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Fisher Scientific 2008/09

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Supporting research for more than a century.

Fisher Scientific
Serving customers in more than 150 countries around the world.

Fisher Scientific
A family of global service brands for lab equipment, chemicals, and supplies.

Fisher Scientific
A customer-driven portfolio of service solutions—Freeing You to Achieve Success.

Fisher Scientific
Offering convenience and choice—from a single purchase to supply chain solutions.

Fisher Scientific
Delivering the products you need, when you need them, where you need them.

Fisher Scientific
A partner you trust.

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TAG IT!

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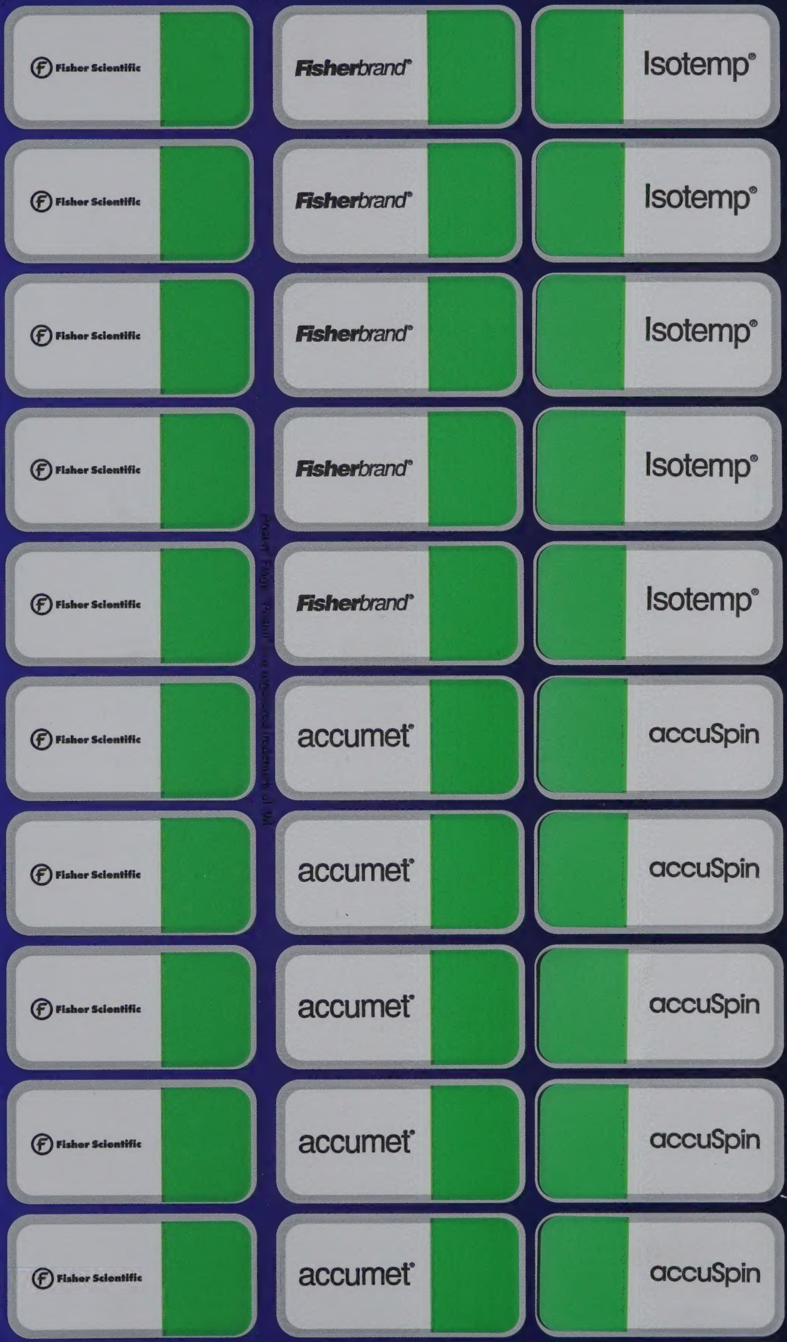

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Fisher Scientific

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- More than 800,000 products offered on www.fishersci.com
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Featured Products

This section highlights new and innovative products from our leading suppliers. It is arranged alphabetically by brand. You will also find popular Fisherbrand* and other consumables that complement these products.

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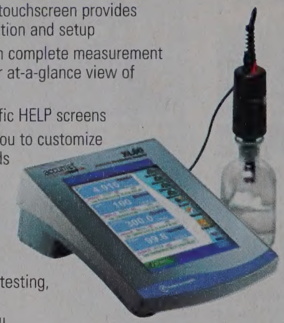
Fisher Scientific

accumet* Excel XL60 pH/mV/Temperature/DO/ISE/Conductivity Meter

A complete electrochemistry lab in one instrument, with unrivaled usability and connectivity

- Windows CE*-driven, full-color touchscreen provides unmatched ease of use in operation and setup
- Switchable numeric display with complete measurement data or graphic display mode for at-a-glance view of measured data over time
- User prompts and context-specific HELP screens
- Extensive setup screens allow you to customize the meter precisely to your needs



Top-of-the-line, research-grade meter

- Measures and displays 4 parameters simultaneously
- DO mode calculates 5-day BOD testing, OUR, and SOUR
- Conductivity mode accepts 2-cell and 4-cell probes
- ISE mode offers direct and indirect measurements
- pH mode accepts standard or Fisher Scientific accuFet* nonglass electrodes

accumet
XL60
4.010
100
300.0
99.8

Extensive GLP capabilities

- Customizable printer/computer output
- 1000-reading datalog capability
- Print Setup lets you print exactly what you want, when you want
- Displays time in 12- or 24-hour format, date in U.S. or international format
- USB port, RS-232 serial port and Ethernet

accumet
XL60

Choice of packaging options:

- **Meter Only** package includes meter, electrode support arm and bracket, 110V/220V power supply and operation manual.
- **Meter Kit/pH** package includes meter, Fisher Scientific accuCap combination pH electrode (13-620-130), ATC probe (13-620-19), electrode support arm and bracket, 110V/220V power supply and operation manual.
- **Meter Kit/pH-DO** package includes meter, Fisher Scientific accuCap* combination pH electrode (13-620-130), self-stirring BOD probe (13-620-SSP), ATC probe (13-620-19), electrode support arm and bracket, 110V/220V power supply and operation manual.
- Each package is also available with Certificate of Traceability to NIST* Standards.

Three-year warranty. Model XL60 is warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years. Call your Fisher Scientific Customer Service Representative for full details.

Package	Cat. No.	Each
Meter Only	**13-636-XL60A**	2768.54
Meter Only with NIST-Traceable Certificate	**13-636-XL60AC**	2881.04
Meter Kit/pH	**13-636-XL60**	3034.04
Meter Kit/pH with NIST-Traceable Certificate	**13-636-XL60C**	3146.53
Meter Kit/pH-DO	**13-636-XL60D**	3696.57
Meter Kit/pH-DO with NIST-Traceable Certificate	**13-636-XL60DC**	3809.07

SPECIFICATIONS

Model	**XL60**
Modes	pH, mV, Dissolved Oxygen, Concentration, Conductivity, Resistivity, Temperature
Display	640 × 480 pixel STN Color LCD; 4½W × 6"H (11 × 15cm). Measurement Characters: ¾"H (1.9cm). Other Data: 1/4"H (0.6cm)
Keypad/Controls	Touchscreen and External Keypad
Menus	Microsoft Windows CE* pull-down menu options; extensive Help screens.
Remote Access	Parameters remotely controllable and monitorable via Windows CE Remote Application Interface.
Connectivity	Ethernet port connectivity to LAN. USB Host/Device 1.1 connectivity to printer, PC, bar code scanner, mouse, keypad etc.
Data Memory	Internal: 1000 Data points. External: USB storage device connectivity, SDCARD Memory Interface ver 1.0, RS-232 connectivity.
Data Output	On Stable; via timer; Manual
Special Features	User upgradable software (Flash ROM via Ethernet). Powerup self test; error messages; alarm, real-time clock/calendar.
pH Mode	
Range/Resolution	-2.000 to +20.000pH/0.1, 0.01, 0.001pH; auto lock
Relative Accuracy	±0.002pH ±1 least significant digit
Buffer Recognition	Manual or Automatic: U.S., Euro, NIST or Custom.
Calibration Points	1 to 6
FET Electrode Input	Yes
mV Mode	
Range/Resolution	0 to ±2000mV (absolute or relative)/0.1mV
Relative Accuracy	±0.2mV ±1 least significant digit
Temperature Mode	
Range/Resolution	-10.0° to +110.0°C (14° to 230°F)/0.1°C
Relative Accuracy	±0.2°C
Compensation	Automatic or Manual
Ion Mode (Concentration)	
Range/Resolution	1×10^{-6} to 9.99×10^{10}/0.1, 0.01, 0.001
Relative Accuracy	±0.17n% (where n = the number of electrons exchanged in the electrode reaction process)
Calibration Points	5
Incremental Methods	Known addition, analyte addition, known subtraction, analyte subtraction
Conductivity Mode	
Cell Constants	0.1cm^{-1}, 1.0cm^{-1}, 10cm^{-1}
Conductivity Range	0 to 5×10^5µS/cm
Resistivity Range	3ohms·cm to 100megohms·cm
Salinity Range	0 to 90ppt
Relative Accuracy	±0.5% of Full Scale reading ±1 least significant digit
Dissolved Oxygen Mode	
Range/Resolution	0-60mg/L, 0-600% saturation/0.01mg/L, 0.1% saturation
Relative Accuracy	±0.1mg/L ±1 least significant digit, ±0.1% saturation
Inputs	2 BNC/pin, 2 ATC, 3 DIN (FET, 2- or 4-cell cond., DO)
Outputs	USB Host/Device, Bidirectional RS-232, Ethernet, SDCARD
Electrical Requirements	110V/220V 50/60Hz

*Trademark. See Trademark Reference.

Prices subject to change.

Bel-Art Products

Scienceware* Secador* Desiccator Cabinets

Secador Desiccator Cabinets assure the safe and dry storage of humidity sensitive products, instruments and hygroscopic chemicals. Select from multiple models with electronic Auto Desiccant control or regular cabinets to utilize the drying agent of your choice.

Secador 2.0, 3.0, and 4.0 Large Desiccator Cabinets

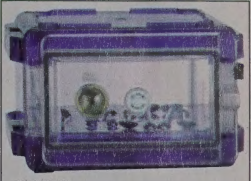
08-647-57

- Polystyrene shelves with waffle pattern for maximum air circulation
- Latches: two latches in horizontal or vertical configurations
- Vertical cabinets: three shelves adjustable up to four positions
- Horizontal cabinets: two shelves adjustable up to two positions
- Standard models are nonelectric
- Auto-desiccator models
- Built-in hygrometer
- Continual silica gel desiccation is regenerated every 20 minutes
- Reduces RH from 75% to less than 25% in approximately eight hours
- Keeps the RH at a constant level

Description	Dimensions	Cat. No.	Each
Vertical Standard Cabinets			
Clear	34.1W x 41.4D x 31.4cm H	**08-647-658**	302.57
Clear	34.1W x 41.4D x 41.7cm H	**08-647-657**	385.72
Clear	34.1W x 41.4D x 51.8cm H	**08-647-54**	550.00
Clear with Blue End Caps	34.1W x 41.4D x 51.8cm H	**08-647-55**	550.00
Horizontal Standard Cabinets			
Clear	51.8W x 41.4D x 31.4cm H	**08-647-58**	550.00
Clear with Blue End Caps	51.8W x 41.4D x 31.4cm H	**08-647-59**	550.00
Vertical Auto-Desiccator Cabinets			
Clear	34.1W x 41.4D x 31.4cm H	**08-647-656**	422.79
Clear	34.1W x 41.4D x 41.7cm H	**08-647-655**	505.00
Clear	34.1W x 41.4D x 51.8cm H	**08-647-52**	675.00
Clear with Blue End Caps	34.1W x 41.4D x 51.8cm H	**08-647-53**	675.00
Conversion Shelf, Horizontal to Vertical		**01-816-19**	24.31
Horizontal Auto-Desiccator Cabinets			
Clear	51.8W x 41.4D x 34.1cm H	**08-647-56**	675.00
Clear with Blue End Caps	51.8W x 41.4D x 34.1cm H	**08-647-57**	675.00
Conversion Shelf, Vertical to Horizontal		**01-816-18**	27.50

Secador 1.0 Small Desiccator Cabinets

- Latches: airtight, one latch construction
- Nonelectric
- Built-in hygrometer


08-647-51

Color	Dimensions	Cat. No.	Each
Clear	34.1W × 41D × 21.3cm H	**08-647-50**	155.58
Clear with Blue End Caps	34.1W × 41D × 21.3cm H	**08-647-51**	155.58

Secador Mini Desiccator Cabinet

For small humidity sensitive products or materials that are always needed near a work area

03-410-540

- 0.35 cubic ft. internal volume
- Molded of clear polystyrene and door is molded of clear copolyester for easy viewing of contents
- Positive latch on the door and two locking loops permit the use of a padlock or tamper evident seal to maintain security
- Built-in hygrometer
- Door opening: 23.6W × 12.7cm H

Description	Dimensions	Cat. No.	Each
Mini Desiccator Cabinet	33.8W × 25.4D × 21.6cm H	**03-410-540**	91.46

Fisherbrand

Humidity Sponge Desiccant

Absorbs 16% moisture by weight

- Tyvek* pack contains 10g sodium calcium aluminosilicate hydrate
- Maintains dry atmosphere in 2 gal. (7.6L) container
- Nontoxic, meets FDA specifications for use in direct contact with food and drugs, and certified as Class M3.5 (Class 100) cleanroom compatible
- Shell is resistant to chemicals, abrasion, and aging
- Disposable window type contains blue gel that turns pink when pack is exhausted
- Reusable type comes with Relative Humidity Card that changes from blue to pink when pack is exhausted; heat pack at 177°C (350°F) to regenerate

Humidity Sponge
Humidity Sponge
Humidity Sponge
07-580

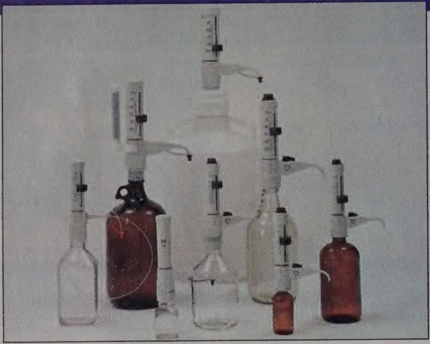
ORDERING INFORMATION:
Measures 3 × 3 × ¼" (7.6 × 7.6 × 0.6cm).

Description	Cat. No.	Pack of 40
Disposable Window Type	**07-580**	33.40
Reusable Type	**07-580-1**	31.33

brinkmann

Bottletop and ChemSaver* Dispensers

Always count on Brinkmann for reliable and convenient reagent dispensing from virtually any size bottle.



Brinkmann bottletop dispensers, shown with bottles and discharge/drying tube (not included).

Fixed- and adjustable-volume dispensers cover a volume range of 0.1 to 100mL, and deliver even the harshest reagents safely. Choose standard models or ChemSaver models, which recirculate the reagent used during the priming step. Accuracy ±0.5%,† precision ≤0.1%.

- Clear plastic sleeve surrounds the glass cylinder to protect against chemical hazards should the cylinder break
- Entire assembly rotates 360° for safe and convenient dispensing and easy access to volume adjustment
- Autoclavable without having to loosen valves or remove individual parts
- Reagent is wiped out of the cylinder with each stroke to prevent the buildup of residue that can lead to malfunction
- Filling valve, tubing, and even the piston can be individually replaced
- ChemSaver models eliminate reagent waste through the use of a recirculating safety valve that diverts reagent used in priming back into the reservoir bottle
- ChemSaver valve can be closed to prevent unintended flow of reagent
- ChemSaver models can be user-calibrated for fine adjustment of volume

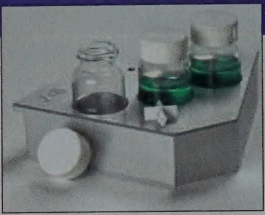
Volume	Increments	Mfr. No.	Cat. No.	Each
Fixed-Volume Dispensers				
1mL	----	2222060-8	**13-688-137**	380.00
5mL	----	2222070-5	**13-688-138**	380.00
10mL	----	2222080-2	**13-688-139**	380.00
Adjustable-Volume Dispensers				
0.1 to 2.5mL	0.05mL	2222000-4	**13-688-130**	380.00
1 to 5mL	0.10mL	2222010-1	**13-688-131**	380.00
2 to 10mL	0.20mL	2222020-9	**13-688-133**	380.00
5 to 25mL	0.50mL	2222030-6	**13-688-134**	510.00
10 to 50mL	1.00mL	2222040-3	**13-688-135**	540.00
20 to 100mL	1.00mL	2222050-1	**13-688-136**	800.00
ChemSaver Dispensers (Adjustable Volume)				
0.1 to 2.5mL	0.05mL	2222090-0	**13-688-140**	405.00
1 to 5mL	0.10mL	2222100-1	**13-688-141**	405.00
2 to 10mL	0.20mL	2222110-8	**13-688-142**	405.00
5 to 25mL	0.50mL	2222120-5	**13-688-143**	555.00
10 to 50mL	1.00mL	2222130-2	**13-688-144**	560.00
20 to 100mL	1.00mL	2222140-0	**13-688-145**	860.00

† For all except 1mL fixed-volume (13-688-137) and 0.1-2.5mL adjustable-volume models (13-688-130 and -140), which are accurate to ±0.6%.

brinkmann

Radleys StarFish* Multiexperiment Workstation

Turns your hotplate or stirrer into a multitasker



Affordable, flexible and modular workstation reduces time and clutter by simultaneously performing up to five experiments, from simple to complex. Easily handles reflux experiments and those requiring inert and vacuum conditions.

- Compact footprint fits on all commonly used hotplates
- Easy assembly—even complex reactions take less than five minutes to set up
- Interchangeable blocks accommodate all types of standard glassware—from 1 dram vials to 500mL round-bottom flasks and scintillation vials—on the same plate
- Modular design permits addition of scaffolding, condensers, extraction/digestion glassware, and other common laboratory accessories
- Optimized block and plate design provides the most even heating and stirring—improves results of downstream experiments
- Anodized aluminum for strong chemical resistance and fast heat-up

Description	Plate Size	Mfr. No.	Cat. No.	Each
Base Plates				
For Radleys Discovery Technologies and IKA	135mm I.D.	015890010	**05-404-028**	405.51
For Heidolph	145mm I.D.	015890020	**05-404-029**	405.51
For Eyela	150mm I.D.	015890030	**05-404-030**	405.51
For Cimarec	184 × 184mm	015890040	**05-404-031**	405.51
For Atuart	160 × 160mm	015890050	**05-404-032**	405.51
Base Plate Handles (Pair)		015890060	**05-404-033**	405.51
Monoblocks				
For 3 × 500mL Flasks		015892110	**05-404-179**	420.79
For 5 × 250mL Flasks		015890070	**05-404-034**	375.47
For 16 × 25mm Tubes		015890080	**05-404-035**	375.47
For 16 × 24mm Tubes		015890090	**05-404-036**	375.47
For 40 × 16mm Tubes		015890100	**05-404-037**	375.47
For 40 × 12mm Tubes		015890110	**05-404-038**	375.47
For 20 × 21mm Vials, 4 dram		015890120	**05-404-039**	375.47
For 40 × 17mm Vials, 2 dram		015890130	**05-404-040**	375.47
For 40 × 15mm Vials, 1 dram		015890140	**05-404-041**	375.47
For 40 × 12mm Vials, 2mL		015890150	**05-404-042**	375.47
For 16 × 28mm Vials (Scintillation)		015892040	**05-404-137**	344.65
Polyblocks				
For 1 × 250mL Flask		015890160	**05-404-043**	175.66
For 3 × 25mm Tubes		015890170	**05-404-044**	175.66
For 3 × 24mm Tubes		015890180	**05-404-045**	175.66
For 9 × 16mm Tubes		015890190	**05-404-046**	175.66
For 9 × 12mm Tubes		015890200	**05-404-047**	175.66
For 3 × 21mm Vials, 4 dram		015890210	**05-404-048**	175.66
For 7 × 17mm Vials, 2 dram		015890220	**05-404-049**	175.66
For 9 × 15mm Vials		015890230	**05-404-050**	175.66
For 9 × 12mm Vials		015890240	**05-404-051**	175.66

brinkmann Heidolph* LABOROTA* Rotary Evaporation Systems

Now backed by Brinkmann, Heidolph is the brand of choice for reliable Rotary Evaporators and Vacuum Pumps. Benchtop LABOROTA evaporators range from basic Collegiate* to advanced Efficient, Digital and Control models; industrial versions are also available.

13-876-300

13-878-432

Feature modular, expandable design, with all components designed to function together; handle flask sizes from 50 to 5000mL; individual power switches for control panel and heating bath; electronically controlled motor provides 20 to 270rpm

LABOROTA Collegiate Models offer:

- Economical rotary evaporator with hand lift and water bath
- Convenient large dial controls
- Water bath temperature range from 20° to 100°C, ±1°C
- 24/40 Glassware, including specified condenser, 1L receiving flask, 1L evaporating flask

LABOROTA 4000 and 4001 Efficient Models feature:

- Rotary evaporator with large analog rotation control knob
- Manual or motorized lift
- Water/oil heating bath with 4.3L capacity, 1300w heating capacity, 20° to 180°C range ±1°C; digital display of set temperature
- 24/40 Glassware, including specified condenser, 1L receiving flask, 1L evaporating flask
- Attachment for optional vacuum valve or Woulff Bottle

LABOROTA 4010 and 4011 Digital Models have all of the features of 4000/4001 models, plus:

- Digital display of rotation speed, vapor temperature and bath temperature

LABOROTA 4002 and 4003 Control Models, with all of the features of 4010/4011 models, plus:

- Built-in vacuum controller for automatic process control based on vapor pressure and temperature detection
- Programmability of up to nine of your most common applications
- Process timer allows for unattended operation
- T Function to stop distillation at your set minimum pressure
- P Function to hold vacuum setting constant throughout distillation
- Pressure ramps for gradient distillation of binary/tertiary solvent mixtures

Include one of these glassware assemblies:

Assembly G1. Diagonal condenser
Assembly G3. Vertical condenser
Assembly G5. Condensate trap
Assembly G6. Vertical condenser for reflux operation

REQUIRED ACCESSORIES:

Vacuum pump or system and associated sensors and connections

Description	Mfr. No.	Cat. No.	Each
LABOROTA Collegiate Models with Standard Glassware: 115V 50/60Hz			
LABOROTA 4000 Collegiate/WB/G1, 24/40	036000030	**13-876-300**	3800.80
LABOROTA 4000 Collegiate/WB/G3, 24/40	036000050	**13-876-302**	4050.79
LABOROTA 4000 Collegiate/WB/G5, 24/40	036000070	**13-876-304**	4362.79
LABOROTA Collegiate Models with Safety-Coated Glassware: 115V 50/60Hz			
LABOROTA 4000 Collegiate/WB/G1B, 24/40	036000090	**13-876-306**	3894.79
LABOROTA 4000 Collegiate/WB/G3B, 24/40	036000110	**13-876-308**	4157.79
LABOROTA 4000 Collegiate/WB/G5B, 24/40	036000130	**13-876-310**	4295.00
LABOROTA 4000 Efficient Models with Safety-Coated Glassware: 115V 50/60Hz			
LABOROTA 4000 Efficient/HB/G1B, 24/40	036000250	**13-878-412**	4040.00
LABOROTA 4000 Efficient/HB/G3B, 24/40	036000270	**13-878-414**	4450.00
LABOROTA 4000 Efficient/HB/G5B, 24/40	036000310	**13-878-418**	4695.00
LABOROTA 4001 Efficient Models with Safety-Coated Glassware: 115V 50/60Hz			
LABOROTA 4001 Efficient/HB/G1B, 24/40	036000450	**13-878-432**	4340.00
LABOROTA 4001 Efficient/HB/G3B, 24/40	036000470	**13-878-434**	4595.00
LABOROTA 4001 Efficient/HB/G5B, 24/40	036000510	**13-878-438**	4852.06
LABOROTA 4010 Digital Models with Safety-Coated Glassware: 115V 50/60Hz			
LABOROTA 4010 Digital/HB/G1B, 24/40	036000650	**13-878-452**	4800.00
LABOROTA 4010 Digital/HB/G3B, 24/40	036000670	**13-878-454**	5250.00
LABOROTA 4010 Digital/HB/G5B, 24/40	036000710	**13-878-458**	5830.00
LABOROTA 4010 Digital/HB/G6B, 24/40	036000730	**13-878-460**	5980.00
LABOROTA 4011 Digital Models with Safety-Coated Glassware: 115V 50/60Hz			
LABOROTA 4011 Digital/HB/G1B, 24/40	036000850	**13-878-472**	5020.00
LABOROTA 4011 Digital/HB/G3B, 24/40	036000870	**13-878-474**	5450.00
LABOROTA 4011 Digital/HB/G5B, 24/40	036000910	**13-878-478**	6020.00
LABOROTA 4011 Digital/HB/G6B, 24/40	036000930	**13-878-480**	6150.00
LABOROTA 4002 Control Models with Safety-Coated Glassware: 115V 50/60Hz			
LABOROTA 4002 Control/HB/G1B, 24/40	036001050	**13-878-492**	5570.00
LABOROTA 4002 Control/HB/G3B, 24/40	036001070	**13-878-494**	6000.00
LABOROTA 4002 Control/HB/G5B, 24/40	036001110	**13-878-498**	6600.00
LABOROTA 4002 Control/HB/G6B, 24/40	036001130	**13-878-500**	6720.00
LABOROTA 4003 Control Models with Safety-Coated Glassware: 115V 50/60Hz			
LABOROTA 4003 Control/HB/G1B, 24/40	036001250	**13-878-512**	6650.00
LABOROTA 4003 Control/HB/G3B, 24/40	036001270	**13-878-514**	7130.00
LABOROTA 4003 Control/HB/G5B, 24/40	036001310	**13-878-518**	7840.00
LABOROTA 4003 Control/HB/G6B, 24/40	036001330	**13-878-520**	7920.00
Accessories			
Vapor Temperature Sensor	036302150	**13-878-672**	273.85
Temperature Sensor T	036302160	**13-878-673**	200.38
ROTAVAC Valve Control Pump	036302830	**13-876-312**	2067.00
Vacuum Controller	036302870	**13-876-313**	1795.00
ROTAVAC Vario Control Pump 115V	036302850	**13-878-740**	6020.00
Vacuum Valve Unit	036302930	**13-876-314**	395.00
Tube Set for LABOROTA 4000 Series	036302180	**13-878-675**	141.79

brinkmann Tuttnauer* Autoclaves

A wide range of benchtop and verticle top-loading autoclaves with capacities up to 85L and rapid cooling chambers—to efficiently sterilize all liquids and media, glassware, clothing, instruments and utensils.

Brinkmann/Tuttnauer Vertical Top-Loading Autoclaves

Provide automatic, microprocessor-controlled sterilization—safely and economically

Intelligent Control Technology sterilizes higher load capacities in shorter batch times, saving time and energy. Dual temperature and chamber pressure control systematically increases pressure and temperature throughout heating phase, helping to achieve chamber and sample temperature in half the time of other autoclaves. Cooling system available on select models.

130-880-100

Operating Features

- Largest capacity available—Model ELV 3870 features 85L chamber for Erlenmeyer flasks up to 5000mL
- Cooling coils—surround chamber for rapid, efficient cooling (ELVC models)
- Independent, front-mounted pressure gauge monitors chamber pressure for added user safety
- Dual built-in temperature probes accurately monitor sample temperature to ensure appropriate media sterilization
- Built-in printer satisfies GLP and SOP requirements; RS-232 for data transfer to PC
- Two wire baskets included
- ELVC series' rapid cooling system cools chamber after sterilization cycle
- Optional cooling cube available for ELVC models for even faster cooling
- UL-listed and CSA-approved
- Backed by Brinkmann with expert local Systems Specialists and after-sales Application and Service Support

Model	Version	Electrical Reqts.	Mfr. No.	Cat. No.	Each
2540 ELV	----	220V 50/60Hz	23210900	**13-880-100**	7295.00
2540 ELVC	With Rapid Cooling System	220V 50/60Hz	23210910	**13-880-101**	8450.00
3850 ELV	----	220V 50/60Hz	23210920	**13-880-102**	13,495.00
3850 ELVC	With Rapid Cooling System	220V 50/60Hz	23210930	**13-880-103**	15,295.00
3870 ELV	----	220V 50/60Hz	23210940	**13-880-104**	16,995.00
3870 ELVC	With Rapid Cooling System	220V 50/60Hz	23210950	**13-880-105**	18,295.00

Brinkmann/Tuttnauer Benchtop Autoclaves

tuttnauer
BRINKMANN

02-964-14

Compact sterilizers for fast, safe sterilization of solids and liquids

- Easy installation: no hardwiring or plumbing required
- Stainless-steel chamber and removable trays
- Large-capacity reservoirs with self-contained water supply
- Fast and slow exhaust for sterilizing solids and liquids
- Drying cycle removes residual moisture
- Heat-insulated, double-locking door; no burns
- Analog, electronic, and electronic printing models

Electronic Control E Series models add:

- Microprocessor controls and digital display
- Four fully-adjustable programs
- Temperature selection from 105°C to 137°C (221°F to 279°F)
- Low-water signal
- Standby heating
- **EP Series** adds printer for documenting sterilization procedures
- **2540EPK** features a larger heating element for accelerated cycle time; helps to meet U.S. EPA guidelines for autoclave operation
- **EA Series** models feature an air-driven pump; facilitates sterilization of wrapped and sealed instruments

Models listed below are electronic with 15 dia. x 27"D chamber and are for 220V 50/60Hz. Other models are available in different sizes and electrical configurations, including analog models. See p. 1736.

Model	No. of Trays	Printer	Stand	Mfr. No.	Cat. No.	Each
Electronic Control: E Series						
3870E	2	No	Yes	023 21 060 6	**02-964-10B**	16,100.00
Electronic Control with Printer: EP Series						
2540EPK	4	Yes	No	023 21 044 4	**02-964-25**	6920.00
3870EP	2	Yes	Yes	023 21 056 8	**02-964-14**	16,200.00
Electronic Control for Sealed Instruments: EA Series						
3870EA	2	No	Yes	023-21-065-7	**13-876-706**	16,800.00
3870EAP	2	Yes	Yes	023-21-067-3	**13-876-707**	16,500.00

Brinkmann*/Metrohm* Karl Fischer Titrators

For accurate, easy-to-perform moisture determinations, count on Metrohm to get the job done right. A wide range of models and accessories are available to accurately determine water levels from 1ppm to 100%.

Titrino* Model 795 Karl Fischer Titrators

KF reagent 5 mg/mL
Waste

795 Karl Fischer Titrino with 703 Pump/Stirring Stand

Built-in multiple method storage creates and stores up to 100 methods for different samples and reagent concentrations

- 100ppm to 100% H_2O content measuring range
- Stirring begins automatically at the start of a titration and stops as soon as it is finished
- Large-screen display allows for easy programming and shows real-time titration curve, enabling you to quickly troubleshoot and change parameters during titration
- Dual RS-232-C interfaces allow simultaneous connection of balance and printer or PC
- Metrohm pump/stirrer aspirates Karl Fischer waste and adds fresh reagent at the touch of a button without exposing the titration vessel to atmospheric moisture
- Good Laboratory Practice (GLP)-compliant

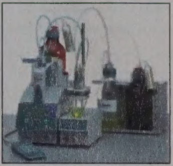
INCLUDES

Unit with Metrohm pump/stirrer, cell and buret; cell includes double-platinum indicator electrode, titration vessel, and all required accessories

Buret Capacity	Mfr. No.	Cat. No.	Each
5mL	20 85 820 6	**20-858-206**	7990.00
10mL	20 85 822-2	**20-858-222**	7990.00
20mL	20 85 824 9	**20-858-249**	7990.00
50mL	20 85 826 5	**20-858-265**	7990.00

Titrino* Model 787 Volumetric Karl Fischer Titrators

Dedicated, economical, single-method titrators for volumetric KF analysis



- Provide 100ppm to 100% H_2O content measuring range and reduced personal contact with reagent
- Automatic storage and retrieval of titer and blank values
- Calculate the result, mean, standard deviation, and relative standard deviation
- Backlit LCD for easy viewing of results
- RS-232-C interface allows connection of balance, printer, or PC
- Pump/stirrer aspirates KF waste, adds fresh reagent at the touch of a button without exposing vessel to atmospheric moisture

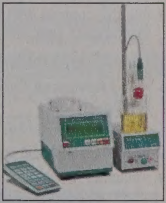
INCLUDES

Unit with Metrohm pump/stirrer, cell and buret; cell includes double-platinum indicator electrode, titration vessel, and all required accessories

Buret Capacity	Mfr. No.	Cat. No.	Each
5mL	20 85 060 4	**20-850-604**	6560.00
10mL	20 85 062 1	**20-850-621**	6560.00
20mL	20 85 064 7	**20-850-647**	6560.00
50mL	20 85 066 3	**20-850-663**	6560.00

Models 756 and 831 Coulometric Karl Fischer Titrators

Compact coulometric titrators determine trace quantities of water in liquids, solids, and gases down to 10µg



- Method memory creates and stores settings specifically for your samples and applications
- Use titration time and current to eliminate reagent calibration or standardization
- Large-screen display for observation of real-time curves for side reactions or titration progress, or scrolling through method parameters
- Choose cell without diaphragm to reduce reagent consumption and electrode contamination; standard cell with diaphragm
- Generate necessary reagent electrolytically in the titration vessel
- Precisely measured and controlled current allows addition of high-resolution reagent for trace moisture analysis
- Dual RS-232-C interfaces connect to a balance, PC and printer
- Good Laboratory Practice (GLP)-compliant

INCLUDES

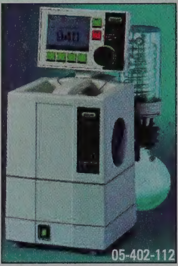
Platinum generator electrode, double-platinum indicator electrode, titration vessel, and all required accessories; magnetic stirrer is included with 20-815-108

Titrator	Mfr. No.	Cat. No.	Each
Model 756 KF Coulometer with Magnetic Stirrer and Built-in Printer			
Cell without diaphragm	20 81 510-8	**20-815-108**	8410.00
Cell with diaphragm	20 81 500-1	**20-815-001**	8300.00
Model 756 KF Coulometer with Model 703 Pump/Stirrer and Built-in Printer			
Cell without diaphragm	20 81 515-9	**20-815-159**	9050.00
Model 831 KF Coulometer with Model 703 Pump/Stirrer			
Cell without diaphragm	20 81 415-2	**20-814-152**	7750.00

BUCHI

Equipment for Evaporations, Vacuum Control and Melting Point Testing

V700/V710 Vacuum Pumps and Systems


05-402-112

Provide a complete solution for creating vacuum in the laboratory

The heart of these systems is a high-performance, oil-free, nearly maintenance-free vacuum pump. Wide range of accessories gives you a complete system that can make many tasks more efficient, and eliminate challenges encountered with large, centralized vacuums.

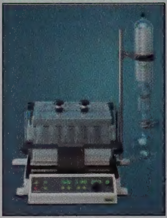
- Oil-free, chemical-resistant, PTFE diaphragm pumps
- Designed for use with all gases and vapors typically found in the lab
- Cover a wide range of classical laboratory applications
- Compact, space-saving design, built-in carrying handle
- Removable housing with built-in tools
- PEEK/glass head for extreme chemical resistance, instant visual detection of contaminants
- **V-700 Pump** has two stages, dual heads, flowrate of $1.8m^3$/hr., ultimate vacuum of <10mbar (24mbar with gas ballast)
- **V-710 Pump** has three stages, four heads, flowrate of $3.1m^3$/hr., ultimate vacuum of <2mbar (8mbar with gas ballast)

Optional Vacuum Controllers:

- **V-850 Professional Controller** for Standard Applications
- Vacuum or speed control of set pressure
- Intuitive controls with timer
- USB data interface
- Library with 43 solvent presets to simplify parameter selection
- **V-855 Advanced Controller** with Programmability for Special Distillation Tasks
- Stores up to 15 processes
- Easy/Vac automatic process control
- Automatic distillation; repeat function

Description	With Trap or Condenser	Cat. No.	Each
V-700 Pumps and Systems			
Pump only	None	**05-402-100**	1780.34
Pump only	Condenser	**05-402-101**	2419.66
Pump only	Cold Trap	**05-402-102**	2419.66
Pump with V-850 Controller	None	**05-402-112**	3373.78
Pump with V-850 Controller	Condenser	**05-402-113**	4013.12
Pump with V-850 Controller	Cold Trap	**05-402-114**	4013.12
Pump with V-855 Controller	None	**05-402-118**	3895.08
Pump with V-855 Controller	Condenser	**05-402-119**	4534.42
V-710 Pumps and Systems			
Pump only	None	**05-402-136**	4989.67
Pump only	Condenser	**05-402-137**	5836.50
Pump only	Cold Trap	**05-402-138**	5836.50
Pump with V-850 Controller	None	**05-402-148**	7100.21
Pump with V-850 Controller	Condenser	**05-402-149**	7947.02
Pump with V-850 Controller	Cold Trap	**05-402-150**	7947.02
Pump with V-855 Controller	None	**05-402-154**	7790.68
Pump with V-855 Controller	Woulff bottle	**05-402-155**	7973.06

Syncore* Polyvap* Systems


05-402-348

Efficient, safe, and environmentally sound tools for multiple evaporation, even with high-boiling solvents

Interchangeable racks allow parallel evaporation of 4 to 96 samples, ranging in volume from 0.5 to 500mL.

- No cross-contamination
- High chemical resistance
- Environmentally sound operation (ISO 14000)
- Evaporation of high-boiling solvents like DMSO and DMF
- Fully transparent crystal racks in format 4 and 6
- Temperature Range: ambient to 150°C
- Vacuum Cover Temperature: ambient to 70°C
- Rotation Speed: 0 to 600rpm
- Programmability: nine time/temperature steps; up to 9 hr. 59 min. each
- Compatible with the Syncore Reactor and Syncore Analyst
- Operates on 120V; comes with S Vertical Condenser

Flask Size	Rack	Mfr. No.	Cat. No.	Each
2L	R-4 Crystal	1P2S21000	**05-402-352**	17,075.42
2L	R-6 Crystal	1P2S22000	**05-402-353**	17,545.36
2L	R-12	1P2S23000	**05-402-354**	17,492.89
1L	R-24	1P2S14000	**05-402-348**	17,049.18
2L	R-48	1P2S28000	**05-402-359**	17,850.27
1L	R-48	1P2S18000	**05-402-172**	17,850.27
1L	R-96	1P2S16000	**05-402-350**	18,637.16

Melting Point Apparatus

05-404-347

Simultaneously determine melting or boiling points

With highly accurate determinations up to 400°C, these systems are designed for continuous operation and allow two boiling points and three meltings points to be determined during a single cycle.

- Nine heating gradients from 0.1 to 20.0°C/min.
- Metal block serves as heating component, eliminates the need for silicone oil
- Compliance with Pharmacopoeia methodologies, e.g., Ph. Eur. II, Ph. Helv. VII, DAB 10
- Data recording via RS-232 port for GLP compliance
- Calibration with World Health Organization (WHO) standards
- Working memory for 10 methods
- Detailed IQ/CQ documentation available for model B-545
- No mercury thermometer, no silicone oil to dispose of
- **Melting Point B-540** employs visual observation of melting point
- **Melting Point B-545** features automatic determination of melting points with sample observation

Model	Mfr. No.	Cat. No.	Each
B-540	036581	**05-404-347**	3978.00
B-545	036582	**05-404-348**	5847.00

*Trademark. See Trademark Reference.

Prices subject to change.

BÜCHI

Rotary and Parallel Evaporation Systems

P-12 Multivapor* Parallel Evaporation System

Compact instrument for parallel evaporation of up to 12 samples under vacuum conditions; designed to eliminate the time constraint bottleneck that occurs during extraction, chromatography and reaction processes

- Heat samples separately in cylindrical transparent water baths
- Vigorous vortex induced by a horizontal orbital movement of heating plate to prevent boiling retardation
- Vacuum manifold contains individual sample connections which conduct vapors to condenser assembly of the rotary evaporator
- Ideal for high throughput labs
- Connect P-12 to your rotary evaporator and use the same condenser/vacuum assembly for two instruments
- Prepare samples in advance, store in evaporation rack
- Reduce environmental impact vs. nitrogen evaporators
- Samples are visible throughout evaporation
- Meets ISO 14000 guidelines
- Accommodate various vessel types with up to 30mL working volume
- Compatibility with modern fast extraction techniques such as PSE or ASE eliminates sample transfer steps
- Parallel evaporation of reaction samples in the same reaction tube

SYSTEMS INCLUDE:

- P-12 Mutivapor platform
- Crystal rack
- Adapter set specified
- Vacuum cover
- Specified condenser and receiving flask, plastic-coated
- 100-120V power supply

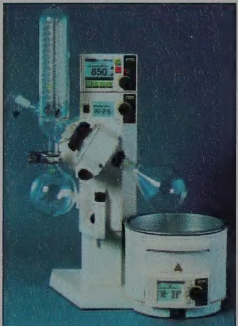
Other configurations are available; contact your Fisher Scientific Customer Service Representative for details.

05-402-899

Condenser	Flask	Adapter	Mfr. No.	Cat. No.	Each
None: connects to Rotavapor*	----	Test tube 25mm O.D.	MP12001R00	**05-402-898**	8189.00
None: connects to Rotavapor	----	Radley's Tube 24mm O.D.	MP12002R00	**05-402-903**	8221.00
S (Vertical Condenser)	1L	Test tube 25mm O.D.	MP12001S10	**05-402-899**	9511.00
S (Vertical Condenser)	1L	Radley's Tube 24mm O.D.	MP12002S10	**05-402-904**	9544.00
C (Cold Trap Dry Ice Condenser)	1L	Test tube 25mm O.D.	MP12001C10	**05-402-896**	9740.00
C (Cold Trap Dry Ice Condenser)	1L	Radley's Tube 24mm O.D.	MP12002C10	**05-402-901**	9773.00
C (Cold Trap Dry Ice Condenser) with V-700/V-850 vacuum system	1L	Test tube 25mm O.D.	MP12001C11	**05-402-897**	13,642.00

Rotavapor R-210 and R-215 Rotary Evaporators

Set the highest standards for ease of use and safety—provide a complete solution for all evaporator applications


Buchi R-215C Advanced 05-402-251

- Modular systems in Basic, Advanced and Professional configurations for distillation of all solvents
- Motorized quick-action jack raises and lowers evaporator
- Optional safety-coated glass protects operator
- Easy handling and fail-safe functionality
- Long-life sealing system reduces maintenance and cleaning time, increases efficiency
- Three-year warranty
- Extensive accessories
- Available with integrated vacuum controllers
- Choice of 7 condenser assemblies for numerous applications
- Handle flask sizes from 50 to 4000mL

See pp. 649 and 650 for a listing of popular configurations.

RII with Glass Assembly V, 05-402-287

RII Rotary Evaporators

For quick, gentle and economical evaporation procedures without cutting corners

- Manual quick-action jack
- 1300w heating capacity, control from 20° to 95°C
- 20 to 280rpm motor

SYSTEMS INCLUDE:

- Evaporator, manual lift and rotation control
- Glassware, specified condenser, 1L receiving flask
- 1L $ evaporating flask
- Heating bath

Glass Assembly	$ No.	Mfr. No.	Cat. No.	Each
A Standard	24/40	2422A0	**05-401-953**	4000.00
A Plastic Coated	24/40	2422A1	**05-401-954**	4149.00
C Standard	24/40	2422C0	**05-403-616**	4416.45
C Plastic Coated	29/32	2421C1	**05-402-282**	4566.28
C Plastic Coated	24/40	2422C1	**05-402-285**	4566.28
V Standard	24/40	2422A0	**05-403-617**	4136.37
V Plastic Coated	29/32	2421V1	**05-402-284**	4286.17
V Plastic Coated	24/40	2422V1	**05-402-287**	4286.17

CORNING

Low Profile Cell Culture Flask

Frees up incubator space and gives you more cells with less subculturing

13-700-433

- 100cm^2 available growth area
- Rectangular with canted neck, corner cap for easy pouring and improved access to flask for pipetting or scraping
- Manufactured from optically clear virgin polystyrene
- Available with patented Corning* CellBIND* surface treatment for enhanced cell attachment or tissue culture treatment
- Vented cap contains a 0.2µm nonwettable membrane sealed to the cap, providing consistent, sterile gas exchange while minimizing risk of contamination
- Graduated
- 100% integrity tested
- Sterilized by gamma radiation and certified nonpyrogenic

Surface Treatment	Mfr. No.	Cat. No.	Case of 60
CellBIND	3073	**13-700-433**	270.88
Tissue culture-treated	3816	**07-200-878**	225.83

CORNING

Baffled Polycarbonate Flasks with Caps

Baffles increase aeration for better growth, especially with insect cell lines and bacteria

13-700-432

- Increased aeration provides better cell growth, especially for bacteria and insect cell lines
- Erlenmeyer style
- Made from optically clear polycarbonate
- Graduated at 50mL intervals
- Sterilized by gamma radiation and certified nonpyrogenic
- Available with vent caps for applications requiring sterile gas exchange
- Two-position polypropylene plug seal cap (U.S. Patent No. 4,763,804) can be opened for gas exchange or closed for a liquid-tight seal

NOTE:

Non-baffled styles are also available in all sizes on our Web site.

Capacity	Mfr. No.	Cat. No.	Case of
Vented Screw Cap			
125mL	431405	**13-700-429**	50/439.48
250mL	431407	**13-700-431**	50/490.09
500mL	431401	**13-700-425**	25/374.23
1L	431403	**13-700-427**	25/536.57
2L	431256	**10-126-43**	6/168.03
3L	431253	**10-126-40**	4/197.83
Plug Seal Cap			
125mL	431404	**13-700-428**	50/412.84
250mL	431406	**13-700-430**	50/449.56
500mL	431408	**13-700-432**	25/337.17
1L	431402	**13-700-426**	25/509.40

CORNING

CellBIND* Surface HYPERFlask* Cell Culture Flasks

Bar-coded and compatible with cell culture automation platforms

13-700-406

The novel Corning* HYPERFlask cell culture vessel offers 1720cm$_2$ growth area in the footprint of a traditional 175cm$_2$ flask. This high yield, high performance flask utilizes a multilayer gas permeable growing surface for efficient gas exchange

- CellBIND surface treatment increases oxygen content of the polymer surface, resulting in improved hydrophilicity and wettability for optimal cell spreading and attachment
- Rectangular polystyrene
- Growth Area: 1720cm
- Max. Working Volume: 560mL
- HDPE plug seal cap on a straight neck is designed for filling with growth medium
- Sterile

Mfr. No.	Cat. No.	Case of
10010	**13-700-406**	4/300.00
10024	**13-700-407**	24/1800.00

CORNING

Disposable Spinner Flasks

Ready-to-use system comes with paddle and integrated magnet, eliminating the need for time-consuming assembly or cleaning and reassembly

07-201-153, 07-201-152 (left to right)

- Made of ISO 10993 polystyrene
- Comparable to conventional glass spinner flasks for growth of suspension cell lines and any attachment-dependent cultures using microcarrier beads
- Paddle size and height are optimized for each vessel size
- Magnet provides a smooth, even rotation at required speeds on any laboratory slow speed stirrer
- Heat buildup in the vessel is reduced by means of a specially designed flange that raises the vessel off the stir-plate surface
- Flared base provides extra stability and support

Capacity	Center Neck Dia.	Side Arm Dia.	Mfr. No.	Cat. No.	Case of
125mL	70mm	32mm	3152	**07-201-152**	12/716.88
500mL	100mm	45mm	3153	**07-201-153**	12/840.48

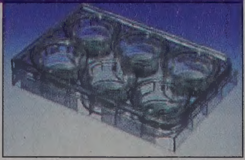
*Trademark. See Trademark Reference.

Prices subject to change.

CORNING

Transwell* Permeable Supports

Convenient, easy-to-use support devices for the study of anchorage-dependent and -independent cell lines



07-200-165

- Microporous inserts come preloaded in Tissue Culture Plates
- Available tissue culture treated in 6-, 12-, or 24-well formats
- Openings for pipet tips allow convenient addition and removal of media and samples from both compartments
- Patented self-centering design provides independent access to both apical and basolateral membranes of the cell monolayer
- Polycarbonate membranes are compatible with most organic fixatives and stains

APPLICATIONS:

Epithelial and endothelial cell culture; transport, migration/invasion, co-culture, and microbial pathogenesis studies

NOTE:

Additional Transwell products are available. Please visit our Web site for details.

Pore Size	Diameter	Growth Area	Mfr. No.	Cat. No.	Case of
For 6-well Plates					
0.4μm	24.5mm	4.7cm^2	3412	**07-200-165**	24/102.00
3.0μm	24.5mm	4.7cm^2	3414	**07-200-166**	24/104.00
8.0μm	24.5mm	4.7cm^2	3428	**07-200-169**	24/104.00
For 12-well Plates					
0.4μm	12mm	1.0cm^2	3401	**07-200-156**	48/191.05
3.0μm	12mm	1.0cm^2	3402	**07-200-157**	48/191.05
For 24-well Plates					
0.4μm	6.5mm	0.33cm^2	3413	**07-200-147**	48/177.76
3.0μm	6.5mm	0.33cm^2	3415	**07-200-148**	48/177.76
5.0μm	6.5mm	0.33cm^2	3421	**07-200-149**	48/177.76
8.0μm	6.5mm	0.33cm^2	3422	**07-200-150**	48/177.76

CORNING

Transwell* Inserts and Dishes

07-200-173

- Tissue culture-treated inserts supplied with 100mm diameter dishes
- Polycarbonate membrane is compatible with most organic fixatives and stains
- Insert diameter, 75mm. Insert growth area, 44cm^2
- Sterile
- Individually wrapped

APPLICATIONS:

Co-culture, drug transport, in vitro fertilization, and microbial pathogenesis studies

Pore Size	Mfr. No.	Cat. No.	Case of 12
0.4μm	3419	**07-200-172**	321.76
3.0μm	3420	**07-200-173**	321.76

CORNING

Nonbinding Surface (NBS*) Microplates

Ideal for protein and nucleic acid binding at low concentrations, increasing assay signal-to-noise ratios

07-200-778 (top),
07-200-732

- Modified polymer surface is nonionic hydrophilic, minimizing bio-interaction within wells to reduce nonspecific binding and reagent costs
- Significantly reduces protein and nucleic acid binding to polymers, maintains enzyme activity, and inhibits adhesion of a number of cell lines
- Stable to aqueous solutions containing EtOH
- Use at temperature range of 4° to 37°C (39° to 99°F)
- Compatible with a wide range of plate readers, liquid handlers, and robotic systems

NOTE:

Additional NBS microplates are available. Please visit our Web site for details.

Color	Well Shape	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of
96-Well							
Black	Flat	360μL	No	No	3650	**07-200-778**	100/477.84
White	Flat	360μL	No	No	3600	**07-200-731**	100/489.79
White	Round	330μL	No	No	3605	**07-200-791**	100/489.79
White/clear bottom	Flat	360μL	No	No	3604	**07-200-732**	100/629.55
96-Well Half Area							
Black	Flat	190μL	No	No	3686	**07-200-340**	100/501.60
384-Well Low Volume							
Black	Round	35μL	No	No	3676	**12-595-460**	100/749.30
Black/clear bottom	Flat	50μL	No	No	3544	**09-761-84**	50/563.35
White	Round	35μL	No	No	3673	**07-200-330**	100/831.15
384-Well Low Flange							
Black	Flat	112μL	No	No	3575	**09-761-86**	50/282.19
White	Flat	112μL	No	No	3574	**07-201-322**	50/300.42

CORNING

Square Polycarbonate Storage Bottles

Ideal for storage, mixing or sampling

13-700-412, -402, -400, -401

- Polycarbonate resin makes them more break resistant than other glass or plastic bottles
- 45mm size cap provides larger access for liquid transfer
- Screened graduations are easier to see when compared to molded
- Sterile; individually packaged
- Large marking spot
- Linear tear packaging
- Can be autoclaved once at 121°C and 15psi

INCLUDES:

Linerless, one-piece, autoclavable orange GL45 threaded polypropylene plug-seal caps

NOTE:

Repeated autoclaving weakens polycarbonate and is not recommended.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of 24
4 oz. (125mL)	45mm	431430	**13-700-400**	87.84
8 oz. (250mL)	45mm	431431	**13-700-401**	118.80
16 oz. (500mL)	45mm	431432	**13-700-412**	149.04
32 oz. (1L)	45mm	431433	**13-700-402**	199.26

Timberline Analytical and Precision Balances

Easy operation, fast readouts, and reliability. Priced for those who need precision on a tight budget. Compact size takes up less space on the benchtop.

- Clear display and a keypad with large function keys
- Quick readouts using the latest weighing technology
- Toggle between two weigh units including grams, milligrams and ounces
- Automatic external calibration using a precision calibration weight (sold separately)
- Counting, percent weighing, formulation, average weighing
- RS-232 port standard for data transfer to printer or computer

WARRANTY:
Three years.

CERTIFICATIONS:
CE marked, CSA approved.

01-913-149

01-913-151

Model	TP-64	TP-214	TP-303	TP-1502	TP-3101	TP-12
Readability	0.1mg	0.1mg	0.001g	0.01g	0.1g	1g
Capacity	60g	210g	310g	1500g	3100g	12,000g
Pan Size	3¼" dia. (80mm)	3¼" dia. (80mm)	3⅞" dia.	6⅞ × 5⅝" (174 × 143mm)	6⅞ × 5⅝" (174 × 143mm)	6⅞ × 5⅝" (174 × 143mm)
Cat. No.	**01-913-145**	**01-913-147**	**01-913-148**	**01-913-149**	**01-913-151**	**01-913-153**
Each	1515.00	1985.00	990.00	925.00	695.00	595.00

SPECIAL OFFER

Purchase a Denver Timberline balance and receive a FREE backpack or a $25 AMEX* gift cheque. Call **1-800-321-1135** for a redemption form. Offer valid until December 31, 2009.

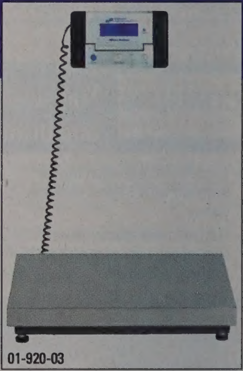
Mesa Industrial Scales

Convenience and flexibility in high capacity weighing. Configure the platform, indicator display and function mode specifically for the application.

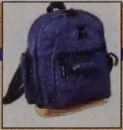
- Display can be wall-mounted and located nine feet away from weighing platform
- Weigh units: kg, lb., ozt (grams available on MZ-11 and MZ-22 models)
- Count mode perfect for inventory and mailing operations
- Totalization application
- Removable stainless-steel weighing platform
- 200% overload protection
- AC or battery operation with battery saving mode
- RS-232 data interface to connect to printer or computer

INCLUDES:
Power supply and RS-232 cable

WARRANTY:
Two years


01-920-03

Model	MZ-11	MZ-22	MZ-55	MZ-102	MZ-205
Readability	1g	2g	5g	20g	50g
Capacity	10kg	20kg	50kg	100kg	200kg
Pan Size	12⅜ × 12⅜" (31 × 31cm)	12⅜ × 12⅜" (31 × 31cm)	12⅜ × 12⅜" (31 × 31cm)	15⅞ × 20½" (40 × 52cm)	15⅞ × 20½" (40 × 52cm)
Cat. No.	**01-920-00**	**01-920-01**	**01-920-02**	**01-920-03**	**01-920-04**
Each	339.64	339.64	339.64	419.79	419.79



SPECIAL OFFER

Purchase a Denver Mesa scale and receive a FREE backpack or a $25 AMEX* gift cheque. Call **1-800-321-1135** for a redemption form. Offer valid until December 31, 2009.

*Trademark. See Trademark Reference.

Prices subject to change.

Repeater* stream and Xstream Pipetters

Repeater stream is suitable for all standard pipetting and dispensing applications. For added versatility, the Repeater Xstream can also perform titrations, sequential dispensing, and aspiration of supernatants. When used with Combitips Plus* tips, both systems form an unbeatable and essential lab tool for all applications.

Applications

- Electronic dispensing with programmable memory functions
- Contamination-free dispensing using the positive-displacement principle
- Ideal for viscous solutions (e.g., glycerol, oil) or liquids with high vapor pressure (e.g., acetone, ethanol)
- Dispensing in a long series

Features

- Automatic dispensing
- Rapid and ergonomic dispensing with motorized piston
- Single-button tip ejector
- Li-ion battery
- Function selection wheel
- Automatic Combitips Plus tip recognition
- IVD conformity

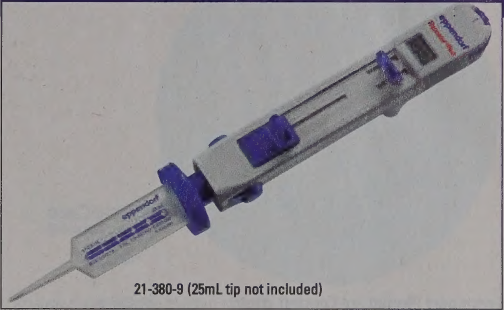
05-401-041

New, illuminated display

Description	Range	Mfr. No.	Cat. No.	Each
Repeater stream	1µL to 50mL	022460803	**05-401-040**	800.00
Repeater Xstream	1µL to 50mL	022460811	**05-401-041**	960.00
Charging Stand	----	022460897	**05-401-042**	189.00

Repeater* Plus Pipetter

Offers expanded dispensing range and makes up to 100 repetitive deliveries.



21-380-9 (25mL tip not included)

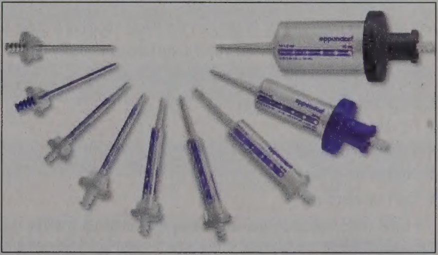
- Expanded dispensing range of 1.0µL to 10mL, including 12µL, 65µL, and 1.1mL
- Performs a greater number of successive deliveries (up to 100)† from a single aspiration of sample—further enhancing efficiency and reducing tedium
- Accuracy to ±0.3%; precision to ≤0.25%
- With 20 different volume settings for each of the nine Eppendorf Combitips* Plus tip sizes, fewer tips cover a given dispensing range
- Unit automatically recognizes the size tip in use and displays volume selection on the digital LCD, reducing dispensing errors
- Tip mounting is quick and easy; removal is hands-free, with a touch of the ejector button
- Choose from sterile and nonsterile Eppendorf Combitips Plus tips and Eppendorf Biopur* Combitips Plus tips

Description	Mfr. No.	Cat. No.	Each
Repeater Plus Pipetter	022260201	**21-380-9**	425.00
Carousel Stand Adapter	022261592	**21-380-2E**	9.75

† With dial setting of 0.5. In all, 20 volume selections (dial settings) can be made, from 0.5 to 10.

Eppendorf* Combitips Plus* Pipet Tips

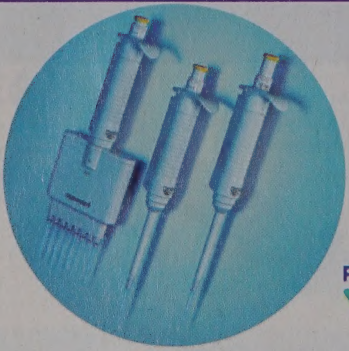
Tips function according to the positive-displacement principle, ensuring that the correct volume is dispensed with regard to the density and viscosity of the liquid used. The positive-displacement system provides safer dispensing of radioactive and toxic substances as well as solutions with high vapor pressure. No aerosols are formed.



- For use with Eppendorf Repeater* pipetters (original, Plus, Pro, stream and Xstream); and EDOS (automatic dispensing system)
- Available in nine volumes from 0.1 to 50mL
- Fine tip provides exact dispensing without additional pipet tip
- Polyethylene plunger and polypropylene cylinder make these tips ideal for use with aggressive reagents
- Choose from sterile and nonsterile Combitips Plus tips and Eppendorf Biopur* tips, which are certified sterile as well as pyrogen-, RNase-, DNA-, and ATP-free
- For the full selection of Combitips Plus tips, including pricing and ordering information, see p. 1444 of this catalog or visit our Web site.

PhysioCare Concept*

Eppendorf Research* pipetters, with their easy-to-use, two-button design, are a lab favorite all over the world. The volume display is magnified for better visibility, and the entire lower part can be easily removed for cleaning and autoclaving. Available in fixed-volume, adjustable-volume and multichannel models.



Eppendorf PhysioCare Concept criteria focuses on all relevant aspects of pipetting—the whole person and process, not just the hand or device. Eppendorf pipetters fulfill all of the following criteria:

- Integrated systems: Complete pipetter and tip program to fit any application
- Exceptional durability: Made of state-of-the-art materials
- Optimized form and function: Easy operation through all work steps
- Perfectly balanced: Fit comfortably in the hand, with models weighing up to 30% less than other brands
- Intuitive operation: Color-coded pipetter and tip matching system for easy identification
- Minimal user exertion: Minimize stress; manual models require up to 50% less pipetting force
- Simple maintenance: Easy to clean, autoclave and repair
- Total support: Certified and ready to use; calibration services also available

Saving precious energy

Our goal is to minimize strain on all affected muscle groups throughout the entire pipetting process. First, we strive to design lightweight pipetters. Our Eppendorf Research manual pipetters, for example, weigh up to 30% less than similar pipetters on the market. But total weight is only part of the equation. How weight is distributed is just as important. The weight of Eppendorf Research pipetters is optimally distributed to minimize stress to any one muscle area during the pipetting process.

Simplify your work: PhysioCare Concept

A lightweight pipetter that is easy on the human body is a great start; however, to achieve Eppendorf PhysioCare Concept quality it must address these tasks that are part of the pipetting process:

1. Selection of the pipetter
2. Tip attachment
3. Aspiration of liquid
4. Dispensing of liquid
5. Pipet tip ejection

The right combination of optimally designed elements ensures that features such as piston-stroke length, button location and pipet tip design and fit enable simple, yet highly effective and ergonomic pipetting.

Research* Multichannel Pipetters

13-688-501

Ideal for applications in immunology, cell culture, serology

Provide high performance and reliability in a multichannel format from 0.5 to 300µL. Innovative design features make everyday use more efficient, comfortable and strain-free.

Features

- Designed with reduced operating forces
- Larger, separate tip-ejector button
- Manifold can be rotated 360° to let user find the most comfortable pipetting position
- Rounded grip, reshaped operating button and longer hand rest for better, more ergonomic handling
- Lower portion of pipetter can easily be removed, cleaned and autoclaved

ORDERING INFORMATION:
Compatible with Eppendorf* pipet tips (epTIPS). Also compatible with all Fisherbrand* universal-fit tips, Extended Length, Gel Loading, Large Orifice and Low-Retention tips. Eppendorf pipetters are color coded (operating button and volume display) to easily recognize tip sizes in color-coded Eppendorf tip racks.

CERTIFICATION:
Supplied with individual Certificate of Conformity

WARRANTY:
Three-year

Range	Incre.	Inacc.†	Imprec.†	Mfr. No.	Cat. No.	Each
8-Channel						
0.5–10µL	0.01µL	±8.0 to 2.0%	≤5.0 to 1.0%	02245200-2	**13-688-507**	685.00
10–100µL	0.1µL	±3.0 to 0.8%	≤2.0 to 0.3%	02245202-9	**13-688-501**	685.00
30–300µL	0.2µL	±3.0 to 0.6%	≤1.0 to 0.3%	02245204-5	**13-688-502**	685.00
12-Channel						
0.5–10µL	0.01µL	±8.0 to 2.0%	≤5.0 to 1.0%	02245206-1	**13-688-503**	795.00
10–100µL	0.1µL	±3.0 to 0.8%	≤2.0 to 0.3%	02245208-8	**13-688-504**	795.00
30–300µL	0.2µL	±3.0 to 0.6%	≤1.0 to 0.3%	02245210-0	**13-688-505**	795.00

† The first value applies to the lowest volume in the stated range; the second, to the highest volume, with one exception: for the 0.5 to 10µL pipetters, the first value is for a dispensed volume of 1µL.

*Trademark. See Trademark Reference.

Prices subject to change.

PhysioCare Concept*—Changing the Face of Pipetting

Research* Series 2100 Adjustable-Volume Pipetters

05-402-88

Designed for high performance, reliability and user comfort

- Designed with reduced operating forces and a larger, separate, tip-ejector button
- Rounded grip, reshaped operating button, and longer hand rest hook for better, more ergonomic handling
- Lower portion of pipetter can easily be removed, cleaned and autoclaved

CERTIFICATION:

Supplied with individual Certificate of Conformity

WARRANTY:

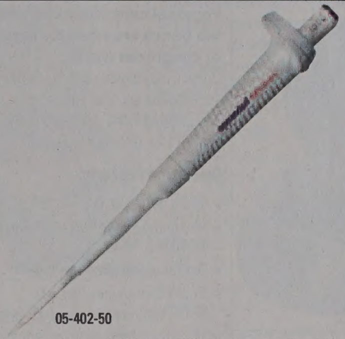
Three year

Range	Incre.	Inacc.†	Imprec.†	Mfr. No.	Cat. No.	Each
0.1 to 2.5µL‡	0.002µL	±12.0 to 1.4%	≤6.0 to 0.7%	022471856	**05-402-85**	289.00
0.5 to 10µL‡	0.01µL	±2.5 to 1.0%	≤1.8 to 0.4%	022471902	**05-402-86**	289.00
2 to 20µL‡	0.02µL	±5.0 to 1.0%	≤1.5 to 0.3%	022471953	**05-402-87**	289.00
10 to 100µL	0.1µL	±3.0 to 0.8%	≤1.0 to 0.2%	022472003	**05-402-88**	289.00
20 to 200µL	0.2µL	±2.5 to 0.6%	≤0.7 to 0.2%	022472054	**05-402-89**	289.00
100 to 1000µL	1.0µL	±3.0 to 0.6%	≤0.6 to 0.2%	022472101	**05-402-90**	289.00
500 to 5000µL	5.0µL	±2.4 to 0.6%	≤0.6 to 0.15%	022472151	**05-402-91**	289.00
1 to 10mL	----	±3.0 to 0.6%	≤0.6 to 0.15%	022472208	**05-403-121**	289.00

† For adjustable-volume pipetters, the first value applies to the smallest volume in the stated range; the second, to the largest volume, with one exception: for the 0.1 to 2.5µL pipetter, the first value is for a dispensed volume of 0.2µL.

‡ Ultra-micro models.

Reference Series 2000 Adjustable-Volume Pipetters



05-402-50

Compact design includes a single, multifunctional button that controls both pipetting and tip ejection

Designed for pipetting accuracy, a smooth stroke, and superior operating comfort.

- Eppendorf pipetter/tip system ensures outstanding accuracy and precision
- Ejection sleeve can be removed to fit into smaller vessels
- Smooth-running piston is corrosion-free and chemically resistant
- Lateral volume locking safeguards volume selected
- UV-resistant and completely autoclavable without any impairment of accuracy or precision
- Supplied with individual labels for identification
- User calibratable

CERTIFICATION:

Supplied with individual Certificate of Conformity

WARRANTY:

Three year

Range	Incre.	Innac.†	Imprec.†	Mfr. No.	Cat. No.	Each
0.1 to 2.5µL‡	0.002µL	±12.0 to 1.4%	≤6.0 to 0.7%	022470001	**05-402-44**	349.00
0.5 to 10µL‡	0.01µL	±5.0 to 1.0%	≤2.8 to 0.4%	022470051	**05-402-45**	349.00
2 to 20µL‡	0.02µL	±3.0 to 0.8%	≤2.0 to 0.3%	022470108	**05-402-46**	349.00
2 to 20µL	0.02µL	±5.0 to 1.0%	≤1.5 to 0.3%	022470159	**05-402-47**	349.00
10 to 100µL	0.1µL	±3.0 to 0.8%	≤0.7 to 0.15%	022470205	**05-402-48**	349.00
50 to 200µL	0.2µL	±1.0 to 0.6%	≤0.3 to 0.2%	022470256	**05-402-49**	349.00
100 to 1000µL	1.0µL	±3.0 to 0.6%	≤0.3 to 0.2%	022470302	**05-402-50**	349.00
500 to 2500µL	2.0µL	±1.5 to 0.6%	≤0.3 to 0.2%	022470353	**05-402-51**	349.00

† For adjustable-volume pipetters, the first value applies to the smallest volume in the stated range; the second, to the largest volume, with one exception: for the 0.1 to 2.5µL pipetter, the first value is for a dispensed volume of 0.2µL.

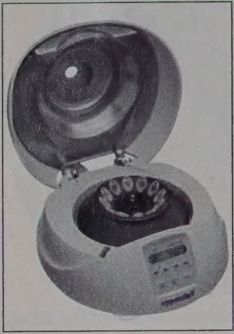
‡ Ultra-micro models.

eppendorf North America

Microcentrifuges

Provide customers with choices from 12 to 30 tubes and speeds from 12,000×G up to 30,130×G. Refrigerated and 230V versions also available.

MiniSpin* and MiniSpin plus Microcentrifuges



Personal centrifuges for every lab bench are ideal for research or classroom work.
Quickly and easily perform routine separations such as pelleting precipitated DNA. Fit in just half a square foot of benchtop space.

Operating Features

- Capacity: 24mL (12 × 2.0mL)
- Maximum speed/force: 14,500rpm/14,100×G
- Digital speed/time display
- Timed, continuous-run, or SHORT-spin modes
- Memory retains most recent settings for repeatable runs

Safety Features

- Lid interlocking system prevents accidental opening during operation
- Natural rotor airflow minimizes heat buildup to protect samples
- Brushless motor runs quietly (<60dB)

Available Rotors

- Aluminum rotor for 12 × 1.5/2.0mL tubes with metal lid is suitable for spinning miniprep/spin columns (included)
- Accepts adapters (05-400-124, -125, -126; sold separately) for 0.2 to 0.5mL tubes
- PCR strip rotor for 2 × 8-strip PCR tubes

MiniSpin

- Maximum speed/force with supplied rotor: 13,400rpm/12,100×G
- 30-minute timer can be set in 15 sec. increments
- SHORT-spin mode fixed at maximum speed

MiniSpin plus

- Maximum speed/force with supplied rotor: 14,500rpm/14,100×G
- Automatic rpm/RCF conversion
- 99-minute timer (15 sec. increments) with continuous mode option and variable-speed SHORT-spin mode

Electrical Requirements	Mfr. No.	Cat. No.	Each
MiniSpin			
115V 60Hz	022 62 010 0	**05-401-09**	1199.00
MiniSpin plus			
115V 60Hz	022 62 020 7	**05-401-07**	1399.00
220V 60Hz	022 62 025 8	**05-401-08**	1399.00

Model 5418 Microcentrifuge

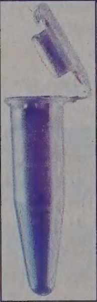
05-403-90

Compact and economical microcentrifuge features a certified aerosol-tight rotor (included) and a unique, contoured rotor bowl designed for quiet operation.

- Capacity: 36mL (18 × 1.5/2.0mL)
- Maximum speed/RCF: 14,000rpm/16,873×G
- Full-digit speed display
- Timer: 30 sec. to 9 hr., 59 min., plus HOLD for continuous run
- Whisper-quiet—even when running without the rotor lid
- Innovative lid design with soft-touch, one-finger closure and automatic opening at end of run for quick sample removal
- Automatic 1-button rpm/RCF conversion
- Supplied with 18 × 1.5/2.0mL aerosol-tight rotor with "click-lock" lid for fast and secure closing

Electrical Reqts.	Mfr. No.	Cat. No.	Each
120V 60Hz	022 62 030 4	**05-403-90**	1875.00
230V 50Hz	022 62 032 1	**05-403-91**	1875.00

ACCESSORIES



05-402-25

Eppendorf* 1.5mL Safe-Lock Microcentrifuge Tubes

- Positive sealing cap snaps shut for sample incubation, storage, and transportation
- Flat-top cap provides an ideal writing surface for sample identification
- Volume graduation scale
- Rated to 30,000×G
- Choose from six colors, including amber for light-sensitive samples
- 0.5 and 2.0mL sizes available, see p. 1865.

Color	Outside Dia. x L (with Cap)	Mfr. No.	Cat. No.	Pack of
Capacity, 1.5mL				
Natural	10 × 38mm	022 36 320 4	**05-402-25**	500/40.00
Natural	10 × 38mm	022 36 333 6	**05-404-30**	700/41.25
Amber	10 × 38mm	022 36 322 1	**05-402-26**	500/49.00
Blue	10 × 38mm	022 36 324 7	**05-402-27**	500/49.00
Green	10 × 38mm	022 36 326 3	**05-402-28**	500/49.00
Red	10 × 38mm	022 36 328 0	**05-402-29**	500/49.00
Yellow	10 × 38mm	022 36 330 1	**05-402-30**	500/49.00
Assorted	10 × 38mm	022 36 332 8	**05-402-5**	500/49.00

*Trademark. See Trademark Reference.

Prices subject to change.

Meet the new laboratory standard for Silence | Speed | Simplicity*—Eppendorf* Microcentrifuges.

Model 5424 Microcentrifuges

05-403-92

Compact 24-place microcentrifuges with advanced features provide silence, speed and simplicity

- Capacity: 48mL (24 × 1.5/2.0mL)
- Max. speed/RCF: 15,000rpm/21,130×G
- Full-digit speed display
- Variable speed control from 100 to 15,000rpm in 100rpm increments
- Timer: 30 sec. to 9 hr. 59 min. with HOLD for continuous run
- OptiBowl* design—whisper-quiet operation, even without rotor lid
- Innovative lid features soft-touch, one-finger closure and automatic opening at end of run for quick sample removal
- Convenience features include: Adjustable volume (including MUTE), "end-of-run" alarm, SOFT-brake for delicate samples, and programmable SHORT-spin set at desired speed
- "At set rpm" function to start timer when set speed is reached for better reproducibility
- Parameter lock prevents accidental changes
- Equipped with 24 × 1.5/2.0mL certified aerosol-tight rotor with lid

Choice of control systems

- Rotary knob version allows fast parameter settings
- Keypad version has a smooth, easy-to-clean surface

Rotor options (sold separately)

- 24 × 1.5/2.0mL tubes rotor (comes standard with "Models with Rotor" 05-400-005 and 05-403-92)
- Certified aerosol-tight rotor with lid for 24 × 1.5/2.0mL tubes with special PTFE coating for improved chemical resistance and easy cleaning (50-400-010)
- 18-place miniprep spin column rotor with lid (05-400-012)
- 4 × 8-tube PCR strip rotor with lid (05-400-014)

Model with Rotor	Keypad Control	Rotary Knob Control
Electrical Reqts.	120V 60Hz	120V 60Hz
Mfr. No.	022620444	022620401
Cat. No.	**05-400-005**	**05-403-92**
Each	2450.00	2450.00
Without Rotor	Keypad Control	Rotary Knob Control
Electrical Reqts.	120V 60Hz	120V 60Hz
Mfr. No.	022620498	022620487
Cat. No.	**05-400-007**	**05-400-006**
Each	2195.00	2195.00

Model 5430 Microcentrifuges

05-400-016

Top-of-the-line 30-place models achieve forces over 30,000xG and spin 0.2 to 50mL tubes as well as microplates

- Capacity: 300mL (6 × 50mL); 60mL (30 × 1.5/2.0mL); or 2 microplates
- Max. speed/RCF: 17,500rpm/30,130×G
- Variable speed control from 100 to 17,500rpm in 100rpm increments
- Timer: 30 sec. to 99 hr. 59 min. with HOLD for continuous run
- Compact footprint: 16½D × 13W × 10"H (42 × 33 × 25cm)
- Large backlit LCD with Windows*-like menus and pictogram symbols

Menu Options

- Save up to 50 programs, with five keys for routine programs
- Selectable menu language (English, Spanish, French or German)
- Advanced options include: Soft-touch one-finger lid closure, SOFT-brake and "at set rpm" functions, fully adjustable end-of-run alarm, adjustable SHORT-spin, parameter lock

Rotor Options (sold separately)

- For 30 × 1.5/2.0mL tubes, aerosol-tight rotor with lid spins to 20,817×G (05-400-021)
- For 30 × 1.5/2.0mL tubes, non-aerosol-tight rotor with lid spins to 20,817×G (05-400-019)
- For 24 × 1.5/2.0mL tubes, high-speed aerosol-tight rotor with lid spins to 30,130×G (05-400-023)
- For 24 × 1.5/2.0mL tubes, aerosol-tight rotor for miniprep spin columns with lid spins to 19,090×G (05-400-025)
- For 6 × 15/50mL (conical) tubes, rotor with lid and adapters spins to 7197×G
- For 18 × 17mm dia. cryogenic tubes, rotor with lid spins to 7970×G (05-400-027)
- 8 × 8-tube PCR strip rotor with lid spins to 13,543×G
- 2-place microplate rotor for plates up to 29mm H with lid spins to 2204×G (05-400-031)

Description	Electrical Reqts.	Mfr. No.	Cat. No.	Each
Model 5430 with 30-Place Aerosol-tight Rotor	120V 60Hz	022620509	**05-403-94**	3920.00
Model 5430 with Microplate Rotor	120V 60Hz	022620568	**05-400-017**	4665.00

ACCESSORIES

Eppendorf* 5424 Miniprep Rotor with Lid

Deep lip design supports open microtube lids

- Capacity: 18 × 1.5/2.0mL tubes; Max RCF: 18,111×G

Cat. No.	Each
05-400-012	610.00

Eppendorf* 5430 Microplate Rotor

Safely spins two standard microplates up to 2200×G

Cat. No.	Each
05-400-031	1431.00

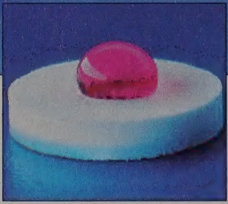
ep DualFilter TIPS

STOP AEROSOLS! New ep DualFilter TIPS with their unique two-phase filter protection provide the perfect shield against contamination. Their soft, hydrophobic filters consist of two visible phases with different pore sizes and fit perfectly into the pipette tip cone. This new system outmatches conventional filters with an absorption of aerosols and biomolecules. Rely on it!

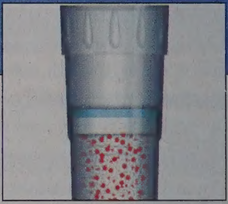
epTIPS
eppendorf Sterile Tips eppendorf Sterile Tips eppe

Contamination-free handling—thanks to the practical box system

Unique, two-phase filter protection



Hydrophobic filter surface provides maximum recovery



Only ep Dualfilter TIPS provide reliable protection against even the finest impurities

Convincing benefits of ep DualFilter TIPS:

- Double protection by two filter phases
- Maximum safety for pipette and sample
- Ultimate absorption of aerosols and biomolecules
- Free from PCR-inhibiting additives and filter material particles
- Soft, flexible tip cone provides a better seal to the pipette
- Patent-pending technology
- Sterile, pyrogen-free, and Eppendorf PCR clean
- IVD conformity

Reliable, reproducible, high-precision pipetting

- ep DualFilter TIPS provide contamination-free handling, thanks to the practical box system
- The hydrophobic filter surface provides maximum sample recovery

CERTIFICATION:

ep DualFilter TIPS are manufactured under strict quality standards in an ISO-9001-certified production process. Batch-related certificates are available upon request.

ORDERING INFORMATION:

Packaged in racks of 96 tips or individually wrapped.

Volume	Packaging	Mfr. No.	Cat. No.	Pack of
0.1–10µL, S	Racks, 10 × 96	2249120-2	**05-403-14**	960/119.00
0.1–10µL, M	Racks, 10 × 96	2249121-1	**05-403-15**	960/119.00
0.1–10µL, L	Racks, 10 × 96	2249122-9	**05-403-16**	960/119.00
2–20µL	Racks, 10 × 96	2249127-0	**05-403-17**	960/119.00
2–100µL	Racks, 10 × 96	2249123-7	**05-403-18**	960/109.00
2–200µL	Racks, 10 × 96	022491296	**04-987-420**	960/109.00
20–300µL	Racks, 10 × 96	2249124-5	**05-403-19**	960/109.00
50–1000µL	Racks, 10 × 96	2249125-3	**05-403-20**	960/119.00
100–5000µL	Racks, 5 × 24	022491261	**04-987-421**	120/65.00
1-10mL	Indiv. Wrapped, 100	2249128-8	**05-403-120**	100/55.00

Pipetter Compatibility
Eppendorf*
Most other leading brands of pipetters

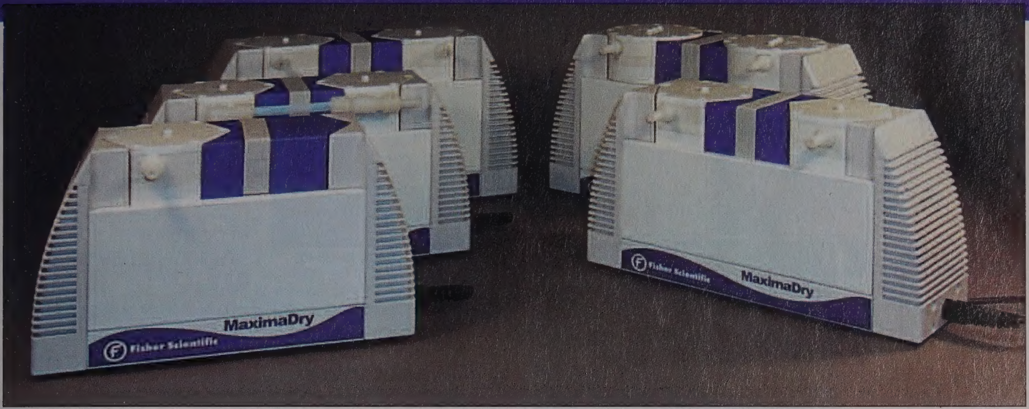
*Trademark: See Trademark Reference.

Prices subject to change.

Fisher Scientific

MaximaDry* Oil-Free Vacuum Pumps

Clean, reliable, oil-free vacuum pumps are ideal for use with any brand rotary evaporators, gel dryers, filtration flasks and manifolds, vacuum ovens and concentrators



13-880 Series

Quiet, reliable operation without the hazards of handling pump oil or contaminated water. Excellent replacement for rotary vane pumps and water aspirators, especially in applications where corrosive vapors are encountered.

Two-stage vacuum to 1.5 torr

- Withstand aggressive gases and vapors—can be used with aggressive solvents without the risk of damaging the pump
- Single-piece diaphragm and molded pumpheads are made from PTFE to provide corrosion resistance
- High-flow multiport valves are made from tough Kalrez* elastomers to withstand pumping heavy solvent vapors and liquid condensate without a loss in performance
- Fan-cooled (TEFC) motor is rated for continuous operation and never needs lubrication
- Compact design fits easily on a benchtop or in a fume hood
- Setup and disassembly are quick and easy and do not require any special tools
- Plug into standard electrical outlet; no hardwiring required
- ⅜" I.D. tubing required (sold separately)

Head Configuration	Capacity	Vacuum	Pressure	Motor hp	Shipping Weight	Dimensions (L × W × H)	Electrical Requirements	Cat. No.	Each
One Stage	20L/min.	75 torr	15psig	⅙	21 lb. (9.5kg)	13 × 6½ × 8½" (33 × 16.5 × 22cm)	115V 60Hz	**13-880-14**	1250.00
One Stage	20L/min.	75 torr	15psig	⅙	21 lb. (9.5kg)	13 × 6½ × 8½" (33 × 16.5 × 22cm)	230V 50Hz	**13-880-15**	1250.00
Parallel	40L/min.	65 torr	15psig	⅙	21 lb. (9.5kg)	15 × 6½ × 8½" (38 × 16.5 × 22cm)	115V 60Hz	**13-880-16**	1625.00
Parallel	40L/min.	65 torr	15psig	⅙	21 lb. (9.5kg)	15 × 6½ × 8½" (38 × 16.5 × 22cm)	230V 50Hz	**13-880-17**	1625.00
Two Stage	20L/min.	6 torr	15psig	⅙	21 lb. (9.5kg)	15 × 6½ × 8½" (38 × 16.5 × 22cm)	115V 60Hz	**13-880-18**	1550.00
Two Stage	20L/min.	6 torr	15psig	⅙	21 lb. (9.5kg)	15 × 6½ × 8½" (38 × 16.5 × 22cm)	230V 50Hz	**13-880-19**	1550.00
Two Stage	35L/min.	6 torr	15psig	⅓	27 lb. (12.2kg)	16 × 7 × 9" (40.6 × 17.8 × 23cm)	115V 60Hz	**13-880-20**	2100.00
Two Stage	35L/min.	6 torr	15psig	⅓	27 lb. (12.2kg)	16 × 7 × 9" (40.6 × 17.8 × 23cm)	230V 50Hz	**13-880-21**	2100.00
Two Stage	35L/min.	1.5 torr	15psig	⅓	27 lb. (12.2kg)	16 × 7 × 9" (40.6 × 17.8 × 23cm)	115V 60Hz	**13-880-22**	3100.00
Two Stage	35L/min.	1.5 torr	15psig	⅓	27 lb. (12.2kg)	16 × 7 × 9" (40.6 × 17.8 × 23cm)	230V 50Hz	**13-880-23**	3100.00

Fisherbrand

Magnetic Stir Bar 6-pack

Buy a 6-pack and save! Now our most popular sizes of Fisherbrand* micro and octagon stirring bars are available in convenient and economical 6-packs!

Fisherbrand MAGNETIC STIRRING BARS
Fisherbrand MAGNETIC STIRRING BARS
Fisher Scientific

- FDA-grade PTFE coating
- Leakproof design
- Smooth, seamless, polished finish
- Alnico V permanent magnets
- High-strength magnetization
- Micro bars or octagonal bars
- Octagonal bars have pivot rings
- Manufactured using ISO 9001:2000 certified processes

Diameter	Length	Cat. No.	Pack of 6
Micro Bars			
1/16" (1.5mm)	5/16" (8mm)	**14-513-64SIX**	30.18
3/32" (2mm)	1/4" (7mm)	**14-513-63SIX**	30.18
1/8" (3mm)	3/8" (10mm)	**14-513-65SIX**	33.18
Octagonal Bars			
1/8" (3mm)	1/2" (13mm)	**14-513-57SIX**	24.60
5/16" (8mm)	1/2" (13mm)	**14-513-58SIX**	27.60
5/16" (8mm)	1" (25mm)	**14-513-59SIX**	30.18
5/16" (8mm)	1 1/2" (38mm)	**14-513-60SIX**	34.08
5/16" (8mm)	2" (51mm)	**14-513-61SIX**	41.82
3/8" (9.5mm)	1" (25mm)	**14-513-51SIX**	37.08
3/8" (9.5mm)	2" (51mm)	**14-513-66SIX**	59.10

Fisher Scientific

Digital Control Ultrasonic Cleaners

Precise control and consistent cleaning from batch to batch

Fisher Scientific

15-335-100, 15-335-104, 15-335-102

Digital Control Panel

- Power switch plus touch controls
- SELECT OPTION lets you read or set solution temperature, set timers for sonics and degassing, turn heat on and off
- SET DISPLAY adjusts temperature and timer settings
- User can set temperature from 20° to 69°C (68° to 156°F)
- Six digital models from 3 to 20 qt. (2.8 to 18.9L)
- Microprocessor-controlled timer with cycle times to 99 minutes
- Thermostat with LED readout maintains optimum cleaning temperature of 69°C (156°F)
- Operate on 120V 50/60Hz
- Manufactured using ISO 9001:2000-certified processes, UL and CSA listed

Model	Capacity	Cat. No.	Each
FS20D	3 qt. (2.8L)	**15-335-100**	424.76
FS30D	4 qt. (3.8L)	**15-335-101**	558.60
FS60D	6 qt. (5.7L)	**15-335-102**	862.60
FS110D	10 qt. (9.5L)	**15-335-103**	1105.80
FS140D	13 qt. (12.3L)	**15-335-104**	1514.00
FS220D	20 qt. (18.9L)	**15-335-105**	1912.95

Fisher Scientific

Vortex Mixers

Durable, rugged vortexers offer exceptional versatility and value

Fisher Scientific
PULSING VORTEX MIXER

02-215-375

Fixed-speed Mixer

- One-touch unit for high-speed mixing at 3200rpm
- Activated by applying pressure to mixing head

Analog Mixer

- Variable analog speed control from 100 to 3200rpm

Digital Mixer

- Ideal for applications demanding repeatable results
- Variable speed control from 500 to 3000rpm
- Touch keypad controls and LED display for speed and time

Pulsing Mixer

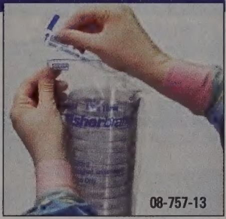
- Powerful pulsing vortex provides excellent cell disruption in minutes
- Pulse feature reduces heat generation while delivering more effective mixing
- Variable speed control from 500 to 3000rpm

Model	Electrical Reqts.	Cat. No.	Each
Fixed-speed	120V 50/60Hz, 75w	**02-215-360**	249.06
Analog	120V 50/60Hz, 75w	**02-215-365**	317.55
Digital	120V 50/60Hz, 75w	**02-215-370**	363.21
Pulsing	120V 50/60Hz, 75w	**02-215-375**	486.70

*Trademark. See Trademark Reference.

Fisherbrand® Petri Dishes with Clear Lids

Polystyrene, radiation-sterilized dishes are easy to handle with just one hand


08-757-13

- Top and bottom edges are squared off (not rounded) to provide a firm, sure grip
- Bottom is flat so medium spreads evenly over the entire dish bottom
- Three venting ribs built into the underside of the lid prevent buildup of condensation that would drip onto the media
- Lid skirt is flared just enough so that it can be replaced quickly after streaking
- Lid fits loosely enough to provide air exchange, yet is tight enough to reduce risk of aerial contamination
- Place lid upside down on dish to close off dish from outside environment

Beveled Ridge Petri Dishes

- Ideal for automated filling systems
- Remove dishes easily from the center of a stack
- 150 × 15mm Kirby-Bauer dish has a larger capacity for antimicrobial susceptibility testing

Raised Ridge Petri Dishes

- Stack high and remain stacked
- Minimum of slipping, sliding, and resulting scratches

Outside Dia. × H	Cat. No.	Case of
Beveled Ridge		
100 × 15mm	**08-757-13**	500/147.10
150 × 15mm	**08-757-14**	100/149.40
Raised Ridge		
100 × 15mm	**08-757-12**	500/147.10

Fisherbrand® Media-Miser* Dishes

Space-saving, stackable, and sterilized

Clockwise from top: 08-757-14G, 08-757-11YZ, 08-757-13A

These disposable polystyrene dishes are smaller than standard Petri dishes so less media is used.

- Clear tops for distortion-free viewing
- Venting ribs prevent condensation
- Lids fit snugly when turned over, to reduce the risk of aerial contamination
- Packaged in cut-apart polyethylene sleeves, 20 per sleeve
- Radiation sterilized

35 × 10mm Dishes

- Raised, straight ridge around the top permits high stacking with little or no slipping, sliding, or scratching

60 × 15mm Dishes

- Raised, straight ridge for high stacking

95 × 15mm Dishes

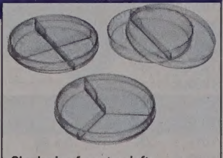
- Raised, beveled ridge around the top for easy removal from a stack

Dia. × H	Percent Media Saved[1]	Cat. No.	Case of 500
35 × 10mm	11	**08-757-11YZ**	174.04
60 × 15mm	N/A	**08-757-13A**	171.20
95 × 15mm	11	**08-757-14G**	170.90

Fisherbrand® Compartmentalized Dishes

Select from 2-, 3-, or 4-section plates with numbered sections

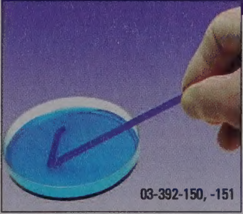
- Radiation sterilized
- Size: 100 × 15mm
- Supplied 25 per polyethylene sleeve


Clockwise from top left: 08-758-2, 08-757-150, 08-758-3

Description	Cat. No.	Case of 500
I Dish (2 sections)	**08-757-150**	260.25
Y Dish (3 sections)	**08-758-3**	274.75
X Dish (4 sections)	**08-758-2**	272.75

Fisherbrand® L-Shaped Cell Spreaders

Ideal for even spreading of bacterial cultures


03-392-150, -151

- Disposable
- Smooth L-shaped end reduces risk of damaging agar
- Pre-sterilized blue polypropylene

Cat. No.	Case of
03-392-151	100/34.98
03-392-150	500/93.48

Fisherbrand SureOne* Pipet Tips

New, improved Fisherbrand SureOne Reload system offers a full line of universal fit pipet tips in both filtered and nonfiltered configurations

Fisherbrand
SureOne

- All racked sterile tips are shrink wrapped and certified free of RNase, DNase, DNA, ATP
- Pyrogen, PCR inhibitor and bioburden free
- All nonsterile racked and bulk nonfiltered tips are certified free of RNase, DNase, DNA
- Reload packaging format reduces plastic waste by 52%
- Unique reload packaging design saves 58% bench space vs. racked packaging
- Lot traceable—all inserts contain the Fisherbrand part number, tip volume, lot number
- Multichannel design; all inserts are 96 well format
- Reversable lid acts as a hinged rack or a lift-off lid
- Inserts are easy to place into and remove from rack
- Insert clips into rack for a very secure fit, preventing spilling of tips

ORDERING INFORMATION:

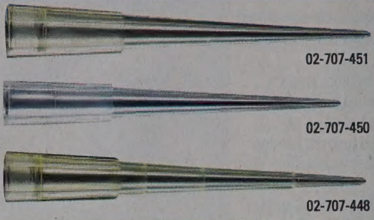
Packaging options include bulk, rack, rack sterile and reload. Also available in convenient removable/stackable reload decks that snap into empty racks without the need for special tools or precision hole alignment (visit our Web site).

Aerosol Barrier Tips

- DNase-/RNase-free; sterile tips are also pyrogen-free
- Filter eliminates aerosol cross-contamination
- Tips allow for noncontaminated sample recovery

Volume	Length	Packaging†	Color	Cat. No.	Each	Case of 5 Pk.
0.1–10µL	1¼"	HRS, 10 × 96	Natural	**02-707-439**	97.78	481.70
1–20µL	2"	HRS, 10 × 96	Natural	**02-707-432**	97.78	481.70
5–100µL	2"	HRS, 10 × 96	Natural	**02-707-431**	97.78	481.70
1–200µL	2"	HRS, 10 × 96	Natural	**02-707-430**	97.78	481.70

Pipetter Compatibility
Universal fit for research-grade pipetters



Nonfilter Tips

Volume	Length	Packaging†	Color	Cat. No.	Pack of	Case of
0.1–10µL	1¼"	HR, 10 × 96	Natural	**02-707-436**	960/41.50	5 Pk./205.69
0.1–10µL	1¼"	HRS, 10 × 96		**02-707-437**	960/45.85	5 Pk./227.24
0.1–10µL	1¼"	RD, 10 × 96		**02-707-438**	960/36.89	5 Pk./182.85
1–200µL	2"	BP	Yellow	**02-707-451**	1000/19.23	5 Pk./190.62
1–200µL	2"	HR, 10 × 96		**02-707-421**	960/38.87	5 Pk./192.65
1–200µL	2"	HRS, 10 × 96		**02-707-422**	960/43.61	5 Pk./216.14
1–200µL	2"	RD, 10 × 96		**02-707-423**	960/32.94	5 Pk./163.26
1–200µL	2"	BP	Natural	**02-707-450**	1000/19.23	5 Pk./190.62
1–200µL	2"	HR, 10 × 96		**02-707-418**	960/38.87	5 Pk./192.65
1–200µL	2"	HRS, 10 × 96		**02-707-419**	960/43.61	5 Pk./216.14
1–200µL	2"	RD, 10 × 96		**02-707-420**	960/32.94	5 Pk./163.26
1–200µL	2"	BP	Yellow	**02-707-448‡**	1000/32.25	10 Pk./276.00
1–200µL	2"	HR, 10 × 96		**02-707-412‡**	960/40.31	5 Pk./199.80
1–200µL	2"	HRS, 10 × 96		**02-707-413‡**	960/44.80	5 Pk./222.01
1–200µL	2"	RD, 10 × 96		**02-707-414‡**	960/34.26	5 Pk./169.79
1–200µL	2"	BP	Natural	**02-707-449‡**	1000/32.25	10 Pk./276.00
1–200µL	2"	HR, 10 × 96		**02-707-415‡**	960/40.31	5 Pk./199.80
1–200µL	2"	HRS, 10 × 96		**02-707-416‡**	960/44.80	5 Pk./222.01
1–200µL	2"	RD, 10 × 96		**02-707-417‡**	960/34.26	5 Pk./169.79
1–300µL	2"	BP	Natural	**02-707-447‡**	1000/22.51	10 Pk./223.10
1–300µL	2"	HR, 10 × 96		**02-707-409‡**	960/42.04	5 Pk./208.31
1–300µL	2"	HRS, 10 × 96		**02-707-410‡**	960/46.51	5 Pk./230.51
101–1000µL	2¾"	BP	Natural	**02-707-400‡**	1000/27.28	10 Pk./267.76
101–1000µL	2¾"	HR, 10 × 96		**02-707-401‡**	960/49.94	5 Pk./247.49
101–1000µL	2¾"	HRS, 10 × 96		**02-707-402‡**	960/57.62	5 Pk./283.84
101–1000µL	2¾"	RI, 10 × 96		**02-707-403‡**	960/45.46	5 Pk./225.28
101–1000µL	2¾"	BP	Blue	**02-707-405‡**	1000/27.28	10 Pk./267.76
101–1000µL	2¾"	HR, 10 × 96		**02-707-406‡**	960/49.94	5 Pk./247.49
101–1000µL	2¾"	HRS, 10 × 96		**02-707-407‡**	960/57.62	5 Pk./283.84
101–1000µL	2¾"	RI, 10 × 96		**02-707-408‡**	960/45.46	5 Pk./225.28

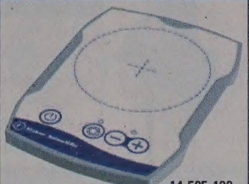
† Packaging Code, BP: Bulk Pack; HR: Hinged Rack; HRS: Hinged Rack, Sterile; RI: Rack Inserts; RD: Reload Decks (2 stacks of 5 preloaded decks of 96).
‡ With 2.5µL reference mark.

*Trademark. See Trademark Reference.

Fisher Scientific

Lab Disc Magnetic Stirrers

Ultra-flat and compact personal stirrer speeds to 1500rpm



14-505-122

Can reverse direction of rotation automatically every 30 seconds to ensure better mixing.

- General-purpose mixing up to 800mL
- Wear-free drive with no moving parts
- Chemically resistant polyester set-up plate and casing
- Slip-proof stand
- Accepts magnetic stir bars up to ⅛" (30mm) long
- Operates on 12V via plug-in transformer
- Requires stir bars and stirring vessel (sold separately)

No. of Stirring Positions	One
Stirring Capacity	800mL
Speed Range	15 to 1500rpm
Top Plate Dia.	3½" (9cm)
Overall L × W × H	6¼ × 4⅜ ×½" (16 × 11 × 1.2cm)
Electrical Requirements.	115V 60Hz
Cat. No.	**14-505-122**
Each	172.85

IKA®

Ultra Turrax* Tube Disperser Workstation

The first closed homogenizing system for stirring, milling and dispersing

14-259-600

Easy to operate for quick, one-time sample preparation with no cleanup. Disposable tubes lock into place and remove quickly with a simple twist.

- Speed range: 300 to 6000rpm
- Continuously variable speed control
- Digital display
- Accommodates sample volumes from 2 to 15mL
- Hygienic—Tubes contain samples securely
- Anti-locking function ensures consistent results
- Low-voltage (24V) for added safety

INCLUDES:

Tube drive unit, two DT-20 stirring tubes, two ST-20 dispersing tubes, two BMT-20G/S grinding/milling tubes, ceramic and stainless-steel grinding balls, power supply, carrying case

Electrical Requirements	Cat. No.	Each
115V 50/60Hz, 0.8A	**14-259-600**	524.00
230V 50Hz, 0.8A	**14-259-601**	524.00

IKA®

Calorimeters

Choose the C2000 for a high level of automation and simple handling or the C200 for teaching and training applications

C2000 Analytical Calorimeter

14-505-2000

Determine gross calorific values of liquid and solid samples using isoperibolic (static jacket) or dynamic (reduced-time) working methods.

- Water handling system automatically tempers, fills, and empties inner vessel
- Automatic oxygen filling of decomposition vessel
- Automatic sample ignition
- C 2000 measuring cell with control unit
- KV 600 Digital Cooling Water Supply to provide cooling water to the calorimeter
- Basic Version 1 Package has C5010 Decomposition Vessel
- Basic Version 2 Package has C5012 Halogen-resistant Decomposition Vessel

Description	Electrical Requirements	Mfr. No.	Cat. No.	Each
C 2000 Calorimeter Basic Version 1 Package	115V 50/60Hz	8801891	**14-505-131**	19,465.80
	230V 50/60Hz	8801890	**14-505-132**	19,465.80
C 2000 Calorimeter Basic Version 2 Package	115V 50/60Hz	8801991	**14-505-133**	21,317.00
	230V 50/60Hz	8801990	**14-505-134**	21,317.00

C 200 Calorimeter System

14-505-200

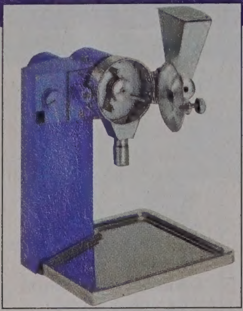
Space-saving and economical combustion calorimeter for determining gross calorific values of liquid and solid samples

- Semi-automated water handling and manual oxygen filling
- Four different working methods—isoperibolic, dynamic, manual and time controlled—for ideal adjustment of different operating tasks
- Ignition and calculation of gross calorific done automatically in modes other than manual
- Manual operating mode features user-activated ignition and end of measurement with calculations performed by user

Description	Mfr. No.	Cat. No.	Each
C 200 Calorimeter System, 115V	8802501	**14-505-200**	9840.00
C 200 Calorimeter System, 230V	8802500	**14-505-201**	9840.00

IKA® MF10 Micro Mill

Universal grinder is designed for continuous operation and inline processing



Cutting/grinding head suitable for fibrous substances, impact grinding head for brittle materials.

- Grinds samples at a maximum rate of 11 lb./hr. (5kg/hr.)
- Maximum feed particle size: 10mm
- Powerful drive (3000–6500rpm)
- Easy-to-clean stainless-steel work surface
- Stainless-steel cutter
- Overload protection
- Door-contact safety device
- Requires at least one head and one sieve for operation (order separately), call your Fisher Scientific Customer Service Representative

ORDERING INFORMATION:

Dimensions: $12\frac{3}{16}$L × 14⅝W × 22⅜"H (31 × 37.1 × 56.8cm); for 115V. Available accessories: Cutting Grinding Head for fibrous substances (14-259-143), Impact Grinding Head for brittle substances (14-259-144), Stainless-steel sieves in hole sizes from 0.25 to 3mm (see 14-259-156); all sold separately.

Electrical Requirements	Cat. No.	Each
115V 50/60Hz	**14-259-139**	1693.65

IKA® RCT Basic IKAMAG* Safety Control Magnetic Stirrer

Offers medium-viscosity stirring power with advanced heating protection for unsupervised operation

14-261-100

- Integrated temperature control
- Precise temperature/speed setting via digital display—even when turned off
- Adjustable safety circuit for heating plate temperature
- Digital readout
- Hot-top indicator
- Highly polished aluminum alloy heating plate for optimal heat transfer
- DIN 12878 bushing for connecting a contact thermometer
- PT 1000 temperature sensor

Stirring Capacity	5 gal. (20L)
Speed Range	50 to 1200rpm
Heating Temperature Range	50 to 310°C
Heat Output	600w
Top Plate Dia.	5¾" (135mm)
Overall L × W × H	10¾ × 6½ × 3¼" (27.5 × 16.5 × 8.5cm)
Electrical Requirements	115V 50/60Hz
Cat. No.	**14-261-100**
Each	716.50

IKA® RW 20 Digital Stirrers

For stirring liquid volumes up to 20L and 10,000mPas

14-505-600

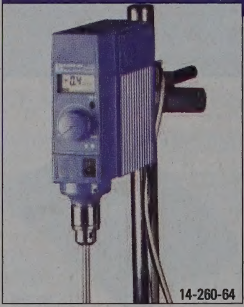
Sturdy, slimline, ergonomic design. Sold as kit with stirrer and stand.

- Stepless knob speed control and LED digital readout
- With constant power drive for continuous operation
- Two speed ranges for universal use (see table)
- Power Input/Output: 72w/35w
- Chuck dia. range: 0.5-10mm
- Hollow shaft inner dia.: 10.5mm
- Push-through agitator shafts
- Dimensions: 8⅜D × 34⅝W × 11⅝"H (21.2 × 88 × 29.4cm)
- Includes R 1342 propeller stirrer, R 182 Boss Head Clamp, and R 1826 Plate Stand

Electrical Requirements	Speed Range 1	Speed Range 2	Cat. No.	Each
115V 60Hz	72-600rpm	288-2400rpm	**14-505-600**	614.00
230V 50Hz	60-500rpm	240-2000rpm	**14-505-601**	614.00

IKA® Eurostar Power Control-Visc Stirrer

Medium- to high-viscosity stirrer with enhanced features



14-260-64

- Quiet 130w motor with push-through agitator shafts and electronic safety circuit
- Smooth-start design prevents splashing
- Analog interface for recording speed and torque, plus RS-232-C interface
- Labworldsoft* software to control and document speed and torque parameters via PC
- Overall dimensions: 7½D × 3⅛W × 6⅞"H (19 × 7.9 × 17.5cm)
- Electrical Requirements: 115V, 50/60Hz
- Digital torque display
- Variable speed control from 50 to 2000rpm/Viscosity to 50,000mPas
- Stirring capacity: 10⅝ gal. (40L)
- Maximum torque at chuck: 60Ncm
- With PC-based control/recording software

INCLUDES:

Stirrer unit, stainless-steel chuck and key, cord and plug, instruction manual, tool kit. Kits add Plate Stand, Boss Head (14-259-83), and Strap Clamp (14-259-166).

Description	Cat. No.	Each
Stirrer	**14-260-64**	1659.50
Stirrer Kit	**14-259-212**	2289.90

*Trademark. See Trademark Reference.

Prices subject to change.

IKA® Big Squid Magnetic Stirrers

Colorful single-position stirrers, for volumes up to 1.5L

- Variable electronic speed control from 0 to 1500rpm
- Chemical-resistant glass top surface measures 6¼" dia. (16cm)
- Available in assorted colorful designs

Style	Cat. No.	Each
Chameleon	**14-259-267**	215.30
Fish	**14-259-266**	215.30
Froggy	**14-259-265**	215.30
Kiwi	**14-259-682**	217.22
Orange	**14-259-681**	217.22
Pineapple	**14-259-679**	217.22
Star	**14-259-264**	215.30
Strawberry	**14-259-680**	217.22

LOOKING FOR MORE IKA* COLOR SQUID STIRRERS?

Snazzy compact stirrers handle volumes up to 800mL! With four new styles. You'll find them on p. 1741.

IKA® IKAMAG* RET Control-Visc Magnetic Stirrer

Safety magnetic stirrer with heat, for stirring up to 5 gal. (20L) at speeds up to 1100rpm.

Features fuzzy logic control and microprocessor technology for maximum accuracy.

14-259-206 Stirrer Kit

Operating Features

- Digital display shows all functions
- RS-232-C and analog interfaces
- Temperature of contents controlled by sensor (Cat. No. 14-260-27, order separately [included in kit version])
- Maximum load: 55 lb. (24.9kg)

Operating Modes

- Variable control—allows user to change setpoints during operation
- Memory control—automatically returns stirrer to last selected setpoint
- Safety mode—locks in setpoints to prevent accidental changes

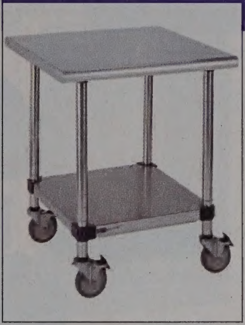
INCLUDES:

Stirrer and Labworldsoft* 2.6 Windows*-based software (Allows user to control, regulate and document temperature, speed and viscosity trend parameters); kits add sensor and mounting hardware

Description	Cat. No.	Each
Stirrer	**14-260-29**	1418.60
Stirrer Kit	**14-259-206**	1859.40

InterMetro Stainless Steel Mobile Tables

Tables are designed specifically for long life in laboratory environments



- Stainless steel construction throughout provides corrosion-proof performance
- Tables feature smooth surfaces that are easy to clean; mobile units can be easily moved to clean behind table area
- Casters must be ordered separately, based on customer requirements and application
- Visit our Web site for additional accessories including shelves, keyboard trays, and drawers

L × W	Weight	Mfr. No.	Cat. No.	Each
Tables with stainless island top and solid HD shelf				
29¾ × 30" (75.5 × 76.2cm)	65 lb. (30kg)	LTSM30IS	**13-450-974**	1122.50
35¾ × 30" (90.8 × 76.2cm)	80 lb. (36kg)	LTSM36IS	**13-450-975**	1184.50
47¾ × 30" (121 × 76.2cm)	103 lb. (47kg)	LTSM48IS	**13-450-960**	1268.00
59¾ × 30" (152 × 76.2cm)	140 lb. (63kg)	LTSM60IS	**13-450-961**	1351.00
Tables with stainless island top and three-sided frame				
29¾ × 30" (75.5 × 76.2cm)	58 lb. (26kg)	LTSM30UIS	**13-450-980**	1122.50
35¾ × 30" (90.8 × 76.2cm)	70 lb. (32kg)	LTSM36UIS	**13-450-981**	1184.50
47¾ × 30" (121 × 76.2cm)	91 lb. (41kg)	LTSM48UIS	**13-450-982**	1268.00
59¾ × 30" (152 × 76.2cm)	119 lb. (54kg)	LTSM60UIS	**13-450-983**	1351.00
Tables with stainless backsplash top and solid HD shelf				
29¾ × 30" (75.5 × 76.2cm)	65 lb. (30kg)	LTSM30S	**13-450-988**	1122.50
35¾ × 30" (90.8 × 76.2cm)	80 lb. (36kg)	LTSM36S	**13-450-989**	1184.50
47¾ × 30" (121 × 76.2cm)	103 lb. (47kg)	LTSM48S	**13-450-990**	1268.00
59¾ × 30" (152 × 76.2cm)	140 lb. (63kg)	LTSM60S	**13-450-991**	1351.00
Tables with stainless backsplash top and three-sided frame				
29¾ × 30" (75.5 × 76.2cm)	58 lb. (26kg)	LTSM30US	**13-450-996**	1122.50
35¾ × 30" (90.8 × 76.2cm)	70 lb. (32kg)	LTSM36US	**13-450-997**	1184.50
47¾ × 30" (121 × 76.2cm)	91 lb. (41kg)	LTSM48US	**13-450-998**	1268.00
59¾ × 30" (152 × 76.2cm)	119 lb. (54kg)	LTSM60US	**13-450-999**	1351.00

Casters for Stainless-Steel Laboratory Tables

The total weight of equipment and load should not exceed three times the load rating per caster. Polymer and stainless construction casters are designed for long-life in wet and corrosive environments.

With Brake	Load Rating	Mfr. No.	Cat. No.	Each
High Modulus Rubber Casters				
No	250 lb. (114kg)	5MDA	**19-123-303**	30.16
Yes	250 lb. (114kg)	5MDBA	**19-450-966**	31.50
Polyurethane Casters (Polymer Construction)				
No	300 lb. (137kg)	5PC	**19-450-950**	63.50
Yes	300 lb. (137kg)	5PCB	**19-063-096**	78.98
Polyurethane Casters (Stainless Steel Construction)				
No	300 lb. (137kg)	5MPGSA	**19-450-968**	124.50
Yes	300 lb. (137kg)	5MPBGSA	**19-450-970**	129.50

Fisher Scientific

Isotemp* Digital-Control Water Baths

Programmable, digital, dual-temperature control

15-462 Series

Ideal for industrial, clinical, pharmaceutical, or biomedical procedures.

- Temperature range from ambient to 100°C
- Microprocessor PID control
- Multiple built-in safety features
- Low-profile design for easy access

Controller Features

- PID control for ±0.24°C uniformity, ±0.5°C accuracy/stability at 37°C
- Display shows °C or °F; easy to read from across the room

Safety Features

- Low profile and front-panel controls for easier access, safer operation
- Dual thermostats guard against thermal runaway
- Covers have fins that keep hands away from hot vapors
- Covers stay open at 90° or lift off completely for large glassware
- Heating elements will not burn out if bath accidentally runs dry

Design Features

- Corrosion-resistant exterior; tough, easy-to-clean acrylic enamel coating
- Temperature-resistant plastic rim insulates, resists leaks, keeps its shape and won't dry out or crack like caulked seals
- Exterior stays cool even after hours of operation
- Deep-drawn, stainless-steel reservoirs and perforated sample trays prevent leaks, guard against rust and contamination
- Rounded reservoir corners and sample trays with finger holes allow for easy removal, make cleaning easier

Model Selection

- **Shallow-form Model 202S** is perfect for heating samples in microcentrifuge tubes and for other molecular-biology procedures
- **Model 215** features two chambers with separate controls
- **Models 220 and 228** have movable control panel that mounts on long or short side of bath
- **Models 210, 215, 220 and 228** include drain pump to empty reservoir

All models listed operate on 120V 50/60Hz.

Model	202	202S Shallow Form	205	210	215 Dual Chamber	220	228
Capacity	½ gal. (2L)	½ gal. (2L)	1⅜ gal. (5L)	2⅝ gal. (10L)	1⅜/2⅝ gal. (5L/10L)	5¼ gal. (20L)	7⅜ gal. (28L)
Reservoir L × W × D	5¼ × 5⅞ × 6" (13 × 14.8 × 15cm)	5⅞ × 11¾ × 2½" (14.8 × 30 × 6cm)	5⅞ × 11¾ × 6" (14.8 × 30 × 15cm)	12⅞ × 11¾ × 6" (33 × 30 × 15cm)	11¾ × 5⅞ × 6"/11¾ × 12⅞ × 6" (30 × 15 × 14.8cm/30 × 33 × 15cm)	11¾ × 19¾ × 6" (30 × 50 × 15cm)	11¾ × 19¾ × 8" (30 × 50 × 20cm)
Cat. No.	**15-462-2Q**	**15-462-2SQ**	**15-462-5Q**	**15-462-10Q**	**15-462-15Q**	**15-462-20Q**	**15-462-28Q**
Each	768.76	790.59	873.88	997.23	1713.72	1284.87	1697.32

Thermo SCIENTIFIC

AquaTec Water Preservation Cell

Prevents microbe contamination in CO_2 incubators and water baths for up to six months

Thermo
SCIENTIFIC

- Protects your valuable samples from waterborne contaminants, without harsh chemicals
- Simply place cell into water reservoir of any CO_2 incubator or water bath
- Proven effective up to six months against bacteria, viruses, molds and fungi
- Safe to handle—requires no gloves and no special disposal protocol
- Self-regulates to maintain effectiveness regardless of water level
- Easy-to-use in equipment from any manufacturer
- Comes with suction cup for easy mounting on reservoir wall at your option
- Replacement reminder assures uninterrupted water protection
- Come in pack of four cells.

Cat. No.	Pack of 4
15-453-271	199.11

Fisher Scientific

Isotemp* Plus Lab Refrigerators

Microprocessor-controlled temperatures in a choice of capacities and styles

Fisher Scientific* Isotemp Plus laboratory refrigerators are designed for economical sample preservation at temperatures from 1° to 12°C (33.8° to 53.6°F). Sizes range from 23.1 to 74 cu. ft. for maximum storage flexibility.

- Microprocessor controlled temperature in °C or °F using interior control with ±3° average temperature stability
- Exterior-mounted ½" (1.3cm) LED display with 0.1° temperature resolution
- White enamel-coated steel cabinets, stainless-steel interiors for durability and functionality, easy cleanup and disinfection, and corrosion resistance
- Choice of one, two or three solid or glass doors—all with key locks
- Solid doors are hinged, white enamel-coated steel
- Thermopane* glass doors (hinged or sliding) provide easy access and visual inventory control
- Sliding doors require no swing-out space—a valuable benefit in high traffic or narrow areas
- Interior fluorescent lighting with exterior light switch
- Keyed ON/OFF power switch
- CFC-free R134A refrigerant and polyurethane insulation
- Automatic defrost

13-986-128S

13-986-126

ORDERING INFORMATION:

With or without temperature chart recorder or alarm. For 115V 60Hz.

Model	Interior D × W × H	No. of Shelves	Exterior L × W × H†	Net Weight††	Amps/Breaker	Cat. No.	Each
23.1 cu. ft. (654L), 1 hinged solid door‡							
Basic	26 × 21½ × 60" (66 × 55 × 151cm)	4 full size	34 × 26 × 84½" (86 × 66 × 215cm)	320 lb. (145kg)	10/15	**13-986-120**	5600.92
With Alarm						**13-986-120A**	6259.82
With Recorder						**13-986-120R**	7059.89
With Recorder/Alarm						**13-986-120RA**	7748.36
30 cu. ft. (850L), 1 hinged solid door							
Basic	27½ × 30 × 60" (70 × 76× 152cm)	4 full size	33½ × 35 × 85" (85 × 89 × 215cm)	440 lb. (200kg)	10/15	**13-986-122**	6710.62
With Alarm						**13-986-122A**	7408.73
With Recorder						**13-986-122R**	8254.16
With Recorder/Alarm						**13-986-122RA**	8945.16
30 cu. ft. (850L), 1 hinged glass door‡							
Basic	27½ × 30 × 60" (70 × 76× 152cm)	4 full size	33½ × 35 × 84½" (85 × 89 × 215cm)	440 lb. (200kg)	10/15	**13-986-124**	7161.30
With Alarm						**13-986-124A**	7721.25
With Recorder						**13-986-124R**	8532.08
With Recorder/Alarm						**13-986-124RA**	9283.59
45.4 cu. ft. (1290L), 2 sliding glass doors							
Basic	27 × 48½ × 54½" (67 × 123 × 138cm)	8 full size	31½ × 52 × 78" (80 × 132 × 198cm)	498 lb. (226kg)	10/15	**13-986-128S**	7825.28
With Alarm						**13-986-128SA**	8421.82
With Recorder						**13-986-128SR**	9126.35
With Recorder/Alarm						**13-986-128SRA**	9781.60
46.6 cu. ft. (1320L), 2 hinged solid doors‡							
Basic	26 × 48 × 59½" (66 × 122 × 151cm)	8 full size	34 × 52 × 84½" (86 × 132 × 215cm)	527 lb. (239kg)	10/15	**13-986-126**	7903.96
With Alarm						**13-986-126A**	8372.98
With Recorder						**13-986-126R**	7982.14
With Recorder/Alarm						**13-986-126RA**	9977.68
74 cu. ft. (2100L), 3 hinged solid doors‡							
Basic	27½ × 74 × 59½" (70 × 188 × 151cm)	12 full size	34 × 78 × 84½" (86 × 198 × 215cm)	805 lb. (366kg)	12/15	**13-986-130**	10,109.97
With Alarm						**13-986-130A**	10,601.19
With Recorder/Alarm						**13-986-130RA**	12,055.09
74 cu. ft. (2100L), 3 hinged glass doors‡							
Basic	27¹/2 × 74 × 59¹/2" (70 × 188 × 151cm)	12 full size	34 × 78 × 84½" (86 × 198 × 215cm)	805 lb. (366kg)	12/15	**13-986-132**	10,952.78
With Alarm						**13-986-132A**	11,617.74
With Recorder						**13-986-132R**	12,570.90
With Recorder/Alarm						**13-986-132RA**	13,232.60

† Allow 4" clearance top, sides and back of unit.

‡ Top-mounted compressor.

†† Add 5 lb. (5kg) to Models with Recorder and with Recorder/Alarm.

Fisher Scientific

Isotemp* Ultralow-Temperature Undercounter Freezer

No need to store your valuable samples down the hall. Get the convenience and security of Fisher Scientific's new upright, personal-sized Isotemp ultralow-temperature freezer, for on or under your lab bench, or stacked two high.

Fisher Scientific
isotemp

14-278-36

- Temperature range: -86° to -50°C, with control in 1° increments
- Capacity: 3.6 cu. ft. (101L)
- Maximum box capacity: 60 × 2", 36 × 3", 24 × 4"
- User-programmable temperature and alarm settings
- Visual/audible high/low temperature alarms adjustable in 1° increments
- Battery backup with indicator for monitoring in event of power loss
- Control system S.M.A.R.T software allows service to diagnose freezer issues
- Remote contacts provide connection to external, user-supplied alarm monitoring system

Refrigeration System

- Two-stage sealed hermetic cascade system provides years of worry-free operation
- Environmentally friendly CFC/HCFC-free refrigerant
- Two commercially available low-noise, heavy-duty compressors for quiet in-lab operation

Construction

- Powder-coated steel exterior and stainless-steel interior for easy cleaning and increased durability
- Space-saving vacuum insulation panel technology maximizes storage capacity while minimizing footprint
- Two internal compartments with inner doors and high-efficiency seals prevent cold air loss, reduce energy consumption
- Heated vent with plunger to clear icing prevents vacuum formation, allowing the door to be easily opened repeatedly
- Lock and key on outer door for added security
- Two access ports for external probes or optional CO_2/LN_2 backup system

ORDERING INFORMATION:

Dimensions: 32⅚H × 35½W × 22¼"D (83 × 90 × 56.6cm). Shipping weight: 256 lb. (235kg). 115V 60Hz single phase. Optional inventory boxes and racks, backup systems and voltage stabilizer available. Contact your Fisher Scientific Customer Service Representative for more information.

CERTIFICATIONS:

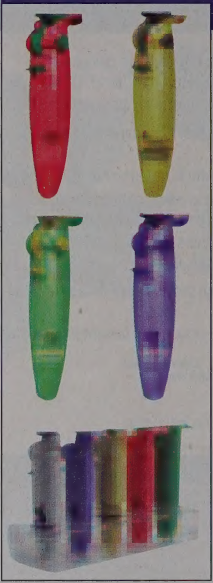
UL listed, CE marked

Description	Cat. No.	Each
Ultralow-Temperature Freezer	**14-278-36**	8865.00

JENCONS

Smoothie* Pipet Fillers

Exceptionally smooth, controllable thumb action



03-692-200

Unique range selector allows you to select from two dispense resolutions for maximum accuracy. One range setting delivers fast filling with optimal accuracy when used with 10 to 25mL pipets; the other setting is for use with pipets from 1 to 10mL where accuracy of fill can sometimes be difficult to control.

- Comfortable and simple to use
- Precise and accurate pipetting
- Compatible with blow-out, TD (to deliver) or gravity-dispense pipets
- Eliminate the need to use a range of different sized pipet fillers for a variety of volumes dispensed
- Fit pipets from 1–25mL
- Removable and autoclavable silicone pipet holder
- Acrylic stand available to hold up to five Smoothies
- Choose from five colors, each with its own subtle fragrance

Description	Color	Mfr. No.	Cat. No.	Each
Vanilla Smoothie	White and blue	475-360	**03-692-200**	30.00
Strawberry Smoothie	Red and green	475-361	**03-692-201**	30.00
Banana Smoothie	Yellow and gray	475-362	**03-692-202**	30.00
Lemon and Lime Smoothie	Green and yellow	475-363	**03-692-203**	30.00
Blueberry Smoothie	Blue and purple	475-364	**03-692-204**	30.00
Stand (holds 5 pipet fillers)	Clear acrylic	475-002	**03-692-205**	30.00

*Trademark. See Trademark Reference.

Polystyrene Disposable Serological Pipets

Sterile, nonwettable pipets offer a tolerance of ±2% at full volume and have plug-in mouth end

- Two pipet styles are available: one with magnifier stripe and one without
- Each pipet lot is tested for sterility, accuracy and endotoxin level
- Calibrated "To Deliver/Blow Out"
- Certified nonpyrogenic with an endotoxin level less than 0.5EU/mL following USP XXII Bacterial Endotoxins Test (85).

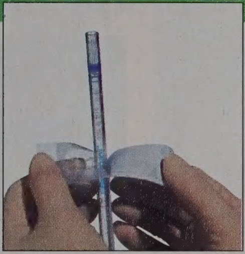
Serological Pipets with Magnifier Stripe

Ideal for tissue culture work

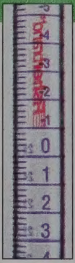
- Black magnifier stripe runs lengthwise along pipet making meniscus obvious at arm's length—reducing reading errors
- Pipets have improved optical clarity—high-contrast black markings make volumes easier to read
- 5, 10, 25, and 50mL pipets have ascending and descending graduations; plus, improved tip design on 25 and 50mL pipets increases the effect of surface tension to minimize dripping
- Color coding on each pipet and on inner bags for multipack pipets makes it easy to spot the size you need

ORDERING INFORMATION:

Inner bags are recyclable LDPE; outer boxes also are recyclable. **Individually wrapped pipets** are ideal for small-volume use requiring sterility and are available in either a clear, durable all-plastic wrap, or a color-coded paper/plastic wrap for reduced static cling. **Multipack** for larger-volume use permits easy access to several pipets at a time without contaminating unused pipets.



13-678-11 Series pipets have color-coded, transparent paper/plastic wrappers for easy identification and tear-through.



13-678-14B

					Multipack		
Capac. (mL)	Subdiv. (mL)	Neg. Grads. (mL)	Tolerance (mL)	Pkg. Color Code	Inner Pack Qty.	Cat. No.	Case of
1	1/100	4/10	±0.02	Yellow	50/Bag	**13-678-12B**	1000/203.03
2	1/100	6/10	±0.04	Green	50/Bag	**13-678-12C**	500/129.43
5	1/10	2	±0.10	Blue	50/Bag	**13-678-12D**	500/151.83
10	1/10	3	±0.20	Orange	50/Bag	**13-678-12E**	500/164.81
25	2/10	10	±0.50	Red	25/Bag	**13-678-14B**	200/162.60
5	5/10	9	±1.0	Purple	25/Bag	**13-678-14C**	100/223.23
With Wide Tip							
10	1/10	3	±0.20	Orange	----	**13-678-14A**	500/251.92

Standard Serological Pipets

Color-coded pipets and packaging permit easy identification by size using ISO standard colors

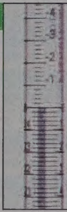
- Negative graduations on all sizes
- Ascending and descending graduations on all but the 1 and 2mL sizes
- Recyclable outer packaging

COMPLIANCE:

Designed from ASTM* E 934; conform to ASTM E 1380 for color coding.

ORDERING INFORMATION:

Available in multipacks, which permit easy access to several pipets at a time without contaminating unused pipets. Outer packaging is recyclable.



13-676-10M

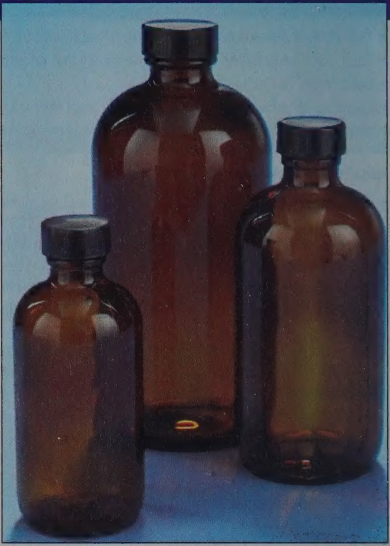
13-676-10 and 13-678-11 Series

					Individually Wrapped						Multipack		
					All-Plastic Wrap			Paper/Plastic Wrap					
Capac. (mL)	Subdiv. (mL)	Neg. Grads. (mL)	Tolerance (mL)	Pkg. Color Code	Inner Qty.	Cat. No.	Case of	Inner Qty.	Cat. No.	Case of	Inner Pack Qty.	Cat. No.	Case of
1	1/100	2/10	±0.02	Yellow	100	**13-676-10G**	1000/236.94	50	**13-678-11B**	1000/232.81	50	**13-676-10B**	1000/218.41
2	1/100	2/10	±0.04	Green	100	**13-675-3C**	500/156.16	50	**13-678-11C**	500/140.13	50	**13-675-2C**	500/139.01
5	1/10	2.5	±0.1	Blue	50	**13-676-10H**	200/79.41	50	**13-678-11D**	200/74.22	50	**13-676-10C**	500/170.78
10	1/10	3	±0.2	Orange	50	**13-676-10J**	200/83.44	50	**13-678-11E**	200/80.72	50	**13-676-10F**	500/186.57
25	2/10	10	±0.5	Red	50	**13-676-10K**	200/199.14	25	**13-678-11**	200/175.89	25	**13-676-10M**	200/187.93
50	5/10	----	±1.0	Purple	25	**13-676-10R**	100/209.14	25	**13-678-11F**	100/221.60	25	**13-676-10Q**	100/211.59

Type III Glass Boston Rounds

Soda lime storage containers combine quality and economy. Choose from Convenience Packs, Bulk Packs, or Pallet Packs in a variety of sizes and cap/liner combinations.

Kimble* storage containers come in a wide range of configurations to handle your workflow. The broad product portfolio includes glass containers and closures in many different shapes and cap/liner combinations. The selection of cap liners includes: Pulp/Vinyl, Tinfoil, Solid PE, PTFE-Faced LDPE Foam, 14B White Rubber, and Taperseal LDPE. Bottle sizes include 30mL, 60mL, 125mL, 250mL, 500mL, 1000mL. For unsurpassed selection, performance and value, choose Kimble.



Kimble Amber Boston Rounds

PACKAGING OPTIONS:

Convenience Packs

- Caps assembled
- Corrugated dividers
- Quantities of 12 to 48 per pack
- Variety of cap liners

Bulk Packs

- Caps bagged separately
- Shrink wrapped glassware
- Quantities of 12 to 432 per pack
- Variety of cap liners
- Bottles also sold without caps

Pallet Packs

- Shrink wrapped on pallets
- Cardboard dividers
- Larger quantities
- Caps not included

Kimble Phenolic Caps are:

- Temperature tolerant
- Compatible with wide range of chemicals
- Dimensionally stable

Kimble Clear Boston Rounds

Capacity	Closure	Packaging/Caps	Mfr. No.	Cat. No.	Case of
Clear					
8 oz. (250mL)	24-400	Bulk, Pulp/Vinyl-Lined Caps Unassembled	5110824C 21	**13-756-875**	108/155.50
8 oz. (250mL)	24-400	Convenience Pack, Pulp/Vinyl-Lined Caps Assembled	5110824V 21	**13-756-869**	12/30.83
8 oz. (250mL)	24-400	Bottles Only, 108/Case	5110824B	**13-756-941**	108/104.18
8 oz. (250mL)	24-400	Pallet Pack, Caps not included	5110824P	**13-756-947**	2592/2020.79
Amber					
8 oz. (250mL)	24-400	Bulk, Pulp/Vinyl-Lined Caps Unassembled	5120824C 21	**13-756-531**	108/141.89
8 oz. (250mL)	24-400	Convenience Pack, Pulp/Vinyl-Lined Caps Assembled	5120824V 21	**13-756-525**	12/30.85
8 oz. (250mL)	24-400	Bottles Only, 108/Case	5120824B	**13-756-597**	108/107.40
8 oz. (250mL)	24-400	Pallet Pack, Caps not included	5120824P	**13-756-603**	2592/1935.06

*Trademark. See Trademark Reference.

KIMBLE CHASE
Life Science and Research Products

Type III Glass Wide Mouth Packers

Ideal for storing solids and semi-solids

Features

- Wide-mouth design provides efficient addition and removal of contents
- Available with amber glass for protection of light-sensitive contents
- Choose from Convenience Packs, Bulk Packs, or Pallet Packs in a variety of sizes and cap/liner combinations

Kimble* Amber Wide Mouth Packers

Kimble Clear Wide Mouth Packers

Capacity	Closure	Packaging/Caps	Mfr. No.	Cat. No.	Case of
Clear					
8 oz. (250mL)	45-400	Bulk, Pulp/Vinyl-Lined Caps Unassembled	5210845C 21	**13-756-615**	84/110.91
8 oz. (250mL)	45-400	Convenience Pack, Pulp/Vinyl-Lined Caps Assembled	5210845V 21	**13-756-609**	12/38.00
8 oz. (250mL)	45-400	Bottles Only, 84/Case	5210845B	**13-756-675**	84/97.68
8 oz. (250mL)	45-400	Pallet Pack, Caps not included	5210845P	**13-756-681**	2520/1678.89
Amber					
8 oz. (250mL)	45-400	Bulk, Pulp/Vinyl-Lined Caps Unassembled	5220845C 21	**13-756-453**	84/116.09
8 oz. (250mL)	45-400	Convenience Pack, Pulp/Vinyl-Lined Caps Assembled	5220845V 21	**13-756-447**	12/39.18
8 oz. (250mL)	45-400	Bottles Only, 84/Case	5220845B	**13-756-513**	84/100.70
8 oz. (250mL)	45-400	Pallet Pack, Caps not included	5220845P	**13-756-519**	2520/1702.70

LINER COMPARISON CHART

Materials	Application	Properties
Pulp/Vinyl	General purpose	Low cost Resistant to mild acids, alkalis, alcohols, aqueous solutions, oils and solvents Not recommended for hydrocarbons or bleaches
Tinfoil	General purpose Environmental sampling	Good barrier Resistant to alcohols, hydrocarbons, ketones and oils Not recommended for acids and alkalis
Solid polyethylene, 0.040"	General purpose	Resistant to acids, alcohols, alkalis, aqueous solutions, oils, and solvents Not recommended for hydrocarbon solvents
PTFE-faced LDPE foam 0.005" PTFE 0.050" LDPE foam	General purpose	Excellent chemical resistance Compressible foam for sealability Not recommended for organic amines
14B white rubber 0.050" homogenous white rubber	Hermetic sealing for biologicals and other contents requiring sterilization	Moisture resistant Chemical barrier Autoclavable
Taperseal (cone-shaped) LDPE	Commonly used for liquids	Excellent sealing ability Stress crack resistant Excellent torque retention

SPECIAL OFFER

FISHER SCIENTIFIC EXCLUSIVE OFFER: Buy $250 in Kimble* Type III Boston Rounds or Wide Mouth Packers and Get a FREE Case of Fisherbrand* Borosilicate Glass Disposable Culture Tubes with Plain End (Fisher Scientific Cat. Nos. 14-961-25 through -34 Series).

To redeem, simply fax your proof of purchase to Marketing Dept. at **1-(865) 354-3823**. Offer valid until December 31, 2009.

Transcription Factor Assays

Transcription Factors play a vital role in gene regulation. Marligen offers a wide variety of research products to facilitate the understanding of these essential proteins in cellular function.

Multiplex Transcription Factor Profiling Kit (20-plex)

Simultaneously measures binding of 20 transcription factors to their regulatory DNA elements

MA11954096

- Fast, easy protocol with quantitative results superior to EMSAs
- Provides excellent sensitivity, specificity, reproducibility and dynamic range compared to ELISAs
- Multiple binding sites in assay are similar to in vivo binding conditions
- Obtain data within three hours, requiring only a small amount of sample

INCLUDES:
Pre-mixed 20-plex Binding Mix 2 which includes AP-1, AP2, AR, CRE-ATF, CREB, E2F1-5, E2F6, EGR, GATA, HNF1, HNF4, ISRE, Myc-Max, NF-1, NFκB, p53, PPAR, SMAD 2/3, SP1, YY1 Binding Site Probes; Sample Diluent; Binding Mix 1; Digestion Reagent B; Digestion Buffer; Hybridization Accelerator; Hybridization Buffer; Bead Mix (20-plex); 10X Wash Buffer; Detection Reagent; Filter Plate; Aluminum Plate Sealers; PCR Plate

Description	No. of Samples	Cat. No.	Each
20-plex kit	96 reactions	**MA11954096**	2899.00

Microplate Assay Kits

Quantify transcription factor binding to regulatory DNA elements using a microplate format

- Provides 100-fold greater sensitivity than gelshift assays
- Chemiluminescent detection
- Obtain results within four hours, requiring only a small amount of sample
- Allows direct quantitation of transcription factor binding activity without the use of antibodies

INCLUDES:
Sample Diluent; Binding Mix 1; Binding Mix 2; Digestion Buffer; Digestion Reagent; Capture Microplate; Hybridization Accelerator; Hybridization Buffer; 10 X Wash Buffer; Conjugate Diluent; Streptavidin-Alkaline Phosphatase Conjugate (SA-AP); Chemiluminescent Substrate; PCR Plate; Plate Sealers; Microplate Cover

Binding Site	Quantity	Cat. No.	Each
AP-1	96 reactions	**MA11942096**	525.00
CRE-ATF	96 reactions	**MA11983096**	525.00
CREB	96 reactions	**MA11979096**	525.00
EGR	96 reactions	**MA11946096**	525.00
GATA	96 reactions	**MA11980096**	525.00
MEF-2	96 reactions	**MA11982096**	525.00
Myc-Max	96 reactions	**MA11978096**	525.00
NF-1	96 reactions	**MA11947096**	525.00
NFκB	96 reactions	**MA11945096**	525.00
Octamer	96 reactions	**MA11981096**	525.00
PPAR	96 reactions	**MA11953096**	525.00

Site Specific Reagent Sets

Provide binding site probes to measure activated transcription factors

- Include Site Specific Binding Mix 2 and Bead Mix
- Must be used with Marligen Multiplex Buffer Panel (Cat. No. MA11955096, below)

Binding Site	Quantity	Cat. No.	Each
AP-1	96 reactions	**MA11957096**	240.34
AP2	96 reactions	**MA11970096**	240.34
AR	96 reactions	**MA11959096**	240.34
CRE-ATF	96 reactions	**MA11956096**	240.34
CREB	96 reactions	**MA11960096**	240.34
E2F1-5	96 reactions	**MA11962096**	240.34
E2F6	96 reactions	**MA11963096**	240.34
EGR	96 reactions	**MA11966096**	240.34
GATA	96 reactions	**MA11969096**	240.34
HNF1	96 reactions	**MA11972096**	240.34
HNF4	96 reactions	**MA11973096**	240.34
ISRE	96 reactions	**MA11967096**	240.34
Myc-Max	96 reactions	**MA11965096**	240.34
NF-1	96 reactions	**MA11974096**	240.34
NFκB	96 reactions	**MA11958096**	240.34
p53	96 reactions	**MA11968096**	240.34
PPAR	96 reactions	**MA11975096**	240.34
SMAD 2/3	96 reactions	**MA11971096**	240.34
SP1	96 reactions	**MA11964096**	240.34
YY-1	96 reactions	**MA11961096**	240.34

Multiplex Buffer Panel

For use with Site Specific Reagent Sets

Provides buffers and common reagents to complete 96 reactions when combined with one or more Site Specific Reagent Sets.

- Create customized panel using any combination of 20 binding sites (available separately, above)
- Designed and optimized for use with nuclear extracts prepared from Marligen Nuclear Extraction Kit (MA11906100)

INCLUDES:
Sample Diluent, Binding Mix 1, Digestion Reagent, Digestion Buffer, Hybridization Accelerator, Hybridization Buffer, 10X Wash Buffer, Detection Reagent, Filter Plate, Aluminum Plate Sealers, PCR Plate

Description	No. of Samples	Cat. No.	Each
Buffer panel w/common reagents	96 reactions	**MA11955096**	240.34

LOOKING FOR NUCLEIC ACID PURIFICATION KITS?

Marligen carries a wide offering of High Purity Plasmid Purification Kits.

Visit www.fishersci.com and search for Marligen Plasmid DNA

Low Retention Pipet Tips

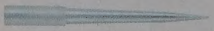
Specifically designed for eliminating sample retention within the pipet tip

- Inner surface is extremely hydrophobic; increasing sample reproducibility and sample accuracy
- Crystal clear tips allow you to easily see transparent samples
- Pure tips are racked, presterilized and certified RNase-, DNase-, DNA- and pyrogen-free
- Other MBP racked and bulk tips are nonsterile and autoclavable

21-402-492

21-402-498

21-402-502


21-402-509

Description	Volume	Packaging	Mfr. No.	Cat. No.	Pack of
MBP 10 Pure	0.1-10µL	Racked†	3501-05	**21-402-491**	960/73.50
MBP 10	0.1-10µL	Racked	3502-05	**21-402-492**	960/60.00
MBP 10	0.1-10µL	Bulk	3500-05	**21-402-493**	1000/41.75
MBP 10 Reach Pure	0.1-10µL	Racked†	3511-05	**21-402-497**	960/74.95
MBP 10 Reach	0.1-10µL	Racked	3512-05	**21-402-498**	960/61.50
MBP 10 Reach	0.1-10µL	Bulk	3510-05	**21-402-499**	1000/43.00
MBP Pure 20L	0.1-20µL	Racked†, SoftFit-L	3721-05	**21-402-503**	960/76.00
MBP 20L	0.1-20µL	Racked, SoftFit-L	3722-05	**21-402-504**	960/75.50
MBP 200	0.5-200µL	Bulk	3550-05	**21-402-502**	1000/39.00
MBP 200L Pure	0.5-200µL	Racked†	3551-05	**21-402-500**	960/71.50
MBP 200L	0.5-200µL	Racked	3552-05	**21-402-501**	960/60.00
MBP Ultra Micro Pure	0.5-20µL	Racked†	3521-05	**21-402-494**	960/73.75
MBP Ultra Micro	0.5-20µL	Racked	3522-05	**21-402-495**	960/60.00
MBP Ultra Micro	0.5-20µL	Bulk	3520-05	**21-402-496**	1000/42.00
MBP 300U Pure	1.0-300µL	Racked†, Multichannel	3771-05	**21-402-507**	960/87.75
MBP 300U	1.0-300µL	Racked, Multichannel	3772-05	**21-402-508**	960/81.89
MBP 1000L Pure	100-1000µL	Racked†, SoftFit-L	3781-05	**21-402-509**	768/74.83
MBP 1000L	100-1000µL	Racked, SoftFit-L	3782-05	**21-402-510**	768/68.00

† Sterile.

RNase AWAY* and DNA AWAY*

Conveniently packaged decontamination wipes

RNase AWAY Wipes
DNA AWAY Wipes

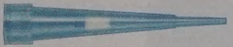
- Quickly remove RNase, DNase and DNA contaminants
- Easy access and use compared to bulky cleaning supplies and spray bottles
- Eliminate overspraying of decontaminants on sensitive equipment

Description	Packaging	Cat. No.	Case of
RNase AWAY Canister	25 Wipes	**14-754-40**	12/336.00
RNase AWAY Wipes	35 Indiv. Wrapped Wipes/Box	**14-754-41**	16/552.00
DNA AWAY Canister	25 Wipes	**14-754-42**	12/336.00
DNA AWAY Wipes	35 Indiv. Wrapped Wipes/Box	**14-754-43**	16/552.00

ART* Self-Sealing Advantage Low-Retention Barrier Tips

Increase sample reproducibility and accuracy

21-402-484


21-402-5E007

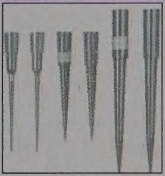
21-402-486

21-402-487

- Specifically designed for eliminating sample retention within the pipet tip
- Precision-molded tips with ART self-sealing barrier
- Prevent carryover contamination during aspiration and delivery of samples
- Certified RNase-, DNase-, and pyrogen-free
- Ideal for use in genetic studies, forensics, PCR, and radioisotope sampling
- Racked, presterilized

ART Tip	Volume	Mfr. No.	Cat. No.	Pack of	Case of
10	0.1-10µL	2139-05	**21-402-5E007**	960/124.72	5 Pk./533.00
10 Reach	0.1-10µL	2140-05	**21-402-482**	960/124.72	5 Pk./533.00
10F	0.5-10µL	2139F-05	**21-402-481**	960/124.72	5 Pk./533.00
20P	0.5-20µL	2149P-05	**21-402-484**	960/124.72	5 Pk./533.00
20E	0.5-10µL	2149E-05	**21-402-483**	960/124.72	5 Pk./533.00
20L	0.5-10µL	2749-05	**21-402-488**	960/124.72	5 Pk./533.00
100E	0.1-100µL	2065E-05	**21-402-485**	960/124.72	5 Pk./533.00
200	1.0-200µL	2069-05	**21-402-486**	960/124.72	5 Pk./533.00
200L	1.0-200µL	2769-05	**21-402-489**	960/124.72	5 Pk./533.00
1000	100-1000µL	2279-05	**21-402-487**	768/124.31	4 Pk./425.00
1000L	100-1000µL	2779-05	**21-402-490**	768/124.31	4 Pk./425.00

SoftFit-L* Design for Rainin* LTS* LiteTouch* Pipetter



- SoftFit-L tips have thinner walls than conventional tips so they conform more easily to the pipetter barrel, which ensures a better seal and allows the tip to eject with less force
- MBP* tips are nonsterile; ART* and Pure are sterile
- ART tips have a self-sealing barrier that prevents carryover contamination
- Racked

Volume	Packaging	Mfr. No.	Cat. No.	Pack of	Case of
MBP Tips					
20µL	Tray, 10 × 96	3722	**21-236-02**	960/68.54	5 Pk./308.50
200µL	Tray, 10 × 96	3752	**21-236-04**	960/68.54	5 Pk./308.50
1000µL	Tray, 8 × 96	3782	**21-236-06**	768/63.03	4 Pk./226.95
Pure Tips					
20µL	Tray, 10 × 96, Sterile	3721	**21-236-01**	960/85.74	5 Pk./379.40
200µL	Tray, 10 × 96, Sterile	3751	**21-236-03**	960/85.74	5 Pk./379.40
1000µL	Tray, 8 × 96, Sterile	3781	**21-236-05**	768/75.63	4 Pk./272.35
ART Barrier Tips					
20µL	Tray, 10 × 96, Sterile	2749	**21-403-00**	960/112.85	5 Pk./482.25
200µL	Tray, 10 × 96, Sterile	2769	**21-403-01**	960/112.85	5 Pk./482.25
1000µL	Tray, 8 × 96, Sterile	2779	**21-403-02**	768/112.91	4 Pk./386.00

Pipetter Compatibility
Rainin LTS LiteTouch Pipetter; universal fit also accommodates most other research-grade pipetters.

Excellence Plus/Excellence Analytical Balances

Excellence Plus and Excellence balances offer world-leading weighing performance, unprecedented ergonomics and advanced solutions for data management. They enable full compliance in regulated areas and increase productivity and user safety.

- SmartGrid* Weighing Pan: Minimizes effects of turbulence in the weighing chamber; ensures more accurate results and shorter stabilization times
- ErgoClips* (order separately): Facilitate secure placement and efficient handling of tare containers

Excellence Plus XP Models

- SmartSens* Sensors: Enable user to tare, open and close draft shield or print without touching the balance; promote safe handling of samples, prevention of spills, minimized contamination risk
- SmartScreen* Display: Color-guided touchscreen for safe operation; individual, color-coded profiles can be configured and documented for up to eight users or jobs
- LevelControl* warns if balance is not correctly leveled
- MinWeigh: Signals when sample has not reached minimum weight defined by regulations
- Temperature Drift: 1×10^{-6}/°C[1]
- Long-term Stability: 1×10^{-6}/a[3]
- Pan Size: 3 × 2⅞" (7.8 × 7.3cm)
- L × W × H: 19 × 10¼ × 12½" (48.7 × 26.3 × 32.2cm)
- Net Weight: 22 lb. (10kg)
- Electrical Requirements: 100-240V 50/60Hz, 0.8A
- Come with automatic and detachable draftshield, proFACT automatic calibration technology, RS232-C interface, optional slot for second interface (choice of seven different interfaces), inner draftshield plate (adjustable), protective cover, detachable and adjustable terminal

Excellence XS Models

- Fully Automatic Calibration Technology (FACT) ensures precision and accuracy
- Comply with GLP and other quality management systems
- Temperature Drift: 0.00015%/°C[1]
- Long-term Stability: 0.002%/a[2]
- Pan Size: 2¾ × 3" (7 × 8cm)
- L × W × H: 17⅝ × 10¼ × 12½" (45.3 × 26.3 × 32.2cm)
- Net Weight: 23¼ lb. (10.5kg)
- Electrical Requirements: 115V 50/60Hz

EXCELLENCE PLUS XP MODELS

Model	XP105DR	XP205	XP205DR	XP204	XP504	XP504DR
Readability	0.1/0.01mg	0.01mg	0.1/0.01mg	0.1mg	0.1mg	1/0.1mg
Weighing Range	0–120g/0 to 31g	0–220g	0–220g/81g	0–220g	0–520g	0–520g/101g
Taring Range	0–120g	0–220g	0–220g	0–220g	0–520g	0–520g
Repeatability						
Nominal Load	0.06mg	0.03mg	0.05mg	0.07mg	0.12mg	0.6mg
Low Load (10g)	0.02mg	0.015mg	0.02mg	0.05mg	0.1mg	0.5mg
Sensitivity						
Temperature Drift[2]	1×10^{-6}/°C	1×10^{-6}/°C	1×10^{-6}/°C	1×10^{-6}/°C	1×10^{-6}/°C	1×10^{-6}/°C
Long-term Stability[4]	1×10^{-6}/a	1×10^{-6}/a	1×10^{-6}/a	1×10^{-6}/a	1×10^{-6}/a	1×10^{-6}/a
Mfr. No.	XP105DR	XP205	XP205DR	XP204	XP504	XP504DR
Cat. No.	**01-911-350**	**01-911-351**	**01-911-352**	**01-911-353**	**01-911-354**	**01-911-355**
Each	7239.00	10,299.00	9228.00	7239.00	8636.00	7341.00

EXCELLENCE XS MODELS

Model	XS64	XS104	XS105DU	XS204DR (DeltaRange)	XS204	XS205DU
Readability	0.1mg	0.1mg	0.1mg/0.01mg	1mg/0.1mg	0.1mg	0.1mg/0.01mg
Weighing Range	0 to 61g	0 to 120g	0 to 120g/0 to41g	0 to 220g/0 to 81g	0 to 220g	0 to 220g/0 to 81g
Taring Range	0 to 61g	0 to 120g	0 to 120g	0 to 220g	0 to 220g	0 to 220g
Repeatability[1]	0.07mg	0.07mg	0.05mg/0.02mg	0.5mg/0.1mg	0.07mg	0.05mg/0.02mg
Linearity	±0.2mg	±0.2mg	±0.2mg	0.2mg	±0.2mg	±0.2mg
Stabilization Time	<2 sec.	<2 sec.	<3 sec.	<2 sec.	<2 sec.	<3 sec.
Sensitivity						
Temperature Drift[2]	0.00015%/°C	0.00015%/°C	0.00015%/°C	0.00015%/°C	0.00015%/°C	0.00015%/°C
Long-Term Stability[3]	0.0002%/a	0.0002%/a	0.0002%/a	0.0002%/a	0.0002%/a	0.0002%/a
Mfr. No.	XS64	XS104	XS105DU	XS204DR	XS204	XS205DU
Cat. No.	**01-910-320**	**01-910-321**	**01-910-322**	**01-910-323**	**01-910-324**	**01-910-325**
Each	3065.00	3680.00	4355.00	3755.00	4315.00	5375.00

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[1] At maximum capacity (sd).

[2] In the temperature range 10° to 30°C (50° to 86°F).

[3] Sensitivity drift/year after putting into operation for the first time, with FACT self-calibration function activated.

[4] Stability of sensitivity as from first installation with proFACT.

*Trademark. See Trademark Reference.

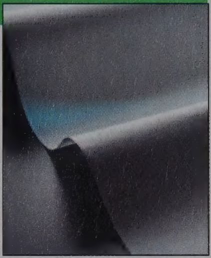
Immunodetection Products

When developing new immunodetection protocols, all product components and their interactions must be considered. Millipore provides a full line of immunodetection tools to yield the superior results you require.

Immobilon* PVDF Transfer Membranes

Superior Handling

Immobilon membranes are not like traditional blotting membranes that crack and curl. They have exceptional handling characteristics and can be cut without fracturing. They are also compatible with a variety of detection chemistries including radioactive, fluorescent, chromogenic, chemiluminescent and chemifluorescent techniques.


IPVH 000 10

Superior Protein Binding and Signal

Immobilon membranes have high protein adsorption that provides excellent binding and prevents protein loss during reprobing. The open pore structure of the membrane makes it easy to access bound proteins yet remove unbound probes that can increase background.

Immobilon-P (0.45µm)

- Sandwich format available: Immobilon-P membrane interleaved with blotting paper >20kDa
- Recommended for Western, dot, slot and other blotting applications for proteins

Immobilon-P^{SQ} (0.22µm)

- Recommended for blotting and sequencing of proteins <20kDa
- Features a large internal surface area that results in higher sequencing yields and less blow-through than other membranes

Immobilon-FL (0.45µm)

- Low fluorescence PVDF membrane for Western blotting applications
- Compatible with common stains and blocking reagents

Size	Quantity/Pack	Cat. No.	Price
Immobilon-P Blotting Sandwiches: PVDF 0.45µm			
7 × 8.4cm Sheets	20	**IPSN07852**	126.47
8.5 × 13.5cm Sheets	20	**IPSN08132**	240.90
Immobilon-P: PVDF 0.45µm			
7 × 8.4cm Sheet	50	**IPVH 078 50**	294.00
9 × 12cm Sheet	10	**IPVH 091 20**	99.00
10 × 10cm Sheet	10	**IPVH 101 00**	99.00
15 × 15cm Sheet	10	**IPVH 151 50**	144.00
20 × 20cm Sheet	10	**IPVH 202 00**	207.00
26 × 26cm Sheet	10	**IPVH 304 F0**	285.00
26.5 × 3.75m Roll	1	**IPVH 000 10**	266.00
Immobilon-P^{SQ}: PVDF 0.22µm			
10 × 10cm Sheet	10	**ISEQ 101 00**	111.00
15 × 15cm Sheet	10	**ISEQ 151 50**	164.00
20 × 20cm Sheet	10	**ISEQ 202 00**	226.00
26 × 26cm Sheet	10	**ISEQ 262 60**	300.00
26.5 × 3.75m Roll	1	**ISEQ 000 10**	292.00
Immobilon-FL: PVDF 0.45µm			
10 × 10cm Sheet	10	**IPFL 101 00**	119.00
20 × 20cm Sheet	10	**IPFL 202 00**	248.00
26.5 × 3.75m Roll	1	**IPFL 000 10**	318.00

Immobilon* Western Chemiluminescent Substrates

WBKLS0500

Provides high sensitivity over a broad detection range at an economical price

- High signal intensity and low background allow detection to the mid femtogram level without enhancers or special buffers
- Lowers antibody consumption by two to five fold compared to less sensitive chemiluminescent substrates
- Compatible with PVDF and nitrocellulose membranes, as well as all commonly used buffers and blocking reagents

Description	Quantity	Cat. No.	Each
Chemiluminescent HRP Substrate	50mL	**WBKL S0 050**	44.00
	100mL	**WBKL S0 100**	66.00
	500mL	**WBKL S0 500**	206.00
Chemiluminescent AP Substrate	25mL	**WBKD S0 025**	55.28
	100mL	**WBKD S0 100**	156.59

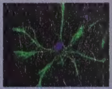
Neuroscience Antibodies and Proteins

Millipore's Chemicon line of neuroscience antibodies and proteins comprise a broad line of well-characterized tools for the study of developmental, synaptic, and degenerative mechanisms in the nervous system. Millipore's immunodetection products provide invaluable assistance in the identification, cellular and subcellular localization and measurement of defining structures in most cell types comprising the developing and differentiated nervous system. Vertebrate neuron-specific nuclear protein or NeuN (Neuronal Nuclei) Cat. No. MAB377MI reacts with NeuN, which is found in most neuronal cell types throughout the nervous system of mice.

Antigen	Clone	Quantity	Cat. No.	Each
Neuron-Specific Nuclear Protein (NeuN)	A60	500µg	**MAB377MI**	240.90
Tyrosine Hydroxylase Ab-3	----	100µL	**AB152MI**	230.86
Alzheimer Precursor Protein A4, aa 66-81, N-terminus	22C11	50µg	**MAB348MI**	330.41

LOOKING FOR MORE?

Millipore offers a comprehensive line of antibodies for all your immunodetection needs.



Visit www.fishersci.com and search for Millipore Antibodies

Filtration and Cell Culture Devices

Millipore's innovative filtration and culture devices provide an optimal environment for maintaining and growing cells. Designed for maximum flexibility, all have optimized filters and come with your choice of membrane. Growing cells on membranes is an approach to culturing that expands your ability to create in vivo like epithelial and endothelial cultures. Millipore's family of cell culture inserts and plates not only improve cell differentiation over plastic plates, but also offer improved handling for other cell types and cell based assays.

Millicell* Culture Plates Inserts

Millicell-HATF and Millicell-PCF Inserts

PIHA 012 50

- Don't require an extracellular matrix for attachment-dependent cells
- Polystyrene housing; supplied sterile and individually blister packed
- Millicell-HATF Inserts utilize a mixed cellulose esters membrane; Triton*-free
- Millicell-PCF Inserts utilize tissue culture-treated polycarbonate membranes for use in co-culturing applications as well as tumor cell invasion and metastasis studies

Millicell-CM Inserts

- Incorporate transparent hydrophilic PTFE Biopore* membranes for neural growth and embryo development work
- Inert and allow repeated viewing of living cells through the membrane

Pore Size	Diameter	Cat. No.	Pack of 50
Millicell-HATF Inserts			
0.45µm	13mm	**PIHA 012 50**	189.00
0.45µm	31.5mm	**PIHA 030 50**	237.00
Millicell-CM Inserts			
0.4µm	13mm	**PICM 012 50**	189.00
0.4µm	31.5mm	**PICM 030 50**	244.00
Millicell-PCF Inserts			
0.4µm	13mm	**PIHP 012 50**	178.00
0.4µm	31.5mm	**PIHP 030 50**	201.00

Stericup* Sterile Vacuum Filter Units

From left to right: SCGP-U05-RE, SCGP-U10-RE

No-tip design for improved stability during filtration—ideal for laminar flow hood use

- NEW — Stem Cell Tested 0.22µm pore size
- Millipore Express* Plus polyethersulfone (PES) membrane for fast-flow, low protein binding sterilization of aqueous solutions

INCLUDES:

Steritop* bottle-top filter unit with a graduated, polystyrene receiving flask for storing volumes of 150, 250, 500 and 1000mL.

Pore Size	Membrane	Cat. No.	Pack of 12
150mL Funnel, 150mL Receiver			
0.22µm	PES	**SCGP U01 RE**	64.00
250mL Funnel, 250mL Receiver			
0.22µm	PES	**SCGP U02 RE**	85.00
500mL Funnel, 500mL Receiver			
0.22µm	PES	**SCGP U05 RE**	135.00
500mL Funnel, 1000mL Receiver			
0.22µm	PES	**SCGP U10 RE**	190.00
1000mL Funnel, 1000mL Receiver			
0.22µm	PES	**SCGP U11 RE**	190.00

Millicell* Culture Inserts with Hanging Geometry

Uniquely designed flanges suspend the insert within culture plate well for superior growth, ease of pipetting

- Compatible with automated cell seeding, feeding, and washing systems
- General-purpose for growth and differentiation of various cell types

PIRP Series

Insert Pore Size	Description	Cat. No.	Pack of 48
6-well Plate			
0.4µm	Translucent	**PIHT-30R-48**	165.76
1.0µm	Transparent	**PIRP-30R-48**	165.76
12-well Plate			
0.4µm	Translucent	**PIHT-15R-48**	177.14
1.0µm	Transparent	**PIRP-15R-48**	177.14
24-well Plate			
0.4µm	Translucent	**PIHT-12R-48**	187.20
1.0µm	Transparent	**PIRP-12R-48**	187.20

** Also available in 3, 5 and 8µm pore sizes.*

Steritop* Sterile Vacuum Bottle-Top Filters

SCGV-T10-RE, SCGP-S01-RE, SCGP-S02-RE

With large 73mm diameter filter for faster filtration

- Recessed funnel threads maintain sterility
- Gamma radiation sterilized
- Without receiver bottles
- Millipore Express* Plus polyethersulfone (PES) membrane for fast flow and low protein binding (0.1µm PES membrane is also useful for removing mycoplasma)

Pore Size	Membrane	For Neck Size	Cat. No.	Pack of 12
With 150mL Funnel				
0.22µm	PES	33mm	**SCGP S01 RE**	59.00
0.22µm	PES	45mm	**SCGP T01 RE**	59.00
With 250mL Funnel				
0.22µm	PES	33mm	**SCGP S02 RE**	71.00
0.22µm	PES	45mm	**SCGP T02 RE**	71.00
With 500mL Funnel				
0.22µm	PES	33mm	**SCGP S05 RE**	83.00
0.22µm	PES	45mm	**SCGP T05 RE**	83.00

NALGENE* Bottles and Carboys

Provide the ultimate leakproof storage solution for laboratory water, reagents, chemicals and samples. Choose from over 300 containers designed to meet the most demanding lab storage requirements.

HDPE Boston Round Bottles

- Durable, uniform walls are resistant to splitting or puncturing
- Ideal for storing, shipping and packaging liquids for long periods
- Can be used with most corrosives
- Good for freezer use to -100°C
- Leakproof†, linerless closures
- Manufactured in compliance with ISO 13485:2003 quality requirements

02-923 Series

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
⅛ oz. (4mL)	13mm-415	2002-9125	**02-923-6A**	12/11.01	6 Pk./44.00
¼ oz. (8mL)	20mm-415	2002-9025	**02-923-11A**	12/11.18	6 Pk./44.70
½ oz. (15mL)	20mm-415	2002-9050	**02-923-8A**	12/12.33	6 Pk./49.30
1 oz. (30mL)	20mm-415	2002-0001	**02-923A**	12/16.52	6 Pk./66.10
2 oz. (60mL)	20mm-415	2002-0002	**02-923B**	12/17.01	6 Pk./68.00
4 oz. (125mL)	24mm-415	2002-0004	**02-923C**	12/21.78	6 Pk./87.10
6 oz. (175mL)	24mm-415	2002-0006	**02-923CC**	12/30.94	6 Pk./123.75
8 oz. (250mL)	24mm-415	2002-0008	**02-923D**	12/31.13	6 Pk./124.50
16 oz. (500mL)	28mm-415	2002-0016	**02-923E**	12/44.16	4 Pk./117.75
16 oz. (500mL)	38mm-430	2002-9016	**02-923-11F**	12/68.06	4 Pk./181.50
32 oz. (1000mL)	38mm-430	2002-0032	**02-923F**	6/39.75	4 Pk./106.00
Bulk Packed					
1 oz. (30mL)	20mm-415	312002-0001	**03-313-78A**	----	1000/645.00
2 oz. (60mL)	20mm-415	312002-0002	**03-313-78B**	----	1000/659.50
4 oz. (125mL)	24mm-415	312002-0004	**03-313-78C**	----	500/432.75
6 oz. (175mL)	24mm-415	312002-0006	**03-313-78D**	----	250/304.50
8 oz. (250mL)	24mm-415	312002-0008	**03-313-78E**	----	250/308.00
16 oz. (500mL)	28mm-415	312002-0016	**03-313-78F**	----	125/218.25
16 oz. (500mL)	38mm-430	312002-9016	**03-313-78G**	----	125/333.50
32 oz. (1000mL)	38mm-430	312002-0032	**03-313-78H**	----	50/155.50

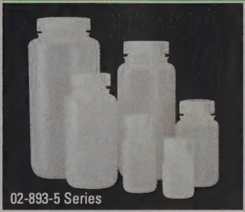
LDPE Round Carboys with Spigots

- Molded-in graduations in liters and gallons; graduated "To Deliver"
- Leakproof†
- Supplied with shoulder loop on 1-gallon size, shoulder handles on all other sizes.
- Polypropylene screw cap

02-963B

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
1 gal. (4L)	38mm-430	2318-0010	**02-963AA**	99.76	6/399.00
2½ gal. (10L)	83B	2318-0020	**02-963A**	143.13	6/572.50
5¼ gal. (20L)	83B	2318-0050	**02-963BB**	171.47	4/457.25
6½ gal. (25L)	83B	2318-0065	**02-963B**	130.25	----
13 gal. (50L)	83B	2318-0130	**02-963C**	197.50	----

Wide Mouth HDPE Bottles for Chemicals or Specimens



02-893-5 Series

- Translucent HDPE, Leakproof†
- Good for freezer storage to -100°C
- Excellent chemical resistance to most acids, bases and alcohols
- Polypropylene screw closures

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
1 oz. (30mL)	28mm-415	2104-0001	**02-893-5A**	12/25.31	6 Pk./101.25
2 oz. (60mL)	28mm-415	2104-0002	**02-893-5B**	12/25.88	6 Pk./103.50
4 oz. (125mL)	38mm-415	2104-0004	**02-893-5C**	12/30.81	6 Pk./123.25
8 oz. (250mL)	43mm-415	2104-0008	**02-893-5D**	12/46.81	6 Pk./187.25
16 oz. (500mL)	53mm-415	2104-0016	**02-893-5E**	12/62.63	4 Pk./167.00
32 oz. (1000mL)	63mm-415	2104-0032	**02-893-5F**	6/57.00	4 Pk./152.00
48 oz. (1500mL)	63mm-415	2104-0048	**10-346-9**	----	24/172.00

Nalgene* Autoclavable Carboys

02-960-20A

Polypropylene for temperature resistance and rigidity

- Molded-in graduations in 1 gal. and 5L increments; graduated "To Contain"
- Ideal for use with culture media, distilled water
- Integral shoulder handles for easy lifting
- Neck will accept No. 13½ rubber stopper
- White polypropylene screw closures
- Leakproof†

Alert: Completely disengage threads or remove closure before autoclaving. Not recommended for hazardous materials.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
2½ gal. (10L)	83B	2250-0020	**02-960-20C**	89.06	6/356.25
5¼ gal. (20L)	83B	2250-0050	**02-960-20A**	127.12	4/339.00
13 gal. (50L)	83B	2250-0130	**02-960-20B**	----	6/356.25

† Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. ***Note:*** *these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.*

NALGENE® Cryoware

Provides everything you need to safely store and organize cryogenic samples

Cryogenic Vials

03-337-7N, 03-337-7P

- For cryogenic storage of cell and microbiological cultures, sperm and serum/blood or other biologicals in vapor phase of nitrogen
- Two-turn deep-skirted screw closure system minimizes contamination
- Conical bottoms allow full retrieval of sample
- Polypropylene vials are self-standing and may be used without a holder
- Do not autoclave
- All vials with high-density polyethylene closures, except 03-337-7X and -7Y, which have polypropylene closures
- System-100 vials 03-337-7X and -7Y also have gasket seals for excellent seals during shipping
- Preassembled, radiation-sterilized vials are noncytotoxic, nonpyrogenic, and have a large white marking area, graduations, and fill line printed on the side
- Nonsterile vials without printing or graduations; packed separately from closures

Capacity	O.D. × H	Mfr. No.	Cat. No.	Case of
Sterile Vials				
1.2mL	13.5 × 38mm	5000 0012	**03-337-7C**	500/211.25
2.0mL	13.5 × 48mm	5000 0020	**03-337-7D**	500/211.25
5.0mL	13.5 × 92mm	5000 0050	**03-337-7H**	250/171.00
Nonsterile Vials				
1.2mL	13.5 × 38mm	5011 0012	**03-337-7N**	1000/310.50
2.0mL	13.5 × 48mm	5011 0020	**03-337-7P**	1000/310.50
System-100 Sterile Vials with Gasket Seal				
1.0mL	12 × 38mm	5000 1012	**03-337-7X**	500/216.50
1.5mL	12 × 48mm	5000 1020	**03-337-7Y**	500/216.50

"Mr. Frosty" Freezing Container

15-350-50 (Vials not included.)

Low-cost, freezing container provides repeatable -1°C/min. cooling rate for successful cryopreservation and recovery

- Rigid vial holder isolates vials from alcohol, preventing contamination of samples by wicking
- Requires only 100% isopropyl alcohol and a -70°C mechanical freezer
- Labeled with graphic step-by-step instructions
- Holds up to 18 vials

Accepts	O.D. × H	Mfr. No.	Cat. No.	Each
18 Nalgene* 1.0, 1.2, 1.5, 1.8 and 2.0mL cryogenic vials or equivalent	4⅝ × 3⁷⁄₁₆" (117 × 86mm)	5100 0001	**15-350-50**	61.25

NALGENE® Centrifuge Bottles

Two new Nalgene* Centrifuge Bottles— 1L Super-Speed and 2L Low-Speed Bio Bottles

Nalgene 1L Centrifuge Bottle

Boost productivity and pellet recovery in high-speed, large-volume gross separation applications. These graduated, wide-mouth bottles simplify decanting, re-suspensions and pellet removal. Their smooth inner walls are less likely to shear delicate cells. Ergonomic design facilitates loading, recovery and storage of samples.

SUPER SPEED

- Process a full liter in each bottle at speeds up to 15,810×G
- Ideal for bacterial, yeast and tissue isolations
- Improve viral harvesting in vaccine production
- Reduce shearing in mammalian culture separations
- Clear large-volume cell debris of homogenates
- Purify viruses and polysaccharides for vaccine production
- Choose polycarbonate for clarity and mechanical strength
- Choose polypropylene for chemical resistance
- Leakproof
- USP Class VI, noncytotoxic
- Designed to fit FiberLite* F6S 6×1000Y, F8S 6×1000Y, and F9S 4×1000Y carbon fiber rotors
- Recommended operating temperature range is from 4°C to 22°C
- Autoclavable
- With sealing cap assembly, polycarbonate bottle, polypropylene plug, modified PPE closure, and silicone gasket.

Description	Material	Mfr. No.	Cat. No.	Case of 6
1L Centrifuge Bottle	Polycarbonate	3140-1006	**05-564-25**	594.00
1L Centrifuge Bottle	Polypropylene	3141-1006	**05-564-26**	594.00

NEW! Nalgene* Centrifuge 2L Bio Bottle

Nalgene 2L Bio Bottle

Improved quality and performance for centrifugation of biologics. Process a 12L harvest in a single run. For large-volume gross separation applications at speeds up to 7333xG. Graduated, wide-mouth bottle simplifies decanting, re-suspensions and pellet removal. Ergonomic design facilitates loading, recovery and storage of samples.

- Leakproof up to 7333xG
- USP Class VI, noncytotoxic and nonhemolytic
- Ideal for bacterial, yeast and tissue isolations
- Designed for use in Thermo Scientific* Sorvall* RC12BP Centrifuge and H12000 Swing Bucket Rotor
- Smooth inner walls are less likely to shear cells
- Centrifugation operating temperature range is from 4°C to 22°C, storage to 0°C
- Autoclavable

Description	Material	Mfr. No.	Cat. No.	Case of 6
2L Bio Bottle	Polypropylene	3120-2006	**05-564-27**	276.52

*Trademark. See Trademark Reference.

Prices subject to change.

Unassembled Certified* Vial Kits

High quality chromatography kits provide the best assurance of consistent performance standards.

- Fully lot tested including HPLC and GC analysis
- Certificate of Conformance included with each pack
- Include choice of vials and closures, conveniently packaged in benchtop storage compartments
- Vials of clear or amber borosilicate glass, with or without an I-D* patch
- Closures with pre-inserted septa for GC, HPLC and headspace analysis

03-377 Series

Description	Septa	Mfr. No.	Cat. No.	Pack of 100
Target DP* 1.5mL Certified High Recovery Clear Vial Kit	Bonded PTFE/Silicone	CERT4000-992	**03-377-333**	137.20
	Bonded Slit PTFE/Silicone	CERT4000-79	**03-377-334**	142.50
Target DP 0.9mL Certified Precision Taper Clear Vial Kit	Bonded PTFE/Silicone	CERT4000-98PT	**03-377-335**	138.00
	Bonded Slit PTFE/Silicone	CERT4000-99PT	**03-377-336**	149.60
Target DP 2mL Certified Clear I-D Vial Kit	Bonded PTFE/Silicone	CERT4000-78W	**03-377-337**	47.21
	Bonded Slit PTFE/Silicone	CERT4000-93W	**03-377-338**	52.75
Target DP 350µL Certified Clear I-D Insert Vial Kit	Bonded PTFE/Silicone	CERT4000-69LV	**03-377-339**	103.85
	Bonded Slit PTFE/Silicone	CERT4000-71LV	**03-377-340**	115.50
Target DP 2mL Certified Amber I-D Vial Kit	Bonded PTFE/Silicone	CERT4000-75W	**03-377-341**	45.70
	Bonded Slit PTFE/Silicone	CERT4000-76W	**03-377-342**	46.71
Target DP 350µL Certified Amber I-D Insert Vial Kit	Bonded PTFE/Silicone	CERT4000-72LV	**03-377-343**	112.10
	Bonded Slit PTFE/Silicone	CERT4000-73LV	**03-377-344**	125.65
Target DP 2mL Certified Clear Vial Kit	PTFE/Rubber	CERT4000-80	**03-377-345**	37.95
Target DP 2mL Certified Clear I-D Vial Kit	PTFE/Rubber	CERT4000-80W	**03-377-346**	39.25
Target DP 2mL Certified Clear I-D Vial Kit	PTFE/Silicone	CERT4000-92W	**03-377-347**	44.80
Target DP 2mL Certified Amber I-D Vial Kit	PTFE/Rubber	CERT4000-82W	**03-377-348**	42.05
Target DP 2mL Certified Clear I-D Vial Kit	PTFE/Silicone/PTFE	CERT4000-86W	**03-377-349**	51.66
3.5mL Certified Max Recovery Clear Vial Kit	Bonded PTFE/Silicone	CERT4015-992	**03-377-356**	157.50
	Bonded Slit PTFE/Silicone	CERT4015-79	**03-377-357**	158.61
2mL Certified 10-425 Clear Vial Kit	Bonded PTFE/Silicone	CERT4010-91	**03-377-358**	56.60

SPECIAL OFFER

Buy any two National Scientific Certified Vial Kits from Fisher Scientific, receive a free Vial Tray.
Fax proof of purchase to 770-871-4814. Offer valid until December 31, 2009.

Optima* Solvents in Safe-Cote* Bottles

New FisherChemical* Optima grade high purity solvents deliver outstanding performance with safety and convenience. The solvents are protected by Safe-Cote PVC bottles that provide the purity of glass and most of the benefits of plastic for storing and dispensing of solvents. If they break, glass fragments and liquids are more likely to remain trapped. Optima grade high purity solvents are used when contaminant-free performance is essential—LC/MS, HPLC, GC, plasma/ICP, spectrophotometry, environmental testing and other analytical applications.

- Innovative safety bottle with FisherLOCK* tamper evident cap
- Convenient storing and dispensing
- Packaged in new 100% recyclable Styrofoam*-free EcoSafPak

Description	Qty.	Cat. No.	Price
Optima Acetone	4L	**A929SK-4**	Call for pricing
Optima Acetonitrile	4L	**A996SK-4**	Call for pricing
Optima Methanol	4L	**A454SK-4**	Call for pricing
Optima Tetrahydrofuran	4L	**T427SK-4**	Call for pricing
Optima Petroleum Ether	4L	**E120SK-4**	Call for pricing
Optima 2-Propanol	4L	**A464SK-4**	Call for pricing
Optima Hexanes	4L	**H303SK-4**	Call for pricing

NEW BRUNSWICK SCIENTIFIC

Excella* Shakers

Innovative, dependable and affordable, Excella Incubator Shakers with refrigeration option provide reproducible growth for a variety of cell types. Offered in benchtop and large-capacity console models. A Fisher Scientific exclusive!

Excella* E24/E24R Benchtop Shakers

Accepts vessels up to 2.8L

14-285-732

Features

- Flask capacity: 10mL to 2.8L
- Shaking speed range: 50 to 400rpm
- Shaking orbit: ¾" dia. (19mm)
- Digital keypad control and LED display for speed, run time, alarms and temperature
- Timer: 0.1 to 99.9 hours
- LED indicates temperature settings in 0.1°C increments
- Powerful UniCentric drive is counterbalanced for continuous-duty shaking over a wide range of speed
- Microprocessor feedback-control maintains precise shaking speed
- Large-capacity circulating fan distributes air evenly throughout chamber to ensure accurate temperature control and rapid thermal recovery

Safety Features

- Automatic shutoff when lid is opened
- Automatic restart with settings stored in memory
- Maintains speed even with unbalanced loads
- Visual and audible warning signals when speed deviates more than 5rpm, or temperature more than 1°C, from setpoint

Incubator Shaker Model E24

- Temperature Range: 7°C above ambient to 60°C
- Net weight: 135 lb. (61.2kg)

Incubated and Refrigerated Shaker Model E24R

- Temperature Range: 15°C below ambient to 60°C
- Net weight: 180 lb. (81.6kg)

DIMENSIONS:

- Platform: 18L × 18"W (46 × 46cm)
- Chamber: 20¼L × 21½W × 14"H (51.4 × 54.6 × 35.8cm)
- Overall: 22L × 30W × 24"H (56 × 76.2 × 61cm)
- For 120V 60Hz

REQUIRED ACCESSORIES:

Platform or tray (sold separately)

WARRANTY:

Two years on parts and labor

CERTIFICATIONS:

cETLus listed (Meets UL, CSA and CE standards)

Model	Orbit	Mfr. No.	Cat. No.	Each
E24, Incubated	¾"	M1352 0000	**14-285-732**	5325.00
E24R, Refrigerated	¾"	M1352-0004	**14-285-733**	7260.00

Excella* E25/E25R Console Shakers

Large-capacity shakers for flasks up to 6L

14-285-734

Features

- Flask Capacity: up to 6L
- Shaking speed range: 50 to 400rpm, ±2rpm
- Shaking orbit: 1" dia. (2.54cm)
- UniCentric drive delivers consistent performance for reproducible results
- Display: LED for temperature, speed, alarm conditions and running time
- Timer: 0.1 to 99.9 hours
- Speed, timer and temperature alarms
- High-velocity air circulation system accurately maintains temperature within ±0.25°C
- Adjustable feet absorb vibrations to stabilize workload and prevent creeping
- Accommodates glassware on Dedicated or Universal Platforms
- Shake test tubes from 8 to 30mm diameter in adjustable-angle racks, (sold separately)

Incubator Shaker Model E25

- Temperature Range: 7° above ambient to 60°C
- Net weight: 420 lb. (190kg)

Incubated and Refrigerated Shaker Model E25R

- Temperature Range: 15°C below ambient to 60°C
- CFC-free refrigeration
- Net weight: 450 lb. (204kg)

DIMENSIONS:

- Platform: 30W × 18"H (76 × 46cm)
- Chamber: 33½D × 23W × 19"H (85 × 58 × 48cm)
- Overall: 50L × 30½W × 41¾"H (127 × 77 × 85cm)
- For 120V 60Hz;

REQUIRED ACCESSORIES:

Platform or tray (sold separately)

WARRANTY:

Two years on parts and labor

CERTIFICATIONS:

cETLus listed (Meets UL, CSA and CE standards)

Model	Orbit	Mfr. No.	Cat. No.	Each
E25, Incubating	1"	M1353 0000	**14-285-734**	9125.00
E25R, Refrigerated	1"	M1353 0004	**14-285-735**	10,935.00

Excella shakers without temperature control are also available; see the Shakers section for details.

*Trademark. See Trademark Reference.

NEW BRUNSWICK SCIENTIFIC

CO_2 Incubators

NBS direct-heat CO_2 incubators with fanless design optimize culture conditions, minimize contamination risk, and simplify cleaning. Choose Innova* models with advanced controls or economical Excella* models.

Advanced features for exceptional performance

- Six-sided direct heating ensures stable temperature control, excellent uniformity (±0.2°C) and rapid recovery with no overshoot
- Unique fanless design minimizes vibration, increases usable chamber space and simplifies cleaning
- Compared to air- or water-jacketed designs, direct heat decreases overall incubator size and weight, increases chamber capacity, and simplifies setup, maintenance and relocation
- Infrared (IR) CO_2 sensor provides superior accuracy
- Seamless, deep-drawn chamber and bracket-free shelving minimize contamination risk and simplify cleaning
- User-programmable CO_2 auto-zero function automatically adjusts sensor baseline for optimum accuracy
- Programmable alarms provided for CO_2 and temperature, delays, duration, and more
- HEPA filter on CO_2 inlet protects against contamination
- Non-volatile memory guarantees data integrity in case of power outage
- CE marked

Innova models provide superior convenience and control

- Extra-large display features real-time data graphing, programmable alarms, and diagnostics
- Automated 72-hour datalogging of CO_2 concentration, temperature, alarms and door openings, with on-screen display
- On-screen help guides operator through setup, programming and diagnostics
- Unique, micro-sized Model CO-14 meets specialized needs of IVF and stem cell research

Economical Excella models for less sophisticated needs

- Excella ECO-17 series (and Innova Model CO-14) offer the same advantage as the Innova line, but with a simple temperature display and easy-to-use four-button keypad for programming CO_2, temperature and audio/visual alarm settings

Three sizes suit a variety of needs

- Innova CO-14, 0.5 cu. ft. (14L) capacity
- Innova CO-48, 1.7 cu. ft. (48L) capacity
- Innova CO-170, 6 cu. ft. (170L) capacity
- Excella ECO-170, 6 cu. ft. (170L) capacity

Multiple options enhance versatility and performance

- High temperature (HT) decontamination for absolute peace of mind
- O_2, control (1 to 19%) for IVF, hypoxic stress, aging studies and anaerobic work
- Communications package for use with facility monitoring system and/or PC download
- Copper interior for optimum contamination control
- Stacking stands, CO_2 bottle changeover controller, and other accessories are sold separately (For details, contact your Fisher Scientific Customer Service Representative.)

Excella
ECO-170
innova
CO-170

Innova and Excella CO_2 Incubators

Model	Mfr. No.	Cat. No.	Each
Innova Models			
Innova CO-14	M1314-0000	**14-286-133**	3505.00
Innova CO-14 with O_2 Option	M1314-0200	**14-286-134**	4650.00
Innova CO-48	M1300-0000	**14-286-125**	5255.00
Innova CO-48 with HT Option	M1300-1000	**14-286-126**	5695.00
Innova CO-48 with O_2 Option	M1300-0200	**14-286-127**	6400.00
Innova CO-48 with HT and O_2 options	M1300-1200	**14-286-128**	6840.00
Innova CO-170	M1306-0000	**14-286-129**	7645.00
Innova CO-170 with HT Option	M1306-1000	**14-286-130**	8165.00
Innova CO-170 with HT option	M1306-1200	**14-286-132**	9310.00
Excella Models			
Excella ECO-170	M1311-0000	**14-286-135**	6190.00
Excella ECO-170 with Copper Chamber	M1311-5000	**14-286-136**	7514.00
Excella ECO-170 with Communications Package Option	M1311-0010	**14-286-147**	6870.00
Excella ECO-170 with HT Option	M1311-1000	**14-286-149**	6710.00
Excella ECO-170 with HT Options and Communications Package	M1311-1010	**14-286-150**	7390.00

Many other NBS CO_2 Incubators models and options are available. Ask your Fisher Scientific Customer Service Representative for details.

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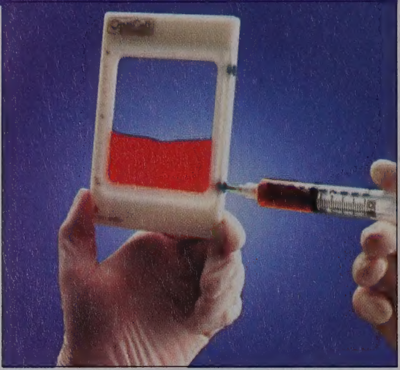
OptiCell* Cell Culture System

Unique format for growing, monitoring, and transporting cells



- Sterile system is created from two parallel, gas-permeable, cell culture-treated polystyrene membranes
- Each OptiCell 1100 membrane has a growth area of 50cm², total area: 100cm²
- Recommended media/cell fill volume of only 10mL for adherent cell cultures (OptiCell) and 30mL for OptiCell MAX for suspension cells
- Two resealing access ports provide a closed growth environment with sterile fluid path, reducing the risk of contamination
- Unique freezing capabilities allow for prolonged live cell storage
- Designed with approved shipping system to transfer cell lines
- Ideal for production of monoclonal antibodies, cytokines, and other secreted molecules

INCLUDES:

OptiCell 1100 Starter Kit: 20 ea. of OptiCell 1100, rack, knife, 50 tips, manual

OptiCell MAX 2100 Starter Kit: 5 ea. of OptiCell MAX, rack, 50 tips, Hybridoma production protocol, manual

OptiMag Cell Separation Kit: 20 ea. of OptiCell 1100, rack, 50 tips, magnet, Cell Separation protocol, manual

OptiCell Mailer: 5 ea. OptiCell 1100, five mailers, 50 tips, manual, shipping protocol

Description	Mfr. No.	Cat. No.	Price
OptiCell 1100 (10mL for adherent cells)			
Starter Kit	155330	**12-566-602**	Ea./150.84
Cartridges only	155331	**12-566-500**	Cs. of 20/115.65
Cartridges only	155332	**12-566-501**	Cs. of 100/575.00
Cartridges only	155333	**12-566-502**	Cs. of 500/2875.00
OptiMag Cell Separation Kit	155337	**12-566-515**	Ea./90.68
OptiCell MAX 2100 (30mL for suspension cultures)			
Starter Kit	155334	**12-566-603**	Ea./75.56
Cartridges only	155335	**12-566-503**	Cs. of 20/150.84
Cartridges only	155336	**12-566-504**	Cs. of 100/750.00
OptiCell Mailer			
Starter Kit	155339	**12-566-604**	Ea./80.60
Mailers only	155340	**12-566-600**	Cs. of 10/63.47

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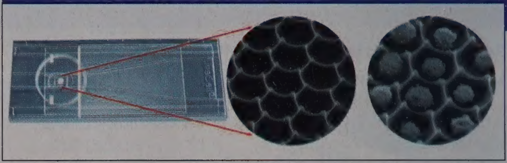
LiveCell* Array Microscope Slides

Provide real-time study of individual, living cells within heterogeneous populations



- Suitable for both adhering and nonadhering cells
- Disposable and sterile, with an embedded transparent array of picowells
- Enable multiple functional assays on living cells followed by postfixation studies on the same cells
- Staining, rinsing, and perfusion do not displace cells
- Compatible with standard microscopes
- Image Analysis Software designates an address to each cell

Well Size	Mfr. No.	Cat. No.	Pack of
15µm	130504	**12-566-100**	1/61.25
	130505	**12-566-101**	5/306.25
20µm	130506	**12-566-102**	1/61.25
	130507	**12-566-103**	5/306.25
100µm	130508	**12-566-104**	1/61.25
	130509	**12-566-105**	5/306.25
250µm	130510	**12-566-106**	1/61.25
	130511	**12-566-107**	5/306.25

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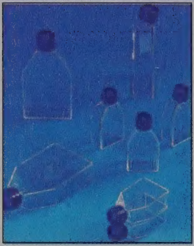
Sterile EasYFlask*

Nunclon* Δ treated surface ensures optimal cell attachment and growth



12-565 Series Flasks

- Polystyrene flat-sided cell culture flasks
- Choice of filter or vent/close caps
- Large opening and angled neck allow for easy access to growth surface with pipets and cell scrapers
- Low profile maximizes incubator space and allows viewing of entire growth surface with standard microscope
- Volume graduations printed and molded on both sides
- Frosted writing surfaces on neck
- Certified nonpyrogenic
- Extra caps in every case

Culture Area	Working Volume	Mfr. No.	Cat. No.	Case of
With Vent/Close Caps				
25cm²	7mL	156340	**12-565-348**	200/259.25
75cm²	25mL	156472	**12-565-350**	100/243.25
175cm²	55mL	159920	**12-562-001**	30/145.71
225cm²	70mL	159933	**12-565-220**	30/172.00
With Filter Caps				
25cm²	7mL	156367	**12-565-351**	200/300.75
75cm²	25mL	156499	**12-565-349**	100/263.74
175cm²	55mL	159910	**12-562-000**	30/162.44
225cm²	70mL	159934	**12-565-221**	30/178.25

OHAUS

Discovery Balances

Our finest balance with world-class capabilities and performance at an industry-leading value

Removable wind ring makes it easy to clean.

- SmarText* user interface with bright, dual-line, backlit LCD, utilizes text prompts to guide users through setup and operation
- Advanced AutoCal* dual-weight internal calibration system
- Cal Adjust and Cal Test allow traceability and validation
- Stability filters, stability indicator range, and auto-zero tracking enable use in difficult environments
- Weighing modes include Percent Weighing, Parts Counting, Check Weighing, Animal Weighing, Totalization, and High Point
- Weighing units include g, mg, dwt, ct, oz, ozt, GN, taels (3), mommes, custom

Model	DV114C	DV214C	DV314C	DV215CD
Capacity	110g	210g	310g	81/210g
Readability	0.1mg	0.1mg	0.1mg	0.01/0.1mg
Pan Size	3½" (9cm)	3½" (9cm)	3½" (9cm)	3½" (9cm)
Cat. No.	**01-920-050**	**01-920-051**	**01-920-053**	**01-920-052**
Each	3195.00	3495.00	3995.00	4495.00

Height above pan is 9½" (24cm).

OHAUS

Adventurer* Pro Analytical Balances

The finest balance in its class

01-919-204

- Available with NTEP and a second RS-232
- Compact design features frameless, flip-top draft shield, stainless-steel weighing pan, and QuadraStance* stability
- Weighing modes include: Animal Weighing, Check Weighing, Totalization, Display Hold, Parts Counting, and Percentage
- Multiple weighing units: milligram, gram, kilogram, ounce, pound, carat, pennyweight, ounce troy, grain, Newton, Hong Kong tael, Singapore tael, Taiwan tael, momme, tical, Baht, mesghal, Tola, custom

Model	Capacity	Readability	Pan Size (Dia.)	Cat. No.	Each
With InCal*					
AV64C	65g	0.1mg	3½" (9cm)	**01-919-204**	2122.00
AV114C	110g	0.1mg	3½" (9cm)	**01-919-206**	2326.00
AV264C	260g	0.1mg	3½" (9cm)	**01-919-208**	2836.00
Without InCal					
AV64	65g	0.1mg	3½" (9cm)	**01-919-205**	1816.00
AV114	110g	0.1mg	3½" (9cm)	**01-919-207**	2020.00
AV264	260g	0.1mg	3½" (9cm)	**01-919-209**	2530.00

Fisherbrand

Aluminum Weighing Dishes

08-732-100 through -104

With fluted sides

- Inexpensive aluminum dishes, ideal for weighing and dispensing
- Also can serve as evaporating dishes or dust covers
- Lightweight, yet sturdy
- Convenient finger-grip handle can be etched prior to weighing for identification

With smooth sides

- Lightweight dishes with flanged rims
- Slightly sloping sides facilitate stacking
- Especially useful for materials that cannot easily be cleaned from dish surface

Capacity	Bottom I.D. × Top I.D.	Depth	Cat. No.	Pack of	Case of
With Fluted Sides					
20mL	1¾ × 2" (4.4 × 5.2cm)	0.53" (1.3cm)	**08-732-100**	100/24.51	10 Pk./ 209.50
42mL	2 × 2½" (5.1 × 6.2cm)	0.67" (1.7cm)	**08-732-101**	144/27.05	56 Pk./ 1183.59
85mL	2¾ × 3" (6.9 × 7.7cm)	0.63" (1.6cm)	**08-732-102**	100/49.53	10 Pk./ 423.30
With Smooth Sides					
70mL	2⅝× 6¾" (5.1 × 7.3cm)	0.67" (1.7cm)	**08-732-103**	100/43.04	10 Pk./ 367.90
150mL	3¾ × 4" (9.6 × 10.2cm)	0.77" (2cm)	**08-732-104**	100/63.51	10 Pk./ 562.00

Fisherbrand

Polystyrene Antistatic Weighing Dishes

Disposable dishes are ideal for weighing, dispensing, or storing applications

08-732-112 through -118

- Contaminant-free, antistatic, biologically inert
- Resist dilute acids, aqueous solutions, alcohols, and bases
- Flat bottoms resist tipping
- Choose from standard style or Pour-Boat weighing dishes
- Pour boats feature a molded spout for convenient pouring and dispensing

Size (L × W × H)	Bottom I.D.	Color	Cat. No.	Pack of	Case of 8 pk.
Standard Style					
1⅝ × 1⅝ × 5⁄16" (41 × 41 × 8mm)	1.4" (3.6cm)	Natural	**08-732-112**	500/64.01	453.20
3½ × 3½ × 1" (89 × 89 × 25mm)	2.4" (6.1cm)	Natural	**08-732-113**	500/70.42	----
3½ × 3½ × 1" (89 × 89 × 25mm)	2.4" (6.1cm)	Blue	**08-732-114**	500/79.86	----
5½ × 5½ × 1" (140 × 140 × 25mm)	3.86" (9.8cm)	Natural	**08-732-115**	500/138.77	----
Pour Boat					
1⅝ × 1¼ × 5⁄16" (41 × 32 × 8mm)	1.3" (3.3cm)	Natural	**08-732-116**	250/62.30	441.04
3½ × 5¼ × 1" (89 × 133 × 25mm)	2" (5.1cm)	Natural	**08-732-117**	250/90.39	----
4¾ × 7¾ × 1" (121 × 197 × 25mm)	3.85" (9.8cm)	Natural	**08-732-118**	250/127.01	----

Omni Prep* Multisample Homogenizer

Homogenize six samples per cycle—up to 250 samples per hour

15-340-120 (tubes sold separately)

Two rack system allows one group of samples to be prepared while another group is being processed. Processes up to six samples at a time rapidly and efficiently in 1.5/2, 15, and 50mL conical tubes.

- Working volume 0.25 to 30mL
- Speed range 500 to 30,000rpm
- Digital display with 10-min. timer and 3-program memory
- Works exclusively with reusable/disposable Omni Tip* plastic probes or specially designed 10mm stainless steel probes
- Most samples processed in under one minute
- Movable rack is ideal for processing samples that require probe mobility within the sample

INCLUDES:

Omni Prep processing unit, 2 six-place processing racks, nine tube holders (three each of 1.5/2, 15, and 50mL sizes), 50 Omni Tip soft tissue probes, and 50 Omni Tip hard tissue probes

Electrical Reqts.	Mfr. No.	Cat. No.	Each
115/230V 50/60Hz	06-023-F	**15-340-120**	14,995.00

r²mini Pocket Refractometer

Big features and performance in a small package!

13-975-411

- High-contrast five-digit LCD readout switches between Refractive Index and % Brix
- Wide measurement ranges of 1.3330 to 1.4465 RI and 0.0 to 62.0% Brix
- Automatic readings in seconds at the push of a button
- Electronic Automatic Temperature Compensation from 10° to 40°C
- Automatic power-off mode extends battery life beyond 10,000 measurements
- Rugged housing has International Protection Class rating of IP65, making it water resistant and dustproof

ORDERING INFORMATION:

Measures 3⅞L × 2⅛W × 1⅛"H (100 × 54 × 27mm). Net weight, ¼ lb. (100g). With storage case and detachable neck lanyard. Operates on 2 × "AAA" batteries included. Optional holster case available.

Mfr. No.	Cat. No.	Each
13940000	**13-975-411**	295.00

RM 200 Laboratory Mortar Grinder

A standard in every laboratory, now with enhanced features for better results and greater ease of use

08-418-506

Delivers reproducible and contamination-free sample.

- For wet and dry grinding to <10µm
- Closed, dust-tight grinding chamber without windows
- High-performance drive with electronic control and load display
- Built-in automatic switch-off and rapid deceleration
- Mortar and pestle can be changed easily without tools
- Safe, CE-conforming design
- Seven different grinding set materials
- Limited warranty

Cat. No.	Each
08-418-503	5690.00

ACCESSORIES

For use with Retsch* RM 200 Mortar Grinder

Other materials available; to order, contact your Fisher Scientific Customer Service Representative.

Description	Cat. No.	Each
Mortars		
Agate	**08-418-511**	2660.00
Hard Porcelain	**08-418-508**	578.00
Stainless-steel	**08-418-505**	630.00
Pestles		
Agate	**08-418-507**	858.00
Hard Porcelain	**08-418-510**	473.00
Stainless-steel	**08-418-504**	508.00

Thermo SCIENTIFIC

Haake* DynaMax* Refrigerating-Heating Circulators

Precision temperature control of high-end laboratory and pilot applications: combines rapid temperature changes with incredible stability

13-875-500

- Dissipate heat from exothermic chemical reactions faster than other products in their class
- Dynamic Heat Load Suppression (DHLS) technology offers faster reactions to temperature changes, maintains precise temperature stability
- Adapt precisely to your application needs, allowing you to perform more experiments in less time

Easy to Operate

- Easy to use, with intuitive menu programming
- Controller is programmable in seven languages, stores 10 ramping programs with 30 segments, saving you valuable programming time
- Systems are self-degassing and completely self-draining for greater ease of operation

Adaptable to Meet Application Needs

- Cover a wide temperature range, suitable for a variety of applications
- Nine preset PID settings allow you to select the best balance between temperature overswing and time-to-temperature for your application

Enhanced Safety Features

- Closed-system architecture prevents hot fluids from contacting the atmosphere, eliminating fumes and icing at low temperatures
- DHLS technology protects system and application from potential damage
- If set limits are exceeded, system rapidly injects fluids from cold storage tank to bring system back within safety limits
- User can define upper and lower system temperature and pressure limits for improved application control and greater safety

ORDERING INFORMATION:

Fluid Connections, M30x1.5. Refrigerant, R404A. RS-232 port standard; optional RS-485 connection.

Models listed have air-cooled condenser.

WARRANTY:

Two years or 10,000 hours

COMPLIANCE:

CE, NRTL certified (CE, UL & CSA)

Model	**DynaMax 1200**		**DynaMax 1700**	
Cooling Capacity	1200w at 20°C, 50/60Hz; 900w at 0°C, 50/60Hz; 250w at -20°C, 50/60Hz		1700w at 20°C, 50/60Hz; 1250w at 0°C, 50/60Hz; 250w at -20°C, 50/60Hz; 150w at -40°C, 50/60Hz	
Pump Flowrate	20L/min. (oil); 25L/min. (water)			
Pump Pressure	1.2bar (oil); 1.5bar (water)			
Heat Output	1600w (60Hz models); 2000w (50Hz models)			
Temperature Range	-40° to +150°C		-45° to +150°C	
Temperature Stability	±0.01°K			
Dimensions L × W × H	$27\frac{9}{16} \times 19\frac{9}{32} \times 27\frac{9}{16}$" (70 × 49 × 70cm)			
Electrical Requirements	208V 60Hz	230V 50Hz	208V 60Hz	230V 50Hz
Cat. No.	**13-875-501**	**13-875-500**	**13-875-503**	**13-875-502**
Each	13,300.00	14,630.00	15,900.00	17,490.00

Thermo SCIENTIFIC

Neslab* ThermoFlex* Recirculating Chillers

Reliable, easy-to-use chillers optimized for the most demanding applications

13-266-130

High reliability plus superior performance

- Robust refrigeration system is designed for continuous use in a variety of installations
- Temperature setpoint range of 5° to 40°C (41° to 104°F) with ±0.1°C stability
- Recirculation system incorporates highly reliable plumbing connections to eliminate leaks
- Integrated air and fluid filters to minimize wear to mechanical parts, for lower maintenance costs and improved system reliability
- Up to 10% greater cooling capacity than comparable units
- Lower noise, ensuring a pleasant work environment
- Deliver continuous cooling capacity up to 900 or 1400 watts
- Additional models available, contact your Fisher Scientific Customer Service Representative

Easy to Use

- Quick-start guide enables trouble-free system start-up
- Snap in-and-out air and fluid filters promote quick and simple maintenance
- Innovative recirculation system includes integrated funnel and visual indicator for operator convenience
- Intuitive controller allows customer-defined alarms to be set for various parameters, ensuring that your process is always under control
- Easy-to-read LCD
- Integrated pressure relief ensures application pressure limits are kept within range

ORDERING INFORMATION:

Dimensions, 24.7L × 14.2W × 27.4"H (62.7 × 36 × 68.6cm). Net weight, 126 lb. (57.2kg). Operating temperature: 10° to 40°C (50° to 104°F).

Model	Electrical Requirements	Pump Type	Pumping Speed	Cat. No.	Each
900 PD1	115V 60Hz, 15A circuit	Positive Displacement (PD1)	2.1 gal./min. (7.8L/min.) at 60psi	**13-266-130**	3451.00
900 PD2	115V 60Hz, 15A circuit	Positive Displacement (PD2)	4.1 gal./min. (15.5L/min.) at 60psi	**13-266-131**	3841.00
900 PD1	230V 50Hz, 16A circuit	Positive Displacement (PD1)	1.7 gal./min. (6.4L/min.) at 60psi	**13-266-132**	3740.00
900 PD2	230V 50Hz, 16A circuit	Positive Displacement (PD2)	3.3 gal./min. (12.5L/min.) at 60psi	**13-266-133**	4150.00
1400 PD1	115V 60Hz, 20A circuit	Positive Displacement (PD1)	2.1 gal./min. (7.8L/min.) at 60psi	**13-266-134**	3809.00
1400 PD2	115V 60Hz, 20A circuit	Positive Displacement (PD2)	4.1 gal./min. (15.5L/min.) at 60psi	**13-266-135**	4219.00
1400 PD1	208V 60Hz, 15A circuit	Positive Displacement (PD1)	2.1 gal./min. (7.8L/min.) at 60psi	**13-266-136**	3809.00
1400 PD2	208V 60Hz, 15A circuit	Positive Displacement (PD2)	4.1 gal./min. (15.5L/min.) at 60psi	**13-266-137**	4219.00
1400 PD1	230V 50Hz, 16A circuit	Positive Displacement (PD1)	1.7 gal./min. (6.4L/min.) at 60psi	**13-266-138**	4118.00
1400 PD2	230V 50Hz, 16A circuit	Positive Displacement (PD2)	3.3 gal./min. (12.5L/min.) at 60psi	**13-266-139**	4528.00

Thermo SCIENTIFIC

Hypersil* GOLD* HPLC Columns

Hypersil GOLD HPLC columns packed with 1.9µm particles offer the chromatographer improved speed and efficiency while maintaining the peak shape and resolution obtained with Hypersil GOLD columns in larger particle formats.

Hypersil GOLD

Thermo SCIENTIFIC

- Ideal for high throughput and high pressure applications
- C18 selectivity provides a predictable elution order
- Excellent peak shapes for all analyte types
- Ideal for applications where resolution between compounds closely related in structure is very important—like in drug analyses
- Increased resolution and sensitivity

I.D.	Length	Cat. No.	Each
1mm	20mm	**25002-021030**	606.00
1mm	30mm	**25002-031030**	606.00
1mm	50mm	**25002-051030**	606.00
1mm	100mm	**25002-101030**	606.00
2.1mm	20mm	**25002-022130**	606.00
2.1mm	30mm	**25002-032130**	606.00
2.1mm	50mm	**25002-052130**	606.00
2.1mm	100mm	**25002-102130**	606.00
3mm	20mm	**25002-023030**	606.00
3mm	30mm	**25002-033030**	606.00
3mm	50mm	**25002-053030**	606.00
3mm	100mm	**25002-103030**	606.00

Thermo SCIENTIFIC

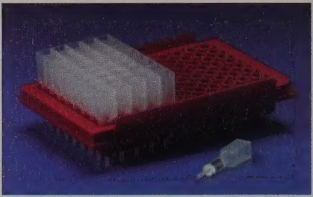
HyperSep* Hypercarb* SPE Columns, Plates and Wells

HyperSep SPE products offer reproducible and reliable sample preparation in a range of formats and materials, including the unique Hypercarb for the retention of extremely polar compounds.

03-250-4 Series

- Unique flat, 100% porous graphitic carbon (PGC) with selectivity for structurally similar compounds
- Stable across the 0 to 14pH range
- High batch-to-batch reproducibility
- Strong retention properties allow use of low bed weights for concentrated extracts
- Unique interaction mechanism with polar molecules
- 30µm mean particle size
- 250Å mean pore size

Bed Weight	Column Volume	Mfr. No.	Cat. No.	Pack of
50mg	1mL	60106-303	**03-250-400**	50/225.25
100mg	1mL	60106-302	**03-250-401**	30/267.75
200mg	3mL	60106-301	**03-250-402**	30/357.00
500mg	6mL	60106-402	**03-250-403**	20/429.25
1g	6mL	60106-403	**03-250-404**	10/467.50
2g	15mL	60106-404	**03-250-405**	10/777.75


03-250-4 Series

Bed Weight	Volume	Mfr. No.	Cat. No.	Each
96-Well Plates				
10mg	1mL	60302-606	**03-250-409**	259.25
25mg	1mL	60302-607	**03-250-410**	290.70
50mg	1mL	60302-608	**03-250-411**	379.95

Thermo SCIENTIFIC

FOCUS* GC (Gas Chromatograph)

Designed for routine QA/QC and high productivity laboratories

03-950-106

The single channel workhorse GC

- Affordable full-sized GC performance in a compact footprint
- Reliable and easy to use, requiring minimal operator training
- Ideal for high quality routine analysis
- Proven ruggedness and reliability
- Fast GC oven
- Wide front opening allows easy access and quick installation of conventional column racks

Optional Accessories

- Eight-position AI 3000 Autosampler (03-950-102) or 105-position AS 3000 Autosampler (03-950-103) available separately or as part of product bundles
- ChromQuest data system (03-950-104)
- Start-Up Kit: (03-950-105) SS tubes and fittings, nuts and ferrules (unions and Tee) to perform instrument connection w/gas lines and standard 10µL syringe for instrument SOP start-up
- Installation (03-950-109)
- Computer System (03-950-110)

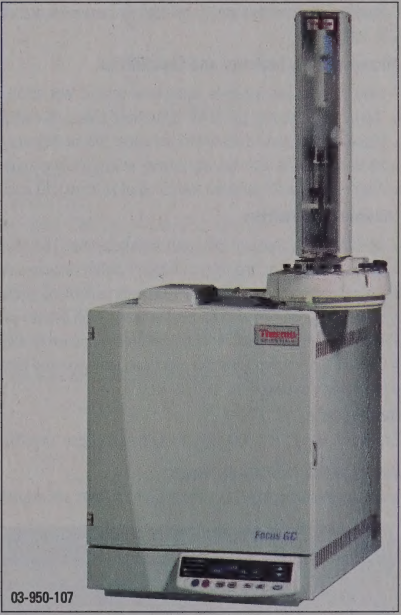
INCLUDES:

Basic Bundle: FOCUS GC SSL-FID, Start-up kit, ChromQuest DS; **Automated Bundle:** Basic Bundle plus AI 3000 Autosampler (8 vial positions); **High Productivity Bundle:** Basic Bundle plus AS 3000 Autosampler (105 vial positions)

Description	Mfr. No.	Cat. No.	Each
Basic FOCUS GC Bundle	12550305	**03-950-106**	16,590.00
Automated FOCUS GC Bundle	12550306	**03-950-107**	22,013.25
High Productivity FOCUS GC Bundle	12550311	**03-950-108**	25,200.00

SPECIFICATIONS

D × W × H	20 × 13¾ × 17" (350 × 510 × 430mm)
Weight	66 lb. (30kg)
Typical heat-up time:	50 to 350°C in 270 sec.
Typical cool-down time:	350 to 50°C in 270 sec.
Injectors available:	Split-Splitless, Purged-Packed
Detectors available:	FID, TCD
Interface	Local keyboard or Data system control
Gas Sampling/Switching valve accessory	Available for petrochemical and industrial applications


03-950-107

Forma* CryoPlus* Series LN_2 Storage Systems

Combine liquid nitrogen storage flexibility with microprocessor control technology. Capacities range from 90 to 552L and offer sample storage capabilities up to 40,000 vials.

TF7400
TF7406
TF7404
TF7402

- Standard temperature sleeve for cold temperatures and efficient vapor phase operation
- Autofill

Microprocessor Features and Capabilities

- Easy, precise, and accurate liquid level control over all 16 parameters
- Top-mounted control panel for convenient access to microprocessor control and easy programming via touchpad
- Digital temperature display located under the lid indicates highest temperature reading inside tank
- 24 tri-color LEDs continuously display actual liquid nitrogen level and high level/low level setpoints
- Alarm contacts for remote monitoring of storage tank conditions

Durable Construction

- Double-walled, vacuum-insulated, stainless-steel LN_2 storage tanks
- Liquid level sensor and fill port located within vacuum space, ensuring maximum storage area and protecting sensor
- Exterior cabinet constructed of 18 gauge, cold-rolled steel with powder-coated paint
- Counterbalanced lid with foamed-in-place, high density polyurethane insulation; patented, dedicated vent; 100% clearance
- Two independent, flexible lid gaskets reduce moisture migration into the chamber
- Convenient, front-mounted key lock and rear-mounted recessed power switch provide product security; control panel can also be locked
- Heavy-duty casters

INCLUDES:

CryoPlus 1 has ½" 45° flare, 4' (1.2m) flexible hose. CryoPlus 2, 3, and 4 come with ½" 45° flare, 6' (1.8m) flexible hose.

REQUIRED ACCESSORIES:

Inventory systems of racks, canisters, and frames are available separately.

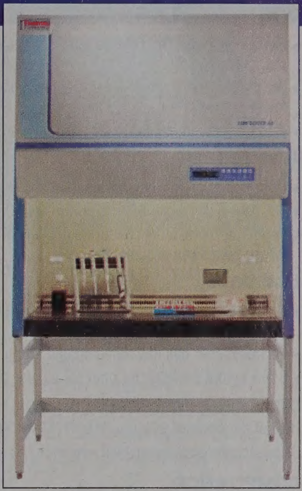
Model	Capacity	Tank Dia.	Overall L × W × H[†]	Weight Full	Weight Empty	Static Evap.	Static Holding Time	Holds No. of 2mL Vials	Cat. No.	Each
CryoPlus 1	90L (23¾ gal.)	16" (40.6cm)	26 × 21½ × 41" (66 × 54.6 × 104.1cm)	354 lb. (160.6kg)	214 lb. (97.1kg)	3L/day (¾ gal./day)	30 days	5500 with 11 TF4000012 Vertical Racks, 6318 with 6 TF4000044 Arrowhead Racks	**TF7400**	7656.00
CryoPlus 2	200L (52¾ gal.)	24" (61cm)	34 × 28½ × 41" (86.4 × 72.4 × 104.1cm)	680 lb. (308.4kg)	325 lb. (147.4kg)	5L/day (1¼ gal./day)	40 days	13,000 with 10 TF4000006 Square Racks and 26 TF4000012 Vertical Racks	**TF7402**	9855.00
CryoPlus 3	340L (89¾ gal.)	31" (78.7cm)	41½ × 34½ × 41" (105.4 × 87.6 × 104.1cm)	1021 lb. (463.1kg)	416 lb. (188.7kg)	8L/day (2⅛ gal./day)	42.5 days	22,100 with 17 TF4000006 Square Racks, 24,000 with 48 TF4000012 Vertical Racks	**TF7404**	15,336.00
CryoPlus 4	552L (145¾ gal.)	39½" (100.3cm)	50 × 43½ × 47" (127 × 110.5 × 119.4cm)	1620 lb. (734.8kg)	820 lb. (371.9kg)	10L/day (2⅝ gal./day)	55 days	36,400 with 28 TF4000006 Square Racks, 38,500 with 77 TF4000012 Vertical Racks	**TF7406**	19,223.00

[†] *Add 5" (12.7cm) to length for utilities and lid opening.*

Thermo SCIENTIFIC

1300 Series Class II, Type A2 Biological Safety Cabinets

Ideal for working with biological agents at Biosafety Levels 1–3



13-261-303

Less energy consumption and heat output deliver unparalleled cost savings: energy-efficient DC motor technology provides savings in excess of 65% over competitive units.

- Exhaust volumes from 328 to 541cfm, depending on model
- Patented, laminated safety glass front window has 10° slope for less glare and ergonomically comfortable working posture; lowers easily for interior cleaning
- Easy-to-reach control panel with LED displays hours of use, inflow/downflow velocities, services in use, filter usage status
- Sash opens to 10" (25cm); 21" (54cm) maximum opening
- Large, single-piece work surface provides ample space for optimizing productivity
- HEPA filter, 99.995% at 0.3µm
- Independent DC motors simultaneously control both inflow and downflow; reduce energy consumption, heat output, and vibration inside cabinet
- Motor operates at reduced speed when front window is closed—keeps interior cleaner and reduces lab noise
- No internal damper needed—continuous airflow adjustment maintains proper inflow

Safety Features

- Meet NSF Standard 49
- Real-time airflow adjustments ensure inflow and downflow velocities remain steady
- Pressure sensor filter monitoring measures total airflow across the working area
- Patented front window design simplifies cleaning for a safer working environment

Construction Features

- Work surface height ranges from 28 to 36" (71 to 91cm), with adjustable stand
- Armrest (included with package) supports ergonomic posture; prevents accidental blockage of front air grill
- Thimble exhaust connection has a zero leak damper; joins cabinet to standard 8" (20cm) dia. exhaust duct
- Two service connections (noncombustible gas, combustible gas, vacuum, water) can be ordered separately and installed on each side
- UV light (included with package) is programmable for different decontamination cycle lengths; timed UV light option preserves bulb life
- White interior walls reduce glare to improve ergonomics

ORDERING INFORMATION:

Overall D × H (including stand set at 30" [76.2cm]): 31⅜ × 85⅝" (79.5 × 220cm).

INCLUDES:

Packages come with standard 30" (76.2cm) high stand, UV light and armrest. Accessories also available separately; contact your Fisher Scientific Customer Service Representative for more information.

WARRANTY:

3 years, parts and labor on equipment

CERTIFICATIONS:

NSF (Standard 49), cUL, CE, TUV, EN

Width	Cabinet Exhaust Volume	Thimble Exhaust Volume	Outlets	Electrical Requirements	Mfr. No.	Cat. No.	Each
Cabinet Only							
48" (122cm)	328-361cfm	426-469cfm	1 back wall	115V 50/60Hz	1355	**13-261-300**	7235.00
48" (122cm)	328-361cfm	426-469cfm	1 back wall	230V 50/60Hz	1356	**13-261-301**	7235.00
72" (183cm)	492-541cfm	640-703cfm	2 back wall	115V 50/60Hz	1357	**13-261-302**	7810.00
72" (183cm)	492-541cfm	640-703cfm	2 back wall	230V 50/60Hz	1358	**13-261-303**	7810.00
Cabinet Package†							
48" (122cm)	328-361cfm	426-469cfm	1 back wall	115V 50/60Hz	1385	**13-261-304**	7500.00
48" (122cm)	328-361cfm	426-469cfm	1 back wall	230V 50/60Hz	1386	**13-261-305**	7500.00
72" (183cm)	492-541cfm	640-703cfm	2 back wall	115V 50/60Hz	1387	**13-261-306**	8500.00
72" (183cm)	492-541cfm	640-703cfm	2 back wall	230V 50/60Hz	1388	**13-261-307**	8500.00

† Package includes standard 30" (76.2cm) high stand, UV light and armrest.

Thermo
SCIENTIFIC

Hamilton ProVent* Laboratory Fume Hoods

The comprehensive offering of Thermo Scientific* Hamilton fume hood product lines includes ProVent, SafeAire* II, Concept*, Pioneer*, Horizon* and special ventilated enclosures. Each line is designed to lead the market in its respective applications.

- Exhaust volumes from 485 to 1570cfm, depending on hood size and sash opening
- Collar design reduces noise and conserves energy by maintaining lower static pressure
- Fluorescent lighting optimizes visibility and safety

Safety Features

- Unframed sash for greater impact resistance
- 18" (46cm) sash lock/release with manual override
- Perimeter baffle slots contain fumes and eliminate dead spaces where fumes can accumulate

Construction

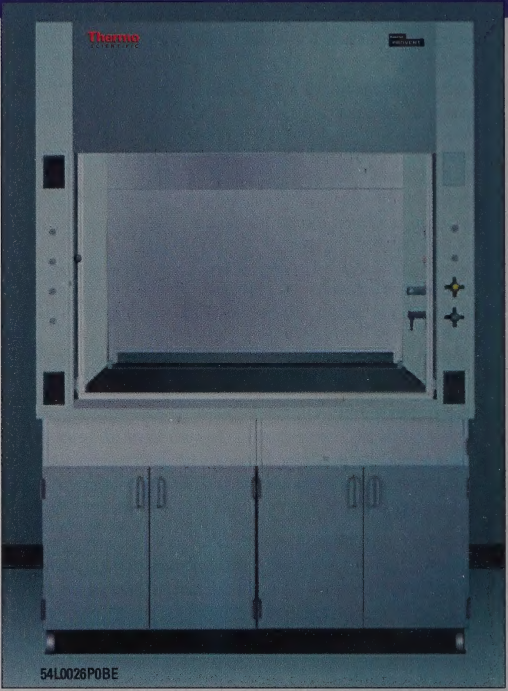
- Unique rectangular exhaust collar for more vertical space defines the operating position
- Polyresin liner has low flame spread rating, meets NFPA 45 standards
- Blank cutout provided for optional blower switch or safety monitors

ORDERING INFORMATION:

Overall dimensions: 57½H × 31¼"D (146 × 79cm). Order base separately. Shipped assembled; installation required.

COMPLIANCE:

UL 1805 classified and labeled; adheres to ASHRAE* 110 tracer gas test parameters.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	Total Exhaust/Static Pressure Loss at 100fpm			
Hood Width	Sash Open 18"	Sash Fully Open	Cat. No.	Each
48" (122cm)	485cfm ($0.09H_2O$)	700cfm ($0.15H_2O$)	**54L0026P0BE**	4003.00
60" (152cm)	650cfm ($0.09H_2O$)	920cfm ($0.17H_2O$)	**54L0027P0BE**	4294.00
72" (183cm)	785cfm ($0.13H_2O$)	1130cfm ($0.24H_2O$)	**54L0028P0BE**	4823.00
96" (244cm)	1100cfm ($0.09H_2O$)	1570cfm ($0.21H_2O$)	**54L0029P0BE**	5925.00

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo SCIENTIFIC

Hamilton Perspective* Steel Casework

No matter how you view this steel casework, there is no denying the incredible value offered by the Thermo Scientific* Hamilton Perspective* line. This casework features understated elegance in its flush overlay styling and linear reveals. With the option of several designer colors and the choice of wire or flush propylene pulls, your lab can achieve a discerning appearance.

- Wraparound cabinet body construction eliminates the need for applied finished back
- Sides, back, and outside corner posts are formed from single sheet of 20-gauge steel
- Durable drawer boxes hold heavy loads and withstand repeated impact of opening and closing without joint failure; drawer stops contact welded drawer body rather than drawer head to provide longer, trouble-free service

Features

- Welded steel construction with corner posts at all four corners to ensure high load-bearing capacity
- Chemical- and abrasion-resistant urethane powder coat finish
- Durable, corrosion-resistant stainless-steel hinges
- Four corner levelers for height adjustment
- Self-centering, self-closing, rise-up drawer suspension
- Coved horizontal corners within drawer bodies to facilitate cleaning
- Strong, formed-steel shelves that won't sag under long-term loading
- Shelf height adjustable over the full height of the cabinet for maximum flexibility

Standing-Height Combination Base Cabinets

- With one adjustable shelf
- Drawers on all models measure 7⅜" (18.9cm) high

ORDERING INFORMATION:

Dimensions: 35H × 22"D (89.4 x 55.9cm).

Description	Width	Handle	Cat. No.	Each
With two drawers above cupboard with hinged doors	48" (122cm)	Wire pull with access handle	**BHL1648NNS**	949.00
With one full-width drawer above cupboard with hinged doors	42" (107cm)	Wire pull with access handle	**BHL1742NNS**	844.00
With four drawers at left and full-height cupboard with hinged doors at right	30" (76.2cm)	Wire pull with solid back	**BHL1030NNW**	964.00
With four drawers at right and full-height cupboard with hinged door at left	30" (76.2cm)	Plastic pull with solid back, lock	**BHL1130LNR**	1065.00
With four drawers at left and one drawer above cupboard with hinged door at right	48" (122cm)	Wire pull with solid back, lock	**BHL1448LNW**	1328.00

Standing-Height Door Base Cabinets

- With full-height door(s) and one adjustable shelf
- Features wire pull with solid back

ORDERING INFORMATION:

Dimensions: 35H × 22"D (89.4 × 55.9cm).

Description	Width	Cat. No.	Each
With one door (right hinged)	24" (61cm)	**BHL0424NNW**	416.07
With two doors	48" (122cm)	**BHL0548LNR**	707.00

Standing-Height Trash Receptacle Cabinet

- With swing-out full-height door for trash receptacle
- Features lock and plastic pull with access panel

ORDERING INFORMATION:

Dimensions: 35H × 22"D (89.4 × 55.9cm).

Width	Cat. No.	Each
18" (45.7cm)	**BHL1218LNP**	842.00

Thermo SCIENTIFIC

Sorvall* Legend* Micro 17 and 21 Microcentrifuge Series

Powerful units deliver exceptional capacity, performance and safety in a compact, user-friendly design

75-002-446, -431

Support fast, efficient microvolume processes. Wide selection of high-capacity rotors and two speed options make these centrifuges ideal for complex as well as simple protocols.

- Capacity: 24 × 1.5/2.0mL
- Choice of two RCF options (17,000×G or 21,100×G) in ventilated or refrigerated styles
- Intuitive controls with bright digital display
- Fast acceleration and braking for faster throughput
- Sleek, space-saving design
- Refrigerated models (17R, 21R) offer temperature control from -9° to +40°C
- Rotor and ClickSeal* biocontainment lid included; rotor lid clicks shut to ensure secure sample containment

INCLUDES:

Rotor (see table for selection)

Model	Includes	Electrical Requirements	Cat. No.	Each
Ventilated Models				
Micro 17	24 × 1.5/2.0mL rotor with biocontainment lid	120V 60Hz	**75-002-431**	1875.00
Micro 17	Hematocrit rotor	120V 60Hz	**75-002-494**	1875.00
Micro 21	24 × 1.5/2.0mL rotor with biocontainment lid	120V 60Hz	**75-002-436**	2300.00
Micro 21	24 × 1.5/2.0mL rotor with biocontainment lid and 18 × 0.5mL/18 × 2.0mL dual rotor with screw-on lid	120V 60Hz	**75-002-488**	2700.00
Refrigerated Models				
Micro 17R	24 × 1.5/2.0mL rotor with biocontainment lid	120V 60Hz	**75-002-441**	5200.00
Micro 21R	24 × 1.5/2.0mL rotor with biocontainment lid	120V 60Hz	**75-002-446**	5600.00
Micro 21R	24 × 1.5/2.0mL rotor with biocontainment lid and 18 × 0.5mL/18 × 2.0mL dual rotor with screw-on lid	120V 60Hz	**75-002-490**	6000.00

Model	Legend Micro 17/17R	Legend Micro 21/21R
Max. Speed	13,300rpm	14,800rpm
Max. RCF	17,000×G	21,100×G
Noise Level	<55dbA	<56dbA
Timer Range	1 to 99 min.	1 to 99 min.
Timer Resolution	1 min. increments	1 min. increments
Temperature Range (17R and 21R only)	-9°C to +40°C, 1°C incr.	-9°C to +40°C, 1°C incr.
Dimensions (L × W × H)		
Micro 17/Micro 21	13¾ × 9⅝ × 7⅞" (25.2 × 24.3 × 22.5cm)	13¾ × 9⅝ × 7⅞" (25.2 × 24.3 × 22.5cm)
Micro 17R/Micro 21R	17½ × 11⅝ × 12⅞" (44.5 × 29.5 × 33cm)	17½ × 11⅝ × 12⅞" (44.5 × 29.5 × 33cm)

Thermo SCIENTIFIC

Sorvall* Legend* T Plus/ RT Plus Centrifuges

Versatile, 3L-capacity centrifuges deliver high RCF for tissue culture, virological tests, DNA/protein precipitations and other applications

75-004-377

Available in refrigerated or ventilated models, with a wide range of rotors and adapters for unmatched versatility.

- 120V: Operate on standard benchtop electric outlets (no special service required)
- Capacity: 3L (4 × 750mL) with optional swinging bucket rotor 75-006-445 and round buckets 75-006-441 (order separately)
- Maximum speed/RCF: 15,000rpm/24,400×G
- Microprocessor-soft-touch keypad control with large digital LED display for speed, RCF and run time
- 4-program memory plus pre-temp program
- Refrigerated model provides uniform temperature control from +4°C to ambient room temperature

Safety and Convenience Features

- Short deck height for easy sample loading/unloading
- Automatic rotor recognition and electronic imbalance detection
- Dual lid-locking mechanism (soft-touch closure with lid interlock)

REQUIRED ACCESSORIES:

Swinging bucket rotors, carbon fiber high-performance rotors, buckets and tube adapters (sold separately)

CERTIFICATIONS:

CE, CSA, EN 61 010-1, EN 61 010-2-020

Description	Dimensions	Net Weight	Electrical Requirements	Cat. No.	Each
Legend T Plus (Ventilated)	26¼ × 21¾ × 14¼"H (67 × 55 × 36cm)	196 lb. (89kg)	120V 60Hz	**75-004-367**	6083.00
Legend RT Plus (Refrigerated)	26¼ × 28¾ × 14¼"H (67 × 73 × 36cm)	288 lb. (131kg)	120V 60Hz	**75-004-377**	8938.00

LOOKING FOR NEW CENTRIFUGES FROM THERMO SCIENTIFIC* SORVALL*?

All-new Thermo Scientific Sorvall* Legend T1 and T3 Series centrifuges offer advanced features and multiple rotor options for convenient operation and efficient sample processing. Choose the high-speed compact 1.2L capacity T1/RT1 models or the high-throughput (3L) T3/RT3 models. For more information, see the Centrifuges section.

Visit www.fishersci.com and search for Centrifuges

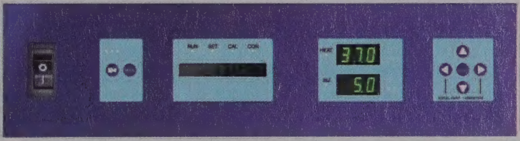
Thermo
SCIENTIFIC

Napco* 8000 Series CO_2 Incubators

Water-Jacketed (WJ) and Direct-Heat (DH) Models to match your specific needs, each with advanced contamination control technology to simplify use. Choose Thermo Scientific Napco 8000 for superior sample protection!

These models give you the flexibility you can depend on for growing cells, and a selection of sensors and features to meet your lab's needs. Maintain precise temperature control and stability of all culture parameters.

15-497-009, -001



Panel detail.

Complete Contamination Control

- Rapid HEPA filtration produces Class 100 air quality in under five minutes
- Coved corners throughout make for easy cleaning
- Shelves, supports and HEPA filter are easily removed without tools
- Intuitive Message Center user interface for quick and easy access to all functions
- Choice of TC (thermal conductivity) or IR CO_2 sensors to match your requirements

Peace of mind

- Made to the highest standards of workmanship, thanks to many years of experience in manufacturing CO_2 incubators
- Unsurpassed service and technical support

Water-Jacketed (WJ) Models provide extra security

- Triple-wall construction and large volume of water mean unsurpassed temperature stability and heat-loss protection
- Water-jacketed technology holds temperature for extended periods, critical during power failures, to ensure the safety of your cultures
- Fast temperature recovery keeps culture conditions very stable
- Heated, dual-pane glass inner door reduces heat loss and condensation

Direct-Heat (DH) Models let you culture with confidence

- Safe, proven sterilization system ensures elimination of all microbial life inside chamber
- Automatic high-temperature decontamination cycle provides overnight sterilization and consistent sterilization time after time
- Light weight makes them easy to move where you need them
- Advanced airflow and heating provide temperature uniformity and stability

ORDERING INFORMATION:

Models listed have 6.5 cu. ft. (184L) chamber volume, measure 25L × 26W × 39½"H (63.5 × 66 × 100cm), operate on 115VAC.

Sensor	RH Display	O_2 Control	In-Chamber HEPA	Cat. No.	Each
Water-Jacketed (WJ) Models					
TC	No	No	Yes	**15-497-001**	5564.00
TC	Yes	No	Yes	**15-497-002**	6032.00
IR	No	No	Yes	**15-497-003**	6552.00
IR	Yes	No	Yes	**15-497-004**	7020.00
TC	No	Yes	Yes	**15-497-005**	6604.00
TC	Yes	Yes	Yes	**15-497-006**	7072.00
IR	No	Yes	Yes	**15-497-007**	7540.00
IR	Yes	Yes	Yes	**15-497-008**	8008.00
Direct-Heat (DH) Models					
TC	No	No	Yes	**15-497-009**	5564.00
TC	Yes	No	Yes	**15-497-010**	6354.40
IR	No	No	Yes	**15-497-011**	6552.00
IR	Yes	No	Yes	**15-497-012**	7342.40

HyClone* AdvanceSTEM* Cell Culture Media

Optimized for robust growth of embryonic cell cultures

Murine Embryonic stem cells grow quickly and require daily maintenance. When co-cultured in ES cell media with a mouse embryonic fibroblast (MEF) feeder layer, these stem cell cultures are suitable for electroporation, expansion, or further experimentation.

- AdvanceSTEM IMDM4SC contains no L-glutamine and supports excellent growth of B6 ES cells
- AdvanceSTEM DMEM4SC is formulated without L-glutamine or sodium pyruvate and is ideal for use with 129 ES cells
- AdvanceSTEM Serum Replacement developed for growth of undifferentiated embryonic cells in culture; minimal or no requirement for fetal bovine serum
- AdvanceSTEM Low Osmo DMEM is basal medium developed to support growth and maintenance of ES cells in an undifferentiated state

Description	Quantity	Cat. No.	Each
AdvanceSTEM IMDM4SC	500mL	**SH3082201**	18.00
AdvanceSTEM DMEM4SC	500mL	**SH3082401**	16.95
AdvanceSTEM Serum Replacement	100mL	**SH3087402**	63.90
AdvanceSTEM Serum Replacement	500mL	**SH3087403**	213.00
AdvanceSTEM Low Osmo DMEM	500mL	**SH3087001**	19.00
AdvanceSTEM Low Osmo DMEM	1000mL	**SH3087002**	34.20

Nutrient Media Supplements

Growth enhancement components compatible with serum-free or serum-reduced media formulations

Description	Quantity	Cat. No.	Each
AdvancedSTEM, ES-Qualified HEPES	100mL	**SH3085101**	32.20
AdvancedSTEM, ES-Cell Qualified NEAA	100mL	**SH3085301**	9.60
Sodium Pyruvate Solution (100mM)	100mL	**SH3023901**	7.42
L-Glutamine, 200mM in 0.85% NaCl	100mL	**SH3003401**	11.33
	500mL	**SH3003402**	19.06
AdvancedSTEM, ES-Cell Qualified L-Glutamine	100mL	**SH3085201**	13.20
MEM Vitamin Solution, 100X	100mL	**SH3059901**	10.71
HyQ* SG-200, stable dipeptide of L-alanyl-L-glutamine	100mL	**SH3059001**	24.21

SH3087402 SH3087001

Embryonic Stem (ES) Cell Screened Fetal Bovine Serum

Eliminates the need for prescreening serum prior to using it with embryonic stem cells

Collected and processed with strict adherence to current Good Manufacturing Practices (cGMP) and ISO 9001:2000 guidelines. Tightly controlled processing from blood collection to filtration to packaging, all to assure quality, uniformity, origin, complete traceability and purity. Meet high standards required for quality cell culture. Production, from collection through processing, is vertically integrated.

- Screening process, which is performed by experienced ES cell culturists, includes plating efficiency, colony morphology and toxicity tests
- Filtered through sequential 40nm (0.04µm) pore-size rated filters

ORDERING INFORMATION:

Orders requesting a specific lot of Thermo Scientific* HyClone serum must reference the lot number; please place lot specific orders with a Fisher Scientific Customer Service Representative.

Description	Quantity	Cat. No.
ES Screened FBS	100mL	**SH3007002E†**
	500mL	**SH3007003E†**
ES Screened FBS, Heat Inactivated	500mL	**SH3007003EH†**
ES Screened FBS, Gamma Irradiated	500mL	**SH3007003EI†**

† Call for pricing

LOOKING FOR MORE THERMO SCIENTIFIC* HYCLONE* MEDIA PRODUCTS?

See the Cell Culture section of this catalog.

Visit www.fishersci.com and search for HyClone

Pierce* Enhanced Chemiluminescent (ECL) Western Blotting Substrate

An entry-level Western blotting substrate at an economical price

Thermo Scientific* Pierce ECL Western Blotting Substrate is a highly sensitive nonradioactive, enhanced luminol-based chemiluminescent substrate for the detection of horseradish peroxidase (HRP) on immunoblots. ECL Western Blotting Substrate enables the detection of picogram amounts of antigen and allows for easy detection of HRP using photographic or other imaging methods. Blots can be repeatedly exposed to X-ray film to obtain optimal results or stripped of the immunodetection reagents and re-probed.

- No optimization required—switch from other entry-level ECL substrates without the need for optimization or protocol changes

INCLUDES:

Detection Reagent 1 & 2

STORAGE CONDITIONS:

Store from 2° to 8°C

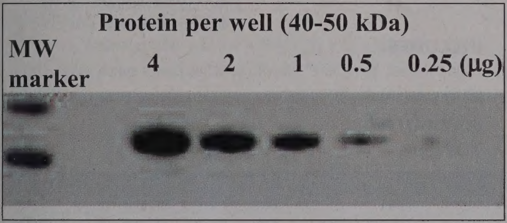


Figure 1. Thermo Scientific Pierce ECL Substrate Western blot detection of Actin (Beta) from HeLa cell lysate. Dilutions of HeLa cell lysate were prepared and separated by electrophoresis. The proteins were transferred to a nitrocellulose membrane (PI-88025) and the membrane was blocked with 5% skim milk. After blocking, the membrane was incubated with Mouse Anti-Human Actin β (US Biological, Swampscott, MA) at 1µg/mL. The membrane was washed and then incubated with 0.2µg/mL of HRP-conjugated Goat anti-Mouse IgG (PI-31430) and then washed again. Working solutions of the substrate were prepared according to the manufacturers' instructions and added to the membrane for 1 min. The membrane was removed from the substrate and placed in plastic sheet protectors and exposed to CL-XPosure Film for 90 sec.

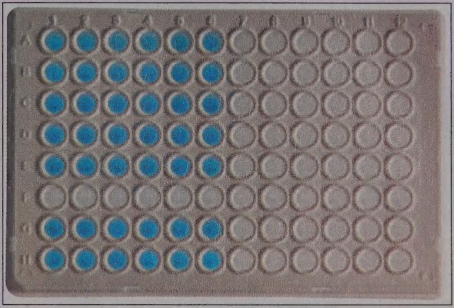
Quantity	Cat. No.	Each
50mL (Sufficient for 400cm² of membrane)	**PI-32109**	40.00
250mL (Sufficient for 2000cm² of membrane)	**PI-32209**	101.00
500mL (Sufficient for 4000cm² of membrane)	**PI-32106**	139.00

LOOKING FOR MORE NITROCELLULOSE MEMBRANES FOR YOUR WESTERN BLOT?

Visit www.fishersci.com and search for PI-88025

ABsolute* Blue QPCR Mixes

A colored high performance QPCR master mix to spot dispensing errors in the plate, not in your results



AB-4000 series QPCR master mixes, Easy-to-See, Easy-to-Use

- Easier to see in the white opaque plastics recommended for QPCR than traditional colorless reagents
- Contain Thermo-Start* hot-start enzyme for increased sensitivity
- Utilize dTTP in the dNTP mix for increased reaction efficiency and reduced time per reaction (low Ct)
- Compatible with all QPCR platforms

STORAGE CONDITIONS:

Store at -20°C. The ROX* dye is light sensitive; exposure to light should be minimized for vials containing ROX dye.

Description	Quantity	Cat. No.	Pack of
QPCR Mix and ROX Vial	100 × 25µL rxns	**AB-4136A**	2/194.11
QPCR ROX Mix	100 × 25µL rxns	**AB-4138A**	2/194.11
QPCR SYBR* Green ROX Mix	100 × 25µL rxns	**AB-4162A**	2/220.04
QPCR SYBR Green Mix and ROX Vial	100 × 25µL rxns	**AB-4166A**	2/220.04
QPCR SYBR Green Fluorescein Mix	100 × 25µL rxns	**AB-4219A**	2/182.35
QPCR low ROX Mix	100 × 25µL rxns	**AB-4318A**	2/194.11
QPCR SYBR Green low ROX Mix	100 × 25µL rxns	**AB-4322A**	2/220.04

Purchase of this product includes an immunity from suit under patents specified in the product insert to use only the amount purchased for the purchaser's own internal research. No other patent rights (such as 5' Nuclease Process patent rights) are conveyed expressly, by implication, or by estoppel. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

Thermo SCIENTIFIC

Orion* 4-Star pH/ISE Benchtop Meter

Reliable measurement of pH and ionic concentrations for quality control and general analysis applications

- Accepts Ion Selective Field Effect Transistor electrodes
- Auto or manual pH calibration, at 1 to 5 points
- Recognizes NIST*, US and manual buffers
- Manual ISE calibration with 1 to 5 calibration points
- Full complement of GLP-related features
- Stores up to 10 password-protected methods; downloads updates
- 200-point datalogger, downloadable to printer or computer via optional RS-232 or USB interface accessory
- IP-54 dustproof and splashproof

Meter Only option includes meter, instructions.

Meter Kit option includes meter; ROSS* Ultra* pH electrode; Epoxy ATC probe; 475mL each of pH 4.01, 7.00 and 10.01 buffers and pH Electrode Storage Solution; benchtop electrode stand.

Model	Orion 4-Star pH/ISE Benchtop Meter
pH Mode	
Range	-2.000 to +19.999pH or 0 to 14pH in aqueous solutions
Resolution	0.1/0.01/0.001pH
Relative Accuracy	±0.002pH
ISE mode	
Range	0 to 19,900
Units	M, mg/L, %, ppb, or no units
Relative Accuracy	±0.2mV or 0.05%, whichever is greater
Resolution	1, 2, or 3 significant digits
mV/RmV	±1999.9mV
Temperature Mode	
Range	-5° to +105°C
Compensation Range	-5° to +105°C
Meter Only	
Mfr. No.	1115000
Cat. No.	**13-642-055**
Each	1080.00
Meter Kit	
Mfr. No.	1115001
Cat. No.	**13-645-107**
Each	1308.00

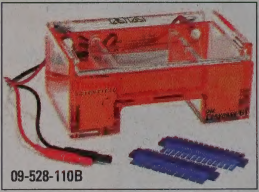
Thermo SCIENTIFIC

Owl* Horizontal and Vertical Electrophoresis Products

Durability, flexibility, and support

- Cast and run all-in-one
- Exceptional convenience
- Ideal for every lab

Thermo Scientific* Owl EasyCast* Horizontal Minigel



09-528-110B

Designed for ease-of-use with high-performance results

- Features leakproof casting that allows a gel to be cast and run in the same chamber with no tape or additional parts required
- Supplied with a UV-transmissible gel tray with a silk-screened ruler that fluoresces under UV light
- Randomly available in yellow, orange, and green

INCLUDES:

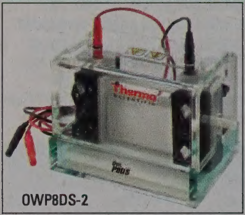
Main chamber, SuperSafe* lid with attached power supply leads, UVT gel tray, two double-sided combs

WARRANTY:

Three years

Gel Size	Combs Included	Buffer Volume	Cat. No.	Each
7 × 8cm	6 and 10 wells	400mL	**09-528-110**	348.15
9 × 11cm	10 and 14 wells	600mL	**09-528-178**	380.00
12 × 14cm	12 and 20 wells	800mL	**09-528-110B**	441.53

Thermo Scientific* Owl Vertical Electrophoresis Systems



OWP8DS-2

Eliminate the mess and inconvenience of conventional polyacrylamide gel casting

- Easy-to-use system utilizes an agarose plug technique to permit slab gels to be cast and run in one unit
- Central cooling core provides even cooling across the gel surface for outstanding resolution and clear banding
- Cooling is achieved by circulating fluid through the core with an external circulator or cool tap water

WARRANTY:

Three years

Gel Size	Buffer Volume	L × W × H	Cat. No.	Each
10 × 8–10cm	300mL	5⅛ × 6¾ × 5½" (13 × 17 × 14cm)	**OWP8DS-2**	620.00
16 × 14–16cm	600mL	5⅛ × 9⅞ × 7⅝" (13 × 25 × 19.5cm)	**OWP9DS-2**	1021.00
20 × 20cm	1150mL	6½ × 12 × 9" (16.5 × 30.5 × 23cm)	**OWP10DS-2**	1100.00

Thermo SCIENTIFIC

Barnant Compulab* 3 Microprocessor Programmable Dispensing System

Ideal for all your fluid transfer, dispensing and diluting requirements—delivering performance when it counts

System dispenses, dilutes/dispenses, or functions as metering pump, with direct connection and control from a PC to several popular brand balances.

- Eighty-character LCD guides setup and calibration, displays flowrate, cumulative volume and complete program parameters—including setup and running functions.
- Intuitive 20-key control pad with user prompts for parameter settings: volumes, flowrates, speed, up/down ramp time, tube size, direction, units of measure, delay time (speed and volume can be changed during operation)
- Memory stores up to 30 programs which can run manually (with supplied dispensing handle or optional footswitch); semi-automatically (in cycles); automatically (by specifying cycle count from 1 to 999); or by direct control from a PC. (Software is included; compatible with Windows* 95 and Windows NT*.)
- Manual or automatic timed delay cycling from 0.1 sec. to 2.780 hr., with anti-drip feature
- Audible end-of-cycle alarm

ORDERING INFORMATION:

Dimensions, controller: 8¾L × 6⅛W × 3¼"H (22 × 16 × 8.2cm)

INCLUDES:

Pump and controller software

COMPLIANCE:

Meet IEC 1010 regulations

CERTIFICATIONS:

UL 508, cUL, CE

Description	Electrical Requirements	Mfr. No.	Cat. No.	Each
Controller	Supplied by pump drives	72-767-000	**13-875-128**	867.36
RD1 Pump Drive	115/230VAC, 2A	72-777-100	**13-875-129**	1924.17
RD2 Pump Drive	115/230VAC, 2A	72-666-100	**13-875-127**	2196.17

DON'T FORGET TO ORDER TUBING.
See page 1482.

13-875-129

13-875-128

Model	With RD1 Pump	With RD2 Pump
Flowrate Exchange	0.4 to 3450mL/min.	0.5 to 5000mL/min.
Dispensed Volume	Min. 2 to 175mL/cycle; to 5L max.	Min. 3 to 250mL/cycle; to 7L max.
Speed Range	12 to 720rpm, ±0.3%	12 to 720rpm, ±0.3%
Accuracy/Repeatability	±1.0%	±1.0%
Pump Dimensions (L × W × H)	8¾ × 10 × 5" (22 × 25 × 13cm)	9½ × 10½ × 6" (24 × 27 × 15cm)

Thermo SCIENTIFIC

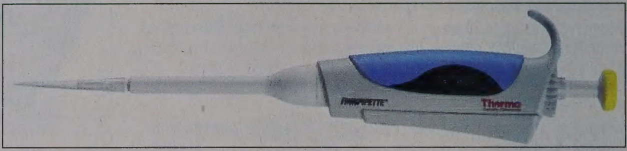
Finnpipette* Focus Single-Channel and Multichannel Pipetters

Combine comfortable design with superior accuracy and precision

- Unique ergonomic design reduces user stress and optimizes pipetting performance so that you can set the volume you need quickly and focus on your work
- Fully autoclavable
- Industry-leading five-year warranty with Web registration

Thermo Scientific* Finnpipette Focus Single-Channel, Adjustable-Volume Pipetters

- Fast-dial system with 0.01µL adjustment on micro volumes
- Improved grippy finger rest
- Easy to calibrate using tool (provided)
- Standard tip cone



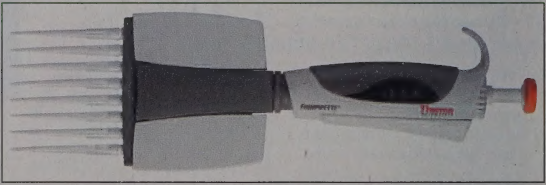
Range	Increments	Accuracy†	Precision†	Finntip* Type	Mfr. No.	Cat. No.	Each
0.3 to 3µL (Micro)	0.01µL	±10 to 2.5%	8.0 to 2.0%	10	4600150	**14-387-40**	305.00
0.5 to 5µL (Micro)	0.01µL	±3.5 to 1.0%	3.0 to 0.8%	10	4600160	**14-387-41**	305.00
1 to 10µL (Micro)	0.01µL	±2.5 to 1.0%	2.0 to 0.5%	10	4600170	**14-387-42**	305.00
1 to 10µL	0.01µL	±3.5 to 1.0%	3.0 to 0.5%	250 Univ., 200 Ext.	4600180	**14-387-43**	285.00
3 to 30µL (Micro)	0.1µL	±2.5 to 0.8%	3.0 to 0.4%	50	4600190	**14-387-44**	285.00
3 to 30µL	0.1µL	±3.5 to 0.8%	3.0 to 0.4%	250 Univ., 200 Ext., Flex 300	4600200	**14-387-45**	285.00
5 to 50µL (Micro)	0.1µL	±3.0 to 0.6%	2.5 to 0.3%	50	4600210	**14-387-46**	285.00
5 to 50µL	0.1µL	±3.0 to 0.6%	2.5 to 0.3%	250 Univ., 200 Ext., Flex 300	4600220	**14-387-47**	285.00
10 to 100µL	0.1µL	±3.0 to 0.8%	1.0 to 0.2%	250 Univ., 200 Ext., Flex 300	4600230	**14-387-48**	285.00
30 to 300µL	1µL	±1.5 to 0.6%	0.6 to 0.2%	300, Flex 300	4600240	**14-387-49**	285.00
100 to 1000µL	1µL	±1.0 to 0.6%	0.6 to 0.2%	1000, 1000 Ext., Flex 1000	4600250	**14-387-50**	285.00
0.5 to 5mL	0.01mL	±2.0 to 0.5%	0.8 to 0.2%	5mL	4600400	**14-386-87**	285.00
1 to 10mL	0.01mL	±2.0 to 0.5%	0.8 to 0.2%	10mL, Flex 10mL Ext.	4600410	**14-386-88**	305.00

† When a range is given, the first value applies to the smallest volume in the stated range; the second, to the largest volume.

Thermo Scientific* Finnpipette Focus Plus Multichannel, Adjustable Volume Pipetters

Speed up repeat dispensing of reagents into microplates

- Super blow-out for 0.1-10µL volumes
- Grippy finger rest lets pipetter balance at optimum pipetting angle
- Soft-touch tip ejection requires less effort
- Fully autoclavable
- For use with Thermo Scientific Finntip* tips. Also compatible with all Fisherbrand* universal-fit tips, Large Orifice, Large Orifice/Genomic Aerosol Barrier, and Low Retention tips.



Range	Increments	Accuracy†	Precision†	Finntip	Color Code	Mfr. No.	Cat. No.	Each
8-Channel								
1 to 10µL	0.1µL	±2.4/±12%	1.6/8.0%	10, 20, 50	Pink	4610100	**14-386-08**	638.00
5 to 50µL	0.1µL	±1.5/±5%	0.7/2.0%	250 Univ., 200 Ext.	Yellow	4610120	**14-386-09**	638.00
30 to 300µL	1µL	±1/±5%	0.3/2.0%	300, Flex 300	Orange	4610140	**14-386-12**	638.00
12-Channel								
1 to 10µL	0.1µL	±2.4/±12%	1.6/8.0%	10, 20, 50	Pink	4610110	**14-386-13**	781.00
5 to 50µL	0.1µL	±1.5/±5%	0.7/2.0%	250 Univ., 200 Ext.	Yellow	4610130	**14-386-14**	781.00
30 to 300µL	1µL	±1/±5%	0.3/2.0%	300, Flex 300	Orange	4610150	**14-386-15**	781.00
16-Channel								
5 to 50µL	0.1µL	±1.5/±5%	0.7/2.0%	50	Turquoise	4610170	**14-386-16**	842.00

† When a range is given, the first value applies to the smallest volume in the stated range; the second, to the largest volume.

Thermo SCIENTIFIC

Finntip* Flex Tips

The Finntip Flex system consists of a new generation of easy-to-use 300, 1000 and 1200µL tips

Finntip Flex 300 Rack

The latest breakthrough in pipet tip technology, the Finntip Flex system offers flexible, soft and sophisticated high-end tips for discerning users. All elements in the system have been designed to fulfill the most demanding requirements for ergonomics and flexibility in pipetting tasks at today's fast-paced laboratories.

Benefits

- Excellent for single and multichannel pipetting
- Available in three volume ranges: 5-300, 50-1000, and 50-1200µL
- Sterile tips are supplied in vacuum sealed, sterilized, 10 x 96 rack
- Save space with refills

Softer Tip

- The soft tip reduces the amount of force needed to attach and eject tips, significantly lowering the risk of repetitive stress injury (RSI)
- It also ensures a better seal with the pipetter module, ensuring higher accuracy and precision

Slip-free rack

- New nonslip operating rack has been designed as a result of direct feedback from laboratory personnel around the world
- The see-through cover is easy to open with one hand, leaving the other hand free to perform other tasks
- Thanks to the new sturdy base and slip-proof feet, the rack stays put, allowing you to easily yet firmly attach the tip
- The rack's attractive new design is fresh and compact—a welcome addition to any lab

Volume	Packaging	Mfr. No.	Cat. No.	Pack of
300µL	Rack, 10 × 96	94060510	**14-387-70**	960/67.50
300µL	Rack, 10 × 96, sterile	94060513	**14-387-71**	960/77.50
300µL	Rack, 1×96 + 20×96 refill	94060516	**14-387-72**	2016/118.50
300µL	Refill, 20 × 96	94060517	**14-387-73**	1920/112.50
1000µL	Rack, 10 × 96	94060710	**14-387-84**	960/64.00
1000µL	Rack, 10 × 96, sterile	94060713	**14-387-85**	960/79.00
1000µL	Rack, 1×96 + 16×96 refill	94060716	**14-387-86**	1632/113.00
1000µL	Refill, 16 × 96	94060717	**14-387-87**	1536/108.00
1200µL	Rack, 10 × 96	94060810	**14-387-82**	960/97.50
1200µL	Rack, 10 × 96, sterile	94060813	**14-387-83**	960/117.50

Thermo SCIENTIFIC

Finntip* Flex Filter Tips

Finntip Flex filters effectively eliminate the risk of cross-contamination

Finntip Flex 1000 Rack

Combine the ergonomics of a standard Finntip Flex pipet tip and the safety of a filter tip. Free from DNA, DNase and RNase, these sterile tips are essential where cross contamination is a major concern.

- Ideal for use in research applications such as biomolecular assays
- Full sample recovery after accidental ingress, without any loss of integrity
- Certified to be free from DNA, DNase, RNA and endotoxins
- Available in 30, 100, 300, 1000 and 1200µL volumes
- Ideal for PCR and pipetting of radioactive and infectious samples
- Filters, made of an inert nonsealing polyethylene matrix, are effective at eliminating carry-over contamination from liquids and aerosols between pipet and tip
- Supplied in vacuum sealed sterilized tip racks

Volume	Packaging	Mfr. No.	Cat. No.	Pack of
30µL	Rack, 10 × 96, sterile	94056510	**14-386-204**	960/123.00
100µL	Rack, 10 × 96, sterile	94056520	**14-386-205**	960/123.00
300µL	Rack, 10 × 96, sterile	94056580	**14-386-206**	960/123.00
1000µL	Rack, 10 × 96, sterile	94056710	**14-386-207**	960/142.00
1200µL	Rack, 10 × 96, sterile	94056810	**14-386-208**	960/174.00

Thermo
SCIENTIFIC

Revco* Ultima* PLUS -86°C Upright Freezers

Advanced control platform for labs requiring sophisticated monitoring, alarm and communication functions

Offers maximum sample protection and peace of mind. Upright capacities range from 17 to 25 cu. ft. for storage flexibility. Plus, these units offer 20% more heat removal capacity, 15% less power consumption, 15% less heat emission, and 40% less noise than other ultralow-temperature freezers.

- Precise temperature control from -86° to -50°C, adjustable in 1°C increments
- Easy-to-read LED door-mounted at eye level, with touchpad data entry

Monitoring System

- On-Board Diagnostics continuously monitor sensors to ensure proper performance
- Life-Guard Alert monitors compressor performance, automatically adjusts to internal and external conditions
- Clean Filter, Alarm Battery Low and Voltage indicators

Alarm System

- Key-operated main power and alarm switch lock temperature and alarm setpoints
- Control Setpoint sets cabinet temperature, Cabinet Temperature displays the temperature
- Audible/visual power and temperature failure alarms automatically activate during a temperature deviation
- Automatic Incident Monitor (AIM) identifies temperature deviation due to power or temperature failure
- Time Delay feature delays restart after power failure
- Extreme Ambient Alert warns if room temperature may affect performance condition
- Alarm Test simulates temperature alarm
- Alarm Reset mutes audible alarm and resets AIM
- Battery backup supplies control panel in case of power failure

Patented Refrigeration System

- CFC-free DuPont* low-stage refrigerants
- 1hp industrial-grade compressors
- Downfeed evaporator
- Washable condenser filter

Construction

- Voltage Buck/Boost corrects line voltage into the unit
- Low Voltage Surge Protection minimizes voltage spikes
- Remote alarm contacts for external alarm/monitoring system

13-989-719 with optional built-in Temperature Chart Recorder.

- Two 1" (2.5cm) dia. access ports
- RS-232 data port
- High-strength steel cabinet with corrosion-resistant coating
- Minimum 5" (127mm) CFC-free, foamed-in-place urethane insulation (outer door: minimum 3½" [89mm])
- Integrated Cryolatch* door handle for one-handed operation
- Built-in key lock (padlock compatible)
- Outer door gasket seals with five points of sealing contact
- Inner doors are high-impact ABS plastic with recessed handles
- Stainless-steel interior shelves
- Heavy-duty 2" (5cm) locking, tandem wheel casters

ORDERING INFORMATION:

Optional built-in Temperature Chart Recorder (7-day, 6 dia.) and/or LN_2/CO_2 Backup System must be specified at time of order. Freestanding LN_2/CO_2 Backup System also available. Contact your Fisher Scientific Customer Service Representative for more information.

WARRANTY:

Two years, parts and labor

CERTIFICATIONS:

Meet NEMA, UL61010-1, UL471, CUL, CE, TUV, IEC60335-2-89/Climate Class T (Tropical) criteria

Interior D x W x H	Exterior L x W x H	Electrical Requirements	Amps/ Breaker	NEMA Plug	Shipping Weight	Mfr. No.	Cat. No.	Each
17.2 cu. ft. (487L)								
25 × 23½ × 50½" (63.5 × 59.7 × 128.3cm)	35½ × 36¾ × 77⅞" (90.1 × 93.1 × 197.5cm)	115V 60Hz	16/20	5-20R	720 lb. (325kg)	ULT1786 10 A	**13-989-717**	14,278.00
25 × 23½ × 50½" (63.5 × 59.7 × 128.3cm)	35½ × 36¾ × 77⅞" (90.1 × 93.1 × 197.5cm)	208-230V 60Hz	12/15	6-15P	720 lb. (325kg)	ULT1786 10 D	**13-989-718**	14,278.00
20.2 cu. ft. (572L)								
24⅜ × 28½ × 50½" (61.6 × 72.4 × 128.3cm)	36¼ × 41¾ × 77⅞" (92 × 105.8 × 197.5cm)	115V 60Hz	16/20	5-20R	770 lb. (349kg)	ULT2186 10 A	**13-989-719**	14,928.00
24⅜ × 28½ × 50½" (61.6 × 72.4 × 128.3cm)	36¼ × 41¾ × 77⅞" (92 × 105.8 × 197.5cm)	208-230V 60Hz	12/15	6-15P	770 lb. (349kg)	ULT2186 10 D	**13-989-720**	14,928.00
24.4 cu. ft. (691L)								
24⅜ × 34½ × 50½" (61.6 × 87.6 × 128.3cm)	36¼ × 47¾ × 77⅞" (920 × 121 × 197.5cm)	115V 60Hz	16/20	5-20R	830 lb. (376kg)	ULT2586 10 A	**13-989-721**	15,685.00
24⅜ × 34½ × 50½" (61.6 × 87.6 × 128.3cm)	36¼ × 47¾ × 77⅞" (920 × 121 × 197.5cm)	208-230V 60Hz	12/15	6-15P	830 lb. (376kg)	ULT2586 10 D	**13-989-722**	15,685.00

*Trademark. See Trademark Reference.

Thermo
SCIENTIFIC

Revco* General-Purpose Lab Refrigerators

With cabinet sizes to fit your varying space and storage requirements, Thermo Scientific Revco laboratory refrigerators are available in capacities from 4.9 to 78.8 cu. ft.

- Adjustable temperatures between 1° and 8°C (factory preset at 4°C)
- Automatic defrost and condensate removal

IntrLogic* Microprocessor Control

- Digital electronic technology designed to simplify operation and deliver greater accuracy
- Icon-based controls
- Large, easy-to-read digital display of temperature within 0.1°C
- Graphic thermometer is steady green when temperature is normal, flashes top bar for overtemperature, flashes bulb for undertemperature
- Sensor automatically initiates defrost cycle on demand, eliminating need for a defrost timer, minimizing frost buildup, and optimizing coil efficiency

Alarm System

- Audible/visual warnings for temperature deviations or power failure
- Key-operated ON/OFF/ALARM ON master switch for setpoint security
- Push-button alarm test and remote alarm contacts
- Alarm silence, ringback and auto reset
- Controller battery backup system
- Alarm setpoints are preset to warn of temperature deviation at 5.5°C overtemperature and 1.5°C undertemperature

Construction

- Positive forced-air circulation systems
- Industrial-grade cabinet construction and compressors
- High-density CFC-free urethane foam insulation
- Self-closing, key-locked doors
- Zinc-plated, open-wire shelves adjustable in 1" (2.5cm) increments
- Cold-rolled steel interior and exterior finished with high-impact powder paint coating
- Interior lights with door-activated ON/OFF switch, independent switch on control panel, adjustable leveling feet (except 4.9 cu. ft. undercounter model)

Thermo
REVCO

- 45.8 cu. ft. (1297L) units have double sliding glass doors, base-mounted controls and refrigeration systems, independent switch-activated lights, and dual-wheel 2" (5cm) casters instead of leveling feet
- Undercounter model has a 1" (2.5cm) dia. access port with plug

ORDERING INFORMATION:

Alarm systems, temperature chart recorders and power monitors are available separately. Other voltages are available; contact your Fisher Scientific Customer Service Representative for more information.

WARRANTY:

Two years parts and labor, U.S. and Canada only

COMPLIANCE:

UL and cUL listed. TUV approved. CE marked.

Capacity†	No. of Doors/Shelves	Interior D x W x H†	Exterior L x W x H†	Shipping Weight	Electrical Requirements	Amps/ Breaker	NEMA Plug	Mfr. No.	Cat. No.	Each
Undercounter										
4.9 cu. ft. (139L)	1 solid/3	20 × 20 × 20" (51 × 51 × 51cm)	26 × 24 × 33$^{3}/_{8}$" (66 × 61 × 85cm)	212 lb. (96kg)	115V 60Hz	8/15	5-15P	REL 404A	**13-990-156**	4325.00
Space Saver										
11.5 cu. ft. (326L)	1 solid/4	21 × 20 × 52" (55 × 51 × 133cm)	28$^{3}/_{4}$ × 24 × 72" (73 × 61 × 183cm)	280 lb. (127kg)	115V 60Hz	9.4/15	5-15P	REL 1204A	**13-991-89**	4611.00
Upright										
23.3 cu. ft. (659L)	1 solid/4	29 × 24 × 58" (74 × 61 × 147cm)	35$^{1}/_{2}$ × 28 × 77$^{1}/_{2}$" (90 × 71 × 197cm)	405 lb. (184kg)	115V 60Hz	9.4/15	5-15P	REL 2304A	**13-991-52**	5422.00
					208/230V 60Hz	6/15	6-15P	REL 2304D	**13-991-1**	5422.00
29.2 cu. ft. (826L)	1 solid/4	29 × 30 × 58" (74 × 76 × 147cm)	35$^{1}/_{2}$ × 34 × 77$^{1}/_{2}$" (90 × 86 × 197cm)	435 lb. (197kg)	115V 60Hz	9.4/15	5-15P	REL 3004A	**13-991-130**	6394.00
					208/230V 60Hz	6/15	6-15P	REL 3004D	**13-991-131**	6394.00
45.8 cu. ft. (1297L)	2 sliding glass/8	26 × 52 × 58" (66 × 132 × 147cm)	35 × 56$^{1}/_{2}$ × 77$^{1}/_{2}$" (89 × 144 × 197cm)	670 lb. (304kg)	115V 60Hz	15/20	5-20P	REL 4504A	**13-991-139**	7764.00
					208/230V 60Hz	8.5/15	6-15P	REL 4504D	**13-991-140**	7764.00
51.1 cu. ft. (1447L)	2 solid/8	29 × 52 × 58" (74 × 132 × 147cm)	35$^{1}/_{2}$ × 56$^{1}/_{2}$ × 77$^{1}/_{2}$" (90 × 144 × 197cm)	585 lb. (265kg)	115V 60Hz	15/20	5-20P	REL 5004A	**13-991-53**	7422.00
					208/230V 60Hz	8.5/15	6-15P	REL 5004D	**13-991-2**	7422.00
78.8 cu. ft. (2231L)	3 solid/12	29 × 81 × 58" (74 × 206 × 147cm)	35$^{1}/_{2}$ × 85 × 77$^{1}/_{2}$" (90 × 216 × 197cm)	805 lb. (365kg)	115V 60Hz	16/20	5-20P	REL 7504A	**13-991-3**	9646.00
					208/230V 60Hz	10.5/15	6-15P	REL 7504D	**13-991-4**	9646.00

† *Published interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.*

Thermo SCIENTIFIC

Evolution* UV-Visible Spectrophotometers

High performance optical design for reliable results

Thermo Scientifc* Evolution* 300 UV-Vis Spectrophotometer

14-386-404

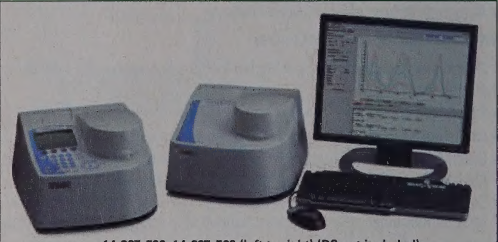
A true double-beam design and long lifetime xenon lamp ensure the most reliable analysis of samples

- Large sample compartment easily accommodates over 30 accessories
- Long lifetime, quiet xenon lamp is guaranteed for three years of maintenance-free performance
- Smart Accessories* can be installed and removed without restarting the instrument. Accessories are instantly detected and Local Control or PC software is configured automatically
- Unique serial number of the accessory is recorded for comprehensive event logs and audit trail capabilities
- Optional mercury lamp accessory provides primary standard for wavelength accuracy recommended by the USP, EP, and the ASTM
- All common applications such as scanning, fixed wavelength analysis, and kinetics, controlled directly from Local Control software
- Available with Thermo Scientific VISION*pro** software for general research and QC laboratories series or Thermo Scientific VISION*security** for laboratories requiring 21 CFR Part 11 compliance
- PC Control analyzer packages available for enzymatic food analysis, color, and materials calculations

Description	Mfr. No.	Cat. No.	Each
Local Control	10300301	**14-386-404**	13,339.00
Local Control w/Internal Graphic Printer	10300401	**14-386-405**	13,648.00
PC†	10300501	**14-386-408**	9995.00
PC w/Thermo Scientific VISION*pro* Software	10300201	**14-386-407**	11,511.00
PC w/Thermo Scientific VISION*security* Software	10300101	**14-386-406**	12,314.00

† Select optional software

Thermo Scientific* Evolution* 60 UV-Vis Spectrophotometer



14-387-500, 14-387-502 (left to right) (PC not included)

Flexible, cost-efficient system designed for a wide range of laboratory applications—from routine to research

- Highly accurate instrument with fixed 1.0nm bandpass assures full compliance with regulatory requirements.
- Automatic cell changer controlled by built-in Local Control or PC Control software.
- Cell changer easily removed to accommodate optional accessories††
- Compact design saves valuable space for additional laboratory equipment
- Maintenance-free operation including xenon lamp with 3-year guarantee

Versatile system choices

- Easy-to-use Local Control embedded software or Thermo Scientific VISION*lite** PC software offers intuitive method setup, analysis, reporting, and calculation capabilities
- Biochemical tests for DNA, RNA and protein are included in the Local Control embedded software
- PC Control analyzer packages for enzymatic food analysis, color, and materials calculations

Description	Mfr. No.	Cat. No.	Each
Local Control, 120V	840189600	**14-387-500**	6350.00
Local Control w/printer,120V	840189700	**14-387-501**	6750.00
PC, 120V	840189800	**14-387-502**	5750.00

†† Optional Peltier temperature control and fiber-optic sampling

Thermo Scientific* Evolution* 600 UV-Vis Spectrophotometer

Designed for laboratories demanding sensitivity and high performance

A total analysis solution for applications in materials science, spectroscopy research, optics, color analysis, and remote measurements with fiber optics.

- Red-sensitive photomultiplier tube (PMT) detector
- True double-beam design
- Comprehensive calibration routine
- Superior wavelength accuracy over entire spectral range
- Large sample compartment
- Wide beam separation
- Wide selection of accessories for demanding samples
- PC Control analyzer packages available for enzymatic food analysis, color, and materials calculations

14-386-401 (PC not included)

Description	Mfr. No.	Cat. No.	Each
Local Control	10600301	**14-386-400**	14,950.00
PC†	10600501	**14-386-401**	14,000.00
PC w/Thermo Scientific VISION*pro* Software	10600201	**14-386-403**	14,450.00
PC w/Thermo Scientific VISION*security* Software	10600101	**14-386-402**	15,250.00

† Select optional software

Fisherbrand Disposable Cuvets

Select polystyrene cuvets for assays in visible spectral range (340 to 750nm). For accuracy throughout UV/Vis range (285 to 750nm), choose cuvets made from a superior grade of methacrylate.

14-955-125

14-955-129

14-955-127

- Disposable 10mm pathlength cuvets designed for visible and UV/Vis assays
- Clear four-sided cuvets are ideal for fluorimetry and nephelometry, as well as spectrophotometry
- Scale down assay volumes and save on reagents by using semimicro cuvets with capacity to 1.5mL
- Molded-in arrow indicates direction of transmission on standard and semimicro cuvets—helping assure uniformity
- Each case contains cuvets with same mold impression number—assuring precision between samples—standard deviation is <±0.005 extinction units between cuvets

ORDERING INFORMATION:

Packaged 100 cuvets per stackable tray; five trays to a case. Outside dimensions: 12L × 12W × 45mmH.

Cuvet Style	Material	Lightpath	Capacity	Cat. No.	Case of 500
Standard	Polystyrene	10mm	4.5mL	**14-955-125**	127.46
	Methacrylate	10mm	4.5mL	**14-955-126**	125.80
Semimicro	Polystyrene	10mm	1.5mL	**14-955-127**	99.99
	Methacrylate	10mm	1.5mL	**14-955-128**	135.01
Four-Clear-Sided	Polystyrene	10mm	4.5mL	**14-955-129**	110.58
	Methacrylate	10mm	4.5mL	**14-955-130**	118.61

TRANSMITTANCE VALUES

Wavelength (nm)	% Transmission	
	Polystyrene	Methacrylate
800	88	90
700	88	90
600	85	90
500	85	90
400	85	90
380	85	90
360	80	89
350	80	88
340	75	86
320	65	85
300	35	82
280	----	55

UVP BioDoc-It* Imaging Workstations

Stand-alone gel documentation workstations for fluorescent and colorimetric imaging

UVP97-0178-01

Ideal for routine acquisition of DNA and protein gels and for multiple-user laboratories with large volume image capture requirements. No computer required! Network connectivity is available for image transfer.

CCD Camera

- On-chip interline transfer CCD sensor
- Composite monochrome output with 752 × 582 PAL
- 8-48 zoom lens
- UV and IR bandpass locking filters
- Sensitivity to 0.1ng of Ethidium Bromide-stained DNA

Integrated processor and LCD monitor

- Six-button, touch-control keypad controls camera integration
- Display live preview of images on the integrated 6.4" flat panel LCD
- Autosave images in TIFF and JPEG formats to either memory card or network retrievable storage
- Unique gel window opens for quick sample viewing without opening the door
- Side access doors allow moving or cutting gels without opening the front door

INCLUDES:

8-bit monochrome CCD camera; LCD viewing screen; CompactFlash* memory card (64mb) and card reader to save and transfer images; compact 3-door darkroom with overhead white light access door and unique UV-blocking gel viewer; choice of single- or multiple-wavelength UV transilluminators or FirstLight* Uniform UV illuminator; easily accessible filter tray for quick exchange of Ethidium Bromide filters

BioDoc-It w/ Transilluminator	Transilluminator UV Wavelength, Filter Area	Electrical Reqts.	Cat. No.	Each
BioDoc-It System, M-20	302nm, 20 × 20cm	115V 60Hz	**UVP97-0182-01**	6545.88
	302nm, 20 × 20cm	230V 50Hz	**UVP97-0182-02**	6545.88
BioDoc-It System, M-26	302nm, 21 × 26cm	115V 60Hz	**UVP97-0183-01**	6703.06
	302nm, 21 × 26cm	230V 50Hz	**UVP97-0183-02**	6703.06
BioDoc-It System, M-26X	302nm, 25 × 26cm	115V 60Hz	**UVP97-0178-01**	6859.37
	302nm, 25 × 26cm	230V 50Hz	**UVP97-0178-02**	6859.37
BioDoc-It System, LM-20E	254/302nm, 20 × 20cm	115V 60Hz	**UVP97-0174-01**	6681.74
	254/302nm, 20 × 20cm	230V 50Hz	**UVP97-0174-02**	6681.74
BioDoc-It System, LM-26E	254/302nm, 21 × 26cm	115V 60Hz	**UVP97-0175-01**	6859.37
	254/302nm, 21 × 26cm	230V 50Hz	**UVP97-0175-02**	6859.37
BioDoc-It System, LMS-20E	254/302/365nm, 20 × 20cm	115V 60Hz	**UVP97-0176-01**	7277.55
	254/302/365nm, 20 × 20cm	230V 50Hz	**UVP97-0176-02**	7277.55
BioDoc-It System, LMS-26E	254/302/365nm, 21 × 26cm	115V 60Hz	**UVP97-0177-01**	7486.64
	254/302/365nm, 21 × 26cm	230V 50Hz	**UVP97-0177-02**	7486.64
BioDoc-It System, FI-20	302nm, 20 × 20cm	115V 60Hz	**UVP97-0190-01**	7480.55
	302nm, 20 × 20cm	230V 50Hz	**UVP97-0190-02**	7480.55
BioDoc-It System, FI-26	302nm, 21 × 26cm	115V 60Hz	**UVP97-0189-01**	7683.55
	302nm, 21 × 26cm	230V 50Hz	**UVP97-0189-02**	7683.55
BioDoc-It System, FI-26X	302nm, 25 × 26cm	115V 60Hz	**UVP97-0179-01**	7886.55
	302nm, 25 × 26cm	230V 50Hz	**UVP97-0179-02**	7886.55

Whatman

Protran* Blotting Membrane Products

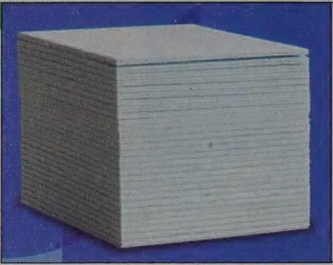
Whatman offers an extensive line of blotting products for all of your application requirements. Our selection includes premium blotting membranes and blotting devices for screening many samples on one membrane. We also offer circular membranes in a variety of membrane types, which are ideal for colony hybridization and plaque lift applications.

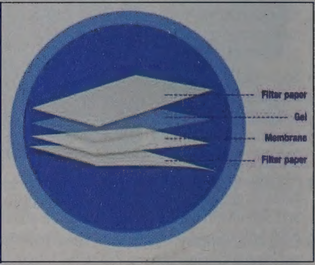
- Universal membrane suitable for Western, Southern, and Northern blotting
- Hydrophilic, so no prewetting with methanol is required
- High binding capacity and very low background for superior signal-to-noise ratios without stringent washing conditions
- Compatible with all common detection methods, including radioactive, colorimetric, fluorescent, and chemiluminescent
- Provide excellent shelf-life for proteins—proteins maintain molecular recognition activity for up to five years

Protran* Blotting Sandwiches

Available in sizes that match the most commonly used precast gels

- Consist of Protran transfer membrane between 3MM CHR blotting paper
- Precut for speed and convenience





Description	Dimensions	Mfr. No.	Cat. No.	Pack of 20
0.20µm BA83/3MM CHR	7 × 8.5cm	10485376	**09-925-102**	121.58
0.20µm BA83/3MM CHR	8.5 × 13.5cm	10485377	**09-925-103**	234.61
0.45µm BA85/3MM CHR	7 × 8.5cm	10485374	**09-925-100**	100.65
0.45µm BA85/3MM CHR	8.5 × 13.5cm	10485375	**09-925-101**	193.99

Protran* Blotting Rolls

100% pure nitrocellulose to ensure the highest binding capacity possible

- Three pore sizes available—0.45µm is ideal for larger molecular weight samples, 0.2µm ensures retention of samples below 20kDa, 0.1µm is used for molecules below 7kDa

Protran BA85
Whatman
09-301-108

Format	Dimensions	Mfr. No.	Cat. No.	Each
0.1µm Protran-BA79				
Rolls	30cm × 3m	10402096	**09-301-120**	276.42
0.2µm Protran-BA83				
Rolls	15cm × 3m	10402468	**09-301-124**	185.74
Rolls	20cm × 3m	10402495	**09-301-128**	214.40
Rolls	30cm × 3m	10401396	**09-301-115**	315.59
0.45µm Protran-BA85				
Rolls	15cm × 3m	10402594	**09-301-137**	167.44
Rolls	20cm × 3m	10401197	**09-301-109**	209.07
Rolls	30cm × 3m	10401196	**09-301-108**	260.49

Whatman® 3MM CHR Chromatography Paper

Relatively thick with a high alpha cellulose content

CHROMATOGRAPHY PAPER
3MM CHR
Whatman®

05-716 Series

0.34mm, grade 3MM chromatography paper is manufactured entirely from cotton linters that have an alpha cellulose content of at least 98%.

- Smooth surface
- No "paper making" additives—the final organic purity of these chromatography grade papers represents the highest level that can be achieved without oxidation and degradation of the cellulose fibers
- Medium flowrate: 130mm/30 min. (water)
- Widely used for electrophoresis, general chromatography, and blotting applications

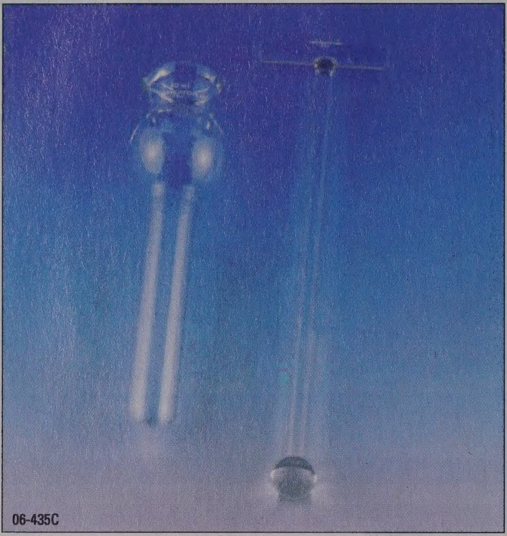
Size	Mfr. No.	Cat. No.	Each
Sheets in Packs of 100			
10.2 x 13.3cm	3030-6189	**05-716-6H**	16.28
11 × 14cm	3030-6185	**05-716-6D**	18.95
12 x 14cm	3030-6132	**05-716-6C**	20.39
15 × 17.5cm	3030-153	**05-716-3D**	30.18
15 x 20cm	3030-6188	**05-716-6G**	36.77
15.2 x 20.3cm	3030-6187	**05-716-6F**	37.49
18 x 34cm	3030-221	**05-716-3E**	71.25
20 x 20cm	3030-861	**05-716-3V**	46.77
20 x 25cm	3030-866	**05-716-6B**	58.42
26 x 41cm	3030-6461	**05-713-336**	117.75
35 x 43cm	3030-347	**05-716-6A**	157.91
35 x 45cm	3030-392	**05-716-3F**	145.85
46 x 57cm	3030-917	**05-714-5**	275.00
58 x 68cm	3030-931	**05-716-3W**	439.83
Rolls			
2cm × 100m	3030-614	**05-716-3A**	36.46
3.8cm × 90m	3030-651	**05-716-3B**	53.46
7.5cm × 100m	3030-662	**05-716-3M**	126.33
10cm × 100m	3030-672	**05-716-3N**	159.53
12.5cm × 100m	3030-675	**05-716-3P**	185.82
15cm × 100m	3030-681	**05-716-3Q**	219.74
19cm × 100m	3030-690	**05-716-3R**	225.67
23cm × 100m	3030-700	**05-716-3S**	272.83
27cm × 100m	3030-704	**05-716-3T**	304.49

WHEATON Science Products

Wheaton Tissue Grinders

All Wheaton Tissue Grinders are made from 33 low extractable borosilicate glass, which meets ASTM* Type I, Class A and USP Type I standards.

Dounce Tissue Grinders



06-435C

Designed to retain a high percentage of cell nuclei, mitochondria, and proteins in soft tissues or cell suspensions

- Ideal for enzyme studies
- Sample covers the pestle ball, preventing heat buildup by reducing friction against the mortar
- Mortar features large reservoir and pouring lip
- Supplied with "loose" and "tight" pestles
- Tight pestle clearance: 0.0020 ±0.001" (0.05 ±0.025mm)
- Loose pestle clearance: 0.114 ±0.001" (0.114 ±0.025mm)

Working Capacity	Tube O.D. × L	Overall Length	Mfr. No.	Cat. No.	Case of 2
1mL	11 × 48mm	125mm	357538	**06-434**	143.42
7mL	13 × 82mm	175mm	357542	**06-435A**	89.50
15mL	22 × 94mm	210mm	357544	**06-435B**	106.56
40mL	32 × 140mm	285mm	357546	**06-435C**	132.21

LOOKNG FOR MORE?

For additional information on other Wheaton Tissue Grinders...

Visit www.fishersci.com and search for Tissue Grinders

Potter-Elvehjem Tissue Grinders

08-414-10 Series

Choose grinders with or without plastic safety coating

- Interchangeable parts
- Stainless-steel rod can be inserted in an electric overhead stirrer
- PTFE pestle bottom conforms exactly to tube bottom; clearance of approximately 0.1 to 0.15mm
- Transparent plastic coating on Safe-Grind* tissue grinders protects mortar from becoming scratched, improves grip, and contains homogenate in the case of tube breakage
- Autoclavable
- Rod dimensions, 1/4" diameter (6mm)

Working Capacity	Tube O.D. × L	Overall Length	Mfr. No.	Cat. No.	Case of 2
Safe-Grind Models					
2mL	11 × 45mm	203mm	358003	**08-414-16A**	138.42
5mL	13 × 66mm	219mm	358005	**08-414-16C**	140.09
10mL	16 × 74mm	219mm	358007	**08-414-19**	142.17
15mL	19 × 84mm	219mm	358009	**08-414-16G**	162.52
30mL	24 × 118mm	266mm	358011	**08-414-16J**	187.62
55mL	30 × 130mm	266mm	358013	**08-414-16M**	221.90
Models Without Plastic Coating					
2mL	11 × 45mm	203mm	358029	**22-290-066**	138.89
5mL	13 × 66mm	219mm	358034	**22-290-067**	140.60
10mL	16 × 74mm	219mm	358039	**08-414-14A**	142.72
15mL	19 × 84mm	219mm	358044	**08-414-14B**	162.84
30mL	24 × 118mm	266mm	358049	**08-414-14C**	189.64
55mL	30 × 130mm	266mm	358054	**08-414-14D**	225.45

Tenbroeck Tissue Grinder

08-414 Series

With expanded reservoir and pouring lip

- Can be operated by hand or slow-speed motor
- Hollow handle permits packing with ice to reduce heat buildup
- Clearance between pestle and tube is approximately 0.12mm

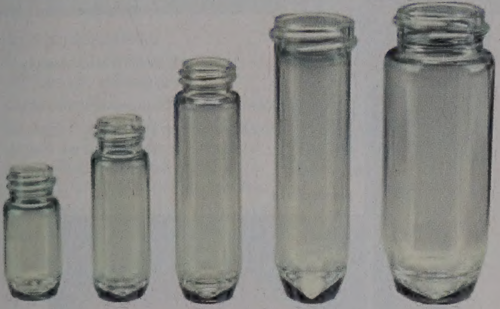
Working Capacity	Tube O.D. × L	Overall Length	Mfr. No.	Cat. No.	Case of 2
1mL	11 × 48mm	140mm	357421	**08-414-18**	103.03
2mL	11 × 50mm	140mm	357422	**08-414-13A**	129.72
7mL	16 × 82mm	190mm	357424	**08-414-13B**	134.27
15mL	22 × 94mm	250mm	357426	**08-414-13C**	145.55
40mL	32 × 140mm	320mm	357428	**08-414-13D**	188.11

*Trademark. See Trademark Reference.

WHEATON Science Products

E-Z Ex-Traction* Vials

E-Z Ex-Traction Vials from Wheaton combine the best attributes of high recovery vials with a specially designed bottom to provide the optimum benefits to users of automated or manual sample storage and sample handling systems in compound or biological sample applications. Precision manufactured from low extractable borosilicate glass, E-Z Ex-Traction Vials meet ASTM* Type I, Class A and USP Type I standards.



For collection, automated handling, storage and maximum retrieval of samples

- Large, smooth, flat bottom surface provides greater stability and optional 2D bar code placement
- Conical well design ensures maximum recovery of high value samples
- Manufactured for fail-safe operation in automated sample handling and storage systems
- Type I Class A grade borosilicate glass prevents changes in pH and maintains purity of contents
- Closures available separately

Capacity	Dia. × H	Cap Size (mm)	Mfr. No.	Cat. No.	Case of
2mL	15 × 32mm	13-425	W224601	**02-927-123**	250/458.00
4mL	15 × 45mm	13-425	W224613	**02-927-125**	250/468.00
8mL	16.75 × 60mm	15-425	W224618	**02-927-127**	250/485.00
10mL†	19 × 70mm	22-400	W224630	**02-927-129**	100/212.00
20mL	26.5 × 67mm	22-400	W224634	**02-927-131**	100/245.00

† 10mL shoulderless vial provides wider opening for sample retrieval and dispensing.

LOOKING TO BAR CODE YOUR VIALS?

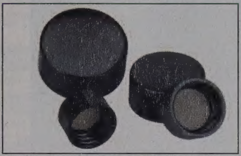
SciLutions* Value Added Services include bar coding, surface treatment, critical cleaning and custom packaging. Ask your Wheaton or Fisher Scientific Customer Service Representative for more information.

LOOKING FOR MORE?

For larger case quantities on the E-Z Ex-Traction* Vials and Screw Caps,

Visit www.fishersci.com and search for E-Z Ex-Traction

Black Phenolic Screw Caps with PTFE Faced 14B Rubber Liners



- Autoclavable
- Designed to ensure the ultimate in product safety
- Liner made of styrene-butadiene rubber faced with PTFE
- Excellent chemical resistance

Fits Vial Size	Cap Size (mm)	Mfr. No.	Cat. No.	Case of
2 and 4mL	13-425	W240820	**02-927-100**	250/147.50
8mL	15-425	W240822	**02-927-102**	250/162.00
10mL	22-400	W240824	**02-927-104**	100/125.50
20mL	22-400	240418	**06-406-35**	100/140.39

White Polypropylene Screw Caps with Bonded PTFE Faced Silicone Liner

- Autoclavable
- PTFE faced silicone liner ideal for storage, containment and retrieval of volatile solvents, sensitive compounds or corrosive chemicals

Fits Vial Size	Cap size (mm)	Mfr. No.	Cat. No.	Case of
2 and 4mL	13-425	W240830	**02-927-107**	250/147.50
8mL	15-425	W240832	**02-927-109**	250/162.00
10mL	22-400	W240834	**02-927-111**	100/125.50
20mL	22-400	W240836	**02-927-113**	100/127.00

White Polypropylene Open-Top Screw Caps with Bonded PTFE Faced Silicone Liner

- Autoclavable
- PTFE faced silicone liner ideal for storage, containment and retrieval of volatile solvents, sensitive compounds or corrosive chemicals

Fits Vial Size	Cap Size (mm)	Mfr. No.	Cat. No.	Case of
2 and 4mL	13-425	W240840	**02-927-115**	250/147.50
8mL	15-425	W240842	**02-927-117**	250/162.00
10mL	22-400	W240844	**02-927-119**	100/125.50
20mL	22-400	W240846	**02-927-121**	100/127.00

Sample Vials in Lab Files*

All Wheaton sample vials are made from 33 low-extractable borosilicate glass, which meets ASTM* Type I, Class A and USP Type I standards. Choice of Shorty Vials* or standard vials, packed in convenient file trays.

Shorty Vials

- Vials in partitioned corrugated trays
- Standard vials available in clear or amber glass
- Shorty Vials* feature low profile for greater stability
- Black phenolic screw caps are pre-attached with choice of liner

Screw Cap liner options:

- **14B rubber lined caps** are autoclavable and have substantial resistance to chemicals, acids and bases without the added cost of PTFE.
- **PTFE faced caps** are 14B rubber lined and provide an extremely inert and chemically resistant environment for harsh, sensitive and reactive samples.

Standard Vial

Lab Files

Capacity	Screw Cap Size	Liner	Mfr. No.	Cat. No.	Case of
Standard Vial, Clear					
2mL	8-425	14B Rubber	224881	**06-408A**	288/127.27
4mL	13-425	14B Rubber	224882	**06-408B**	144/68.44
8mL	15-425	14B Rubber	224884	**06-408C**	144/79.58
2mL	8-425	PTFE faced 14B Rubber	W224581	**02-911-648**	288/270.53
4mL	13-425	PTFE faced 14B Rubber	W224582	**02-911-649**	144/120.12
8mL	15-425	PTFE faced 14B Rubber	W224584	**02-911-650**	144/141.18
Standard Vial, Amber					
2mL	8-425	14B Rubber	224981	**06-412-19**	288/137.47
4mL	13-425	14B Rubber	224982	**06-412-20**	144/75.52
8mL	15-425	14B Rubber	224984	**06-412-21**	144/86.35
2mL	8-425	PTFE faced 14B Rubber	W224681	**02-911-654**	288/294.00
4mL	13-425	PTFE faced 14B Rubber	W224682	**02-911-655**	144/150.11
8mL	15-425	PTFE faced 14B Rubber	W224684	**02-911-656**	144/158.59
Shorty Vials, Clear					
2mL	13-425	14B Rubber	W225291	**02-912-506**	200/76.92
4mL	15-425	14B Rubber	W225292	**02-912-507**	200/81.92
6mL	15-425	14B Rubber	W225293	**02-912-508**	200/86.54
2mL	13-425	PTFE faced 14B Rubber	W224606	**02-912-514**	200/181.04
4mL	15-425	PTFE faced 14B Rubber	W224607	**02-912-515**	200/193.71
6mL	15-425	PTFE faced 14B Rubber	W224608	**02-912-516**	200/203.04

WHEATON Science Products

Serum Bottles, Vials and Seals

Wheaton Serum Bottles

06-406A, 06-406D, 06-406C

- High chemical durability
- Manufactured with clear and amber USP Type I borosilicate glass
- Molded bottles have excellent wall strength
- Blowback feature in the neck of the tubular vial and the specially designed bottom radius provide added strength which is important for lyophilization applications
- Shrink-wrapped packaging and partitioned modules reduce breakage
- A variety of stoppers, aluminum seals and septa are available to seal the bottles and vials
- Use the ergonomically friendly Wheaton E-Z Crimper* (see below) to crimp the aluminum seals to the bottles and vials

APPLICATIONS:

- **Lyophilization (Freeze-Drying)** — Strength and thermal conductivity make these ideal containers for this process.
- **Long- to Short-Term Storage System** — Borosilicate glass and crimp seal closures allow for optimum sterility and sample integrity, making these containers suitable for various storage and sampling needs.
- **Vaccine/Medicine Containers** — Specified by the FDA for use with injectable drugs and medicines.

Wheaton Serum Bottles and Vials conform to the requirements for Class A of the United States Pharmacopeia for Type I glass.

Capacity	Dia. × H	I.D. × O.D.	Mfr. No.	Cat. No.	Case of
Clear					
0.07 oz. (2mL)	17.5 × 35mm	7 × 13mm	223712	**06-406A**	288/129.24
¼ oz. (5mL)	23 × 47mm	13 × 20mm	223738	**06-406C**	288/137.45
⅜ oz. (10mL)	25 × 54mm	13 × 20mm	223739	**06-406D**	288/192.34
1 1/16 oz. (20mL)	32 × 58mm	13 × 20mm	223742	**06-406E**	288/234.95
1 oz. (30mL)	37 × 63mm	13 × 20mm	223743	**06-406F**	288/289.39
1 11/16 oz. (50mL)	43 × 73mm	13 × 20mm	223745	**06-406G**	288/363.13
2.0 oz. (60mL)	41 × 91mm	13 × 20mm	223746	**06-406H**	144/202.63
3 7/16 oz. (100mL)	52 × 95mm	13 × 20mm	223747	**06-406J**	144/279.24
4¼ oz. (125mL)	54 × 107mm	13 × 20mm	223748	**06-406K**	144/392.77
Amber					
¼ oz. (5mL)	23 × 47mm	13 × 20mm	223760	**06-402A**	288/247.23
⅜ oz. (10mL)	25 × 54mm	13 × 20mm	223761	**06-402B**	288/273.99
1 1/16 oz. (20mL)	32 × 58mm	13 × 20mm	223762	**06-402C**	288/310.46
1 oz. (30mL)	37 × 63mm	13 × 20mm	223763	**06-402D**	288/380.30
1 11/16 oz. (50mL)	43 × 73mm	13 × 20mm	223764	**06-402E**	288/484.35
3 7/16 oz. (100mL)	52 × 95mm	13 × 20mm	223766	**06-402F**	144/361.17

Wheaton Serum Tubing Vials

Left to right: 06-406-37, 06-446C, 06-446J, 06-446H, 06-446G

- Clear vials made from 33 expansion low extractable borosilicate glass to ensure uniform wall thickness
- Amber vials made from 55 expansion borosilicate glass
- Meet ASTM* Type 1, Class A and USP Type I standards
- Withstands extreme temperature variations
- Necks finished for aluminum crimp seals
- Blowback feature of neck and specially designed bottom radius for lyophilization applications

Capacity	Dia. × H	I.D. × O.D.	Mfr. No.	Cat. No.	Case of
Clear					
0.07 oz. (2mL)	15 × 32mm	7 × 13mm	223683	**06-406-37**	144/49.61
0.10 oz. (3mL)	17 × 38mm	7 × 13mm	223684	**06-446C**	144/50.90
0.17 oz. (5mL)	22 × 40mm	13 × 20mm	223685	**06-446D**	144/63.45
0.34 oz. (10mL)	24 × 50mm	13 × 20mm	223686	**06-406-38**	144/74.61
0.68 oz. (20mL)	31 × 58mm	13 × 20mm	223687	**06-446E**	120/87.68
Amber					
0.07 oz. (2mL)	15 × 32mm	7 × 13mm	223693	**06-446G**	144/64.41
0.17 oz. (5mL)	22 × 40mm	13 × 20mm	223695	**06-446H**	144/74.31
0.34 oz. (10mL)	24 × 50mm	13 × 20mm	223696	**06-446J**	144/92.47

Wheaton Aluminum Seals and Crimpers

Aluminum Seals

E-Z Crimper*

Mouth O.D.	Mfr. No.	Cat. No.	Price
One-piece; Aluminum Seals			
20mm	224178-01	**11-126-12**	Cs. of 1000/69.38
13mm	224182-01	**06-406-14A**	Cs. of 1000/64.38
20mm	224183-01	**06-406-14B**	Cs. of 1000/69.38
30mm	224187-01	**06-406-17**	Cs. of 1000/96.08
TFE-lined on one side; Rubber Septa			
13mm	224222-01	**06-406-16**	Cs. of 1000/353.67
20mm	224223-01	**06-406-15A**	Cs. of 1000/1032.15
Tear Off*			
20mm	224193-01	**06-406-15**	Cs. of 1000/61.94
Flip Cap			
13mm	224202	**06-406-16C**	Cs. of 1000/118.82
20mm	224203	**06-406-15B**	Cs. of 1000/175.31
Tear Cap			
20mm	224208	**06-406-15C**	Cs. of 1000/202.56
E-Z Crimper			
Attaches 30mm Aluminum Seals	224307	**06-451-122**	Ea./354.52
Attaches 13mm Flip Cap Seals	224322	**06-451-125**	Ea./288.61
Attaches 20mm Flip Cap Seals	224323	**06-451-126**	Ea./288.61

Fisher Scientific

Traceable* Conductivity Standards

From an accredited ISO 17025 A2LA Calibration Laboratory, with NIST* Traceable Certificate

09-328-1 09-328-6

Traceable Conductivity Standards are the most accurate available. Accuracy at 25°C is ±0.25 micromhos for 1, 5, and 10 micromho solutions and ±0.25% for other solutions or the uncertainty shown on the certificate, whichever is greater.

- Traceable Certificate comes with Bottle and One-Shots*
- Units on label are: micromhos/microsiemens, ohms, parts per million/total dissolved solids
- Individual temperature compensation chart supplied with each item
- Individually tested bottles are available from an ISO 17025 calibration laboratory accredited to A2LA
- Probes placed directly into One-Shots eliminate concern about external container contamination

Conductivity (µmhos)	Resistivity (megohms)	TDS (ppm)	16 oz. Bottle with NIST Certificate		16 oz. Bottle with NIST Certificate and 2LA/ISO 17025/Z540-1 accreditation		One-Shot 100mL (3½ oz.) 6 Pack with NIST Certificate	
			Cat. No.	Each	Cat. No.	Each	Cat. No.	Each
1	1.0	0.66	**15-077-945**	53.40	**15-077-946**	84.20	----	----
5	0.5	3.3	**06-664-24**	55.59	**15-077-947**	84.20	**06-664-25**	73.38
10	0.1	6.6	**09-328-1**	27.60	**15-077-948**	62.88	**09-328-6**	30.82
100	0.01	66	**09-328-2**	27.60	**15-077-949**	62.88	**09-328-7**	30.82
1000	0.001	666	**09-328-3**	27.60	**15-077-950**	62.88	**09-328-8**	30.82
1413	0.00071	933	**09-328-11**	25.71	**15-077-951**	62.88	**09-328-12**	30.82
10,000	0.0001	6666	**09-328-4**	27.60	**15-077-952**	62.88	**09-328-9**	30.82
100,000	0.00001	66,666	**09-328-5**	27.60	**15-077-953**	62.88	**09-328-10**	30.82
Assortment: one of each One-Shot except 06-664-25			----	----	----	----	**09-328-20**	42.75

Fisherbrand

Stir Bar Retrievers

Ideal pickup rods

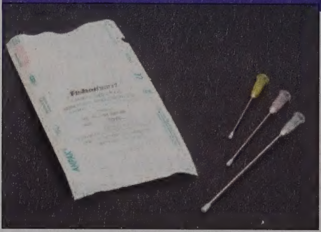
- Polypropylene magnetic stir bar retrievers
- Alnico-V magnet sealed in one end, hang-up ring on other
- ⅜" diameter (9.5mm)

Length	Cat. No.	Each	Case of 36
12" (31cm)	**14-513-69**	13.66	393.29
18" (46cm)	**14-513-70**	14.97	449.19

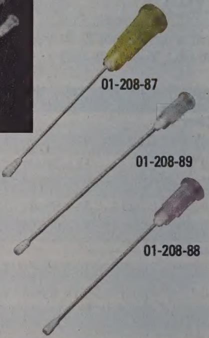
Fisherbrand

Disposable Animal Feeding Needles

For critical applications requiring single-use feeding needles



Tyvek* Pouch Packaging



- Nontoxic and nonpyrogenic
- Malleable stainless-steel tubing and silicone tip bend easily
- Plastic Luer hubs
- Sterile, packaged in Tyvek pouches, five per pouch, 20 pouches per box

Gauge/Length	Cat. No.	Pack of 100
20/38mm (1½")	**01-208-87**	313.13
18/50mm (2")	**01-208-88**	313.13
15/76mm (3")	**01-208-89**	313.13

*Trademark. See Trademark Reference.

AIR

*Fisherbrand** Dust'it* Air Duster

Powerful bulb duster forcibly blows away dust, lint, and dirt

Ideal for optical lenses, slides, circuit boards, and cuvets.

- Provides high-pressure, pinpoint jets of air exactly where desired; vary the squeeze to control delivery
- One-way inlet valve at top stops air from being drawn through tip
- Nonconductive plastic sleeve-tip prevents scratches
- Dimensions: (Dia. × H) 2¼ × 5" (5.7 × 12.7cm)
- Weight: 2 oz. (56.7g)

14-649-59

Cat. No.	Pack of 3
14-649-59	26.88

*Fisherbrand** Super Friendly Air'It* Aerosol Duster

Blows lint, dust, and loose dirt away instantly

Ideal for delicate, difficult-to-clean, and inaccessible equipment.

- Provides high-pressure, pinpointed jets of air exactly where needed—up to 3000 jets of cleaning power
- Trigger-actuated valve provides controlled delivery at 71psi
- Triple-filtered (to 0.3µm) gas is noncorrosive, nonflammable, dry, and odorless
- 5" (13cm) snorkel constructed of nonconductive polyethylene
- Size: 11 oz. (312g)

CERTIFICATIONS:
EPA designated as ozone-safe

Fisherbrand
SUPER FRIENDLY AIR'IT

23-022523

Cat. No.	Case of 6
23-022523	124.05

Decon* Jet Stream* High-Pressure Dust Remover

Removes microscopic dust from laboratory equipment

Ideal for use on negatives, microscope slides, lenses, and balances.

- Moisture-free
- Size: 11 oz. (312g)

22-281-495

Cat. No.	Each	Case of 6
22-281-495	24.52	125.75

AIR MONITORS

Millipore* 25mm Aerosol Analysis Monitors

Preloaded filter monitors

Come with plain white membranes of mixed cellulose esters, a cellulose support pad, and a three-piece housing. Average Background Count (ABC) for particles is printed on each package.

- Effective filtration area, 3.7cm^2
- Monitors come nonsterile; for vacuum only

MAWP 025 AC and AO

Type A

- For monitoring airborne particles, trace metals, and particulate fluoride
- Polystyrene housing has a 16mm center ring to distribute sample flow
- Female Luer slip vacuum connection
- Height with top section removed is 1¼" (3.2cm); with top in place, 1¾" (4.4cm)

Type B

- For asbestos and trace metals, lead, and copper
- Carbon-filled, conductive, polypropylene housing with 50mm extension cowl
- Barbed hose vacuum connection eliminates the need for a tubing adapter
- Height without top section, 3" (7.6cm); with top in place, 3⅛" (7.9cm)

COMPLIANCE:
Type B meets NIOSH specifications for airborne asbestos fiber monitoring.

ORDERING INFORMATION:
Type A is also available without membrane (M000 025 A0).

REQUIRED ACCESSORIES:
Type A requires tubing adapter with male Luer connection, XX62 000 05.

Housing	Pore Size	Membrane Surface	Cat. No.	Pack of 50
Type A	0.8µm	White, plain	MAWP 025 A0	162.00
Type B	0.8µm	White, plain	MAWP 025 AC	152.00

ACCESSORIES

Empty Monitor Cassette

For Millipore* 25mm Aerosol Analysis Monitors

Includes endcaps.

ORDERING INFORMATION:
Bulk pack.

Description	Cat. No.	Pack of 50
Monitor Case only, Type A	M000 025 A0	10.00

Millipore* 37mm Aerosol Analysis Monitors

For particulate analysis of aerosols

- Available with matched-weight membranes
- Transparent, disposable filter holders come preassembled, with MF-Millipore* mixed cellulose ester filters
- Thin cellulose support ring seals the filter between monitor sections to distribute sample flow evenly over the filter surface
- Three-part SAN (styrene acrylonitrile) nonsterile plastic housing
- Center section holds filter in place when top section is removed for open aerosol sampling
- Female Luer slip inlet and outlet
- Housing measures $1\frac{7}{16}$ dia. × $1\frac{1}{8}$"H (3.7 × 2.9cm) with top section removed; $1\frac{7}{16}$"H (3.7cm) with top in place
- Average Background Count (ABC) value is marked on each preassembled monitor package
- Effective filtration area: 9.0cm^2
- For vacuum only
- Matched-weight monitors contain two filters matched in weight to within 0.1mg, eliminating test filter preweighing in gravimetric analysis

MAWP 037 A0

ORDERING INFORMATION:

Monitor case is also available separately for use with membrane of your choice; comes with or without support ring.

Pore Size	Membrane Surface	Cat. No.	Pack of 50
Aerosol Analysis Monitors			
0.45µm	White, plain	**MHWP 037 A0**	145.00
0.8µm	White, plain	**MAWP 037 A0**	105.00
Matched Weight Monitor			
0.8µm	White, plain	**MAWP 037 AM**	320.00

ACCESSORIES

Empty Monitor Cassette

For Millipore* 37mm Aerosol Analysis Monitors

Includes red and blue plugs.

ORDERING INFORMATION:

Bulk pack.

Description	Cat. No.	Pack of 50
With Support Ring	**M000 037 A0**	90.00
Without Support Ring	**M000 037 00**	85.00

Accessories for 25mm and 37mm Millipore* Aerosol Analysis Monitors

Description	Cat. No.	Pack of
Flow-limiting Orifices	**XX50 000 00**	5/146.55
Tubing Adapter, male slip Luer	**XX62 000 05**	10/15.09

Millipore* Membrane Filter Refills and Alternatives

For 37mm monitors

Pore Size	Membrane Surface	Cat. No.	Pack of
MF-Millipore Mixed Cellulose Esters (with pads)			
0.45µm	White, plain	**HAWP 037 00**	100/113.00
0.8µm	White, plain	**AAWP 037 00**	100/97.00
0.8µm	White, plain; matched weight	**AAWP 037 PM**	50/394.00
PVC (pure medical grade polyvinyl chloride w/o backing; w/o pads)			
5.0µm	White, plain	**PVC5 037 00**	100/277.00

LOOKING FOR FILTERS?

See our Filtration section for a complete selection of Millipore* Membrane Filters.

Millipore* M Air T* Tester

Preset sampling volumes from 25 to 1000L

Lightweight sieve-impaction sampler tests microbial quality of air in accordance with USP 24 reference method for cleanrooms, barrier environments and critical filling areas.

- Samples up to 1000L in less than seven minutes
- Programmable electronics with delay timer saves airflow parameters to be reused for subsequent runs
- Timer can be set in increments of five minutes to one hour
- Low turbulence will not disrupt air currents in laminar hoods and confined spaces
- Stainless-steel, autoclavable sieve with nearly 1000 micro-perforations evenly distributes air over agar surface to minimize colony overlapping

ATAS05060 with ATSMTTD60 (sold separately)

ORDERING INFORMATION:

Dimensions (L × W × H): 4 × 5 × 10" (10.2 × 12.7 × 25.4cm).
Net weight: 4 lb. (1.8kg).

INCLUDES:

Tester, spare sieve with cover, Allen key, tripod, battery charger (110-240V 50/60Hz), carrying case and instructions. Eight rechargeable NiCd batteries permit seven hours of use on a single charge.

REQUIRED ACCESSORIES:

Millipore M Air T Agar Cassettes (sold separately)

WARRANTY:

One year

CERTIFICATIONS:

CE marked; Certificate of Calibration provided.

The small size and unique design of the M Air T Tester will not disrupt the air currents inside a laminar hood.

Description	Cat. No.	Each
M Air T Kit	**ATAS05060**	4302.00

ACCESSORIES

Millipore* M Air T* Agar Cassettes

Prefilled cassettes with SAN (styrene acrylonitrile) body

- Simple colony counting through integrated grid
- Consistent filling level and flat agar surface maintain constant surface-to-sieve ratio for reproducible results
- 20g of agar with a minimum depth of 7mm minimize water evaporation
- Cassettes are preprinted with lot number for recording and traceability
- Gamma-irradiated, disposable cassettes with edge wings position easily in tester head

COMPLIANCE:

USP and EPA compliant.

ORDERING INFORMATION:

Cassette diameter: 73mm. Package of 60 includes six bags of ten cassettes each. Double sleeve packaging for barrier environments.

INCLUDES:

Resin lids and polypropylene bottom covers

Description	Cat. No.	Pack of
Tryptic Soy Cassettes	**ATSMTTD60**	60/173.00
Empty Cassettes, EtO Sterilized	**ATSMC0114**	114/173.00

Millipore* M Air T* Tester Accessories and Replacement Parts

Description	Cat. No.	Each
Battery Charger	**ATAC05060**	164.62
Battery Pack	**ATASBAT01**	217.81
Calibration Kit	**ATACAL001**	1844.00

Whatman* EPM 2000 High-Volume Air Sampling Filters

Developed for high-volume air sampling in collection of atmospheric particulates and aerosols

09-874-69

- Selected by U.S. EPA as standard filter used in nationwide Hi-Vol air sampler network
- Pure borosilicate glass—enable detailed chemical analysis of trace pollutants with minimal interference and background
- Heat treated to remove organic traces; 99.99% efficiency for DOP 0.3µm-size particles
- Thickness: 0.45mm (18mil); weight: 85g/m^2
- Autoclavable; maximum temperature, 500°C (932°F)
- Easily handle typical commercial high-volume sampling technique (2200m^3 over 24 hours; average flowrate, 1.7m^3/min.; through exposed filter area of approximately 400cm^2)

ORDERING INFORMATION:

Come in 4.7cm diameter circles or individually numbered 8 × 10" (20.3 × 25cm) sheets.

Description	Mfr. No.	Cat. No.	Pack of 100
4.7cm circles	1882-047	**09-874-69**	36.29
8 × 10" sheets	1882-866	**09-874-67**	363.89

Millipore* Filter Forceps

Handle membrane filters without damage

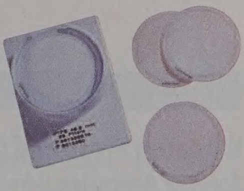
- Made from highly polished stainless steel with beveled, unserrated tips
- Sterilize by autoclaving or flaming

XX62 000 06

Cat. No.	Each
XX62 000 06	12.07

Whatman* PM 2.5 Air Monitoring Filters

Low-chemical-background filters permit sensitive, interference-free determinations



05-717-5

- For U.S. EPA PM 2.5 ambient air monitoring
- With high-purity, thin PTFE membranes
- Chemical-resistant, sequentially numbered polypropylene support rings
- Low tare mass provides for accurate gravimetric determinations
- Thermally stable design eliminates curling, keeping the membrane flat
- Filter thickness: 40µm
- Pore size: 2µm
- Manufactured under cleanroom conditions without any glues or adhesives
- Individually numbered for easy sample tracking

ORDERING INFORMATION:

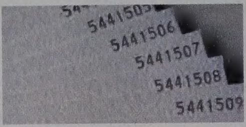
Each box of 50 filters is sequentially labeled for easy control.

Diameter	Mfr. No.	Cat. No.	Pack of 50
46.2mm	7592-104	**05-717-5**	264.88

Whatman* QM-A Quartz Air-Sampling Filters

Microfiber filters for air sampling in acidic gases, stacks, flues and aerosols at temperatures to 500°C (932°F)

- High airflow, excellent retention—ideal for PM-10 high-volume air sampling method
- Ultrahigh-purity quartz (SiO_2)
- Low in alkaline earth metals, heavy metals
- Virtually eliminate sulfate and nitrate artifacts
- Choose from discs or sequentially numbered sheets



09-873P

Description	Mfr. No.	Cat. No.	Pack of
3.2cm circles	1851-032	**09-874-87**	100/86.89
3.7cm circles	1851-037	**09-874-88**	100/104.42
4.7cm circles	1851-047	**09-874-89**	100/113.74
5.5cm circles	1851-055	**09-874-90**	100/126.30
8 × 10" sheets	1851-865	**09-916-7**	25/246.59
8 × 10" sheets	1851-8866	**09-873P**	100/1002.09

ALUMINUM FOIL

*Fisherbrand** Aluminum Foil

For sealing, weighing, and transferring samples

In rolls or sheets. Box with outer bar is supplied with all rolls except 01-213.

Fisherbrand

Thickness	Width	Length	Cat. No.	Price	Case of
Rolls					
0.011mm	3" (7.6cm)	315' (96m)	**01-213**	Ea./34.60	12/373.68
0.018mm	12" (30.5cm)	25' (7.6m)	**01-213-100**	Ea./8.89	24/116.65
	12" (30.5cm)	200' (61m)	**01-213-101**	Ea./49.00	16/513.08
	12" (30.5cm)	500' (152m)	**01-213-102**	Ea./76.42	9/608.67
0.024mm	18" (46cm)	25' (7.6m)	**01-213-103**	Ea./21.56	12/182.30
	18" (46cm)	50' (15.2m)	**01-213-104**	Ea./27.64	12/274.05
	18" (46cm)	500' (152m)	**01-213-105**	Ea./152.63	----
Sheets					
0.025mm	6" (15cm)	6" (15cm)	**01-213-1**	Pk. of 1000/ 431.73	10 Pk./ 3690.00

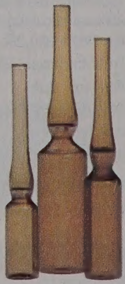
AMPULES

Wheaton Prescored Gold-Band* Amber Ampules

Protect light-sensitive samples

- Wheaton "320" amber borosilicate glass
- Prescored to eliminate filing
- Gold-Band feature indicates prescoring
- Stems can be pull sealed or tip sealed

COMPLIANCE:
Meet USP Type 1 and ASTM* Type I, Class B standards



01-215N, -215Q, and -215P

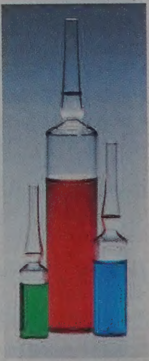
Capacity	O.D. × H	Mfr. No.	Cat. No.	Case of 144
1mL	10.5 × 67mm	176792	**01-215N**	37.54
2mL	12 × 75mm	176796	**01-215P**	37.54
5mL	16.5 × 84mm	176799	**01-215Q**	75.95

Wheaton Prescored Gold-Band* Ampules

Prescored to eliminate need for filing

- Wheaton-33* low-extractable borosilicate glass
- Gold-Band feature indicates prescoring
- Stems can be pull sealed or tip sealed

COMPLIANCE:
Meet USP Type 1 and ASTM* Type I, Class A standards



01-215 Series

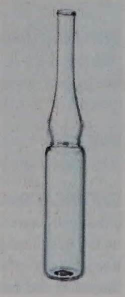
Capacity	O.D. × H	Mfr. No.	Cat. No.	Case of 144
1mL	10.5 × 67mm	176772	**01-215A**	32.48
2mL	12 × 75mm	176776	**01-215B**	32.48
5mL	16.5 × 84mm	176779	**01-215C**	51.77
10mL	19 × 107mm	176780	**01-215D**	70.14
20mL	22.5 × 130mm	176782	**01-215L**	103.41
50mL	29.5 × 175mm	176784	**01-215M**	276.72

*Trademark. See Trademark Reference.

Wheaton Cryule* Gold-Band* Cryogenic Ampules

For preservation of biological materials with liquid nitrogen

- Wheaton-33* low-extractable borosilicate glass
- Gold-Band feature indicates prescoring
- Tips of prescored ampules snap off easily without filing
- Designed for low-temperature storage and rapid thawing



06-401 Series

Capacity	O.D. x H	Mfr. No.	Cat. No.	Case of 144
Unscored				
1mL	10.5 × 61mm	651462	**06-400A**	53.34
1.5mL	11.5 × 61mm	651464	**02-911-620**	53.99
2mL	11.5 × 70mm	651466	**06-400D**	58.29
5mL	16.5 × 98mm	651469	**02-911-621**	110.86
10mL	19.5 × 114mm	651470	**02-911-622**	130.18
Prescored				
1mL	10.5 × 61mm	651482	**06-401B**	66.66
1.2mL	11.8 × 58mm	651483	**06-401C**	66.66
2mL	11.5 × 70mm	651486	**06-401D**	76.29

Wheaton Vacule* with Screw Cap

Solid black cap without liner holds stopper in place

Wheaton-33* borosilicate glass.

ORDERING INFORMATION:

Accepts stoppers 06-406-12 (for freeze drying applications) or 06-406-11B (both sold separately).

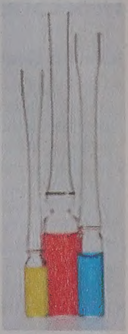
12-009-4 Series

Capacity	O.D. × H	Mfr. No.	Cat. No.	Pack of 200
5mL	22 × 45mm	651905	**12-009-40**	149.84
10mL	22 × 60mm	651907	**12-009-41**	140.63

Wheaton Prescored Gold-Band* Vacule*

For protein hydrolysis, freeze drying, microdetermination of ketones and amino acids

- Wheaton-33* low-extractable borosilicate glass
- Gold-Band feature indicates prescoring
- Long stems for convenient heat sealing under vacuum



12-006-3 Series

Capacity	O.D. × H	Approx. O.D. at Top	Mfr. No.	Cat. No.	Case of 144
2mL	11.8 × 122mm	11.75mm	651506	**12-009-36**	98.24
5mL	16.5 × 133mm	10mm	651509	**12-009-37**	137.94
10mL	19.5 × 154mm	10mm	651510	**12-009-38**	170.04

*Fisherbrand** SafeSnap* Disposable Ampule Openers

Ideal safety measure for ampule usage—especially in respiratory and blood-gas laboratories

Polyethylene ampule collars protect fingers while breaking open the scored neck of glass ampules.

To use:

- Slip the collar onto the ampule until collar rests on the widest part
- Grip the collar with thumb and forefinger while holding the upright ampule at bottom
- Break the ampule with a quick snap
- Dispose of the collar and ampule top together

01-216 Series

For Ampule Size	Cat. No.	Pack of 1000
1 to 4mL	**01-216-1**	144.36
5 to 10mL	**01-216-2**	123.44

ANEMOMETERS

Fisher Scientific* Traceable* Hot Wire Anemometer/Thermometer

Ideal for cleanrooms and environmental tests

- Miniature glass-bead thermistor provides greater precision at low air velocities; eliminates friction errors caused by rotating vanes in traditional anemometers
- Measures air velocity in five ranges: 0.2 to 20mps with a resolution of 0.1mps; 0.7 to 72kph with a resolution of 0.1kph; 40 to 3940fpm with a resolution of 1fpm; 0.5 to 44.7mph with a resolution of 0.1mph; and 0.4 to 38.8 knots with a resolution of 0.1 knots
- Accuracy is ±1% full scale plus 1 digit
- Displays temperature in user-selectable °C or °F; temperature range from 0° to 50°C (32° to 122°F) with a resolution of 0.1°C or F and accuracy of ±0.8°C (1.5°F)
- Serial RS-232 output allows the meter to be connected to any IBM*-compatible computer or datalogger
- Information can be imported to an existing database and, with the accessory Data Acquisition System, captured, displayed on monitor, and stored†
- Memory function recalls the highest and lowest readings and HOLD button freezes display for later reading

2.0
HOT WIRE ANEMOMETER

06-662-73

ORDERING INFORMATION:

Unit measures 7L × 3W × 1¼"H (17.8 × 7.6 × 3.2cm); weighs 9½ oz. (269g). Available accessories include DAS-4 Data Logger System (06-662-72) and DAS-3 Data Acquisition System (11-661-22).

INCLUDES:

Dual thermistors probe, 40" (101.6cm) cable, and six "AAA" batteries.

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST* (National Institute of Standards and Technology).

Cat. No.	Each
06-662-73†	420.56

† Unit is equipped with a sample program that allows you to store 100 readings; the complete DAS-3 Data Acquisition System or DAS-4* Data Logger System is required to transfer these readings to a computer file*

LOOKING FOR MORE ANEMOMETERS?

Fisher Scientific has many more anemometers available online for a variety of airflow measurement applications.

Visit www.fishersci.com and search for Anemometers

ANIMAL CARE

CAGES

Tecniplast* Deluxe Reusable Animal Cages

Safe, sanitary environments for mice, rats, hamsters, guinea pigs, gerbils

- Sturdy cages feature rounded corners for easy cleaning
- Corner lugs or side arms allow stacking without scratching or jamming
- Filter covers (sold separately) maintain environment for optimum animal health; lock in place to assure containment
- Durable wire lids available for several cage sizes

Polycarbonate cage 01-288-1 Series with wire lid 01-288-5 Series

- Tecniplast water bottles available for most cage sizes; fit securely beneath filter cover

Reusable Polycarbonate Cages

- Withstand temperatures to 121°C (250°F)
- Glass-like clarity with excellent impact strength
- Autoclavable

Reusable High-Temperature Polysulfone Cages

- Withstand repeated autoclaving at 134°C (273°F)
- Molded of clear, special-grade PSF to withstand higher temperatures and provide better chemical resistance

COMPLIANCE:

Meet NIH size guideline

	Reusable Polycarbonate Cages				Reusable High-Temperature Polysulfone Cages			
Cage Sizes (L × W × H)	Mfr. No.	Cat. No.	Each	Case of	Mfr. No.	Cat. No.	Each	Case of
9⅜ × 5 7/16 × 5⅛" (24 × 14 × 13cm)	1177A00139	**01-288-1A**	----	20/441.05	1177A150	**01-288-29**	38.34	20/511.09
13 × 5⅞ × 5¼" (33 × 15 × 13cm)	3700M022	**01-288-1B**	----	20/575.06	----	----	----	----
10½ × 8⅛ × 5½" (27 × 21 × 14cm)	3M01D100	**01-288-1C**	----	10/279.55	1284L150	**01-286-13B**	52.74	10/351.59
14 7/16 × 8⅛ × 5½" (37 × 21 × 14cm)	----	----	----	----	1290D150	**01-286-13H**	74.28	10/495.24
14 × 9½ × 7½" (36 × 24 × 19cm)	2000P420	**01-288-1E**	----	5/315.66	----	----	----	----
16¾ × 10½ × 6" (43 × 27 × 15cm)	3701M081	**01-288-1D**	86.26	10/575.05	1291H150	**01-286-13A**	107.84	10/718.91
16¾ × 10½ × 7½" (43 × 27 × 19cm)	3M12D900	**01-288-1H**	112.64	5/375.48	----	----	----	----
19 × 10½ × 8" (48 × 27 × 20cm)	1284L400SU	**01-288-1F**	----	5/391.39	2P15D1000	**01-286-13F**	161.77	5/539.23
23¼ × 15 3/16 × 8" (59 × 39 × 20cm)	2UN2D500R	**01-288-1G**	----	5/639.02	----	----	----	----

Accessories for Tecniplast* Deluxe Reusable Animal Cages

Filter Covers

- For an isolated environment
- Minimize temperature variations, humidity, harsh drafts, CO_2 buildup
- Promote animal health, encourage breeding
- Economical polyvinyl chloride (PVC) covers are disposable
- Sturdy, molded polycarbonate (PC) covers are reusable
- Use with disposable polyester fibers

Wire Lids

- Extra strong
- Crosswires prevent bending
- 01-288-5H wires spaced 19mm apart; all others 7mm
- Folding divider allows lid to be nested for storage
- Autoclavable
- Include protective stopper guard

	Filter Covers					Wire Lids			
For Cage Sizes (L × W × H)	**Cover Material**	**Mfr. No.**	**Cat. No.**	**Each**	**Case of**	**Mfr. No.**	**Cat. No.**	**Each**	**Case of**
9⅜ × 5⁷⁄₁₆ × 5⅛" (24 × 14 × 13cm)	PC	2000P001	**01-288-13B**	43.13	20/575.06	1264C400SU	**22-152-116**	82.67	20/1102.29
	Filters	2154F150	**01-288-9E**	----	100/75.88	----	**----**	----	----
13 × 5⅞ × 5¼" (33 × 15 × 13cm)	PC	2000P00PI	**01-288-13A**	46.73	20/623.08	2154F400SU	**01-288-21**	94.03	20/1253.70
	Filters	1264C150	**01-288-9A**	----	100/79.04	----	**----**	----	----
10½ × 8⅛× 5½" (27 × 21 × 14cm)	PVC	ACPC0056	**01-288-7C**	----	20/224.60	ACCPS1246	**01-288-5C**	91.23	10/608.18
	PC	9VENTPF01D	**01-288-13D**	46.80	10/312.03	----	**----**	----	----
	Filters	1144B401	**01-288-9D**	----	100/82.20	----	**----**	----	----
14⁷⁄₁₆ × 8⅛ × 5½" (37 × 21 × 14cm)	PC	9ARMVFH01US	**01-288-102**	----	10/455.86	1177A001	**01-288-5L**	----	10/797.24
	Filters	2150E400SU	**01-288-9G**	----	100/131.57	----	**----**	----	----
16¾ × 10½ × 6" (43 × 27 × 15cm)	PC	9ARMVFC01	**01-288-23C**	76.98	5/256.59	1144B001	**01-288-5D**	128.94	10/859.54
	Filters	1264C401	**01-288-24**	----	100/159.98	----	**----**	----	----
14 × 9½ × 7½" (36 × 24 × 19cm)	PC	1177A114	**01-288-7E**	----	5/188.57	1291H001	**01-288-5E**	----	5/375.95
	Filters	2D24D1000	**01-288-9**	----	100/149.45	----	**----**	----	----
19 × 10½ × 8" (48 × 27 × 20cm)	PVC	ACPC0043	**01-288-7F**	----	5/120.40	2154F00138	**01-288-5F**	----	5/467.65
	PC	2L01D200	**01-288-13C**	73.52	5/245.09	----	**----**	----	----
	Filters	2150E420	**01-288-9B**	----	100/168.41	——	**----**	----	----
23¼ × 15³⁄₁₆ × 8" (59 × 39 × 20cm)	PC	3700M002UC	**01-288-103**	----	5/375.95	1264C001	**01-288-5G**	----	5/926.58
	Filters	2C30D1000	**01-288-100**	----	5/160.46	1290D001	**01-288-5H**	----	5/750.85
24 × 17 × 8" (61 × 43 × 20cm)	Filters	2G24D1000	**01-288-101**	----	50/100.66	----	**----**	----	----

Tecniplast* Metabolic Cage Systems for Rodents

Unique funnel and cone design completely separates urine and feces

Distinctive two-chamber design provides a safe, sanitary environment for animals and permits acquisition of untainted urine and feces for study. Upper and lower chambers constructed of smooth, transparent polycarbonate to prevent gnawing and noise.

01-287-6 Series with 01-287-6E stand (order separately)

Upper Chamber Features

- Large cover keeps animals securely in cage; removes to allow easy access to interior
- Stainless-steel support grid separates chambers and allows waste products to pass through bars
- Handles on grid allow for easy cage transportation without stand
- Feeder chamber on outside of upper chamber is large enough for animals to access food, yet small enough to prevent sleeping or nesting
- Polycarbonate feed drawer underneath feeder chamber slides out for easy filling
- Rear chamber of feed drawer catches spilled slurry, liquid, or powder food—excess food will not contaminate excreta
- Calibrated polycarbonate water bottle with stainless-steel cap and sipper tube assembly, combined with water spillage collection tube, facilitates accurate collection of fluid intake data
- All parts are autoclavable

Lower Chamber Features

- Nonwetting polymethylpentene (PMP) funnel and separating cone allow waste products to collect in separate PMP feces and urine collection tubes
- Fecal matter rolls down the sides of funnel to collect in feces collection tube
- Urine collection tube is graduated in cubic centimeters and can be cooled in an ice bath
- Tubes unlock from outside of cage with a single twist so as not to disturb animals
- All parts are autoclavable

ACCESSORIES:

System requires accessory stand to support cage (01-287-6E, next page) and provide access to all cage components.

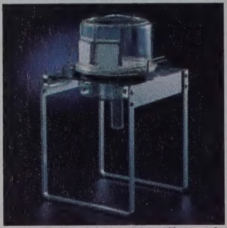
NOTE:

Feed drawer not designed for use with pellet food.

Accommodates	Domicile Portion I.D. × H	Overall L × W × H	Mfr. No.	Cat. No.	Each
Rats, guinea pigs and hamsters, >300g	9½ × 7" (24 × 18cm)	14 × 11 × 20½" (36 × 28 × 52cm)	2150E382	**01-287-6G**	1064.10
Rats, 150g to 300g	8 × 5½" (20 × 14cm)	14 × 11 × 19" (36 × 28 × 48cm)	1264C00PI	**01-287-6A**	804.64
Mice	8 × 5½" (20 × 14cm)	14 × 11 × 19" (36 × 28 × 48cm)	2154F00PI	**01-287-6C**	804.64
A single mouse	6¾ × 5" (18 × 13cm)	12⅝ × 9⅞ × 14" (32 × 25 × 35.6cm)	2F01D200	**01-814-25**	609.35

Tecniplast* Diuresis Metabolic Cage for Mice

Channels and collects liquid waste products into graduated urine collection tube



01-288-2D with 01-287-6E stand (sold separately)

Similar to Cat. No. 01-287-6C. Smaller polymethylpentene separating cone and collection funnel specifically designed to channel and collect liquid waste products into graduated urine collection tube.

- Helps minimize urine evaporation
- Features stainless-steel screen for collecting feces
- All cage parts autoclavable

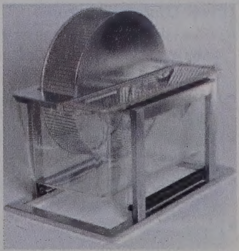
INCLUDES:
14L × 11W × 19"H (36 × 28 × 48cm) polycarbonate upper chamber with easy-access cover and stainless-steel mouse support grid; 100mL water bottle and cap with support assembly; water spillage collection tube; feeder chamber with feed drawer.

REQUIRED ACCESSORIES:
Requires cage stand (01-287-6E, at right), available separately

Accommodates	Mfr. No.	Cat. No.	Each
Single mouse	3700D001	**01-288-2D**	709.44

Tecniplast* Activity Wheel for Rodents

Ideal for research involving circadian rhythms, ingestion, and drug or pharmaceutical testing



01-286-12C wheel assembly with 01-288-1F cage and 01-281-12B cage support

Allows easy, convenient measurement of lab rodents' voluntary physical activity in response to chemical or environmental stimuli.

- Constructed with low-friction bushing for long life and quiet, smooth action
- All metal parts are stainless steel
- All nonelectrical cage parts are autoclavable
- Compatible with cages with dimensions of 19 × 10½ × 8" (48 × 27 × 20cm) (01-288-1F and 01-286-13F for rats; not included)

ORDERING INFORMATION:
Accessory cage support (01-281-12B) and magnetic switch counter with LCD counter (01-286-12E) sold separately. Wheel assembly dimensions: (Dia. × W): 13½ × 3⅞" (34.5 × 9.7cm).

INCLUDES:
Activity wheel, wheel hub and support, sheet lid that encloses wheel and covers cage for secure containment, activity wire lid with water bottle support and food hopper

Mfr. No.	Cat. No.	Each
3700M011	**01-286-12C**	680.67

ACCESSORIES

Support Racks for Tecniplast* Metabolic Cages

Stainless-steel racks hold up to 12 Tecniplast Metabolic Cages

01-287-6F

- Accommodate cages for small rats and mice (01-287-6A, 01-287-6C, and 01-288-2D)
- Mounted on swivel casters—one pair locks for safety

Vertical Style

- Hold three rows of four cages each
- Can be adjusted to hold eight metabolic cages (01-287-6G)

Horizontal Style

- Hold two rows of six cages each, situated at a convenient working height

Description	L × W × H	Mfr. No.	Cat. No.	Each
Vertical Style	49½ × 19½ × 73½" (126 × 50 × 187cm)	1264C00SU	**01-287-6F**	2627.50
Horizontal Style	70 × 25 × 51" (178 × 64 × 130cm)	1284L00SU	**01-287-6L**	2661.97

Stand for Tecniplast* Metabolic Cages

Stainless-steel cradle assembly with nylon supports

01-287-6E

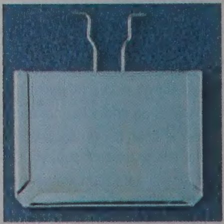
- Holds one metabolic rodent cage
- Autoclavable

ORDERING INFORMATION:
Overall dimensions (L × W × H): 12¼ × 12¼ ×13⅜" (31 × 31 × 34cm).

Accommodates	Mfr. No.	Cat. No.	Each
One rodent metabolic cage	1290D00SU	**01-287-6E**	173.29

Tecniplast* Data Card Holders

For use with Tecniplast Deluxe Reusable Animal Cages



01-288-4A

- Hold standard 3 × 5" index cards
- Vertical swivel style allows card to be written on without removing from holder

Description	Mfr. No.	Cat. No.	Case of
Horizontal	1284L420	**01-288-4A**	100/783.29
Vertical	3700M922	**01-288-4B**	10/84.94

*Trademark. See Trademark Reference.

Tecniplast* Water Bottles with Sipper Caps

Exceptionally clear and remarkably durable

- Large-diameter, high-capacity water bottles
- Molded-in graduations for easy measurement
- Shatter-proof polycarbonate
- Fit securely beneath filter covers

INCLUDES:
Stainless-steel sipper tubes and caps.

01-288-10 Series

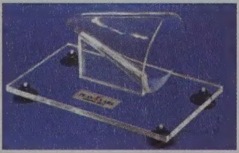
For Cage Sizes (L × W × H)	Capacity	Mfr. No.	Cat. No.	Pack of 12	Case of
9⅜ × 5⁷⁄₁₆ × 5⅛" (24 × 14 × 13cm)	5 oz. (150mL)	1144B420	**01-288-10A**	----	72/1493.38
10½ × 8⅛ × 5½" (27 × 21 × 14cm)	8 oz. (250mL)	2154F420	**01-288-10C**	422.61	6 Pk./ 1690.42
16¾ × 10½ × 6" (43 × 27 × 15cm)	18 oz. (500mL)	1264C420	**01-288-10E**	----	72/1807.42
15¼ × 12¾ × 15¼" (38 × 32 × 38cm)	35 oz. (1000mL)	ACCPS1246	**01-288-16**	----	12/279.70

RESTRAINTS

Plas-Labs* Rodent Injection Cone

Ideal for large quantity sampling where high speed and efficiency are required

- Completely transparent, durable, and easy to clean
- Utilizes suction cup feet to secure device



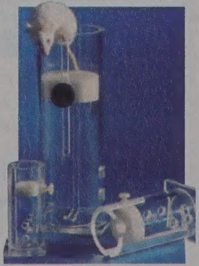
01-288-32

Animal Size Range	L × H × Dia.	Cat. No.	Each
15 to 30g (mice), 500 to 600g (rats)	5¾ × 5 × 4" (14.6 × 12.7 × 10.2cm)	**01-288-32**	278.32

Plas-Labs* Broome-Style Rodent Restrainers

Ideal for injections or blood sampling

- Offer easy access to rodent
- Prevent rodent from turning
- Provide safety to the animal handler
- Manufactured from clear materials to provide complete visual awareness of the state of the animal



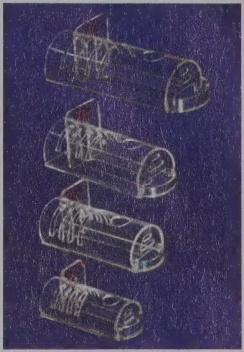
Left to right: 01-288-32A, 01-288-32D, 01-288-32B

Animal Size Range	L × Dia.	Cat. No.	Each
15 to 30g	3¾ × 1" (9.5 × 2.5cm)	**01-288-32A**	150.00
30 to 125g	5½ × 1½" (14 × 3.8cm)	**01-288-32B**	118.28
125 to 250g	8 × 2" (20.3 × 5.1cm)	**01-288-32C**	129.48
250 to 500g	8½ × 2½" (21.6 × 6.4cm)	**01-288-32D**	138.08
550g+	9 × 3½" (22.9 × 8.9cm)	**11-389-4**	224.30

Plas-Labs* Flat-Bottom Rodent Restrainers

Apertures in the top and bottom provide easy access for injections or sampling

- Pocket and holes in the front make it easy to anesthetize or feed the animal
- Clear material provides a visual check of rodent's condition
- Adjustable tail stock can be inserted into any one of four positions



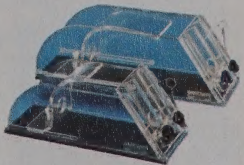
Top to bottom:
01-288-31D, 01-288-31C,
01-288-31B, 01-288-31A

Animal Size Range	L × Dia.	Cat. No.	Each
15 to 30g	3¾ × 1½" (9.5 × 3.8cm)	**01-288-31A**	142.98
30 to 125g	5 × 2" (12.7 × 5.1cm)	**01-288-31B**	118.28
125 to 250g	6 × 2½" (15.2 × 6.4cm)	**01-288-31C**	122.65
250 to 500g	8 × 3¼" (20.3 × 8.3cm)	**01-288-31D**	138.08

Plas-Labs* Rabbit Restrainers

Designed to minimize trauma

- Highly polished edges prevent chafing, especially at the neck
- Non-slip surface provides better footing and helps to calm animal
- Unique curved back butt plate minimizes the risk of back injury
- Rear access hole for pyrogen testing
- Unit can be sanitized in a cage washer up to 180°F or sterilized chemically
- Clear acrylic aids in retaining body warmth
- Vertical head bars (adjustable) are easily removable if not needed
- Stainless-steel pin permits several fine adjustment points for neck plate
- Nonslip base pads ensure unit stability
- Additional sizes available; contact your Fisher Scientific Customer Service Representative



Top to bottom: 11-389-5, 11-389-9

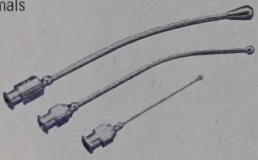
Animal Size Range	L × W × H	Cat. No.	Each
Up to 4kg	18 × 6 × 6" (45.7 × 15.2 × 15.2cm)	**11-389-5**	473.53
4 to 7kg	22 × 6 × 6½" (55.9 × 15.2 × 16.5cm)	**11-389-9**	505.00

SURGICAL DEVICES

Popper* Animal Feeding Needles

Precision-assembled stainless-steel feeding needles ideal for feeding and dosing

- For the intubation of laboratory animals
- Straight, curved or malleable tubing styles
- In standard sizes to accommodate animals from newborn mice to primates
- Autoclavable



01-290 Series

Newborn Needles

- For newborn mice and rats
- For animals up to 0.7 oz. (20g)

Small Animal Needles

- For animals 0.7 oz. to 1 lb., 5 oz. (20 to 600g)

Malleable Needles

Feeding needles have bendable tubing to shape as needed

Tube Style	Gauge/Length	Ball Dia.	Mfr. No.	Cat. No.	Pack of 12
Newborn Needles					
Straight	24/25mm	1.25mm	7900	**01-290-1**	362.08
	22/25mm	1.25mm	7901	**01-290-2A**	300.58
	22/38mm	1.25mm	7920	**01-290-2B**	300.58
Small Animal Needles					
Straight	20/25mm	2.25mm	7921	**01-290-3A**	239.58
	20/38mm	2.25mm	7902	**01-290-3B**	239.58
	20/76mm	2.25mm	7903	**01-290-3C**	239.58
	18/25mm	2.25mm	7922	**14-818-107B**	243.76
	18/38mm	2.25mm	7904	**01-290-4B**	239.58
	18/50mm	2.25mm	7905	**01-290-4C**	239.58
	18/76mm	2.25mm	7906	**01-290-4D**	239.58
	16/50mm	3.00mm	7923	**01-290-6A**	239.58
	16/76mm	3.00mm	7908	**01-290-6B**	239.58
	14/76mm	4.00mm	7909	**01-290-7**	243.73
	13/76mm	4.00mm	7924	**01-290-8**	243.73
Curved	20/38mm	2.25mm	7910	**01-290-9A**	255.14
	20/76mm	2.25mm	7911	**01-290-9B**	255.14
	18/38mm	2.25mm	7912	**01-290-10A**	255.14
	18/50mm	2.25mm	7913	**01-290-10B**	255.14
	18/76mm	2.25mm	7914	**01-290-10C**	255.14
	16/50mm	3.00mm	7915	**01-290-11A**	268.20
	16/76mm	3.00mm	7916	**01-290-11B**	268.20
	16/102mm	3.00mm	7946	**01-290-11C**	268.20
	14/76mm	4.00mm	7917	**01-290-12**	408.04
Malleable Needles					
Malleable	20/38mm	2.25mm	7944	**01-290-15**	367.77

Plas-Labs* Animal Operating Boards

Useful for surgery, biopsy, necropsy, injections, and basic restraint

- One-piece Noryl* plastic boards accommodate small animals
- Suction cup feet secure 01-288-30A
- Metal bracket on 01-330 enables user to elevate the head end of board if needed

01-330

INCLUDES:

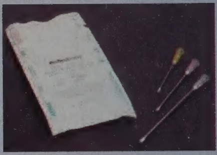
Five adjustable nylon cords.

Animal Size Range	L × W	Cat. No.	Each
Up to 9" long (23cm)	11 × 4½" (27.9 × 11.4cm)	**01-288-30A**	174.82
Up to 12" long (31cm)	16 × 8⅛" (40.6 × 20.6cm)	**01-330**	195.06

*Fisherbrand** Disposable Animal Feeding Needles

For critical applications requiring single-use feeding needles

- Nontoxic and nonpyrogenic
- Malleable stainless-steel tubing and silicone tip bend easily
- Plastic Luer hubs
- Sterile, packaged in Tyvek* pouches, five per pouch, 20 pouches per box



01-208-87, 01-208-88, 01-208-89

Gauge/Length	Cat. No.	Pack of 100
20/38mm (1½")	**01-208-87**	313.13
18/50mm (2")	**01-208-88**	313.13
15/76mm (3")	**01-208-89**	313.13

*Fisherbrand** Animal Tags

Small aluminum tags in set numbered 1 to 100 with 100 washers

- Insert tag through hole; place washer in back of hole
- Bend ends of tag back in rivet fashion, leaving space for ear growth

13-812-200

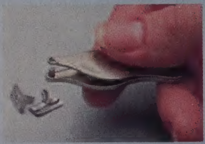
REQUIRED ACCESSORIES:

Punch (13-812-201, not included) to make hole in animal's ear

Cat. No.	Pack of 100
13-812-200	21.70

Animal Ear-Tag Punch

For punching holes into thin part of animal's ear



13-812-201, shown with tag, purchased separately

Cat. No.	Each	Pack of 12
13-812-201	12.23	125.45

Animal Clippers

For preparing mice, rats, hamsters, or other animals for surgery without irritating or frightening them

Oster
GOLDEN A5

- Cutting blades snap on and off, permitting instant change with no tools required
- Universal motor uses high rpm and gear-down design to produce outstanding power for unit's size
- Automatic armature take-up ensures long life and quiet operation

INCLUDES:
Size 10 blade set for general clipping

COMPLIANCE:
Double insulated to meet OSHA specifications

NOTE:
For surgical shaving, see Size 40 Blade Set (01-305-10B) below

Cat. No.	Each	Case of 6
01-305-10	267.24	1370.45

ACCESSORIES

Animal Clipper Size 40 Blade Set

Oster
Cryogen-X
size 40

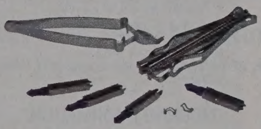
01-305-10B

- For surgical shaving with animal clippers (01-305-10, at left)
- Fine-grain, high-carbon steel
- Shaves hair as close as 1/100" (0.25mm)

Cat. No.	Each	Case of 12
01-305-10B	45.69	437.65

BD* Autoclip* Wound Closing System

Ideal for use on lab animals or in veterinary surgery



Clockwise from top left: 01-804-15, 01-804, 01-804-5

Consists of applier (01-804), nonsterile wound clips (01-804-5), and remover (01-804-15). Insert clips into applier; locate edges of wound; use applier as you would a staple gun to rapidly close wound.

- Provides maximum holding force with minimal trauma
- May be used without assistance
- Easily remove clips with clip remover when wound is healed

Applier

- Stainless-steel applying forceps hold one rack of 20 clips
- Clips fed by rustless beryllium-copper springs
- Dimensions: 4½L × 1⅜W ×⅜"H (114 × 35 × 9.5mm)
- Net weight: 1½ oz. (45g)

Wound Clips

- 9mm nonsterile Autoclip wound clips
- 20 stainless-steel double clips per rack
- 100 clips (5 racks) per box, 10 boxes per case

Remover

- Easily removes clips from healed wound
- Stainless steel
- Length: 4" (100mm)

Description	Mfr. No.	Cat. No.	Price	Case of 10 Pk.
Applier	427630	**01-804**	Ea./440.25	----
Wound Clips	427631	**01-804-5**	Pk. of 100/67.69	599.00
Remover	427637	**01-804-15**	Ea./174.25	----

APPAREL

APRONS AND SLEEVES

*Fisherbrand** Rubberized Cloth Apron and Sleeves

For protection from acids and caustics

Apron

- Rubberized cloth apron has double coating of abrasion-resistant rubber
- Measures 45L × 35"W (114 × 89cm)
- Black

Rubberized Sleeves

- Protect arms from wrist to elbow
- With elastic cuffs
- 14½" long

ORDERING INFORMATION:
Sleeves packaged one pair per pack.

01-357 with 01-360 sleeves

Description	Cat. No.	Each	Case of 6
Apron	**01-357**	26.25	----
Sleeves	**01-360**	30.63	157.09

*Fisherbrand** Resin-Coated Aprons

Withstand prolonged use in industrial laboratories

- Synthetic resin coating over cotton/polyester fabric is longer lasting than rubber
- Measures 36L × 33"W (91.4 × 83.8cm)
- Brown

01-365

Cat. No.	Each
01-365	8.83

Ansell* Neoprene Aprons

Provide excellent chemical resistance

- Designed with four metal grommets, neck string, and waist ties
- Top 2" (5cm) of bib is a double thickness of material
- All edges hemmed
- Measure 45L × 35"W (114 × 89cm)

17-987-105B

Thickness	Color	Cat. No.	Each	Case of 12
12½ oz.	Black	**19-042-266**	----	199.69
19 oz.	Black	**17-987-104B**	24.59	252.16
19 oz.	Yellow	**17-987-105B**	24.59	252.16

Best* Rubber-Coated Nylon Apron

Excellent chemical resistance

- Durable nylon core is coated on both sides with synthetic rubber
- Breast pocket holds accessories
- Measures 42L × 36"W (107 × 91cm)
- Gray

01-352

Mfr. No.	Cat. No.	Each
A3520930	**01-352**	18.29

Nalgene* Beta Apron

Ideal for working with "hot" samples

Protects against >97% of ^{32}P beta emissions and hazardous chemicals.

- Constructed of black neoprene
- With comfortable, adjustable cross-back straps with quick clips
- Measures 32L × 20"W (81 × 51cm)
- Thickness: ¼" (6mm)
- Black

01-354

NOTE:
Apron should be used in addition to standard radiation safety equipment.

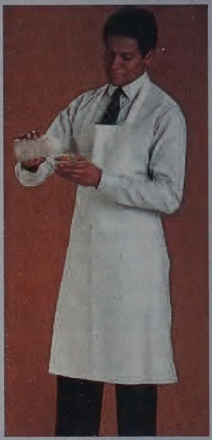
Mfr. No.	Cat. No.	Each
6800-0001	**01-354**	220.83

*Fisherbrand** Cotton-Polyester Apron

Suitable for general wear

Ideal for stockroom workers. Reusable.

- Bib apron of 65% cotton/35% polyester
- Ties in back at waist
- Measures 30L × 35"W (76.2 × 88.9cm)
- White


01-353B

L × W	Cat. No.	Each	Pack of 12
36 × 27" (91 × 69cm)	**01-353A**	34.99	341.12
46 × 36" (117 × 91cm)	**01-353B**	55.87	568.23

*Fisherbrand** Disposable Polyethylene Apron

Lightweight plastic apron is sturdy enough to be reused

- Measures 46L × 28"W (117 × 71cm)
- Thickness: 1.5mil
- White

ORDERING INFORMATION:
Sold in handy dispenser pack.

19-181-529

Cat. No.	Pack of 50	Case of 5 Pk.
19-181-529	19.75	76.22

Kimberly-Clark* KleenGuard* A20 Disposable Polypropylene Apron and Sleeves

Secure fit

Apron

- Made from breathable, patented Microforce* barrier SMS fabric
- Measures 40L × 28"W (102 × 71cm)
- White

Sleeve Protectors

- Made of the same fabric as apron
- Provide secure fit and allow unrestricted movement
- One size fits all
- 18¾" long (48cm)
- White

COMPLIANCE:

Complies with FDA regulations regarding aprons for use around food.

01-366-5B

Packaging	Mfr. No.	Cat. No.	Case of
Aprons			
Bulk	36550	**01-366-5B**	100/146.89
Sleeves			
Case	36870	**17-981-41D**	200/150.39

Kimberly-Clark* Kleenguard* A20 Polyethylene Apron

Economical, lightweight disposable apron

For general lab use.

- Measures 45L × 28"W (114 × 71cm)
- White

ORDERING INFORMATION:

Available in handy dispenser pack.

17-981-54C

Mfr. No.	Cat. No.	Pack of 100	Case of 5 Pk.
43745	**17-981-54C**	62.01	256.43

WARNING

Garments made of Tyvek* should not be used around heat, flames, sparks or in potentially flammable or explosive environments.

Ansell* 6mil Vinyl Aprons with Sewn or Unfinished Edges

Suitable when lighter aprons will do, such as for students and visitors

- Nylon ties secure apron at back
- Grommets and bib are electronically heat-sealed for added strength

ORDERING INFORMATION:

Available with either nylon-serged finished edges or with less expensive, unfinished edges. For additional styles and colors, visit our Web site.

L × W	Mfr. No.	Cat. No.	Pack of 12	Case of 6 Pk.
Unfinished Edges, White				
45 × 35" (114 × 89cm)	950062	**17-987-127C**	20.68	106.05
50 × 35" (127 × 89cm)	950064	**17-987-127E**	21.71	111.35
Unfinished Edges, Blue				
45 × 35" (114 × 89cm)	950054	**17-987-128C**	20.68	106.05
48 × 35" (122 × 89cm)	950055	**17-987-128D**	21.37	109.58
50 × 35" (127 × 89cm)	950056	**17-987-128E**	21.71	111.35
55 × 35" (140 × 89cm)	950057	**17-987-128F**	22.06	113.12
Sewn Edges, White				
50 × 35" (127 × 89cm)	AW 50	**17-987-129D**	141.95	----
Sewn Edges, Blue				
45 × 35" (114 × 89cm)	5600750039	**17-987-130B**	22.75	116.65
48 × 35" (122 × 89cm)	AC 48	**17-987-130C**	23.44	120.19
50 × 35" (127 × 89cm)	AC 50	**17-987-130D**	23.78	121.95

17-987-128F

17-987-130B (17-987-126D sleeves available separately)

DuPont* Tyvek* Bib Apron and Sleeves

Protect against many hazardous powders

Made of nonwoven Tyvek fabric that helps resist penetration by particles and other contaminants. The inherent barrier stops submicron particles even after abrasion.

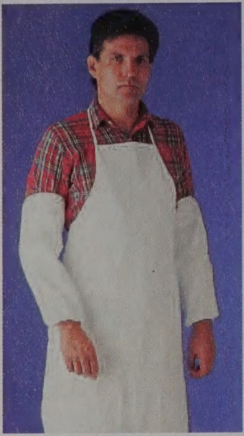
Aprons

- Provide coverage of front and sides
- With bound neck and ties
- Available in 36 or 44" (91 or 112cm lengths)
- White

Sleeves

- Offer wrist-to-elbow protection
- Elasticized seams at both ends
- Length: 18" (46cm)
- White

ORDERING INFORMATION:
Aprons, 100 per case; sleeves, 100 pairs per case.



01-361-83 apron with 01-361-21 sleeves

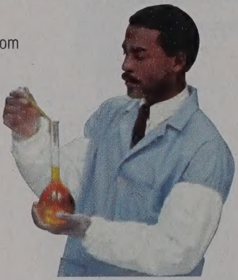
Description	Mfr. No.	Cat. No.	Case of 100
Apron, 36" Long	TY273SWH00010000	**01-361-83**	155.88
Apron, 44" Long	TY274BWH00010000	**19-165-319**	179.08
Sleeves	TY274SWH00010000	**01-361-21**	103.42

Cardinal Health* Sleeves with Tyvek*

For applications requiring more protection than gloves alone

Sleeves can provide barrier protection from contamination and particulates.

- Double-stitched, reinforced seams
- Elastic at both ends
- 18" (45.7cm) long
- White



19-047-787

Mfr. No.	Cat. No.	Case of
9403N	**19-047-787**	60/63.73
9403	**19-130-5566**	300/656.32

WARNING
Garments made of Tyrek* should not be used around heat, flames, sparks or in potentially flammable or explosive environments.

DuPont* ProShield* NexGen* Aprons and Sleeves

Maximum protection at affordable cost

DuPont ProShield NexGen is liquid resistant and provides a true aerosol barrier, with >99% holdout of particles down to 0.35µm. Proprietary microporous technology gives aprons and sleeves effective protective properties at an economical price. Perfect for applications involving nontoxic liquid or spray hazards.

Aprons

- Bib-style apron provides coverage of front and sides
- With bound neck and ties
- Available in 36 or 44" lengths (91 or 112cm)
- White

Sleeves

- Elastic at both ends
- Length: 18" (46cm)
- White

ORDERING INFORMATION:
Aprons, 100 per case; sleeves 100 pairs per case.

19-048-402B

Length	Mfr. No.	Cat. No.	Case of 100
Aprons (L x W)			
36 × 28" (69 × 71cm)	NG273BWH00010000	**19-048-402A**	149.31
44 × 28" (112 × 71cm)	NG274BWH00010000	**19-048-402B**	153.76
Sleeves			
18" (46cm)	NG500SWH00010000	**19-088-2165**	77.75

Cardinal Health* Sterile Disposable Sleeves

Easy, fast removal

Sleeves are made from low-linting, nonwoven polyester/cellulose material.

- Feature latex-free elastic at both ends
- 21½" (54.6cm) length
- Blue

ORDERING INFORMATION:
Individually packaged 30 per box, with two boxes per case.

19-120-3021

Mfr. No.	Cat. No.	Case of 60
599	**19-120-3021**	149.67

CONTROLLED ENVIRONMENTS

DuPont* Suprel* LS Apparel

Offers a unique balance of breathability and barrier protection

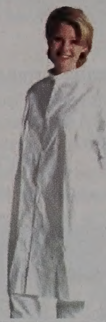
Patented Suprel LS bi-component fabric offers breathability and barrier protection combined with soft feel and optimal comfort.

- Softer feel provides a greater ease of movement
- Provides particulate and splash protection
- White
- Frocks, coveralls, and boot covers available sterile or nonsterile

COMPLIANCE:
Meet ASTM* standards for particle and bacterial filtration efficiency.

Suprel* LS Lab Coats

- Mandarin collar
- Three pockets
- Six-snap front closure
- Knit cuffs
- Serged seams



19-165-182

Size	Mfr. No.	Cat. No.	Case of 30
Small	SR219SWHSM003000	**19-165-181**	156.98
Medium	SR219SWHMD003000	**19-165-182**	156.98
Large	SR219SWHLG003000	**19-165-183**	156.98
X-Large	SR219SWHXL003000	**19-165-184**	156.98
XX-Large	SR219SWH2X003000	**19-165-185**	169.74
XXX-Large	SR219SWH3X003000	**19-165-186**	176.38
4X-Large	SR219SWH4X003000	**19-165-187**	190.49

Suprel* LS Frocks

- Mandarin collar
- No pockets
- Six-snap front-closure
- Full sleeves with tunnel elastic wrists

Size	Mfr. No.	Cat. No.	Case of 30
Nonsterile			
Small	SR267SWHSM003000	**19-165-188**	146.26
Medium	SR267SWHMD003000	**19-165-189**	146.26
Large	SR267SWHLG003000	**19-165-190**	146.26
X-Large	SR267SWHXL003000	**19-165-191**	146.26
XX-Large	SR267SWH2X003000	**19-165-192**	155.03
XXX-Large	SR267SWH3X003000	**19-165-193**	164.34
4X-Large	SR267SWH4X003000	**19-165-194**	177.49
Sterile			
Small	SR267SWHSM00300S	**19-165-151**	358.51
Medium	SR267SWHMD00300S	**19-165-152**	358.51
Large	SR267SWHLG00300S	**19-165-153**	358.51
X-Large	SR267SWHXL00300S	**19-165-154**	358.51
XX-Large	SR267SWH2X00300S	**19-165-155**	380.05
XXX-Large	SR267SWH3X00300S	**19-165-156**	402.83
4X-Large	SR267SWH4X00300S	**19-165-157**	426.99

Suprel* LS Coveralls

Zipper-front closure serged seams

19-165-196
(Mask, goggles, gloves and boot covers not included)

Size	Mfr. No.	Cat. No.	Case of 25
Sterile; Elastic Wrists and Ankles with Mandarin Collar			
Small	SR148SWHSM00250S	**19-165-140**	361.16
Medium	SR148SWHMD00250S	**19-165-141**	361.16
Large	SR148SWHLG00250S	**19-165-142**	361.16
X-Large	SR148SWHXL00250S	**19-165-143**	361.16
XX-Large	SR148SWH2X00250S	**19-165-144**	382.81
XXX-Large	SR148SWH3X00250S	**19-165-145**	405.80
4X-Large	SR148SWH4X00250S	**19-165-146**	438.26
Sterile; Elastic Wrists and Ankles with Drawstring Hood			
Small	SR127SWHSM00250S	**19-165-158**	435.19
Medium	SR127SWHMD00250S	**19-165-159**	435.19
Large	SR127SWHLG00250S	**19-165-160**	435.19
X-Large	SR127SWHXL00250S	**19-165-161**	435.19
XX-Large	SR127SWH2X00250S	**19-165-162**	461.29
XXX-Large	SR127SWH3X00250S	**19-165-163**	488.98
4X-Large	SR127SWH4X00250S	**19-165-164**	526.79
Nonsterile; Elastic Wrists and Ankles with Mandarin Collar			
Small	SR148SWHSM002500	**19-165-165**	178.54
Medium	SR148SWHMD002500	**19-165-166**	178.54
Large	SR148SWHLG002500	**19-165-167**	178.54
X-Large	SR148SWHXL002500	**19-165-168**	178.54
XX-Large	SR148SWH2X002500	**19-165-169**	189.27
XXX-Large	SR148SWH3X002500	**19-165-170**	200.61
4X-Large	SR148SWH4X002500	**19-165-171**	216.66
Nonsterile; Elastic Wrists and Ankles with Elastic Hood			
Medium	SR180SWHMD002500	**19-165-195**	176.07
Large	SR180SWHLG002500	**19-165-196**	176.07
X-Large	SR180SWHXL002500	**19-165-197**	176.07
XX-Large	SR180SWH2X002500	**19-165-198**	186.63
XXX-Large	SR180SWH3X002500	**19-165-199**	197.83
Nonsterile; Elastic Wrists and Ankles with Drawstring Hood			
Small	SR127SWHSM002500	**19-165-200**	183.99
Medium	SR127SWHMD002500	**19-165-201**	183.99
Large	SR127SWHLG002500	**19-165-202**	183.99
X-Large	SR127SWHXL002500	**19-165-203**	183.99
XX-Large	SR127SWH2X002500	**19-165-204**	195.05
XXX-Large	SR127SWH3X002500	**19-165-205**	206.73
4X-Large	SR127SWH4X002500	**19-165-206**	219.13
Nonsterile; Elastic Wrists and Ankles with Laydown Collar			
Small	SR181SWHSM002500	**19-165-207**	167.92
Medium	SR181SWHMD002500	**19-165-208**	167.92
Large	SR181SWHLG002500	**19-165-209**	167.92
X-Large	SR181SWHXL002500	**19-165-210**	167.92
XX-Large	SR181SWH2X002500	**19-165-211**	178.00
XXX-Large	SR181SWH3X002500	**19-165-212**	188.66
4X-Large	SR181SWH4X002500	**19-165-213**	199.99

Contd. on next page.

DuPont* Suprel* LS apparel, Contd.

Suprel* LS Full-Face Hood

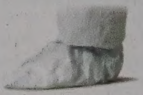
- Safety stitch construction with ties
- Sterile, bound seams

19-165-147

Mfr. No.	Cat. No.	Case of 100
SR663SWH0001000S	**19-165-147**	451.34

Suprel* LS Shoe Covers

- Gripper sole
- Elastic ankle
- Serged seams
- White



19-165-179

Size	Mfr. No.	Cat. No.	Case of 50 Pair
Medium	SR442SWHMD010000	**19-165-178**	101.06
Large	SR442SWHLG010000	**19-165-179**	107.80
X-Large	SR442SWHXL010000	**19-165-180**	113.20

Suprel* LS Boot Covers

- High-top style extends 17½" (45cm) up leg
- Serged elastic at opening with elastic or tie ankle

19-165-176

Size	Mfr. No.	Cat. No.	Case of 100 Pair
Nonsterile with Tie Ankle			
Medium	SR446SWHMD010000	**19-165-175**	163.43
Large	SR446SWHLG010000	**19-165-176**	172.98
X-Large	SR446SWHXL010000	**19-165-177**	183.42
Nonsterile with Elastic Ankle			
Medium	SR447SWHMD010000	**19-165-172**	170.87
Large	SR447SWHLG010000	**19-165-173**	182.19
X-Large	SR447SWHXL010000	**19-165-174**	194.04
Sterile with Elastic Ankle			
Medium	SR447SWHMD01000S	**19-165-148**	251.68
Large	SR447SWHLG01000S	**19-165-149**	261.72
X-Large	SR447SWHXL01000S	**19-165-150**	273.54

WARNING

Garments made of Tyvek* should not be used around heat, flames, sparks, or potentially flammable or explosive environments.

DuPont* Tyvek* IsoClean* Serged Seam Coveralls

NEW

ISO Class 6 to 8 (Class 1000 to 100,000) compatible

Serged-seam DuPont Tyvek garments provide adequate particulate protection at a lower cost.

- Tapered torso is nonconstrictive, but has no excess fabric to billow
- Feature full-length zippered front, tunnelized elastic wrists and ankles, and mandarin collar
- Size Small, with slimmer and shorter torso length and longer legs, is specially designed to fit women
- White

17-986-14C

ORDERING INFORMATION:
Available cleaned (laundered, but not sterilized) or not specially cleaned in bulk packs (not laundered or sterilized).

For serged seam apparel that is both clean and sterile, contact your Fisher Scientific Customer Service Representative.

Size	Mfr. No.	Cat. No.	Case of 25
Not Specially Clean			
Small	IC148SWHSM00250B	**17-985-370B**	242.35
Medium	IC148SWHMD00250B	**17-985-370C**	242.35
Large	IC148SWHLG00250B	**17-985-370D**	242.35
X-Large	IC148SWHXL00250B	**17-985-370E**	242.35
XX-Large	IC148SWH2X00250B	**17-985-370F**	256.88
XXX-Large	IC148SWH3X00250B	**17-985-370G**	274.60
Clean			
Small	IC148SWHSM00250C	**17-986-14B**	363.23
Medium	IC148SWHMD00250C	**17-986-14C**	363.23
Large	IC148SWHLG00250C	**17-986-14D**	363.25
X-Large	IC148SWHXL00250C	**17-986-14E**	363.23
XX-Large	IC148SWH2X00250C	**17-986-14F**	391.61
XXX-Large	IC148SWH3X00250C	**17-986-14G**	415.08
4X-Large	IC148BWH4X00250C	**19-308-898**	591.28

DuPont* Tyvek* IsoClean* Serged-Seam Shoe Covers

Completely cover shoe and ankle

- DuPont Tyvek uppers
- Nonskid PVC soles
- Elastic closures
- White

17-985-376C

ORDERING INFORMATION:
Available in bulk in a single polybag.

Size	Mfr. No.	Cat. No.	Case of 100
Small	IC441SWHSM02000B	**17-985-376A**	199.64
Medium	IC441SWHMD02000B	**17-985-376B**	199.64
Large	IC441SWHLG02000B	**17-985-376C**	199.64
X-Large	IC441SWHXL02000B	**17-985-376D**	199.64

*Trademark. See Trademark Reference.

DuPont* Tyvek* IsoClean* Serged-Seam Economy Boot Covers

Excellent traction with a snug fit

- DuPont Tyvek uppers
- Anti-slip embossed PVC soles
- Elastic tops and ankles
- Height: 17" (43cm)
- White

ORDERING INFORMATION:
Bulk packed in a single polybag.

17-986-8B

Size	Mfr. No.	Cat. No.	Case of 100 Pair
Small	IC444SWHSM02000B	**17-986-8A**	361.26
Medium	IC444SWHMD02000B	**17-986-8B**	361.26
Large	IC444SWHLG02000B	**17-986-8C**	361.26

Cardinal Health* Frocks with Tyvek*

Below-the-knee length provides maximum coverage

Frocks provide protection from spills and splashes. For industrial use only.

- Full-length, front zipper closure
- Bound collar
- Raglan sleeves with latex-free elastic cuffs

ORDERING INFORMATION:
Bulk packed in double poly bags.

19-047-824

Size	Mfr. No.	Cat. No.	Case of 25
Small	9380	**19-130-5564A**	347.90
Medium	9381	**19-130-5564B**	351.92
Large	9382	**19-130-5564C**	366.35
X-Large	9383	**19-047-824**	236.11
XX-Large	9384	**19-047-830**	259.57

WARNING
Garments made of Tyvek* should not be used around heat, flames, sparks, or potentially flammable or explosive environments.

Cardinal Health* Fluid-Resistant Coveralls

NEW

Provide barrier and comfort

Coveralls are constructed of high-quality, fluid-resistant, tri-layer SMS material. For industrial use only.

- Traditional collar
- Latex-free elastic wrists and ankles
- Offer protection against nonhazardous liquids and contaminants

19-130-5337

Size	Mfr. No.	Cat. No.	Case of 24
Medium	2199CV	**19-130-5336**	139.20
Large	2200CV	**19-130-5337**	139.20
X-Large	2201CV	**19-130-5338**	139.20
XX-Large	2202CV	**19-130-5339**	139.20
XXX-Large	22003CV	**19-130-5340**	154.60
4X-Large	22004CV	**19-130-5341**	156.71

Cardinal Health* Sterile Micro-Clean* Coveralls and Sleeves

Designed for consistent quality with no risk of cross-contamination

Single-use; made from clean-processed Tyvek* provide cloth-like aesthetics with excellent particulate protection to 0.5 microns.

- Bound seams and tunnelized elastic eliminate raw edges that can generate particles
- Fully traceable with lot number embossed on the outer carton, individual packaging, and garment
- Sterility Assurance Level (SAL), 10^{-6}

ORDERING INFORMATION:
Individually packaged within an outer bag and two inner poly liners to provide tri-level protection. Packaged under ISO Class 4 (Class 10) conditions.

19-120-2940B

Size	Mfr. No.	Cat. No.	Case of
Small	9831	**19-120-2940A**	30/610.67
Medium	9832	**19-120-2940B**	30/610.67
Large	9833	**19-120-2940C**	30/610.67
X-Large	9834	**19-120-2940D**	25/610.67
XX-Large	9835	**19-120-2940E**	25/611.83
XXX-Large	9836	**19-120-2940F**	29/725.05
4X-Large	9837	**19-120-2940G**	29/799.90
5X-Large	9838	**19-120-2940H**	29/987.57

Contd. on next page.

Cardinal Health* Sterile Micro-Clean* Sleeves, Contd.

Sleeves

Feature a generous cut for maximum comfort

- Made of sterile Tyvek*
- Feature bound seams and tunnelized elastic to eliminate raw edges
- Have a Sterility Assurance Level of 10^{-6}
- Lot number is embossed on each package and garment
- Length: 18" (45.7cm)
- Color: white

ORDERING INFORMATION: Packaged under ISO Class 5 (formerly Class 100) conditions. Pair packaged.

19-120-2941

Mfr. No.	Cat. No.	Case of 50 Pair
A6128-26	**19-120-2941**	264.85

Polypropylene Isolation Gowns

Breathable, economical polypropylene

NEW

Ideal for environments where exposure to liquid contamination is not a concern.

- Lightweight polypropylene
- Full length
- Elastic wrist

19-130-3610

Size	Mfr. No.	Cat. No.	Case of 50
Yellow			
X-Large	813381-XL	**19-130-3610**	46.26
XX-Large	813381-2X	**19-130-3611**	46.26
White			
X-Large	813881-XL	**19-130-3612**	46.26
XX-Large	813881-2X	**19-130-3613**	46.26
Blue			
X-Large	813781-XL	**19-130-3614**	46.79
XX-Large	813781-2X	**19-130-3615**	46.79

WARNING

Garments made of Tyvek* should not be used around heat, flames, sparks, or potentially flammable or explosive environments.

GENERAL PURPOSE

*Fisherbrand** Women's Long Lab Coats

Comfortable fit with durability

- White 65% polyester/35% cotton poplin weave
- Notch collar
- Three pockets
- Single-breasted, five-button front-closure
- Back belt, no vents
- Length: 39½" (100cm)
- Washable

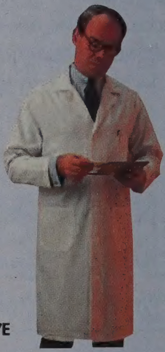
01-368C

Size	Cat. No.	Each
X-Small	**01-368A**	33.11
Small	**01-368B**	33.11
Medium	**01-368C**	33.11
Large	**01-368D**	33.11

*Fisherbrand** Men's Long Lab Coats

Comfortably styled—won't bind or restrict

- White twill or blue poplin
- Notch-collar
- Three pockets
- Single-breasted, five-button front-closure
- Vented back with side slits
- Length: 43" (109cm)



01-367E

Chest Size	Cat. No.	Each
White Twill		
34"	**01-367A**	34.23
36"	**01-367B**	34.23
38"	**01-367C**	34.23
40"	**01-367D**	34.23
42"	**01-367E**	34.23
44"	**01-367F**	34.23
Blue Poplin		
34"	**01-369A**	34.77
36"	**01-369B**	34.77
38"	**01-369C**	34.77
40"	**01-369D**	34.77
42"	**01-369E**	34.77
44"	**01-369F**	34.77

*Fisherbrand** Men's and Women's Lab Coats with Knit Cuffs

Polyester knit cuffs provide comfortable, snug fit

- White poplin-woven 80% polyester/20% cotton fabric
- Notched-lapel collar
- Three pockets
- Single-breasted, six stainless-steel snap front-closure
- Length: 43" (109cm)
- Washable

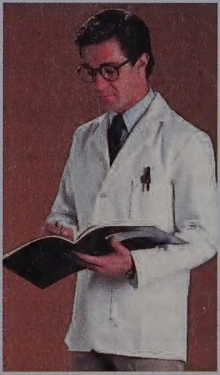
17-987-145D

Size	Cat. No.	Each
X-Small	**17-987-145A**	21.67
Small	**17-987-145B**	21.67
Medium	**17-987-145C**	21.67
Large	**17-987-145D**	21.67
X-Large	**17-987-145E**	21.67

*Fisherbrand** Men's and Women's Short Lab Coats

Won't bind or restrict

- White, twill-woven blend of 65% polyester-35% cotton
- Notch collar
- Three pockets
- Single-breasted, three-button front-closure
- Length: 30" (76cm)



01-366E

Chest Size	Cat. No.	Each
32"	**01-366A**	29.38
34"	**01-366B**	29.38
36"	**01-366C**	29.38
38"	**01-366D**	29.38
40"	**01-366E**	29.38
42"	**01-366F**	29.38
44"	**01-366G**	29.38

Sizing Guide for *Fisherbrand** Men's and Women's Lab Coats

Size	Fits Men's Chest Sizes	Fits Women's Bust Sizes
X-Small	32"	26 to 28"
Small	34 to 36"	30 to 32"
Medium	38 to 40"	34 to 36"
Large	42 to 44"	38 to 40"
X-Large	46 to 48"	40 to 42"

White Swan* Meta* Unisex Long Lab Coats

For men and women

Not fluid resistant or antimicrobial.
Slits provide access to pants pockets.

- Made of 65% polyester, 35% cotton poplin
- Three patch-style pockets
- Button-front closure
- Two-piece swing belt
- Length: 40" (102cm)
- Washable

Left: 18-999-942B.
Right: 18-999-944D.

Size	Mfr. No.	Cat. No.	Each
White			
X-Small	6116 11 XS	**18-999-942A**	25.75
Small	6116 11 S	**18-999-942B**	25.75
Medium	6116 11 M	**18-999-942C**	25.75
Large	6116 11 L	**18-999-942D**	25.75
X-Large	6116 11 XL	**18-999-942E**	25.75
XX-Large	6116 11 XXL	**18-999-942F**	28.33
XXX-Large	6116 11 XXX	**18-999-942G**	28.33
Blue			
X-Small	6116 19 XS	**18-999-943A**	29.36
Small	6116 19 S	**18-999-943B**	29.36
Medium	6116 19 M	**18-999-943C**	29.36
Large	6116 19 L	**18-999-943D**	29.36
X-Large	6116 19 XL	**18-999-943E**	29.36
XX-Large	6116 19 XXL	**18-999-943F**	31.81
XXX-Large	6116 19 XXX	**18-999-943G**	31.81
Navy			
X-Small	6116 14 XS	**18-999-944A**	29.36
Small	6116 14 S	**18-999-944B**	29.36
Medium	6116 14 M	**18-999-944C**	29.36
Large	6116 14 L	**18-999-944D**	29.36
X-Large	6116 14 XL	**18-999-944E**	29.36
XX-Large	6116 14 XXL	**18-999-944F**	31.81
XXX-Large	6116 14 XXX	**18-999-944G**	31.81

White Swan* Meta* Sizing Guide for Unisex Lab Coats

Lab Coat Size	Fits Men's Chest Sizes	Fits Women's
X-Small	30 to 32"	4 to 6
Small	34 to 36"	8 to 10
Medium	38 to 40"	12 to 14
Large	42 to 44"	16 to 18
X-Large	46 to 48"	40 to 42" Bust
XX-Large	50 to 52"	44 to 46" Bust
XXX-Large	54 to 56"	48 to 50" Bust

DuPont* Tyvek* Coveralls

Provide excellent inherent protection against sub-micron airborne particles

Coveralls are lightweight, chemically and biologically inert, and tear resistant.

- Full-length coveralls are cut generously for wearing over clothing
- Provide limited splash protection
- Economical enough to discard after wearing, yet strong enough to withstand several wearings
- Nylon zippered front
- White

ORDERING INFORMATION:
Additional sizes available. Contact your Fisher Scientific Customer Service Representative for ordering information.

01-361-1D
(hardhat, respirator, and gloves not included)

Size	Mfr. No.	Cat. No.	Case of 25
Open Wrists and Ankles			
Small	TY120SWHSM002500	**01-361-1A**	154.09
Medium	TY120SWHMD002500	**01-361-1B**	154.09
Large	TY120SWHLG002500	**01-361-1C**	154.09
X-Large	TY120SWHXL002500	**01-361-1D**	154.09
XX-Large	TY120SWH2X002500	**01-361-1E**	173.46
XXX-Large	TY120SWH3X002500	**01-361-1F**	184.88
4X-Large	TY120SWH4X002500	**01-361-1G**	197.81
Elasticized Wrists and Ankles			
Small	TY125SWHSM002500	**01-361-4A**	184.90
Medium	TY125SWHMD002500	**01-361-4B**	184.90
Large	TY125SWHLG002500	**01-361-4C**	184.90
X-Large	TY125SWHXL002500	**01-361-4D**	184.90
XX-Large	TY125SWH2X002500	**01-361-4E**	204.21
XXX-Large	TY125SWH3X002500	**01-361-4F**	216.44
4X-Large	Y125SWH4X002500	**19-308-647**	250.70
Elasticized Wrists and Ankles, Attached Hood			
Small	TY127SWHSM002500	**01-361-7A**	198.13
Medium	TY127SWHMD002500	**01-361-7B**	198.13
Large	TY127SWHLG002500	**01-361-7C**	198.13
X-Large	TY127SWHXL002500	**01-361-7D**	198.13
XX-Large	TY127SWH2X002500	**01-361-7E**	210.02
XXX-Large	TY127SWH3X002500	**01-361-7F**	233.18
4X-Large	TY127SWH4X002500	**19-308-661**	275.22
Elasticized Wrists, Attached Hood and Boots			
Small	TY122SWHSM002500	**01-361-2A**	201.05
Medium	TY122SWHMD002500	**01-361-2B**	201.05
Large	TY122SWHLG002500	**01-361-2C**	201.05
X-Large	TY122SWHXL002500	**01-361-2D**	201.05
XX-Large	TY122SWH2X002500	**01-361-2E**	222.00
XXX-Large	TY122SWH3X002500	**01-361-2F**	236.62
4X-Large	TY122SWH4X002500	**01-361-2G**	251.50

DuPont* Tyvek* Shirts and Pants

Lightweight, chemically and biologically inert, tear-resistant

Inherent barrier protection. Stops submicron particles, even after abrasion.

Shirts

- Snap front
- Full-length sleeves with open cuffs
- White

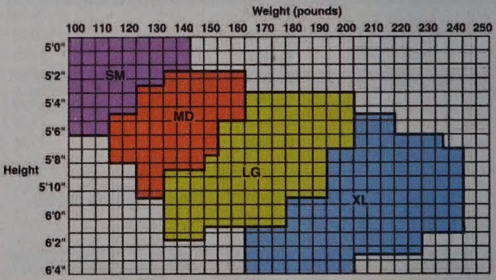
Pants

- Elasticized waist
- No pockets
- Open ankles
- White

01-361-18B and 01-361-20B

Size	Mfr. No.	Cat. No.	Case of 50
Shirts			
Small	TY303SWHSM005000	**01-361-18A**	236.33
Medium	TY303SWHMD005000	**01-361-18B**	236.33
Large	TY303SWHLG005000	**01-361-18C**	236.33
X-Large	TY303SWHXL005000	**01-361-18D**	236.33
XXX-Large	TY303SWH3X005000	**19-042-277**	270.05
Pants			
Small/Medium	TY350SWHMD005000	**01-361-20B**	195.74
Large/X-Large	TY350SWHXL005000	**01-361-20D**	195.74
XX-Large	TY350SWH2X005000	**01-361-20E**	216.14

Dupont* Tyvek* Coveralls Sizing Guide



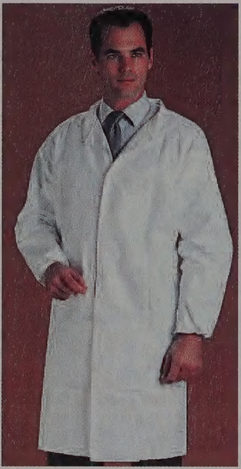
WARNING
Garments made of Tyvek* should not be used around heat, flames, sparks, or potentially flammable or explosive environments.

DuPont* Tyvek* Lab Coats

Disposable, yet strong enough to withstand several wearings

Provide excellent protection against submicron particles.

- Lightweight and tear resistant Tyvek fabric
- Knee length with five-snap front and full sleeves
- Chemically and biologically inert
- Provide limited splash protection
- White



19-900-021

Size	Mfr. No.	Cat. No.	Case of 30
Open Wrists, Two Pockets, Open Collar			
Small	TY212SWHSM003000	01-361-10A	158.50
Medium	TY212SWHMD003000	01-361-10B	158.50
Large	TY212SWHLG003000	01-361-10C	158.50
X-Large	TY212SWHXL003000	01-361-10D	158.50
XX-Large	TY212SWH2X003000	01-361-10E	167.99
XXX-Large	TY212SWH3X003000	19-308-674	201.72
4X-Large	TY212SWH4X003000	19-308-675	229.19
Elasticized Wrists, No Pockets, Mandarin Collar			
Medium	TY211SWHMD003000	19-165-224	155.39
Large	TY211SWHLG003000	19-900-021	154.23
X-Large	TY211SWHXL003000	19-900-022	154.23
XX-Large	TY211SWH2X003000	19-054-106	168.14
XXX-Large	TY211SWH3X003000	19-165-225	180.60
4X-Large	TY211SWH4X003000	19-054-105	200.48

DuPont* NexGen* Isolation Gowns

Resistant to abrasions, punctures, and tears

Provide cost-effective protection from aerosols and liquids in clinical settings. Strong whether wet or dry.

- Made of patented cloth-like NexGen fabric composite
- Knit or elastic wrists
- Bound neck with ties
- Ties at waist
- Wraparound style opens to front
- Nonsterile
- White

ORDERING INFORMATION:

- Front length: small 38¾" (98.4cm), medium 39¾" (101cm), large 40¾" (103.5cm)
- Back length of all sizes: 3" (7.6cm) longer than front

COMPLIANCE:

Comply with ASTM* F 1670 blood penetration resistance test.

19-999-344C

Size	Mfr. No.	Cat. No.	Case of
Knit Wrist			
Large	LS112WHLG2H	**19-999-344B**	30/206.75
Elastic Wrists			
Small	LS112WHSM	**19-999-344D**	50/298.98
Medium	LS112WHMD	**19-999-344C**	50/298.98
Large	LS112WHLG	**19-999-344A**	50/298.98
X-Large	LS112WHXL	**19-999-344E**	50/298.98

WARNING

Garments made of Tyvek* should not be used around heat, flames, sparks, or potentially flammable or explosive environments.

Cardinal Health* General-Purpose Coveralls with Tyvek*

Available in two styles

- Feature full-length front zipper and elastic wrists and ankles
- **Basic style** offers set-in sleeves and traditional collar
- **Premier style** offers raglan sleeves, bound collar, and a more generous cut
- Both styles are white

ORDERING INFORMATION:

To ensure cleanliness, coveralls are packed in double poly-lined bags.

19-130-5562C

Size	Mfr. No.	Cat. No.	Case of 25
Basic Style			
Small	9365	**19-130-5562A**	296.30
Medium	9366	**19-130-5562B**	297.35
Large	9367	**19-130-5562C**	298.47
X-Large	9368	**19-130-5562D**	318.82
XX-Large	9369	**19-130-5562E**	313.49
XXX-Large	9370	**19-130-5562F**	471.50
4X-Large	93671	**19-130-5562G**	520.51
5X-Large	93715	**19-130-2119**	475.43
Premier Style			
Small	9375	**19-130-5563**	319.33
Medium	9376	**19-147-756**	317.28
Large	9377	**19-147-757**	314.01
X-Large	9378	**19-147-758**	314.22
XX-Large	9379	**19-147-759**	354.49
XXX-Large	93793	**19-130-2117**	283.57
4X-Large	93794	**19-130-2118**	311.36

DuPont* NexGen* Protective Coveralls

Affordable high barrier protection

Lightweight coveralls (1.8 oz. per sq. yd.) provide excellent barrier protection against nontoxic particle, liquid, and spray hazards. True aerosol- and liquid-proof microporous barrier demonstrates >99% holdout of particles down to 0.35µm.

- Breathable, cloth-like material treated to provide antistatic properties for use in controlled environments
- Proprietary bilaminate composite fabric provides superior liquid penetration[1]
- Compared favorably to leading fabric in physical property tests covering resistance to ripping and tearing[2]
- Low linting for use in critical applications
- Disposable coveralls can be easily discarded via landfill burial or proper incineration[3]
- Long torso with polyester front zipper measures 26" long (66cm)
- White

19-088-2154 Hardhat, respirator and gloves not included.

Size	Mfr. No.	Cat. No.	Case of 25
Open Wrists and Ankles			
Small (5' 0" to 5' 7")	NG120SWHSM002500	**19-088-2137**	131.69
Medium (5' 2" to 5' 7")	NG120SWHMD002500	**19-088-2138**	131.69
Large (5' 5" to 5' 10")	NG120SWHLG002500	**19-088-2139**	131.69
X-Large (5' 7" to 6' 2")	NG120SWHXL002500	**19-088-2140**	131.69
XX-Large (5' 9" to 6' 4")	NG120SWH2X002500	**19-088-2141**	131.69
XXX-Large (6' 2" to 6' 5")	NG120SWH3X002500	**19-088-2142**	139.60
4X-Large (6' 5" to 6' 7")	NG120SWH4X002500	**19-088-2143**	150.76
Elasticized Wrists and Ankles			
Small (5' 0" to 5' 7")	NG125SWHSM002500	**19-088-2151**	145.17
Medium (5' 2" to 5' 7")	NG125SWHMD002500	**19-088-2152**	145.17
Large (5' 5" to 5' 10")	NG125SWHLG002500	**19-088-2153**	145.17
X-Large (5' 7" to 6' 2")	NG125SWHXL002500	**19-088-2154**	145.17
XX-Large (5' 9" to 6' 4")	NG125SWH2X002500	**19-088-2155**	145.17
XXX-Large (6' 2" to 6' 5")	NG125SWH3X002500	**19-088-2156**	153.86
4X-Large (6' 5" to 6' 7")	NG125SWH4X002500	**19-088-2157**	149.30
Elasticized Wrists, Ankles and Face Opening, Attached Hood and Boots			
Small (5' 0" to 5' 7")	NG122SWHSM002500	**19-088-2144**	170.61
Medium (5' 2" to 5' 7")	NG122SWHMD002500	**19-088-2145**	170.61
Large (5' 5" to 5' 10")	NG122SWHLG002500	**19-088-2146**	170.61
X-Large (5' 7" to 6' 2")	NG122SWHXL002500	**19-088-2147**	170.61
XX-Large (5' 9" to 6' 4")	NG122SWH2X002500	**19-088-2148**	170.61
XXX-Large (6' 2" to 6' 5")	NG122SWH3X002500	**19-088-2149**	180.85
4X-Large (6' 5" to 6' 7")	NG122SWH4X002500	**19-088-2150**	195.30
Elastic Wrists, Ankles and Face Opening, Attached Hood			
Small (5' 0" to 5' 7")	NG127SWHSM002500	**19-088-2158**	155.62
Medium (5' 2" to 5' 7")	NG127SWHMD002500	**19-088-2159**	155.62
Large (5' 5" to 5' 10")	NG127SWHLG002500	**19-088-2160**	155.62
X-Large (5' 7" to 6' 2")	NG127SWHXL002500	**19-088-2161**	155.62
XX-Large (5' 9" to 6' 4")	NG127SWH2X002500	**19-088-2162**	155.62
XXX-Large (6' 2" to 6' 5")	NG127SWH3X002500	**19-088-2163**	164.96
4X-Large (6' 5" to 6' 7")	NG127SWH4X002500	**19-088-2164**	178.15

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[1] Measured per ASTM F 903 in relation to the following substances: household bleach, diazinon (4 oz./gal.), hydraulic jack oil, machine oil, malathion (50%), motor oil (40W), sodium hydroxide and isocyanate-based paint hardener. Tests were performed by independent laboratories on material samples under laboratory conditions, not with actual garments or in actual onsite conditions.*

[2] ASTM D 751 (Grab Tensile Strength), ASTM D 1117 (Trapezoid Tear), ASTM D 3787 (Ball Burst).

[3] Certified incinerable by independent laboratory. For details, contact your Fisher Scientific Customer Service Representative.

DuPont* Tychem* SL Coveralls

Useful when handling many wet and dry chemicals, and certain hazardous materials such as PCBs

Effective protection against a range of chemicals. Excellent for waste management, PCB cleanup, hazardous response, and nuclear environments.

- DuPont Tyvek * fabric laminated with Dow* Saranex*-23P film
- Zipper front with storm flap

Coveralls

- Bound seams
- White

18-760C

Size	Mfr. No.	Cat. No.	Case of
Open Wrists and Ankles; Taped Seams			
Large	SL120TWHLG000400	**19-130-2732C**	4/130.80
X-Large	SL120TWHXL000400	**19-130-2732D**	4/130.80
XX-Large	SL120TWH2X000400	**19-130-2732E**	4/139.11
Elasticized Wrists and Ankles; Bound Seams			
Small	SL125BWHSM001200	**18-760A**	12/253.19
Medium	SL125BWHMD001200	**18-760B**	12/253.19
Large	SL125BWHLG001200	**18-760C**	12/253.19
X-Large	SL125BWHXL001200	**18-760D**	12/259.52
XX-Large	SL125BWH2X001200	**19-087-309**	12/268.38
XXX-Large	SL125BWH3X001200	**18-760E**	12/284.49
4X-Large	SL125BWH4X001200	**18-999-2583**	12/307.28
5X-Large	SL125BWH5X001200	**18-999-2584**	12/313.81

WARNING

Garments made of Tyvek* should not be used around heat, flames, sparks, or potentially flammable or explosive environments.

Tychem* SL Coveralls with Hood and Boots[†]

Elastic wrists and face

- **Bound-seamed** models are tightly sewn with a reinforced outer binding to increase strength and particle barrier
- **NSR-seamed** models (no sewing required) are lapped and thermally welded—no filters, thread or needle holes
- White

10-361-54C

Size	Mfr. No.	Cat. No.	Case of
NSR Seams			
Medium	SL123NWHMD000600	**01-361-54B**	6/345.14
Large	SL123NWHLG000600	**01-361-54C**	6/345.14
X-Large	SL123NWHXL000600	**01-361-54D**	6/345.14
XX-Large	SL123NWH2X000600X	**19-057-587**	6/337.13
3X-Large	SL123NWH3X000600	**19-057-588**	6/351.28
Bound Seams			
Small	SL122BWHSM001200	**01-361-51A**	12/339.97
Medium	SL122BWHMD001200	**01-361-51B**	12/339.97
Large	SL122BWHLG001200	**01-361-51C**	12/348.47
X-Large	SL122BWHXL001200	**01-361-51D**	12/348.47
XX-Large	SL122BWH2X001200X	**18-999-2216**	12/350.12
3X-Large	SL122BWH3X001200X	**18-999-2217**	12/357.66
4X-Large	SL122BWH4X001200	**19-166-136**	12/365.24
6X-Large	SL122BWH6X001200	**19-166-137**	12/425.99

[†] Attached socks are to be worn inside the user's own chemical protective boots. The boot splash cover adds additional protection. These attached socks do not have adequate durability or slip resistance to be worn as outer footwear covering.

Chemical Test Results for Tychem* SL[†] Fabric

	Normalized Breakthrough Time in Minutes[2]
Chemicals	Tychem SL
Acetone	24
Acetonitrile	13
Carbon disulfide	8
Dichloromethane	7
Diethylamine	12
Dimethylformamide	113
Ethyl acetate	36
n-Hexane	146
Methanol	480
Nitrobenzene	102
Sodium hydroxide	480
Sulfuric acid	480
Tetrachloroethylene	8
Tetrahydrofuran	P1
Toluene	Immediate

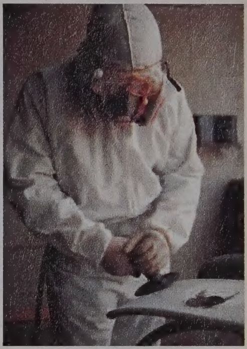
[†] Test battery performed per ASTM F 1001.*

Kimberly-Clark* KleenGuard* A30 Coveralls

Combine durability and breathability to provide comfortable splash and particle protection

Microforce* Barrier SMS fabric incorporates a web of microfibers that filter particulates and water-based liquids. Strong and abrasion-resistant.

- Excellent protection from non-hazardous particles and liquids
- Suitable for multiple wearings
- Zipper front with 1" flap
- White



19-170-388B

APPLICATIONS:

- Manufacturing
- Fiberglass and asbestos handling
- Lead abatement
- Food processing
- Electronics and more

COMPLIANCE:

Passes NFPA 99 for antistatic materials.

Size	Mfr. No.	Cat. No.	Case of
Elastic Back			
Medium	46002	**19-170-386A**	25/137.88
Large	46003	**19-170-386B**	25/137.88
X-Large	46004	**19-170-386C**	25/137.88
XX-Large	46005	**19-170-386D**	25/137.88
XXX-Large	46006	**19-170-386E**	21/137.88
4X-Large	46007	**19-170-386F**	21/137.88
Elastic Back, Wrists, and Ankles			
Medium	46102	**19-170-387A**	25/144.88
Large	46103	**19-170-387B**	25/144.88
X-Large	46104	**19-170-387C**	25/144.88
XX-Large	46105	**19-170-387D**	25/144.88
XXX-Large	46106	**19-170-387E**	21/144.88
4X-Large	46107	**19-170-387F**	21/144.88
Elastic Back, Wrists, and Ankles; Attached Hood			
Large	46113	**19-170-388B**	25/153.62
X-Large	46114	**19-170-388C**	25/153.62
XX-Large	46115	**19-170-388D**	25/153.62
XXX-Large	46116	**19-170-388E**	21/153.62
4X-Large	46117	**19-170-388F**	21/153.62
Elastic Back and Wrists; Attached Hood and Boots			
Medium	46122	**19-170-389A**	25/167.37
Large	46123	**19-170-389B**	25/167.37
X-Large	46124	**19-170-389C**	25/167.37
XX-Large	46125	**19-170-389D**	25/167.37
XXX-Large	46126	**19-170-389E**	21/167.37
4X-Large	46127	**19-170-389F**	21/167.37

Kimberly-Clark* KleenGuard* A20 Disposable Apparel

17-987-236A, 19-999-976, 01-349C, 19-150-1613

Patented, nonwoven, General-Protection MicroForce* barrier SMS(GP) fabric consists of three layers of polypropylene: two outer layers of tough, spunbonded filaments that resist abrasion and tearing; inner matrix of meltblown polypropylene microfibers that filters out liquid and particulates.

- Resist penetration by potentially infectious blood
- Air and moisture vapor can pass through to aid wearer comfort
- Weight, 1.6 oz. per square yard
- Triple-stitched serged seams
- Can withstand multiple wearings

COMPLIANCE:

Blood Strikethrough Tests

Test swatches were placed over blotters of known weight. A 1.4g sample of bovine blood was pipetted in a random dot pattern. Pressure was applied to the fabric and blotter, then immediately released. Blotters were weighed to determine how much blood had penetrated test fabrics.

Note: KleenGuard fabrics are not impervious; determine suitability of fabric and garments for the exposure and quantity of blood expected to be encountered.

KleenGuard* A20 Lab Coats

Tailored Style

- Made of breathable patented Microforce* Barrier SMS fabric
- Features long sleeves, notched-lapel collar, one chest and one hip pocket
- Plastic snap front closure
- White

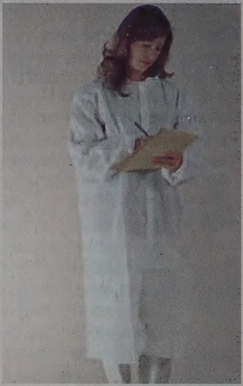
Size	Length	Mfr. No.	Cat. No.	Case of 25
Medium	37.5" (95cm)	10019	**01-349B**	179.76
Large	38.5" (98cm)	10029	**01-349C**	179.76
X-Large	38.5" (98cm)	10039	**01-349D**	179.76

WARNING
Not for use near heat or flames, or in flammable environments.

KleenGuard* A20 Professional Jackets

Protection against dry particulates and light liquid sprays

- Long, abrasion resistant jackets made of breathable Microforce* Barrier SMS fabric
- Raglan sleeves with elastic wrists, high collar, and no pockets
- Plastic snap front closure
- White



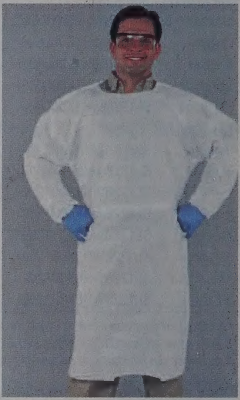
19-150-1613

Size	Length	Mfr. No.	Cat. No.	Case of 30
Medium	40" (102cm)	36262	**19-150-1613**	218.23
Large	42" (107cm)	36263	**19-150-1614**	218.23
X-Large	44" (112cm)	36264	**19-161-734**	191.85
XX-Large	46" (117cm)	36225	**19-150-1615**	218.23

KleenGuard* A20 Smock

Economical, breathable smock

- Breathable patented Microforce* barrier SMS fabric
- Elastic cuffs on sleeves; no collar or pockets
- Back-closure with glued-on belt that fastens in back
- One size fits all
- White



17-987-236A

Mfr. No.	Cat. No.	Case of 60
36150	**17-987-236A**	178.00

KleenGuard* A20 Lab Coat with Knit Cuffs

Breathable particle protection, comfortable snug fit

Similar to professional jackets but with snug-fitting polyester knit cuffs on raglan sleeves.

- With high collar, one chest pocket, and one hip pocket
- Plastic snap front closure
- Denim blue

Cuff detail 19-999-976

Size	Length	Mfr. No.	Cat. No.	Case of 15
Small	38" (97cm)	23871	**19-999-974**	130.69
Medium	40" (102cm)	23872	**19-999-975**	127.50
Large	42" (107cm)	23873	**19-999-976**	127.50
X-Large	44" (112cm)	23874	**19-999-977**	127.50

Cardinal Health* Standard Back Nonsterile Gowns

Offer maximum coverage with comfort

For industrial use only.

- Made from cellulose/polyester blend fabric
- Raglan sleeves
- Soft polyester cuffs
- Extra-wide back flap
- Blue

19-147-761

Size	Mfr. No.	Cat. No.	Case of 25
Large	9841N	**19-147-761**	224.89
X-Large	9842N	**19-120-3172**	262.04

PolyWear* Disposable Gown

Lightweight, single-layer low-density polyethylene gown for clinical and laboratory settings

Heat-sealed seam is behind sleeves—minimizes chance of contamination passing through.

- Full-length wraparound with open back tailored to eliminate excess material
- Tear-away collar for quick and easy removal
- Thumb loop on sleeve keeps cuffs under gloves, enhancing leak protection
- Gowns are folded for quick shake-out and easy donning
- Powder blue with smooth matte finish

18-567

ORDERING INFORMATION:
Individually packed in flip-top polybag and then placed in dispenser pack.

Regular: For users under 6'; 42" long (107cm) from neck to bottom, 39" wide (99cm); 34" long (86cm) sleeves.

Large: For users over 6'; 49" long (125cm), 42" wide (108cm); 38" long (97cm) sleeves.

COMPLIANCE:
Complies with FDA regulations. Successfully tested for liquid and aerosol blood resistance under ASTM* F 1670 Synthetic Blood Penetration Resistance and ASTM 1671 Bacteriophage Penetration Resistance.

Size	Length	Sleeve	Cat. No.	Pack of	Case of 5 Pk.
Regular (for under 6')	42" (107cm)	34" (86cm)	**18-567**	20/31.22	134.55
Large (for over 6')	49" (125cm)	38" (97cm)	**18-568**	15/24.91	109.13

ACCESSORIES

*Fisherbrand** Lightweight Nylon Hairnets

Weightless feel

- With ⅛" (3.2mm) holes
- Diameter: 24" (61cm)
- White

19-060-218

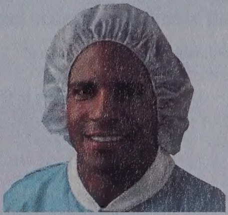
Cat. No.	Pack of 144	Case of 10 Pk.
19-060-218	33.57	286.88

*Fisherbrand** Latex-Free Polypropylene Bouffant Caps

Lightweight, non-linting

Made of 100% spunbonded polypropylene, caps feature a synthetic, nonlatex band stitched in with soft floss for a comfortable, secure fit.

- Comfortable, cool, and lint-free
- High filtration yet breathable
- Disposable
- Latex-free


19-098-914

ORDERING INFORMATION:
Double polybagged; flat packed for easy storage.

Diameter	Cat. No.	Pack of 100	Case of 5 Pk.
White			
18" (46cm)	**19-098-910**	15.23	65.10
21" (53cm)	**19-098-913**	15.99	68.33
24" (61cm)	**19-098-914**	16.57	70.80
28" (71cm)	**19-098-912**	17.33	74.05
Blue			
21" (53cm)	**19-098-915**	15.99	68.33
24" (61cm)	**19-098-916**	16.57	70.80

DuPont* Tyvek* Bouffant Caps

Lightweight, tear-resistant

Provide excellent protection against microscopic airborne particles.

- Lightweight, chemically and biologically inert, and tear resistant Tyvek
- Elastic band for comfortable, unrestricted fit
- Diameter: 21" (53cm)
- White caps are designed for all hairstyles

01-361-80C

Mfr. No.	Cat. No.	Case of 250
TY667SWH00025000	**01-361-80C**	262.21

WARNING
Garments made of Tyvek* should not be used around heat, flames, sparks, or potentially flammable or explosive environments.

Kimberly-Clark* KleenGuard* A10 Light- Duty Bouffant Caps

Breathable polypropylene

- Single layer, spunbond polypropylene
- White

17-981-43A

ORDERING INFORMATION:
Available in case of 1000 caps (in 10 polybags containing 100 caps each).

Diameter	Mfr. No.	Cat. No.	Case of 1000
21" (53cm)	36850	**17-981-43A**	219.35
24" (61cm)	36860	**17-981-43B**	247.18

Kimberly-Clark* KleenGuard* A20 Hood

Full breathable particle protection

Breathable patented Microforce* barrier SMS fabric.

- Hood extends over shoulders to fit inside coveralls
- Elastic face closure
- White

01-349-8

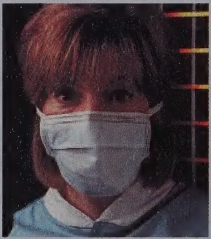
Mfr. No.	Cat. No.	Case of 100
36890	**01-349-8**	149.01

*Fisherbrand** Facemasks

Reduce particle generation

Thin middle layer of meltblown polypropylene filter media lies between spunbonded polypropylene inner and outer layers.

- Bacterial filtration efficiency is 99%
- Layers ultrasonically welded to reduce particle generation
- Blue outer layer with white inner layer
- Elastic ear loops or polypropylene ties, with or without plastic clip



18-960C

Description	Cat. No.	Case of
With ear loops and clips	**18-960A**	600/370.75
With ear loops	**18-960B**	500/149.37
With ties	**18-960C**	300/111.25

LOOKING FOR MORE HOODS?

DuPont* Suprel* LS Full-Face Hoods can be found among the Controlled Environments products starting on p. 15.

Cardinal Health* Insta-Gard* Earloop Mask with Eyeshield

Comfort plus eye protection

- Contoured nose cutout allows exhaled breath to escape unobstructed through mask
- Eyeshield treated with anti-fogging agent
- Downward folded pleats
- Sonically sealed edges
- Fully enclosed nosepiece
- Latex-free
- Blue

19-120-1281

Mfr. No.	Cat. No.	Case of 100
AT71311	**19-120-1281**	150.97

*Fisherbrand** Facemask with Polyfiltration Medium

Contour bar reduces eyeglass fogging

Blue nonwoven synthetic fiber outer layers surround fiberglass-free polyfiltration inner layer.

- Bacteria filtration exceeds 92% at 1.0 micron.
- Two sets of Tyvek* ties
- Three-ply
- Surgical style

COMPLIANCE:
ISO Class 5 (formerly Class 100) compatible.

01-361-92

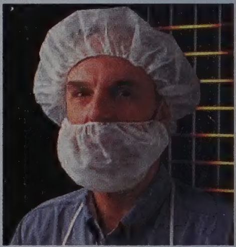
Mfr. No.	Cat. No.	Case of 400
0136192	**01-361-92**	146.74

*Fisherbrand** Polypropylene Beard Cover

Cool and comfortable

Excellent in food preparation and industries where body contaminants are a concern.

- Cool, nonflammable, nonparticulating
- Comfortable elastic seams
- Latex-free
- White



19-098-917

Size	Cat. No.	Pack of 100	Case of 5 Pk.
Regular	**19-098-917**	20.06	85.73
X-Large	**19-098-918**	20.28	86.68

*Trademark. See Trademark Reference.

*Fisherbrand** Poly Boots

Great for splash protection

- Calf-high clear plastic boots protect shoes
- Ideal for blood spills or bodily fluid cleanup

19-181-527

Size	Thickness	Cat. No.	Pack of 100	Case of 10 Pk.
Medium	1.75mil	**19-181-527**	29.90	264.56
Large	3mil	**19-181-528**	47.25	415.31

Kimberly-Clark* KleenGuard* A20 Boot Covers

Breathable particle protection

Made of white, breathable patented Microforce* barrier SMS fabric

- Covers fit over virtually all boots
- With elastic tops

NOTE:
Boot covers may not provide traction on slippery floors.

01-349-6

Mfr. No.	Cat. No.	Case of 150 Pair
36880	**01-349-6**	221.34

*Fisherbrand** Conductive Polypropylene Shoe Covers

Less static buildup

- Constructed of blue polypropylene
- Conductive carbon strip helps eliminate static buildup
- With elastic ankles

ORDERING INFORMATION:
Packed in double polybag.

19-098-925

Size	Cat. No.	Pack of 50 Pair	Case of 3 Pk.
Regular	**19-098-925**	44.42	113.91
X-Large	**19-098-926**	44.42	113.91

*Fisherbrand** Polylatex Shoe Covers

Skid resistant

Durable, zero particulate shoe covers repel liquids.

- Constructed of blue polylatex fabric
- With seamed or seamless bottom
- Elastic ankle for comfortable fit

19-098-927

ORDERING INFORMATION:
Packed in double polybag.

Size	Cat. No.	Pack of 50 Pair	Case of 3 Pk.
Seamed Bottom			
Regular	**19-098-927**	23.80	61.03
X-Large	**19-098-929**	23.80	61.03
Seamless Bottom			
Regular	**19-098-928**	23.80	61.03
X-Large	**19-098-930**	23.80	61.03

WARNING
These products contain natural rubber latex, a component of which may cause allergic reaction in some users. Use only in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these products.

DuPont* ProShield* Shoe Covers

Superior protection against particles and liquids

Unique coated polypropylene-fabric provides excellent protection against particles and liquids.

- Blue polypropylene coated fabric
- Skid-resistant soles
- Elastic ankles
- Serged seams
- One size fits all

18-999-2654

Mfr. No.	Cat. No.	Case of 100 Pair
P3444SGY000200NT	**18-999-2654**	112.56

*Fisherbrand** Heavyweight Polypropylene Shoe Covers

Strong, lightweight polypropylene

- Constructed of blue heavy-weight poly-propylene
- Available with or without nonskid surface
- Elastic ankles
- Weight: 42g/m^2

19-098-921

NEW

Size	Cat. No.	Pack of 50	Case of 3 Pk.
Without Nonskid Surface			
Regular	**19-098-921**	22.02	56.46
X-Large	**19-098-922**	29.01	56.46
With Nonskid Surface			
Regular	**19-098-923**	35.53	91.10
X-Large	**19-098-924**	35.53	91.10

DuPont* Sure Step* Shoe Covers

NEW

Help to keep workers clean and safe

Resistant to liquids. Will not delaminate; practically lint-free. Generously sized.

- Constructed of a unique monofilament coated, tear-resistant and durable fabric
- With skid-resistant sole
- Elastic ankles for secure fit
- Seamless

19-047-744

Size	Mfr. No.	Cat. No.	Case of 100 Pair
White			
Large	PE440SWHLG020000	**19-045-450C**	61.95
X-Large	PE440SWHXL020000	**19-088-2235**	68.38
Blue			
Large	PE440SBULG020000	**19-047-744**	73.47
X-Large	PE440SBUXL020000	**19-047-745**	70.42

DuPont* Tyvek* Shoe Covers

Low-linting and anti-static

Comfortable, lightweight, and durable. Stop submicron particles, even after abrasion. Not cleaned.

- Constructed of white Tyvek
- Standard finish sole
- Elastic ankles
- Serged seams

01-361-77F

Size	Mfr. No.	Cat. No.	Case of 100 Pair
Large	TY440SWH00020000	**01-361-77F**	119.52
X-Large	TY440SWHXL010000	**18-999-2610**	120.92

WARNING

Garments made of Tyvek* should not be used around heat, flames, sparks, or potentially flammable or explosive environments.

Kimberly-Clark* KleenGuard* A20 Shoe Covers

Secure fit

- White breathable patented Microforce* barrier SMS fabric
- Standard sole
- Elastic tops
- One size fits all

19-057-570

Mfr. No.	Cat. No.	Case of 150 Pair
36885-71	**19-057-570**	135.81

ARRAY ANALYSIS

LIVE CELL ARRAY—KITS

Nunc* LiveCell* Array Apoptosis Kits

Use microarray slides for real-time study of individual cell viability within heterogeneous populations

NEW

Sterile, disposable LiveCell Array slides contain an embedded transparent array of picowells. Enable multiple functional assays on living cells followed by postfixation studies on the same cells.

- Use of both Annexin V-FITC and Propidium Iodide distinguishes between necrotic and apoptotic cells
- Suitable for both adhering and nonadhering cells
- Cells will not be displaced by staining, rinsing, or perfusion
- Compatible with standard fluorescent microscopes

12-566 Series

INCLUDES:
Annexin V-Fluorescein Isothiocyanate (FITC), 10µg/mL (10X solution); Propidium Iodide (PI), 40µg/mL (10X Solution); Binding Buffer (1X Solution); Five Nunc LiveCell Array slides

REQUIRED ACCESSORIES:
Ca^{2+}- and Mg^{2+}-free PBS for washes, fluorescence microscope equipped to measure FITC and rhodamine fluorescence, hemacytometer or other device for cell counting.

STORAGE CONDITIONS:
Store reagents at 4°C in the dark. Stable for one year from date on label. Slides can be stored at room temperature for up to two years from date of purchase.

Slide Well Size	Mfr. No.	Cat. No.	Each
15µm	130512	**12-566-108**	800.00
20µm	130513	**12-566-109**	600.00
100µm	130514	**12-566-111**	600.00
250µm	130515	**12-566-114**	800.00

Particular types of arrays, as well as methods of making or using arrays, may be covered by one or more patents held by others. Use of Nunc microarray products is recommended only for applications which do not violate proprietary rights of others or for which the user has a license or other permission under such proprietary rights.

LOOKING FOR THERMO SCIENTIFIC* PIERCE* EXCELARRAY* FLUORESCENT ARRAY KITS?

ExcelArray antibody sandwich microarrays are multiplexed fluorescent immunoassays for the simultaneous quantitation of up to 12 protein targets. For complete details, see the Cell Biology section.

*Trademark. See Trademark Reference.

Prices subject to change.

Nunc* LiveCell* Array Cell Surface Markers Kits

Determine CD4/CD8 ratios by dual staining lymphocytes with fluorescently labeled anti-CD4 and anti-CD8 in conjunction with anti-CD3

- Detect CD3 for the quantification of a T-lymphocyte immune response
- Quantify CD4 and CD8 for the determination of immune activation and suppression
- Use Hoechst dye to penetrate all cells, allowing for the quantification of total T-lymphocytes from the remaining B-lymphocytes, monocytes, natural killer lymphocytes, and remaining mononuclear cells
- Utilize monoclonal antibodies raised in mouse, which react with human CD markers; other species have not been tested

12-566-115

INCLUDES:

anti-Human CD3-FITC antibody, 70µL; anti-human CD4-PE antibody, 70µL; anti-human CD8-Cy*-Q antibody, 70µL; Hoechst 33342, 70µL; Nunc LiveCell Array slides, 5 each.

REQUIRED ACCESSORIES:

Ca^{2+}- and Mg^{2+}-free PBS for washes; Fluorescence microscope equipped to measure FITC, PE, Cy-Q, and Hoechst; Hemacytometer or other device for cell counting; Paraformaldehyde, if fixation is required.

STORAGE CONDITIONS:

Store reagents at 2° to 8°C in the dark. Stable for one year from date on label. Slides may be stored at room temperature for up to two years from date on label.

Slide Well Size	Mfr. No.	Cat. No.	Each
15µm	130516	**12-566-115**	800.00
20µm	130517	**12-566-116**	600.00
100µm	130518	**12-566-117**	600.00
250µm	130519	**12-566-118**	800.00

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LOOKING FOR THERMO SCIENTIFIC* CELLOMICS* HITKIT* CELL SIGNALING AND CELL BIOLOGY KITS?

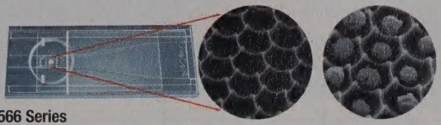
Fluorescence-based assays are compatible with a wide range of cell types and provide sensitive quantitative and qualitative results without radioactivity. For more information, see the Cell Biology section.

LIVE CELL ARRAY—SLIDES

Nunc* LiveCell* Array Microscope Slides

Provide real-time study of individual, living cells within heterogeneous populations

- Suitable for both adhering and nonadhering cells
- Disposable and sterile, with an embedded transparent array of picowells
- Enable multiple functional assays on living cells followed by postfixation studies on the same cells
- Staining, rinsing, and perfusion do not displace cells
- Compatible with standard microscopes
- Image Analysis Software designates an address to each cell



12-566 Series

Well Size	Mfr. No.	Cat. No.	Pack of
15µm	130504	**12-566-100**	1/150.84
	130505	**12-566-101**	5/750.00
20µm	130506	**12-566-102**	1/100.75
	130507	**12-566-103**	5/500.94
100µm	130508	**12-566-104**	1/100.75
	130509	**12-566-105**	5/500.94
250µm	130510	**12-566-106**	1/150.84
	130511	**12-566-107**	5/750.00

NUCLEIC ACID ARRAY—KITS

Corning* Pronto!* Universal Microarray Reagent System

Increases sensitivity and specificity by removing autofluorescent background due to oxidation

INCLUDES:

Borohydride solution (10mL), Presoak solution (1L)

Description	Mfr. No.	Cat. No.	Each
Background Reduction Kit for up to 50 arrays	40029	**07-201-622**	140.00

LOOKING FOR CORNING* MICROARRAY ACCESSORIES?

For the Corning Hybridization Chamber, Microarray Slide Holders, and Microarray Storage Pouches, please see p. 36.

Corning* Pronto!* Universal Microarray Reagent System

Includes all components necessary for an enhanced microarray protocol

Universal spotting solution is designed and optimized for printing both long oligonucleotides and cDNA on UltraGAPS* slides, with less than 10% evaporation over extended print runs. Univeral hybridization reagents include accelerants and volume excluders to enhance sensitivity.

- Detects differential expression from as little as 5μg of total RNA
- Interslide CV is less than 10%
- Presoak step reduces background

Storage Conditions:

Store at room temperature.

Includes	Universal Validation Kit	Univeral Printing Kit	Universal Hybridization Kit	Hybridization Kit w/out Presoak
UltraGAPS Slides	√	√		
Universal Spotting Solution	√	√		
Presoak Solution	√		√	
Prehybridization Solution	√		√	√
Short Oligo Hyb. Soln.	√		√	√
Long Oligo Hyb. Soln.	√		√	√
Wash Reagent A	√		√	√
Wash Reagent B	√		√	√
Presoak Tablets	√		√	

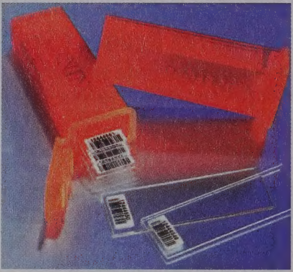
07-200-906

Description	Mfr. No.	Cat. No.	Each
Universal Validation Kit with 10 slides	40024	**07-200-904**	300.69
Universal Printing Kit with 25 slides	40025	**07-200-905**	402.30
Universal Hybridization Kit for 10 arrays	40028	**07-200-907**	136.00
Universal Hybridization Kit for 25 arrays	40026	**07-200-906**	340.00
Hybridization Kit w/out Presoak for 25 arrays	40030	**07-200-915**	283.20

NUCLEIC ACID ARRAY—SLIDES

Corning* UltraGAPS* Coated Slides

Ideal for printing both long (>50-mer) oligonucleotide and cDNA arrays



07-200-256

- Uniform, covalently bound coating of pure Gamma Amino Propyl Silane (GAPS) yields a high-quality DNA-binding surface with stable surface properties and low autofluorescence
- Hydrophobic and stable surface yields smaller spots and increased slide-to-slide reproducibility
- Low background, high signal-to-noise ratio, and consistent spot morphology enhance the ability to detect the expression of low abundance transcripts
- Cleaned and individually examined for mechanical defects and the presence of glass and dust particles
- Shipped with a lot-specific Quality Certificate, detailing the results of nine quality parameters, including DNA retention and spot morphology

Bar Code	Packaging	Mfr. No.	Cat. No.	Case of 25
Yes	Pack of 5	40015	**07-200-256**	358.20
Yes	Pack of 25	40017	**07-200-139**	358.20
No	Pack of 5	40016	**07-200-257**	341.45
No	Pack of 25	40018	**07-200-138**	341.45

Corning* GAPS II* Coated Slides

Unique surface chemistry enables the even immobilization of DNA and uniform spot morphology

07-200-008

Each slide is manufactured with quality materials, then visually inspected and subjected to a rigorous cleaning process. A proprietary coating process causes the Gamma Amino Propyl Silane (GAPS) molecules to bond covalently to the glass surface, leaving positively charged primary amine groups free to attract the negatively charged sugar phosphate backbone of cDNA.

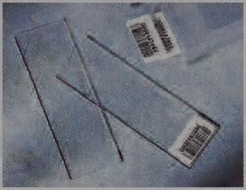
- Ultralow fluorescent background lends superior sensitivity
- High DNA retention provides maximum signal strength
- To facilitate data tracking, slides are available with small bar codes traceable to manufacturing lots
- Every lot of slides is tested to ensure superior performance
- Dimensions: 25 × 75mm
- Each slide is precisely packaged in a container that protects its surface during shipment

Bar Code	Packaging	Mfr. No.	Cat. No.	Case of 25
Yes	In pouches of 5	40003	**07-200-008**	304.62
Yes	In pouches of 25	40005	**07-200-006**	291.55
No	In pouches of 5	40004	**07-200-009**	288.92
No	In pouches of 25	40006	**07-200-007**	275.79

Corning* Epoxide-Coated Microarray Slides

Ideal for covalent attachment of unmodified or amino-modified short oligonucleotides (~30-mer) and long oligonucleotides (>50-mer)

- Provide superior spot size control for printing high-density arrays when used with the Pronto!* Epoxide Spotting Solution (07-201-626); for details, visit our Web site
- Do not require UV crosslinking or baking for DNA coupling
- Ensure interarray CV below 10%



07-201-625, 07-201-624

Bar Code	Packaging	Mfr. No.	Cat. No.	Case of 25
Yes	In pouches of 5	40041	**07-201-624**	360.71
No	In pouches of 5	40042	**07-201-625**	344.96
No	Bulk	40044	**07-202-524**	334.75

Thermo Scientific* Erie SuperChip* Precoated Microarray Slides

Four surface chemistries available

Aminopropylsilane-coated slides are ideal for microarrays fabricated with PCR products as probes; Poly-L-Lysine-coated slides offer an economical alternative to aminopropylsilane; Aldehyde-silane-coated slides provide a uniform coating of aldehydes for the attachment of amine-modified DNA; Epoxysilane-coated slides utilize a coating of epoxide groups for the attachment of amine-modified DNA with an amine end.

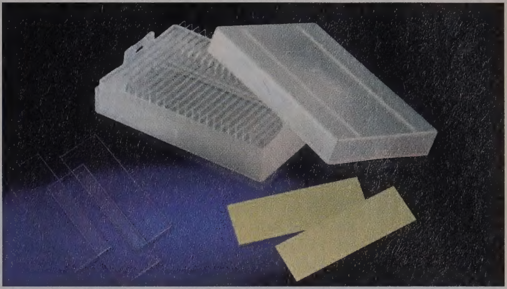
- Manufactured from high-quality low-fluorescence glass
- Consistent surface coating to provide a uniform DNA immobilizing surface
- Bind an optimal amount of probe while minimizing nonspecific binding of labeled targets
- Available with an enhanced surface (ES) treatment that produces a smaller, more uniform spot size without changing surface chemistry
- Compatible with standard microarray spotting and detection systems
- Ready for immediate use or may be stored at room temperature for up to a year (six months for Poly-L- Lysine)
- Overall dimensions: 25 × 75mm
- Printable area: 20 × 70mm
- Packaged in a secure no-contact mBox* and vacuum sealed in a foil barrier bag

Enhanced Surface	Bar Code	Cat. No.	Pack of 20
Aminopropylsilane Coated			
No	No	**22-037-210**	254.40
Yes	No	**22-037-212**	302.40
No	Yes	**22-037-211**	317.60
Poly-L-Lysine Coated			
No	No	**22-037-216**	179.00
Yes	No	**22-037-217**	254.00
Aldehyde Silane Coated			
No	No	**12-550-57**	294.65
Yes	No	**12-550-58**	346.35
Epoxysilane Coated			
No	No	**12-550-55**	273.95
Yes	No	**12-550-56**	325.65

Nunc* Glass Microarray Slides

NEW

Available in a choice of surfaces for leading microarray applications



12-566-224

- Low fluorescence provides high signal-to-noise ratio
- Uniformity provides reproducibility
- Dimensions: 25 × 75mm

Applications:

cDNA, PCR products, and proteins; aldehyde: Nucleic acids, SNPs, proteins; epoxy: Nucleic acids, proteins, poly-L-Lysine: Proteins, cells; uncoated; Any glass coating process

Coating	Bar Code	Cat. No.	Case of 20
Aminopropylsilane	No	**12-566-224**	265.25
Aldehyde	No	**12-566-234**	276.50
Epoxy	No	**12-566-232**	270.75
Poly-L-Lysine	No	**12-566-229**	206.23
Uncoated	No	**12-566-226**	145.50

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LOOKING FOR CORNING* MICROARRAY ACCESSORIES?

For the Corning Hybridization Chamber, Microarray Slide Holders, and Microarray Storage Pouches, please see p. 36.

LOOKING FOR MICROARRAY ACCESSORIES?

Microarray Accessories, including mSeries LifterSlips Cover Slips for Microarray Slides and the mBox Microarray Slide Handling Tray, can be found on p. 36.

PROTEIN ARRAY—KITS

Thermo Scientific* Pierce* SearchLight* Arrays

NEW

Quick, easy-to-use multiplexed sandwich ELISAs enable quantitative measurement of multiple analytes in a single well

- Utilize a 2 × 2 or 3 × 3 array of capture antibodies prespotted in each well of a 96-well plate
- Generate a chemiluminescent signal that is imaged using a commercially available 12-bit cooled CCD camera
- Quantify the proteins in the sample through comparison to standard curves
- Produce results in approximately two hours

INCLUDES:

Sufficient reagents for one 96-well ELISA assay

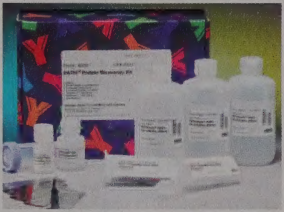
Description	Analytes	Species	Sample Types	Sample Size	Cat. No.	Each
Angiogenesis Array 1	ANG-2, FGF Basic, HB-EGF, HGF, KGF, PDGF-BB, TIMP-1, Tpo, VEGF	Human	Cell culture supernate, EDTA plasma, serum	10-50µL/well	**EN-84699**	1350.00
Angiogenesis Array 2	FGF basic, HGF, PDGF-BB, VEGF	Human	Cell culture supernate, EDTA plasma, serum	10-50µL/well	**EN-84694**	725.01
Chemokine Array 1	Eotaxin, I-309, IL-β, MCP-1, MDC, MIP-1α, MIP-1β, RANTES, TARC	Human	Cell culture supernate; EDTA, heparin, or sodium citrate plasma; serum	10-50µL/well	**PI-84659**	1350.00
	Eotaxin, JE/MCP-1, KC/GROα, MCP-5, MIP-1α, MIP-2, RANTES, SDF-1β, TARC	Mouse	Cell culture supernate, serum	10-50µL/well	**EN-84729**	1350.00
	Fractalkine, KC/GROα, MCP-1, MIP-1α, MIP-2, MIP-3α, RANTES	Rat	Cell culture supernate, EDTA plasma, serum	10-50µL/well	**EN-84707**	1100.00
Chemokine Array 2	Exodus II, GROα, IP-10, I-TAC, Lymphotactin, MIP-3α, MIP-3β, NAP-2, SDF-1β	Human	Cell culture supernate, EDTA plasma, serum	5-50µL/well	**EN-84629**	1350.00
	Eotaxin, MCP-1, MIP-1α, RANTES	Mouse	Cell culture supernate, serum	10-50µL/well	**EN-84724**	725.01
	MCP-1, MIP-1α, MIP-3α, RANTES	Rat	Cell culture supernate, EDTA plasma, serum	10-50µL/well	**EN-84706**	725.01
Chemokine Array 3	MCP-1, MIP-1α, MIP-1β, RANTES	Human	Cell culture supernate; EDTA, heparin, or sodium citrate plasma; serum	5-50µL/well	**PI-84654**	725.00
	KC/GROα, MCP-5, MIP-2, TARC	Mouse	Cell culture supernate, serum	10-50µL/well	**EN-84725**	725.01
Chemokine Array 4	Eotaxin, MCP-1, MDC, TARC	Human	Cell culture supernate; EDTA, heparin, or sodium citrate plasma; serum	5-50µL/well	**PI-84656**	725.00
Cytokine Array 1	IFNγ, IL-1β, IL-2, IL-4, IL-5, IL-6, IL-10, IL-12 (p70), TNFα	Mouse	Cell culture supernate, serum	10-50µL/well	**PI-84649**	1350.00
Cytokine Array	IFNγ, IL-1β, IL-2, IL-4, IL-6, IL-8, IL-10, IL-12(p70), TNFα	Porcine	Cell culture supernate, serum	5-50µL/well	**EN-84669**	1350.00
Inflammatory Cytokine Array	IFNγ, IL-1β, IL-6, TNFα	Primate	Cell culture supernate, serum	10-50µL/well	**EN-84740**	725.01
		Rat	Cell culture supernate, EDTA plasma, serum	10-50µL/well	**EN-84704**	725.01
		Mouse	Cell culture supernate, serum	10-50µL/well	**PI-84645**	725.00
		Porcine	Cell culture supernate, serum	5-50µL/well	**EN-84664**	725.01
Inflammatory Cytokine Array 1	IFNγ, IL-1α, IL-1β, IL-2, IL-6, IL-8, IL-10, IL-12 (p70), TNFα	Human	Cell culture supernate, heparin or sodium citrate plasma, serum	10-50µL/well	**EN-84619**	1350.00
Inflammatory Cytokine Array 2	IFNγ, IL-1β, IL-6, TNFα	Human	Cell culture supernate, heparin or sodium citrate plasma, serum	10-50µL/well	**EN-84614**	725.01
Inflammatory Cytokine Array 3	IL-1β, IL-6, IL-10, IL-12	Human	Cell culture supernate, heparin or sodium citrate plasma, serum	10-50µL/well	**EN-84615**	850.00
MMP Array 1	MMP-1, MMP-2, MMP-3, MMP-8, MMP-9, MMP-10, MMP-13, TIMP-1, TIMP-2	Human	Cell culture supernate, EDTA plasma, serum	10-50µL/well	**EN-84739**	1350.00
MMP Array 2	MMP-2, MMP-9, TIMP-1, TIMP-2	Human	Cell culture supernate, EDTA plasma, serum	10-50µL/well	**EN-84734**	725.01
TH1/TH2 Cytokine Array 1	IFNγ, IL-2, IL-4, IL-5, IL-8, IL-10, IL-12(p70), IL-13, TNFα	Human	Cell culture supernate; EDTA, heparin, or sodium citrate plasma; serum	10-50µL/well	**PI-84689**	1350.00
TH1/TH2 Cytokine Array 2	IFNγ, IL-2, IL-4, IL-10,	Human	Cell culture supernate; EDTA, heparin, or sodium citrate plasma; serum	10-50µL/well	**PI-84684**	725.00
TH1/TH2 Cytokine Array	IFNγ, IL-2, IL-4, IL-10	Mouse	Cell culture supernate, serum	10-50µL/well	**PI-84644**	725.00
		Porcine	Cell culture supernate, serum	5-50µL/well	**EN-84665**	725.01

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* Pierce* PATH* Protein Microarray Kit

Utilize slides with a proprietary ultra-thin (<500nm) nitrocellulose coating for noncovalent, yet irreversible capture of active proteins


EN-82000

- Nitrocellulose coating offers low background and increased dynamic range
- Standard slide dimensions provide compatibility with all commonly available slide-format microarray readers
- Individual etched barcode and accompanying numbers on slides allow easy identification for reliable tracking and documentation
- Complete kit provides a ready-to-use, optimized system for superior results
- Slide dimensions: 75 × 25 × 1mm
- Printable area: 58 × 21mm

Applications:

- Quantitative multiplex immunoassays
- Multiplex serological assays
- Single-capture antibody microarrays
- Protein microarrays for all stages of drug development

INCLUDES:

PATH Protein Microarray Slide, 10 each; PATH Print (5X) Buffer, 10 mL; PATH Block (5X) Buffer, 30 mL; PATH Wash (10X) Buffer, 2 × 250 mL; PATH Rinse (10X) Buffer, 250 mL

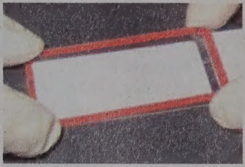
STORAGE CONDITIONS:

Store PATH Block (5X) Buffer at 4°C. Store all other components at room temperature. Store PATH Protein Microarray Slides in the original packaging.

Cat. No.	Each
EN-82000	499.62

Thermo Scientific* Lab Vision* Antibody Microarray Complete Kit

Easy-to-use kit screens hundreds of proteins simultaneously


TAA-001

This convenient research tool enables high-throughput protein profiling with the potential to generate a large number of datapoints. 722 antibodies are spotted in triplicate per slide, including internal controls, for a total of over 2100 spots. In addition, formulations of most antibodies may be purchased separately for further evaluation.

- Utilizes antibodies that have been performance tested for Western blotting, immunohistochemistry, or immunoprecipitation
- Eliminates handling of hazardous materials
- Extremely sensitive—10 to 100µg of total protein is sufficient to generate a strong signal
- Ready-to-use; does not need rehydration
- Compatible with most commercially available microarray scanners
- Spotted with antibodies relevant to a variety of cellular processes, including angiogenesis, cell cycle, signal transduction, neuroscience, apoptosis, cancer research, and transcriptional regulation

INCLUDES:

Two microarrayed slides; Extraction buffer, 2mL; Labeling buffer, 1mL; Biotinylation reagent, 1 to 2mg; Hybridization buffer, 1mL; Streptavidin, 2mL; Detection antibody, 2mL; Two micro spin columns and collection tubes; Four hybridization chambers; Four cover slips

STORAGE CONDITIONS:

Store slides and all reagents except the biotinylation reagent at 2° to 8°C for up to one year. Biotinylation reagent should be stored at -20°C upon arrival.

NOTE:

The antibody microarray may be used to determine relative protein expression levels of two related samples, but may not be used to quantify protein expression.

Description	Cat. No.	Each
Antibody Microarray Kit	TAA-001	1214.63

Whatman* FAST* Macro Membrane-based Antibody Array Kits

Used to simultaneously evaluate the relative abundance of 20 different cytokines

09-301-210

Each array consists of 20 anti-cytokine antibodies arrayed on Whatman Protran*-BA83 nitrocellulose (0.2µm), a surface which is well known for high protein binding capacity and excellent signal-to-noise ratios. Cytokines are arrayed in triplicate with nine positive and three negative control spots per membrane.

- Require as little as 400µL of sample
- Provide array-to-array reproducibility
- Tested for cytokine specificity—virtually no cross reactivity
- Sensitivity as low as 15pg/mL
- Arrays are visualized using streptavidin/HRP-based chemiluminescent detection and x-ray film or a phosphor imager
- Membrane is notched in one corner for orientation
- Cytokine spots are visible on the unprocessed membrane—inert dye disappears during membrane wet-out

INCLUDES:

Arrayed membranes, FAST Macro Wash and Blocking Buffers, a biotinylated antibody cocktail, processing tray

NOTE:

650µL samples may be processed with the processing tray provided with the kit. For samples as small as 400 to 500µL, it is suggested that macroarrays be processed in the Chip Clip* (holds one to two arrays [Cat. No. 09-301-213]) or FAST Frame (holds up to eight arrays [Cat. No. 09-301-214]) in conjunction with dual well incubation chambers and standard 1 × 3" glass microscope slides.

FAST Macro Cytokine Panels

Human I		Mouse I	
Eotaxin	IL-10	M-CSF	IL-12 (p40)
GM-CSF	IL-13	GM-CSF	IL-12 (p70)
IFNγ	IP-10	IFNγ	IL-13
IL-1α	MCP-1	IL-1β	MCP-1
IL-1β	MCP-2	IL-2	MCP-5
IL-2	MCP-3	IL-3	MIP-1α
IL-4	MCP-4	IL-4	MIP-2
IL-5	MIP-1α	IL-5	Rantes
IL-6	Rantes	IL-6	TNFα
IL-8	TNFα	IL-10	VEGF

Description	Mfr. No.	Cat. No.	Pack of
Human I Kit	10 485 151	**09-301-209**	4/617.40
	10 485 152	**09-301-210**	8/1058.40
Mouse I Kit	10 486 166	**09-301-211**	4/617.40
	10 486 167	**09-301-212**	8/1058.40

Whatman* FAST* PAK Protein Array Kits

Ideal for multiplex experiments, side-by-side comparisons, and control experiments all on the same slide

09-301-205

- Kits are available with 1-, 2-, 8-, and 16-pad formats of FAST slides and include the necessary components to conveniently build and process protein microarrays
- Each pad can be processed separately to increase the number of arrays on each slide and reduce sample volume
- FAST PAK Array Buffer provides increased protein stability and enhanced signal intensity
- Proprietary blocking buffer ensures optimum signal-to-noise ratios and promotes specific binding
- Kits are compatible with fluorescent, chemiluminescent, colorimetric, and radiographic detection methods

APPLICATIONS:

ELISA-format experiments using antibody arrays; reverse-phase (micro-Western) arrays using cell or tissue lysates; purified protein arrays; carbohydrate arrays; arrays of lipids and other materials compatible with nitrocellulose

INCLUDES:

Slides, 10; Incubation chambers, 10; Chamber covers, 40; Protein arraying buffer (2X), 10mL; Blocking buffer (1X), 15mL; Wash buffer (10X), 125mL

REQUIRED ACCESSORIES:

FAST Frame Slide Holder (Cat. No. 09-301-214) holds up to four slides and the corresponding incubation chambers

Description	Mfr. No.	Cat. No.	Each
With one-pad slides	10 485 262	**09-301-205**	642.20
With two-pad slides	10 485 319	**09-301-206**	721.30
With eight-pad slides	10 485 322	**09-301-207**	780.60
With sixteen-pad slides	10 485 325	**09-301-208**	820.10

Whatman* Protein Array Reagents

Optimized for use on FAST* Slides

09-301-227, 09-301-226, 09-301-228

Protein Arraying Buffer

- Increases long-term protein stability and molecular recognition activity
- Enhances fluorescent signal from arrayed sample

Protein Array Blocking Buffer

- Demonstrates highly efficient blocking of protein microarrays
- Exhibits strong reduction of non-specific antibody-antibody interactions
- Shows minimal effects on specific antibody-antigen interactions
- Results in superior signal-to-noise ratios in protein microarray applications

Protein Array Wash Buffer

- Optimized for efficient washing of protein microarrays to ensure optimum results

Description	Quantity	Mfr. No.	Cat. No.	Each
Protein Arraying Buffer (2X)	4 × 10mL	10 485 331	**09-301-227**	191.66
Protein Arraying Buffer (1X)	1 × 100mL	10 485 356	**09-301-226**	193.30
Protein Array Wash Buffer (10X)	4 × 125mL	10 485 330	**09-301-228**	191.66

PROTEIN ARRAY—SLIDES

Thermo Scientific* Pierce* PATH* Protein Microarray Slides

Utilize a proprietary ultra-thin (<500nm) nitrocellulose coating for noncovalent, yet irreversible capture of active proteins to the surface

EN-82001

- Nitrocellulose coating offers low background and increased dynamic range
- Standard slide dimensions provide compatibility with all commonly available slide-format microarray readers
- Individual etched barcode and accompanying numbers allow easy identification for reliable tracking and documentation
- Slide dimensions (W × L × Thickness): 25 × 75 × 1mm
- Printable area: 58 × 21mm

Applications:

- Quantitative multiplex immunoassays
- Multiplex serological assays
- Single-capture antibody microarrays
- Protein microarrays for all stages of drug development

STORAGE CONDITIONS:

Store at room temperature in the original packaging.

Cat. No.	Pack of 25
EN-82001	759.00

Nunc* MaxiSorp* Polymer Microarray Slides

Polymer slides for protein microarrays

12-566-222

- Low background fluorescence
- Improved signal-to-noise ratio versus glass slides
- Shelf life: 5 years
- Dimensions (W × L × Thickness): 25 × 76 × 1mm

APPLICATIONS:

Ideal for quantification of low protein concentrations

Color	Cat. No.	Case of 25
Black	**12-566-222**	330.25

Particular types of arrays, as well as methods of making or using arrays, may be covered by one or more patents held by others. Use of Nunc mircoarray products is recommended only for applications which do not violate proprietary rights of others or for which the user has a license or other permission under such proprietary rights.

Whatman* FAST* Protein Microarray Slides

Three-dimensional surface maintains protein reactivity and provides reproducible results

09-301-201, 09-301-203, 09-301-202, 09-301-204

- Glass slides coated with a proprietary nitrocellulose polymer
- Polymer binds proteins in a noncovalent, irreversible manner and can be probed using the same methods as traditional blots
- FAST Slides may be used with all detection methodologies including fluorescent, chemiluminescent, colorimetric, and radiographic detection systems
- Matrix retains proteins in near-quantitative fashion, producing antibody arrays with sensitivity down to antigen concentrations of 1pg/mL
- Coating provides excellent long-term stability of printed proteins
- Standard 25 × 76mm size is compatible with microarray scanners and robots

Applications:

Slides are suitable for many types of protein microarrays, including antibody arrays and microarray Westerns.

No. of Pads	Pad L × W	No. of Spots/Pad†	Bar Code	Mfr. No.	Cat. No.	Pack of
1	20 × 51mm	Up to 10,000	Yes	10 484 182	**09-301-200**	20/498.01
1	20 × 60mm	Up to 12,000	Yes	10 486 111	**09-301-201**	20/532.90
1	20 × 60mm	Up to 12,000	No	10 485 332	**09-301-240**	20/507.50
2	20 × 20mm	Up to 3600	Yes	10 485 317	**09-301-202**	10/298.81
8	6 × 6mm	Up to 256	No	10 485 320	**09-301-203**	10/338.73
16	6 × 6mm	Up to 256	No	10 485 323	**09-301-204**	10/378.55

† 150μm spot size, 300 μm pitch.

Thermo Scientific* Pierce* Microarray Slides

An economical alternative to nitrocellulose-coated slides

- Slides are available in a choice of three coatings
  - Aminopropylsilane is used for noncovalent adsorption of protein
  - Aldehyde is reactive with lysine and arginine where pH 7 to 10 drives Schiff's base reaction
  - Epoxysilane is reactive with lysine, arginine, cysteine, and hydroxyls at pH 5 to 9
- Optional enhanced-surface (ES) format has an extensively microetched surface that produces a smaller, more uniform spot size
- Overall dimensions: 1 × 3"
- Printable area: 1 × 3"

STORAGE CONDITIONS:

Store at 4°C.

Enhanced Surface	Cat. No.	Pack of 10
Aminopropylsilane Coated		
No	**PI-82050**	130.00
Yes	**PI-82051**	155.00
Aldehyde Coated		
No	**PI-82054**	150.00
Yes	**PI-82055**	175.00
Epoxysilane Coated		
No	**PI-82052**	140.00
Yes	**PI-82053**	165.00

GENERAL ACCESSORIES

Corning* Hybridization Chamber

Holds 25 × 75mm microarray slides at a constant temperature and humidity during hybridization incubations

- O-ring and metal retaining clips ensure that the chamber remains watertight and completely submerged in the water bath
- Humidity wells in the base hold 10μL of water to maintain chamber humidity and probe hydration around the edges of the cover slip
- Watertight seal eliminates the risk of water bath contamination
- Can be used with either constant temperature water baths or hybridization ovens
- Base and cover are polycarbonate

07-200-271 (shown with slide, sold separately)

Hybridization Chamber II

- Has an increased interior depth which not only allows for single slide hybridizations, but also allows the user to place two arrays face-to-face and hybridize using a single labeled target
- Can also be used with raised-edge coverslips that are thicker or taller than standard thin coverglass

Description	Mfr. No.	Cat. No.	Case of 5
Chamber I, Standard Depth	2551	**07-200-271**	296.74
Chamber II, Increased Depth	40080	**07-201-628**	342.40

Corning* Microarray Slide Holders

Use to ship Corning UltraGAPS* and epoxide-coated slides or to store microarrays

- Hold 5 × 75mm glass or microarray slides
- Orange-colored plastic has low 500 to 700nm transmittance that helps to protect Cy*3 and Cy5 dyes from photobleaching
- Plastic does not shed particles or out-gas volatile chemicals that may contaminate microarray slides
- Hinged lid on five-slide holder snaps tightly closed
- Lift-off lid on twenty-five-slide holder is easy to open and close

07-202-525, 07-201-629

Description	Mfr. No.	Cat. No.	Case of
Five-slide Holder	40082	**07-202-525**	50/79.19
Twenty-five-slide Holder	40081	**07-201-629**	20/103.35

Corning* Microarray Storage Pouches

Protect printed microarrays from light, humidity, and environmental contaminants

- Foil laminated
- Heat-sealable
- Tear-resistant
- With white marking label

07-202-528, 07-202-527

Pouch Capacity	Mfr. No.	Cat. No.	Case of 50
5 Slide Mailer	40085	**07-202-527**	52.53
25 Slide Storage Box	40086	**07-202-528**	65.14

Thermo Scientific* Erie mBox* Microarray Slide Handling Tray

Provides secure, convenient, and efficient handling of 20 microarray slides

- Separates slides to prevent damage during shipping and processing; enables easy slide removal
- Fits standard 96-well microplate format for centrifuging
- Withstands continuous use at temperatures up to 104°C (220°F); melting point: 168°C (334°F)
- Polypropylene
- Removable stainless-steel handle available separately

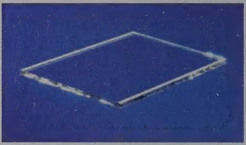
22-037-218 with -219 (slides sold separately)

Description	Cat. No.	Price
mBox Slide Handling Tray	**22-037-218**	Pack of 10/517.40
Stainless-steel Handle	**22-037-219**	Ea./58.90

Thermo Scientific* Erie mSeries LifterSlip* Cover Slips for Microarray Slides

Flatness and superior surface quality reduce the variation in hybridization fluid volume across the microarray surface

- Feature precise ink-printed raised edges to provide consistent dispersal and easy injection of hybridization solution
- Manufactured without adhesives to prevent leaching at high temperatures or extended hybridization times
- 1mm thick glass



22-037-220

Size	Approx. Volume	Cat. No.	Pack of 50
22 × 25mm	20μL	**22-037-220**	95.00
22 × 40mm	29μL	**22-037-221**	95.00
22 × 50mm	36μL	**22-037-222**	95.00
22 × 60mm	45μL	**12-550-60**	95.00
25 × 40mm	30μL	**22-037-224**	95.00
25 × 60mm	55μL	**22-037-223**	95.00

Thermo Scientific* Microarray Gene Frames

Specifically designed for microarray slide hybridizations

- Feature dual-strength adhesive system for easy removal after use
- Rigid coverslips ensure hybridization uniformity

AB-1 Series

Interior Dimensions	Volume	Cat. No.	Pack of 100
21 × 22mm	120μL	**AB-1043**	198.34
42 × 21mm	240μL	**AB-1044**	232.79
60 × 21mm	330μL	**AB-1130**	226.52

*Trademark. See Trademark Reference.

Prices subject to change.

Whatman* MicroCaster* Arrayer

An economical, entry-level, manual microarraying system for principle and pilot studies

- Eight-pin hand tool allows samples to be loaded from 96- or 384-well microplates
- Slide holder accepts two slides and has a built-in indexing system that enables precise printing of up to 768 spots in an array of 32 × 24 spots
- Easy-to-use system is designed for one-pad FAST* Slides with 20 × 51mm pad size and is compatible with other slide surfaces

09-301-216

- Processing time: 5 to 25 minutes per slide

SYSTEM INCLUDES:

MicroCaster 8-Pin system hand tool, MicroCaster 8-Pin system slide holder, MicroCaster pin conditioner, Spare replicator pins

SPECIFICATIONS

No. of Spots	Up to 768
Horizontal Pitch (x-axis)	1250µm
Vertical Pitch (y-axis)	750µm
Spot Size	500 to 1000µm
Print Volume	20-70nL[†]

[†] Varies with buffer and viscosity.

Description	Mfr. No.	Cat. No.	Each
MicroCaster System	10 485 047	**09-301-216**	4060.60
MicroCaster Pin Conditioner, 100mL	10 485 061	**09-301-217**	94.37
MicroCaster Replacement Pin	10 485 326	**09-301-218**	88.90
MicroCaster Replacement Pin Support Pad	10 485 370	**09-301-219**	41.56

LOOKING FOR MORE LIFE SCIENCE PRODUCTS?

See the following sections:

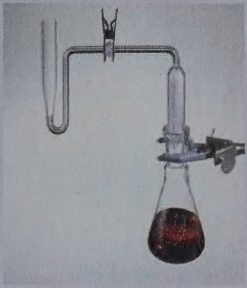
- Cell Biology
- Cell Culture
- Cloning and Expression
- Electroporation
- Luminometers
- Microplates
- Microplate Instrumentation
- Nucleic Acid Research
- PCR
- Protein Characterization, Detection, and Purification
- RNA Technologies
- Transfection and Transformation

ARSENIC TESTING

Fisherbrand* Arsine Generator

Used for determination of total inorganic arsenic

Place sample in generator flask for conversion to arsine gas. In scrubber, hydrogen sulfide is removed from gas, permitting silver diethyldithiocarbamate reagent in absorber to form red complex with evolved arsine gas.



- Absorbance of complex is proportional to arsenic concentration and easily measured with colorimeter or spectrophotometer
- Samples can be prepared in interchangeable flasks and put, one after another, onto scrubber/absorber units
- Ball-and-socket joint makes it easy to clean or recharge scrubber
- Joints need no grease, eliminating a contamination source
- Made of Wheaton 33* low-extractable borosilicate glass

ORDERING INFORMATION:

Order clamp separately. Packed in foam case.

INCLUDES:

125mL flask, scrubber, absorber

COMPLIANCE:

Meets APHA 104A, ACS/USP, and EPA specifications

Description	Cat. No.	Each
Complete Unit	**01-405**	139.26

Replacement Flasks, Scrubbers, and Absorbers

Description	Cat. No.	Each
125mL Flask	**01-405-2**	44.36
Scrubber	**01-405-5**	58.71
Absorber	**01-405-10**	83.71

Clamp

Cat. No.	Each	Case of 12
05-885B	9.07	90.71

Replacement Silver Diethyldithiocarbamate

25g

Cat. No.	Each	Case of 6
S666-25	430.16	2013.12

BAGS

*Fisherbrand** Biohazard Autoclave Bags

Strong, pliable, leak- and puncture-resistant

- Polypropylene bags and clear polyethylene bags come printed or unprinted
- Printed bags feature English and Spanish text
- Clearly visible biohazard symbol and sterilization indicator
- Pass the Dart Impact Resistance Test of 165g, using ASTM D1709-85

COMPLIANCE:
Graphics on printed styles conform to OSHA standard 29CFR1910.1030

Polypropylene Bags

Supplied with autoclavable elastic steam-venting closures

- Maximum temperature, 140°C (285°F); for use at 134°C (274°F)
- 2mil thick

W x L	Cat. No.	Pack of
Printed Red Polypropylene Bags		
8 × 12" (20 × 30cm)	**01-828A**	200/87.95
14 × 19" (36 × 48cm)	**01-828B**	200/145.18
19 × 23" (48 × 58cm)	**01-828C**	200/194.29
25 × 35" (64 × 89cm)	**01-828D**	200/304.92
37 × 48" (94 × 122cm)	**01-828E**	100/295.25
Plain Red Polypropylene Bags		
8 × 12" (20 × 30cm)	**01-830A**	200/72.80
14 × 19" (36 × 48cm)	**01-830B**	200/134.62
19 × 23" (48 × 58cm)	**01-830C**	200/175.92
25 × 35" (64 × 89cm)	**01-830D**	200/267.72
37 × 48" (94 × 122cm)	**01-830E**	100/229.23
Printed Clear Polypropylene Bags		
12 × 24" (30 × 61cm)	**01-826A**	200/141.59
24 × 30" (61 × 76cm)	**01-826B**	200/273.59
24 × 36" (61 × 91cm)	**01-826C**	200/318.83
31 × 38" (79 × 97cm)	**01-826D**	200/424.73
37 × 48" (94 × 122cm)	**01-826E**	100/308.99
Plain Clear Polypropylene Bags		
8 × 12" (20 × 30cm)	**01-826-1**	200/67.98
10 × 10" (25 × 25cm)	**01-826-2**	200/66.98
10 × 12" (25 × 30cm)	**01-826-3**	200/67.61
10 × 15" (25 × 38cm)	**01-826-4**	200/80.39
12 × 24" (30 × 61cm)	**01-826-5**	200/116.77
24 × 30" (61 × 76cm)	**01-826-6**	200/256.99
24 × 36" (61 × 91cm)	**01-826-7**	200/274.64

LOOKING FOR MORE SHARPS CONTAINERS?

Fisher Scientific also offers containers for the proper disposal of sharps and biohazard materials. For details, see the Waste Disposal section.

01-826, -827, -828, and -829 Series printed bags

Polyethylene Bags

Printed red and clear high-density bags

- Maximum temperature, 127°C (260°F); for use at 121°C (250°F)
- All bags supplied with autoclavable elastic steam-venting closures except 1.5mil-thick plain clear bags

W x L	Thickness (mil)	Cat. No.	Pack of
Printed Red Polyethylene Bags			
8 × 12" (20 × 30cm)	1.5	**01-829A**	200/82.51
14 × 19" (36 × 48cm)	1.5	**01-829B**	200/203.36
19 × 23" (48 × 58cm)	1.5	**01-829C**	200/280.61
24 × 36" (61 × 91cm)	4.0	**01-831A**	100/189.48
25 × 35" (64 × 89cm)	1.5	**01-829D**	200/402.88
33 × 30" (84 × 76cm)	1.5	**01-829F**	200/315.61
38 × 48" (97 × 122cm)	1.5	**01-829E**	100/227.71
38 × 48" (97 × 122cm)	4.0	**01-831B**	50/218.16
Printed Clear Polyethylene Bags			
8 × 12" (20 × 30cm)	1.5	**01-827A**	200/80.73
12 × 24" (30 × 61cm)	1.5	**01-827B**	200/90.15
24 × 30" (61 × 76cm)	1.5	**01-827C**	200/251.48
24 × 36" (61 × 91cm)	1.5	**01-827D**	200/275.79
Plain Clear Polyethylene Bags			
12 × 24" (30 × 61cm)	1.5	**01-814-1†**	200/72.66
24 × 30" (61 × 76cm)	1.5	**01-814-2†**	200/188.32
24 × 36" (61 × 91cm)	1.5	**01-814-3†**	200/224.39
24 × 36" (61 × 91cm)	4.0	**01-832A**	100/174.10

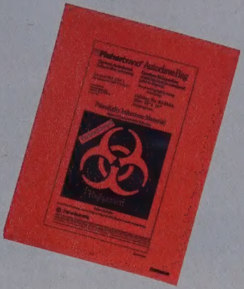
† Without closures.

LOOKING FOR MORE CONTAINERS?

For hands-free sanitary waste management, these bright red seamless and puncture-resistant containers hold Fisherbrand* Autoclave Bags. Ideal for biohazard waste disposal when properly labeled. See the Waste Disposal section for ordering information.

***Fisher**brand** Orange Autoclave Bags

COMPLIANCE:
Printed with graphics that comply with OSHA standards 29CFR1910.1030. Pass ASTM impact- and tear-resistance tests



01-814A

With Sterilization Indicator

- Maximum temperature of 140°C (285°F); use at 125°C (257°F)
- Printed in English and Spanish
- Come with wire tie closures

W × L	Cat. No.	Pack of
14 × 19" (36 × 48cm)	**01-814A**	200/124.89
19 × 23" (48 × 58cm)	**01-814B**	200/194.55
25 × 35" (64 × 89cm)	**01-814C**	200/300.09
38 × 47" (97 × 119cm)	**01-814D**	100/378.55

Without Sterilization Indicator

- Maximum temperature, 127°C (260°F); use at 121°C (250°F)
- Printed in English
- Bags not supplied with wire tie closures

W × L	Cat. No.	Pack of 100	Case of 10 Pk.
8½ × 11" (21.5 × 28cm)	**01-815-1**	19.65	172.73
12 × 24" (30 × 61cm)	**01-815A**	47.16	----
24 × 30" (61 × 76cm)	**01-815B**	114.48	----
24 × 36" (61 × 91cm)	**01-815C**	157.78	----

ACCESSORIES

***Fisher**brand** Autoclave Bag Elastic Closures

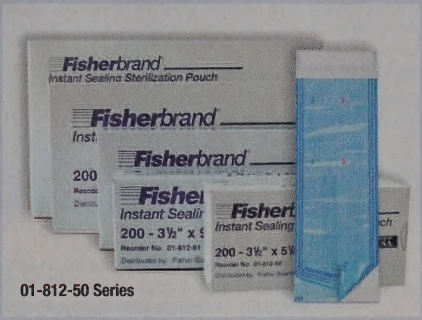
An alternative to wire tie closures

- High-tensile-strength elastic bands
- Compatible with most autoclave bags
- Remain intact at autoclaving temperatures

Cat. No.	Pack of 200
01-815-8	5.89

***Fisher**brand** Instant Sealing Sterilization Pouches

No tape or heat sealing needed



01-812-50 Series

Integral sealing strip eliminates the need to tape or heat seal pouches. Simply peel off protective strip, fold along perforation, and press firmly to seal pouch.

- Triple heat-processed seams provide excellent tear and puncture resistance
- Suitable for steam or EtO gas sterilization
- Indicator arrows change color when sterilization cycle is complete
- Made of paper/plastic; medical-grade paper side guards against puncture
- 2mil-thick blue transparent polyester/polypropylene laminate film side allows contents to be identified quickly and shows any compromise in the film
- Corner tack seals prevent contamination in the seal area
- Thumb notch makes opening pouch easy

W × L	Cat. No.	Pack of	Case of
3½ × 5¼" (9 × 13.3cm)	**01-812-50**	200/33.51	10 Pk./296.56
3½ × 9" (9 × 23cm)	**01-812-51**	200/51.85	20 Pk./917.81
5¼ × 10" (13.3 × 25cm)	**01-812-54**	200/63.17	10 Pk./559.06
7½ × 13" (19 × 33cm)	**01-812-55**	200/109.12	5 Pk./466.32
10 × 15" (25 × 38cm)	**01-812-57**	100/117.06	5 Pk./500.27
12 × 18" (30 × 46cm)	**01-812-58**	100/121.28	5 Pk./518.27

*Fisherbrand** Holders for Biohazard Autoclave Bags

Hold Fisherbrand and most biohazard autoclave bags

- High-density polyethylene container with rigid low-density polyethylene lid with knob
- Autoclavable
- Lid fits securely to seal against hazardous aerosols
- Containers have integral handle for easy transporting
- For use on benchtop or floor

14-375-175

Outside Dia. x H	Accepts Bag No.	Or Bags With Min. Width of	Capacity	Cat. No.	Each	Case of 6
9 × 11" (23 × 28cm)	01-814-1, 01-814A, 01-826-2 to -5, 01-826A, 01-827B, 01-828B, 01-829B, 01-830B	12" (30cm)	8 qt.	**14-375-175**	18.64	110.84
12 × 16" (30 × 41cm)	01-814B, 01-815B, 01-828C, 01-828-032, 01-829C, 01-830C	16" (40.6cm)	24 qt.	**14-375-176**	35.64	211.93
15 × 20" (38 × 51cm)	01-814C, 01-815C, 01-826-6, 01-826B/C, 01-827C/D, 01-828D, 01-828-033, 01-829D, 01-830D, 01-831A, 01-832A	20" (50.8cm)	48 qt.	**14-375-177**	49.15	289.44

Bel-Art* Scienceware* Poxygrid* Standard-Size Biohazard Bag Holders

Keep biohazard bags open and ready for filling

- Made from bright orange, epoxy-coated wire
- Easy-to-use—simply place bag into sturdy wire holder and stretch it over top ring
- Hooked snap-ring on top helps secure bag

BIOHAZARD
AUTOCLAVE BAG

01-815-10A shown with autoclave bag (sold separately)

Dia. × H	Accepts Bag No.	Or Bags With Min. Width of	Mfr. No.	Cat. No.	Each
7⅜ × 20½" (18.5 × 52cm)	01-814-1, 01-814A/B, 01-815A, 01-826-5, 01-826A, 01-827B, 01-828B, 01-829B, 01-830B	12" (30cm)	131870000	**01-815-10A**	47.99
14½ × 23½" (37 × 60cm)	01-814-2, 01-814C, 01-815B, 01-826-6, 01-826B, 01-827C, 01-830D, 01-831A, 01-828-033, 01-832A	24" (61cm)	131880000	**01-815-10B**	52.46
14½ × 29½" (37 × 75cm)	01-814-3, 01-814C, 01-815C, 01-826-7, 01-826C, 01-827D, 01-828D, 01-828-033, 01-829D, 01-831A, 01-832A	24" (61cm)	131890000	**01-815-10C**	56.08

Bel-Art* Scienceware* Poxygrid* Desk Model Biohazard Bag Holder

Convenient disposal holder for used tips and tubes

- Rectangular holder made of orange epoxy-coated wire
- Provide space-saving, disposal unit for use in fume hoods or on benchtops and desks

BIOHAZARD
AUTOCLAVE BAG

01-815-2, shown with autoclave bag (sold separately)

L × W × H	Accepts Bag No.	Or Bags With Min. Width of	Mfr. No.	Cat. No.	Each
3⅜ × 5 × 8½" (8.6 × 12.7 × 21.6cm)	01-828A, 01-828-031, 01-830A, 01-826-1, 01-827A, 01-829A, 01-815-1	8½" (21.6cm)	131931000	**01-815-2**	17.20

Ampac* Flexibles Heat-Sealable Multipurpose Pouches

Transparent pouches with polyethylene lining

01-812 Series

- Ideal for histology and pathology specimens and for safe biological waste disposal in medical, institutional and industrial facilities
- Withstand infrared and gamma rays
- Can be frozen, microwaved, or boiled without harm
- Use **regular** (2.5mil) pouches to store and dispense medicines and to dispose of wastes; **heavy-duty** (4.5mil) pouches are ideal for long-term storage and mailing of specimens and equipment
- Use with Ampac Flexibles pouch sealer (Cat. Nos. 01-812-15 or 01-812-15B) and handy pouch cutter (01-812-21)
- Easily resealed

ORDERING INFORMATION:

Additional pouches available on our Web site.

Capacity	W × L	Cat. No.	Pack of	Cs. of 24 Pk.
Regular Pouches (2.5mil thick)				
4 oz. (118mL)	4 × 6" (10 × 15cm)	**01-812-25A**	100/65.37	1340.93
16 oz. (473mL)	6½ × 8" (17 × 20cm)	**01-812-16**	75/64.72	1327.67
24 oz. (710mL)	8 × 9½" (20 × 24cm)	**01-812-25AA**	50/65.37	1340.93
32 oz. (946mL)	8 × 12" (20 × 30cm)	**01-812-17**	40/64.72	1327.67
48 oz. (1420mL)	10 × 12" (25 × 30cm)	**01-812-25BB**	30/65.37	1340.93
64 oz.(1893mL)	9½ × 16" (24 × 41cm)	**01-812-25B**	20/62.40	1279.98
96 oz. (2839mL)	12 × 16" (30 × 41cm)	**01-812-25GG**	15/62.40	1279.98
Heavy-duty Pouches (4.5mil thick)				
4 oz. (118mL)	4 × 6" (10 × 15cm)	**01-812-25D**	100/102.49	2102.46
16 oz. (473mL)	6½ × 8" (17 × 20cm)	**01-812-25E**	75/102.49	2102.46
24 oz. (710mL)	8 × 9½" (20 × 24cm)	**01-812-25EE**	50/102.49	2102.46
32 oz. (946mL)	8 × 12" (20 × 30cm)	**01-812-25H**	40/102.49	2102.46
48 oz. (1420mL)	10 × 12" (25 × 30cm)	**01-812-25FF**	30/97.74	2004.99
64 oz. (1893mL)	9½ × 16" (24 × 41cm)	**01-812-25F**	20/102.49	2102.46
96 oz. (2839mL)	12 × 16" (30 × 41cm)	**01-812-25G**	15/102.49	2102.46

Pouch Cutter

Handheld cutter opens sealed pouches with ease

- Provides a straight cut that facilitates effective resealing
- Made of white plastic with replaceable double-edged razor blade
- Designed for maximum user safety

01-812-21

L × W × H	Cat. No.	Each
3¾L × 2½W × ⅜"H (9.5 × 6.4 × 1cm)	**01-812-21**	10.63

Heat-Sealable Tubular Roll Stock

Create custom-size pouches

- For continuous roll feeding
- Transparent polyester with polyethylene lining
- Can be cut to desired length and sealed at both ends

INCLUDES:

Pouch cutter (01-812-21) supplied with every roll.

W x L	Cat. No.	Each
Regular Roll Stock (2.5mil thick)		
9½" × 250' (24cm × 76m)	**01-812-26E**	448.85
24" × 250' (61cm × 76m)	**01-812-26C**	772.88
Heavy-duty Roll Stock (4.5mil thick)		
9½" × 125' (24cm × 38m)	**01-812-26D**	448.86
16" × 125' (41cm × 38m)	**01-812-26A**	639.02

Pouch Sealer

For airtight, leak-resistant seals

- Maintains constant sealing temperature
- Seals pouches up to 11" (28cm)
- Aluminum/polypropylene housing stays cool
- Can be mounted on wall or countertop, or used lying flat

01-812-13 (top), 01-812-15 (bottom)

ORDERING INFORMATION:

Not for use with plastic/polyethylene bags.

INCLUDES:

Two detachable sealer legs, leg pads, sealer bar cleaner tool, and instructions

Electrical Reqts.	Cat. No.	Each	Case of 6
120V	**01-812-15**	236.04	1210.48
230V	**01-812-15B**	213.61	1095.46

Commercial Pouch Sealer

For use with tubular roll films

- Open-back design easily accommodates continuous roll
- Seals pouches up to 18" (46cm) wide
- Self-cleaning, PTFE-coated heating element and heavy-duty aluminum housing
- Mounts on benchtop, wall or under cabinet

ORDERING INFORMATION:

Not for use with plastic/polyethylene bags.

Electrical Reqts.	Cat. No.	Each
120V	**01-812-13**	476.34

*Fisherbrand** Sterile Sampling Bags with Protected Ends

A convenient and cost-effective way to collect, transport, and test a variety of materials

- Made from heavy-gauge, virgin polyethylene that meets FDA specifications
- Can accommodate solid, semi-solid and liquid materials
- To use, simply tear off top and open bag using pull tabs
- Insert sample and seal by twirling the bag away from you four times and bending wire ends inward
- Tape-on bag closure extends past the ends of internal support wires, covering them completely to reduce the risk of a protruding wire damaging surrounding bags
- Choice of round- or flat-wire closures; flat wire closures provide extra strength to seal larger and heavier samples
- Available in several sizes and wall thicknesses, clear or with printed, write-on label

14-955 Series

Bags with Round-Wire Closures

Capacity	W × L	Style	Cat. No.	Pack of	Case of
2.5mil thick					
2 oz. (60mL)	3 × 5" (7.6 × 12.7cm)	Clear	**14-955-175**	500/65.17	2 Pk./111.98
2 oz. (60mL)	3 × 5" (7.6 × 12.7cm)	Printed	**14-955-182**	500/70.93	2 Pk./121.89
4 oz. (120mL)	3 × 7" (7.6 × 17.8cm)	Clear	**14-955-176**	500/70.32	2 Pk./120.84
4 oz. (120mL)	3 × 7" (7.6 × 17.8cm)	Printed	**14-955-183**	500/80.00	2 Pk./129.52
3.0mil thick					
18 oz. (530mL)	4½ × 9" (11.4 × 22.9cm)	Clear	**14-955-177**	500/96.69	2 Pk./169.59
18 oz. (530mL)	4½ × 9" (11.4 × 22.9cm)	Printed	**14-955-184**	500/110.74	2 Pk./183.79
27 oz. (800mL)	4½ × 12" (11.4 × 30.4cm)	Clear	**14-955-178**	500/157.25	2 Pk./260.98
36 oz. (1L)	4½ × 15" (11.4 × 38.1cm)	Clear	**14-955-179**	500/169.65	2 Pk./289.72
3.5mil thick					
24 oz. (710mL)	5½ × 9" (14 × 22.9cm)	Clear	**14-955-180**	500/122.45	2 Pk./203.22
24 oz. (710mL)	5½ × 9" (14 × 22.9cm)	Printed	**14-955-185**	500/144.03	2 Pk./239.04
42 oz. (1.2L)	5½ × 15" (14 × 38.1cm)	Clear	**14-955-181**	500/190.91	2 Pk./316.84
4.0mil thick					
55 oz. (1.6L)	7 × 12" (18 × 30cm)	Clear	**14-955-191**	250/93.00	4 Pk./318.19
55 oz. (1.6L)	7 × 12" (18 × 30cm)	Printed	**14-955-192**	250/99.00	4 Pk./354.55

Bags with Flat-Wire Closures

Capacity	W × L	Style	Cat. No.	Pack of	Case of
3.0mil thick					
18 oz. (530mL)	4½ × 9" (11.4 × 22.9cm)	Clear	**14-955-186**	500/107.82	2 Pk./178.93
18 oz. (530mL)	4½ × 9" (11.4 × 22.9cm)	Printed	**14-955-189**	500/116.82	2 Pk./193.88
3.5mil thick					
24 oz. (710mL)	5½ × 9" (14 × 22.9cm)	Clear	**14-955-187**	500/128.92	2 Pk./213.96
24 oz. (710mL)	5½ × 9" (14 × 22.9cm)	Printed	**14-955-190**	500/147.48	2 Pk./245.26
42 oz. (1.2L)	5½ × 15" (14 × 38.1cm)	Clear	**14-955-188**	500/192.22	2 Pk./319.01
4.0mil thick					
55 oz. (1.6L)	7 × 12" (18 × 30cm)	Clear	**14-955-193**	250/91.01	4 Pk./312.76
55 oz. (1.6L)	7 × 12" (18 × 30cm)	Printed	**14-955-194**	250/93.42	4 Pk./321.06
60 oz. (1.8L)	10 × 12" (25.4 × 30.5cm)	Clear	**14-955-200**	250/123.96	4 Pk./423.80
60 oz. (1.8L)	10 × 12" (25.4 × 30.5cm)	Printed	**14-955-195**	250/131.63	4 Pk./436.90
100 oz. (3L)	10 × 14" (25.4 × 35.6cm)	Clear	**14-955-196**	250/151.94	4 Pk./504.31
100 oz. (3L)	10 × 14" (25.4 × 35.6cm)	Printed	**14-955-201**	250/154.73	4 Pk./529.00

*Fisherbrand** Low-Density Polyethylene Bags

Use as specimen, sample, and freezing bags, and for storing and shipping small items

- Transparent polyethylene bags
- Designed to fit Fisherbrand Dry Waste Containers (Cat. No. 12-009-15; order separately)

12-009-15A

W × L	Cat. No.	Case of 100
22 × 28" (56 × 71cm)	**12-009-15A**	34.24

*Fisherbrand** Polyethylene Bags

Flexible even when frozen

- Ideal for short-term storage
- May be tied or heat sealed
- Not suggested for use with liquids
- Thickness, 4 mil

19-075-388 Series

W × L	Cat. No.	Pack of 100	Case of 10 Pk.
4 × 6" (10.2 × 15.3cm)	**19-075-388G**	13.33	121.43
6 × 10" (15.2 × 25.4cm)	**19-075-388B**	22.35	203.00
10 × 12" (25.4 × 30.5cm)	**19-075-388J**	31.26	284.37
10 × 16" (25.4 × 40.6cm)	**19-075-388C**	32.03	291.66
12 × 20" (30.5 × 50.8cm)	**19-075-388K**	47.15	427.79
12 × 18" (30.5 × 45.7cm)	**19-075-388H**	43.05	391.91

*Trademark. See Trademark Reference.

Prices subject to change.

*Fisherbrand** Biohazard Specimen Bags

Access pocket without opening sealed pouch

- Two-pouch bags constructed of FDA-approved polyethylene
- 2mil-thick zipper-seal pouch holds specimen container
- Separate 1.5mil-thick pocket for papers
- Each bag printed with biohazard graphics in orange and blue

19-075-388F

W × L	Cat. No.	Case of 1000
5 × 9" (13 × 23cm)	**19-075-388E**	171.13
6 × 10" (15 × 25cm)	**19-075-388D**	194.25
10 × 10" (25 × 25cm)	**19-075-388F**	213.46

*Fisherbrand** Biohazard Specimen Transport Bags

For light-duty use

- Clear polyethylene with three-wall construction and large printed biohazard graphic
- Attached document compartment with flap cover keeps paperwork in place
- Reclosable zipper seal
- 01-800-05 features a pouch and a 3 × 5" pad impregnated with super-absorbent polymers; pad will absorb 180cc of water, 60cc of urine, or 38cc of blood
- 01-800-06 features a scoreline for safe and easy entry without cutting

01-800 Series

COMPLIANCE:

Meet OSHA and NCCLS guidelines

W × L	Cat. No.	Case of
Printed		
4 × 6" (10.2 × 15.2cm)	**01-800-00**	1000/142.39
6 × 6" (15.2 × 15.2cm)	**01-800-01**	1000/143.22
6 × 9" (15.2 × 23cm)	**01-800-03**	1000/246.18
6 × 9" (15.2 × 23cm)	**01-800-04**[†]	1000/161.28
6 × 9" (15.2 × 23cm)	**01-800-05**[‡]	500/57.88
6 × 9" (15.2 × 23cm)	**01-800-06**[††]	1000/168.11
8 × 8" (20 × 20cm)	**01-800-07**	1000/179.80
8 × 10" (20 × 25cm)	**01-800-08**	1000/262.10
12 × 15" (30 × 38cm)	**01-800-09**	1000/218.09
Plain		
6 × 9" (15.2 × 23cm)	**01-800-02**	1000/151.77

[†] *With requisition pouch and red STAT labeling.*
[‡] *With 3 × 5" pad for absorbing water, urine, or blood.*
[††] *With scoreline.*

*Fisherbrand** "Zipper" Seal Sample Bags

Zipper locking feature securely seals bags

- Durable, transparent polyethylene
- Ideal for collecting, storing, and protecting laboratory specimens and samples easily and conveniently
- Clear, print-free surface lets user mark and label each bag separately
- Not suggested for use with liquids

01-816 Series

W × L	Cat. No.	Pack of 50	Case of
2mil thick			
2 × 3" (5 × 7cm)	**01-816-1A**	----	1000/26.80
3 × 5" (7 × 13cm)	**01-816-1B**	----	1000/31.50
4 × 6" (10 × 15cm)	**01-816-1C**	----	1000/37.88
5 × 8" (13 × 20cm)	**01-816-1D**	----	1000/68.17
9 × 12" (23 × 30cm)	**01-816-1E**	----	1000/160.06
4mil thick			
4 × 6" (10 × 15cm)	**01-816A**	31.20	10 Pk./266.40
5 × 8" (13 × 20cm)	**01-816D**	24.70	10 Pk./211.05
6 × 13" (15 × 33cm)	**01-816B**	53.65	5 Pk./229.15
9 × 13" (23 × 33cm)	**01-816E**	37.85	5 Pk./161.75
9 × 18" (23 × 46cm)	**01-816C**	77.95	5 Pk./344.95
9 × 26" (23 × 66cm)	**01-816F**	73.20	4 Pk./259.05

*Fisherbrand** Heavy-Paper Lined Sample Bags

Ideal for collection, shipment or storage of grain, seed, soil, or food samples

- Heavy-paper bags lined with 1mil-thick polyethylene
- Heat sealed at bottom to prevent seepage
- Tin-tie closure ensures moisture retention

01-818-10

ORDERING INFORMATION:

Maximum gusset width on side of bag is 2½" (6.4cm) for 01-818-10; 3" (7.6cm) for 01-818-11.

W × D × L	Cat. No.	Case of
3⅜ × 2½ × 9⅝" (8.6 × 6.4 × 24cm)	**01-818-10**	1000/406.21
5 × 3 × 9" (13 × 7.6 × 23cm)	**01-818-11**	500/282.15

LOOKING FOR SAMPLERS?

Fisher Scientific offers a variety of scoops, spoons, and spatulas to meet all of your sampling needs. For details, see the Samplers section.

Nalgene* Sample Bags

Ideal for small lab items, botanical samples, other specimens

- Collect, store, seal and protect items conveniently and easily
- Made of strong, waterproof low-density polyethylene with 4mil-thick walls
- Heavy-duty, double-track zipper locks securely to keep dust out—dry samples stay dry, moist samples stay moist

01-814-15 Series

ORDERING INFORMATION:

Not recommended for storing liquids

W x L	Mfr. No.	Cat. No.	Pack of 50	Case of
4 × 6" (10.2 × 15.2cm)	6255-0406	**01-814-15A**	23.68	10 Pk./162.00
5 × 8" (12.7 × 20.3cm)	6255-0508	**01-814-15B**	27.57	10 Pk./183.75
6 × 13" (15.2 × 33cm)	6255-0613	**01-814-15C**	43.72	5 Pk./145.75
9 × 13" (23 × 33cm)	6255-0913	**01-814-15D**	51.82	5 Pk./172.75
9 × 18" (23 × 45.7cm)	6255-0918	**01-814-15E**	58.35	5 Pk./194.50

Easy-To-Close Whirl-Pak* Bags

For sampling and product analysis

- Transparent polyethylene bags
- Gas sterilized, with documentation available
- Feature "puncture proof" tabs for protection from damage due to wire-end protrusion
- Pull tabs help prevent contamination from finger contact when opening
- Write-on bags have area that accepts ballpoint pen or pencil
- Thickness, 2.25 to 4mil

01-812-5C

ORDERING INFORMATION:

Bags should not be used at temperatures above 180°F (82°C).

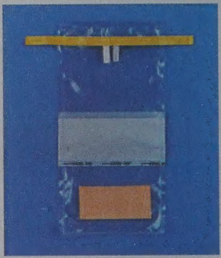
Capacity†	Thickness	Mfr. No.	Cat. No.	Pack of 500	Case of
Plain Style					
2 oz. (58mL)	2.25mil	B01009WA	**01-812-5M**	48.40	20 Pk./871.20
4 oz. (118mL)	2.25mil	B00679WA	**01-812-5A**	68.65	20 Pk./1235.70
7 oz. (207mL)	3mil	B00992WA	**01-812-120**	55.95	10 Pk./503.55
18 oz. (532mL)	2.5mil	B00736WA	**01-812-5B**	98.95	12 Pk./1068.65
24 oz. (710mL)	3mil	B01020WA	**01-812-5C**	134.31	6 Pk./688.75
24 oz. (710mL)	4mil	B01063WA	**01-812-83A**	121.68	4 Pk./416.00
27 oz. (798mL)	3mil	B00990WA	**01-812-81**	89.25	6 Pk./481.95
36 oz. (1.1L)	3mil	B00994WA	**01-812-5P**	117.41	4 Pk./401.40
42 oz. (1.2L)	3mil	B01027WA	**01-812-5Q**	130.51	4 Pk./446.20
69 oz. (2L)	3mil	B01323WA	**01-812-3**	271.85	----
Write-on Style					
2 oz. (58mL)	2.25mil	B01064WA	**01-812-6A**	68.50	20 Pk./1233.00
4 oz. (118mL)	2.25mil	B01062WA	**01-812-6B**	68.55	20 Pk./1233.90
18 oz. (532mL)	2.5mil	B01065WA	**01-812-6C**	97.00	12 Pk./1047.60
24 oz. (710mL)	3mil	B01297WA	**01-812-1A**	96.10	6 Pk./518.95
24 oz. (710mL)	4mil	B01196WA	**01-812-78C**	129.46	4 Pk./442.60
55 oz. (1.6L)	4mil	B01195WA	**01-812-78B**	153.35	----

† *Measured when bag is closed and tab folded over three times.*

Whirl-Pak* "Speci-Sponge" Bag

Convenient sterile absorbent sponge sampler in a sterile Whirl-Pak bag

- Designed for testing work surfaces and equipment for *Salmonella*, *Listeria*, and other foodborne pathogens
- Dry "Speci-Sponge" measures 1½W × 3L × ⅝" thick (3.8 × 7.6 × 1.6 cm); not pretreated with bactericide
- Simply add diluent, wipe test surface, and return sponge to its 18 oz. (532mL) bag
- Self-contained sample can then be shipped for analysis
- Sponge will wipe a large area; bag's puncture-proof tabs reduce damage to sample
- White write-on area allows easy labeling and identification


01-812-5L

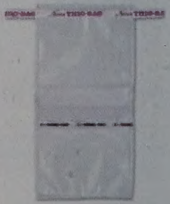
W x L	Mfr. No.	Cat. No.	Pack of 100	Case of 24 Pk.
4½ × 9" (11.4 × 23cm)	B01245WA	**01-812-5L**	101.78	2142.70

Whirl-Pak* Thio-Bag* Bags for Chlorinated Water Sampling

Ideal for sampling potable water, swimming pool water, effluents, industrial wastes

Unbreakable, sterile bags to collect and dechlorinate water and wastewater samples for bacteriological examination in compliance with EPA and APHA requirements.

- Economical and easy to dispose
- 4 oz. (118mL) bag contains one nontoxic, non-nutritive pill impregnated with 10mg sodium thiosulfate and has both 4 oz. and 100mL fill-lines
- 18 oz. (532mL) bag contains three 10mg sodium thiosulfate pills and has 300mL fill-line


08-812-5F

Capacity	W × L	Mfr. No.	Cat. No.	Pack of 100	Case of
4 oz. (118mL)	3 × 7" (7.6 × 18cm)	B01040WA	**01-812-5F**	27.95	10 Pk./251.55
18 oz. (532mL)	4½ × 9" (11.5 × 23cm)	B01254WA	**01-812-8**	54.89	24 Pk./1155.60

*Trademark. See Trademark Reference.

Prices subject to change.

*Fisherbrand** Bags for Stomacher* Lab Blenders

01-002 Series

Single-Chamber Bags

Superior wall strength

- Internal sterility assured with patented† tear-off sterile barrier top
- Highly transparent and puncture-resistant virgin polyethylene extruded tube material
- No side seams
- Simply tear the perforated end along the top, open, and insert the material to be analyzed and processed

W × L	Capacity	Fits Stomacher Model	Cat. No.	Pack of 250	Case of
3mil thick					
4 × 6" (10 × 15cm)	7½ oz. (225mL)	80	**01-002-54**	26.23	4 Pk./89.66
7 × 12" (18 × 30cm)	55 oz. (1650mL)	400	**01-002-55**	47.58	4 Pk./162.68
15 × 20" (38 × 51cm)	600 oz. (18L)	3500	**01-002-58**	171.74	2 Pk./293.57
4mil thick					
7 × 12" (18 × 30cm)	55 oz. (1650mL)	400	**01-002-56**	62.76	4 Pk./222.17
15 × 20" (38 × 51cm)	600 oz. (18L)	3500	**01-002-59**	210.52	2 Pk./359.87

† U.S. Patent 5,564,829.

Two-Chamber Filter Bag

For processing samples containing solids

- Integrated filter separates bag into two chambers
- After processing, solids remain in one chamber; filtrate collects in the other
- Clear with 4mm edge seams
- Sterilized by gamma radiation

01-002-57

W × L	Capacity	Fits Stomacher Model	Cat. No.	Pack of 100	Case of 4 Pk.
3mil thick					
7 × 12" (18 × 30cm)	55 oz. (1650mL)	400	**01-002-57**	111.27	380.42

Whirl-Pak* Sterile Bag for Stomacher* Lab Blenders

Write-on label makes identification quick and easy

- Round bottom minimizes sample fragments from getting caught in corners of the bag during blending
- Polyethylene
- Contains layer of finely perforated PE to filter out solids

COMPLIANCE:

Meets FDA and USDA food-sampling specifications.

01-812

W x L	Capacity	Fits Stomacher Model	Mfr. No.	Cat. No.	Pack of 500
3mil thick					
7 × 13" (18.5 × 33cm)	52 oz. (1538mL)	400	B01239WA	**01-812**	173.80

Whirl-Pak* Sterile Filter Bags for Stomacher* Lab Blenders

Designed to filter out solids in samples

- Excellent for liquid, semi-solid, or solid samples
- Filter layer separates liquid and solids, allowing for easy pipetting
- White write-on area
- Suitable for use with most homogenizer blenders
- Polyethylene

01-812-69

ORDERING INFORMATION:

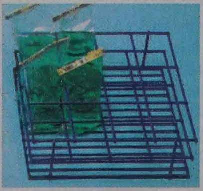
Not for use at temperatures above 82°C (180°F)

W x L	Capacity	Mfr. No.	Cat. No.	Pack of 250	Case of
3mil thick					
3 × 7 in. (9.5 × 18cm)	7 oz. (207mL)	B01385WA	**01-812-94**	129.10	20 Pk./2206.80
4mil thick					
6 × 9 in. (15 × 23cm)	24 oz. (710mL)	B01348WA	**01-812-69**	169.75	6 Pk./870.50
7½ × 12 in. (19 × 30cm)	55 oz. (1627mL)	B01318WA	**01-812-5**	225.14	2 Pk./384.85

Whirl-Pak* Carrying Racks

For transporting and using sample-filled bags in laboratories

- Coated wire racks stand up to many lab materials
- Double grid rack with second horizontal bar below top bar prevents bags from slipping sideways
- 01-812-5G can be used for plate incubation by turning it on one side
- Autoclavable



01-812-5E

For Bag Size	Holds	Mfr. No.	Cat. No.	Each
1 to 7 oz. (30 to 207mL)	15 bags	B00678WA	**01-812-5D**	29.05
13 to 24 oz. (385 to 710mL)	12 bags	B00751WA	**01-812-5E**	33.45
27 oz. and larger (800mL)	6 bags	B01048WA	**01-812-5G**	47.35

BEFORE YOU BUY ANALYTICAL BALANCES

Analytical balances, also known as high resolution balances, are used for weighing at readabilities between 0.1 and 0.01 mg, with maximum capacities ranging from 50 to 500g.

IMPORTANT TERMS TO KNOW

Readability—The smallest displayed digit, or weight, on any balance

Accuracy—A measure of the balance's ability to hit, or repeat, a result

Stabilization time—The time a balance requires to come to rest from the moment a load is placed on the pan to the moment the result is displayed

Repeatability—The closeness of repeated results carried out in assumed identical conditions

Linearity—A measure of how well the balance is capable of following the linear relationsh between the loaded weight and the displayed value

FEATURES TO LOOK FOR

Support—Unparalleled support from sales representatives, nationwide service organization and technical support will provide the help you need to prevent service interruptions.

Internal Calibration—Calibration can be programmed to occur at specific times throughout the day, ensuring your balance is performing at its best. METTLER TOLEDO's proFACT feature provides fully automatic internal calibration and linearization with two internal weights.

Grid-style weighing pan—Minimizes the effects of air turbulence, therefore improving stabilization times. METTLER TOLEDO's SmartGrid p can be found on the Excellence and Excellence Plus balances.

Quality Management Tools—Include features such as overload protection, instant parameter reset and level control warnings to ensur safe, accurate weighing. For example, METTLER TOLEDO's MinWeigh feature warns if the minimum weight requirement is violated.

From simple to sophisticated, METTLER TOLEDO's full line of balance solutions offers a variety of features to meet your needs.

MODEL	APPLICATION
Excellence Plus (XP)	Regulatory compliance, high productivity, and data/sample security
Excellence (XS)	Durable and efficient for routine operations
Classic Plus (AB-S/FACT)	Reliable and robust for simple weighing in a demanding environment
Classic Light (AL)	For easy weighing on a low budget

0.00000 g
METTLER TOLEDO

XP Analytical Balance

sponsored by:

METTLER TOLEDO

Factors that influence reliable weighing results:

Check that the balance is level.
Leave the balance connected to power supply and turned on to establish thermal equilibrium.
Use the smallest possible weighing vessel.
Place sample in middle of weigh pan to avoid corner load errors.
Check that the balance displays exactly zero before weighing.
Calibrate regularly.
Keep weighing chamber and pan cleaned.

For a full selection of METTLER TOLEDO Analytical Balances, see pp. 47-53.

Mettler Toledo* Balance Features

01-910-002

01-911-351

01-910-364

Mettler Toledo's uncompromising focus on innovation has led to numerous technological advancements in the field of laboratory weighing and a wide range of balances to accommodate a wide range of applications. Following are unique features found throughout the Mettler Toledo balance lines.

Connectivity

- Complete flexibility through six different interface options including wireless Bluetooth* and Ethernet

DeltaRange*

- Balances with ten times more readability
- Can be recalled at any time throughout the entire weighing range simply by taring

DeltaTrac

- Analog display indicates how much of the weighing range has been used during a normal weighing mode even if the balance has been tared
- Eliminates common overloading problems
- Becomes a graphical ± indicator using two pointers and two tolerance markers

ErgoClips*

- Facilitate secure placement and efficient handling of tare containers
- Farraday effect eliminates negative effects of statically charged tare containers

FACT (Fully Automatic Calibration Technology)

- Automatically calibrates balances 24 hours a day using internal calibration weights
- When sensors detect ambient fluctuations of ±1.5°C (±2.7°F), balance immediately calibrates itself

IP54 InUse

- Protection against dust and water

LevelControl

- For full regulatory compliance
- LevelControl warns if balance is not correctly leveled

MinWeigh

- Signals when sample has not reached minimum weight defined by regulations

MonoBloc

- Latest-generation, rugged high-performance weigh cell for peak weighing performance

proFACT (Pro Fully Automatic Calibration Technology)

- Utilizes temperature control with linearization
- Assures balance is correctly adjusted at all times, regardless of factors that may influence the measuring environment

QM Toolbox

- Maximum security in regulated environments, including password protection, full traceability, management of users with administrator profile, and seamless documentation with four IDs

ReproCheck

- Menu function instructs balance to perform an internal test for determination of repeatability

ReproSet*

- Menu function to set the internal balance repeatability

SmartBar

- Activates a function with a touch of the keyword on the display

SmartGrid* Weighing Pan

- Minimizes effects of turbulence in the weighing chamber
- Ensures more accurate results and dramatically shorter stabilization times
- Smallest sample sizes can be weighed-in according to regulations
- Increases the yield of expensive substances

SmartScreen Display

- Color-guided touchscreen for safe operation
- Individual, color-coded profiles can be configured and documented for up to eight users or jobs
- Protects users, data and processes and guarantees seamless traceability

SmartSens*

- Intelligent sensors allow user to weigh without touching the balance
- Ideal for working with sensitive substances

VariCal

- Calibrates balance at various points throughout the weighing range using external calibration weights

Weighing Process Adapter

- Enables display adjustment to specific weighing applications
- Use lower settings for fine filling and balance weighs slowly, continually displaying the last digit
- Use higher settings and balance weighs faster, shutting off the last digit until the weight is stable

LOOKING FOR MORE INFORMATION ON THE METTLER TOLEDO* WARRANTY?

Mettler Toledo offers an extended onsite warranty. You can find more details online.

Visit www.fishersci.com and search for Mettler Toledo Warranty

Mettler Toledo* MX and UMX Series Professional Level Analytical Micro and Ultramicro Balances

Fully automatic calibration, hands-free operation

Mettler Toledo's proFACT automates calibration: as soon as built-in sensors detect a change in ambient conditions, the units recalibrate automatically using two integral weights. Balances can also be calibrated manually using weights of your choice. Plus, with the SmartSens sensors on each side of the weighing chamber, you can weigh without ever touching the balance—weighing, opening and closing the doors, and taring are done automatically.

Standard Features

- Multiple weighing units: grams, milligrams, ounces, troy ounces, grains, pennyweight, mommes or carats
- SmartTrac feature graphically shows certain options, including available weighing range
- Separate weighing cell protects measurements against thermal and vibration effects
- Vibration adapter neutralizes any remaining adverse conditions
- Weighing process adapter controls the last digit of the display, suppressing it until the readout is stable
- Grounded weighing pan with overload protection dissipates electrostatic charges
- Backlit touchscreen display is easy to read from any angle
- Circular draft shield offers a minimal exposure area for thermal radiation emanating from the user
- Chamber temperature increases by a maximum of only 0.1°C, so no sample acclimation is necessary
- Chamber design permits viewing from all sides and access from right or left

Advanced Features

- Built-in RS-232-C bidirectional interface allows direct connection with computers, printers, and other peripherals (additional RS-232-C or LocalCAN interface option available)
- Download software versions, updates and modules from the Internet to a PC, then transfer to your balance
- Automatic stability detector slows down stabilization rate for better reproducibility
- Can be configured with up to eight different user settings
- Built-in data security feature protects settings from changes

INCLUDES:

Tweezers, cleaning brush, feedthrough for below-balance weighing, in-use cover, operating instructions, and self-sensing AC/DC adapter that operates in 100–240V 50/60Hz AC or 12V DC ranges.

WARRANTY:

One year extendable to three years with return of warranty card.

01-910-002

Model	MX5	UMX2
Readability	1µg	0.1µg
Weighing Range	0 to 5100mg	0 to 2100mg
Taring Range	0 to 5100mg	0 to 2100mg
Repeatability		
0 to 2g	0.8µg	0.25µg
2 to 5g	0.9µg	----
Linearity[1]	±4µg	±1µg
Linearity Relative[1] to 500mg	±2µg	±0.5µg
Stabilization Time	8–12 seconds	10–16 seconds
Sensitivity		
Temperature Drift[1, 2]	±1.0ppm/°C	±1.0ppm/°C
Long-Term Stability[3]	±0.0001%	±0.0001%
Pan Size	11⁄16" dia. (2.7cm)	5⁄8" dia. (1.6cm)
Height Above Weighing Pan	2⅛" (5.5cm)	2⅛" (5.5cm)
Dimensions (L × W × H)		
Chamber	11 5⁄16 × 5 × 4 7⁄16" (28.7 × 12.8 × 11.3cm)	11 5⁄16 × 5 × 4 7⁄16" (28.7 × 12.8 × 11.3cm)
Control Unit	14⅜ × 8 13⁄16 × 3⅝" (36.6 × 22.4 × 9.4cm)	14⅜ × 8 13⁄16 × 3 11⁄16" (36.6 × 22.4 × 9.4cm)
Mfr. No.	MX5	UMX2
Cat. No.	**01-910-002**	**01-910-001**
Each	17,395.00	22,018.00

[1] *In the temperature range 10° to 30°C (50° to 86°F).*

[2] *1ppm = 1/1,000,000 (relative to current weight display).*

[3] *Sensitivity deviation/year with self-adjustment proFACT switched on.*

LOOKING FOR MORE METTLER TOLEDO* INFORMATION?

For more details about Mettler Toledo balance features, see p. 47.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

LOOKING FOR METTLER TOLEDO* MX AND UMX SERIES BALANCE ACCESSORIES?

Find accessories for these balances on pp. 104-106 and online.

Visit www.fishersci.com and search for Mettler MX, UMX

LOOKING FOR BALANCE ACCESSORIES?

We carry a full range of Fisherbrand* weighing paper, funnels, weighing dishes, brushes and forceps. For more information and to order,

Visit www.fishersci.com and search for Fisherbrand Balance Accessories

Mettler Toledo* Excellence Plus XP Analytical Balances

Hands-free operation and unmatched weighing performance

NEW

Analytical balances offer high speed, high performance and security features for measurements, users and data.

SmartGrid* Weighing Pan

- Minimizes effects of turbulence in the weighing chamber
- Ensures more accurate results and shorter stabilization times
- Smallest sample sizes can be weighed-in according to regulations
- Increases the yield of expensive substances

SmartSens* Sensors

- For hands-free operation and personnel security
- Enable user to tare, open and close draft shield or print without touching the balance
- Promotes safe handling of samples, prevention of spills, minimized contamination risk

SmartScreen* Display

- Color-guided touchscreen for safe operation
- Individual, color-coded profiles can be configured and documented for up to eight users or jobs
- Protects users, data and processes, and guarantees seamless traceability

ErgoClips*

- Facilitate secure placement and efficient handling of tare containers
- Faraday effect eliminates negative effects of statically charged tare containers

LevelControl* and MinWeigh

- For full regulatory compliance
- LevelControl warns if balance is not correctly leveled
- MinWeigh signals when sample has not reached minimum weight defined by regulations

Standard Features

- Prepared for weighing below the balance
- User administration and password protection
- Target weighing
- Statistical evaluation
- Formulation with security check
- Density determination
- Percent weighing
- Piece counting with reference optimization
- Alphanumeric data entry of four IDs

01-911-351

INCLUDES:

Automatic and detachable draftshield, ProFACT* automatic calibration technology, RS-232-C interface, option slot for second interface (choice of seven different interfaces), inner draftshield plate (adjustable), protective cover, detachable and adjustable terminal.

WARRANTY:

One year extendable to three years with return of warranty card.

Model	**XP105DR**	**XP205**	**XP205DR**	**XP204**	**XP504**	**XP504DR**
Readability	0.1/0.01mg	0.01mg	0.1/0.01mg	0.1mg	0.1mg	1/0.1mg
Weighing Range	0–120g/31g	0–220g	0–220g/81g	0–220g	0–520g	0–520g/101g
Taring Range	0–120g	0–220g	0–220g	0–220g	0–520g	0–520g
Repeatability						
Nominal Load	0.06mg	0.03mg	0.06mg	0.07mg	0.12mg	0.6mg
Low Load (10g)	0.05mg	0.015mg	0.05mg	0.05mg	0.1mg	0.5mg
Sensitivity						
Temperature Drift[1]	1×10^{-6}/°C	1×10^{-6}/°C	1×10^{-6}/°C	1×10^{-6}/°C	1×10^{-6}/°C	1×10^{-6}/°C
Long-term Stability[2]	1×10^{-6}/a	1×10^{-6}/a	1×10^{-6}/a	1×10^{-6}/a	1×10^{-6}/a	1×10^{-6}/a
Pan Size	3 × 2⅞" (7.8 × 7.3cm)	3 × 2⅞" (7.8 × 7.3cm)	3 × 2⅞" (7.8 × 7.3cm)	3 × 2⅞" (7.8 × 7.3cm)	3 × 2⅞" (7.8 × 7.3cm)	3 × 2⅞" (7.8 × 7.3cm)
Height Above Weighing Pan	9¼" (23.5cm)	9¼" (23.5cm)	9¼" (23.5cm)	9¼" (23.5cm)	9¼" (23.5cm)	9¼" (23.5cm)
Dimensions (L x W x H)	19 × 10¼ × 12½" (48.7 × 26.3 × 32.2cm)	19 × 10¼ × 12½" (48.7 × 26.3 × 32.2cm)	19 × 10¼ × 12½" (48.7 × 26.3 × 32.2cm)	19 × 10¼ × 12½" (48.7 × 26.3 × 32.2cm)	19 × 10¼ × 12½" (48.7 × 26.3 × 32.2cm)	19 × 10¼ × 12½" (48.7 × 26.3 × 32.2cm)
Net Weight	22 lb. (10kg)	22 lb. (10kg)	22 lb. (10kg)	22 lb. (10kg)	22 lb. (10kg)	22 lb. (10kg)
Mfr. No.	XP105DR	XP205	XP205DR	XP204	XP504	XP504DR
Cat. No.	**01-911-350**	**01-911-351**	**01-911-352**	**01-911-353**	**01-911-354**	**01-911-355**
Each	7239.00	10,299.00	9228.00	7239.00	8636.00	7341.00

[1] *In temperature range 10° to 30°C.*

[2] *Stability of sensitivity as from first installation with proFACT.*

LOOKING FOR BALANCE ACCESSORIES?

We carry a full range of Fisherbrand* weighing paper, funnels, weighing dishes, brushes and forceps. For more information and to order,

Visit www.fishersci.com and search for Fisherbrand Balance Accessories

LOOKING FOR MORE INFORMATION ON THE METTLER TOLEDO* WARRANTY?

Mettler Toledo offers an extended onsite warranty. You can find more details online.

Visit www.fishersci.com and search for Mettler Toledo Warranty

Mettler Toledo* Excellence Plus XP Micro-Balances

Hands-free operation and unmatched weighing performance

Micro-balances offer high speed, high performance and security features for measurements, users and data.

01-910 series

SmartGrid* Weighing Pan

- Minimizes effects of turbulence in the weighing chamber
- Ensures more accurate results and shorter stabilization times
- Smallest sample sizes can be weighed-in according to regulations
- Increases the yield of expensive substances

SmartSens* Sensors

- For hands-free operation and personnel security
- Enables user to tare, open and close draft shield or print without touching the balance
- Promotes safe handling of samples, prevention of spills, minimized contamination risk

SmartScreen* Display

- Color-guided touchscreen for safe operation
- Individual, color-coded profiles can be configured and documented for up to eight users or jobs
- Protects users, data and processes, and guarantees seamless traceability

ErgoClips*

- Facilitate secure placement and efficient handling of tare containers
- Faraday effect eliminates negative effects of statically charged tare containers

LevelControl* and MinWeigh

- For full regulatory compliance
- LevelControl warns if balance is not correctly leveled
- MinWeigh signals when sample has not reached minimum weight defined by regulations

Standard Features

- Prepared for weighing below the balance
- User administration and password protection
- Target weighing
- Statistical evaluation
- Formulation with security check
- Density determination
- Percent weighing
- Piece counting with reference optimization
- Alphanumeric data entry of four IDs

INCLUDES:

Automatic and detachable draftshield, automatic inner draft shield, ProFACT* automatic calibration technology, RS-232-C interface, option slot for second interface (choice of seven different interfaces), protective cover, detachable and adjustable terminal.

WARRANTY:

One year extendable to three years with return of warranty card.

Model	XP26	XP26DR	XP56	XP56DR
Readability	0.001mg	0.002mg/0.01mg	0.001mg	0.002mg/0.01mg
Weighing Range	0-22g	0-5.1/22g	0-52g	0-11/52g
Taring Range	0-22g	0-22g	0-52g	0-52g
Repeatability				
Nominal Load	1.5µg	2µg	1.5µg	2µg
Sensitivity				
Temperature Drift[1]	±1.0ppm/°C	±1.0ppm/°C	±1.0ppm/°C	±1.0ppm/°C
Long-term Stability[2]	±0.0001%	±0.0001%	±0.0001%	±0.0001%
Pan Size	40 × 40mm	40 × 40mm	40 × 40mm	40 × 40mm
Height Above Weighing Pan	111mm	111mm	111mm	111mm
Dimensions (L x W x H)	19⅛ × 10⅜ × 12⅝" (486.5 × 263 × 322mm)	19⅛ × 10⅜ × 12⅝" (486.5 × 263 × 322mm)	19⅛ × 10⅜ × 12⅝" (486.5 × 263 × 322mm)	19⅛ × 10⅜ × 12⅝" (486.5 × 263 × 322mm)
Net Weight	22 lb. (10kg)	22 lb. (10kg)	22 lb. (10kg)	22 lb. (10kg)
Mfr. No.	XP26	XP26DR	XP56	XP56DR
Cat. No.	**01-910-670**	**01-910-671**	**01-910-650**	**01-910-651**
Each	17,270.00	14,737.00	20,465.00	18,760.00

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[1] In temperature range 10° to 30°C.

[2] Stability of sensitivity as from first installation with proFACT.

LOOKING FOR METTLER TOLEDO* EXCELLENCE PLUS XP BALANCE ACCESSORIES?

Find accessories for these balances on pp. 104-106 and online.

Visit www.fishersci.com and search for Excellence Plus XP Micro

Mettler Toledo* Excellence XS Series Analytical Balances

Flexible weighing surface, slotted weigh pan, grounding system for static reduction

- Unique, slotted SmartGrid* weigh pan is suspended inside weighing chamber, providing flexible weighing surface for speed and accuracy
- Pan lifts out for easy cleaning, minimizes chance of contamination
- Spills fall into sealed base plate, won't interfere with weighing
- SmartGrid pan and ErgoClip* accessory (order separately) act as a grounding system to remove static from weighing samples
- Fully Automatic Calibration Technology (FACT) ensures precision and accuracy

01-910-320

WARRANTY:
One year extendable to three years with return of warranty card

COMPLIANCE:
Comply with GLP and other quality management systems.

Model	XS64	XS104	XS105DU	XS204DR (DeltaRange)	XS204	XS205DU
Readability	0.1mg	0.1mg	0.1mg/0.01mg	1mg/0.1mg	0.1mg	0.1mg/0.01mg
Weighing Range	0 to 61g	0 to 120g	0 to 120g/0 to41g	0 to 220g/0 to 81g	0 to 220g	0 to 220g/0 to 81g
Taring Range	0 to 61g	0 to 120g	0 to 120g	0 to 220g	0 to 220g	0 to 220g
Repeatability[1]	0.1mg	0.1mg	0.1mg/0.02mg	0.5mg/0.1mg	0.1mg	0.1mg/0.02mg
Linearity	±0.2mg	±0.2mg	±0.2mg/0.03mg	±1mg/0.2mg	±0.2mg	±0.2mg/0.03mg
Stabilization Time	<2 sec.	<2 sec.	<3 sec.	<2 sec.	<2 sec.	<3 sec.
Sensitivity						
Temp. Drift[2]	0.00015%/°C	0.00015%/°C	0.00015%/°C	0.00015%/°C	0.00015%/°C	0.00015%/°C
Long-Term Stability[3]	0.0002%/a	0.0002%/a	0.0002%/a	0.0002%/a	0.0002%/a	0.0002%/a
Pan Size	2¾ × 3" (7 × 8cm)	2¾ × 3" (7 × 8cm)	2¾ × 3" (7 × 8cm)	2¾ × 3" (7 × 8cm)	2¾ × 3" (7 × 8cm)	2¾ × 3" (7 × 8cm)
Dimensions (L × W × H)	17⅝ × 10¼ × 12½" (45.3 × 26.3 × 32.2cm)	17⅝ × 10¼ × 12½" (45.3 × 26.3 × 32.2cm)	17⅝ × 10¼ × 12½" (45.3 × 26.3 × 32.2cm)	17⅝ × 10¼ × 12½" (45.3 × 26.3 × 32.2cm)	17⅝ × 10¼ × 12½" (45.3 × 26.3 × 32.2cm)	17⅝ × 10¼ × 12½" (45.3 × 26.3 × 32.2cm)
Net Weight	23¼ lb. (10.5kg)	23¼ lb. (10.5kg)	23¼ lb. (10.5kg)	23¼ lb. (10.5kg)	23¼ lb. (10.5kg)	23¼ lb. (10.5kg)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	XS64	XS104	XS105DU	XS204DR	XS204	XS205DU
Cat. No.	**01-910-320**	**01-910-321**	**01-910-322**	**01-910-323**	**01-910-324**	**01-910-325**
Each	3065.00	3680.00	4355.00	3755.00	4315.00	5375.00

[1] *At maximum capacity (sd).*
[2] *In the temperature range 10° to 30°C (50° to 86°F).*
[3] *Sensitivity drift/year after putting into operation for the first time, with FACT self-calibration function activated.*

ACCESSORIES

For Mettler Toledo* XS Series Analytical Balances

Description	Mfr. No.	Cat. No.	Each
Weighing Pans, Aluminum (set of 10)	11106711	**01-916-226**	28.12
Weighing Kit with ErgoClips†	11106707	**01-916-230**	265.00
Interface for printer, computer, or titrator; RS-232 option	11132500	**01-916-224**	137.00
Adapter, 230VAC	21900882	**01-916-225**	202.00
Adapter, 115V	11106930	**09-317-553**	148.39
Protective Cover for Terminal	11106870	**01-916-227**	28.12
Transport Case, with space for printer	11106867	**01-916-229**	481.00

† Kit contains various attachments for round-bottom flasks, test tubes, and weighing boats; also includes a set of weighing boats and disposable aluminum pans.

LOOKING FOR MORE BALANCE ACCESSORIES?

We carry a full range of Fisherbrand* weighing paper, funnels, weighing dishes, brushes and forceps. For more information and to order,

Visit www.fishersci.com and search for Fisherbrand Balance Warrany

For more information about Mettler Toledo* balance features, see p. 54 and online.

LOOKING FOR MORE INFORMATION ON THE METTLER TOLEDO* WARRANTY?

Mettler Toledo offers an extended onsite warranty. You can find more details online.

Visit www.fishersci.com and search for Mettler Toledo Warranty

Mettler Toledo* AB-S/FACT Classic Plus Series Analytical Balances

Analytical precision in a basic balance

For less complex tasks where the primary concern is fast, reliable weighing results. These balances provide an optimum price-performance ratio, weighing range up to 320g, and readability to 0.01mg.

- Single-button piece counting, taring, simple weighing and calibration
- Toggle between two weigh units
- Units include: gram, milligram, ounce, troy ounce, pennyweight, carat, momme, Mesghal, Singapore tael, Hong Kong tael, Taiwan tael
- MonoBlock technology delivers fast and accurate weighing with outstanding overload protection
- Stability detector indicates stable reading
- FACT (Fully Automatic Calibration Technology)
- Automatically calibrates balances 24 hours a day using internal calibration weights
- When sensors detect ambient fluctuations of ±1.5°C (±2.7°F), balance immediately calibrates itself
- "rESEt" instantly resets parameters to factory settings and returns to simple weighing mode
- Built-in RS-232-C interface operates bidirectionally at all standard transfer rates from 110 to 9600bps; connects to a variety of computers, printers and other peripherals
- Easy-to-read liquid crystal display
- Sealed keypad
- Sturdy all-metal upper and lower housing

01-916-250 Series

INCLUDES:
Protective cover, calibration weight, draft shield, 115V AC adapter, feedthrough for weighing below the balance and operating instructions.

Model	AB54-S/FACT	AB104-S/FACT	AB204-S/FACT	AB304-S/FACT	AB265-SDU/FACT	AB135-SDU/FACT
Readability	0.1mg	0.1mg	0.1mg	0.1mg	0.01mg/0.1mg	0.01mg/0.1mg
Weighing Range	0 to 51g	0 to 101g	0 to 210g	0 to 320g	0 to 61g/0 to 220g	0 to 31g/0 to 120g
Taring Range (By Subtraction)	0 to 51g	0 to 101g	0 to 51g	0 to 320g	0 to 220g	0 to 120g
Repeatability	0.1mg	0.1mg	0.1mg	0.1mg	0.03mg/0.1mg	0.03mg/0.1mg
Linearity[1]	±0.2mg	±0.2mg	±0.2mg	±0.2mg	±0.2mg	±0.2mg
Stabilization Time (Normal Setting)	2½ seconds	2½ seconds	2½ seconds	5 seconds	5 seconds	5 seconds
Supplied Calibration Weights[2]	50g	100g	200g	Internal motorized test weights	Internal motorized test weights	Internal motorized test weights
Pan Size	3⅛" (8cm)	3⅛" (8cm)	3⅛" (8cm)	3⅛" (8cm)	3⅛" (8cm)	3⅛" (8cm)
Dimensions (L × W × H)	12⅝ × 9⅝ × 13½" (32 × 24.5 × 34.4cm)	12⅝ × 9⅝ × 13½" (32 × 24.5 × 34.4cm)	12⅝ × 9⅝ × 13½" (32 × 24.5 × 34.4cm)	12⅝ × 9⅝ × 13½" (32 × 24.5 × 34.4cm)	12⅝ × 9⅝ × 13½" (32 × 24.5 × 34.4cm)	12⅝ × 9⅝ × 13½" (32 × 24.5 × 34.4cm)
Net Weight	12¾ lb. (5.8kg)	12¾ lb. (5.8kg)	12¾ lb. (5.8kg)	12¾ lb. (5.8kg)	12¾ lb. (5.8kg)	12¾ lb. (5.8kg)
Electrical Requirements[3]	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz
Mfr. No.	AB54-S/FACT	AB104-S/FACT	AB204-S/FACT	AB304-S/FACT	AB265-SDU/FACT	AB135-SDU/FACT
Cat. No.	**01-916-252**	**01-916-253**	**01-916-254**	**01-916-255**	**01-916-251**	**01-916-250**
Each	2274.00	2710.00	3445.00	4130.00	4778.00	3868.00

[1] *In the temperature range 10° to 30°C (50° to 86°F).*

[2] *ASTM Class 1.*

[3] *230V operation requires accessory 09-313-152V 230V Power Adapter.*

Mettler Toledo* AL Classic Light Series Analytical Balances

Ideal for simple weighing tasks; compact, economical

- Simple operation with logical menu guidance and only a few keys
- Automatic adjustment with external weight, piece counting, percent weighing, calculation with a custom "free factor," selectable character size in display, dynamic weighing, +/- weighing, and automatic shutoff
- Units include g, kg, mg, ct, lb, oz, ozt, GN, dwt, momme, mesghal, tael, tical, tola, and baht
- Large weighing pan for maximum working efficiency
- Glass draft shield opens to sides and top
- Large, bright, seven-segment LCD readout
- Built-in overload protection
- AC adapter to appropriate national standard
- Built-in below-balance weighing capability

ORDERING INFORMATION:
Use with line cord (included) or four "AA" batteries

WARRANTY: One year extendable to three years with return of warranty card

01-910-154

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Contd. on next page.

Mettler Toledo* AL Classic Light Series Analytical Balances, Contd.

Model	AL54	AL104	AL204
Readability	0.0001g	0.0001g	0.0001g
Weighing Range	0 to 51g	0 to 110g	0 to 210g
Taring Range	0 to 51g	0 to 110g	0 to 210g
Repeatability	0.0001g	0.0001g	0.0001g
Linearity	0.0002g	0.0002g	0.0003g
Stabilization Time	4 sec.	4 sec.	4 sec.
Pan Size	3½" dia. (9cm)	3½" dia. (9cm)	3½" dia. (9cm)
Dimensions (L × W × H)	13 × 9¼ × 14⅛" (33.5 × 23.8 × 36.4cm)	13 × 9¼ × 14⅛" (33.5 × 23.8 × 36.4cm)	13 × 9¼ × 14⅛" (33.5 × 23.8 × 36.4cm)
Net Weight	12¾ lb. (5.8kg)	12¾ lb. (5.8kg)	12¾ lb. (5.8kg)
Electrical Reqts.	120V 50/60Hz	120V 50/60Hz	120V 50/60Hz
Mfr. No.	AL54	AL104	AL204
Cat. No.	**01-910-150**	**01-910-152**	**01-910-154**
Each	1887.00	2282.00	2555.00

Denver Instrument* Pinnacle* Series Analytical Balances

Weighing capacities to 310g

Simple, menu-driven operation allows quick access to powerful functions: multiple weighing units, parts counting, percent weighing, and animal weighing. Built-in bidirectional RS-232C interface and USB ports enable a network of analytical laboratory instruments centered on your P-Series balance. View your balance anywhere on the network via Ethernet.

Key Features

- Weighing units: grams, milligrams, ounces, troy ounces, pounds, grains, carats, drams, pennyweight, mommes, three taels (Hong Kong, Singapore and Taiwan), Tolas, Bahts
- Extremely accurate parts counting—display constantly updates number and collective weight value
- Percent calculation; displays values as percentage of control weight
- Display totals, averages, calculates standard deviation (or population deviation), minimum and maximum weights, and range of stored values
- Store statistical summary of weight values for display or printing
- Provide GLP/ISO documentation: operator identification, balance identification, date, time, lot and sample numbers

Design

- Rugged diecast aluminum base supports durable stainless-steel weighing pan
- Glass draft shield surrounds weighing chamber
- Built-in overload; leveling bubble; chemical-resistant sealed keypad; weigh-below port

Operation

- User-friendly interface for programming, setting standard serial output, operating remotely
- Permit digital input of tare weights
- Large LCD with easy-to-use menus and stability indicator
- Electronic filling guide; bar graph indicates how much of weight range is still available

REQUIRED ACCESSORIES:

Weigh-below port requires optional 01-960-6 weigh-below hanger; contact your Fisher Scientific Customer Service Representative.

WARRANTY:

Three years

CERTIFICATIONS:

UL listed, CSA approved

01-913-81

User-friendly interface features large numeric display with print, calibrate, tare, and directional keys. Bar-graph capacity indicator, date, timer, user name, current weigh mode and equivalent weigh modes are prominently displayed.

Model	P-114	P-214	P-314
Weighing Range	0 to 110g	0 to 210g	0 to 310g
Readability	0.1mg	0.1mg	0.1mg
Taring Range	0 to 110g	0 to 210g	0 to 310g
Repeatability (Std. Deviation)	0.1mg	0.1mg	0.1mg
Linearity	0.2mg	0.2mg	0.2mg
Stabilization Time	3 seconds	3 seconds	3 seconds
Pan Size	3⅛" dia. (7.9cm)	3⅛" dia. (7.9cm)	3⅛" dia. (7.9cm)
Dimensions (L × W × H)	14½ × 9⅜ × 13¼" (37 × 24 × 34cm)	14½ × 9⅜ × 13¼" (37 × 24 × 34cm)	14½ × 9⅜ × 13¼" (37 × 24 × 34cm)
Net Weight	15 lb. (6.75kg)	15 lb. (6.75kg)	15 lb. (6.75kg)
Electrical Requirements†	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	9854.1	9855.1	9856.1
Cat. No.	**01-913-81**	**01-913-82**	**01-914-03**
Each	2475.00	2845.00	3265.00

† *International voltages are also available; specify desired voltage when ordering. Contact your Fisher Scientific Customer Service Representative for details.*

Denver Instrument* PI Series Analytical Balances with Internal Calibration

Automatic internal calibration with the press of a key

Balances can be set to automatically calibrate when too much time has passed since the last calibration or if the temperature has changed significantly; or set a number of days for the calibration to be performed. Use internal weights to calibrate the balance or add a certified weight for external calibration.

Key Features

- 16 weigh units including grams, milligrams, kilograms, ounces, troy ounces, pound, grain, pennyweight and carat
- Store up to 250 points
- Sample averaging and standard deviation
- Meet ISO/GLP requirements: Bidirectional RS-232, or USB port prints data to computer or printer, sends commands remotely. Ethernet enables viewing balance anywhere on network
- Adjustable serial settings
- Extra-large, back-lit display has ¾" high numerals
- Display two weigh units simultaneously, plus time, date and current status

Operation

- Programmable environmental settings
- Add alphanumeric batch identification and sample number
- Store up to nine user names

Design

- Rugged, die-cast aluminum base
- Durable stainless-steel weighing pan
- Easy-to-see leveling bubble
- Chemically resistant keypad sealed for protection against spills
- Weigh-below port (requires optional weigh-below device 01-960-6)

WARRANTY:
Three years

COMPLIANCE:
Meet ISO/GLP requirements

01-914-22

	Single-Range			Dual-Range
Model	PI-114	PI-214	PI-314	PI-225D
Readability	0.1mg	0.1mg	0.1mg	0.01/0.1mg
Weighing Range	0-110g	0-210g	0-310g	0-60g/60-220g
Taring Range	0 to 110g	0 to 210g	0 to 310g	0 to 220g
Repeatability (Std. Dev.)	0.1mg	0.1mg	0.1mg	0.02mg/0.1mg
Linearity	0.2mg	0.2mg	0.3mg	0.03mg/0.2mg
Stabilization Time	3 sec.	3 sec.	3 sec.	3 sec.
Pan Size	3⅛" dia. (7.9cm)	3⅛" dia. (7.9cm)	3⅛" dia. (7.9cm)	3⅛" dia. (7.9cm)
Dimensions (L × W × H)	14⅝ × 9⅜ × 13¼" (37 × 24 × 34cm)	14⅝ × 9⅜ × 13¼" (37 × 24 × 34cm)	14⅝ × 9⅜ × 13¼" (37 × 24 × 34cm)	14⅝ × 9⅜ × 13¼" (37 × 24 × 34cm)
Net Weight	15 lb. (6.75kg)	15 lb. (6.75kg)	15 lb. (6.75kg)	15 lb. (6.75kg)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	9974.1	9975.1	9976.1	2156.1
Cat. No.	**01-914-20**	**01-914-21**	**01-914-22**	**01-913-120**
Each	2775.00	3295.00	3563.00	4375.00

Denver Instrument* Summit Series Analytical Balances

Simplicity, accuracy, reliability—plus advanced weighing features

No calibration weights needed—single key completes calibration automatically, saving time and increasing the accuracy and reliability of readings. (Standard models without internal calibration are also available.)

Key Features

- Choice of 19 measuring units including grams, ounces, troy ounces, carats, or pounds
- Built-in functions include parts counting, percent weighing, net total, animal weighing, and formulation—with user-defined settings allowed
- Bidirectional RS-232 port for transmitting data to computers, printers for ISO/GLP program requirements
- Security settings block access to menu structure or inactivate all keys
- Built-in overload protection prevents damage to the weigh cell
- Standby mode conserves power
- Toggle between four weigh units
- Automatic time and date stamps

01-915-13

Design

- Below-balance weighing port
- Stainless-steel pans and drip rings make cleaning a snap
- Glass draft shield has easy-sliding doors
- Leveling feet and level indicator assure stability

WARRANTY: Three years

Contd. on next page.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Denver Instrument* Summit Series Analytical Balances, Contd.

Model	SI-64	SI-114	SI-234	SI-215D
Weighing Range	0 to 60g	0 to 110g	0 to 230g	0 to 60/210g
Readability	0.1mg	0.1mg	0.1mg	0.01/0.1mg
Tare Range	0 to 60g	0 to 110mg	0 to 230g	0 to 60/210g
Repeatability	0.1mg	0.1mg	0.1mg	0.01/0.1mg
Linearity	0.2mg	0.2mg	0.2mg	0.03/0.2mg
Stabilization Time	2 sec.	2 sec.	2 sec.	3 sec.
Pan Size	3½" dia. (9.0cm)	3½" dia. (9.0cm)	3½" dia. (9.0cm)	3⅛" dia. (7.9cm)
Overall L x W x H	12⅛ × 8½ × 12½" (30.8 × 21.6 × 31.5cm)	12⅛ × 8½ × 12½" (30.8 × 21.6 × 31.5cm)	12⅛ × 8½ × 12½" (30.8 × 21.6 × 31.5cm)	11¾ × 7¾ × 13" (30.0 × 19.8 × 33.0cm)
Draft Shield L x W x H	6½ × 6⅝ × 9½" (16.7 × 17.1 × 23.6cm)	6½ × 6⅝ × 9½" (16.7 × 17.1 × 23.6cm)	6½ × 6⅝ × 9½" (16.7 × 17.1 × 23.6cm)	6½ × 6⅝ × 9½" (16.5 × 16.8 × 24.1cm)
Net Weight	9.7 lb. (4.4kg)	9.7 lb. (4.4kg)	9.7 lb. (4.4kg)	9.7 lb. (4.4g)
Net Weight (with Int. Cal.)	10.5 lb. (4.8kg)	10.5 lb. (4.8kg)	10.5 lb. (4.8kg)	10.5 lb. (4.8kg)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
With Internal Calibration				
Mfr. No.	SI-64.1	SI-114.1	SI-234	SI-215D.1
Cat. No.	**01-915-11**	**01-915-12**	**01-915-13**	**01-913-132**
Each	2080.00	2280.00	2580.00	3765.00
Without Internal Calibration				
Mfr. No	S-64.1	S-114	S-234	----
Cat. No.	**01-915-24**	**01-915-25**	**01-915-26**	----
Each	1780.00	1980.00	2280.00	----

Denver Instrument* Timberline Analytical Balances

NEW

Ideal for laboratory and educational environments

Easy operation, fast readouts, and reliability. Priced for those who need precision on a tight budget. Compact size takes up less space on the benchtop.

- Readability of 0.1mg
- Clear display and a keypad with large function keys
- Built-in analytical draft shield opens on both sides and the top for easy sample entry
- Quick readouts, using the latest weighing technology
- Toggle between two weigh units including grams, milligrams and ounces
- Automatic external calibration using a precision calibration weight (sold separately)
- Counting, percent weighing, formulation, average weighing
- RS-232 port standard for data transfer to printer or computer

WARRANTY:
Three years

CERTIFICATIONS:
CE marked, CSA approved

DENVER INSTRUMENT

01-913-146

Model	TP-64	TP-124	TP-214
Readability	0.1mg	0.1mg	0.1mg
Weighing Range	0 to 60g	0 to 120g	0 to 210g
Tare Range	0 to 60g	0 to 120g	0 to 210g
Repeatability	0.1mg	0.1mg	0.1mg
Linearity	0.2mg	0.2mg	0.2mg
Stabilization Time	3 sec.	3 sec.	3 sec.
Pan Size	3¼" dia. (80mm)	3¼" dia. (80mm)	3¼" dia. (80mm)
Overall L x W x H	7⅜ × 9⅞ × 11¾" (18.9 × 25.1 × 29.9cm)	7⅜ × 9⅞ × 11¾" (18.9 × 25.1 × 29.9cm)	7⅜ × 9⅞ × 11¾" (18.9 × 25.1 × 29.9cm)
Net Weight	6⅝ lb. (3.0kg)	6⅝ lb. (3.0kg)	6⅝ lb. (3.0kg)
Mfr. No.	TP-64	TP-124	TP-214
Cat. No.	**01-913-145**	**01-913-146**	**01-913-147**
Each	1515.00	1725.00	1985.00

LOOKING FOR WEIGHTS?

Analytical and precision weights for Denver Instrument* balances can be found on pp. 100-101.

LOOKING FOR MORE BALANCE ACCESSORIES?

We carry a full range of Fisherbrand* weighing paper, funnels, weighing dishes, brushes and forceps. For more information and to order,

Visit www.fishersci.com and search for Fisherbrand Balance Accessories

Ohaus* Discovery* Semi-Micro and Analytical Balances

High-precision balance provides exceptional weighing performance and reproducibility with 0.01mg readability

With its affordable price, innovative design, and convenient, SmarText* user interface, the Discovery provides everything you need in a high-precision balance. Its advanced features and wide range of built-in applications take the manual work out of specimen analysis.

Features

- Discovery's 10µg repeatability and linearity is 2X better than most balances in its class
- SmarText user interface with bright, dual-line, backlit LCD, utilizes text prompts to guide users through setup and operation
- Advanced AutoCal* dual-weight internal calibration system automatically calibrates the balance when it senses a temperature change sufficient enough to affect weighing accuracy; also performs a 3-point linear calibration every time scale is internally calibrated
- Cal Adjust and Cal Test allow traceability and validation
- Stability filters, stability indicator range, and auto-zero tracking enable use in difficult environments
- Ideal for university research, pharmaceutical research/drug discovery, and general lab applications
- Weighing units include g, mg, dwt, ct, oz, ozt, GN, taels (3), mommes, custom

Design

- Full glass and steel construction resists effects of static and corrosion
- Draftshield and housing design provide optimum draft protection and maximum static resistance for superior stability and reproducibility in challenging environments such as high traffic areas
- Ergonomic leveling system; menu and calibration lock-out switch; factory reset option; spill gutter and in-use protective keypad cover
- User selectable GLP outputs via RS-232 to meet traceability requirements
- Right and left-hand tare buttons
- Integral weigh-below hook

Standard Application Modes

- Weighing
- Percent Weighing: displays the weight of a sample as a percentage of a reference weight useful in sieving applications, reagent weighing, moisture determination, and other types of ingredient mixing
- Parts Counting: for counting pills, or parts that have a consistent, but low nominal mass; allows user to count based on a calculated piece weight
- Check Weighing: checks the weight of a sample against preset target limits
- Animal/Dynamic Weighing: for weighing in a rough environment (such as on a ship), or in a location with less than ideal conditions; also for weighing moving objects such as animals, insects or other moving specimens
- Totalization: to sum a series of sample weights that can be greater than the capacity of the balance
- High Point: can be used when analyzing batches or lots, or for quality checking of random samples

01-920-051

Advanced Application Modes

- Statistics: for comparing a number of samples and examining the relative deviation of the samples along with other statistical data
- Density: With four methods of density determination to choose from, provides rapid and accurate density results, with no manual calculations needed
- Pipette Calibration: checks the accuracy and precision values of pipettes by weight analysis

Optional Accessories

Density determination kit, calibration masses, SF42 impact printer, RS-232 interface cables, and Ohaus Collect Data Acquisition and Control software.

WARRANTY:

Two years (US and Canada)

CERTIFICATIONS:

CSA certified to CSA 1010-1, UL 3101-1 and IEC 1010-1. FCC approved.

LOOKING FOR ACCESSORIES?

Find accessories for these balances on p. 106 and online.

Visit www.fishersci.com and search for Ohaus Discovery

Model	DV114C	DV214C	DV314C	DV215CD
Readability	0.1mg	0.1mg	0.1mg	0.01/0.1mg
Weighing Range	0 to 110g	0 to 210g	0 to 310g	0 to 81g/0 to 210g
Taring Range	0 to 110g	0 to 210g	0 to 310g	0 to 81g/0 to 210g
Repeatability (Std. Dev.)	0.1mg	0.1mg	0.2mg	0.02/0.1mg
Linearity	±0.2mg	±0.2mg	±0.5mg	±0.03/0.2mg
Sensitivity (Drift)	±2ppm/°C	±2ppm/°C	±2ppm/°C	±2ppm/°C
Stabilization Time	4 sec.	4 sec.	8 sec.	12 sec./5 sec.
Pan Size	3½" (9cm)	3½" (9cm)	3½" (9cm)	3½" (9cm)
Dimensions (L x W x H)	18 × 7⅞ × 11¾" (45.7 × 20 × 30cm)	18 × 7⅞ × 11¾" (45.7 × 20 × 30cm)	18 × 7⅞ × 11¾" (45.7 × 20 × 30cm)	18 × 7⅞ × 11¾" (45.7 × 20 × 30cm)
Net Weight	22½" (10.2cm)	22½" (10.2cm)	22½" (10.2cm)	22½" (10.2cm)
Electrical Reqts.	100-120V, 220-240V 50/60Hz	100-120V, 220-240V 50/60Hz	100-120V, 220-240V 50/60Hz	100-120V, 220-240V 50/60Hz
Mfr. No.	DV114C	DV214C	DV314C	DV215CD
Cat. No.	**01-920-050**	**01-920-051**	**01-920-053**	**01-920-052**
Each	3195.00	3495.00	3995.00	4495.00

Ohaus* Voyager* Pro Series Analytical Balances

Advanced application modes, innovative software, simple user interface

- Six advanced applications to automate weighing and help reduce errors
- AutoCal* automatic internal calibration
- Backlit, high-resolution dot-matrix display
- Applications library to store and recall past procedures
- Integral weigh-below hook
- Large, three-door draftshield provides optimum draft protection
- Manufactured using ISO 9001:2000-certified processes
- Ideal for university research, teaching laboratories and general lab applications.

Operation

- Simple user interface with two-button operation and three application specific soft keys
- Easy-to-use navigation windows and scroll-down menus to guide user through balance functions
- User-selectable GLP/GMP data output via RS-232 communications port
- User-selectable filter, stability indicator, and auto-zero tracking for use in difficult environments
- Five operating languages

Weighing Modes/Units

- Standard modes: percent weighing, animal weighing, check weighing, filling, parts counting and gross/net/tare weighing
- Advanced modes: statistics, formulation, differential weighing, statistical QC, density determination and pipet calibration
- Weighing units: milligrams, carats, mommes, grams, troy ounces, taels (three), kilograms, newtons, ticals, pounds, grains, pennyweight, ounces, and custom units

Voyager Pro
0.0000

02-114-18

ORDERING INFORMATION:

A wide range of accessories are available, including auxiliary display kit, remote display kit, security device, density determination kit, calibration masses, impact printer, RS-232 interface cables and TAL WinWedge* software. (Contact your Fisher Scientific Customer Service Representative.)

INCLUDES:

Protective in-use cover and security bracket

WARRANTY:

Two year warranty (US and Canada)

CERTIFICATIONS:

UL listed, CSA approved, FCC approved

Model	VP64CN	VP114CN	VP214CN	VP214DCN†
Readability	0.1mg	0.1mg	0.1mg	0.1mg/1mg
Weighing Range	0 to 62g	0 to 110g	0 to 210g	0 to 100g/0 to 210g
Repeatability (Std. dev.)	0.1mg	0.1mg	0.1mg	0.1mg/0.5mg
Linearity	±0.2mg	±0.2mg	±0.2mg	±0.2mg/±0.5mg
Stabilization Time	4 sec.	4 sec.	4 sec.	4 sec.
Pan Size	3½" (9cm)	3½" (9cm)	3½" (9cm)	3½" (9cm)
Dimensions (L x W x H)	13.8 × 8.3 × 13.8" (35 × 21 × 35cm)	13.8 × 8.3 × 13.8" (35 × 21 × 35cm)	13.8 × 8.3 × 13.8" (35 × 21 × 35cm)	13.8 × 8.3 × 13.8" (35 × 21 × 35cm)
Net Weight	13.2 lb. (6kg)	13.2 lb. (6kg)	13.2 lb. (6kg)	13.2 lb. (6kg)
Electrical Requirements	100-120V/220-240V 50/60Hz	100-120V/220-240V 50/60Hz	100-120V/220-240V 50/60Hz	100-120V/220-240V 50/60Hz
Mfr. No.	VP64CN	VP114CN	VP214CN	VP214DCN
Cat. No.	**02-114-18**	**02-114-19**	**02-114-20**	**02-114-21**
Each	2917.00	3101.00	3468.00	3157.00

† With Moveable FineRange.

LOOKING FOR ACCESSORIES?

Find accessories for these balances on p. 106 and online.

Visit www.fishersci.com and search for Voyager Pro Accessories

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Ohaus* Explorer* Pro Series Analytical Balances

Advanced, user-friendly software allows the user to work in any of seven application modes with no training

Optional AutoCal feature automatically calibrates the balance when it senses a temperature change sufficient enough to affect weighing accuracy.

Advanced Display

- Simultaneous viewing of reference information
- High-resolution, dot matrix display for optimum viewing
- Displays additional results and reference information
- Capacity guide shows relationship between total platform load and full balance capacity
- Fill guide displays relationship between total platform load and user-defined target

Operation

- Three application-specific soft keys for calibration, units, new sample, sample size, new reference weight, reference weight, new target, and target
- Selectable operating languages
- Built-in RS-232 port, auxiliary display port, complete built-in GLP/GMP protocol, selectable language display text, selectable displayed information settings, selectable environmental settings, selectable auto-print settings, integral weigh-below hook, contrast and brightness control

Weighing Modes

- Built-in applications include animal weighing, parts counting, percent weighing, check weighing, filling, and gross/net/tare weighing
- Weighing units include gram, milligram, ounce, user-programmable custom unit, troy ounce, carat, pennyweight, Hong Kong tael, Singapore tael, Taiwan tael, mommes, grain, tical and newton
- View simple weighing results or piece count, average piece weight, sample size, tare weight, weight, and under- and over-indicators
- Choice of limited or multiple data fields

INCLUDES:

Integral security bracket that permits locking balance with cable and in-use cover.

02-112-111

WARRANTY:

Two year warranty (U.S. and Canada)

CERTIFICATIONS:

UL listed, CSA approved, FCC approved.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

	Single-Range Models			Dual-Range Models with Moveable FineRange*
Model	**EP64**	**EP114**	**EP214**	**EP214D**
Readability	0.1mg	0.1mg	0.1mg	0.1/1mg
Weighing Range	0 to 62g	0 to 110g	0 to 210g	0 to 100g/0 to 210g
Taring Range (By Subtraction)	0 to 62g	0 to 110g	0 to 210g	0 to 100g/0 to 210g
Repeatability (Std. Deviation)	0.1mg	0.1mg	0.1mg	0.1mg/0.5mg
Linearity	±0.2mg	±0.2mg	±0.2mg	±0.2mg/0.5mg
Stabilization Time	4 sec.	4 sec.	4 sec.	4 sec.
Pan Size	3½" (9cm)	3½" (9cm)	3½" (9cm)	3½" (9cm)
Dimensions (L × W × H)	13 × 8½ × 15" (33 × 21.5 × 38.1cm)	13 × 8½ × 15" (33 × 21.5 × 38.1cm)	13 × 8½ × 15" (33 × 21.5 × 38.1cm)	13 × 8½ × 15" (33 × 21.5 × 38.1cm)
Net Weight	13¼ lb. (6kg)	13¼ lb. (6kg)	13¼ lb. (6kg)	13¼ lb. (6kg)
Electrical Reqts.	100-120V, 220-240V 50/60Hz	100-120V, 220-240V 50/60Hz	100-120V, 220-240V 50/60Hz	100-120V, 220-240V 50/60Hz
Without AutoCal				
Mfr. No.	EP64-US	EP114-US	EP214-US	EP214D-US
Cat. No.	**02-112-110**	**02-112-112**	**02-112-114**	**02-112-116**
Each	2147.00	2331.00	2698.00	2382.00
With AutoCal				
Mfr. No.	EP64C-US	EP114C-US	EP214C-US	EP214DC-US
Cat. No.	**02-112-111**	**02-112-113**	**02-112-115**	**02-112-117**
Each	2458.00	2642.00	3009.00	2698.00

*Trademark. See Trademark Reference.

Ohaus* Adventurer* Pro Analytical Balances

Rich in features, compact in size

Balances count, sum, hold and deliver traceable results. Three weighing capacities, with or without InCal* internal calibration system.

Design

- Frameless, flip-top draftshield permits easy access into the weighing chamber—helps eliminate spillage and reduce waste
- Doors and glass panels disassemble in seconds, so they're easy to clean
- QuadraStance* provides superior footprint stability on any surface
- Large stainless steel weighing platform
- 2-line alphanumeric LCD, 4 × 1" (10 × 2.5cm) with brilliant backlight
- Replaceable protective in-use cover
- Integrated security bracket for accessory anti-theft lock (01-950-6, order online at **www.fishersci.com**)

Performance

- SmarText* software guides users through application use and balance setup; displays weight and application-specific information simultaneously
- Digital calibration without external weight (models with InCal) or with external weight (models without InCal)
- Standard RS-232 interface, plus optional factory-installed USB or second RS-232, enable multiple connections for full GLP/GMP data output

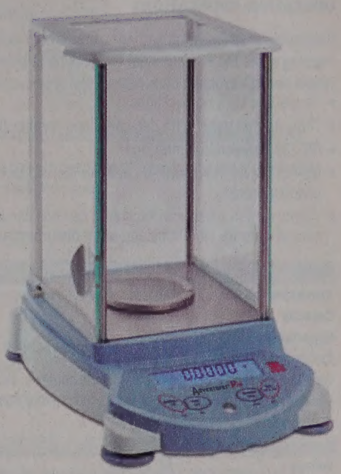
Modes

- Three filter modes and adjustable zero tracking
  - **Animal Weighing** to weigh small animals; filters out animal movements for a stable weight indication
  - **Check Weighing** to check the weight of a sample against a preset target
  - **Totalization** sums a series of sample weights
- **Display Hold** keeps the highest stable weight on the display until cleared
- **Parts Counting with Optimization** counts based on a calculated piece weight
- **Percentage** displays sample weight as a percentage of reference weight

- Multiple weighing units: milligram, gram, kilogram, ounce, pound, carat, pennyweight, ounce troy, grain, Newton, Hong Kong tael, Singapore tael, Taiwan tael, momme, tical, Baht, mesghal, Tola, custom

Operation

- Four-button key pad with dedicated YES, NO, BACK, EXIT functions
- User-selectable span calibration points
- Weigh-below hook
- Mechanical and software overload/underload protection
- Upfront stability indicator
- Low battery indicator, auto shutoff
- Software reset menu



01-919-204

WARRANTY:

Two year (US and Canada)

CERTIFICATION:

Meet requirements of: CE, FCC, CULus, CCSAus, NRTL; C Tick; CB Scheme; IP33 (without power adapter, with pan put on); IP20 (with power adapter, with pan put on).

Model	With InCal			Without InCal		
	AV64C	**AV114C**	**AV264C**	**AV64**	**AV114**	**AV264**
Readability	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg
Weighing Range	0 to 65g	0 to 110g	0 to 260g	0 to 65g	0 to 110g	0 to 260g
Taring Range (by Subtraction)	0 to 65g	0 to 110g	0 to 260g	0 to 65g	0 to 110g	0 to 260g
Repeatability	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg
Linearity	±0.2mg	±0.2mg	±0.3mg	±0.2mg	±0.2mg	±0.3mg
Stabilization Time	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.
Pan Dia.	3½" (9cm)	3½" (9cm)	3½" (9cm)	3½" (9cm)	3½" (9cm)	3½" (9cm)
Overall L x W x H	11⅞ × 8¾ × 12" (30 × 22 × 30.5cm)	11⅞ × 8¾ × 12" (30 × 22 × 30.5cm)	11⅞ × 8¾ × 12" (30 × 22 × 30.5cm)	11⅞ × 8¾ × 12" (30 × 22 × 30.5cm)	11⅞ × 8¾ × 12" (30 × 22 × 30.5cm)	11⅞ × 8¾ × 12" (30 × 22 × 30.5cm)
Net Weight	9.6 lb. (4.4kg)	9.6 lb. (4.4kg)	9.6 lb. (4.4kg)	8.7 lb. (4kg)	8.7 lb. (4kg)	8.7 lb. (4kg)
Mfr. No.	AV64C-US	AV114C-US	AV264C-US	AV64-US	AV114-US	AV264-US
Cat. No.	**01-919-204**	**01-919-206**	**01-919-208**	**01-919-205**	**01-919-207**	**01-919-209**
Each	2122.00	2326.00	2836.00	1816.00	2020.00	2530.00

LOOKING FOR ACCESSORIES?

Find accessories for these balances on pp. 101-107 and online.

Visit www.fishersci.com and search for Balance Accessories

Ohaus* Pioneer* Analytical Balances

NEW

Excellent for routine weighing in lab, industrial and education applications

Selectable environmental settings, three filter modes, and adjustable zero tracking make the Pioneer ideal for working in slow filling applications where sensitivity is a must.

- Single-line LCD; no backlight
- Three-button panel with dedicated and number functions
- RS-232 bidirectional interface
- Up-front level indicator—no need to look in back of balance during leveling process
- Works well in harsh environments; settings can be adjusted to compensate for vibrations and other disturbances
- Calibration lockout
- Security loop in rear of balance
- Communications software, SW12W

INCLUDES:
AC adapter

REQUIRED ACCESSORIES:
Six alkaline "C" batteries

CERTIFICATIONS:
FCC, CE

WARRANTY: Two year (US and Canada)

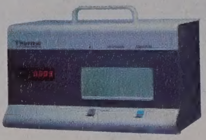
01-918-300

Model	PA 64	PA 114	PA 214
Readability	0.1mg	0.1mg	0.1mg
Capacity	65g	110g	210g
Repeatability	0.1mg	0.1mg	0.1mg
Stabilization Time	3 sec.	3 sec.	3 sec.
Weighing Modes	Weighing, parts counting, percent weighing	Weighing, parts counting, percent weighing	Weighing, parts counting, percent weighing
Dimensions (W × H × D)	7¾ × 11¼ × 12⅝" (19.6 × 27.8 × 32cm)	7¾ × 11¼ × 12⅝" (19.6 × 27.8 × 32cm)	7¾ × 11¼ × 12⅝" (19.6 × 27.8 × 32cm)
Platform Size	90mm	90mm	90mm
Electrical Reqts.			
Voltage	AC adapter	AC adapter	AC adapter
Battery	6 alkaline "C" batteries	6 alkaline "C" batteries	6 alkaline "C" batteries
Mfr. No.	PA 64	PA 114	PA 214
Cat. No.	**01-918-300**	**01-918-301**	**01-918-302**
Each	1607.00	1690.00	2096.00

Thermo Scientific* Cahn* Analytical Microbalances

Push-button tare and calibration

Microbalances used in analytical, biomedical and industrial applications. Ideal for sample preparation, filter weighing, fire assay, elemental analysis, standards preparation. Calibration system can produce weighings traceable to national standards, and Model C-35 has an RS-232-C interface for data management capability.



20-063-40

20-065-25

Model C-33

- Rugged microbalance with a resolution of 1.0µg
- Big, bright LED
- Single-pan construction
- Push-button operation
- Unaffected by movement or temperature

Model C-35

- Ultramicrobalance with separate weighing chamber
- Resolution to 0.1µg
- Stability indicator
- Push-button operation and calibration
- Large chamber for broader field of view and easy access
- Rugged construction

ORDERING INFORMATION:
For 100 to 240V 50/60Hz

INCLUDES:
Platform stirrups, calibration weights, forceps, fuses, detachable 120V power cord, storage case and instruction manual. Model C-35 is supplied with pans and tare weights.

	Single-Pan Standard Model	Dual-Pan Model With Remote Weighing Chamber
Model	**C-33**	**C-35**
Display Resolution/ Ranges	1.0µg/0–200mg	0.01mg/0–1250mg; 1.0µg/0–250mg; 0.1µg/0–25mg
Tare Ranges		
Electrical[1]	0-250mg	0-1250mg
Mechanical[1]	----	0-3.5g
Repeatability/Linearity		
Ultimate[2]	1.0µg	0.1µg
Fraction of Load[2]	0.0005%	0.0005%
Dimensions		
Housing (L × W × H)	9 × 16 × 11" (23 × 42 × 28cm)	24½ × 30 × 19" (62.2 × 76.2 × 48.3cm)
Weighing Unit (L × W × H)	----	13 × 30 × 21" (33 × 76.2 × 53.3cm)
Net Weight	14⅜ lb. (6.5kg)	17⅝ lb. (8kg)
Mfr. No.	13633-01	10935-01
Cat. No.	**20-063-40**	**20-065-25**
Each	10,274.00	16,260.00

[1] Value given is for highest capacity range.
[2] Value given is for highest sensitivity range.

ACCESSORIES

Thermo Scientific* Cahn* Aluminum Sample Containers

Dimensions	Weight	Mfr. No.	Cat. No.	Pack of
Pans				
½" dia. (12mm)	17mg	01187-01	**20-065-17A**	20/45.00
1" dia. (25mm)	35mg	01568-02	**20-063-56**	20/93.00
Boat				
⅞L × ¼W × ¼"H (22 × 7 × 7mm)	130mg	14076-01	**20-065-41**	10/47.00

Precision balances, also known as toploading balances, are used for weighing at readabilities between 1 mg and 1 g, with maximum capacities ranging from 200 g to 64 kg.

IMPORTANT TERMS TO KNOW

Readability—The smallest displayed digit, or weight, on any balance.

Accuracy—A measure of the balance's ability to hit, or repeat, a result.

Stabilization Time—The time a balance requires to come to rest from the moment a load is placed on the pan to the moment the result is displayed.

Repeatability—The closeness of repeated results carried out in assumed identical conditions

Linearity—A measure of how well the balance is capable of following the linear relationship between the loaded weight and the displayed value.

FEATURES TO LOOK FOR

Support—Unparalleled support from sales representatives, nationwide service organization and technical support will provide the help you need to prevent service interruptions.

Durability—All-metal housing resists chemicals and withstands even the most demanding environments.

Quality Management Tools—Include features to ensure safe, accurate weighing.

Internal Calibration—Calibration can be programmed to occur at specific times throughout the day, ensuring your balance is performing at its best. METTLER TOLEDO's proFACT feature provides fully automatic internal calibration and linearization with two internal weights.

Pan Size—A larger pan size allows for proper placement of larger samples.

From simple to sophisticated, METTLER TOLEDO's full line of balance solutions offers a variety of features to meet your needs.

BEFORE YOU BUY PRECISION BALANCES

MODEL	APPLICATION
Excellence Plus (XP)	Regulatory compliance, high productivity, and data/sample security
Excellence (XS):	Durable and efficient for routine operations
Classic Plus (PB-S/FACT and SB)	Reliable and robust for simple weighing in a demanding environment
Classic Light (PL and PL-S)	For easy weighing on a low budget

METTLER TOLEDO
0.00 g
METTLER TOLEDO
0.0 g

XP Precision Balance

sponsored by:

METTLER TOLEDO

Factors that influence accuracy or reliability of results:

Stability of the weighing bench.
Room temperature should be as constant as posible (typically 1 – 2 ppm/°C).
Maintain atmospheric humidity.
Avoid direct light.
Avoid weighing near air conditioners, radiators, or powerful air currents.

For a full selection of METTLER TOLEDO® Precision Balances, see pgs. 62-68.

ELECTRONIC TOPLOADING

Mettler Toledo* Excellence Plus XP Series Electronic Toploading Balances

Precision balances with a unique combination of the highest capacities with the finest resolutions

01-910-370

01-910-364
(see next page)

Features

- User-friendly touchscreen with large, colored, SmartScreen* display
- Hands-free operation with SmartSens* and ErgoSens sensors
- Fully automatic temperature and time-controlled internal adjustment with proFACT*
- Warning feature (MinWeigh*) notifies user if weight is below the allowed minimum
- Weighing adapter for optimal adaptation to the environment
- Include MonoBloc$^{\text{High-Speed}}$—a rugged, high-performance weigh cell for peak weighing performance
- Download software via the Internet
- Display different weighing units; display statistics
- Adapt to the environment; adapt to weighing type
- Formula weighing, including security protection
- Factor calculation, alphanumeric identification, four IDs per sample, seven languages
- Safe operation in QM-regulated environments—include User Management, Password Protection, and Change History

Design

- Stainless-steel weighing pan with draft ring or draft shield
- Spring-loaded stabilizing feet for all 0.1 and 0.01g models
- Built-in RS-232 interface; slot for second freely selectable interface; and two switch contacts
- Protective cover for terminal and weighing platform; terminal can be mounted on special stand to save space
- Feedthrough for below-the-balance weighing

WARRANTY:
One year extendable to three years with return of warranty card.

210 to 410g

Model	XP204S	XP404S	XP404SDR
Readability	0.1mg	0.1mg	0.1mg/1mg
Weighing Range	0 to 210g	0 to 410g	0 to 80g/0 to 410g
Taring Range	0 to 210g	0 to 410g	0 to 410g
Repeatability†	0.2mg	0.1mg	0.1mg/0.6mg
Linearity	0.2mg	0.2mg	0.6mg
Stabilization Time	2 sec.	2 sec.	2 sec.
Pan Size	3.5" (90mm dia.)	3.5" (90mm dia.)	3.5" (90mm dia.)
Dimensions (L × W × H)	15⅜ × 8¼ × 14¼" (39.5 × 21.4 × 36.3cm)	15⅜ × 8¼ × 14¼" (39.5 × 21.4 × 36.3cm)	15⅜ × 8¼ × 14¼" (39.5 × 21.4 × 36.3cm)
Height of Draft Shield	9⅝" (24.8cm)	9⅝" (24.8cm)	9⅝" (24.8cm)
Net Weight	17 lb. (7.7kg)	17 lb. (7.7kg)	17 lb. (7.7kg)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	XP204S	XP404S	XP404SDR
Cat. No.	**01-910-418**	**01-910-419**	**01-910-420**
Each	5362.00	6586.00	5678.00

† At full load (sd).

210 to 5100g

Model	XP203S	XP603S	XP603SDR	XP1203S	XP2003SDR	XP5003SDR
Readability	1mg	1mg	1mg/10mg	1mg	1mg/10mg	1mg/10mg
Weighing Range	0 to 210g	0 to 610g	0 to 120g/0 to 610g	0 to 1210g	0 to 500g/0 to 2100g	0 to 1000g/0 to 5100g
Taring Range	0 to 210g	0 to 610g	0 to 610g	0 to 1210g	0 to 2100g	1 to 5100g
Repeatability†	0.9mg	0.9mg	4mg	0.8mg	1mg/6mg	1mg/6mg
Linearity	±2mg	±2mg	±10mg	±2mg	±6mg	±6mg
Stabilization Time	1.5 sec.	1.5 sec.	1.5 sec.	1.5 sec.	2 sec.	2 sec.
Pan Size	5 × 5" (12.7 × 12.7cm)	5 × 5" (12.7 × 12.7cm)	5 × 5" (12.7 × 12.7cm)	5 × 5" (12.7 × 12.7cm)	5 × 5" (12.7 × 12.7cm)	5 × 5" (12.7 × 12.7cm)
Dimensions (L × W × H)	15⅜ × 8¼ × 14¼" (39.5 × 21.4 × 36.3cm)	15⅜ × 8¼ × 14¼" (39.5 × 21.4 × 36.3cm)	15⅜ × 8¼ × 14¼" (39.5 × 21.4 × 36.3cm)	15⅜ × 8¼ × 14¼" (39.5 × 21.4 × 36.3cm)	15⅜ × 8¼ × 14¼" (39.5 × 21.4 × 36.3cm)	15⅜ × 8¼ × 14¼" (39.5 × 21.4 × 36.3cm)
Height of Draft Shield	9⅝" (24.8cm)	9⅝" (24.8cm)	9⅝" (24.8cm)	9⅝" (24.8cm)	9⅝" (24.8cm)	9⅝" (24.8cm)
Net Weight	17 lb. (7.7kg)	17 lb. (7.7kg)	17 lb. (7.7kg)	17 lb. (7.7kg)	17 lb. (7.7kg)	17 lb. (7.7kg)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	XP203S	XP603S	XP603SDR	XP1203S	XP2003SDR	XP5003SDR
Cat. No.	**01-910-369**	**01-910-370**	**01-910-371**	**01-910-372**	**01-910-421**	**01-910-422**
Each	4036.00	4801.00	4138.00	5592.00	5536.00	6209.00

† At full load (sd).

1210 to 10,100g

Model	**XP1202S**	**XP4002S**	**XP6002S**	**XP8002S**	**XP10002S**
Readability	10mg	10mg	10mg	10mg	10mg
Weighing Range	0 to 1210g	0 to 4100g	0 to 6100g	0 to 8100g	0 to 10, 100g
Taring Range	0 to 1210g	0 to 4100g	0 to 6100g	0 to 8100g	0 to 10, 100g
Repeatability†	8mg	8mg	8mg	8mg	8mg
Linearity	±20mg	±20mg	±20mg	±20mg	±20mg
Stabilization Time	1.2 sec.	1.2 sec.	1.2 sec.	1.5 sec.	1.5 sec.
Pan Size	6⅝ × 8" (17 × 20.5cm)	6⅝ × 8" (17 × 20.5cm)	6⅝ × 8" (17 × 20.5cm)	6⅝ × 8" (17 × 20.5cm)	6⅝ × 8" (17 × 20.5cm)
Dimensions (L × W × H)	15¼ × 7⅝ × 3¾" (39.2 × 19.4 × 9.6cm)	15¼ × 7⅝ × 3¾" (39.2 × 19.4 × 9.6cm)	15¼ × 7⅝ × 3¾" (39.2 × 19.4 × 9.6cm)	15¼ × 7⅝ × 3¾" (39.2 × 19.4 × 9.6cm)	15¼ × 7⅝ × 3¾" (39.2 × 19.4 × 9.6cm)
Net Weight	14.6 lb. (6.6kg)	14.6 lb. (6.6kg)	14.6 lb. (6.6kg)	14.6 lb. (6.6kg)	14.6 lb. (6.6kg)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	XP1202S	XP4002S	XP6002S	XP8002S	XP10002S
Cat. No.	**01-910-362**	**01-910-363**	**01-910-364**	**01-910-366**	**01-910-367**
Each	3567.00	4057.00	4400.00	5005.00	5464.00

† At full load (sd).

4100 to 10,100g

Model	**XP4001S**	**XP6001S**	**XP6002SDR**	**XP8001S**	**XP10001S**	**XP10002SDR**
Readability	100mg	100mg	10mg/100mg	100mg	100mg	10mg/100mg
Weighing Range	0 to 4100g	0 to 6100g	0 to 1200g/0 to 6100g	0 to 8100g	0 to 10, 100g	0 to 2000g/0 to 10, 100g
Taring Range	0 to 4100g	0 to 6100g	0 to 6100g	0 to 8100g	0 to 10, 100g	0 to 10, 100g
Repeatability†	80mg	80mg	40mg	80mg	80mg	8mg/60mg
Linearity	±100mg	±100mg	±100mg	±100mg	±100mg	±100mg
Stabilization Time	0.8 sec.	0.8 sec.	1.2 sec.	1.0 sec.	1.0 sec.	1.5 sec.
Pan Size	7⅜ × 8¾" (19 × 22.3cm)	7⅜ × 8¾" (19 × 22.3cm)	6⅝ × 8" (17 × 20.5cm)	6⅝ × 8" (17 × 20.5cm)	7⅜ × 8¾" (19 × 22.3cm)	6⅝ × 8" (17 × 20.5cm)
Dimensions (L × W × H)	15¼ × 7⅝ × 3¾" (39.2 × 19.4 × 9.6cm)	15¼ × 7⅝ × 3¾" (39.2 × 19.4 × 9.6cm)	15¼ × 7⅝ × 3¾" (39.2 × 19.4 × 9.6cm)	15¼ × 7⅝ × 3¾" (39.2 × 19.4 × 9.6cm)	15¼ × 7⅝ × 3¾" (39.2 × 19.4 × 9.6cm)	15¼ × 7⅝ × 3¾" (39.2 × 19.4 × 9.6cm)
Net Weight	14.6 lb. (6.6kg)	14.6 lb. (6.6kg)	14.6 lb. (6.6kg)	14.6 lb. (6.6kg)	14.6 lb. (6.6kg)	14.6 lb. (6.6kg)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	XP4001S	XP6001S	XP6002SDR	XP8001S	XP10001S	XP10002SDR
Cat. No.	**01-910-358**	**01-910-359**	**01-910-365**	**01-910-360**	**01-910-361**	**01-910-368**
Each	2991.00	3322.00	3570.00	3654.00	3883.00	4648.00

† At full load (sd).

1200 to 12,100g

Model	**XP6002MDR**	**XP8001M**	**XP12002MDR**	**XP8001MDR**	**XP12001M**	**XP12000M**
Readability	10mg/100mg	100mg	10mg/100mg	100mg/1000mg	100mg	1000mg
Weighing Range	0 to 1200g/0 to 6100g	0 to 8100g	0 to 2400g/0 to 12,100g	0 to 1800g/0 to 8100g	0 to 12,100g	0 to 12,100g
Taring Range	0 to 6100g	0 to 8100g	0 to 12,100g	0 to 8100g	0 to 12,100g	0 to 12,100g
Repeatability†	10mg/60mg	80mg	10mg/60mg	80mg/600mg	80mg	600mg
Linearity	60mg	100mg	60mg	600mg	100mg	600mg
Stabilization Time	1.5 sec.	1.2 sec.	1.8 sec.	1.2 sec.	1.2 sec.	1 sec.
Pan Size	9¼ × 9¼" (23.7 × 23.7cm)	9¼ × 9¼" (23.7 × 23.7cm)	9¼ × 9¼" (23.7 × 23.7cm)	9¼ × 9¼" (23.7 × 23.7cm)	9¼ × 9¼" (23.7 × 23.7cm)	9¼ × 9¼" (23.7 × 23.7cm)
Dimensions (L × W × H)	16⅜ × 9⅜ × 4¼" (41.9 × 24 × 11cm)	16⅜ × 9⅜ × 4¼" (41.9 × 24 × 11cm)	16⅜ × 9⅜ × 4¼" (41.9 × 24 × 11cm)	16⅜ × 9⅜ × 4¼" (41.9 × 24 × 11cm)	16⅜ × 9⅜ × 4¼" (41.9 × 24 × 11cm)	16⅜ × 9⅜ × 4¼" (41.9 × 24 × 11cm)
Net Weight	24½ lb. (11.1kg)	24½ lb. (11.1kg)	24½ lb. (11.1kg)	24½ lb. (11.1kg)	24½ lb. (11.1kg)	24½ lb. (11.1kg)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	XP6002MDR	XP8001M	XP12002MDR	XP8001MDR	XP12001M	XP12000M
Cat. No.	**01-910-423**	**01-910-425**	**01-910-424**	**01-910-426**	**01-910-427**	**01-910-428**
Each	4393.00	3853.00	5485.00	3120.00	4227.00	4312.00

† At full load (sd).

LOOKING FOR MORE?

For more information about Mettler Toledo* balance features, see p. 54.

Mettler Toledo* Excellence XS Series Electronic Toploading Balances

Precision balances designed for outstanding efficiency, reliability and ease of use

Key Features

- Fast, precise weighing results
- Touch-screen display with graphical user guidance
- MonoBloc$^{\text{High-Speed}}$ weighing cell, accelerated via dedicated processor
- Fully Automatic Calibration Technology (FACT), for temperature-controlled internal adjustment
- Alphanumeric sample ID entry (up to three IDs per sample)
- GLP/GMP-compliant printouts
- Six interface options, including Bluetooth (wireless), Ethernet, PS/2, and USB
- Verified versions and stand-alone platforms available
- Applications include weighing, statistics, %-weighing, animal/dynamic weighing, piece counting, formulation and density determination

Design

- Large, square weighing pans with up to 30% more surface area
- Draft shield (1mg models) for direct access to weighing pan from any side
- Robust construction and IP54 in-use protection

WARRANTY:
One year extendable to three years with return of warranty card.

01-910-402

210 to 1010g

Model	XS203S	XS403S	XS603S	XS603SDR	XS1003S	XS802S
Readability	1mg	1mg	1mg	1mg/0.01g	1mg	0.01g
Weighing Range	0 to 210g	0 to 410g	0 to 610g	0 to 120g/0 to 610g	0 to 1010g	0 to 810g
Taring Range	0 to 210g	0 to 410g	0 to 610g	0 to 610g	0 to 1010g	0 to 810g
Repeatability†	0.9mg	0.9mg	0.9mg	1mg/5mg†	0.8mg	8mg
Linearity	2mg	2mg	2mg	5mg	2mg	20mg
Stabilization Time	1.5 seconds	1.5 seconds	1.5 seconds	1.5 seconds	1.5 seconds	1.2 seconds
Pan Size (L × W)	5 × 5" (12.7 × 12.7cm)	5 × 5" (12.7 × 12.7cm)	5 × 5" (12.7 × 12.7cm)	5 × 5" (12.7 × 12.7cm)	5 × 5" (12.7 × 12.7cm)	6⅝ × 8" (17 × 20.5cm)
Dimensions (L × W × H)	15¼ × 7⅝ × 10" (39.2 × 19.4 × 25.6cm)	15¼ × 7⅝ × 10" (39.2 × 19.4 × 25.6cm)	15¼ × 7⅝ × 10" (39.2 × 19.4 × 25.6cm)	15¼ × 7⅝ × 10" (39.2 × 19.4 × 25.6cm)	15¼ × 7⅝ × 10" (39.2 × 19.4 × 25.6cm)	15¼ × 7⅝ × 3¼" (39.2 × 19.4 × 9.6cm)
Net Weight	17 lb. (7.7kg)	17 lb. (7.7kg)	17 lb. (7.7kg)	17 lb. (7.7kg)	17 lb. (7.7kg)	14⅝ lb. (6.6kg)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	XS203S	XS403S	XS603S	XS603SDR	XS1003S	XS802S
Cat. No.	**01-910-400**	**01-910-401**	**01-910-402**	**01-910-403**	**01-910-404**	**01-910-405**
Each	3000.00	3270.00	3300.00	2970.00	3780.00	2510.00

† Repeatability at fine range is 1mg.

2100 to 6100g

Model	XS2002S	XS4002S	XS4002SDR	XS6002S	XS6002SDR	XS4001S
Readability	0.01g	0.01g	0.01g/0.1g	0.01g	0.01g/0.1g	0.1g
Weighing Range	0 to 2100g	0 to 4100g	0 to 800g/0 to 4100g	0 to 6100g	0 to 1200g/0 to 6100g	0 to 4100g
Taring Range	0 to 2100g	0 to 4100g	0 to 4100g	0 to 6100g	0 to 6100g	0 to 4100g
Repeatability	8mg	8mg	8mg/60mg†	8mg	8mg/40mg†	80mg
Linearity	20mg	20mg	60mg	20mg	60mg	60mg
Stabilization Time	1.2 seconds	1.2 seconds	1.2 seconds	1.2 seconds	1.2 seconds	0.8 seconds
Pan Size (L × W)	6⅝ × 8" (17 × 20.5cm)	6⅝ × 8" (17 × 20.5cm)	6⅝ × 8" (17 × 20.5cm)	6⅝ × 8" (17 × 20.5cm)	6⅝ × 8" (17 × 20.5cm)	7⅜ × 8¾" (19 × 22.3cm)
Dimensions (L × W × H)	15½ ×7⅝ × 3¼" (39.2 × 19.4 × 9.6cm)	15½ ×7⅝ × 3¼" (39.2 × 19.4 × 9.6cm)	15½ ×7⅝ × 3¼" (39.2 × 19.4 × 9.6cm)	15½ ×7⅝ × 3¼" (39.2 × 19.4 × 9.6cm)	15½ ×7⅝ × 3¼" (39.2 × 19.4 × 9.6cm)	15½ ×7⅝ × 3¼" (39.2 × 19.4 × 9.6cm)
Net Weight	14⅝ lb. (6.6kg)	14⅝ lb. (6.6kg)	14⅝ lb. (6.6kg)	14⅝ lb. (6.6kg)	14⅝ lb. (6.6kg)	14⅝ lb. (6.6kg)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	XS2002S	XS4002S	XS4002SDR	XS6002S	XS6002SDR	XS4001S
Cat. No.	**01-910-406**	**01-910-407**	**01-910-408**	**01-910-409**	**01-910-410**	**01-910-411**
Each	2780.00	3050.00	2670.00	3340.00	2850.00	2250.00

† Repeatability at fine range is 8mg.

LOOKING FOR ACCESSORIES?

Find accessories for these balances on pp. 101-107 and online.

Visit www.fishersci.com and search for Mettler XP Toploading

LOOKING FOR MORE ON THE METTLER TOLEDO* WARRANTY?

Mettler Toledo offers an extended onsite warranty. You can find more details online.

Visit www.fishersci.com and search for Mettler Toledo Warranty

6100 to 10,100g

Model	XS6001S	XS8001S	XS6001M	XS6001MDR	XS10001M	XS10000M
Readability	0.1g	0.1g	0.1g	0.1g/1g	0.1g	1g
Weighing Range	0 to 6100g	0 to 8100g	0 to 6100g	0 to 1200g/0 to 6100g	0 to 10,100g	0 to 10,100g
Taring Range	0 to 6100g	0 to 8100g	0 to 6100g	0 to 6100g	0 to 10,100g	0 to 10,100g
Repeatability	80mg	80mg	80mg	80mg/600mg	80mg	600mg
Linearity	60mg	100mg	60mg	600mg	100mg	600mg
Stabilization Time	0.8 seconds	1.0 seconds	0.8 seconds	1 second	1.2 seconds	1 second
Pan Size (L × W)	7⅜ × 8¾" (19 × 22.3cm)	7⅜ × 8¾" (19 × 22.3cm)	9¼ × 9¼" (23.7 × 23.7cm)	9¼ × 9¼" (23.7 × 23.7cm)	9¼ × 9¼" (23.7 × 23.7cm)	9¼ × 9¼" (23.7 × 23.7cm)
Dimensions (L × W × H)	15¼ × 7⅝ × 3¼" (39.2 × 19.4 × 9.6cm)	15¼ × 7⅝ × 3¼" (39.2 × 19.4 × 9.6cm)	16⅛ × 9⅜ × 4¼" (41.3 × 24 × 11cm)	16⅛ × 9⅜ × 4¼" (41.3 × 24 × 11cm)	16⅛ × 9⅜ × 4¼" (41.3 × 24 × 11cm)	16⅛ × 9⅜ × 4¼" (41.3 × 24 × 11cm)
Net Weight	14⅝ lb. (6.6kg)	14⅝ lb. (6.6kg)	14⅝ lb. (6.6kg)	14⅝ lb. (6.6kg)	14⅝ lb. (6.6kg)	14⅝ lb. (6.6kg)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	XS6001S	XS8001S	XS6001M	XS6001MDR	XS10001M	XS10000M
Cat. No.	**01-910-412**	**01-910-413**	**01-910-414**	**01-910-415**	**01-910-416**	**01-910-417**
Each	2450.00	2650.00	2850.00	2420.00	3100.00	2400.00

ACCESSORIES

Mettler Toledo* XS Series Analytical Balance Accessories

Description	Mfr. No.	Cat. No.	Each
Weighing Pans, Aluminum (set of 10)	11106711	**01-916-226**	28.12
Weighing Kit with ErgoClips*†	11106707	**01-916-230**	265.00
Interface for printer, computer, or titrator; RS-232 option	11132500	**01-916-224**	137.00
Adapter, 230VAC	21900882	**01-916-225**	202.00
Adapter, 115V	11106930	**09-317-553**	148.39
Protective Cover for Terminal	11106870	**01-916-227**	28.12
Transport Case, with space for printer	11106867	**01-916-229**	481.00

† Kit contains various attachments for round-bottom flasks, test tubes, and weighing boats; also includes a set of weighing boats and disposable aluminum pans.

Mettler Toledo* Classic Plus PB-S/FACT and SB Series Basic Level Electronic Toploading Balances

Fast, reliable weighing results on less complex tasks

Provide an optimum price-performance ratio. Choose the PB-S/FACT Series with standard balance design, or the SB Series with separate, large weighing pan for heavy-duty applications.

Standard Features

- Basic weighing, taring, calibration and piece counting easily performed
- Two sets of weighing units: one set includes gram, pound, kilogram1, ounce, troy ounce, pennyweight, carat, momme, Mesghal, grains and tical; the second set includes Singapore tael, Hong Kong tael, and Taiwan tael
- Easy-to-read liquid crystal display
- Automatic shutdown

Advanced Features

- DeltaRange* models feature a movable fine range that gives you 10 times the readability of the balance's entire coarse weighing range
- "rESEt" command lets you instantly reset balance parameters to factory settings and return to simple weighing mode
- Built-in RS-232-C interface provides direct balance connection to a variety of computers, printers and other peripherals

Design

- Sealed keypad
- Sturdy all-metal housing
- Protective cover

PB-S/FACT Models

- Provide maximum weighing values between 151 and 8,100g, with readabilities from 0.001 to 1g
- Include software for counting parts with the touch of a single key
- Come with feedthrough for weighing below the balance

01-916-257
(See next page)

FACT (Fully Automatic Calibration Technology)

- Automatically calibrates balances 24 hours a day using internal calibration weights
- When sensors detect ambient fluctuations of ±1.5°C (±2.7°F), balance immediately calibrates itself

SB Models

- Perform automatic and manual dynamic weighing
- Provide maximum weighing values between 8100g and 32.1kg, with readabilities of 0.1g or 1g

ORDERING INFORMATION:

115/230V 50/60Hz.; 230V operation requires accessory power adapter (09-313-152V). For weigh-below devices and draft shield on 1mg models, call your Fisher Scientific Customer Service Representative.

Contd. on next page.

Mettler Toledo* Classic Plus Balances, contd.

INCLUDES:
Unit, 115VAC adapter, and operating instructions

NOTE:
Calibration weights from Mettler Toledo* are available on p. 99 or online at **www.fishersci.com**.

WARRANTY:
One year extendable to three years with return of warranty card.

OPTIONAL ACCESSORIES
The Mettler Toledo LC-P45 printer (01-911-152A) quickly and easily transforms your Basic-S balance into a QC system. Rechargeable external power source (01-951) provides up to 15 hours of field weighing.

Specifications and Ordering Information for PB-S/ Fact Balances

151 to 1510g

Model	PB153-S/FACT	PB303-S/FACT	PB303-SDR/FACT (DeltaRange)	PB403-S/FACT	PB602-S/FACT	PB1502-S/FACT
Readability	0.001g	0.001g	0.01g/0.001g	0.001g	0.01g	0.01g
Weighing Range	0 to 151g	0 to 310g	0 to 310g/0 to 60g	0 to 410g	0 to 610g	0 to 1510g
Taring Range (By Subtraction)	0 to 151g	0 to 310g	0 to 310g	0 to 410g	0 to 610g	0 to 1510g
Repeatability	0.001g	0.001g	0.01g/0.005g	0.001g	0.01g	0.01g
Linearity[1]	±0.002g	±0.002g	±0.02g/±0.001g	±0.002g	±0.02g	±0.02g
Stabilization Time (Normal Setting)	$2^1/_2$ seconds	$2^1/_2$ seconds	$2^1/_2$ seconds	2.0 seconds	$2^1/_2$ seconds	$2^1/_2$ seconds
Calibration Weights[2]	100g, 01-913-502	200g, 01-913-503	200g, 01-913-503	200g, 01-913-503	200g, 01-913-503	1kg, 01-913-505
Pan Diameter	$3^7/_8$" (9.8cm)[4]	$3^7/_8$" (9.8cm)[4]	$3^7/_8$" (9.8cm)[4]	$3^7/_8$" (9.8cm)	7" (17.8cm)	7" (17.8cm)
Dimensions (L × W× H)	$12^5/_8 \times 9^5/_8 \times 9^5/_{16}$" (32 × 24 × 24cm)	$12^5/_8 \times 9^5/_8 \times 9^5/_{16}$" (32 × 24 × 24cm)	$12^5/_8 \times 9^5/_8 \times 9^5/_{16}$" (32 × 24 × 24cm)	$12^5/_8 \times 9^5/_8 \times 3^1/_2$" (32 × 24 × 9cm)	$12^5/_8 \times 9^5/_8 \times 3^1/_2$" (32 × 24 × 9cm)	$12^5/_8 \times 9^5/_8 \times 3^1/_2$" (32 × 24 × 9cm)
Net Weight	$14^5/_{16}$ lb.(6.5kg)	$14^5/_{16}$ lb.(6.5kg)	$14^5/_{16}$ lb.(6.5kg)	$10^3/_4$ lb. (4.9kg)	$10^3/_4$ lb.(4.9kg)	$10^3/_4$ lb.(4.9kg)
Electrical Reqts.[3]	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz
Mfr. No.	PB153-S/FACT	PB303-S/FACT	PB303-SDR/FACT	PB602-S/FACT	PB1502-S/FACT	PB403-S/FACT
Cat. No.	**01-916-256**	**01-916-257**	**01-916-258**	**01-916-259**	**01-916-261**	**01-916-262**
Each	1791.00	1886.00	1702.00	2222.00	1445.00	1739.00

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[1] *In temperature range 10° to 30°C (50° to 86°F).*
[2] *Must be ordered separately; contact your Fisher Scientific Customer Service Representative.*
[3] *230V operation requires accessory 09-313-152V 230V power adapter.*
[4] *Height above pan with draft shield: 6" (15.2cm).*

01-916-263

3100 to 8100g

Model	PB3002-S/FACT	PB3002-SDR/FACT (DeltaRange*)	PB4002-S/FACT	PB1501-S/FACT	PB3001-S/FACT	PB5001-S/FACT	PB8001-S/FACT
Readability	0.01g	0.1g/0.01g	0.01g	0.1g	0.1g	0.1g	0.1g
Weighing Range	0 to 3100g	0 to 3100g/0 to 600g	0 to 4100g	0 to 1510g	0 to 3100g	0 to 5100g	0 to 8100g
Taring Range (By Subtraction)	0 to 3100g	0 to 3100g	0 to 4100g	0 to 1510g	0 to 3100g	0 to 5100g	0 to 8100g
Repeatability	0.01g	0.01g/0.08g	0.01g	0.08g	0.08g	0.08g	0.08g
Linearity[1]	±0.03g	±0.1g/±0.02g	±0.02g	±0.1g	±0.1g	±0.1g	±0.1g
Stabilization Time (Normal Setting)	2½ seconds	2½ seconds	2 seconds	2 seconds	2 seconds	2 seconds	2 seconds
Calibration Weights[2], [5]	2kg, 01-913-506	2kg, 01-913-506	2kg, 01-913-506	1kg, 01-913-505	2kg, 01-913-506	2kg, 01-913-506	4kg, 01-911-214
Pan Diameter	$7^1/_8$" (18.1cm)	$7^1/_8$" (18.1cm)	$7^1/_8$" (18.1cm)	$7^1/_8$" (18.1cm)	$7^1/_8$" (18.1cm)	$7^1/_8$" (18.1cm)	$7^1/_8$" (18.1cm)
Dimensions (L x W x H)	12⅝ × 9⅝ × 3½" (32 × 24 × 9cm)	12⅝ × 9⅝ × 3½" (32 × 24 × 9cm)	12⅝ × 9⅝ × 3½" (32 × 24 × 9cm)	12⅝ × 9⅝ × 3½" (32 × 24 × 9cm)	12⅝ × 9⅝ × 3½" (32 × 24 × 9cm)	12⅝ × 9⅝ × 3½" (32 × 24 × 9cm)	12⅝ × 9⅝ × 3½" (32 × 24 × 9cm)
Net Weight	$10^3/_4$ lb. (4.9kg)	$10^3/_4$ lb. (4.9kg)	$10^3/_4$ lb. (4.9kg)	$10^3/_4$ lb. (4.9kg)	$10^3/_4$ lb. (4.9kg)	$10^3/_4$ lb. (4.9kg)	$10^3/_4$ lb. (4.9kg)
Electrical Reqts.[3]	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz
Mfr. No.	PB3002-S/FACT	PB3002-SDR/FACT	PB4002-S/FACT	PB1501-S/FACT	PB3001-S/FACT	PB5001-S/FACT	PB8001-S/FACT
Cat. No.	**01-916-263**	**01-916-264**	**01-916-265**	**01-916-266**	**01-916-267**	**01-916-268**	**01-916-269**
Each	1970.00	1702.00	2143.00	1303.00	1481.00	1781.00	2044.00

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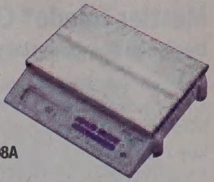
[1] *In temperature range 10° to 30°C (50° to 86°F).*
[2] *Must be ordered separately; contact your Fisher Scientific Customer Service Representative.*
[3] *230V operation requires accessory 09-313-152V 230V power adapter.*
[4] *Height above pan with draft shield: 6" (15.2cm).*
[5] *2kg weight also available in set of two (01-913-507; contact your Fisher Scientific Customer Service Representative).*

Contd. on next page.

*Trademark. See Trademark Reference.

Prices subject to change.

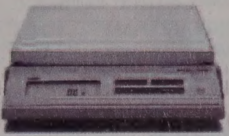

01-913-508A

Specifications and Ordering Information for SB Series Balances

8100g to 3200g

Model	SB8001	SB12001	SB16001	SB16001DR (DeltaRange)
Readability	0.1g	0.1g	0.1g	1g/0.1g
Weighing Range	0 to 8100g	0 to 12,100g	0 to 16,100g	0 to 16,100g/0 to 3200g
Taring Range (By Subtraction)	0 to 8100g	0 to 12,100g	0 to 16,100g	0 to 16,100g
Repeatability	0.1g	0.1g	0.1g	0.5g/0.1g
Linearity[1]	±0.2g	±0.3g	±0.3g	±0.5g/±0.3g
Stabilization Time (Normal Setting)	2½ seconds	2½ seconds	2½ seconds	2½ seconds
Calibration Weights[2]	4kg, 01-911-214	4kg, 01-911-214	4kg, 01-911-214	4kg, 01-911-214
Pan Size (L × W)	9⅛ × 13¾" (23 × 35cm)	9⅛ × 13¾" (23 × 35cm)	9⅛ × 13¾" (23 × 35cm)	9⅛ × 13¾" (23 × 35cm)
Dimensions	12⅝ × 15 × 3⅝" (32 × 38 × 9cm)	12⅝ × 15 × 3⅝" (32 × 38 × 9cm)	12⅝ × 15 × 3⅝" (32 × 38 × 9cm)	12⅝ × 15 × 3⅝" (32 × 38 × 9cm)
Net Weight	15⅝ lb. (7.1kg)	15⅝ lb. (7.1kg)	15⅝ lb. (7.1kg)	15⅝ lb. (7.1kg)
Electrical Reqts.[3]	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz
Mfr. No.	SB8001	SB12001	SB16001	SB16001DR
Cat. No.	**01-913-508A**	**01-913-508B**	**01-913-508C**	**01-913-508D**
Each	2294.00	2517.00	2923.00	2408.00

[1] *In temperature range 10° to 30°C (50° to 86°F).*
[2] *Must be ordered separately; contact your Fisher Scientific Customer Service Representative.*
[3] *230V operation requires accessory 09-313-152V 230V power adapter.*


01-913-508H

8100g to 32,100g

Model	SB24001DR (DeltaRange)	SB32001DR (DeltaRange*)	SB8000	SB16000	SB32000
Readability	1g/0.1g	1g/0.1g	1g	1g	1g
Weighing Range	0 to 24,100g/0 to 4800g	0 to 32,100g/0 to 6400g	0 to 8100g	0 to 16,100g	0 to 32,100g
Taring Range (By Subtraction)	0 to 24,100g	0 to 32,100g	0 to 8100g	0 to 16,100g	0 to 32,100g
Repeatability	0.5g/0.1g	0.5g/0.1g	0.5g	0.5g	0.5g
Linearity[1]	±0.5g/±0.3g	±0.5g/±0.3g	±0.5g	±0.5g	±0.5g
Stabilization Time (Normal Setting)	2½ seconds	2½ seconds	2½ seconds	2½ seconds	2½ seconds
Calibration Weights[2]	4kg, 01-911-214	4kg, 01-911-214	4kg, 01-911-214	4kg, 01-911-214	4kg, 01-911-214
Pan Size (L × W)	9⅛ × 13¾" (23 × 35cm)	9⅛ × 13¾" (23 × 35cm)	9⅛ × 13¾" (23 × 35cm)	9⅛ × 13¾" (23 × 35cm)	9⅛ × 13¾" (23 × 35cm)
Dimensions (L × W × H)	12⅝"× 15 × 4⅝" (32 × 38 × 11.7cm)	12⅝"× 15 × 4⅝" (32 × 38 × 11.7cm)	12⅝"× 15 × 4⅝" (32 × 38 × 11.7cm)	12⅝"× 15 × 4⅝" (32 × 38 × 11.7cm)	12⅝ × 15 × 4⅝" (32 × 38 × 11.7cm)
Net Weight	19 13/16 lb. (9kg)	19 13/16 lb. (9kg)	19 13/16 lb. (7.1kg)	19 13/16 lb. (7.1kg)	19 13/16 lb. (9kg)
Electrical Reqts.[3]	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz	115/230V 50/60Hz
Mfr. No.	SB24001DR	SB32001DR	SB8000	SB16000	SB32000
Cat. No.	**01-913-508E**	**01-913-508F**	**01-913-508H**	**01-913-508J**	**01-913-508K**
Each	2819.00	3152.00	1591.00	2153.00	2814.00

[1] *In temperature range 10° to 30°C (50° to 86°F).*
[2] *Must be ordered separately; contact your Fisher Scientific Customer Service Representative.*
[3] *230V operation requires accessory 09-313-152V 230V power adapter.*

LOOKING FOR MORE ON THE METTLER TOLEDO* WARRANTY?

Mettler Toledo offers an extended onsite warranty. You can find more details online.

Visit www.fishersci.com and search for Mettler Toldeo Warranty

Mettler Toledo* Classic Light Toploading Balances

Designed for essential weighing operations

For simple, easy weighing tasks that need to be done frequently, but with assured accuracy: piece counting, percent weighing, ±weighing, dynamic weighing, and calculation with a custom "free factor."

Key Features

- Logical menu guidance with only a few keys for full function
- Portable; battery operation for 25 to 30 hours
- Automatic shutoff saves battery life
- Built-in overload protection
- Specific gravity and density measurements with built-in below balance weighing mechanism
- Weighing modes: g, kg, mg, carats, lb., oz., ounces troy, grains, pennyweight, mommes, mesghals, taels (three variants), ticals, tolas and bahts

Operation

- Large, high-contrast, seven-segment LCD
- Automatic calibration with external weights
- Large weighing pan supports loading efficiency
- PL-S models offer the option of a built-in rechargeable storage battery

01-910-164

ORDERING INFORMATION:

Electrical Requirements: 115/120V 50/60Hz. Dimensions (W×D×H): 8⅞ × 7⅝ × 5⅜" (22.5 × 19.4 × 13.7cm); except PL303 and PL3002 which are 13¼ × 9⅜ × 11¼" (33.5 × 23.8 × 28.7cm). Net Weight: 3⅜ lb. (1.5kg); except PL83-S and PL303 which are 12⅛ lb. (5.5kg). A variety of accessories are available including optional carrying case, in-use covers, and power adapters.

INCLUDES:

AC adapter appropriate to national standard

WARRANTY:

One year

Model	PL83-S[1]	PL202-S	PL303[2]	PL602-S	PL601-S	PL1501-S	PL3002	PL3001-S	PL6001-S	PL6000-S
Readability	0.001g	0.01g	0.001g	0.01g	0.1g	0.1g	0.01g	0.1g	0.1g	1g
Weighing Range	0 to 81g	0 to 210g	0 to 310g	0 to 610g	0 to 610g	0 to 1510g	0 to 3100g	0 to 3100g	0 to 6100g	0 to 6100g
Taring Range (By Subtraction)	0 to 81g	0 to 210g	0 to 310g	0 to 610g	0 to 610g	0 to 1510g	0 to 3100g	0 to 3100g	0 to 6100g	0 to 6100g
Repeatability	0.0008g	0.008g	0.001g	0.008g	0.08g	0.08g	0.01g	0.08g	0.08g	0.8g
Linearity	±0.002g	±0.02g	±0.002g	±0.02g	±0.2g	±0.2g	±0.03g	±0.2g	±0.2g	±2g
Stabilization Time	2.5 seconds	1.5 seconds	3.0 seconds	2.5 seconds	1.0 second	4 seconds	4 seconds	4 seconds	4 seconds	4 seconds
Pan Size	3⅞" (10cm)	4¾" (12cm)	3⅞" (10cm)	6¼" (16cm)	6¼" (16cm)	6¼" (16cm)	7⅛" (18cm)	6¼" (16cm)	6¼" (16cm)	6¼" (16cm)
Mfr. No.	PL83-S	PL202-S	PL303	PL602-S	PL601-S	PL1501-S	PL3002	PL3001-S	PL6001-S	PL6000-S
Cat. No.	**01-910-158**	**01-918-140**	**01-910-156**	**01-910-160**	**01-913-453**	**01-913-460**	**01-910-157**	**01-910-162**	**01-910-164**	**01-913-452**
Each	1134.00	769.00	1431.00	1123.00	733.00	837.00	1743.00	952.00	1123.00	837.00

[1] With cylindrical glass draft shield.
[2] With glass draft shield.

LOOKING FOR METTLER TOLEDO* ACCESSORIES?

Find more accessories for these balances on pp. 101-107 and online.

Visit www.fishersci.com and search for Mettler Balance Accessories

LOOKING FOR MORE INFORMATION ON BALANCE FEATURES?

For more information about Mettler Toledo* balance features, see p. 54.

Denver Instrument* Pinnacle* Series Toploading Balances

Feature 11 models with capacities from 200 to 8000g—including three with Denver's Dynamic Fine Range

01-913-84
01-913-96

These ruggedly designed balances are the perfect solution for general and industrial laboratory weighing applications, offering high performance and precision at an affordable price.

Standard Features

- Capacities from 200 to 8000g
- Single- and dual-range models
- Each of these balances let you select two weighing units for even greater versatility
- Units include: grams, milligrams, ounces, troy ounces, pounds, grains, carats, drams, pennyweights, mommes, three taels (Hong Kong, Singapore and Taiwan), tolas and bahts
- RS-232-C bidirectional interface
- Multiple weighing units
- Built-in standard RS-232-C interface and a USB port allow you to connect balances to a wide variety of printers and computers for optimum communication
- Set user ID, alphanumeric batch label and sample number, and the balance will comply with ISO/GLP requirements

Advanced Features

- For more precise measurements—choose dual-range P-Series balances with Dynamic Fine Range
- With just a touch of the TARE key, you can easily access an additional fine weighing range at any point along the entire weighing spectrum
- For inventory and process control, P-Series toploaders can be set up to count parts up to the capacity of the balance
- LCD simultaneously indicates the number of parts and their collective weight value
- Perform percent calculations easily with any P-Series balance or determine percent-to-target by weight—ideal for filling stations
- For maximum accuracy, these toploaders can be customized to perform average readings over a set period of time—ideal for weighing nervous lab animals or for work in unstable environments
- Touch the keypad and the toploaders automatically adjust to an applied standard—ensuring that every reading is accurate. All models allow for printing of calibration point as well as date, time and operator identification

Operation

- Perform statistical evaluations of stored samples including total weight, average weight, standard deviation, minimum and maximum weights, and the range of stored weights—all of which can be printed (using optional printer). Printed records can include balance and operator identification, date, time and signature line.
- Oversized display shows weight measurement in large digits
- Electronic filling guide with highly visible bar graph indicates exactly how much of the weight range has been used and how much is still available
- For dual-range models with Dynamic Fine Range feature, the electronic filling guide indicates how much of each weight range is available for use

Design

- Solid construction is built to withstand the demands of everyday—even extreme—use
- Feature overload and shock protectors to guard against accidental blows to the weighing pan
- Chemical-resistant keypad
- Stainless-steel weighing pan, leveling bubble, and weigh-below port (requires optional 02-225-140 weigh-below hanger)

CERTIFICATIONS:
UL listed and CSA approved

WARRANTY: Three years

200 to 2000g

	Single-Range Models					Dual-Range Model with Dynamic Fine Range
Model	**P-203**	**P-403**	**P-402**	**P-602**	**P-2002**	**P-603D**
Readability	0.001g	0.001g	0.01g	0.01g	0.01g	0.001g/0.01g
Weighing Range	0 to 200g	0 to 400g	0 to 400g	0 to 600g	0 to 2000g	0 to 100g/600g
Taring Range	0 to 200g	0 to 400g	0 to 400g	0 to 600g	0 to 2000g	0 to 600g
Repeatability (Std. Deviation)	0.001g	0.001g	0.01g	0.01g	0.01g	0.002g/0.01g
Linearity	0.002g	0.002g	0.02g	0.02g	0.02g	0.003g/0.02g
Stabilization Time	3 seconds	3 seconds	3 seconds	3 seconds	3 seconds	3 seconds
Pan Size	4½" dia. (11cm)	4½" dia. (11cm)	4½" dia. (11cm)	4½" dia. (11cm)	7L × 7"W (18 × 18cm)	4½" dia. (11cm)
Dimensions (L × H × W)	14½ × 9⅜ × 3¾" (37 × 24 × 10cm)	14½ × 9⅜ × 3¾" (37 × 24 × 10cm)	14½ × 9⅜ × 3¾" (37 × 24 × 10cm)	14½ × 9⅜ × 3¾" (37 × 24 × 10cm)	14½ × 9⅜ × 3¾" (37 × 24 × 10cm)	14½ × 9⅜ × 3¾" (37 × 24 × 10cm)
Net Weight	10 lb. (4.5kg)	10 lb. (4.5kg)	10 lb. (4.5kg)	10 lb. (4.5kg)	10 lb. (4.5kg)	10 lb. (4.5kg)
Electrical Reqts.†	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	9858.1	9859.1	9861.1	9862.1	9863.1	9860.1
Cat. No.	**01-913-84**	**01-913-92**	**01-913-94**	**01-913-95**	**01-913-96**	**01-913-93**
Each	1745.00	2095.00	1535.00	1645.00	1785.00	1785.00

† *International voltages are also available; specify desired voltage when ordering. Contact your Fisher Scientific Customer Service Representative for details.*

Denver Instruments* Pinnacle* Series Balances, Contd.

4000 to 8000g

	Single-Range Models			Dual-Range Models with Dynamic Fine Range	
Model	**P-4002**	**P-6001**	**P-8001**	**P-4002D**	**P-8002D**
Readability	0.01g	0.1g	0.1g	0.01g/0.1g	0.01g/0.1g
Weighing Range	0 to 4000g	0 to 6000g	0 to 8000g	0 to 400g/4000g	0 to 800g/8000g
Taring Range	0 to 4000g	0 to 6000g	0 to 8000g	0 to 4000g	0 to 8000g
Repeatability (Std. Deviation)	0.01g	0.1g	0.1g	0.02g/0.1g	0.02g/0.1g
Linearity	0.02g	0.2g	0.2g	0.03g/0.2g	0.03g/0.2g
Stabilization Time	3 seconds	3 seconds	3 seconds	3 seconds	3 seconds
Pan Size	7L × 7"W (18 × 18cm)	7L × 7"W (18 × 18cm)	7L × 7"W (18 × 18cm)	7L × 7"W (18 × 18cm)	7L × 7"W (18 × 18cm)
Dimensions (L × W × H)	14½ × 9⅜ × 3¾" (37 × 24 × 10cm)	14½ × 9⅜ × 3¾" (37 × 24 × 10cm)	14½ × 9⅜ × 3¾" (37 × 24 × 10cm)	14½ × 9⅜ × 3¾" (37 × 24 × 10cm)	14½ × 9⅜ × 3¾" (37 × 24 × 10cm)
Net Weight	10 lb. (4.5kg)	10 lb. (4.5kg)	10 lb. (4.5kg)	10 lb. (4.5kg)	10 lb. (4.5kg)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	9864.1	9867.1	9868.1	9865.1	9866.1
Cat. No.	**01-913-97**	**01-914-00**	**01-914-01**	**01-913-98**	**01-913-99**
Each	2095.00	1725.00	1885.00	1795.00	1995.00

Denver Instrument* PI Series Electronic Toploading Balances

With DenverCal* internal calibration

DenverCal provides automatic calibration based on factory settings of change of time or temperature, or choose automatic based on user-defined time setting. Additionally the user can calibrate using the internal weights by pressing the calibration key or perform a calibration with external weights.

Key Features

- Built-in statistics; store up to 250 results in data log
- Sample averaging and standard deviation
- Programmable environmental settings
- Meet ISO/GLP requirements, with alphanumeric batch identification; sample ID number; date and time; user name
- Bidirectional RS-232 allows you to send readings to a printer or computer plus send commands remotely to the balance from your computer
- Ethernet and USB ports also standard; includes free software to download data into a text file or worksheet via USB
- Display two weigh units simultaneously, plus time, date and capacity indicator
- 16 weigh units including grams, milligrams, kilograms, ounces, troy ounces, pound, grain, pennyweight and carat

Design

- Rugged, die-cast aluminum base
- Durable stainless-steel weighing pan
- Easy-to-see leveling bubble
- Chemically resistant keypad sealed for protection against spills
- Extra-large, back-lit display has ¾" high numerals
- Weigh-below port

REQUIRED ACCESSORIES:
Use of weigh below port requires optional weigh-below hanger (01-960-6); order online at **www.fishersci.com**.

WARRANTY:
Three years

COMPLIANCE:
Meet ISO/GLP requirements

01-914-003

01-914-007 (next page)

200 to 600g

Model	**PI-203**	**PI-403**	**PI-402**	**PI-602**	**PI-603D**
Readability	0.001g	0.001g	0.01g	0.01g	0.001/0.01g
Weighing Range	0 to 200g	0 to 400g	0 to 400g	0 to 600g	0 to 100/0 to 600g
Taring Range	0 to 200g	0 to 400g	0 to 400g	0 to 600g	0 to 600g
Repeatability (Std. Dev.)	0.001g	0.001g	0.01g	0.01g	0.002/0.01g
Linearity	0.002g	0.002g	0.02g	0.02g	0.003/0.02g
Stabilization Time	3 sec.	3 sec.	3 sec.	3 sec.	4 sec.
Pan Size	4½" dia. (11.4cm)	4½" dia. (11.4cm)	4½" dia. (11.4cm)	4½" dia. (11.4cm)	4½" dia. (11.4cm)
Dimensions (L x W x H)	14⅝ × 9⅜ × 3¾" (37.1 × 23.9 × 9.7cm)	14⅝ × 9⅜ × 3¾" (37.1 × 23.9 × 9.7cm)	14⅝ × 9⅜ × 3¾" (37.1 × 23.9 × 9.7cm)	14⅝ × 9⅜ × 3¾" (37.1 × 23.9 × 9.7cm)	14⅝ × 9⅜ × 3¾" (37.1 × 23.9 × 9.7cm)
Net Weight	10 lb. (4.54kg)	10 lb. (4.54kg)	10 lb. (4.54kg)	10 lb. (4.54kg)	10 lb. (4.54kg)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	PI-203.1	PI-403.1	PI-402.1	PI-602.1	PI-603D.1
Cat. No.	**01-914-001**	**01-914-002**	**01-914-004**	**01-914-005**	**01-914-003**
Each	2295.00	2395.00	1835.00	1942.00	2275.00

*Trademark. See Trademark Reference.

Denver Instrument* PI Series, Contd.

2000 to 6000g

Model	PI-2002	PI-4002	PI-4002D	PI-6001
Readability	0.01g	0.01g	0.01/0.1g	0.1g
Weighing Range	0 to 2000g	0 to 4000g	0 to 400/0 to 4000g	0 to 6000g
Taring Range	0 to 2000g	0 to 4000g	0 to 4000g	0 to 6000g
Repeatability (Std Dev.)	0.01g	0.01g	0.02/0.1g	0.1g
Linearity	0.02g	0.02g	0.03/0.2g	0.2g
Stabilization Time	3 sec.	3 sec.	4 sec.	3 sec.
Pan Size	7 × 7" (17.8 × 17.8cm)	7 × 7" (17.8 × 17.8cm)	7 × 7" (17.8 × 17.8cm)	7 × 7" (17.8 × 17.8cm)
Dimensions (L × W × H)	14⅝ × 9⅜ × 3¾" (37.1 × 23.9 × 9.7cm)	14⅝ × 9⅜ × 3¾" (37.1 × 23.9 × 9.7cm)	14⅝ × 9⅜ × 3¾" (37.1 × 23.9 × 9.7cm)	14⅝ × 9⅜ × 3¾" (37.1 × 23.9 × 9.7cm)
Net Weight	10 lb. (4.54kg)	10 lb. (4.54kg)	10 lb. (4.54kg)	10 lb. (4.54kg)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	PI-2002.1	PI-4002.1	PI-4002D.1	PI-6001.1
Cat. No.	**01-914-006**	**01-914-007**	**01-914-008**	**01-914-009**
Each	2085.00	2395.00	2095.00	2025.00

Denver Instrument* Summit* Series Electronic Toploading Balances

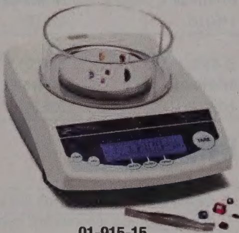
NEW

Simplicity, accuracy and reliability at an economical price

Ideal for laboratory, industrial and educational environments.

Key Features

- Easy, menu-driven operation
- Large TARE key provides quick zeroing of balance
- Toggle between four weigh units with the press of a single key
- RS-232 interface for connection to computer or printer for permanent record of results; easy to integrate into a GLP or ISO program
- Internal, automatic calibration
- Time and date stamp with each result



01-915-15

Weigh Modes/Units

- Percent weighing allows measurement of a percent proportional to a reference weight
- Animal weighing; takes multiple weight readings, then locks average reading on display
- Parts counting capability is ideal for inventory and process control
- 18 total weigh units including grams, ounces, grains, carats and pounds
- Single-block weighing technology for quicker response times and accurate, repeatable results

Design

- Solid construction; stainless-steel pans allow for easy cleanup
- Leveling feet and level indicator
- Below-balance weigh port for density measurements

WARRANTY:

Three years

200 to 600g

Model	SI-203	SI-403	SI-402	SI-603	SI-602
Weighing Range	0 to 200g	0 to 400g	0 to 400g	0 to 600g	0 to 600g
Readability	0.001g	0.001g	0.01g	0.001g	0.01g
Taring Range	0 to 200g	0 to 400g	0 to 400g	0 to 600g	0 to 600g
Repeatability	0.001g	0.001g	0.01g	0.001g	0.01g
Linearity	0.002g	0.002g	0.02g	0.002g	0.02g
Stabilization Time	2 sec.	2 sec.	2 sec.	2 sec.	2 sec.
Pan Size	4½" dia. (11.4cm)	4½" dia. (11.4cm)	4½" dia. (11.4cm)	4½" dia. (11.4cm)	4½" dia. (11.4cm)
Dimensions (L × W × H)	12⅛ × 8½ × 3¾" (30.8 × 21.6 × 9.7cm)	12⅛ × 8½ × 3¾" (30.8 × 21.6 × 9.7cm)	12⅛ × 8½ × 3¾" (30.8 × 21.6 × 9.7cm)	12⅛ × 8½ × 3¾" (30.8 × 21.6 × 9.7cm)	12⅛ × 8½ × 3¾" (30.8 × 21.6 × 9.7cm)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Without Internal Calibration					
Net Weight	7.0 lb. (3.2kg)	7.0 lb. (3.2kg)	7.0 lb. (3.2kg)	7.9 lb. (3.6kg)	7.0 lb. (3.2kg)
Mfr. No.	S-203.1	S-403.1	S-402.1	S-603.1	S-602.1
Cat. No.	**01-915-27**	**01-915-28**	**01-915-30**	**01-915-29**	**01-915-31**
Each	1095.00	1245.00	825.00	1395.00	915.00
With Internal Calibration					
Net Weight	7.9 lb. (3.6kg)	7.9 lb. (3.6kg)	7.9 lb. (3.6kg)	7.9 lb. (3.6kg)	7.9 lb. (3.6kg)
Mfr. No.	SI-203.1	SI-403.1	SI-402.1	SI-603.1	SI-602.1
Cat. No.	**01-915-14**	**01-915-15**	**01-915-17**	**01-915-16**	**01-915-18**
Each	1395.00	1545.00	925.00	1695.00	1015.00

Contd. on next page.

Denver Instrument* Summit Series, Contd.

01-915-23

2000 to 8000g

Model	SI-2002	SI-4002	SI-6002	SI-4001	SI-8001
Weighing Range	0 to 2000g	0 to 4000g	0 to 6000g	0 to 4000g	0 to 8000g
Readability	0.01g	0.01g	0.01g	0.1g	0.1g
Taring Range	0 to 2000g	0 to 4000g	0 to 6000g	0 to 4000g	0 to 8000g
Repeatability	0.01g	0.01g	0.01g	0.1g	0.1g
Linearity	0.02g	0.02g	0.2g	0.2g	0.2g
Stabilization Time	2 sec.	2 sec.	2 sec.	2 sec.	2 sec.
Pan Size	7 × 7" (17.8 × 17.8cm)	7 × 7" (17.8 × 17.8cm)	7 × 7" (17.8 × 17.8cm)	7 × 7" (17.8 × 17.8cm)	7 × 7" (17.8 × 17.8cm)
Dimensions (L × W × H)	12⅛ × 8½ × 3¾" (30.8 × 21.6 × 9.7cm)	12⅛ × 8½ × 3¾" (30.8 × 21.6 × 9.7cm)	12⅛ × 8½ × 3¾" (30.8 × 21.6 × 9.7cm)	12⅛ × 8½ × 3¾" (30.8 × 21.6 × 9.7cm)	12⅛ × 8½ × 3¾" (30.8 × 21.6 × 9.7cm)
Net Weight	7.0 lb. (3.2kg)	7.0 lb. (3.2kg)	7.0 lb. (3.2kg)	7.0 lb. (3.2kg)	7.0 lb. (3.2kg)
Net Weight (with Int. Cal.)	7.9 lb. (3.6kg)	7.9 lb. (3.6kg)	7.9 lb. (3.6kg)	7.9 lb. (3.6kg)	7.9 lb. (3.6kg)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Without Internal Calibration					
Mfr. No.	S-2002.1	S-4002.1	S-6002.1	S-4001.1	S-8001.1
Cat. No.	**01-915-32**	**01-915-33**	**01-915-34**	**01-915-35**	**01-915-36**
Each	1095.00	1250.00	1450.00	825.00	925.00
With Internal Calibration					
Mfr. No.	SI-2002.1	SI-4002.1	SI-6002.1	SI-4001.1	SI-8001.1
Cat. No.	**01-915-19**	**01-915-20**	**01-915-21**	**01-915-22**	**01-915-23**
Each	1395.00	1550.00	1750.00	925.00	1025.00

Denver Instrument* Timberline Toploading Balances

NEW

Good for parts counting in inventory control and percent weighing in filling or batch processes

Compact and sturdy construction make this balance ideal for laboratory, educational and production environments.

Features

- Capacities up to 12kg
- Clear display and keypad with large function keys
- Stainless-steel weigh pan for easy cleanup
- Quick readouts, thanks to the latest weighing technology

01-913-148

- Toggle between two weigh units including grams, pounds and ounces
- Automatic external calibration using a precision calibration weight (sold separately)
- Counting, percent weighing, formulation, average weighing
- RS-232 port standard for data transfer to printer or computer
- Leveling feet and bubble to assure proper balance position
- Built to withstand the rigors of everyday use; includes overload protection

01-913-151

WARRANTY:
Three years

CERTIFICATIONS:
CE marked, CSA approved

Model	TP-303	TP-1502	TP-3002	TP-3101	TP-6101	TP-12
Readability	0.001g	0.01g	0.01g	0.1g	0.1g	1g
Weighing Range	0 to 310g	0 to 1500g	0 to 3100g	0 to 3100g	0 to 6100g	0 to 12,000g
Tare Range	0 to 310g	0 to 1500g	0 to 3100g	0 to 3100g	0 to 6100g	0 to 12,000g
Repeatability	0.001g	0.02g	0.01g	0.1g	0.1g	1g
Linearity	0.002g	0.03g	0.02g	0.2g	0.2g	2g
Stabilization Time	3 sec.	3 sec.	3 sec.	2 sec.	2 sec.	2 sec.
Pan Size	3⅞" dia. (100mm)	6⅞ × 5⅝" (174 × 143mm)	6⅞ × 5⅝" (174 × 143mm)	6⅞ × 5⅝" (174 × 143mm)	6⅞ × 5⅝" (174 × 143mm)	6⅞ × 5⅝" (174 × 143mm)
Overall L x W x H	7⅜ × 9⅞ × 4¾" (18.9 × 25.1 × 7cm)	7⅜ × 9⅞ × 4¾" (18.9 × 25.1 × 7cm)	7⅜ × 9⅞ × 4¾" (18.9 × 25.1 × 7cm)	7⅜ × 9⅞ × 4¾" (18.9 × 25.1 × 7cm)	7⅜ × 9⅞ × 4¾" (18.9 × 25.1 × 7cm)	7⅜ × 9⅞ × 4¾" (18.9 × 25.1 × 7cm)
Net Weight	4⅞ lb. (2.2kg)	3½ lb. (1.6kg)	3½ lb. (1.6kg)	3½ lb. (1.6kg)	3½ lb. (1.6kg)	3½ lb. (1.6kg)
Mfr. No.	TP-303	TP-1502	TP-3002	TP-3101	TP-6101	TP-12
Cat. No.	**01-913-148**	**01-913-149**	**01-913-150**	**01-913-151**	**01-913-152**	**01-913-153**
Each	990.00	925.00	1005.00	695.00	805.00	595.00

Denver Instrument* XP Series Portable Electronic Toploaders

Rugged, budget-minded balances are portable and ready to use

Ideal for general weighing applications, even when electricity is not readily available. Ruggedly built to take the abuse and rigors of the most challenging situations—especially those in an educational environment where multiple users can often play havoc with sensitive equipment.

Features

- Four models with capacities of 300, 600, 1500 or 3000g
- Fully charged internal battery provides up to eight hours of use
- Built-in sleep mode saves the battery's power between weighings
- Multiple weighing units: grams, ounces, troy ounces, pennyweight, carats, grains, Taiwan taels, and Hong Kong taels
- Available RS-232 interface allows sending balance results to a computer or printer for hard copy of data
- Automatic calibration using a precision external weight
- Full-range tare
- Easy-to-see LCD display

Design

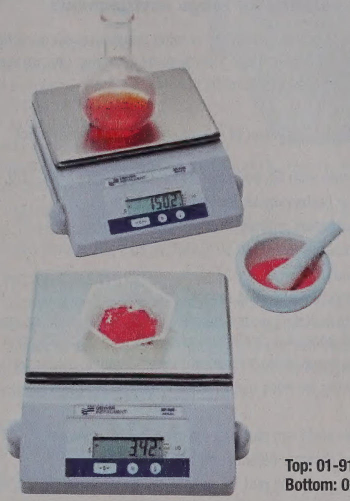
- Durable diecast aluminum housing
- Stainless-steel weighing pan
- Built-in drip edge beneath the pan protects internal components
- Keypad area features a drip gutter for protection against liquid spills

INCLUDES:

Internal rechargeable 9V/500mA battery and an AC adapter/charger

WARRANTY:

One year



Top: 01-913-57,
Bottom: 01-913-59

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Model	XP-300	XP-600	XP-1500	XP-3000
Weighing Range	300g	600g	1500g	3000g
Readability	0.01g	0.02g	0.05g	0.1g
Taring Range	0 to 300g	0 to 600g	0 to 1500g	0 to 3000g
Linearity	±0.01g	±0.02g	±0.05g	±0.1g
Stabilization Time (Avg.)	3 seconds	3 seconds	3 seconds	3 seconds
Pan Size	5L × 7"W (13 × 18cm)	5L × 7"W (13 × 18cm)	5L × 7"W (13 × 18cm)	5L × 7"W (13 × 18cm)
Dimensions (L × W × H)	$8\frac{3}{16} \times 8\frac{5}{16} \times 2\frac{11}{16}$" (20.8 × 21.1 × 6.9cm)	$8\frac{3}{16} \times 8\frac{5}{16} \times 2\frac{11}{16}$" (20.8 × 21.1 × 6.9cm)	$8\frac{3}{16} \times 8\frac{5}{16} \times 2\frac{11}{16}$" (20.8 × 21.1 × 6.9cm)	$8\frac{3}{16} \times 8\frac{5}{16} \times 2\frac{11}{16}$" (20.8 × 21.1 × 6.9cm)
Net Weight	3¾ lb. (1.7kg)	3¾ lb. (1.7kg)	3¾ lb. (1.7kg)	3¾ lb. (1.7kg)
Electrical Requirements	9V/500mA battery; AC adapter	9V/500mA battery; AC adapter	9V/500mA battery; AC adapter	9V/500mA battery; AC adapter
Without RS-232				
Mfr. No.	8708.1	8710.1	8711.1	8709.1
Cat. No.	**01-913-56**	**01-913-59**	**01-913-58**	**01-913-57**
Each	550.00	550.00	550.00	550.00
With RS-232				
Mfr. No.	8708.1R	8710.1R	8711.1R	8709.1R
Cat. No.	**02-225-100**	**02-225-101**	**02-225-102**	**02-225-103**
Each	580.00	580.00	580.00	580.00

LOOKING FOR DENVER INSTRUMENT* ACCESSORIES?

Find accessories for these balances on pp. 101-107 and online.

Visit www.fishersci.com and search for Denver XP Series Accessories

LOOKING FOR MORE BALANCE ACCESSORIES?

We carry a full range of Fisherbrand* weighing paper, funnels, weighing dishes, brushes and forceps. For more information and to order,

Visit www.fishersci.com and search for Denver XP Series Accessories

Denver Instrument* MAXX Toploading Balances

The perfect solution for tough environments

Lightweight design makes it ideal for moving around a production floor or for field use. Built-in applications include parts counting, percent weighing, display lock, formulation and specific gravity.

Key Features

- Simple to operate—a press of the large TARE key quickly zeros the balance
- Portable; operate with AC power or 9V battery (except MXX-123)
- Auto shutoff in battery mode; low-battery indicator
- Automatic calibration with external weight
- Operating temperature: 10° to 30°C (50° to 86°F)

Weigh Modes/Units

- Toggle between two weighing modes
- 13 weigh units including grams, carats, pounds, ounces, lb./oz. and grains—or set your own conversion using the USB or RS-232 port
- Parts counting mode is ideal for inventory or incoming inspection
- Percent weighing provides quick check of total weight

Design

- Stainless-steel weighing platform makes cleanup a breeze
- Sealed keypad protects balance from spills
- Below-balance weighing port for density measurements
- RS-232 or USB port can be added to any MXX balance to send results to computer or printer
- Small size and lightweight (less than 3 lb.) suits on-the-go needs

01-915-02

01-915-05

ORDERING INFORMATION:
Battery (not included): 9V Alkaline or MiMH rechargeable
Dimensions (L×W×H): 9¾ × 7⅛ × 3⅛" (24.9 × 18 × 7.9cm)

INCLUDES:
Operations manual and power supply; MXX-123, -212, -412 and -612 include calibration weight. MXX-123 also includes 1" high, 4.4" dia. draft ring.

WARRANTY: One year

120 to 600g

Model	MXX-123	MXX-212	MXX-412	MXX-612	MXX-601
Readability	0.001g	0.01g	0.01g	0.01g	0.1g
Weighing Range	0 to 120g	0 to 210g	0 to 410g	0 to 610g	0 to 600g
Taring Range (By subtraction)	0 to 120g	0 to 210g	0 to 410g	0 to 610g	0 to 600g
Repeatability (Std. Deviation)	0.002g	0.01g	0.01g	0.01g	0.1g
Linearity	0.003g	0.03g	0.03g	0.02g	0.2g
Stabilization Time	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.
Pan Size	3¾" (9.7cm)	3¾" (9.7cm)	5⅝ × 5⅛" (14.2 × 13cm)	5⅝ × 5⅛" (14.2 × 13cm)	5⅝ × 5⅛" (14.2 × 13cm)
Net Weight	2⅝ lb. (1.2kg)	2⅝ lb. (1.2kg)	2⅞ lb. (1.3kg)	2⅞ lb. (1.3kg)	2⅞ lb. (1.3kg)
Electrical Reqts.	115V ±15%, 48-60Hz	115V ±15%, 48-60Hz or battery	115V ±15%, 48-60Hz or battery	115V ±15%, 48-60Hz or battery	115V ±15%, 48-60Hz or battery
Mfr. No.	MXX-123.1	MXX-212.1	MXX-412.1	MXX-612.1	MXX-601.1
Cat. No.	**01-915-01**	**01-915-02**	**01-915-03**	**01-915-04**	**01-915-05**
Each	435.55	315.40	445.60	545.00	240.90

2000 to 10,000g

Model	MXX-2001	MXX-5001	MXX-5	MXX-10
Readability	0.1g	0.1g	1g	1g
Weighing Range	0 to 2000g	0 to 5000g	0 to 5000g	0 to 10,000g
Taring Range (By Subtraction)	0 to 2000g	0 to 5000g	0 to 5000g	0 to 10,000g
Repeatability (Std. Deviation)	0.1g	0.1g	1g	1g
Linearity	0.2g	0.2g	2g	2g
Stabilization Time	3 sec.	3 sec.	3 sec.	3 sec.
Pan Size	5⅝ × 5⅛" (14.2 × 13cm)	5⅝ × 5⅛" (14.2 × 13cm)	5⅝ × 5⅛" (14.2 × 13cm)	5⅝ × 5⅛" (14.2 × 13cm)
Net Weight	2⅜ lb. (1.1kg)	2⅜ lb. (1.1kg)	2⅜ lb. (1.1kg)	2⅜ lb. (1.1kg)
Electrical Reqts.	115V ±15%, 48-60Hz or battery	115V ±15%, 48-60Hz or battery	115V ±15%, 48-60Hz or battery	115V ±15%, 48-60Hz or battery
Mfr. No.	MXX-2001.1	MXX-5001.1	MXX-5.1	MXX-10.1
Cat. No.	**01-915-06**	**01-915-07**	**01-915-08**	**01-915-09**
Each	315.80	446.00	246.85	320.80

*Trademark. See Trademark Reference.

Prices subject to change.

Ohaus* Voyager* Pro Series Electronic Toploading Balances

Provide standard and advanced application modes, and the intelligence of innovative software

02-114-28

Perfect for university research, teaching laboratories and general lab applications.

Key Features

- Six advanced applications to automate weighing and help reduce errors
- AutoCal* automatic internal calibration
- Backlit, high-resolution dot-matrix display
- Applications library to store and recall past procedures
- Integral weigh-below hook
- Protective in-use cover and security bracket
- Large, three-door draftshield on all balances with 0.1/1mg readability for optimum draft protection
- Manufactured with ISO 9001:2000 certified processes

Operation

- Simple user interface with two-button operation and three application-specific soft keys
- Easy-to-use navigation windows and scroll-down menus to guide user through balance functions
- User-selectable GLP/GMP data output via RS-232 communications port
- User-selectable filter, stability indicator, and auto-zero tracking for use in difficult environments
- Five operating languages

Weighing Modes/Units

- Standard modes: percent weighing, animal weighing, check weighing, filling, parts counting and gross/net/tare weighing
- Advanced modes: statistics, formulation, differential weighing, statistical QC, density determination and pipet calibration
- Weighing units: milligrams, carats, mommes, grams, troy ounces, taels (three), kilograms, newtons, ticals, pounds, grains, pennyweight, ounces, and custom units

ORDERING INFORMATION:

A wide range of accessories are available, including auxiliary display kit, remote display kit, security device, density determination kit, calibration masses, impact printer, RS-232 interface cables and TAL WinWedge* software. Contact your Fisher Scientific Customer Service Representative or visit **www.fishersci.com**.

WARRANTY:

Two-year warranty (US and Canada)

CERTIFICATIONS:

UL listed, CSA approved, FCC approved

210 to 2100g

Model	VP213CN[1]	VP413CN[1]	VP613CN[1]	VP413DCN[1, 2]	VP612CN	VP2102CN
Readability	0.001g	0.001g	0.001g	0.001g/0.01g	0.01g	0.01g
Weighing Range	0 to 210g	0 to 410g	0 to 610g	0 to 100g/0 to 410g	0 to 610g	0 to 2100g
Repeatability (Std. Dev.)	0.0005g	0.0005g	0.0015g	0.0005g/0.005g	0.005g	0.005g
Linearity	±0.002g	±0.002g	±0.002g	±0.002g/0.005g	±0.02g	±0.02g
Stabilization Time	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.
Pan Size	4.7" dia. (12cm)	4.7" dia. (12cm)	4.7" dia. (12cm)	4.7" dia. (12cm)	6.8 × 6.8" (17.2 × 17.2cm)[1]	6.8 × 6.8" (17.2 × 17.2cm)[1]
Dimensions (L × W × H)	13.8 × 8.3 × 13.8" (35 × 21 × 35cm)	13.8 × 8.3 × 13.8" (35 × 21 × 35cm)	13.8 × 8.3 × 13.8" (35 × 21 × 35cm)	13.8 × 8.3 × 13.8" (35 × 21 × 35cm)	13.8 × 8.5 × 4" (35 × 21.5 × 10.3cm)	13.8 × 8.5 × 4" (35 × 21.5 × 10.3cm)
Net Weight	13¼ lb. (6kg)	13¼ lb. (6kg)	13¼ lb. (6kg)	13¼ lb. (6kg)	11 lb. (5kg)	11 lb. (5kg)
Electrical Reqts.	100-120V/220-240V 50/60Hz	100-120V/220-240V 50/60Hz	100-120V/220-240V 50/60Hz	100-120V/220-240V 50/60Hz	100-120V/220-240V 50/60Hz	100-120V/220-240V 50/60Hz
Mfr. No.	VP213CN	VP413CN	VP613CN	VP413DCN	VP612CN	VP2102CN
Cat. No.	**02-114-22**	**02-114-23**	**02-114-24**	**02-114-25**	**02-114-26**	**02-114-27**
Each	2484.00	2769.00	3050.00	2484.00	2417.00	2484.00

4100 to 8100g

Model	VP4102CN	VP6102CN	VP4102DCN[2]	VP4101CN	VP6101CN	VP8101CN
Readability	0.01g	0.01g	0.01g/0.1g	0.1g	0.1g	0.1g
Weighing Range	0 to 4100g	0 to 6100g	0 to 1000g/0 to 4100g	0 to 4100g	0 to 6100g	0 to 8100g
Repeatability (Std. Dev.)	0.005g	0.01g	0.01g/0.05g	0.05g	0.05g	0.05g
Linearity	±0.02g	±0.04g	±0.02g/0.05g	±0.1g	±0.1g	±0.1g
Stabilization Time	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.
Pan Size	6.8 × 6.8" (17.2 × 17.2cm)	6.8 × 6.8" (17.2 × 17.2cm)	6.8 × 6.8" (17.2 × 17.2cm)	6.8 × 6.8" (17.2 × 17.2cm)	6.8 × 6.8" (17.2 × 17.2cm)	6.8 × 6.8" (17.2 × 17.2cm)
Dimensions (L × W × H)	13.8 × 8.5 × 4" (35 × 21.5 × 10.3cm)	13.8 × 8.5 × 4" (35 × 21.5 × 10.3cm)	13.8 × 8.5 × 4" (35 × 21.5 × 10.3cm)	13.8 × 8.5 × 4" (35 × 21.5 × 10.3cm)	13.8 × 8.5 × 4" (35 × 21.5 × 10.3cm)	13.8 × 8.5 × 4" (35 × 21.5 × 10.3cm)
Net Weight	11 lb. (5kg)	11 lb. (5kg)	11 lb. (5kg)	11 lb. (5kg)	11 lb. (5kg)	11 lb. (5kg)
Electrical Reqts.	100-120V/220-240V 50/60Hz	100-120V/220-240V 50/60Hz	100-120V/220-240V 50/60Hz	100-120V/220-240V 50/60Hz	100-120V/220-240V 50/60Hz	100-120V/220-240V 50/60Hz
Mfr. No.	VP4102CN	VP6102CN	VP4102DCN	VP4101CN	VP6101CN	VP8101CN
Cat. No.	**02-114-28**	**02-114-29**	**02-114-30**	**02-114-31**	**02-114-32**	**02-114-33**
Each	2769.00	3050.00	2484.00	2239.00	2417.00	2596.00

[1] *With windshield.*

[2] *With Moveable FineRange*.*

Ohaus* Explorer* Pro Series Precision Electronic Toploading Balances

Innovative software design for quick, easy operation.

02-112-131
(See next page)

Standard Features

- Dot matrix display enhances viewing in any environment and simplifies menu navigation and balance setup
- Capacity guide provides a visual aid by displaying the relationship between total platform load and full balance capacity
- Fill guide displays the relationship between total platform load and user-defined target
- Dot matrix display provides a choice of limited or multiple data fields at each application
- RS-232 port
- Auxiliary display port
- Complete built-in GLP/GMP protocol
- Integral weigh-below hook for density/specific gravity determination

Weighing Modes/Units

- Seven application modes include animal weighing, parts counting, percent weighing, check weighing, filling, and gross/net/tare weighing
- Weighing units include gram, milligram, ounce, user-programmable custom unit, troy ounce, carat, pennyweight, Hong Kong tael, Singapore tael, Taiwan tael, mommes, grain, tical, and newton
- Display either simple weighing results or more advanced results including piece count, average piece weight, sample size, tare weight, weight, and under- and over-indicators

Operation

- AutoCal* feature (optional) automatically calibrates the balance when it senses a temperature change sufficient enough to affect weighing accuracy
- Three application-specific soft keys allow direct access to items such as calibration, units, new sample, sample size, new reference weight, reference weight, new target, and target
- Selectable operating languages include English, Spanish, French, German, and Italian
- Selectable settings—information, environmental, and auto-print
- Contrast and brightness control
- Innovative interface with user prompts make even advanced applications easy to follow

Design

- Ergonomic leveling system with up-front level
- Protective in-use cover

ORDERING INFORMATION:
All models except the EP613 are available in Legal-For-Trade versions; contact your Fisher Scientific Customer Service Representative.

WARRANTY:
Two-years (U.S. and Canada)

LOOKING FOR ACCESSORIES?

An Impact Printer (02-112-98), Density Determination Kit (02-112-88) and Security Device (02-112-86) are available online.

Visit www.fishersci.com and search for Ohaus Explorer Pro

210 to 2100g

Model	EP213	EP413	EP613[1]	EP413D[2]	EP612	EP2102
Readability	0.001g	0.001g	0.001g	0.001g/0.01g	0.01g	0.01g
Weighing Range	0 to 210g	0 to 410g	0 to 610g	0 to 100g/0 to 410g	0 to 610g	0 to 2100g
Taring Range (By Subtraction)	0 to 210g	0 to 410g	0 to 610g	0 to 100g/0 to 410g	0 to 610g	0 to 2100g
Repeatability	0.0005g	0.0005g	0.0015g	0.0005g/0.005g	0.005g	0.005g
Linearity	±0.002g	±0.002g	±0.002g	±0.002g/0.005g	±0.02g	±0.02g
Stabilization Time	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.
Pan Size	4¾" dia. (12cm)	4¾" dia. (12cm)	4¾" dia. (12cm)	4¾" dia. (12cm)	6¾ × 6¾" (17.2 × 17.2cm)	6¾ × 6¾" (17.2 × 17.2cm)
Dimensions (L × W × H)	13 × 8½ × 15" (33 × 21.5 × 38.1cm)	13 × 8½ × 15" (33 × 21.5 × 38.1cm)	13 × 8½ × 15" (33 × 21.5 × 38.1cm)	13 × 8½ × 15" (33 × 21.5 × 38.1cm)	13 × 8½× 4" (33 × 21.5 × 10.1cm)	13 × 8½× 4" (33 × 21.5 × 10.1cm)
Net Weight	13¼ lb. (6kg)	13¼ lb. (6kg)	13¼ lb. (6kg)	13¼ lb. (6kg)	11 lb. (5kg)	11 lb. (5kg)
Electrical Reqts.	100-120, 220-240VAC 50/60Hz	100-120, 220-240VAC 50/60Hz	100-120, 220-240VAC 50/60Hz	100-120, 220-240VAC 50/60Hz	100-120, 220-240VAC 50/60Hz	100-120, 220-240VAC 50/60Hz
Without AutoCal						
Mfr. No.	EP213	EP413	EP613[1]	EP413D[2]	EP612	EP2102
Cat. No.	**02-112-118**	**02-112-120**	**02-112-122**	**02-112-124**	**02-112-126**	**02-112-128**
Each	1709.00	1994.00	2275.00	1709.00	1642.00	1709.00
With AutoCal						
Mfr. No.	EP213C	EP413C	EP613C	EP413DC[2]	EP612C	EP2102C
Cat. No.	**02-112-119**	**02-112-121**	**02-112-123**	**02-112-125**	**02-112-127**	**02-112-129**
Each	2025.00	2310.00	2591.00	2025.00	1958.00	2025.00

[1] *Not available in Legal-For-Trade (U.S.)/Type Approved versions.*
[2] *With Moveable FineRange*.*

Contd. on next page.

Ohaus* Explorer* Pro Series, Contd.

4100 to 8100g

Model	**EP4102**	**EP6102**	**EP4102D2**	**EP4101**	**EP6101**	**EP8101**
Readability	0.01g	0.01g	0.01g/0.1g	0.1g	0.1g	0.1g
Weighing Range	0 to 4100g	0 to 6100g	0 to 1000g/0 to 4100g	0 to 4100g	0 to 6100g	0 to 8100g
Taring Range (By Subtraction)	0 to 4100g	0 to 6100g	0 to 1000g/0 to 4100g	0 to 4100g	0 to 6100g	0 to 8100g
Repeatability	0.005g	0.01g	0.01g/0.05g	0.05g	0.05g	0.05g
Linearity	±0.02g	±0.04g	±0.02g/0.05g	±0.1g	±0.1g	±0.1g
Stabilization Time	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.
Pan Size	6¾ × 6¾" (17.2 × 17.2cm)	6¾ × 6¾" (17.2 × 17.2cm)	6¾ × 6¾" (17.2 × 17.2cm)	8 × 8" (20.3 × 20.3cm)[3]	8 × 8" (20.3 × 20.3cm)[3]	8 × 8" (20.3 × 20.3cm)[3]
Dimensions (L × W × H)	13 × 8½ × 4" (33 × 21.5 × 10.1cm)	13 × 8½ × 4" (33 × 21.5 × 10.1cm)	13 × 8½ × 4" (33 × 21.5 × 10.1cm)	13 × 8½ × 4" (33 × 21.5 × 10.1cm)	13 × 8½ × 4" (33 × 21.5 × 10.1cm)	13 × 8½ × 4" (33 × 21.5 × 10.1cm)
Net Weight	11 lb. (5kg)	11 lb. (5kg)	11 lb. (5kg)	11 lb. (5kg)	11 lb. (5kg)	11 lb. (5kg)
Electrical Reqts.	100-120, 220-240VAC 50/60Hz	100-120, 220-240VAC 50/60Hz	100-120, 220-240VAC 50/60Hz	100-120, 220-240VAC 50/60Hz	100-120, 220-240VAC 50/60Hz	100-120, 220-240VAC 50/60Hz
Without AutoCal*						
Mfr. No.	EP4102	EP6102	EP4102D[2]	EP4101	EP6101	EP8101
Cat. No.	**02-112-130**	**02-112-132**	**02-112-134**	**02-112-136**	**02-112-138**	**02-112-140**
Each	1994.00	2275.00	1709.00	1464.00	1642.00	1821.00
With AutoCal						
Mfr. No.	EP4102C	EP6102C	EP4102DC[2]	EP4101C[2]	EP6101C	EP8101C
Cat. No.	**02-112-131**	**02-112-133**	**02-112-135**	**02-112-137**	**02-112-139**	**02-112-141**
Each	2310.00	2591.00	2025.00	1780.00	1958.00	2137.00

[2] *With moveable FineRange*.*

[3] *Model with AutoCal has pan size of 6 × 6" 17.2 × 17.2cm).*

Ohaus* Adventurer* Pro Precision Electronic Balances

NEW

Simple operation for basic weighing, with the accuracy and range to support more advanced applications

QuadraStance* feature keeps balance stable on any surface. SmarText* software guides user through set and application.

Key Features

- Capacity ranges from 51 to 8100g
- Balances stabilize within 1½ to 3 seconds, depending on model
- Weigh-below hook enables determination of density and specific gravity
- In difficult working situations, filtering to compensate against vibration and disturbances can be preprogrammed
- Standard overload and underload indicators alert operator when load changes are necessary
- Programmable energy-saving auto shutoff; low-battery indicator
- GLP/GMP capabilities such as data storage and output options for properly documenting balance activities to meet good practice requirements; include date, time, balance I.D., user I.D., project I.D., and reference
- Bidirectional RS-232 serial interface enables data transfer to a computer
- Custom two-line backlit LCD enhances viewing and displays additional reference information—allows you to simultaneously view reference and actual weight

Operation

- Operate with included AC adapter or four "AA" batteries (not included)
- Available with or without InCal* internal calibration; InCal ensures weighing accuracy by allowing you to calibrate the balance prior to use without needing external weights
- Without InCal, calibration is digital with external weights
- Easy-to-use SmarText software utilizes text prompts to guide users through application use and balance setup

01-921-20

01-919-211

Weigh Modes/Units

- Weighing modes include basic weighing, animal weighing, parts counting, percent weighing, check weighing, totalizing, and display hold
- Measurements càn be read in custom units or in a variety of standard units: milligram, gram, kilogram, ounce, pound, carat, pennyweight, ounce troy, grain, Newton, Hong Kong tael, Singapore tael, Taiwan tael, momme, tical, bath, mesghal, and tola

Design

- QuadraStance design incorporates four feet to provide superior footprint stability on any surface
- Stainless-steel weighing platform resists corrosion; protective in-use cover
- Integral security bracket accommodates most security cables
- Simple three-button menu navigation promotes speedy setup
- Ergonomic leveling system with up-front level indicator
- Model AV53 comes with round draftshield for precise operation in drafty environments
- Models AV-213 and AV-313 include square, frameless draftshield with removable doors for unobstructed access to materials being weighed and for easy cleaning

Contd. on next page.

Ohaus* Adventurer* Pro Balances, Contd.

51 to 810g

Model	AV53[1]	AV213[2]	AV313[2]	AV212†	AV412	AV812
Readability	0.001g	0.001g	0.001g	0.01g	0.01g	0.01g
Weighing Range	0 to 51g	0 to 210g	0 to 310g	0 to 210g	0 to 410g	0 to 810g
Taring Range	0 to 51g	0 to 210g	0 to 310g	0 to 210g	0 to 410g	0 to 810g
Repeatability (Std. Deviation)	0.001g	0.001g	0.001g	0.01g	0.01g	0.01g
Linearity	±0.002g	±0.002g	±0.002g	±0.02g	±0.02g	±0.02g
Stabilization Time	2½ sec.	3 sec.	3 sec.	1½ sec.[3]	3 sec.	3 sec.
Pan Size	3⅞" (10cm)	4¾" dia. (12cm)	4¾" dia. (12cm)	4¾" dia. (12cm)	5¾ × 6¼" (14.9 × 16.2cm)	5¾ × 6¼" (14.9 × 16.2cm)
Pan Size (with InCal)	----	4¾" dia. (12cm)	4¾" dia. (12cm)	4¾" dia. (12cm)	6⅝ × 7⅛" (16.8 × 18cm)	6⅝ × 7⅛" (16.8 × 18cm)
Dimensions (L × W × H)	10 × 7⅝ × 2¾ " (25.4 × 19.3 × 7.2cm)	11¾ × 8¾ × 7½" (30 × 22 × 19cm)	11¾ × 8¾ × 7½" (30 × 22 × 19cm)	10 × 7⅝ × 2¾" (25.4 × 19.3 × 7.2cm)	10 × 7⅝ × 2¾" (25.4 × 19.3 × 7.2cm)	10 × 7⅝ × 2¾" (25.4 × 19.3 × 7.2cm)
Dimensions (L × W × H), with InCal	----	11¾ × 8¾ × 7½" (30 × 22 × 19cm)	11¾ × 8¾ × 7½" (30 × 22 × 19cm)	11¾ × 8¾ × 7½" (30 × 22 × 19cm)	11¾ × 8¾ × 7½" (30 × 22 × 19cm)	11¾ × 8¾ × 7½" (30 × 22 × 19cm)
Net Weight	3⅛ lb. (1.4kg)	7¼ lb. (3.3kg)	7¼ lb. (3.3kg)	2⅝ lb. (1.2kg)	3¼ lb. (1.5kg)	3¼ lb. (1.5kg)
Net Weight (with InCal)	----	8¼ lb. (3.7kg)	8¼ lb. (3.7kg)	5¾ lb. (2.6kg)	7½ lb. (3.4kg)	7½ lb. (3.4kg)
Electrical Reqts.	AC Adapter (included) or 4 "AA" batteries	AC Adapter (included)	AC Adapter (included)	AC Adapter (included) or 4 "AA" batteries	AC Adapter (included) or 4 "AA" batteries	AC Adapter (included) or 4 "AA" batteries
Electrical Reqts. (with InCal)	----	AC Adapter (included)	AC Adapter (included)	AC Adapter (included)	AC Adapter (included)	AC Adapter (included)
Without InCal Internal Calibration:						
Mfr. No.	AV53	AV213	AV313	AV212	AV412	AV812
Cat. No.	**01-921-17**	**01-919-211**	**01-919-213**	**01-921-18**	**01-921-19**	**01-921-20**
Each	791.00	1117.00	1270.00	678.00	760.00	872.00
With InCal Internal Calibration:						
Mfr. No.	----	AV213C	AV313C	AV212C	AV412C	AV812C
Cat. No.	----	**01-919-210**	**01-919-212**	**01-919-214**	**01-919-215**	**01-919-216**
Each	----	1423.00	1576.00	780.00	862.00	974.00

[1] *Includes round draftshield measuring 2¾" dia. (7cm).*

[2] *IIncludes square, frameless draftshield with removable doors and panels; measures 4.5 × 4.5" (11.5 × 11.5cm).*

† *Note: Models AV212C, AV2101C, AV4101C and AV8101C have a stabilization time of three seconds.*

2100 to 8100g

Model	AV2102	AV3102	AV2101	AV4101	AV8101
Readability	0.01g	0.01g	0.1g	0.1g	0.1g
Weighing Range	0 to 2100g	0 to 3100g	0 to 2100g	0 to 4100g	0 to 8100g
Taring Range	0 to 2100g	0 to 3100g	0 to 2100g	0 to 4100g	0 to 8100g
Repeatability (Std. Deviation)	0.01g	0.01g	0.1g	0.1g	0.1g
Linearity	±0.02g	±0.02g	±0.2g	±0.2g	±0.2g
Stabilization Time	3 sec.	3 sec.	2 sec.†	2 sec.†	2 sec.†
Pan Size	6⅝ × 7⅛" (16.8 × 18cm)	6⅝ × 7⅛" (16.8 × 18cm)	5¾ × 6¼" (14.9 × 16.2cm)	5¾ × 6¼" (14.9 × 16.2cm)	5¾ × 6¼" (14.9 × 16.2cm)
Pan Size (with InCal)	6⅝ × 7⅛" (16.8 × 18cm)	6⅝ × 7⅛" (16.8 × 18cm)	6⅝ × 7⅛" (16.8 × 18cm)	6⅝ × 7⅛" (16.8 × 18cm)	6⅝ × 7⅛" (16.8 × 18cm)
Dimensions (L × W × H)	11¾ × 8¾ × 3¼" (30 × 22 × 8.5cm)	11¾ × 8¾ × 3¼" (30 × 22 × 8.5cm)	10 × 7½ × 2¾" (25.4 × 19.3 × 7.2cm)	10 × 7½ × 2¾" (25.4 × 19.3 × 7.2cm)	10 × 7½ × 2¾" (25.4 × 19.3 × 7.2cm)
Dimensions (L × W × H), with InCal	11¾ × 8¾ × 3¼" (30 × 22 × 8.5cm)	11¾ × 8¾ × 3¼" (30 × 22 × 8.5cm)	11¾ × 8¾ × 3¼" (30 × 22 × 8.5cm)	11¾ × 8¾ × 3¼" (30 × 22 × 8.5cm)	11¾ × 8¾ × 3¼" (30 × 22 × 8.5cm)
Net Weight	6⅛ lb. (2.8kg)	6⅛ lb. (2.8kg)	3½ lb. (1.6kg)	3½ lb. (1.6kg)	3½ lb. (1.6kg)
Net Weight (with InCal)	6⅞ lb. (3.2kg)	6⅞ lb. (3.2kg)	7¾ lb. (3.5kg)	7¾ lb. (3.5kg)	7¾ lb. (3.5kg)
Electrical Reqts.	AC Adapter (included)	AC Adapter (included)	AC Adapter (included) or 4 "AA" batteries	AC Adapter (included) or 4 "AA" batteries	AC Adapter (included) or 4 "AA" batteries
Electrical Reqts. (with InCal)	AC Adapter (included)	AC Adapter (included)	AC Adapter (included)	AC Adapter (included)	AC Adapter (included)
Without InCal Internal Calibration					
Mfr. No.	AV2102	AV3102	AV2101	AV4101	AV8101
Cat. No.	**01-919-218**	**01-919-220**	**01-921-21**	**01-921-22**	**01-921-23**
Each	1117.00	1270.00	683.00	760.00	872.00
With InCal Internal Calibration					
Mfr. No.	AV2102C	AV3102C	AV2101C	AV4101C	AV8101C
Cat. No.	**01-919-217**	**01-919-219**	**01-919-221**	**01-919-222**	**01-919-223**
Each	1423.00	1576.00	785.00	862.00	974.00

† *Note: Models AV212C, AV2101C, AV4101C and AV8101C have a stabilization time of three seconds.*

*Trademark. See Trademark Reference.

Prices subject to change.

Ohaus* Pioneer* Precision Balances

An excellent balance for routine weighing in lab, industrial and education applications

NEW

Selectable environmental settings, three filter modes and adjustable zero tracking make the Pioneer ideal for slow filling applications where sensitivity is a must.

- Single-line LCD; no backlight
- Three-button panel with dedicated and number functions
- RS-232 bidirectional interface
- Up-front level indicator—no need to look in back of balance during leveling process
- Works well in harsh environments; settings can be adjusted to compensate for vibrations and other disturbances
- Calibration lockout
- Security loop in rear of balance
- Communications software, SW12W

INCLUDES:
AC adapter

WARRANTY:
Two years (U.S. and Canada)

CERTIFICATIONS:
FCC, CE mark

01-919-303

Model	PA 153	PA 313	PA 612	PA 1502	PA 3102	PA 4101
Readability	0.001g	0.001g	0.01g	0.01g	0.01g	0.1g
Capacity	150g	310g	610g	1500g	3100g	4100g
Repeatability	0.001g	0.001g	0.01g	0.01g	0.01g	0.1g
Stabilization Time	≤3 sec.	≤3 sec.	≤3 sec.	≤3 sec.	≤3 sec.	≤3 sec.
Weighing Modes	Weighing, parts counting, percent weighing	Weighing, parts counting, percent weighing	Weighing, parts counting, percent weighing	Weighing, parts counting, percent weighing	Weighing, parts counting, percent weighing	Weighing, parts counting, percent weighing
Dimensions (W x H x D)	7¾ × 11¼ × 12⅝" (19.6 × 27.8 × 32cm)	7¾ × 11¼ × 12⅝" (19.6 × 27.8 × 32cm)	7¾ × 11¼ × 12⅝" (19.6 × 27.8 × 32cm)	7¾ × 11¼ × 12⅝" (19.6 × 27.8 × 32cm)	7¾ × 3⅝ × 12⅝" (19.6 × 9.2 × 32cm)	7¾ × 3⅝ × 12⅝" (19.6 × 9.2 × 32cm)
Platform Size	120mm	120mm	120mm	120mm	120mm	120mm
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Mfr. No.	PA 153	PA 313	PA 612	PA 1502	PA 3102	PA 4101
Cat. No.	**01-918-303**	**01-918-304**	**01-918-305**	**01-918-306**	**01-918-307**	**01-918-308**
Each	969.00	1097.00	842.00	969.00	1097.00	740.00

Ohaus* Scout* Pro Series Electronic Toploading Balances

Economical, portable balance with a large, crisp display that allows users to clearly view results from any angle

Simple, two-button keypad provides for weighing with minimal instruction.

Standard Features

- Enhanced user interface
- Menu system is easy to use, with no cryptic code numbers to input
- Weighing units can be changed with a touch of a button; include grams, kilograms, ounces, pounds, combined pound:ounce display, troy ounces, and pennyweight

Advanced Features

- Enhanced parts counting with average piece weight recalculation
- Totalization for summing sample weights, allowing repeated summation to the limit of the display—not just the capacity of the balance
- Percent weighing allows the comparing of sample weights to a reference weight
- Display hold for weighing large packages
- Below-balance weighing with integral weigh-below hook for density determination
- Interfaces (choice of USB or RS-232) are easy-to-install accessories—balance can be upgraded any time after purchase

Design

- Large stainless-steel weighing platform
- High-contrast LCD readout
- Overload and underload indicators
- Low-battery indicator
- Sealed front panel and molded spill ring protect the balance during use
- Includes integral security bracket

01-921-13

- Integral shipping lock protects the weighing mechanism during transportation
- Physical lockswitch allows balance to be locked into a specific configuration, reducing operator error

INCLUDES:
AC adapter; span calibration mass included on 200, 400, and 600g models.

REQUIRED ACCESSORIES:
Four "AA" batteries

WARRANTY:
Two years (US and Canada)

Contd. on next page.

LOOKING FOR BALANCE ACCESSORIES?

We carry a full range of Fisherbrand* weighing paper, funnels, weighing dishes, brushes and forceps. For more information and to order,

Visit www.fishersci.com and search for Fisherbrand Balance Accessories

Ohaus* Scout* Pro Series, Contd.

	Round Platform			Square Platform			
Model	**SP202**	**SP402**	**SP401**	**SP601**	**SP2001**	**SP4001**	**SP6000**
Readability	0.01g	0.01g	0.1g	0.1g	0.1g	0.1g	1.0g
Weighing Range	0 to 200g	0 to 400g	0 to 400g	0 to 600g	0 to 2000g	0 to 4000g	0 to 6000g
Taring Range (By Subtraction)	0 to 200g	0 to 400g	0 to 400g	0 to 600g	0 to 2000g	0 to 4000g	0 to 6000g
Repeatability	0.01g	0.01g	0.1g	0.1g	0.1g	0.1g	1.0g
Linearity	±0.01g	±0.01g	±0.1g	±0.1g	±0.1g	±0.1g	±1.0g
Stabilization Time	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.
Pan Size	4¾" (12cm)	4¾" (12cm)	4¾" (12cm)	6½ × 5½" (16.5 × 14cm)	6½ × 5½" (16.5 × 14cm)	6½ × 5½" (16.5 × 14cm)	6½ × 5½" (16.5 × 14cm)
Dimensions (L × W × H)	8¼ × 7½ × 2⅛" (21 × 19.2 × 5.4cm)	8¼ × 7½ × 2⅛" (21 × 19.2 × 5.4cm)	8¼ × 7½ × 2⅛" (21 × 19.2 × 5.4cm)	8¼ × 7½ × 2⅛" (21 × 19.2 × 5.4cm)	8¼ × 7½ × 2⅛" (21 × 19.2 × 5.4cm)	8¼ × 7½ × 2⅛" (21 × 19.2 × 5.4cm)	8¼ × 7½ × 2⅛" (21 × 19.2 × 5.4cm)
Net Weight	1½ lb. (0.7kg)	1½ lb. (0.7kg)	1¾ lb. (0.8kg)	1¾ lb. (0.8kg)	1¾ lb. (0.8kg)	1¾ lb. (0.8kg)	1¾ lb. (0.8kg)
Electrical Reqts.	120V 50/60Hz or 4 "AA" batteries	"AA" batteries	"AA" batteries	"AA" batteries	"AA" batteries	"AA" batteries	"AA" batteries
Mfr. No.	SP202	SP402	SP401	SP601	SP2001	SP4001	SP6000
Cat. No.	**01-921-10**	**01-921-11**	**01-921-12**	**01-921-13**	**01-921-14**	**01-921-15**	**01-921-16**
Each	325.00	455.00	180.00	250.00	325.00	455.00	250.00

LOOKING FOR MORE MODELS?

A complete listing of models is available online.

Visit www.fishersci.com and search for Ohaus Scout Pro

MECHANICAL

Ohaus* Hanging Pan Balances

High precision and remarkable value

- Vernier dial and beam models
- Rugged construction features a serialized, stainless-steel pan and bow; covered agate bearings; precision ground pivots; and diecast aluminum beam for long life and precise performance
- Tiered and notched beams with center-indicating, windowed poises increase visibility, while parallax-free end-reading device permits use even in harsh light
- Other features include magnetic damping to slow oscillation; spring-loaded zero adjustment compensator; self-storing specific gravity platform; and a direct-reading vernier dial (only on Cat. No. 02-020-10)

Cat. No. 02-020-10: Front beam is graduated from 10 to 100g in 10g increments; rear beam, from 100 to 200g in 100g increments; vernier dial, from 0 to 10g in 0.01g increments.

Cat. No. 02-021: Front beam is graduated from 0 to 1g in 0.01g increments; second beam from 1 to 10g in 1g increments; third beam, from 10 to 100g in 10g increments; fourth beam, from 100 to 200g in 100g increments.

Type	Capacity	Readability	Pan Size (Dia. × H)	Mfr. No.	Cat. No.	Each
Vernier dial	310g	0.01g	3⅝ × ½" (9 × 1cm)	310 00	**02-020-10**	215.00
Beam	311g	0.01g	3⅝ × ½" (9 × 1cm)	311 00	**02-021**	179.00

OHAUS
OHAUS

02-020-10, 02-021

LOOKING FOR OHAUS* ACCESSORIES?

Find accessories for balances on pp. 101-107 and online.

Visit www.fishersci.com and search for Balance Accessories

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

*Trademark. See Trademark Reference.

Prices subject to change.

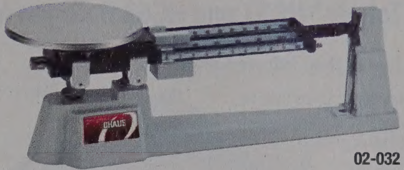
Ohaus* Triple-Beam Balances

Seven rugged models provide accurate and consistent readings to 0.1g

- With stainless-steel pan, scoop, 6" diameter (15cm) plate or aluminum animal container
- 610g capacity, expandable to 2610g via attachment of Auxiliary Weight Set, 02-034-8
- Precision ground pivots and patented self-aligning agate bearings to ensure reproducibility
- Easy zero adjustment remains firmly in place, while deep-notched, tiered beams with diecast, center-reading poise ensure correct positioning
- High-speed throughput allows for more weighings in less time
- Effective magnetic damping coupled with appropriate beam capacity reduces oscillation and speeds weighing process
- Beams are easy to read because of their high-contrast markings, while an end-reading device eliminates parallax
- Nonmagnetic stainless-steel bearing covers and rust-resistant weighing platforms
- Heavy zinc base for exceptional stability, a tamper-resistant poise removable from only one spot on the beam, and attachment weights with recessed pivots to keep them from slipping or falling

Standard Model: front beam is graduated from 0 to 10g in 0.1g divisions; center beam, from 100 to 500g in 100g divisions; rear beam, from 10 to 100g in 10g divisions.

Dial-O-Gram* Model: front beam is graduated from 100 to 500g in 100g increments; rear beam, from 10 to 100g in 10g increments; vernier dial from 0 to 10g in 0.1g increments.



02-032

Cat. No. 02-034-20 comes with a tare beam for taring out the weight of sample containers.

Cat. No. 02-034-25 features an aluminum animal container ideal for weighing small animals.

ORDERING INFORMATION:

Shipped fully assembled. Order polypropylene scoops (02-041-5) online.

Platform Type	Mfr. No.	Cat. No.	Each
Standard Model			
Pan	710 00	**02-032**	138.52
Scoop	720 S0	**02-032-21**	179.67
Plate[1]	760 00	**02-034-20**	149.56
Animal container	730 00	**02-034-25**	186.70
Plate	750 S0	**02-034**	122.46
Plate[1]	760 00	**02-034-20**	149.56
Dial-O-Gram Model			
Pan[1]	1610 00	**02-034-28**	216.81
Plate[1]	1650 00	**02-034-27**	195.73

[1] *Includes 225g tare beam.*

Ohaus* Harvard Trip Balances

Ideal for comparative weighing

Choice of single or double beam models provides many years of maintenance-free, comparative weighing using a known standard.

02-037SD

- With 2000g capacities, 0.1g readabilities, and either a stainless-steel 6" (15.2cm) diameter × ¾" deep (1.9cm) pan or 6" diameter (15.2cm) plate
- Angled beams with center-reading poises for excellent visibility of results; sliding, rotating poise for fine adjustment
- Magnetic damping to slow oscillations and speed weighings
- Zero-adjust compensator ensures precision and reproducibility
- Equipped for specific gravity weighing
- Precision-ground knives, covered self-aligning bearings, cross-braced aluminum-alloy box-end beam, and elliptical check pins
- Single-beam balances graduated in 0.1g increments; double-beams in 0.1 and 10g increments.

Type	Mfr. No.	Cat. No.	Each
Single beam with plates	1450-SD	**02-035SD**	195.73
Double beam with plates	1550-SD	**02-037SD**	216.81
Double beam with plates[1]	1560-SD	**02-037-10SD**	220.83

[1] *Includes 225g tare beam; calibrated in grams and ounces.*

LOOKING FOR MORE?

We offer a variety of mechanical balances for a wide range of applications.

Visit www.fishersci.com and search for Mechanical Balances

LOOKING FOR WEIGHING IMPLEMENTS?

For scoops, ladles and spatulas, see the Samplers and the Spatulas sections.

LOOKING FOR MORE BALANCE ACCESSORIES?

We carry a full range of Fisherbrand* weighing paper, funnels, weighing dishes, brushes and forceps. For more information and to order,

Visit www.fishersci.com and search for Fisherbrand Balance Accessories

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

MOISTURE

Mettler Toledo* HR83 and HG63 Halogen Moisture Analyzers

Up to 40% faster than infrared drying

Ideal for sampling applications used in food processing, pharmaceutical, or chemical industries.

- Suitable for ISO, GLP, and GMP protocols
- Adjustable two-point calibration of dryer and balance
- Drying time of 1 to 480 minutes

01-910-328

Models HR83 and HR83P

- Heats from 50° to 200°C in just 30 seconds
- Four selectable drying programs, choice of switch-off criteria, and built-in database to save 40 sampling procedures
    - **Standard program** heats to the set drying temperature and holds constant
    - **Rapid drying** speeds drying of samples from 3 to 15% moisture
    - **Gentle drying** reduces the formation of "skins" on samples
    - **Step drying** offers one to three temperature steps plus an overheating prevention feature that initiates a time limit for temperatures over 180°C (350°F)
- Models will stop heating based on a manual stop, one of five presettings, mean weight loss per unit of time or programmed drying time
- Built-in database holds up to 40 methods—drying program and temperature, switch-off criteria, drying time, display mode, print interval, and target weight for weighing-in aid, if used
- Results of each procedure are continuously recorded, statistically evaluated, and updated until cleared

Models HG63 and HG63P

- Designed for simpler, more routine procedures that don't require a built-in database for recording extensive instructions, parameters, or journal and statistics values; database stores up to 10 methods
- Simple, one-step process requires setting only drying temperature and time
- Time limit for temperatures over 180°C (350°F) protects analyzer from damaging heat
- Manual or automatic switch-offs
- LCD displays current temperature, elapsed drying time, and current drying value, with results in % moisture, % solids, or weight

ORDERING INFORMATION:

Models without printers are available; visit **www.fishersci.com**.

INCLUDES:

Both models come with 50 aluminum sample pans, sample pan holder, specimen sample, draft shield element, grounded 3-prong power cable, printer and operating instructions. Model HR83P also includes built-in LocalCAN interface for data exchange with a computer or control system (cables available separately).

REQUIRED ACCESSORIES:

Halogen drying unit requires Temperature Calibration Kit (01-909-385) for adjustment. Balance requires 50g ASTM* Class I calibration weight (01-913-501). Both can be ordered online at **www.fishersci.com**.

Model	HR83	HR83P	HG63	HG63P
Readability				
Measurement Values	0.01%/0.001%	0.01%/0.001%	0.01%	0.01%
Balance	1mg/0.1mg	1mg/0.1mg	1mg	1mg
Weighing Range	0 to 81g	0 to 81g	0 to 61g	0 to 61g
Min. Sample Weight	0.1g	0.1g	0.1g	0.1g
Temperature Range	40° to 200°C (104° to 392°F)	40° to 200°C (104° to 392°F)	40° to 200°C (104° to 392°F)	40° to 200°C (104° to 392°F)
Temperature Increments	1°C	1°C	1°C	1°C
Temperature Drying Programs	4	4	2	2
Timer Range	1 to 480 min.	1 to 480 min.	1 to 480 min.	1 to 480 min.
Auto Switchoff Criteria	5 fixed	5 fixed	5 fixed	5 fixed
Printer	Optional	Yes	Optional	Yes
Repeatability (2g Sample)	0.10%	0.10%	0.10%	0.10%
Repeatability (10g Sample)	0.02%	0.02%	0.02%	0.02%
Memory	40 samples	40 samples	10 samples	10 samples
Weighing-in Aid	Yes	Yes	Yes	Yes
Comment Lines	4	4	1	1
Interface Connections	LocalCAN/opt. RS-232	LocalCAN/opt. RS-232	LocalCAN/opt. RS-232	LocalCAN/opt. RS-232
Display	LCD backlit	LCD backlit	LCD backlit	LCD backlit
Dimensions (L x W x H)	14 3/16 × 13 3/8 × 4 5/16" (36 × 34 × 11cm)	14 3/16 × 13 3/8 × 4 5/16" (36 × 34 × 11cm)	14 3/16 × 13 3/8 × 4 5/16" (36 × 34 × 11cm)	14 3/16 × 13 3/8 × 4 5/16" (36 × 34 × 11cm)
Electrical Reqts.	110VAC 50/60Hz	110VAC 50/60Hz	110VAC 50/60Hz	110VAC 50/60Hz
Mfr. No.	HR83	HR83P	HG63	HG63P
Cat. No.	**01-910-328**	**01-910-329**	**01-910-330**	**01-910-331**
Each	5946.00	6419.00	4744.00	5202.00

Mettler Toledo* HB43-S Compact Halogen Moisture Analyzer

NEW

Combines halogen heating technology with strong analytical power

Features

01-910-100

- Samples are heated uniformly using a predefined drying program for quick and highly reproducible results
- Switch between two active drying methods at the touch of a button
- Methods library includes ready-to-use methods for over 100 substances
- Compact unit is suitable for lab and production environments
- Easy to use—just open the cover and the instrument leads you step-by-step through the analysis
- Five automatic switch-off criteria and timer mode complete analysis once constant weight is achieved
- Alphanumeric method names and target-weight indication ensure precise results
- Customized method names to describe your substances
- Optional LabX* software (01-919-700) provides automatic transfer of data to Excel*

Design

- Rugged design for a long service life
- Flat surfaces and excellent access to sample chamber make cleaning easy
- Large, brilliant display allows easy operation

ORDERING INFORMATION:

Printer is optional; choose 01-911-152A or 01-910-121 (contact your Fisher Scientific Customer Service Representative for more details).

INCLUDES:

80 aluminum sample pans, sample holder, sample handler, moisture pads, power cable, and operating instructions.

Model	HB43-S
Readability	
Measurement Values	0.01%
Balance	1mg
Weighing Range	0 to 54g
Minimum Sample Weight	0.5g
Temperature Range	5° to 200°C
Temperature Set Increments	5°C
Temperature Drying Programs	Standard, Rapid, LJ16
Timer Range	1 to 480 minutes
Automatic Switch-off Criteria	5 automatic switch-off
Reproducibility	
Balance	0.01%
Sample=2g	0.15%
Sample=10g	0.015%
Optional Functions	
Memory	100
Display	LCD backlit
Dimensions (L × W × H)	14⅛ × 9⅛ × 5⅞" (36 x 23 x 15cm)
Net Weight	9½ lb. (4.3kg)
Electrical Reqts.	100VAC 50/60Hz
Mfr. No.	HB43-S
Cat. No.	**01-910-100**
Each	3350.00

ACCESSORIES

Built-in Printer for HR83 and HG63 Moisture Analyzers

Provides documentation of measured values to meet GLP and GMP guidelines.

01-909-382

Mfr. No.	Cat. No.	Each
HA-P43	**01-909-382**	568.00

Temperature Calibration Kits for use with Halogen Moisture Analyzers

- Use to adjust halogen drying units to ensure consistent results
- Consist of adjustment disc with precision thermometer and sample pan handler

Calibration Kit	Mfr. No.	Cat. No.	Each
With NIST* certificate	HA-TC/NIST	**01-909-385A**	547.00
Without certificate	HA-TC	**01-909-385**	270.00

Glass Fiber Discs for Halogen Moisture Analyzers

For use with samples with high moisture content. 3½" dia. (90mm), set of 100.

Mfr. No.	Cat. No.	Each
HA-F1	**01-909-422**	73.00

Sample Pans for Halogen and Infrared Moisture Analyzers

- Choice of washable, reusable stainless chrome-nickel steel pans for halogen moisture analyzers, or aluminum or stainless steel pans for Model LJ16 infrared moisture analyzer
- All 3¾" (96mm) in diameter

Material	Mfr. No.	Cat. No.	Pack of
For halogen moisture analyzers			
Stainless chrome-nickel steel	HA-DR1	**01-909-427**	1/67.00
For Model LJ16 infrared moisture analyzer			
Aluminum	13865	**01-913-97A**	50/50.00
Stainless steel	13954	**01-913-97B**	1/20.00

Sample Pan Handlers

Stainless steel, set of 3.

Mfr. No.	Cat. No.	Each
HA-PH	**01-914-15**	34.14

LabX Direct Moisture Software

Mfr. No.	Cat. No.	Each
11120339	**01-919-700**	495.00

Denver Instrument* IR-120 Moisture Analyzer

Versatile, reliable moisture analyzer is great choice for multiple users

01-913-440

- Quartz coil infrared heating element provides consistent heating along with fast analysis times
- Programmable one, two or three-step drying procedure allows rapid drying of the sample without scorching
- Fully adjustable endpoint criteria to maximize efficiency and accuracy
- Store up to 100 custom programs, each with their own alphanumeric identification for easy recall
- Wide working range enables testing of nearly any type of sample
- Built-in dot-matrix printer—customize the printout with pertinent information or set to meet ISO/GLP requirements
- Built-in RS-232 interface for connection to computers, printers, and other peripherals
- Store and perform statistical analysis on up to 250 test results
- Motorized heating hood for full access to sample
- Automatic weight capture for simple, reliable operation
- Security feature to prevent unauthorized changes

Model	IR-120
Working Range	0.1 to 99.9%
Temperature Range	30° to 210°C in 1°C increments
Temperature Steps	Programmable; one, two, or three
Weighing Range	0 to 120g
Taring Range	0 to 120g
Unit of Results	% moisture, % solid, % moisture/dry, mg of weight loss, grams of residue or g/kg
Readability (moisture)	0.01%
Dimensions	18 × 13 13/16 × 6" (45.72 × 35.05 × 15.24cm)
Net Weight	18 lb. (8kg)
Electrical Reqts.	115V 50/60Hz
Mfr. No.	IR-120.1
Cat. No.	**01-913-440**
Each	4995.00

Denver Instrument* IR-60 Moisture Analyzer

Rapid heating technology and easy setup combined in a rugged, straightforward instrument

01-914-270

- Quartz coil infrared heating element allows rapid heating, similar to halogen, while assuring even heating of the sample
- Flexible endpoint determination—choose the factory-defined automatic endpoint or timer mode for general applications, or tailor the endpoint specifically to your samples to get better repeatability or shorter analysis time
- Store up to five programs for analysis of different sample types
- Standby temperature keeps the instrument ready for the next test and reduces analysis time
- Password protection blocks unauthorized changes
- Back-lit liquid crystal display
- RS-232 serial port to send information to computer or optional printer

Model	IR-60
Working Range	0.1 to 99.9%
Temperature Range	40° to 210°C in 1°C increments
Temperature Steps	One
Timer Range	0 to 99 minutes
Weighing Range	0 to 60g
Taring Range	0 to 60g
Unit of Results	% moisture, % solid, % moisture dry, mg of weight loss or grams of residue
Readability (moisture)	0.01%
Dimensions	12⅝ × 8⅜ × 7⅛" (32.0 × 21.3 × 18.1cm)
Net Weight	12⅛ lb. (5.5kg)
Electrical Reqts.	115V or 230V, 50/60Hz
Mfr. No.	IR-60.1
Cat. No.	**01-914-270**
Each	3250.00

Denver Instrument* IR-35 Moisture Analyzer

Low-cost moisture analyzer is fast and easy to operate

01-915-00

- Simple control panel
- Provides fast check of moisture content, typically 5 to 15 minutes
- Simple endpoint determination—choose the automatic shutoff parameter for most samples, or the timer mode for samples that do not lose a significant amount of moisture over time
- Dark radiator infrared heater
- Compact size
- Designed to withstand the rigors of industrial use
- Liquid crystal display
- RS-232 serial port to send information to computer or optional printer

Model	IR-35
Working Range	0.1 - 99.9%
Temperature Range	40° to 160°C in 5°C increments
Temperature Steps	One
Timer Range	0 to 99 minutes
Weighing Range	0 to 35g
Taring Range	0 to 35g
Unit of Results	% moisture, % solid, % moisture dry, grams of weight loss
Readability (moisture)	0.01%
Dimensions	12⅝ × 8⅝ × 6½" (32.0 × 21.8 × 16.5mm)
Net Weight	12⅛ lb. (5.5kg)
Mfr. No.	IR-35.1
Electrical Reqts.	115V 50/60Hz
Cat. No.	**01-915-00**
Each	2675.00

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*Trademark. See Trademark Reference.

ACCESSORIES

Disposable Foil Sample Dishes

For use with all Denver Instrument* Moisture Analyzers

- 3½" (90mm) diameter
- Box of 200 sample pans

Mfr. No.	Cat. No.	Pack of 50
900274.1	**01-913-356**	38.00

Glass Fiber Sample Pads

For use with all Denver Instrument* Moisture Analyzers

- Ideal for samples with a high moisture content
- Prevent crusting or splattering of samples while reducing analysis time
- 3½" dia. (90mm)

Mfr. No.	Cat. No.	Pack of 200
900298.1	**01-913-358**	36.95

Ohaus* MB Series Moisture Analyzers

Full-featured, compact analyzers heat up quickly and uniformly

Ideal for environmental, quality control, food and beverage, chemical and pharmaceutical testing. Two models available for basic or advanced operation.

- Fast halogen heat source for fast heatup—40% faster than traditional infrared
- Gold reflective housing for uniform heat distribution

Model MB45

- Advanced performance plus customizable, time-saving software
- Readability of 0.001g on samples up to 45g, over a 0.01% to 100% moisture range
- Built-in software expands capabilities for greater accuracy and ease of use, as well as data storage and management; allows temperatures to be controlled in 1°C increments from 50° to 200°C
- Integrated database stores/recalls up to 50 drying procedures and allows statistical analysis of data
- Display text in choice of five languages (English, Spanish, French, German, Italian)
- Results can be viewed as % moisture, % solids, time, temperature, weight, test ID and also as a real-time drying curve
- Perform timed tests or use four enhanced heating options:
    - "Fast" (quickest time to reach temperature)
    - "Standard" (minimal overshoot while quickly attaining temperature)
    - "Ramp" (controlled ramping to temperature)
    - "Step" (set three temperatures for difficult samples)
- Four switch-off criteria include manual, timed, auto (weight loss per unit of time), and auto free (user-defined weight loss per unit of time)

Model MB35

- Heats up to 160°C in less than one minute
- Readability of 0.005g (0.05% moisture) on samples up to 35g, over a 0.05% to 100% moisture range
- Temperature can be controlled in 5°C increments from 50° to 160°C
- Display text shows moisture, time, temperature and weight in a choice of three languages (English, Spanish, French)

WARRANTY:

Two years

01-920-115, 01-920-62

NOTE:

Both models offer a GLP-compliant format when printed results are required and have RS-232 port for connection to computer or optional printer (02-112-98; contact your Fisher Scientific Customer Service Representative for ordering information).

Model	MB45	MB35
Weighing Range	0 to 45g	0 to 35g
Minimum Sample Weight	0.5g	0.5g
Readability	0.001g/0.01%	0.005g/0.05%
Repeatability (Std. Deviation)	0.05% (3g sample); 0.015% (10g sample)	0.18% (3g sample); 0.05% (10g sample)
Taring Range (By Subtraction)	0 to 45g	0 to 35g
Stabilization Time	3 seconds	3 seconds
Moisture Range	0.01 to 100% (0.01 to 1000% for regain mode)	0.05 to 100%
Temperature Range	50° to 200°C in 1°C increments (122° to 392°F)	50° to 160°C in 5°C increments (122° to 320°F)
Operating Temperature Range	10° to 40°C (50° to 104°F)	10° to 40°C (50° to 104°F)
Timer Range	1 to 120 min.	1 to 120 min.
Pan Size	3.54" (9.0cm)	3.54" (9.0cm)
Dimensions (L x W x H)	14 × 7½ × 6" (36 × 19 × 15.2cm)	14 × 7½ × 6" (36 × 19 × 15.2cm)
Electrical Requirements	100-120, 220-240VAC 50/60Hz	100-120, 220-240VAC 50/60Hz
Mfr. No.	MB45	MB35
Cat. No.	**01-920-62**	**01-920-115**
Each	3350.00	2750.00

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

LOOKING FOR OHAUS* ACCESSORIES?

Find accessories for these balances online.

Visit www.fishersci.com and search for Moisture Accessories

BEFORE YOU BUY SCALES

BASICS TO CONSIDER WHEN DECIDING WHICH SCALE TO PURCHASE

Where will it be used?

There are a variety of scales designed to handle the unique demands of Lab, Food Service, Food Processing, Shipping/Receiving and other industrial applications. Often scales are used in industrial applications that require high capacity. Furthermore, the industrial scale may only need to provide readings in 2 oz. increments while fine weighing applications may need readings in as little as 0.0001g increments.

What environment will it be in?

Will the scale be used in a clean, dry environment or one where it is exposed to moisture and/or corrosive chemicals? Will this exposure be minimal or excessive? Stainless-steel components provide the best resistance to chemicals and moisture.

How much capacity do I need?

If you are weighing small amounts of fine chemicals, a bench scale with 250 lb. capacity that reads in 2 oz. increments will not address your needs. Select a scale that has the capacity you need along with the appropriate functions and readability.

What about readability?

The readability is the finest increment registered by the scale. For example, the Ohaus ES30R Digital Bench Scale can weigh objects up to 30kg in 0.01kg increments. You may need a readout that is in 0.1g or even 0.0001g increments and while the latter will generally be more expensive, it may be the only solution for fine weighing applications.

Ease of use?

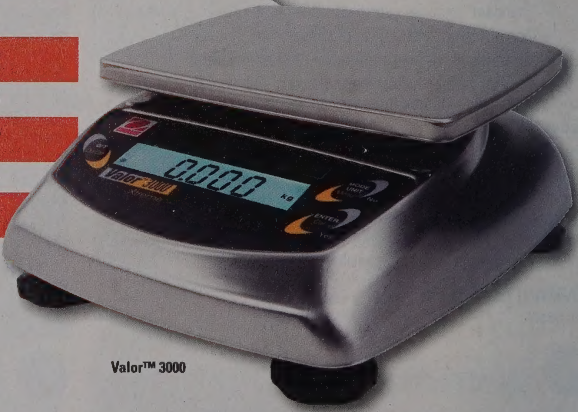
Is the scale easy to use and intuitive or cumbersome and confusing? Some products are advanced enough that you merely plug them in and start weighing. Using a scale shouldn't be rocket science.

Does the scale need to be portable?

Some scales can only run on AC power (plug into a wall socket) while others utilize battery power. Portability is an important feature for field work or for scales that need to be used in multiple locations. Sometimes, the features you need may only be found in a product that is clearly too large or heavy to be portable. Look for newer technology that provides powerful operation in a compact instrument. Ultimately, the decision is up to you.

	DEFENDER 3000	DEFENDER 5000 DRY & WASHDOWN	3000 VALOR WET & DRY MODELS	ES DIGITAL BENCH
Capacity	30kg/60 lb. – 300kg/600 lb.	10kg/25 lb. – 250kg/500 lb.	From 200g to 6000 g	6kg/13.2 lb. to 200kg/440 lb.
Readability	.005kg/.01 lb. to .02kg/.05 lb.	1g/.002 lb. to 20g/.05 lb.	.01g/.00005 lb. to.1g/.005 lb.	.002kg/.005 lb. to .1kg/.2 lb.
# of Weighing Units/Models	5	7	6	4
RS 232 Interface	Yes	Yes	No	No
Time / Date	No	Yes	No	No
Density Determination	NA	NA	Yes	NA
% Weighing	No	Yes	Yes	No
Check Weighing	No	Yes	No	No
GLP Data Output	No	Yes	No	No

sponsored by: OHAUS



Valor™ 3000

For a full selection of Ohaus® Scales and Balances, see pgs. 87-94.

Ohaus* Defender 5000 Bench Scales with Rectangular Base

Portable scale for shipping and inventory

Ideal for routine weighing, shipping and basic applications, including parts counting, checkweighing, % weighing, dynamic weighing and display hold for weighing large packages. Readability as precise as 0.005 lb. (0.002kg).

- Prewired and fully assembled
- Factory set and factory calibrated
- Adjustable, easy to read backlit LCD measures 1" (2.5cm) with three checkweighing LEDs
- Consists of stainless-steel platform with leveling feet and leveling bubble, indicator mounting column and T51P indicator with power supply and line cord
- Five user-selectable weighing units (g, kg, lb., oz., lb.:oz.) and user-defined custom unit
- Net/gross/tare function
- Auto-off timer eliminates battery drain
- RS-232-C bidirectional interface
- Operates on batteries or AC

INCLUDES:
Universal switching 100-240 VAC 50/60Hz power supply

REQUIRED ACCESSORIES:
Six alkaline "C" batteries (rechargeable NiMH batteries optional)

CERTIFICATIONS:
CE marked; UL listed; CSA listed

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

NEW
0.00
Defender

02-113-31

Model	D51P15HR1	D51P30HR1	D51P60HR1	D51P60HL2	D51P100HL2	D51P150HX2	D51P300HX2
Capacity	30 lb. (15kg)	60 lb. (30kg)	120 lb. (60kg)	120 lb. (60kg)	200 lb. (150kg)	300 lb. (150kg)	600 lb. (300kg)
Readability	0.005 lb. (0.002kg)	0.01 lb. (0.005kg)	0.02 lb. (0.01kg)	0.02 lb. (0.01kg)	0.05 lb. (0.02kg)	0.05 lb. (0.02kg)	0.1 lb. (0.05kg)
Weighing Modes	g, kg, lb., oz, lb.:oz., custom unit	g, kg, lb., oz, lb.:oz., custom unit	g, kg, lb., oz., lb:oz., custom unit	g, kg, lb., oz., lb.:oz., custom unit	g, kg, lb., oz., lb.:oz., custom unit	g, kg, lb., oz., lb:oz., custom unit	g, kg, lb., oz., lb.:oz., custom unit
Stabilization Time	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.
Platform L × W × H	12 × 14 × 3¾" (31× 36 × 9.5cm)	12 × 14 × 3¾" (31× 36 × 9.5cm)	12 × 14 × 3¾" (31× 36 × 9.5cm)	16 × 20 × 4⅛" (40 × 50 × 10.5cm)	16 × 20 × 4⅛" (40× 50 × 10.5cm)	17 × 22 × 5" (42 × 55 × 12.5cm)	17 × 22 × 5" (42 × 55 × 12.5cm)
Column Height	14" (35cm)	14" (35cm)	14" (35cm)	27" (68cm)	27" (68cm)	27" (68cm)	27" (68cm)
Electrical Reqts.							
Voltage	Internal switching (100-240VAC 50/60Hz) power supply	Internal switching (100-240VAC 50/60Hz) power supply	Internal switching (100-240VAC 50/60Hz) power supply	Internal switching (100-240VAC 50/60Hz) power supply	Internal switching (100-240VAC 50/60Hz) power supply	Internal switching (100-240VAC 50/60Hz) power supply	Internal switching (100-240VAC 50/60Hz) power supply
Battery	6 alkaline "C" batteries	6 alkaline "C" batteries	6 alkaline "C" batteries	6 alkaline "C" batteries	6 alkaline "C" batteries	6 alkaline "C" batteries	6 alkaline "C" batteries
Mfr. No.	D51P15HR1	D51P30HR1	D51P60HR1	D51P60HL2	D51P100HL2	D51P150HX2	D51P300HX2
Cat. No.	**02-113-31**	**02-113-32**	**02-113-33**	**02-113-34**	**02-113-35**	**02-113-36**	**02-113-37**
Each	735.00	735.00	735.00	875.00	875.00	925.00	1039.00

Ohaus* Defender 5000 Bench Scales with Square Base

Heavy-duty scale for industrial processing and distribution applications

Large pan provides ample room for large and unusually shaped samples or packages. Operates on batteries or with internal power supply; an optional NiMH internal rechargeable battery is available.

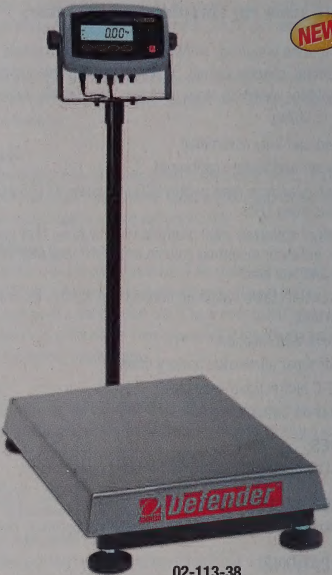
- Easy to clean
- Painted steel frame and stainless-steel platforms
- Impact-resistant plastic housing protects indicator
- Large, 1" (2.5cm) backlit LCD display and three checkweighing LEDs
- Five user-selectable weighing units (kg, g, lb., oz., lb.:oz), custom, and user-defined unit
- Simple four-button operation makes weighing effortless
- Overload protection
- Auto zero tracking to minimize drift
- Auto-off timer eliminates battery drain (when batteries are used)
- Adjustable averaging and stability levels
- RS-232-C bidirectional interface
- GMP output with time/data

INCLUDES:
Universal switching (100-240 VAC 50/60Hz) power supply

REQUIRED ACCESSORIES:
Six alkaline "C" batteries (rechargeable NiMH batteries optional)

CERTIFICATIONS:
CE marked, UL listed, CSA listed

NEW



02-113-38

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

TRYING TO KEEP STAINLESS-STEEL SURFACES CLEAN?

For a selection of stainless-steel cleaning product, look to our Web site.

Visit www.fishersci.com and search for Stainless-Steel Cleaner and Polish

Model	**D51P10QR1**	**D51P25QR1**	**D51P50QL2**	**D51P100QL2**	**D51P250QX2**
Capacity	25 lb. (10kg)	50 lb. (25kg)	100 lb. (50kg)	250 lb. (100kg)	500 lb. (250kg)
Readability	0.002 lb. (0.001kg)	0.005 lb. (0.002kg)	0.01 lb. (0.005kg)	0.02 lb. (0.01kg)	0.05 lb. (0.02kg)
Weighing Modes	g, kg, lb., oz., lb.:oz., custom unit	g, kg, lb., oz., lb.:oz., custom unit	g, kg, lb., oz., lb.:oz., custom unit	g, kg, lb., oz., lb.:oz., custom unit	g, kg, lb., oz., lb.:oz., custom unit
Stabilization Time	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.
Platform L × W × H	12 × 12 × 3¾" (30 × 30 × 8.6cm)	12 × 12 × 3¾" (30 × 30 × 8.6cm)	18 × 18 × 3¾" (45 × 45 × 9.1cm)	18 × 18 × 3¾" (45 × 45 × 9.1cm)	24 × 24 × 5" (60 × 60 × 14.8cm)
Indicator W × D × H	10 × 2¾ × 6½" (26 × 7.1 × 16.6cm)	10 × 2¾ × 6½" (26 × 7.1 × 16.6cm)	10 × 2¾ × 6½" (26 × 7.1 × 16.6cm)	10 × 2¾ × 6½" (26 × 7.1 × 16.6cm)	10 × 2¾ × 6½" (26 × 7.1 × 16.6cm)
Electrical Reqts.					
Voltage	Internal switching (100-240VAC 50/60Hz) power supply	Internal switching (100-240VAC 50/60Hz) power supply	Internal switching (100-240VAC 50/60Hz) power supply	Internal switching (100-240VAC 50/60Hz) power supply	Internal switching (100-240VAC 50/60Hz) power supply
Battery	6 alkaline "C" batteries or optional rechargeable NIMH batteries	6 alkaline "C" batteries or optional rechargeable NIMH batteries	6 alkaline "C" batteries or optional rechargeable NIMH batteries	6 alkaline "C" batteries or optional rechargeable NIMH batteries	6 alkaline "C" batteries or optional rechargeable NIMH batteries
Mfr. No.	D51P10QR1	D51P25QR1	D51P50QL2	D51P100QL2	D51P250QX2
Cat. No.	**02-113-38**	**02-113-39**	**02-113-40**	**02-113-41**	**02-113-42**
Each	815.00	815.00	919.00	919.00	1369.00

*Trademark. See Trademark Reference.

Prices subject to change.

Ohaus* Compact Electronic Scales

Lightweight, portable electronic scales, ideal for work outside of the lab

Suited for a wide range of applications, including quality control, formulations, small animal weighing, forensic testing and soil and water sampling.

- Easy to operate with simple two-button operation
- Three low-profile models with weighing capacities from 200 to 5000g
- Low-battery indicator, overload/underload indicators, tactile feedback keyboard and auto shutoff
- Quick, easy calibration allows user to adjust for changes in location and temperature
- Rugged construction provides overload protection up to 150% of capacity
- Powered by three "AA" batteries (included) or by optional AC adapter (order separately)
- Weighs in g or lb.:oz.
- Net weight: 1.0 lb. (0.5kg)
- Manufactured with ISO 9001:2000—certified process

ORDERING INFORMATION:
Dimensions (L × W × H): 7⅝ × 5⁵⁄₁₆ × 1½" (19.3 × 13.5 × 3.9cm)

INCLUDES:
Three "AA" batteries

WARRANTY:
One-year (US and Canada)

Cal Unit
On Off Tare

01-919-33

Capacity	Linearity	Repeatability	Mfr. No.	Cat. No.	Each
200g	±0.1g	0.1g	CS200P	**01-918-019**	118.44
200g	±0.1g	0.1g	CS200	**01-919-33**	114.43
2000g	±1.0g	1.0g	CS2000	**01-919-34**	114.43
5000g	±2.0g	2.0g	CS5000	**01-919-35**	124.47

Ohaus* Valor* 3000 Xtreme Portable Scale

NEW

Compact portioning scale offers high precision and extreme durability for the harshest environments

High Precision NSF certified and listed scale with USDA accepted housing features the accuracy of the Scout Pro with precision up to 20,000d. User-selectable filtering, auto-zero tracking and stability settings enable use in drafty, unstable environments.

- Full T304 stainless-steel housing, removable stainless-steel weighing pan
- Corrosion-resistant keyboard, great for areas where harsh chemicals are used
- SmarText user interface utilizes bright, backlit LCD plus simple text prompts
- Overload protection rated at 10x capacity
- Percentage weighing mode can automatically compute Baker's Percentages
- Specific Gravity Mode offers rapid, easy determination without need for manual calculations—great for checking density, aeration of mixes
- Durable, easy to clean
- Adjustable rubber feet
- Waterproof models (V31XW3, V31XW6) feature full NEMA 4X/IP65 protection and up-front level bubble
- Laboratory, industrial, food service, baking

02-115-30

02-115-34

INCLUDES:
AC adapter

COMPLIANCE:
EMC Approvals: FCC Class B, Industry Canada, CE

CERTIFICATIONS:
NSF, USDA, UL and CE

02-115-32

Model	V31XH202	V31XH2	V31X3	V31X6	V31XW301†	V31XW3†	V31XW6†
Capacity	200g	2000g	3000g	6000g	300g	3000g	6000g
Readability	0.01g	0.1g	1g	1g	0.2g	1g	2g
Weighing Modes	lb., kg, g, oz., lb.:oz., fl:oz.	lb., kg, g, oz., lb.:oz., fl:oz.	lb., kg, g, oz., lb.:oz., fl:oz.	lb., kg, g, oz., lb.:oz., fl:oz.	lb., kg, g, oz., lb.:oz., fl:oz.	lb., kg, g, oz., lb.:oz., fl:oz.	lb., kg, g, oz., lb.:oz., fl:oz.
Stabilization Time	≤3 sec.	≤3 sec.	≤3 sec.	≤3 sec.	≤3 sec.	≤3 sec.	≤3 sec.
Dimensions (D × W × H)	8½ × 7¼ × 2½" (21.8 × 18.5 × 6.3cm)	8½ × 7¼ × 2½" (21.8 × 18.5 × 6.3cm)	8½ × 7¼ × 2½" (21.8 × 18.5 × 6.3cm)	8½ × 7¼ × 2½" (21.8 × 18.5 × 6.3cm)	8½ × 7¼ × 2½" (21.8 × 18.5 × 6.3cm)	8½ × 7¼ × 2½" (21.8 × 18.5 × 6.3cm)	8½ × 7¼ × 2½" (21.8 × 18.5 × 6.3cm)
Pan Size	4¾" dia. (12cm)	5¾ × 6¼" (14.6 × 15.8cm)	5¾ × 6¼" (14.6 × 15.8cm)	5¾ × 6¼" (14.6 × 15.8cm)	5¾ × 6¼" (14.6 × 15.8cm)	5¾ × 6¼" (14.6 × 15.8cm)	5¾ × 6¼" (14.6 × 15.8cm)
Electrical Reqts.	120V 50/60Hz	120V 50/60Hz	120V 50/60Hz	120V 50/60Hz	120V 50/60Hz	120V 50/60Hz	120V 50/60Hz
Battery	4 "C" size batteries	4 "C" size batteries	4 "C" size batteries	4 "C" size batteries	4 "C" size batteries	4 "C" size batteries	4 "C" size batteries
Mfr. No.	V31XH202	V31XH2	V31X3	V31X6	V31XW301	V31XW3	V31XW6
Cat. No.	**02-115-30**	**02-115-31**	**02-115-32**	**02-115-33**	**02-115-550**	**02-115-34**	**02-115-35**
Each	395.00	395.00	275.00	275.00	325.00	325.00	325.00

† Waterproof.

Ohaus* FD Food Portioning Scales

Speed, durability and cleanliness; designed for food service use

Ideally suited for food preparation in restaurants, bakeries, food manufacturing and other areas requiring fast operation and flexibility. Also excellent for general weighing applications.

Standard Features

- Rugged stainless-steel construction
- Removable, diswasher-safe, stainless-steel weighing pan
- Simple 4-key operation and plain-text menu for fast setup
- ¾" high backlit LCD display with text annunciators
- Fast display update (under 2 seconds); large, dedicated tare key
- Auto tare for hands-free operation
- Optional foot tare switch for hands-free operation
- Checkweighing mode included with advanced features
- 3-LED indication of Over, Accept and Under with audible buzzer
- Positive mode for packaging, negative checkweighing mode for portioning, and "zero" checkweighing mode for sorting and grading operations
- Dedicated Target key for entry of setpoints for checkweighing mode

Advanced Features

- Selectable environmental averaging settings
- Backlight control with auto-off option
- Selectable weighing units
- Configurable checkweighing mode audible buzzer
- Configurable software lockout menu
- Span or linearity calibration in kg or lb. unit with optional external masses
- Selectable auto-zero tracking
- NTEP - Legal for Trade approved
- Low-battery detection system
- Adjustable feet with integrated level bubble

02-113-28

02-113-29

COMPLIANCE:

NSF listed/certified to NSF/ANSI 169-2005 (formerly NSF C-2)

USDA-AMS accepted to NSF/ANSI/3-A 14159-1-2002 (Hygiene Requirements for the Design of Meat and Poultry Processing Equipment)

Meets requirements for HACCP conformity

C-UL US listed, AS/NZS4251.1; Emission, AS/NZS4252.1; Immunity, tested for compliance to FCC Class B Part 15 operation

Ohaus quality management system registered to ISO 9001:2000 by BVQI Specifications

Approvals pending for NTEP Class III to NIST Handbook 44, Canada Weights and Measurement Class III, OIML R76 Class III and EC Type Approval

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Model	FD3	FD6	FD15
Capacity	6 lb. (3kg)	15 lb. (6kg)	30 lb. (15kg)
Readability	0.001 lb. (0.0005kg)	0.002 lb. (0.001kg)	0.005 lb. (0.002kg)
Repeatability	0.5g	1g	2g
Weighing Modes	lb., oz. (fractional or decimal), g, kg, combined lb.:oz. display	lb., oz. (fractional or decimal), g, kg, combined lb.:oz. display	lb., oz. (fractional or decimal), g, kg, combined lb.:oz. display
Scale L × W × H	9 × 12 × 2¾" (30 × 22.3 × 7.1cm)	9 × 12 × 2¾" (30 × 22.3 × 7.1cm)	9 × 12 × 2¾" (30 × 22.3 × 7.1cm)
Pan Size	8¼ × 8¼" (20.9 × 20.9cm)	8¼ × 8¼" (20.9 × 20.9cm)	8¼ × 8¼" (20.9 × 20.9cm)
Electrical Requirements			
Voltage	9VCD 0.5A AC wall adapter, 100-120VAC 50/60Hz	9VCD 0.5A AC wall adapter, 100-120VAC 50/60Hz	9VCD 0.5A AC wall adapter, 100-120VAC 50/60Hz
Battery	Internal rechargeable sealed lead-acid battery w/ 120 hours continuous use	Internal rechargeable sealed lead-acid battery w/ 120 hours continuous use	Internal rechargeable sealed lead-acid battery w/ 120 hours continuous use
Mfr. No.	FD3	FD6	FD15
Cat. No.	**02-113-25**	**02-113-26**	**02-113-27**
Each	495.62	495.62	495.62
FD High-Resolution Scales			
Model	**FH3H**	**FD6H**	**FD15H**
Capacity	6 lb. (3kg)	15 lb. (6kg)	30 lb. (15kg)
Readability	0.1g	0.2g	1g
Weighing Modes	lb., g, kg, oz., lb.:oz. with ½, ¼ and ¾ fractional increments	lb., g, kg, oz., lb.:oz. with ½, ¼ and ¾ fractional increments	lb., g, kg, oz., lb.:oz. with ½, ¼ and ¾ fractional increments
Mfr. No.	FD3H	FD6H	FD15H
Cat. No.	**02-113-28**	**02-113-29**	**02-113-30**
Each	450.00	450.00	450.00

Ohaus* Checkweighing (CKW) Scales

Dedicated checkweighing scales built for applications requiring fast and accurate operation

Combining a food-safe design, durable stainless-steel construction, and industry-leading software, CKW scales are easy to operate, yet allow full configuration to match different checkweighing needs.

Standard Features

- Washdown Protection: all stainless-steel construction with IP66/NEMA 4X indicator and IP67 load cell
- Checkweighing Setpoint Configurability: set targets by range, variance by weight or percent
- Multiple checkweighing methods: positive into container, negative out of container, net for sorting and grading applications
- Programmable red/yellow/green LED graphical display bar with selectable LED over/under/accept display
- Dedicated target key and numeric keypad
- Software and hardware lockouts: CKW can be locked so that operators cannot accidentally change targets and settings
- Selectable weighing units: lb., oz., combined lb.:oz. display, % of target, kg, g
- 20-SKU library with SKU number, over, under, target, tare values
- Connectivity: configurable external input, RS-232 bidirectional port included with GMP/GLP data outputs for traceability requirements
- Manufactured with ISO 9001:2000-certified processes

Design Features

- Checkweighing indication by: 3-color, 24-segment bar graph, beeper and/or display alert within selected checkweigh conditions
- Dedicated checkweighing Target key with numeric keypad
- Selectable environmental averaging settings
- Adjustable span or linearity calibration in kg or lb. unit with optional external masses
- Semi-automatic or automatic tare
- Adjustable auto-zero tracking; adjustable zeroing range
- Operating temperature: 14°F to 104°F/-10°C to 40°C
- NTEP - Legal for trade approved

ORDERING INFORMATION:

Foot Switch, Rechargeable NiMH Battery Kit, Rechargeable NiMH Battery, AC/DC Relay Output Kits, RS422/485 Kit; sold separately, can be found online at **www.fishersci.com** or by contacting your Fisher Scientific Customer Service Representative.

CERTIFICATIONS:

NSF Listed/Certified to NSF C-2, Special Equipment and/or Devices (Food Service Equipment); USDA/AMS Accepted to NSF/3-A 14159-1-2002 (Hygiene Requirements for the Design of Meat and Poultry Processing Equipment); meets requirements for HACCP conformity

01-919-201

Electrical/Emissions: UL, FCC Class B Part 15 operation, Industry Canada Class B, CE EN60950, EN55022, EN50082-1, EN61326

Approved/Legal-for-Trade: OIML R76 Class III and EC Type Approval; approvals pending for NTEP Class III to NIST Handbook 44, Canada Weights and Measurement Class III

Model	**CKW3R55**	**CKW6R55**	**CKW15L55**	**CKW30L55**
Capacity	6 lb. (3kg)	15 lb. (6kg)	30 lb. (15kg)	60 lb. (30kg)
Readability				
Non-type Approved	0.001 lb. (0.0005kg)	0.002 lb. (0.001kg)	0.005 lb. (0.002kg)	0.01 lb. (0.005kg)
Approvable†	0.002 lb. (0.001kg)	0.005 lb. (0.002kg)	0.01 lb. (0.005kg)	0.02 lb. (0.01kg)
Weighing Modes	lb., kg, g, oz., lb.:oz., %	lb., kg, g, oz., lb.:oz., %	lb., kg, g, oz., lb.:oz., %	lb., kg, g, oz., lb.:oz., %
Platform L × W × H	10 × 10 × 2¼" (25.4 × 25.4 × 5.8cm)	10 × 10 × 2¼" (25.4 × 25.4 × 5.8cm)	12 × 12 × 2¼" (30.5 × 30.5 × 5.8cm)	12 × 12 × 2¾" (30.5 × 30.5 × 6.9cm)
Column Height	11¾" (30cm)	¾" (30cm)	11¾" (30cm)	11¾" (30cm)
Electrical Requirements				
Voltage	100-240VAC 50/60Hz Univ. power supply with hardwired cord	100-240VAC 50/60Hz Univ. power supply with hardwired cord	100-240VAC 50/60Hz Univ. power supply with hardwired cord	100-240VAC 50/60Hz Univ. power supply with hardwired cord
Battery	Optional internal rechargeable NiMH battery; 10 hr. life	Optional internal rechargeable NiMH battery, 10 hr. life	Optional internal rechargeable NiMH battery, 10 hr. life	Optional internal rechargeable NiMH battery, 10 hr. life
Mfr. No.	CKW3R55	CKW6R55	CKW15L55	CKW30L55
Cat. No.	**01-919-200**	**01-919-201**	**01-919-202**	**01-919-203**
Each	1195.00	1195.00	1395.00	1395.00

† NTEP resolution; approval pending.

LOOKING FOR OHAUS* ACCESSORIES?

Review our full line of accessories for Ohaus balances and scales online.

Visit www.fishersci.com and search for Ohaus Accessories

LOOKING FOR MORE BALANCE ACCESSORIES?

We carry a full range of Fisherbrand* weighing paper, funnels, weighing dishes, brushes and forceps. For more information and to order,

Visit www.fishersci.com and search for Fisherbrand Balance Accessories

Ohaus* Defender 5000 Washdown Bench Scales

Rugged and versatile scales provide precision weighing during the most demanding applications

Modes for animal weighing, % weighing, check weighing and display hold for large containers. Readability to 0.002 lb. (0.001kg). Operates on internal AC power supply or "C"-cell batteries.

- All stainless-steel construction withstands use in wet environments and provides excellent chemical resistance
- Factory set and factory calibrated
- Large, remote stainless-steel platform
- Stainless-steel column and indicator unit with IP66 NEMA 4X washdown protection
- Large, 1" high, easy-to-read, backlit LCD with three checkweighing LEDs
- Six weighing units (kg, g, lb., oz., lb.:oz.) and user-defined custom unit
- Overload protection
- Auto-off timer eliminates battery drain (when batteries are used)
- Adjustable averaging levels
- Net/gross/tare function
- RS-232-C bidirectional interface
- GMP output with time/date

REQUIRED ACCESSORIES:
Six alkaline "C" batteries (NiMH batteries optional)

CERTIFICATIONS:
UL listed; CE marked; CSA listed, IP66/NEMA 4X rated

0.00
Defender

NEW

02-113-43

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Model	D51XW10WR3	D51XW25WR3	D51XW50WL4	D51XW100WL4	D51XW250WX4
Capacity	25 lb. (10kg)	50 lb. (25kg)	100 lb. (50kg)	250 lb. (100kg)	500 lb. (250kg)
Readability	0.002 lb. (0.001kg)	0.01 lb. (0.005kg)	0.01 lb. (0.005kg)	0.02 lb. (0.01kg)	0.05 lb. (0.02kg)
Weighing Modes	g, kg, lb., oz., lb.:oz., custom unit	g, kg, lb., oz., lb.:oz., custom unit	g, kg, lb., oz., lb.:oz., custom unit	g, kg, lb., oz., lb.:oz., custom unit	g, kg, lb., oz., lb.:oz., custom unit
Stabilization Time	≤3 sec.	≤3 sec.	≤3 sec.	≤3 sec.	≤3 sec.
Platform L x W x H	12 × 12 × 3¾" (30 × 30 × 9.7cm)	12 × 12 × 3¾" (30 × 30 × 9.7cm)	18 × 18 × 3¾" (45 × 45 × 9.5cm)	18 × 18 × 3¾" (45 × 45 × 9.5cm)	24 × 24 × 5" (60 × 60 × 12.7cm)
Indicator W x D x H	10¼ × 3 × 5¾" (26.2 × 7.6 × 14.9cm)	10¼ × 3 × 5¾" (26.2 × 7.6 × 14.9cm)	10¼ × 3 × 5¾" (26.2 × 7.6 × 14.9cm)	10¼ × 3 × 5¾" (26.2 × 7.6 × 14.9cm)	10¼ × 3 × 5¾" (26.2 × 7.6 × 14.9cm)
Electrical Requirements					
Voltage	Internal switching (100-240VAC 50-60Hz) power supply	Internal switching (100-240VAC 50-60Hz) power supply	Internal switching (100-240VAC 50-60Hz) power supply	Internal switching (100-240VAC 50-60Hz) power supply	Internal switching (100-240VAC 50-60Hz) power supply
Battery	6 alkaline "C" batteries	6 alkaline "C" batteries	6 alkaline "C" batteries	6 alkaline "C" batteries	6 alkaline "C" batteries
Mfr. No.	D51XW10WR3	D51XW25WR3	D51XW50WL4	D51XW100WL4	D51XW250WX4
Cat. No.	**02-113-43**	**02-113-44**	**02-113-45**	**02-113-46**	**02-113-47**
Each	1109.00	1109.00	1449.00	1449.00	1955.00

LOOKING FOR OHAUS ACCESSORIES?

For balance-specific accessories,

Visit www.fishersci.com and search for Defender Accessories

TRYING TO KEEP STAINLESS-STEEL SURFACES CLEAN?

For a selection of stainless-steel cleaning products, look to our Web site.

Visit www.fishersci.com and search for Stainless-steel cleaner and polish

*Trademark. See Trademark Reference.

Prices subject to change.

Ohaus* Defender 7000 Square Dry Bench Scales

Multifunctional scales offer superior precision for batching and filling

Advanced part counting, dynamic animal weighing, percent weighing, check weighing, totalization, formulation, batching, library function and display hold for large containers. Readability to 0.002 lb. (0.001kg).

- Large, remote, stainless-steel platform
- Painted column, indicator unit with high-impact plastic housing
- Sealed front display, numeric keypad, five function keys, and large, backlit LCD
- Three checkweighing LEDs
- Eight user-selectable weighing units: lb., kg, g, parts counting, animal weighing, % weighing, check weighing, and user-defined custom unit
- Factory set and factory calibrated
- Overload protection
- Momentary 10X readability display
- Autozero tracking for minimizing drift
- Adjustable averaging levels
- Net/gross/tare function
- RS-232-C bidirectional interface
- GMP output with date/time

INCLUDES:

Universal switching (100-240 VAC/50-60Hz) power supply

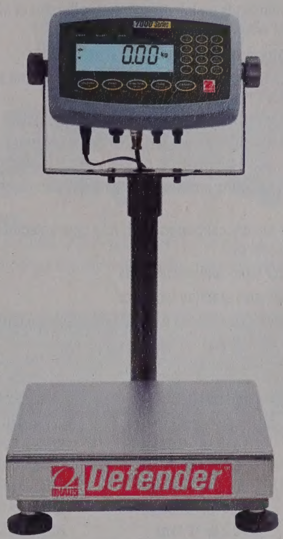
REQUIRED ACCESSORIES:

Six alkaline "C" batteries (rechargeable NiMH batteries optional)

CERTIFICATIONS:

UL listed, CSA listed

NEW



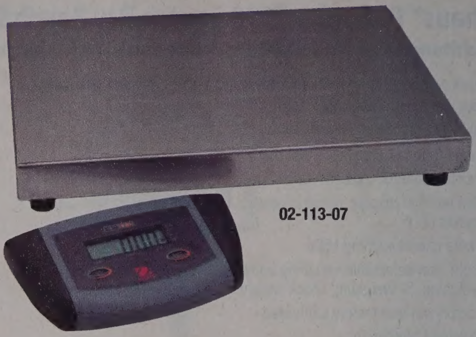
02-113-48

Model	D71P10QR1	D71P25QR1	D71P50QL2	D71P100QL2	D71P250QX2
Capacity	25 lb. (10kg)	50 lb. (25kg)	100 lb. (50kg)	250 lb. (100kg)	500 lb. (250kg)
Readability	0.002 lb (.001kg)	0.005 lb. (.002kg)	0.01 lb. (.005kg)	0.02 lb. (.01kg)	0.05 lb. (.02kg)
Stabilization Time	3 sec.	3 sec.	3 sec.	3 sec.	3 sec.
Weighing Modes	lb., kg, g, parts counting, animal weighing, percent weighing, check weighing, user-defined custom unit	lb., kg, g, parts counting, animal weighing, percent weighing, check weighing, user-defined custom unit	lb., kg, g, parts counting, animal weighing, percent weighing, check weighing, user-defined custom unit	lb., kg, g, parts counting, animal weighing, percent weighing, check weighing, user-defined custom unit	lb., kg, g, parts counting, animal weighing, percent weighing, check weighing, user-defined custom unit
Platform L × W × H	12 × 12 × 3¾" (30 × 30 × 9.7cm)	12 × 12 × 3¾" (30 × 30 × 9.7cm)	18 × 18 × 3¾" (45 × 45 × 9.7cm)	18 × 18 × 3¾" (45 × 45 × 9.5cm)	24 × 24 × 5" (60 × 60 × 12.7cm)
Indicator W × D × H	10 × 2¾ × 6½" (26 × 7.1 × 16.6cm)	10 × 2¾ × 6½" (26 × 7.1 × 16.6cm)	10 × 2¾ × 6½" (26 × 7.1 × 16.6cm)	10 × 2¾ × 6½" (26 × 7.1 × 16.6cm)	10 × 2¾ × 6½" (26 × 7.1 × 16.6cm)
Electrical Reqts.					
Voltage	AC adapter: 100, 120, 220, 240VAC 50/60Hz	AC adapter: 100, 120, 220, 240VAC 50/60Hz	AC adapter: 100, 120, 220, 240VAC 50/60Hz	AC adapter: 100, 120, 220, 240VAC 50/60Hz	AC adapter: 100, 120, 220, 240VAC 50/60Hz
Battery	6 alkaline "C" batteries	6 alkaline "C" batteries	6 alkaline "C" batteries	6 alkaline "C" batteries	6 alkaline "C" batteries
Mfr. No.	D71P10QR1	D71P25QR1	D71P50QL2	D71P100QL2	D71P250QX2
Cat. No.	**02-113-48**	**02-113-49**	**02-113-50**	**02-113-51**	**02-113-52**
Each	923.00	923.00	1025.00	1025.00	1439.00

Ohaus* ES Series Digital Bench Scales

Portable digital scale with easy, two-button operation

- ON/OFF/ZERO key turns balance on and automatically sets it to zero
- CAL/UNITS key changes weighing unit and calibrates scale when used with an external weight (not supplied)
- Separate indicator with easy-to-read 1" (2.5cm) LCD
- Large platform easily accommodates weighing of oversized and awkwardly shaped packages
- Low-profile design makes balances completely portable
- Unique three-way mounting bracket mounts the indicator to the scale base, above the scale platform, or on any vertical surface
- Stainless-steel platforms provide excellent chemical resistance; painted steel frames
- Factory set and factory calibrated, with four user-selectable weighing units: kg, lb., oz., lb.:oz.
- Error indicator for over- and under-loads
- Low-battery indicator; stability indicator
- Auto shutoff (after five minutes of inactivity) prolongs battery life
- Models 02-113-09, -10 and -11 have leveling feet
- Model 02-113-11 has only kg, lb., and oz. units



02-113-07

INCLUDES:
9V DC, 500mA AC adapter

REQUIRED ACCESSORIES:
Six "AA" alkaline batteries

Capacity	Readability	Platform L × W × H	Mfr. No.	Cat. No.	Each
13¼ lb.(6kg)	0.005 lb. (0.002kg)	12³⁄16 × 10¹³⁄16 × 1½" (31 × 27 × 4cm)	ES6R	**02-113-06**	427.53
66 lb.(30kg)	0.05 lb. (0.02kg)	12³⁄16 × 10³⁄16 × 1½" (31 × 27 × 4cm)	ES30R	**02-113-07**	427.53
110 lb.(50kg)	0.05 lb. (0.02kg)	12³⁄16 × 10³⁄16 × 1½" (31 × 27 × 4cm)	ES50R	**02-113-08**	427.53
110 lb.(50kg)	0.05 lb. (0.02kg)	20½ × 15¹¹⁄16 × 3" (52 × 40 × 7.5cm)	ES50L	**02-113-09**	458.57
220 lb.(100kg)	0.1 lb. (0.05kg)	20½ × 15¹¹⁄16 × 3" (52 × 40 × 7.5cm)	ES100L	**02-113-10**	458.57
440 lb.(200kg)	0.2 lb. (0.1kg)	20½ × 15¹¹⁄16 × 3" (52 × 40 × 7.5cm)	ES200L	**02-113-11**	458.57

International models available. Contact your Fisher Scientific Customer Service Representative for more information.

Denver Instrument* Mesa Industrial Scales

NEW

Ideal for shipping and industrial applications

- Display can be wall-mounted and located nine feet away from weighing platform
- Large, blue backlit liquid-crystal display with adjustable angles
- Weigh units: kg, lb., oz. (grams available on MZ-11 and MZ-22 models)
- Count mode perfect for inventory and mailing operations
- Totalization application
- Removable stainless-steel weighing platform
- 200% overload protection
- AC or battery operation with battery saving mode
- RS-232 data interface to connect to printer or computer
- External calibration with three selectable weight values

01-920-00

INCLUDES:
Power supply and RS-232 cable

WARRANTY:
Two years

01-920-03

Readability	1g	2g	5g	20g	50g
Capacity	10kg	20kg	50kg	100kg	200kg
Taring Range	0 to 10kg	0 to 20kg	0 to 50kg	0 to 100kg	0 to 200kg
Linearity	±3g	±6g	±15g	±60g	±150g
Pan Size	12⅜ × 12⅜" (31 × 31cm)	12⅜ × 12⅜" (31 × 31cm)	12⅜ × 12⅜" (31 × 31cm)	15⅞ × 20½" (40 × 52cm)	½" (40 × 52cm)
Net Weight	14 lb. (6.4kg)	14 lb. (6.4kg)	14 lb. (6.4kg)	35.2 lb. (16kg)	35.2 lb. (16kg)
Electrical Reqts.	120V 50/60Hz or 9V battery	120V 50/60Hz or 9V battery	120V 50/60Hz or 9V battery	120V 50/60Hz or 9V battery	120V 50/60Hz or 9V battery
Mfr. No.	MZ-11	MZ-22	MZ-55	MZ-102	MZ-205
Cat. No.	**01-920-00**	**01-920-01**	**01-920-02**	**01-920-03**	**01-920-04**
Each	339.64	339.64	339.64	419.79	419.79

*Trademark. See Trademark Reference.

Prices subject to change.

Troemner Calibration Weights and Weight Sets

Alloy 8 material for Analytical Weights and Weight Sets

UltraClass—A "super" class of precision weights for the most demanding applications.

- Weight tolerances are 40 to 50% better than ANSI*/ASTM* E617 Class 1 and equal to or exceed OIML Class E2 tolerances
- Combine high precision with two-piece construction (1g and larger)
- Available in a full range of weight denominations and shapes

ANSI/ASTM Class 1 through 4 tolerances—for high-precision weighings

- Meet exacting tolerances for their classes as established in ANSI/ASTM E617
- Traceability and NIST*/NVLAP* Weight Certificates can be provided

STATEMENT OF ACCURACY

Weights and weight sets (excluding OIML Class M2 Weight Sets) are supplied with a Statement of Accuracy which verifies that the product has been manufactured and calibrated to meet all specifications for its weight class

CERTIFICATIONS:

Traceability and NIST/NVLAP Weight Certificates can be provided; NIST/NVLAP accredited density determination documentation is available.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Electronic Balance Calibration Weights

Two-piece weights with adjusting cavities

- Manufactured from stainless steel; chosen for its uniform density, high resistance to wear and corrosion, and low magnetic properties
- UltraClass* and Class 1 weights are highly polished to a mirror-like finish
- Weights are constructed to be recalibrated and refinished

Precision-machined stainless steel in three styles

- Masses from 30 to 500g are standard cylinders
- Masses from 1 to 5kg are cylindrical with indentation near the top for easy gripping
- Masses from 5 to 30kg are sleek cylinders with recessed grip handles, perfectly flat on top, and easily stacked on center

Protective Cases

- Individual weights from 30g to 5kg come in an impact-resistant, self-hinged polypropylene case with foam interior compartment to protect weights when not in use
- Soft absorbent cotton glove is included to protect weights during use
- Optional cases are available for grip-handle weights

	UltraClass* Weights			ANSI/ASTM* Class 1			ANSI/ASTM Class 2			ANSI/ASTM Class 3			ANSI/ASTM Class 4		
Nominal Mass	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each
Standard Cylinder															
30g	8054	**02-214-6S**	54.27	8154F	**02-215-17A**	50.00	----	----	----	8354	**02-215-41**	47.28	8454F	**02-215-65A**	44.00
40g	----	----	----	8153F	**02-215-17B**	50.00	----	----	----	----	----	----	----	----	----
50g	8052	**02-214-6Q**	57.29	8152F	**02-215-17C**	50.00	8252	**02-215-44**	49.29	----	----	----	8452F	**02-215-20**	44.00
100g	8044	**02-214-6P**	69.35	8144F	**02-215-17D**	57.00	8244	**02-215-46**	54.27	8344	**02-215-47**	51.26	8444F	**02-215-65D**	47.00
150g	8042	**02-214-6N**	85.43	8142F	**02-215-17E**	64.00	8242	**02-215-48**	60.30	----	----	----	8442F	**02-215-65E**	53.27
160g	----	----	----	8140F	**02-215-21**	71.00	----	----	----	----	----	----	----	----	----
200g	8038	**02-215-28**	83.42	8138F	**02-215-17G**	67.00	8238	**02-215-52**	63.32	8338	**02-215-53**	59.30	8438F	**02-215-65G**	56.00
300g	8036	**02-214-6L**	96.48	8136F	**02-215-17H**	75.00	8236	**02-215-54**	69.35	8336	**02-215-55**	65.33	8436F	**02-215-65H**	62.00
400g	8034	**02-214-6K**	111.42	8134F	**02-215-17J**	90.00	8234	**02-215-56**	----	----	----	----	----	----	----
500g	8032	**02-214-6J**	118.44	8132F	**02-215-17K**	92.00	8232	**02-215-58**	83.42	8332	**02-215-59**	77.39	8432F	**02-215-65K**	72.00
Cylinder with Indentation															
1kg	8028	**02-214-6H**	142.53	8128F	**02-215-17M**	113.00	8228	**02-215-60**	101.38	8328	**02-215-61**	96.48	8428F	**02-215-65M**	96.00
2kg	8024	**02-214-6G**	166.62	8124F	**02-215-17N**	142.00	8224	**02-215-62**	127.48	8324	**02-215-63**	125.47	8424F	**02-215-65N**	119.00
5kg	8016	**02-214-6F**	373.47	8116F	**02-215-17P**	316.00	8216	**02-215-64**	257.32	8316	**02-215-65**	250.94	8416F	**02-215-65P**	245.00
Cylinder with Grip Handle															
5kg	8014	**02-214-6E**	588.00	8114F	**02-215-7A**	496.00	8214	**02-215-66**	395.49	8314	**02-215-67**	356.45	8414F	**02-215-57A**	309.00
10kg	8010	**02-214-6D**	803.00	8110F	**02-215-7B**	680.00	8210	**02-215-68**	596.00	8310	**02-215-69**	520.00	8410F	**02-215-57B**	466.00
20kg	8006	**02-214-6C**	1192.00	8106F	**02-215-7C**	1019.00	----	----	----	8306	**02-215-71**	831.00	8406F	**02-215-57C**	716.00
25kg	----	----	----	8102F	**02-215-7D**	1223.00	----	----	----	8302	**02-215-73**	581.94	----	----	----
30kg	----	----	----	8100F	**02-215-7E**	1433.00	----	----	----	----	----	----	8400F	**02-215-57E**	987.00

Troemner Precision Alloy 8 Analytical and Reference Weights

Manufactured from a specially developed austenitic stainless steel—Alloy 8—available exclusively from Troemner

Weights 1g and larger are manufactured using Alloy 8, which possesses closely controlled density, extremely low magnetic susceptibility, excellent stability and resistance to corrosion, ensuring a very stable mass over time. Other weights are stainless steel.

- Excellent for high-precision calibrations and reference standards
- Each fractional weight is embossed with its value
- Weights from 1 to 30mg are aluminum and flat, with one side turned up to form a handle for non-slip gripping with forceps
- Weights from 50 to 500mg are stainless steel and flat with one side turned up to form a handle
- Gram and kilogram weights are manufactured using Alloy 8 and come in cylindrical shapes with knobs on top for easy handling
- Weight sets come in a 5-2-2-1 series, with two weights of any included mg or g value beginning with "2" (2mg, 20mg, etc.) and one weight for all other inclusive values
- Each weight set (100g to 1mg) is packaged in a polypropylene case; forceps included

02-214 Series

- Weight sets 500g and above come packaged in a wood case
- All weights come with a statement of accuracy

CERTIFICATIONS:

A NIST/NVLAP* weight calibration certificate or traceable certificate may be purchased to meet all of your ISO*, GLP, GMP, FDA, or nuclear requirements.

Individual Weights

	UltraClass* Weights			ANSI/ASTM* Class 1[1]			ANSI/ASTM Class 2[1]			ANSI/ASTM Class 3[1]			ANSI/ASTM Class 4[1]		
Size	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each
1mg	7037-0	**02-214X**	58.00	7037-1F	**02-319-1T**	53.30	7037-2F	**02-217-4A**	28.17	7037-3F	**02-215-20H**	25.00	----	----	----
2mg	7036-0	**02-214W**	58.00	7036-1F	**02-319-1R**	53.30	7036-2F	**02-217-4B**	28.17	----	----	----	----	----	----
5mg	7034-0	**02-214T**	58.00	7034-1F	**02-319-1Q**	53.30	7034-2F	**02-217-4C**	28.17	----	----	----	7034-4F	**02-215-51E**	21.13
10mg	7033-0	**02-214S**	58.00	7033-1F	**02-319-1P**	53.30	7033-2F	**02-217-3A**	28.17	----	----	----	7033-4F	**02-215-60A**	21.13
20mg	7032-0	**02-214R**	58.00	7032-1F	**02-319-1N**	53.30	7032-2F	**02-217-3B**	28.17	----	----	----	----	----	----
50mg	7030-0	**02-214P**	58.00	7030-1F	**02-319-1L**	53.30	7030-2F	**02-217-3C**	32.97	----	----	----	7030-4F	**02-215-60C**	21.13
100mg	7029-0	**02-214N**	58.00	7029-1F	**02-319-1K**	53.30	7029-2F	**02-217-3D**	32.97	7029-3F	**02-215-30D**	26.00	7029-4F	**02-215-60D**	21.13
200mg	7028-0	**02-214M**	58.00	7028-1F	**02-319-1J**	53.30	7028-2F	**02-217-3E**	32.97	----	----	----	----	----	----
300mg	7027-0	**02-214L**	54.33	----	----	----	----	----	----	----	----		----	----	----
500mg	7026-0	**02-214K**	58.00	7026-1F	**02-319-1H**	53.30	7026-2F	**02-217-3F**	32.97	7026-3F	**02-215-30F**	26.00	7026-4F	**02-215-60F**	21.13
1g	7025-0	**02-214J**	58.00	7025-1F	**02-319-1G**	53.27	7025-2F	**02-217-2A**	45.27	7025-3F	**02-215-25A**	41.25	7025-4F	**02-215-55A**	34.20
2g	7024-0	**02-214H**	58.29	7024-1F	**02-319-1F**	53.30	7024-2F	02-217-2B	47.28	----	----	----	7024-4F	**02-215-25**	34.20
3g	7023 0	**02-214G**	58.00	----	----	----	----	----	----	----	----	----	----	----	----
5g	7022-0	**02-214F**	58.00	7022-1F	**02-319-1E**	53.30	7022-2F	**02-217-2C**	47.28	7022-3F	**02-215-24**	41.00	7022-4F	**02-215-55C**	34.20
10g	7021-0	**02-214E**	58.00	7021-1F	**02-319-1D**	53.27	7021-2F	**02-217-2D**	51.51	7021-3F	**02-215-25D**	44.31	7021-4F	**02-215-55D**	37.22
20g	7020-0	**02-214D**	58.00	7020-1F	**02-319-1C**	53.57	7020-2F	**02-217-2E**	50.30	7020-3F	**02-215-25E**	44.00	7020-4F	**02-215-55E**	41.25
50g	7018-0	**02-214B**	68.00	7018-1F	**02-319-1B**	61.31	7018-2F	**02-217-2F**	58.29	7018-3F	**02-215-25F**	58.00	----	----	----
100g	7017 0F	**02-214A**	84.00	7017-1F	**02-319-1A**	75.38	7017 2F	**02-217-2G**	70.35	7017-3F	**02-215-25G**	70.00	7017-4F	**02-215-55G**	59.75
200g	7016-0F	**02-215-76**	131.00	7016-1	**02-215-77**	115.42	7016-2	**02-215-78**	106.40	----	----	----	7016-4	**02-215-93**	90.45
500g	7014-0F	**02-215-94**	187.00	7014-1	**02-215-95**	166.62	----	----	----	7014-3	**02-215-97**	150.56	----	----	----
1kg	7013-0F	**02-215-99**	387.48	7013-1	**02-215-100**	353.44	----	----	----	----	----	----	7013-4	**02-215-103**	174.74
2kg	7012-0F	**02-215-104**	615.00	7012-1	**02-215-105**	557.00	----	----	----	----	----	----	----	----	----
5kg	----	----	----	7010-1	**02-215-110**	835.00	----	----	----	----	----	----	----	----	----

LOOKING FOR WEIGHT CASES?

To find cases with grip handle weights,

Visit www.fishersci.com and search for Troemner Cases

LOOKING FOR MORE BALANCE ACCESSORIES?

We carry a full range of Fisherbrand* weighing paper, funnels, weighing dishes, brushes and forceps. For more information and to order,

Visit www.fishersci.com and search for Fisherbrand Balance Accessories

*Trademark. See Trademark Reference.

Prices subject to change.

Troemner Calibration Weights and Weight Sets, Contd.

02-319D

Weight Sets

	UltraClass Weights			ANSI/ASTM Class 1[1]			ANSI/ASTM Class 2[1]			ANSI/ASTM Class 3[1]			ANSI/ASTM Class 4[1]		
Size	**Mfr. No.**	**Cat. No.**	**Each**	**Mfr. No.**	**Cat. No.**	**Each**	**Mfr. No.**	**Cat. No.**	**Each**	**Mfr. No.**	**Cat. No.**	**Each**	**Mfr. No.**	**Cat. No.**	**Each**
1mg to															
100g	7228 0	**02-214-3C**	933.00	7228-1F	**02-319D**	814.00	7228-2F	**02-216**	684.00	7228-3F	**02-215-20C**	615.00	7228-4F	**02-215-51C**	412.00
200g	----	----	----	7223-1	**02-215-115**	857.00	7223-2	**02-215-116**	722.00	7223-3	**02-215-117**	657.00	7223-4	**02-215-118**	447.00
200g[2]	7221-0	**02-215-119**	1092.00	7221-1	**02-215-120**	940.00	----	----	----	----	----	----	----	----	----
500g	----	----	----	7219-1	**02-215-125**	1435.00	----	----	----	----	----	----	----	----	----
10mg to															
50g	7231 0	**02-214-3E**	445.10	7231 1F	**02-319H**	660.00	----	----	----	7231-3F	**02-215-20A**	527.00	7231-4	**02-215-50A**	368.46
100g	7226 0	**02-214-3B**	860.00	7226-1F	**02-319B**	715.00	7226-2F	**02-217B**	604.00	7226-3F	**02-215-20B**	538.00	----	----	----
1g to															
50g	7229 0	**02-214-3D**	339.20	7229-1F	**02-319G**	473.59	7229-2F	**02-217-1A**	414.00	----	----	----	7229-4F	**02-215-51A**	281.35
100g	7224 0	**02-214-3A**	586.00	7224-1F	**02-319A**	490.27	7224-2F	**02-217-1B**	434.54	----	----	----	7224-4F	**02-215-51B**	292.37

[1] For information on certifying weights, see p. 98.
[2] Set includes two 200g weights.

OIML Class M_2 Weight Sets

For routine analytical weighings where absolute precision is not required

Choose from five sets:

- 1 to 100mg weights are aluminum; 200 and 500mg weights are stainless steel
- Weights over 1g in mass feature brass construction and are accurate to within OIML Class M_2 tolerances
- Mfr. Nos.: 318, 31110, 312, 313, 338F

INCLUDES:
Polypropylene box with cover; 1 to 500mg set includes forceps.

02-301-5E

	Gram Weights											Fractional Weights (mg)										
Description	**2000**	**1000**	**500**	**200**	**100**	**50**	**20**	**10**	**5**	**2**	**1**	**500**	**200**	**100**	**50**	**20**	**10**	**5**	**2**	**1**	**Cat. No.**	**Each**
1 to 500mg	----	----	----	----	----	----	----	----	----	----	----	1	2	1	1	2	1	1	2	1	**02-278**	36.50
10mg to 100g	----	----	----	----	1	1	2	1	1	2	1	1	2	1	1	2	1	----	----	----	**02-301-5B**	41.00
1 to 500g	----	----	1	2	1	1	1	2	1	2	1	----	----	----	----	----	----	----	----	----	**02-301-5C**	71.37
1 to 1000g	----	1	1	2	1	1	1	2	1	2	1	----	----	----	----	----	----	—	----	----	**02-301-5D**	112.00
1 to 2000g	1	1	1	2	1	1	1	2	1	2	1	----	----	----	----	----	----	----	----	----	**02-301-5E**	184.00

Traceability and NIST*/NVLAP* Weight Calibration Certificates

For an additional charge, all Troemner weights and weight sets can be supplied with a Traceablility or NIST/NVLAP Weight Calibration Certificate.

The Traceability Certificate assures that calibrated weights are within the tolerance for their class. It documents the owner's name, address and purchase order number; date of calibration; the individual weights or range of weights in the set; tolerance class; and weight construction details. It also certifies that the nominal values of the weights are within correct NIST, ASTM* or OIML tolerances and identifies the NIST test numbers of Troemner's master weights. **To order, add a "T" to the end of the catalog number (e.g., 02-215-17A becomes 02-215-17AT).**

The NIST/NVLAP Weight Calibration Certificate contains the most comprehensive data. It documents the owner's name and address; date of calibration; equipment and standards used in calibration; accuracy class; true mass value (mass in a vacuum); "as found" mass correction (for recalibration); "as left" mass corrections for each weight; uncertainty of measurement process for each weight; environmental conditions during test; weight construction and density; calibration procedures used; statement of traceability; and a helpful list of terms and definitions. The procedures and processes used to generate this certificate, as well as its format and content, are prescribed by the NIST-administered National Voluntary Laboratory Accreditation Program (NVLAP) and meet all ISO*, FDA, GMP, GLP, DOD, ANSI*/NCSL Z540-1 and nuclear requirements. **To order, add a "C" to the end of the catalog number.**

Calibration and certification services, as well as density determinations on existing weights, are available on request.

For ordering assistance, and for current pricing on weights with traceability and calibration certificates, call your Fisher Scientific Customer Service Representative.

Troemner UltraClass* Calibration and Certification Services

Troemner—an ISO 9001 registered and NIST/NVLAP[1] and UKAS accredited laboratory—offers UltraClass calibration and certification services to help you meet today's exacting requirements of ISO, FDA, GMP, GLP, DOD, and Nuclear regulations. All measurements are performed in Troemner's state-of-the-art laboratories. NIST/NVLAP and UKAS certification is available on new weights and sets or when you need recertification of existing weights and sets from any manufacturer. **Contact your Fisher Scientific Customer Service Representative for details.**

[1] *Accredited by the National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code 105013.*

Metric Weight Tolerances

The values listed here are for reference purposes only. They are not product specifications.

Weight	UltraClass* Weights Single	ANSI/ASTM Class 1[1] Single	ANSI/ASTM Class 2[1] Single	ANSI/ASTM Class 3[1] Single	ANSI/ASTM Class 4[1] Single	NIST 105-1 Class F[2] Single	OIML Class M[2,3] Single	OIML Class E2 Single
30kg	45mg	75mg	150mg	300mg	600mg	3.0g	----	----
25	37	62	125	250	500	2.5	----	----
20	30	50	100	200	400	2.0	3000mg	30mg
10	15	25	50	100	200	1.0	1500	15
5kg	7mg	12mg	25mg	50mg	100mg	500mg	750mg	7.5mg
3	4.5	7.5	15	30	60	300	----	----
2	3	5.0	10	20	40	200	300	3.0
1	1.5	2.5	5.0	10	20	100	150	1.5
500g	0.7mg	1.2mg	2.5mg	5.0mg	10mg	70mg	75mg	0.75mg
300	0.45	0.75	1.5	3.0	6.0	60	----	----
200	0.3	0.50	1.0	2.0	4.0	40	30	0.30
100	0.15	0.25	0.50	1.0	2.0	20	15	0.15
50g	0.07mg	0.12mg	0.25mg	0.60mg	1.2mg	10mg	10mg	0.10mg
30	0.044	0.074	0.15	0.45	0.90	6.0	----	----
20	0.044	0.074	0.10	0.35	0.70	4.0	8	0.080
10	0.03	0.050	0.074	0.25	0.50	2.0	6	0.060
5g	0.02mg	0.034mg	0.054mg	0.18mg	0.36mg	1.5mg	5mg	0.050mg
3	0.02	0.034	0.054	0.15	0.30	1.3	----	----
2	0.02	0.034	0.054	0.13	0.26	1.1	4	0.040
1	0.02	0.034	0.054	0.10	0.20	0.90	3	0.030
500mg	0.005mg	0.010mg	0.025mg	0.080mg	0.16mg	0.72mg	2.5mg	0.025mg
300	0.005	0.010	0.025	0.070	0.14	0.61	2.0	----
200	0.005	0.010	0.025	0.060	0.12	0.54	2.0	0.020
100	0.005	0.010	0.025	0.050	0.10	0.43	----	0.015
50mg	0.005mg	0.010mg	0.014mg	0.042mg	0.085mg	0.35mg	----	0.012mg
30	0.005	0.010	0.014	0.038	0.075	0.30	----	----
20	0.005	0.010	0.014	0.035	0.070	0.26	----	0.010
10	0.005	0.010	0.014	0.030	0.060	0.21	----	0.008
5mg	0.005mg	0.010mg	0.014mg	0.028mg	0.055mg	0.17mg	----	0.006mg
3	0.005	0.010	0.014	0.026	0.052	0.14mg	----	----
2	0.005	0.010	0.014	0.025	0.050	0.12	----	0.006
1	0.005	0.010	0.014	0.025	0.050	0.10	----	0.006

[1] *As per ASTM E 617.*

[2] *As per Handbook 105-1. Class F tolerances are rounded to two significant figures.*

[3] *Also called International Recommendation R111.*

Mettler Toledo* Analytical Individual Weights, ASTM* Class 1

Low magnetic permeability and high corrosion resistance for reliable stable values

- Two-piece screw-knob construction
- 1 to 20mg weights are sheet weights made of aluminum
- 50 to 500mg weights are sheet weights made of steel
- 1g to 5kg weights are knob weights made of steel

01-915-4 Series

Nominal Mass	Mfr. No.	Cat. No.	Each
With Certificate			
1mg	11117011	**01-915-462**	95.33
2mg	11117021	**01-915-463**	95.33
5mg	11117031	**01-915-464**	95.33
10mg	11117041	**01-915-465**	95.33
20mg	11117051	**01-915-466**	95.33
50mg	11117061	**01-915-467**	95.33
100mg	11117071	**01-915-468**	95.33
200mg	11117081	**01-915-469**	95.33
500mg	11117091	**01-915-470**	95.33
1g	11117101	**01-915-471**	95.33
2g	11117111	**01-915-472**	95.33
5g	11117121	**01-915-473**	95.33
10g	11117131	**01-915-474**	95.33
20g	11117141	**01-915-475**	95.33
50g	11117151	**01-915-476**	102.00
100g	11117161	**01-915-477**	114.00
200g	11117171	**01-915-478**	223.00
500g	11117181	**01-915-479**	288.00
1kg	11117191	**01-915-480**	513.00
5kg	11117211	**01-915-482**	1116.00
Without Certificate			
1mg	11117010	**01-915-434**	49.21
2mg	11117020	**01-915-435**	51.21
10mg	11117040	**01-915-437**	51.21
50mg	11117060	**01-915-439**	51.21
100mg	11117070	**01-915-440**	51.21
200mg	11117080	**01-915-441**	51.21
500mg	11117090	**01-915-442**	51.21
1g	11117100	**01-915-443**	51.21
2g	11117110	**01-915-444**	51.21
5g	11117120	**01-915-445**	51.21
10g	11117130	**01-915-446**	51.21
20g	11117140	**01-915-447**	51.21
50g	11117150	**01-915-448**	59.00
200g	11117170	**01-915-450**	141.00

ACCESSORIES

Tweezers for Analytical and Calibration Weights

Metal with carbon reinforced nylon.

For Use with	Length	Cat. No.	Each
1mg to 20g Weights	4½" (115mm)	**01-915-378**	37.16
20 to 200g Weights	7⅞" (200mm)	**01-915-379**	51.21

Mettler Toledo* Calibration Weights

Stainless steel with low magnetic permeability, high corrosion resistance

- Cylindrical with two-piece sealed-plug construction
- 100g to 1kg weights have straight cylinder shape
- 1.5 to 5kg weights have grooved cylinder shape
- 10 to 30kg weights have cylinder shape with grip handle

01-915-4 Series

ASTM* Class 1 Weights

Nominal Mass	Mfr. No.	Cat. No.	Each
With Certificate			
100g	11119011	**01-915-417**	98.00
150g	11119021	**01-915-418**	147.00
200g	11119041	**01-915-420**	147.00
500g	11119071	**01-915-423**	172.00
1kg	11119081	**01-915-424**	195.00
1.5kg	11119091	**01-915-425**	235.00
2kg	11119101	**01-915-426**	243.00
3kg	11119111	**01-915-427**	307.00
4kg	11119121	**01-915-428**	362.00
5kg	11119131	**01-915-429**	378.00
20kg	11119221	**01-915-431**	1029.00
Without Certificate			
100g	11119010	**01-915-400**	54.19
200g	11119040	**01-915-403**	60.21
500g	11119070	**01-915-406**	90.00
1kg	11119080	**01-915-407**	107.00
2kg	11119100	**01-915-409**	126.00
3kg	11119110	**01-915-410**	195.00
4kg	11119120	**01-915-411**	247.00
5kg	11119130	**01-915-412**	265.00
10kg	11119210	**01-915-413**	623.00
25kg	11119230	**01-915-415**	1061.00
30kg	11119240	**01-915-416**	1252.00

ASTM* Class 4 Weights

Nominal Mass	Mfr. No.	Cat. No.	Each
With Certificate			
100g	11119511	**01-915-507**	86.00
1kg	11119581	**01-915-514**	171.00
1.5kg	11119591	**01-915-515**	215.00
2kg	11119601	**01-915-516**	222.00
5kg	11119631	**01-915-519**	314.00
10kg	11119711	**01-915-520**	528.00
25kg	11119731	**01-915-522**	821.00
Without Certificate			
100g	11119510	**01-915-490**	43.18
200g	11119540	**01-915-493**	49.21
500g	11119570	**01-915-496**	66.23
2kg	11119600	**01-915-499**	108.00
3kg	11119610	**01-915-500**	193.00
4kg	11119620	**01-915-501**	209.00
5kg	11119630	**01-915-502**	208.00
10kg	11119710	**01-915-503**	415.00
20kg	11119720	**01-915-504**	609.00
30kg	11119740	**01-915-506**	836.00

Denver Instrument* Calibration Weights and Weight Sets

Precision analytical and reference weights come with Certificate of Traceability

From reference standards in the most exacting laboratory work to student-teaching applications, these weights provide the accuracy and permanence you need.

- Every weight and weight set comes with a Certificate of Traceability to NIST* standards
- Gram weights feature one-piece, knob-style construction of nonmagnetic stainless steel; come in 1 to 100g masses
- Fractional flat weights from 1 to 5mg are made from aluminum; those from 10 to 500mg are stainless steel
- Weights conform to exacting individual and group tolerances for their classes

UltiMass* Weights: for stringent requirements

- Designed for use as laboratory reference standards to meet stringent ISO or GLP requirements
- Equivalent to OIML E2 standards (see Metric Weight Tolerance chart (on p. 98) and exceeding U.S. requirements for NIST Class 1 tolerances

ASTM* Classes 1 through 4: for high-precision weighings

02-225 Series

- Manufactured to meet or exceed tolerances established for their class in ASTM E 617
- Class 1 through 4 weights let you choose the degree of accuracy you need
- Individual weights are available in 30g to 5kg denominations
- Certificate of Traceability documents material, density and type of construction for each weight
- For additional charge, a Certificate of Calibration can be supplied

ORDERING INFORMATION:

For an additional charge, all weight sets can be purchased with calibration certificate; to order, contact your Fisher Scientific Customer Service Representative.

WHICH CLASS IS RIGHT FOR MY APPLICATION?

As a general rule, a balance should be calibrated using a weight with a Class tolerance factor greater than the readability of the balance. Example: a toploading balance with a readability of 0.01g may be calibrated with a weight having a known tolerance of at least ±0.009g (see Metric Weight Tolerances chart on p. 98).

UltiMass* and UltraClass* Weights. Meet or exceed OIML Class E2 standards. See individual product pages for details.

ASTM Class 1. Provides the greatest precision. Can be used as a reference standard in calibrating other weights and is appropriate for calibrating high-precision analytical balances (from 0.01 to 0.1mg).

ASTM Class 2. Appropriate for calibrating high-precision toploading balances with readabilities ranging from 0.001 to 0.01g.

ASTM Class 3. Appropriate for calibrating balances with moderate precision, ranging from 0.01 to 0.1g.

ASTM Class 4. Appropriate for student use and semi-analytical weighing.

Individual Weights

	UltiMass			ASTM Class 1			ASTM Class 2			ASTM Class 3			ASTM Class 4		
Nominal Mass	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each
1mg	869001.7	**02-225-041**	45.90	869001.1	**02-225-35A**	41.70	869001.2	**02-225-40A**	37.55	869001.3	**02-225-45A**	33.40	869001.4	**02-225-50A**	31.10
2mg	869002.7	**02-225-043**	45.90	869002.1	**02-225-35B**	41.70	869002.2	**02-225-40B**	37.55	869002.3	----	----	869002.4	**02-225-50B**	31.10
5mg	869005.7	**02-225-045**	45.90	869005.1	**02-225-35C**	41.70	869005.2	**02-225-40C**	37.55	869005.3	----	----	869005.4	**02-225-50C**	31.10
10mg	869010.7	**02-225-047**	45.90	869010.1	**02-225-35D**	41.70	869010.2	**02-225-40D**	37.55	869010.3	**02-225-45D**	33.40	869010.4	**02-225-50D**	31.10
20mg	869020.7	**02-225-049**	45.90	869020.1	**02-225-35E**	41.70	869020.2	**02-225-40E**	37.55	869020.3	----	----	869020.4	**02-225-50E**	31.10
50mg	869050.7	**02-225-051**	50.05	869050.1	**02-225-35F**	45.90	869050.2	**02-225-40F**	40.65	869050.3	**02-225-45F**	36.50	869050.4	**02-225-50F**	34.20
100mg	869100.7	**02-225-053**	50.05	869100.1	**02-225-35G**	45.90	869100.2	**02-225-40G**	40.65	869100.3	**02-225-45G**	36.50	869100.4	**02-225-50G**	34.20
200mg	869200.7	**02-225-055**	50.05	869200.1	**02-225-35H**	45.90	869200.2	**02-225-40H**	40.65	869200.3	**02-225-45H**	36.50	869200.4	**02-225-50H**	34.20
500mg	869500.7	**02-225-057**	50.05	869500.1	**02-225-35J**	45.90	869500.2	**02-225-40J**	40.65	869500.3	**02-225-45J**	36.50	869500.4	**02-225-50J**	34.20
1g	820001.7	**02-225-027**	50.05	820001.1	**02-225-55A**	45.90	820001.2	**02-225-60A**	40.65	820001.3	**02-225-65A**	36.50	820001.4	**02-225-70A**	34.20
2g	820002.7	**02-225-029**	52.05	820002.1	**02-225-55B**	47.95	820002.2	**02-225-60B**	42.75	820002.3	**02-225-65B**	38.60	820002.4	**02-225-70B**	35.45
5g	820005.7	**02-225-031**	53.85	820005.1	**02-225-55C**	50.05	820005.2	**02-225-60C**	44.85	820005.3	**02-225-65C**	39.65	820005.4	**02-225-70C**	37.30
10g	820010.7	**02-225-033**	59.05	820010.1	**02-225-55D**	52.80	820010.2	**02-225-60D**	47.95	820010.3	**02-225-65D**	42.75	820010.4	**02-225-70D**	40.45
20g	820020.7	**02-225-036**	63.15	820020.1	**02-225-55E**	56.95	820020.2	**02-225-60E**	52.05	820020.3	**02-225-65E**	45.90	820020.4	**02-225-70E**	42.50
50g	820050.7	**02-225-038**	69.40	820050.1	**02-225-55F**	63.15	820050.2	**02-225-60F**	56.95	820050.3	**02-225-65F**	51.00	820050.4	**02-225-70F**	47.70
100g	820100.7	**02-225-039**	77.65	820100.1	**02-225-55G**	71.50	820100.2	**02-225-60G**	64.20	820100.3	**02-225-65G**	56.94	820100.4	**02-225-70G**	52.55

LOOKING FOR MORE BALANCE ACCESSORIES?

We carry a full range of Fisherbrand* weighing paper, funnels, weighing dishes, brushes and forceps. For more information and to order,

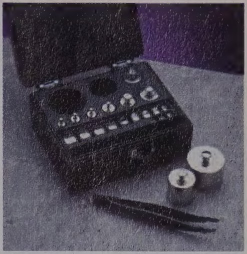
Visit www.fishersci.com and search for Fisherbrand Balance Accessories

Contd. on next page.

*Trademark. See Trademark Reference.

Weight Sets

Each set consists of aluminum and stainless-steel fraction weights from 1 to 500mg and stainless-steel knob-style weights from 1 to 100g


02-225 Series

	UltiMass			ASTM Class 1			ASTM Class 2			ASTM Class 3			ASTM Class 4		
Nominal Mass	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each
1mg to 100g	854254.7	**02-225-059**	1445.45	854254.1	**02-225-15A**	1373.50	854254.2	**02-225-20A**	960.90	854254.3	**02-225-25A**	645.00	854254.4	**02-225-30A**	605.00
10mg to 50g	855400.7	**02-225-061**	1366.75	855400.1	**02-225-15B**	987.55	855400.2	**02-225-20B**	972.20	855400.3	**02-225-25B**	535.00	855400.4	**02-225-30B**	503.15
10mg to 100g	854252.7	**02-225-063**	1329.80	854252.1	**02-225-15C**	1199.60	854252.2	**02-225-20C**	1136.30	854252.3	**02-225-25C**	793.30	854252.4	**02-225-30C**	525.00
1g to 50g	----	----	----	855600.1	**02-225-15D**	730.10	855600.2	**02-225-20D**	719.60	855600.3	**02-225-25D**	515.56	855600.4	**02-225-30D**	357.25
1g to 100g	854050.7	**02-225-067**	710.00	854050.1	**02-225-15E**	640.00	854050.2	**02-225-20E**	627.05	854050.3	**02-225-25E**	576.85	854050.4	**02-225-30E**	417.10
100g to 1kg	855100.7	**02-225-069**	625.00	855100.1	**02-225-8**	565.00	855100.2	**02-301-5F**	510.00	855100.3	**02-225-26P**	457.85	855100.4	**02-235**	427.70

Weight Set	No. of Weights	Nominal Value of Weights in Set
1mg to 100g	21	1mg, (2)2mg, 5mg, 10mg, (2)20mg, 50mg, 100mg, (2)200mg, 500mg, 1g, (2)2g, 5g, 10g, (2)20g, 50g, 100g
10mg to 50g	16	10mg, (2)20mg, 50mg, 100mg, (2)200mg, 500mg, 1g, (2)2g, 5g, 10g, (2)20g, 50g
10mg to 100g	17	10mg, (2)20mg, 50mg, 100mg, (2)200mg, 500mg, 1g, (2)2g, 5g, 10g, (2)20g, 50g, 100g
1 to 50g	8	1g, (2)2g, 5g, 10g, (2)20g, 50g
1 to 100g	9	1g, (2)2g, 5g, 10g, (2)20g, 50g, 100g
100g to 1kg	5	100g, (2)200g, 500g, 1kg

ACCESSORIES

*Fisherbrand** Polystyrene Antistatic Weighing Dishes

Disposable dishes are ideal for weighing, dispensing, or storing applications

- Contaminant-free, antistatic, biologically inert
- Resist dilute acids, aqueous solutions, alcohols, and bases
- Flat bottoms resist tipping
- Choose from standard style or pour boat weighing dishes
- Pour boats feature a molded spout for convenient pouring and dispensing and are made from 12mil thick polystyrene—20% thicker than most dishes on the market today—for better strength, stability, and handling ease
- Ideal for weighing static-affected materials

08-732-112 through -118

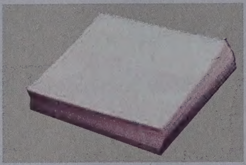
Size (L × W × H)	Bottom I.D.	Color	Cat. No.	Pack of	Case of
Standard Style					
1⅝ × 1⅝ × 5⁄16" (41 × 41 × 8mm)	1.4" (3.6cm)	Natural	**08-732-112**	500/64.01	8 Pk./ 453.20
3½ × 3½ × 1" (89 × 89 × 25mm)	2.4" (6.1cm)	Natural	**08-732-113**	500/70.42	----
3½ × 3½ × 1" (89 × 89 × 25mm)	2.4" (6.1cm)	Blue	**08-732-114**	500/79.86	----
5½ × 5½ × 1" (140 × 140 × 25mm)	3.86" (9.8cm)	Natural	**08-732-115**	500/138.77	----
Pour Boat					
1⅝ × 1¼ × 5⁄16" (41 × 32 × 8mm)	1.3" (3.3cm)	Natural	**08-732-116**	250/62.30	8 Pk./ 441.04
3½ × 5¼ × 1" (89 × 133 × 25mm)	2" (5.1cm)	Natural	**08-732-117**	250/90.39	----
4¾ × 7¾ × 1" (121 × 197 × 25mm)	3.85" (9.8cm)	Natural	**08-732-118**	250/127.01	----

Not for use over 90°C.

Fisherbrand* Low-Nitrogen Weighing Paper

For analytical balances

- Sufficient body to support sample
- Smooth textured to avoid trapping material
- Does not absorb moisture



09-898-12A

ORDERING INFORMATION:

500 sheets per pack

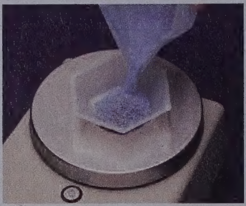
L × W	Cat. No.	Pack of 500	Case of 12 Pack
3 × 3" (76 × 76mm)	**09-898-12A**	23.54	241.41
4 × 4" (100 × 100mm)	**09-898-12B**	23.29	234.72
6 × 6" (150 × 150mm)	**09-898-12C**	24.72	222.86

Fisherbrand* Hexagonal Polystyrene Weighing Dishes

Hexagonal polystyrene design provides greater balance, protection and safety

For handling solids or liquids during weighing.

- Bend easily into pouring spouts to enable nonspill transfer
- Flat bottoms and sloping sides with 3/16" (4.8mm) inside corner radius ensure complete transfer
- Won't react to most substances
- Disposable
- Stack compactly for convenient storage and accessibility



02-202B

Bottom I.D.	Top I.D.	Depth	Approx. Weight	Cat. No.	Pack of 500	Case of
0.9" (2.4cm)	1.4" (3.6cm)	⅜" (0.95cm)	0.02 oz. (0.6g)	**02-202-100**	68.29	8 Pk./ 483.44
2" (5.1cm)	2.5" (6.4cm)	⅝" (1.5cm)	0.05 oz. (1.4g)	**02-202B**	88.35	6 Pk./ 467.50
3" (7.6cm)	4" (10.2cm)	⅞" (2.2cm)	0.14 oz. (4.0g)	**02-202C**	197.50	4 Pk./ 682.60
3.6" (9.2cm)	5.1" (13.2cm)	1¼" (3.2cm)	0.25 oz. (7.1g)	**02-202-103**	230.89	4 Pk./ 789.36

Not for use over 90°C.

Fisherbrand* Disposable Aluminum Dishes with Fluted Sides

Useful as evaporating and general utility dishes

- Larger sizes are ideal for food processing applications
- Inexpensive enough for single use
- Made of lightweight aluminum
- Flat bottoms
- Fluted or slightly fluted sides
- Flanged rims

08-732-108

08-732-1 Series

Capacity	Bottom I.D.	Top I.D.	Depth	Cat. No.	Pack of	Case of
Fluted Sides						
75mL	1.83" (4.6cm)	2.44" (6.2cm)	1.22" (3.1cm)	**08-732-107**	100/27.81	10 Pk./ 237.70
200mL	3.03" (7.7cm)	4.29" (10.9cm)	1.22" (3.1cm)	**08-732-108**	50/22.24	----
500mL	5.39" (13.7cm)	7.09" (18cm)	1.02" (2.6cm)	**08-732-109**	50/33.86	----
Slightly Fluted Sides						
20mL	1.57" (4.0cm)	1.71" (4.3cm)	0.53" (1.3cm)	**08-732-105**	100/25.52	10 Pk./ 218.10
60mL	2.32" (5.9cm)	2.52" (6.4cm)	0.75" (1.9cm)	**08-732-106**	100/32.08	12 Pk./ 329.00

LOOKING FOR MORE BALANCE ACCESSORIES?

We carry a full range of Fisherbrand* weighing paper, funnels, weighing dishes, brushes and forceps. For more information and to order,

Visit www.fishersci.com and search for Fisherbrand Balance Accessories

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Fisherbrand* Aluminum Weighing Dishes

With fluted sides

- Inexpensive aluminum dishes, ideal for weighing and dispensing
- Can serve as evaporating dishes or dust covers
- Lightweight, yet sturdy
- Convenient finger-grip handle can be etched prior to weighing for identification

08-732-100 through -104

With smooth sides

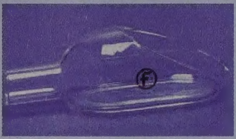
- Lightweight dishes with flanged rims
- Slightly sloping sides facilitate stacking
- Especially useful for materials that cannot easily be cleaned from dish surface

Capacity	Bottom I.D. × Top I.D.	Depth	Cat. No.	Pack of	Case of
With Fluted Sides					
20mL	1.75 × 2.01 (4.4 × 5.2cm)	0.53" (1.3cm)	**08-732-100**	100/24.51	10 Pk./209.50
42mL	2.01" (2.44")	0.67" (1.7cm)	**08-732-101**	144/27.05	56 Pk./1183.59
85mL	2.72" (3.03")	0.63" (1.6cm)	**08-732-102**	100/49.53	10 Pk./423.30
With Smooth Sides					
70mL	2.64" (2.87")	0.67" (1.7cm)	**08-732-103**	100/43.04	10 Pk./367.90
150mL	3.78" (4.02")	0.77" (2cm)	**08-732-104**	100/63.51	10 Pk./562.00

*Fisherbrand** Weighing Funnels

Weighing dish and sample transfer funnel in one

- Borosilicate glass funnels with tapered pouring necks aid micro-transfer of solids and liquids
- No rocking or moving while weighing—flat bottom keeps funnel steady while on balance
- Use in temperatures to 454°C (849°F)



14-353D

ORDERING INFORMATION:

Assortment pack of five includes one each of the following (Diameter × L): 10 × 35mm, 15 × 40mm, 20 × 45mm, 25 × 55mm and 32 × 68mm

Dia. × L	Cat. No.	Pack of 5
15 × 40mm	**14-353B**	60.33
25 × 55mm	**14-353D**	71.29
Assortment Pack	**14-353F**	79.04

*Fisherbrand** Weight Forceps

Plastic tips with small grooves near end for cradling knob of weight during transfer

- 33% glass-reinforced nylon
- Insoluble in ethanol
- Won't warp with use
- With removable locking device

114-742-09

Cat. No.	Pack of 12
11-474-209	37.80

Tradewinds Direct Weighing Funnels

Disposable polypropylene funnels in four different sizes

Serve as weighing dishes plus sample transfer funnels.

- Designed to lie flat on a weighing balance
- Place funnel directly on balance, weigh out needed solids or liquids, transfer sample into flask
- Pouring necks designed to easily fit in volumetric flasks and test tubes

ORDERING INFORMATION

Small funnels fit 5, 10, 25 and 50mL volumetric flasks. Medium funnels fit 100, 200 and 250mL flasks. Large funnels fit 500mL and 1L flasks. X-Large funnels fit 1 and 2L flasks.

17-988-4 Series

Funnel Size	Liquid Capacity	Solid Capacity	Cat. No.	Pack of	Case of
Small	2mL	2mL	**17-988-491**	50/35.08	22/491.76
Medium	7mL	10mL	**17-988-492**	50/37.03	12/379.83
Large	10mL	20mL	**17-988-493**	20/35.38	8/241.94
X-Large	25mL	60mL	**17-988-494**	10/38.93	6/199.62

Thermo Scientific* Hamilton* Epoxyn* Balance Table

Freestanding table diminishes effects of floor vibrations on sensitive balances

Does the job of conventional marble balance tables with the added advantages of high chemical resistance and easy cleanup. Made of 2½"-thick (6.4cm) cast slabs of white epoxy resin.

HM019945

ORDERING INFORMATION:

L × W × H (Overall): 24 × 35 × 31" (61 × 89 × 79cm). Net weight: 375 lb. (170kg). Delivery from stock.

NOTE:

Other colors available on special request. Contact your Fisher Scientific Customer Service Representative for details.

Description	Color	Cat. No.	Each
Full Table	White	**HM019945**	2360.73

Thermo Scientific* Hamilton* Epoxyn* Stabilizing Slab

Use where space limitations prevent use of balance table

For use on a benchtop. Just set slab on top of existing lab bench or desk. Substantially reduces vibrations that can affect performance of sensitive balances.

- White epoxy resin
- Chemical resistant
- Easy to clean

HM0199410 (balance not included)

ORDERING INFORMATION:

L × W × H (Overall): 20 × 13 × 2½" (51 × 33 × 6.4cm). Net weight: 46 lb. (21kg). Delivery from stock.

NOTE:

Other colors are available on special request. Contact your Fisher Scientific Customer Service Representative for details.

Cat. No.	Each
HM0199410	432.95

CAN'T FIND THE RIGHT PRODUCT?

Body Cushion* Vibration Damping and Isolation Pads provide dampening of vibration and noise.

Visit www.fishersci.com and search for Balances Vibration

Mettler Toledo* Balance Accessories

Antistatic Systems

U-shaped and Point Ionizer antistatic systems for discharging electrostatically charged samples prior to weighing

01-910-021

Use a high voltage to generate positively and negatively charged ions. Ions are attracted by the electrostatically charged object and neutralize the disruptive charge on the surface of the weighing sample. As a result, the forces that distort the weighing result also disappear.

U-shaped Ionizer

- Can be used with nearly all balances and weighing substances
- Weighing sample or container is discharged by being passed through the U-shaped ionizer when the balance is loaded; sample is neutralized in seconds
- Weighing pan remains accessible
- No drafts in weighing chamber

Point Ionizer

- Ideal for use with powdery, toxic samples
- Discharges even the smallest objects
- Probe easily inserted into containers—flexible cable enables fastening in any position simply and easily

INCLUDES:

High-voltage power pack with both models.

Description	Mfr. No.	Cat. No.	Each
U Ionizer			
With Warning Light	110041	**01-910-021**	1433.00
Without Warning Light	110042	**01-910-022**	1114.00
Point Ionizer			
With Warning Light	110044	**09-320-40**	1008.00
Without Warning Light	110089	**09-320-41**	690.00

In-Use Balance Covers

Protect control panels from accidental spills

For Model(s)	Mfr No.	Cat. No.	Each
AT, UMT2, MT5	210422	**01-910-30**	30.12
AB-S, PB-S, B154-S	11103681	**01-945**	29.12
PB153, PB303, PB303DR	224007	**01-913-645**	29.12
PB302, PB602, PB1502, PB3002, PB3002DR, PB801, PB1501, PB3001	224008	**01-913-644**	29.12
SB8001, SB12001, SB16001, SB16001DR, SB8000, SB16000	230018	**01-913-647**	29.12
SB24001DR, SB32001DR, SB32000	230019	**01-913-646**	29.12
PG-S	11101338	**01-918-89**	29.12
XS terminal (terminal only)	11106870	**01-916-227**	28.12
XP terminal (terminal only)	11132570	**09-320-105**	35.00
Weighing platform "S," 10mg / 0.1g models (platform only)	11133034	**09-320-106**	40.00
Weighing platform "M" (platform only)	11132574	**09-320-107**	39.00
XS balance with "S" platform, 10mg / 0.1g models (whole balance)	11132571	**09-320-108**	47.00
XS balance with "M" platform (whole balance)	11132572	**09-320-109**	55.00
XS terminal attached to an "L" platform (terminal only)	11132573	**09-320-110**	53.00

LOOKING FOR METTLER TOLEDO* MOISTURE ANALYZERS?

Mettler Toledo* HR 83, HG 63, and HB 43-S Halogen Moisture Analyzers can be found on pp. 82-83.

LocalCAN Cables

Interface, extension, and junction cables

Use to connect balance to peripherals.

01-911-153C

Interface Cables†

- One end has 4-pin connector that connects to LocalCAN universal interface on balance
- Other end has connector shown in chart

Extension Cables

- Both ends have 4-pin LocalCAN connectors
- Connect one end to AG, PR, or SR series balance; connect other end to interface cable

T-Junction Cable

- Links peripherals in multi-peripheral LocalCAN network
- All three ends have 4-pin LocalCan connections

NOTE:

AB, AG, PR, and SR series balances and HR83P Moisture Analyzer must be equipped with accessory LC-B LocalCAN universal interface (01-911-153B, available online) to use the interface cables. PG-S, XS, XP, and AX series balances must be equipped with optional LocalCan interface. (PG-S requires LC-G interface 01-918-91; XS/XP requires 09-320-113; AX requires 09-320-114.)

Connector	Length	For Connection To	For Balance Models	Mfr. No.	Cat. No.	Each
Interface Cables						
DB25†	5' (1.5m)	RS-232-C interface	AG, PR, SR	LC-RS25	**01-911-153C**	153.00
DB9 Female	5' (1.5m)	RS-232-C interface	AG, PR, SR	LC-RS9	**01-911-153D**	169.00
CL	5' (1.5m)	Current loop devices	AG, PR, SR	LC-CL	**01-911-153E**	142.00
Extension Cables						
----	16' (2m)	----	AG, PR, SR	LC-LC2	**01-911-153F**	57.00
----	16' (5m)	----	AG, PR, SR	LC-LC5	**01-911-153G**	63.00
T-Junction Cable						
----	----	----	All	LC-LCT	**01-911-153H**	68.00

† Supplied with both male and female connectors.

*Trademark. See Trademark Reference.

Mettler Toledo* Balance Accessories, Contd.

Printers

01-911-152A

Avoid transcription errors and ensure complete data records with these dot-matrix printers

GLP/GMP Application Printer (LC-P45)

- Connects to all Mettler Toledo* balances
- Dot-matrix, uses plain paper
- Prints and records data on calibration, sample identification, date, time, balance settings, and measurement results
- Prints results in selected unit of measure with correct sign in front
- Permits printing by identification number
- Can perform totaling, multiplication, and statistical evaluation, including number of weighings, average, standard deviation, minimum and maximum values, and difference—extremely useful in production applications
- Built-in clock with battery backup provides date and time even during power outages
- Prints 24 characters per line, 1 line per second
- LocalCAN and RS-232-C interface
- Dimensions (L × W × H): 7½ × 5⅞ × 3⅛" (19 × 15 × 8cm)
- Net weight: 4 7/16 lb. (2kg)
- Comes with connection cables, two "AA" batteries, two rolls of paper, operating instructions

Bluetooth* Interface Printer

- For Excellence* XS and Excellence Plus XP balances
- Dot-matrix, uses normal and adhesive paper
- Prints weighing results, regular adjustments and—depending on the balance—individual configuration application results
- Wireless Bluetooth technology (maximum range 10m)
- Speed: 24 characters per line, 1 line per second
- Dimensions (L × W × H): 8¼ × 6⅛ × 3⅜" (21 × 15.7 × 8.5cm)
- Net weight: 3 3/16 lb. (1.5kg)
- For 115-230V 50/60Hz (switch-selectable on 01-911-152A)

LocalCAN Interface Printer (LC-P43)

- Records calibration data and prints weight values for AG, PG, HG, HR, PR, SG and SR Series balances
- Also prints out all available information from AX, XP or XS Series balances, including data on sample identification, balance identification number, date, time, balance settings, and statistical evaluations
- Dot-matrix, plain paper
- Speed: 24 characters per line, 1 line per second
- LocalCAN universal interface cable
- Comes with two rolls of paper
- Dimensions (L × W × H): 7½ × 5⅞ × 3⅛" (19 × 15 × 8cm)
- Net weight: 4 7/16 lb. (2kg)

Compact Printer (RS-P26)

- For Classic Plus and Classic Lite balances
- Dot matrix printer
- GMP compliant
- Speed: 2.3 lines per second
- RS-232-C interface, 9-pin male connector
- Net weight: 2 lb. (0.9kg)
- Dimensions (L × W × H): 8¼ × 5 × 3" (21 × 12 × 7.3cm)

COMPLIANCE:
Meet GLP/GMP/ISO requirements

Printer Interface	Mfr. No.	Cat. No.	Price
GLP/GMP Application Printer	LC-P45	**01-911-152A**	Ea./1029.00
Bluetooth* Interface Printer	BT-P42	**01-991-410**	Ea./770.00
LocalCAN Interface Printer	LC-P43	**01-911-152B**	Ea./706.00
Compact Printer	RS-P26	**01-913-515**	Ea./580.00
Supplies			
Paper	72456	**01-910-78**	5/28.00
Ribbon	21615	**09-317-5**	5/55.20

Note: PR and SR balances have most LC-P45 printer functions already built into them. A better printer choice for these models is the LC-P43 (01-911-152B), which prints all of the specifications available from the balances. Calibration documentation and printing of balance number not available for BD and LJ16 Series balances. Interface is standard with Series AG, PR, and SR; optional accessory 01-911-153B is required for Series AB (discontinued), PB (discontinued), SB, and College B (discontinued); 01-918-91 is needed for PG-S Series.

LabX* Light Balance Software

For AG, AT, AX, MT, MX, PG-S, PR, SG, SR, UMT, UMX, XP, and XS Series microbalances and analytical balances

Easy data collection, full user guidance, export to Microsoft* Excel*, calibration management.

Balances Supported

XP, XS, AX, MX, UMX, AG, PR, SR, PG-S, SG, AT, MT, UMT, AB-S, PB-S, PB-L

Job Management

- Collect data without touching the computer (RapidAccess: XP, AX only)
- User guidance on the balance display
- Online view
- Support of weighing, differential weighing, dynamic weighing, interval weighing, totalization applications
- Balance settings management

Instrument Management

- Test and adjustment scheduler
- Instrument release control
- Calibration history
- Weights library

Data Management

- Data stored in SQL database
- Search/filter function
- Statistical evaluation
- Calculations
- Report generator
- Manual or automatic export to Microsoft Excel, Word* or other software packages

System

- One balance supported, connected via Ethernet or RS-232 interface
- Integrated help system
- Database back-up tool
- Software and documentation available in English, German and French

RECOMMENDED SYSTEM

Industry standard PC, Pentium* III 400 MHz, 256 MB RAM, 4 GB free hard disk space, 1024 x 768 screen resolution, Windows* 2000 (SP1) or Windows X.

Mfr. No.	Cat. No.	Each
11120317	**01-910-95**	925.00

Mettler Toledo* Balance Accessories, Contd.

Power Adapters

For AB (discontinued), AB-S, PB (discontinued), PB-S, SB, and College B (discontinued) series balances (115V supplied standard with balances).

For Balance Models	Voltage	Mfr. No.	Cat. No.	Each
AB, PB, SB, B	115V	228064	**09-313-152T**	114.00
AB, PB, SB, B	230V	228063	**09-313-152V**	119.00
AB-S, PB-S	115V	11103741	**09-320-116**	93.00
AB-S, PB-S	230V	11103745	**09-320-117**	93.00

Draft Chamber Kits

Plexiglas* shields

Can be assembled to fit around any Mettler Toledo* Series balance (09-313-152F will not fit SR Series balances).

L x W x H	Mfr. No.	Cat. No.	Each
18 × 25 × 25" (46 × 64 × 64cm)	110212	**01-910-68**	201.00
16 × 16 × 17" (41 × 41 × 43cm)	110539	**09-313-152F**	173.00

Weighing Scoops

For convenient transferring of powdered samples into narrow-necked flasks or bottles

01-914-36

Nickel alloy, scoop-shaped weighing dish.

Size	Mfr. No.	Cat. No.	Each
10g	4507	**01-914-36**	83.29
20g	4508	**01-914-38**	83.29

Ohaus* SF42 Impact Printer

Meets current standards for quality and verification

02-211-380

Coupled with an Ohaus balance featuring GLP functions, the SF42 Impact Printer provides a fully documented audit trail. Compatible with Ohaus balances equipped with RS-232 or USB interface.

Standard Features

- Dot matrix
- Compact design
- Quick and easy setup
- Ink ribbon prevents fading
- Self-test mode assures proper functionality
- Serial interface (RS-232 compatible)
- Prints 40 lines per minute, 42 characters per line

SPECIFICATIONS:

Power: 9VDC, 600mA, (center pin positive). Adapter: AC (110/120, 220/240 VAC) 50/60Hz. Operating temperature range: 32° to 104°F (0° to 40°C). Connector type: 25 Pin D type (Female). Baud rate: 1200, 2400, 4800, 9600. Data bit: 7 or 8. Parity: Even, odd or none. Stop bit: Auto select.

ORDERING INFORMATION:

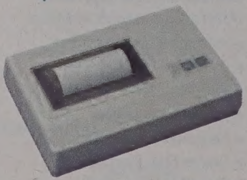
Dimensions (L × W × H): 7.3 × 4 × 3.7" (18.6 × 10.4 × 9.6cm). Weight (without internal paper roll): 1.3 lb. (0.59kg).

Mfr. No.	Cat. No.	Each
SF42	**02-211-380**	354.44

Denver Instrument* Balance Accessories

Dot-Matrix Printer

- Records on $2\frac{5}{16}$" (5.9cm) wide plain paper using an ink ribbon
- Prints up to 1.75 lines per second, 24 characters per line
- Adjustable serial settings, e.g. baud rate (from 150 to 19,200), parity and handshaking; standard 8 data bits and 1 stop bit
- Self-test makes printer easy to use



02-225-133

ORDERING INFORMATION:

Measures 4.2L × 6.3W × 1.6"H (10.6 × 16.0 × 4.0 cm). Net weight: 0.8 lb. (0.3kg).

INCLUDES:

AC Adapter (115V 50/60Hz), cable for connection with balance, one roll of paper, one ink cartridge, operations manual.

Description	Cat. No.	Each
Printer	**02-225-133**	342.60
Printer Paper	**01-913-52**	3.85
Printer Ribbon	**01-913-53**	13.15

BalanceTalk* XL Interface Software

Provides integration between balance and Microsoft* Excel*

Export data from the RS-232-C directly to an Excel* spreadsheet, saving data entry time and eliminating manual transcription errors.

- Preconfigured to interface with any Denver Instrument* balance (including moisture balances)
- Automatically interfaces with selected balance using factory defaults
- Allows addition of time and date to results to meet ISO/GLP requirements
- Prompts for name, product description or batch number for inclusion in spreadsheet
- Preconfigured for moisture analysis, density measurement and content uniformity applications

INCLUDES:

CD-ROM and operating instructions

Mfr. No.	Cat. No.	Each
902227.1	**02-225-136**	416.60

METTLER TOLEDO* ANTITHEFT DEVICE

For AB, PR, PB, SR, PG-S, SB, College B and BD Series Balances

Visit www.fishersci.com and search for 01-910-52 or 01-911-153L

Labconco* XPert* Easy-Order Balance Enclosure Systems

Low-profile enclosure systems provide user protection by containing powders, particulates, and fumes during weighing procedures

Containment Features

- Clean-Sweep* airfoil and upper containment sash keep contaminants from user
- Upper sash, upper dilution supply and side-entry airfoils dilute contaminant and enhance containment
- Perforated rear baffle promotes horizontal laminar flow

Operating Features

- 23D × 22¼"H (58 × 56.5cm) interior easily accommodates large toploading and analytical balances
- Made of static-dissipative tempered safety glass, steel, and aluminum
- Ergonomic 20° angled sash opens 8" (20.3cm)
- Hinged sash pivots up and locks at 20" (50.8cm) loading height

ORDERING INFORMATION:

Shipping weight: 2' models, 138 lb. (63kg); 3' models, 182 lb. (83kg); 4' models, 226 lb. (102.5kg). For 115V 60Hz.

INCLUDES:

XPert Balance Enclosure, FilterMate* Portable Exhauster with HEPA filter, black solid epoxy work surface, and either the Guardian* 1000 Digital or Guardian Jr. Airflow Monitor

REQUIRED ACCESSORIES:

Support base

COMPLIANCE:

ASHRAE* 110-1995

10-304-50 Series

Width	Mfr. No.	Cat. No.	Each
XPert Enclosure Systems with Guardian Jr. Airflow Monitor			
2' (61cm)	3960201	**10-304-51**	5860.00
3' (91cm)	3960301	**10-304-53**	6535.00
4' (122cm)	3960401	**10-304-55**	7925.00
XPert Enclosure Systems with Guardian 1000 Digital Airflow Monitor			
2' (61cm)	3960202	**10-304-52**	6670.00
4' (122cm)	3960402	**10-304-56**	8745.00

BAROMETERS

Fisher Scientific* Traceable* Precision Dial Barometer

Ideal for monitoring weather changes or environmental conditions in labs or plants

- Easy-to-read dial face is 4⅛" dia. (10.8cm) and is encased in a rugged, corrosion-proof nickel-chrome housing
- Manual pointer shows barometric change since last viewing
- Screw adjustment compensates for altitude

ORDERING INFORMATION:

Net weight: 1 lb. (0.45kg).

INCLUDES:

Notched desk stand and wall mount.

Fisher Scientific

14-648-51

CERTIFICATIONS:

Individually serial-numbered certificate from an ISO 17025 calibration lab to indicate instrument traceability to standards provided by NIST*.

Cat. No.	Each
14-648-51	89.13

Atmospheric Pressure	
Range	954 to 1073mbar, 715 to 805mmHg and 28.1 to 31.7"Hg
Resolution	0.5mbar, 0.05"Hg, and 0.5mmHg
Accuracy	±0.5% of the reading

Fisher Scientific* Traceable* Digital Barometer

Ideal for recording ambient conditions in the lab, monitoring differences that could affect sample analysis, and predicting weather changes

Combination unit simultaneously displays current barometric pressure, bar graph of barometric trends, humidity, temperature, and date or time. Switches permit setting in °F or °C, and "Hg or mbar. Use toggle switch to display the month and date.

- Electronic digital barometer has memory feature that automatically captures reading every hour—press HISTORY button to display the last 24 readings
- Bar graph shows current reading and the trend for the previous 1, 3, 6, 12, and 24 hours
- Visual indicator displays weather forecast of sunny, cloudy, or rainy

Fisher Scientific
86.0
46
29.9
8 20

02-400

ORDERING INFORMATION:
Measures 1L × 5¼W × 7¼"H (2.5 × 13 × 18cm).
Net weight: 10 oz. (283.5g).

INCLUDES:
Lab-bench stand, wall mount, and four "AAA" batteries.

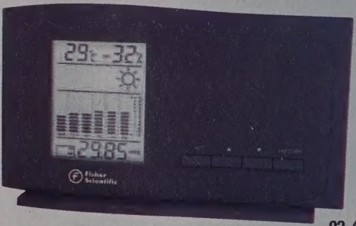
CERTIFICATIONS:
Traceable to standards provided by NIST*. Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA.

Cat. No.	Each
02-400	181.21

Atmospheric Pressure	
Range	23.45 to 31.01"Hg/794 to 1050mbar
Resolution	0.03"Hg (1mbar)
Accuracy	±0.1477"Hg/±5mbar
Altitude Compensation	0 to 2500m
Temperature	
Range	32° to 131°F/0° to +55°C
Resolution	0.90°F/0.50°C
Accuracy	±1°C/±1.8°F
Response	Updates every 9 seconds
Relative Humidity	
Range	10 to 98% RH
Resolution	1%
Accuracy	±5 RH
Response	Updates every 9 seconds
Time	A clock displays time to the minute in either AM/PM or military time

Fisher Scientific* Traceable* Compact Digital Barometer

Full-featured 4" high (10.2cm) barometer can sit on a counter or mount on wall—anywhere that's convenient and out of the way



02-401

- Measures atmospheric pressure every 15 minutes, temperature every 9 seconds and relative humidity every 9 seconds
- Stores hourly barometric readings and displays trends for previous 1, 3, 6, 12, and 24 hours in bar-chart format

ORDERING INFORMATION:
Measures 1L × 3¾W × 7"H (2.5 × 9.5 × 17.8cm).
Net weight: 7 oz. (198.4g).

INCLUDES:
Detachable base, wall-mounting bracket, and four "AAA" batteries.

CERTIFICATIONS:
Traceable to standards provided by NIST*. Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA.

Cat. No.	Each
02-401	142.24

Atmospheric Pressure	
Range	23.45 to 31.01"Hg/794 to 1050mbar
Resolution	0.03"Hg/1mbar
Accuracy	±0.1477"Hg/±5mbar
Adjustable Altitude Compensation	0 to 2500m
Temperature	
Range	23° to 131°F/-5° to +55°C
Resolution	1°
Accuracy	±2°F/±1°C
Response	Updates every 9 seconds
Relative Humidity	
Range	25 to 98% RH
Resolution	1%
Response	Updates every 9 seconds
Accuracy	±5 RH

LOOKING FOR MORE?

For more barometers (including additional traceable barometers),

Visit www.fishersci.com and search for Barometers

*Trademark. See Trademark Reference.

Prices subject to change.

Fisher Scientific* Traceable* Handheld Digital Barometer

Keep track of your environment and your time with this multifunctional handheld barometer

BARO
ALT.
TIME
Fisher Scientific

02-406

Measures and digitally displays atmospheric pressure, temperature, altitude, barometric pressure trends and the time of day—and it's a stopwatch, too. Clock displays time of day to the minute with date and month; also has 12/24-hour timing and alarm.

Barometer Features

- Barometric pressure readings are updated and displayed in either "Hg or mbar every 15 minutes
- Bar chart displays current reading and trend for 2, 4, 6, 8, 10 and 12 hours

Altimeter Features

- Minimum/maximum memory for altitudes reached during any time period
- Trends are presented and readings for previous 2, 4, 6, 8, 10 and 12 hours shown in bar-chart format

ORDERING INFORMATION:

Dimensions: ¾L × 2½W × 4"H (1.9 × 6.4 × 10.2cm)
Weight 3⅝ oz. (104g)

INCLUDES:

Supplied complete with lanyard and two button-cell batteries. Comes in rugged shock-resistant case.

CERTIFICATIONS:

Traceable to standards provided by NIST*. Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA.

Cat. No.	Each
02-406	198.50

Atmospheric Pressure	
Range	15.90 to 31.01"Hg/400 to 1070mbar
Resolution	0.03"Hg/1mbar
Accuracy	±0.1477"Hg/±8mbar
Adjustable Altitude Compensation	-500 to +7000m
Altimeter	
Range	-1640 to +22,965'/-500 to +7000m
Resolution	1m/1'
Response	Readings are updated every two seconds
Temperature	
Range	-40° to +158°F/-40° to +70°C
Resolution	0.1°
Accuracy	±2°F/±1°C
Response	Updates every 10 seconds
Time	
Range	Times events from 1 second to 99 hours, 59 minutes, 59 seconds
Resolution	1 second
Accuracy	0.01%

Fisher Scientific* Wireless Weather System

Complete professional weather station is perfect for industrial plants, labs, and schools

NW
Fisher Scientific

02-402

Allows user to monitor conditions, forecast weather, and check environmental air parameters. Main unit receives radio signal from remote wireless sensors, eliminating need for cables. Place main unit anywhere.

- Displays temperature, humidity, dew point, barometric pressure/pressure trend, weather forecast, wind direction/speed, wind chill, rainfall amount, and clock/calendar
- Programmable alarms for all measurements signal out-of-range conditions
- Serial data output permits linking to a computer for storing all information, making a permanent weather database, generating analysis, and studying trends
- 12/24-hour clock, time-of-day alarm, and month/date calendar

ORDERING INFORMATION:

Unit dimensions: 8 × 7 × 5½ × 1" (20 × 17.8 × 14 × 2.5cm)
Display dimensions: 6¾ × 3¼" (17.1 × 8.3cm)

INCLUDES:

Instructions, all equipment, all sensors (additional external sensors area available), AC adapter, and four "AA" backup batteries (eliminating concerns about power outages).

Cat. No.	Each
02-402	601.72

Temperature	
Indoor Range	23° to 122°F/-5° to +50°C
Outdoor Range	-4° to +140°F/-20° to +60°C
Resolution	0.1°
Relative Humidity	
Range	2 to 98%
Resolution	1% RH
Dew Point	
Indoor Range	32° to 120°F/0° to 49°C
Outdoor Range	14° to 140°F/-10° to +60°C
Resolution	1°C
Absolute Barometric Pressure†	
Range	23.48 to 31.01"Hg/794 to 1050mbar
Resolution	0.03"Hg/1mbar
Wind Speed	
Range	125.3mph (0 to 56m/sec., 202kph)
Resolution	0.1 unit

† Includes sea level reference, pressure trend indicator, and weather forecasting with symbols (sunny, cloudy, rainy).

CHOOSING A SYSTEM

Sample preparation (including thawing and viscosity studies)—Typically requires refrigerated/heated open baths with temperature ranges from -10 to +100°C and bath volumes up to 26L.

Immersion/submersion cooling/heating—Includes applications that require immersing or submersing beakers, test tubes, flasks or other glassware; enzyme assays; spectrophotometer cells; DNA curves; calibration; tissue baths; specific gravity testing and applications that require portable immersio heaters. Typically requires heated open baths with temperature ranges anywhere from ambient +5 to +200°C and bath volumes up to 46L.

Equipment cooling/heating—Required for refractometers, spectrophotometers, condensers, electrophoresis equipment, densitometers, and rotary evaporators. Depending on the application, can require refrigerated or heated bath circulators with temperature ranges anywhere from -50 to +280°C and up to 3kw cooling/2kw heating capacities.

External apparatus cooling/heating—Required for calibration, cloud point/pour point testing, and kinetics research: typically requires ultralow refrigerated o heated bath circulators with temperature ranges anywhere from -90 to +100°C and up to 3kw cooling/3kw heating capacities.

Highly demanding applications—Include jacketed reactors, large-scale evaporators, reaction calorimeters, and viscosity studies. Typically require precision temperature control with temperature ranges from ambient -80° to +200°C and up to 3kw cooling/2kw heating capacities.

BEFORE YOU BUY TEMPERATURE CONTROL PRODUCTS

APPLICATION	PRODUCT LINE	PRODUCT LINE	PRODUCT LINE
Sample preparation	Haake™ DC V Series		
Immersion/submersion cooling/heating	Haake™ DC W Series	Haake™ DC PPO Series	Haake™ DC Acrylic Series
Equipment cooling/heating	Haake™ C/DC Refrigerated/Heated	Neslab™ RTE Refrigerated/Heated	Haake™ Phoenix Refrigerated/Heated
External apparatus cooling/heating	Neslab™ ULT Ultralow Temp	Haake™ Phoenix Cryostats	
Highly demanding applications	Haake™ DynaMax Sealed Systems		

DynaMax

Temperature control products— including baths, circulators, chillers, and cryostats— are used by thousan of chemists, researchers and technicians in labs worldwide.

There are several key technical considerations for specifying temperature control equipment for applications found in the

- The required temperature ranges must always be considered.
- When samples need to be immersed in a bath, the dimensions of the water bath must also be taken into account.
- Conversely, when equipment is required to cool external applications, it is important to be sure that the circulator has sufficient cooling capacity.

In addition to technical specifications, we understand how important such factors as flexibility, precision, ease of use, and budget are when making a purchase decision. Whether you need a simple, cost-effective unit for a single application or a more sophisticated system for flexible, robust applications, we offer you a choice to select the best combination for your needs.

Thermo
SCIENTIFIC

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Thermo Fisher Scientific

For a full selection of Thermo Scientific® Temperature Control Products, see pp. 111-117, 121-125, 129-131, 139-140, 146.

BATHS

CIRCULATORS—SEALED SYSTEMS

Thermo Scientific* Haake* DynaMax* Refrigerating-Heating Circulators

Precision temperature control of high-end laboratory and pilot applications; combine rapid temperature changes with incredible stability

- Dissipate heat from exothermic chemical reactions faster than other products in their class
- Dynamic Heat Load Suppression (DHLS) technology offers faster reactions to temperature changes, maintains precise temperature stability
- Adapt precisely to your application needs, allowing you to perform more experiments in less time

Easy to Operate

- Easy to use, with intuitive menu programming
- Controller is programmable in seven languages, stores 10 ramping programs with 30 segments, saving you valuable programming time
- Systems are self-degassing and completely self-draining for greater ease of operation

Adaptable to Meet Application Needs

- Cover a wide temperature range, suitable for a variety of applications
- Modular design lets you configure system for a specific application and purchase only the options that you need

Enhanced Safety Features

- Closed-system architecture prevents hot fluids from contacting the atmosphere, eliminating fumes and icing at low temperatures
- DHLS technology protects system and application from potential damage
- If set limits are exceeded, system rapidly injects fluids from cold storage tank to bring system back within safety limits
- User can define upper and lower system temperature and pressure limits for improved application control and greater safety

Easy to Service

- Modular design promotes ease of service, lets you change out primary components quickly
- Self-test feature automatically runs through system parameters to ensure that the application performs as you expected, helps in diagnosis of system or application issues to keep you up and running

Model Selection

- DynaMax 1200 models have cooling capacity to 1200w; DynaMax 1700 models to 1700w
- 230V models have 2000w heating capacity; 208V models, 1600w capacity
- Temperature stability, ±0.01°K for all models
- Pump capacity of 20L/min. with oil, at 1.2 bar pressure; 25L/min. water, at 1.5 bar pressure
- Communicate via RS-232 or optional RS-485 connection
- 128 × 64 pixel LCD

Thermo
DynaMax

13-875-500

APPLICATIONS:

For use with, jacketed reactor vessels, large rotary evaporators, reaction calorimetry, fermentation, and analytical instrumentation cooling.

ORDERING INFORMATION:

Operating Temperature Range, 5° to 40°C/41° to 104°F. Fluid Connections, M30x1.5. Refrigerant, R404A. RS-232 port standard; optional RS-485 connection.

Models listed have air-cooled condenser. Additional models are available with air- or water-cooled condensers, standard or high-flowrate pumps, and capacities of 1200w, 1700w or 3000w. Consult your Fisher Scientific Customer Service Representative for details or visit our Web site.

WARRANTY:

Two years or 10,000 hours

COMPLIANCE:

CE, NRTL certified (CE, UL & CSA)

Model	DynaMax 1200		DynaMax 1700	
Cooling Capacity	1200w at 20°C, 50/60Hz; 900w at 0°C, 50/60Hz; 250w at -20°C, 50/60Hz		1700w at 20°C, 50/60Hz; 1250w at 0°C, 50/60Hz; 250w at -20°C, 50/60Hz; 150w at -40°C, 50/60Hz	
Pump Flowrate	20L/min. (oil); 25L/min. (water)		20L/min. (oil); 25L/min. (water)	
Pump Pressure	1.2bar (oil); 1.5bar (water)		1.2bar (oil); 1.5bar (water)	
Heat Output	1600w (60Hz models); 2000w (50Hz models)		1600w (60Hz models); 2000w (50Hz models)	
Temperature Range	-40° to +150°C		-45° to +150°C	
Temperature Stability	±0.01°K		±0.01°K	
Dimensions L x W x H	$27\frac{9}{16} \times 19\frac{9}{32} \times 27\frac{9}{16}$" (70 × 49 × 70cm)		$27\frac{9}{16} \times 19\frac{9}{32} \times 27\frac{9}{16}$" (70 × 49 × 70cm)	
Electrical Requirements	208V 60Hz	230V 50Hz	208V 60Hz	230V 50Hz
Cat. No.	**13-875-501**	**13-875-500**	**13-875-503**	**13-875-502**
Each	13,300.00	14,630.00	15,900.00	17,490.00

CIRCULATORS—REFRIGERATING

Thermo Scientific* Haake* Phoenix II Refrigerating Circulators

Large digital display; efficient heat removal at high temperatures

Microprocessor-controlled circulators for wide application range. User-friendly, programmable within minutes in six languages. Feature wide temperature range, high cooling capacity, powerful pressure/suction pump and choice of bath capacities.

Large displays with flexible interface

- Big LCD monitors with easily visible plain text display; resolution of 0.01°C, direct value setting at the display via numeric input
- 10 control keys for function and menu selection
- Informative icons let you know when cooling and/or heating are active, ramp function is operative, and if timer is activated on P2 models
- Visual alarms notify of shutdown at the first sign of excessively high temperature, motor overload, low liquid level
- Fault Identification System (FIS) clearly shows reason for any alarm, shuts off all safety-related parts

Choice of temperature ranges and capacities

- Lows of -28°, -30°, -35°, -40° or -50°C; highs of 150° or 200°C
- Capacities from 4.5 to 15L (1¼ to $3\frac{15}{16}$ gal.)
- CFC-free refrigerant
- Efficient heat removal and control of external closed liquid circuits at temperatures well below 0°C

Temperature control options

- Fuzzy Logic control with neural adaptation adjusts to varying thermal load, for the most demanding temperature control requirements
- Real Temperature Adjustment (RTA) corrects displayed temperature against measured value, ensuring compliance with ISO 9000 standards
- External Temperature Control (ETC) with connection for an external Pt100 sensor (sold separately) to regulate temperature
- Manufactured with ISO 9001: 2000-certified processes

Powerful pumps with flexible control

- Pressure and suction pumps with automatic speed recognition
- Turbulence Reduction System (TRS) automatically adjusts pump performance to viscosity of bath fluid

P1 Controller features:

- 16-bit processor technology
- Full programmability with ramping capabilities
- Temperature selection in Celsius, Fahrenheit, or Kelvin
- Simultaneous SET/ACTUAL display
- RS-232-C interface for connection to computer

P2 Controller adds:

- Three-point calibration
- Storage of up to 10 ramp programs, maximum of 30 segments
- Timer control to start and/or stop application
- RS-485 and RS-232-C interfaces

13-874-495

ORDERING INFORMATION:

Suitable for water, oil, alcohol or other standard bath media. P2 models accept optional Profibus interface for networked process control. Also available: Phoenix II Cryostats, with cooling to -90°C; see p.114

INCLUDES:

All come with two fittings (for 8 and 12mm tubing), bath cover, and extensive operations manual.

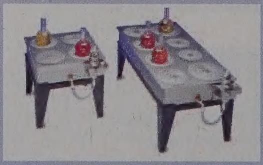
COMPLIANCE:

CE mark

Contd. on next page.

LOOKING FOR MORE BATHS?

Fisher Scientific offers a wide variety of baths for many applications. For general purpose baths, see p. 135. If you need water bath shakers, turn to p. 139. Specialty baths, including steaming baths, can be found on pp. 143-145.



Visit www.fishersci.com and search for Baths

Thermo Scientific* Haake* Phoenix II Refrigerating Circulators, Contd.

Model	**P1-C25P**	**P1-C30P**	**P1-C35P**	**P1-C40P**	**P1-C41P**	**P1-C50P**	**P2-C25P**	**P2-C35P**	**P2-C40P**	**P2-C50P[1]**
Capacity	1¼ gal. (4.5L)	3 5/32 gal. (12L)	2⅛ gal. (8L)	3 5/32 gal. (12L)	3 15/16 gal. (15L)	2⅛ gal. (8L)	1¼ gal. (4.5L)	2⅛ gal. (8L)	3 5/32 gal. (12L)	2⅛ gal. (8L)
Temperature										
Range	-28° to +150°C	-30° to +200°C	-35° to +200°C	-40° to +150°C	-40° to +150°C	-50° to +150°C	-28° to +150°C	-35° to +200°C	-40° to +150°C	-50° to +150°C
Accuracy	±0.01°C	±0.01°C	±0.01°C	±0.01°C	±0.01°C	±0.01°C	±0.01°C	±0.01°C	±0.01°C	±0.01°C
Display	Digital LCD	Digital LCD	Digital LCD	Digital LCD	Digital LCD	Digital LCD	Digital LCD	Digital LCD	Digital LCD	Digital LCD
Control	Fuzzy Logic	Fuzzy Logic	Fuzzy Logic	Fuzzy Logic	Fuzzy Logic	Fuzzy Logic	Fuzzy Logic	Fuzzy Logic	Fuzzy Logic	Fuzzy Logic
Capacity										
Heating	1200w	2000w	1200w	2000w	2000w	2000w	1200w	1200w	2000w	2000w
Cooling	300w at 20°C; 200w at 0°C; 70w at -20°C	800w at 20°C; 620w at 0°C; 40w at -20°C	400w at 20°C; 300w at 0°C; 150w at -20°C	700w at 20°C; 550w at 0°C; 300w at -20°C	1000w at 20°C; 750w at 0°C; 400w at -20°C	850w at 20°C; 700w at 0°C; 500w at -20°C	300w at 20°C; 200w at 0°C; 70w at -20°C	400w at 20°C; 300w at 0°C; 150w at -20°C	700w at 20°C; 550w at 0°C; 300w at -20°C	850w at 20°C; 700w at 0°C; 500w at -20°C
Pump										
Flowrate/ min.	24L/min. (6⅜ gal./min.)	24L/min. (6⅜ gal./min.)	24L/min. (6⅜ gal./min.)	24L/min. (6⅜ gal./min.)	24L/min. (6⅜ gal./min.)	24L/min. (6⅜ gal./min.)	24L/min. (6⅜ gal./min.)	24L/min. (6⅜ gal./min.)	24L/min. (6⅜ gal./min.)	24L/min. (6⅜ gal./min.)
Pressure	560mbar	560mbar	560mbar	560mbar	560mbar	560mbar	560mbar	560mbar	560mbar	560mbar
Suction	22L/min. (5⅞ gal./min.)	22L/min. (5⅞ gal./min.)	22L/min. (5⅞ gal./min.)	22L/min. (5⅞ gal./min.)	22L/min. (5⅞ gal./min.)	22L/min. (5⅞ gal./min.)	22L/min. (5⅞ gal./min.)	22L/min. (5⅞ gal./min.)	22L/min. (5⅞ gal./min.)	22L/min. (5⅞ gal./min.)
Reservoir L x W x D	4 × 5 × 6" (10 × 13 × 15cm)	8¾ × 5½ × 6" (22 × 14 × 15cm)	5½ × 8⅝ × 5⅞" (14 × 22 × 15cm)	11 13/32 × 5⅞ × 5⅞" (29 × 15 × 15cm)	6 × 5½ × 6" (15 × 29 × 20cm)	5½ × 8⅝ × 5⅞" (14 × 22 × 15cm)	4 × 5 × 6" (10 × 13 × 15cm)	5½ × 8⅝ × 5⅞" (14 × 22 × 15cm)	11 13/32 × 5⅞ × 5⅞" (29 × 15 × 15cm)	8¾ × 5½ × 6" (22 × 14 × 15cm)
Overall L x W x H	18⅞ × 10¼ × 24¾" (48 × 26 × 63cm)	14⅛ × 8¼ × 14½" (51 × 40 × 77cm)	20 × 15¾ × 30" (51 × 40 × 71cm)	20 × 15¾ × 30" (51 × 40 × 71cm)	14⅛ × 8¼ × 14½" (51 × 40 × 77cm)	20 × 15¾ × 30" (51 × 40 × 71cm)	18⅞ × 10¼ × 24¾" (48 × 26 × 63cm)	20 × 15¾ × 30" (51 × 40 × 71cm)	20 × 15¾ × 30" (51 × 40 × 71cm)	15¾ × 20 × 30" (40 × 51 × 77cm)
Electrical Reqts.	115V 60Hz	220V 60Hz	115V 60Hz	220V 60Hz	220V 60Hz	220V 60Hz	115V 60Hz	115V 60Hz	220V 60Hz	220V 60Hz
Net Weight	60 lb. (26.3kg)	101⅜ lb. (46kg)	88⅛ lb. (40kg)	90⅜ lb. (41kg)	99¼ lb. (45kg)	101⅜ lb. (46kg)	60 lb. (26.3kg)	88⅛ lb. (40kg)	90⅜ lb. (41kg)	101⅜ lb. (46kg)
Mfr. No.	440-0252	440-0309	440-0352	440-0409	440-0419	440-0509	441-0252	441-0352	441-0409	441-0509
Cat. No.	**13-874-483**	**13-872-121**	**13-874-495**	**13-874-493**	**13-874-490**	**13-874-496**	**13-874-492**	**13-874-494**	**13-874-491**	**13-874-489**
Each	4898.00	7765.00	5037.00	5857.00	8309.00	8735.00	5430.00	5569.00	6390.00	9268.00

[1] *Also available as programmable model with supplied time-linear temperature programs—four temperature ramps with up to six segments each permanently stored in memory. Contact your Fisher Scientific Customer Service Representative for details.*

LOOKING FOR BATH ACCESSORIES?

General bath accessories, as well as accessories for the products shown in this section, can be found online.

Visit www.fishersci.com and search for Bath Accessories

Thermo Scientific* Haake* Phoenix II Cryostat Baths

Achieve temperatures as low as -90°C

Microprocessor-controlled circulators for low-temperature applications. User-friendly, programmable within minutes in six languages. Feature wide temperature range, high cooling capacity, powerful pressure/suction pump and choice of bath capacities.

13-874-568

Large displays with flexible interface

- Big LCD monitors with easily visible plain text display, resolution of 0.1 or 0.01°C, direct value setting at the display via numeric input
- 10 control keys for function and menu selection
- Informative icons let you know when cooling and/or heating are active, ramp function is operative; and if timer is activated on P2 models
- Visual alarms notify of shutdown at the first sign of excessively high temperature, motor overload, low liquid level
- Fault Identification System (FIS) clearly shows reason for any alarm, shuts off all safety-related parts

Choice of temperature ranges and capacities

- Lows of -50°, -80°, or -90° C; highs of 100°C
- Capacities from 12 to 24L (3 3/16 to 6⅜ gal.)
- CFC-free refrigerant
- Efficient heat removal and control of external closed liquid circuits at temperatures well below 0°C

Temperature control options

- Fuzzy Logic control with neural adaptation adjusts to varying thermal load, for the most demanding temperature control requirements
- Real Temperature Adjustment (RTA) corrects displayed temperature against measured value
- Manufactured with ISO 9001: 2000-certified processes
- External Temperature Control (ETC) with connection for an external Pt100 sensor (sold separately) to regulate temperature

Powerful pumps with flexible control

- Pressure and suction pumps with automatic speed recognition
- Turbulence Reduction System (TRS) automatically adjusts pump performance to viscosity of bath fluid

P2 Controller features:

- 16-bit processor technology
- Full programmability with ramping capabilities
- Temperature selection in Celsius, Fahrenheit, or Kelvin
- Simultaneous SET/ACTUAL display
- 3-point calibration
- Storage of up to 10 ramp programs, maximum of 30 segments
- Timer control to start and/or stop application
- 1 to 2kw heating capacity
- RS-485 and RS-232-C interfaces

ORDERING INFORMATION:

Suitable for water, oil, alcohol or other standard bath media. P2 models accept optional Profibus interface for networked process control.

INCLUDES:

All come with two fittings (for 8 and 12mm tubing), bath cover, reservoir drain and extensive operations manual.

COMPLIANCE:

CE marked

Model	**P2-CT80L**	**P2-CT50L**	**P2-CT90W**
Capacity	3⅛ gal. (12L)	6⅜ gal. (24L)	3 15/16 gal. (15L)
Temperature			
Range	-80° to +100°C	-50° to +100°C	-90° to +100°C
Accuracy	±0.1°	±0.1°	±0.1°
Display	Digital LCD	Digital LCD	Digital LCD
Control	Fuzzy Logic	Fuzzy Logic	Fuzzy Logic
Capacity			
Heating	1000w	2000w	2000w
Cooling	800w at 20°C; 750w at 0°C; 700w at -20°C, 600w at -40°C, 500w at -60°C, 50w at -80°C	2500w at 20°C; 1750w at 0°C; 1100w at -20°C, 300w at -40°C	1900w at 20°C; 1700w at 0°C; 1500w at -20°C, 1300w at -40°C, 700w at -60°C, 200w at -80°C
Pump			
Flowrate	24L (6⅜ gal.)/min.	24L (6⅜ gal.)/min.	24L (6⅜ gal.)/min.
Pressure	560mbar	560mbar	560mbar
Suction	22L/min. (5⅞ gal./min.)	22L/min. (5⅞ gal./min.)	22L/min. (5⅞ gal./min.)
Reservoir Material	Stainless steel	Stainless steel	Stainless steel
Reservoir L x W x D	5½ × 8⅝ × 7⅞" (14 × 22 × 20cm)	10⅝ × 8⅝ × 7⅞" (27 × 22 × 20cm)	5⅞ × 8⅝ × 7⅞" (15 × 22 × 20cm)
Overall L x W x H	25 15/16 × 16½ × 40" (66 × 42 × 102cm)	29½ × 19 11/16 × 45 15/16" (75 × 50 × 109cm)	35 7/16 × 19 11/16 × 42 15/16" (90 × 50 × 109cm)
Net Weight	236 lb. (107kg.)	275 9/16 lb. (125kg.)	407⅞ lb. (185kg.)
Electrical Requirements	220V 60Hz 2500w	220V 60Hz 3Ph 3000w	220V 60Hz 3Ph 5300w
Mfr. No.	441-0809	446-0504	449-0904
Cat. No.	**13-874-564**	**13-874-560**	**13-874-568**
Each	16,362.00	21,265.00	27,708.00

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* Haake* C and DC Refrigerating Circulators

Efficient heat removal at high temperatures—choice of water, oil, alcohol bath media

Easy-to-use controllers feature wide temperature range, high cooling capacity, powerful pressure/suction pump and choice of bath capacities.

13-874-372

Choice of temperature ranges and capacities

- Lows of -10°, -28° or -35°C; highs of 100°, 150° or 200°C
- Capacities from 3 to 8L (¾ to 2⅛ gal.)
- Come in space-saving vertical configuration or ergonomic flat version
- CFC-free refrigerant
- Efficient heat removal and control of external closed liquid circuits at temperatures well below 0°C

Temperature control options

- Analog or PID control
- Real Temperature Adjustment (RTA) corrects displayed temperature against measured value
- Manufactured with ISO 9001: 2000-certified processes
- DC50 models have External Temperature Control (ETC) with connection for an external Pt100 sensor (sold separately) to regulate temperature
- Visual alarms that notify of shutdown at the first sign of excessively high temperature, motor overload, low liquid level
- Fault Identification System (FIS) clearly shows reason for any alarm, shuts off all safety-related parts

Powerful pumps with flexible control

- Pressure pumps with 300mbar pressure, 12.5L/min. maximum flowrate
- Turbulence Reduction System (TRS); automatically adjusts pump performance to viscosity of bath fluid

C10 Controller features:

- Analog control via rotary knob and fine adjustment control
- LED indicators for POWER ON, HEAT/CONTROL ON, FAULT
- Real Temperature Adjustment (RTA): corrects displayed temperature against any measured value
- Manufactured with ISO 9001: 2000-certified processes
- Fault Identification System

DC Controllers add:

- Microprocessor with PID control
- Touchpad and dual LED displays; show menu options and actual or set temperature selections separately, HEAT/CONTROL ON
- Separate LED and switch select from three stored fixed temperatures
- Resolution to 0.1 or 0.01°C
- DC30 and DC50 models have RS-232 interface (optional software available)
- DC50 models offer External Temperature Control (ETC) with connection for an external Pt100 sensor (sold separately) to regulate temperature

ORDERING INFORMATION:

Suitable for water, oil, alcohol or other standard bath media as recommended by the manufacturer. DC50 models accept optional RS-485 interface.

INCLUDES:

All circulators come with two fittings (for 8 and 12mm tubing), bath cover and operations manual. C10 models come with 0° to 100°C checking thermometer with 0.5°C divisions.

COMPLIANCE:

CE marked

Model	C10-K10	DC10-K10	C10-K20	DC10-K20	DC30-K20	DC50-K35[1]	DC30-K10	DC50-K10[1]	DC10-K15
Bath Capacity	1⅛ gal. (3L)	1⅛ gal. (3L)	1¼ gal. (4.5L)	1¼ gal. (4.5L)	1¼gal. (4.5L)	2⅛ gal.(8L)	1⅛ gal. (3L)	1⅛ gal. (3L)	1¼ gal. (4.5L)
Temperature									
Range	-10° to +100°C	-10° to +100°C	-28° to +100°C	-28° to +100°C	-28° to +150°C	-35° to +200°C	-10° to + 150°C	-10° to +150°C	-28° to +100°C
Accuracy	±0.04°C	±0.02°C	±0.04°C	±0.02°C	±0.01°C	±0.01°C	±0.01°C	±0.01°C	±0.02°C
Display	Analog/On-Off	Digital/PID	Analog/On-Off	Digital/PID	Digital/PID	Digital/PID	Digital/PID	Digital/PID	Digital/PID
Capacity									
Heating	1000w	1200w	1000w	1200w	1200w	1200w	2000/1200w	2000/1200w	2000/1200w
Cooling	240w	240w	320w	320w	320w	400w	240w	240w	300w
Pump									
Flowrate	12.5L (3 5⁄16 gal.)/min.	12.5L (3 5⁄16 gal.)/min.	12.5L (3 5⁄16 gal.)/min.	12.5L (3 5⁄16 gal.)/min.	12.5L (3 5⁄16 gal.)/min.	12.5L (3 5⁄16 gal.)/min.	12.5L (3 5⁄16 gal.)/min.	12.5L (3 5⁄16 gal.)/min.	12.5L (3 5⁄16 gal.)/min.
Max. Pressure	300mbar	300mbar	300mbar	300mbar	300mbar	300mbar	300mbar	300mbar	300mbar
Reservoir L x W x D	4 × 5 × 6" (10 × 13 × 15cm)	4 × 5 × 6" (10 × 13 × 15cm)	4 × 5 × 6" (10 × 13 × 15cm)	4 × 5 × 6" (10 × 13 × 15cm)	4 × 5 × 6" (10 × 13 × 15cm)	5½ × 8¾ × 6" (14 × 22 × 15cm)	4 × 5 × 6" (10 × 13 × 15cm)	4 × 5 × 6" (10 × 13 × 15cm)	4 × 5 × 6" (10 × 13 × 15cm)
Overall L x W x H	14¼ × 7¾ × 23" (36 × 19.5 × 57cm)	14¼ × 7¾ × 23" (36 × 19.5 × 57cm)	18 × 9 × 23" (46 × 23 × 58cm)	18 × 9 × 23" (46 × 23 × 58cm)	18 × 9 × 23" (46 × 23 × 58cm)	18⅛ × 15 × 26¾" (46 × 38 × 68cm)	14¼ × 1¾ × 23" (36 × 19.5 × 57cm)	14¼ × 1¾ × 23" (36 × 19.5 × 57cm)	18 × 15⅜ × 16⅛" (46 × 39 × 41cm)
Electrical Requirements	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz
Power Consumption	1300w	1500w	1400w	1600w	1600w	1700w	1200w	1200w	1600w
Net Weight	50 lb. (22.7kg)	50 lb. (22.7kg)	65¾ lb. (29.8kg)	65¾ lb. (29.8kg)	65¾ lb. (29.8kg)	81⅝ lb. (37kg)	50 lb. (22.7kg)	50 lb. (22.7kg)	67⅞ lb. (30.8kg)
Mfr. No.	425-1642	426-1642	425-1602	426-1602	426-3602	426-5352	426-3642	426-5642	426 1502
Cat. No.	**13-874-700**	**13-874-701**	**13-874-371**	**13-874-373**	**13-874-367**	**13-874-388**	**13-874-702**	**13-874-703**	**13-874-372**
Each	2732.00	3113.00	3177.00	3559.00	3994.00	4402.00	3549.00	4074.00	3559.00

[1] *Has built-in External Temperature Control with connection for external Pt100 sensor.*

Thermo Scientific* Haake* Open Circulating Baths

Stainless steel, 15 or 26L (4 or 6¾ gal.) capacities

Bath depth of 20cm (7⅞") accommodates large or long objects. Two-speed pump reduces turbulence. Compressor cooling unit eliminates need for tap-water source.

Model C10-V15/B features:

- Includes analog control
- Power ON/OFF switch

Models DC10-V15/B and DC-V26/B features:

- Digital PID control
- Three user-defined preset temperature settings
- RTA (Real Temperature Adjustment)
- FIS (Fault Identification System)

ORDERING INFORMATION:
All baths feature handles and built-in drain reservoir for easy handling and cleaning.

INCLUDES:
A bath bridge to fix the circulator onto the bath and a directable nozzle. C10-V15B has 0° to 100°C checking thermometer, with 0.5°C divisions.

13-874-380

Model	Haake C10-V15/B	Haake DC10-V15/B	Haake DC10-V26/B
Capacity	4 gal. (15L)	4 gal. (15L)	6¾ gal. (26L)
Range	-5° to +100°C	-5° to +100°C	-10° to +100°C
Accuracy	±0.02°C	±0.02°C	±0.04°C
Cooling	200w	200w	250w
Heating	1000w	1200w	1200w
Display	Analog	Digital/PID	Digital/PID
Flowrate	17L (4½ gal.)/min.	17L (4½ gal.)/min.	17L (4½ gal.)/min.
Reservoir L × W × D	7 × 11¾ × 7¾" (17.5 × 30 × 20cm)	7 × 11¾ × 7¾" (17.5 × 30 × 20cm)	13¾ × 11¾ × 7¾" (35 × 30 × 20cm)
Overall L × W × H	23¼ × 14⅛ × 15¾" (59 × 36 × 40cm)	23¼ × 14⅛ × 15¾" (59 × 36 × 40cm)	29½ × 14⅛ × 15¾" (75 × 36 × 40cm)
Net Weight	57½ lb. (2.1kg)	57½ lb. (2.1kg)	68⅜ lb. (31kg)
Power Consumption	1400w	1250w	1250w
Electrical Requirements	115V 60Hz	115V 60Hz	115V 60Hz
Mfr. No.	425-1532	426-1532	426-1562
Cat. No.	**13-874-356**	**13-874-380**	**13-874-381**
Each	3872.00	4132.00	4456.00

Thermo Scientific* Neslab* Ultralow-Temperature Circulators

Circulating temperatures down to -80° or -90°C

Powerful cascaded refrigeration system achieves temperatures down to -80° or -90°C, maintains excellent temperature stability (±0.03° or ±0.2°C), and provides faster cooling rates and higher heat removal capacities at low temperatures. The ULT-95 model features a unique sealed reservoir that includes a dry nitrogen bleed port to prevent moisture buildup and keep bath fluid dry.

Thermo SCIENTIFIC
ULT-80

13-265-171

- Digital temperature controller with RS-232 and analog interface ports
- Remote sensory capability
- User-adjustable high/low-temperature safety

ORDERING INFORMATION:
For 208-230V, 60Hz. Other voltages are available; contact your Fisher Scientific Customer Service Representative.

Model	Neslab ULT-80	Neslab ULT-95
Capacity	4 gal. (15.1L)	4 gal. (15.1L)
Temperature		
Range	-80° to +10°C	-90° to -30°C
Accuracy	±0.03°C	±0.2°C
Display	Digital/PID	Digital/PID
Capacity		
Cooling	250w at -70°C	340w at -80°C
Heating	1200w	1650w
Pump		
Type	Force/suction	Force/suction
Flowrate	10L (2.5 gal.)/min. at 0' head, 12' (3.7m) max.	16L (4.2 gal.)/min. at 0' head, 31' (9.4m) max.
Reservoir L x W x D	5⅜ × 7 × 9½" (13.7 × 17.8 × 24.1cm)	2" dia. fill port (5.1cm dia. fill port)
Overall L x W x H	17¾ × 27⅜ × 47½" (45 × 70 × 121cm)	21½ × 32⅛ × 48" (55 × 82 × 121.2cm)
Shipping Weight	336 lb. (152.4kg)	357 lb. (161kg)
Electrical Requirements	208-230V 60Hz, 16A	208-230V 60Hz, 22A
Mfr. No.	180104201600	179104241600
Cat. No.	**13-265-171**	**13-265-91**
Each	13,311.00	16,639.00

*Trademark. See Trademark Reference.

Thermo Scientific* Neslab* Refrigerated Circulators

13-873-302, -305, -310

- High cooling capacities (-25°/-40° to +150°/+200°C) make ultra-quick temperature changes possible
- Precise temperature stability (±0.01°C) provides repeatable results
- Compressor can operate over entire temperature range
- Lid design and nitrogen purge port minimize moisture buildup during low-temperature operation
- Units use CFC-free R-134A refrigerant
- State-of-the-art controller technology automatically ensures units perform at peak when necessary and save energy during lower demand
- Manufactured with ISO 9001: 2000-certified processes

Digital One Controller

- User-selectable resolution at 0.1° or 0.01°C
- User-adjustable low- and high-temperature alarm limits
- User-selectable fault conditions
- Automatic reservoir refill port
- Low reservoir fluid level shutoff

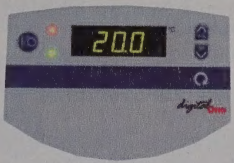
Digital Plus Controller

Same features as Digital One, plus:

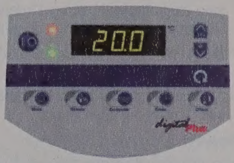
- Remote sensor port, RS-232 and RS-485 communication ports
- ON/OFF timer with clock
- Audible safety alarm with mute
- Temperature offset display

Pumps available in four capacities, all with small footprints to optimize bench space

- Strong pump circulates long distances or to open or closed containers
- Seamless stainless-steel tank resists corrosion and is easy to clean
- Reservoir drain permits quick and tidy fluid changes
- Drain allows tubing to be added after bath is filled
- Quick-release front grille makes condenser cleaning easy



Digital One Controller for 13-873-301, -305, -308, -312



Digital Plus Controller for 13-873-302, -306, -310, -315

ORDERING INFORMATION:

For 115V 50/60Hz. (Other voltages are available; contact your Fisher Scientific Customer Service Representative.)

Model	**Neslab RTE-7**	**Neslab RTE-10**	**Neslab RTE-17**	**Neslab RTE-740**
Bath Capacity	1⅞ gal. (7L)	2⅝ gal. (10L)	4½ gal. (17L)	1⅞ gal. (7L)
Temperature				
Range	-25° to +150°C	-25° to +150°C	-25° to +150°C	-40° to +200°C
Accuracy	±0.01°C	±0.01°C	±0.01°C	±0.01°C
Display	Digital/PID	Digital/PID	Digital/PID	Digital/PID
Capacity at 20°C				
Cooling	500w	500w	500w	800w
Heating	800w	800w	1600w	800w
Pump				
Flowrate	15L (4 gal.)/min. at 0' head, 16' max.	15L (4 gal.)/min. at 0' head, 16' max.	15L (4 gal.)/min. at 0' head, 16' max.	15L (4 gal.)/min. at 0' head, 16' max.
Pressure (max. head)	16' max.	16' max.	16' max.	16' max.
Reservoir L x W x D	6⅝ × 7¼ × 6" (17cm × 18cm × 15cm)	8¾ × 9⅜ × 6" (22 × 24 × 15cm)	8¾ × 9⅜ × 9" (22 × 24 × 23cm)	6⅝ × 7¼ × 6" (17cm × 18cm × 15cm)
Overall L x W x H	17½ × 9¼ × 23⅝" (44.5cm × 23.5cm × 60cm)	18⅞ × 11⅜ × 23⅝" (48 × 29 × 60cm)	18⅞ × 11⅜ × 26⅝" (48cm × 29cm × 68cm)	18⅞ × 11⅜ × 26⅝" (48cm × 29cm × 68cm)
Shipping Weight	63 lb. (28.6kg)	71 lb. (32.3kg)	74 lb. (33.6kg)	90 lb. (40.9kg)
Electrical Requirements	115V 60Hz, 12A	115V 60Hz, 12A	115V 60Hz, 16A	115V 60Hz, 16A
Digital One Models				
Mfr. No.	271103200000	272103200000	273103200000	274103200000
Cat. No.	**13-873-301**	**13-873-305**	**13-873-308**	**13-873-312**
Each	2594.15	2991.68	3124.12	3588.76
Digital Plus Models				
Mfr. No.	271103200100	272103200100	273103200100	274103200100
Cat. No.	**13-873-302**	**13-873-306**	**13-873-310**	**13-873-315**
Each	3257.95	3470.39	3623.74	4132.94

Fisher Scientific* Isotemp* Refrigerating Circulators

Excellent temperature control; choice of programmable, digital or standard controllers

High quality and value

- Answer demanding temperature control requirements in a wide variety of applications
- Built with strong pumps, robust cooling, powerful heaters and a small footprint to maximize benchspace
- Excellent choice as open bath to immerse samples or to pump to an external application

Multiple sizes, three controllers, twelve models

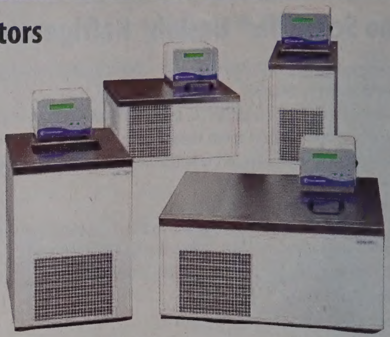
- Choose from 6L low profile, 6L upright, 13 and 28L baths, each available with one of three controllers
- Stainless-steel seamless deep-drawn reservoirs resist staining, are easy to clean; 13 and 28L reservoirs have built-in drain for easier cleaning

Choice of three easy-to-use controllers

- Programmable controller offers multistep programming: stores two 10-step programs with setpoint intervals from 0 to 999 hr., with stability and resolution of ±0.01° and wide temperature range
- Digital controller offers same precision, accuracy, and features without multistep ramping
- Standard controller offers temperature range, stability and resolution for less demanding applications

Powerful pump

- Industrial-grade pump delivers 10' (3m) of vertical pumphead for more efficient heat exchange; lets you locate circulator at a distance from application, or under lab bench
- Efficient reservoir agitation, better fluid uniformity even for heavy immersion loads
- For use with bath fluid that has viscosity of 50cS or less



From left to right: front, 13-874-11, 13-874-13, 13-874-7, 13-874-9, (see next page)

Built-in safety features

- Redundant user-adjustable thermostats plus overtemperature and low-liquid-level cutouts prevent temperature drift and thermal runaway
- Standard controller has visual alarm; digital and programmable controllers have audible/visual alarms
- Thermally protected pump: no burnout even if jammed

More cooling, faster heatup

- Oversized refrigeration system: excellent heat load removal
- Fine-tuned refrigeration metering for excellent stability under shifting heat loads
- Long-life high-wattage heaters for rapid fluid heatup; assure fluid compatibility, even when applications produce fluctuating temperatures
- Excellent temperature control for applications requiring refrigerated fluid work areas or pumping to an external application

Controller Bath Type	Programmable Controller Models			
Model	3006P[1]	3016P	3013P	3028P
Bath Capacity	1½ gal. (6L)	1½ gal. (6L)	3½ gal. (13L)	7⅜ gal. (28L)
Temperature				
Range[2]	-20° to +200°C (-4° to +392°F)	-20° to +200°C (-4° to +392°F)	-30° to +200°C (-22° to +392°F)	-25° to +100°C (-13° to +212°F)
Stability[3]	±0.01°C	±0.01°C	±0.01°C	±0.01°C
Control	PID	PID	PID	PID
Display				
Type	2-line LCD	2-line LCD	2-line LCD	2-line LCD
Resolution	0.1° or 0.01° in °C, °F, or °U	0.1° or 0.01° in °C, °F, or °U	0.1° or 0.01° in °C, °F, or °U	0.1° or 0.01° in °C, °F, or °U
Capacity				
Heating	800w	800w	800w	800w
Cooling[3,4]	90w at -10°C; 190w at 0°C; 350w at +20°C	90w at -10°C; 190w at 0°C; 350w at +20°C	200w at -20°C; 480w at 0°C; 660w at +20°C	175w at -20°C; 450w at 0°C; 700w at +20°C
Pump				
Type	Pressure	Pressure	Pressure	Pressure
Flowrate at 0psig[5]	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)
Reservoir L x W x D	5¼ × 8 × 6" (13 × 20 × 15cm)	5¼ × 8 × 6" (13 × 20 × 15cm)	5¼ × 9 × 8" (13 × 23 × 20cm)	11½ × 11¼ × 8" (29 × 29 × 20cm)
Overall L x W x H	15¾ × 18¾ × 15⅝" (40 × 48 × 40cm)	15¾ × 10 × 21⅝" (40 × 25 × 55cm)	17⅝ × 15 × 26⅛" (45 × 38 × 66cm)	22 × 27½ × 18⅝" (56 × 70 × 47cm)
Shipping Weight	79 lb. (36kg)	70 lb. (32kg)	112 lb. (51kg)	162 lb. (73kg)
Electrical Requirements	115V 60Hz, 15A	115V 60Hz, 15A	115V 60Hz, 20A	115V 60Hz, 20A
Cat. No.	**13-874-18**	**13-874-26**	**13-874-22**	**13-874-30**
Each	3999.00	3999.00	4123.00	4246.00

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[1] Low-profile model.

[2] Low-end temperatures and cooling capacities achieved using a fluid with a specific gravity of 0.5.

[3] Stability measured at fluid temperature of 20°C, ambient 20°C, with tap water as the fluid and not in maximum cooling mode.

Programmable Controller

- Multistep programming
- RS-232-C interface
- Remote temperature control of external systems (with optional probe)
- Adjustable PID control
- Two-line LCD
- Overtemperature/low-level cutouts with-audible/visual alarms
- Moisture-tight seamless keypad
- Temperature display in °C, °F, or °U (user defined); 0.1° or 0.01° resolution

Digital Controller

- Adjustable PID control
- Two-line LCD
- RS-232-C interface
- Overtemperature/low-level cutouts with audible/visual alarms
- Moisture-tight seamless keypad
- Temperature display in °C, °F, or °U (user defined); 0.1° or 0.01° resolution

Standard Controller

- Adjustable PID control
- Low-cost alternative for routine temperature control
- Single-line easy-read LED display
- Overtemperature/low level cutouts with visual alarms
- Temperature display in °C or °F; 0.1° resolution

ORDERING INFORMATION:

Stainless-steel reservoir; other wetted parts are corrosion-resistant 300 Series stainless steel or Ryton* polymer. Circulators include stainless-steel ¼ NPT inlet and outlet fittings, serrated adapter for ⅜" I.D. tubing.

NOTE:

Other voltages are available. Contact your Fisher Scientific Customer Service Representative for information.

WARRANTY:

Two-year warranty on parts and labor

CERTIFICATIONS:

CSA, CE marked

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Digital Controller Models				Standard Controller Models			
3006D	3016D	3013D	3028D	3006S[1]	3016S	3013S	3028S
1½ gal. (6L)	1½ gal. (6L)	3½ gal. (13L)	7⅜ gal. (28L)	1½ gal. (6L)	1½ gal. (6L)	3½ gal. (13L)	7⅜ gal. (28L)
-20° to +200°C	-20° to +200°C	-30° to +200°C	-25° to +100°C	-20° to +200°C	-20° to +200°C	-30° to +200°C	-25° to +100°C
(-4° to +392°F)	(-4° to +392°F)	(-22° to +392°F)	(-13° to +212°F)	(-4° to +392°F)	(-4° to +392°F)	(-22° to +392°F)	(-13° to +212°F)
±0.01°C	±0.01°C	±0.01°C	±0.01°C	±0.05°C	±0.05°C	±0.05°C	±0.05°C
PID	PID	PID	PID	PID	PID	PID	PID
2-line LCD	2-line LCD	2-line LCD	2-line LCD	1-line LED	1-line LED	1-line LED	1-line LED
0.1° or 0.01° in °C, °F, or °U	0.1° or 0.01° in °C, °F, or °U	0.1° or 0.01° in °C, °F, or °U	0.1° or 0.01° in °C, °F, or °U	0.1° in °C or °F	0.1° in °C or °F	0.1° in °C or °F	0.1° in °C or °F
800w	800w	800w	800w	800w	800w	800w	800w
90w at -10°C; 190w at 0°C; 350w at +20°C	90w at -10°C; 190w at 0°C; 350w at +20°C	200w at -20°C; 480w at 0°C; 660w at +20°C	175w at -20°C; 450w at 0°C; 700w at +20°C	90w at -10°C; 190w at 0°C; 350w at +20°C	90w at -10°C; 190w at 0°C; 350w at +20°C	200w at -20°C; 480w at 0°C; 660w at +20°C	175w at -20°C; 450w at 0°C; 700w at +20°C
Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure	Pressure
15L/min. (4 gal./min.)	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)
5¼ × 8 × 6" (13 × 20 × 15cm)	5¼ × 8 × 6" (13 × 20 × 15cm)	5¼ × 9 × 8" (13 × 23 × 20cm)	11½ × 11¼ × 8" (29 × 29 × 20cm)	5¼ × 8 × 6" (13 × 20 × 15cm)	5½ × 8 × 6" (13 × 20 × 15cm)	5¼ × 9 × 8" (13 × 23 × 20cm)	11½ × 11¼ × 8" (29 × 29 × 20cm)
15¾ × 18¾ × 15⅝" (40 × 48 × 40cm)	15¾ × 10 × 21⅝" (40 × 25 × 55cm)	17⅝ × 15 × 26⅛" (45 × 38 × 66cm)	22 × 27½ × 18⅝" (56 × 70 × 47cm)	15¾ × 18¾ × 15⅝" (40 × 48 × 40cm)	15¾ × 10 × 21⅝" (40 × 25 × 55cm)	17⅝ × 15 × 26⅛" (45 × 38 × 66cm)	22 × 27½ × 18⅝" (56 × 70 × 47cm)
79 lb. (36kg)	70 lb. (32kg)	112 lb. (51kg)	162 lb. (73kg)	79 lb. (36kg)	70 lb. (32kg)	112 lb. (51kg)	162 lb. (73kg)
115V 60Hz, 15A	115V 60Hz, 15A	115V 60Hz, 20A	115V 60Hz, 20A	115V 60Hz, 15A	115V 60Hz, 15A	115V 60Hz, 20A	115V 60Hz, 20A
13-874-7	**13-874-9**	**13-874-11**	**13-874-13**	**13-874-20**	**13-874-28**	**13-874-24**	**13-874-32**
2936.00	2963.00	3394.00	3610.00	2495.00	2494.00	3066.00	3267.00

[4] *20°C heat load data taken in maximum cooling mode.*

[5] *Operating at fluid temperature of 20°C, ambient 21°C, with tap water as the fluid.*

Fisher Scientific* Isotemp* 2150 Nano Refrigerated Circulator

Compact circulator uses laboratory tap water; perfect for cooling lab glassware

Small but capable

- Wide temperature range of -10° to +80°C
- 3L (0.8 gal.) bath capacity
- Cooling capacity of 220w at 20°C
- Maximum pump pressure of 4.6psi, flowrate of 12L/min.
- Compact footprint allows installation in most any location
- Economical and environmental solution to using laboratory tap water
- Resolves seasonal temperature instabilities in your process water

Easy operation, essential data at a glance

- Dual LED displays
- Primary display at top shows actual temperature, setpoint, visible alarms for low liquid level, high or low fluid temperature
- Secondary display indicates mode in use: S for setpoint, F1 to F4 to select stored preset temperature, H or L to indicate high or low temperature setpoint
- Controls include arrow keys for setpoints, scroll button for menu options, power switch, overtemperature cutoff selector, RESET and ENTER buttons

Safe and thorough temperature control

- Real Temperature Adjustment (RTA) for integration in QS systems
- Stores up to four preset temperatures
- High-limit and low-limit adjustable temperature alarms
- Variable overtemperature and pump overload protection
- Fault identification system distinguishes between high and low temperature alarms, low fluid level, and motor overload alarms
- Optical alarm flashes on upper LED display to alert you to problems
- Non Flammable Liquids (NFL) safety: safe to run with water and water-glycol mixtures

Cooling Applications

- Laboratory glassware
- Condensers
- Rotary evaporators
- Distillation apparatus
- Jacketed Beakers.

13-874-401

ORDERING INFORMATION:
Available for 115V or 230V operation.

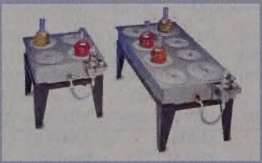
INCLUDES:
Reservoir drain, hose barb for ½" tubing, operation manual.

COMPLIANCE:
CE compliant

Model	Isotemp 2150 Nano	
Reservoir Bath Capacity	3L (0.8 gal.)	
Temperature Range	-10 to +80°C	
Temperature Accuracy	±0.1°C	
Cooling Capacity	220w at 20°C; 60w at 0°C	
Pump Max. Pressure	4.6 psi	
Flowrate at 0' Head	12L/min. (3.2 gal./min.)	
Dimensions L x W x H	19 11/16 × 11 × 14 15/16" (50 × 28 × 38cm)	
Heater Capacity	1.1kw	1.5kw
Electrical Requirements	115V	230V
Mfr. No.	426-1622	426-1621
Cat. No.	**13-874-401**	**13-874-400**
Each	1545.00	1675.00

LOOKING FOR MORE BATHS?

Fisher Scientific offers a wide variety of baths for many applications. For general purpose baths, see p. 135. If you need water bath shakers, turn to p. 139. Specialty baths, including steaming baths, can be found on pp. 143-145.



Visit www.fishersci.com and search for Baths

CIRCULATORS-HEATING

Thermo Scientific* Haake* Phoenix II Heating Circulators

Efficient heating for open and closed systems

Microprocessor-controlled heating circulators for wide application range. User-friendly, programmable within minutes in six languages. Feature wide temperature range, powerful pressure/suction pump and choice of bath capacities.

HAAKE Phoenix
Thermo
HAAKE B7

13-874-485

Large digital display with flexible interface

- Big LCD monitors with easily visible plain text display, resolution of 0.01°C, direct value setting at the display via numeric input
- 10 control keys for function and menu selection
- Informative icons let you know when heating is active, ramp function is operative; and if timer is activated on P2 models
- Visual alarms notify of shutdown at the first sign of excessively high temperature, motor overload, low liquid level
- Fault Identification System (FIS) clearly shows reason for any alarm, shuts off all safety-related parts

Choice of temperature ranges and capacities

- Lows of 28°, 30°, or 32°C; highs of 250° or 280°C
- Lows can be extended to 20°C with tap water cooling
- Capacities from 4.5 to 12L (1¼ to 3⅛ gal.)
- Efficient control of external closed liquid circuits
- Manufactured with ISO 9001:2000-certified processes

Temperature Control Options

- Fuzzy Logic control with neural adaptation adjusts to varying thermal load, for the most demanding temperature control requirements
- Real Temperature Adjustment (RTA) corrects displayed temperature against measured value, ensuring compliance with ISO 9000 standards
- External Temperature Control (ETC) with connection for external Pt100 sensor (sold separately) to regulate temperature

Powerful pumps with flexible control

- Pressure and suction pumps with automatic speed recognition
- Turbulence reduction system (TRS) automatically adjusts pump performance to viscosity of bath fluid

P1 Controller features:

- 16-bit processor technology
- Full programmability with ramping capabilities
- Temperature selection in Celsius, Fahrenheit, or Kelvin
- Simultaneous SET/ACTUAL display
- RS-232-C interface for connection to computer

P2 controller adds:

- Three-point calibration
- Storage of up to 10 ramp programs, maximum of 30 segments
- Timer control to start and/or stop application
- RS-485 and RS-232-C interfaces

ORDERING INFORMATION:

Suitable for water, oil, alcohol or other standard bath media. P2 models accept optional Profibus interface for networked process control.

INCLUDES:

All come with two fittings for 8 and 12mm tubing, bath cover, tap-water cooling coil, and extensive operations manual.

CERTIFICATIONS:

CE marked

Model	P1-B5	P2-B5	P2-B7	P2-B7	P2-B12
Bath Capacity	1¼ gal. (4.5L)	1¼ gal. (4.5L)	1⅞ gal. (7L)	1⅞ gal. (7L)	3⅛ gal. (12L)
Temperature					
Range	32° to 250°C	32° to 280°C	30° to 280°C	30° to 280°C	28° to 280°C
Accuracy	±0.01°C	±0.01°C	±0.01°C	±0.01°C	±0.01°C
Display	Digital LCD	Digital LCD	Digital LCD	Digital LCD	Digital LCD
Control Type	Fuzzy Logic	Fuzzy Logic	Fuzzy Logic	Fuzzy Logic	Fuzzy Logic
Heater	1200w	1200w	1200w	3000w	3000w
Pump					
Max. Pressure	560mbar	560mbar	560mbar	560mbar	560mbar
Flowrate	24L (6⅜ gal.)/min.	24L (6⅜ gal.)/min.	24L (6⅜ gal.)/min.	24L (6⅜ gal.)/min.	24L (6⅜ gal.)/min.
Suction	22L (5¾ gal.)/min.	22L (5¾ gal.)/min.	22L (5¾ gal.)/min.	22L (5¾ gal.)/min.	22L (5¾ gal.)/min.
Reservoir Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Reservoir L × W × D	5¾ × 5½ × 5⅞" (14.5 × 14 × 15cm)	5¾ × 5½ × 5⅞" (14.5 × 14 × 15cm)	4 × 5 × 8⅞" (10 × 13 × 20cm)	4 × 5 × 8⅞" (10 × 13 × 20cm)	5½ × 8⅝ × 8⅞" (14 × 22 × 20cm)
Overall L × W × H	15 × 8½ × 17⅜" (38 × 24 × 44cm)	15 × 8½ × 17⅜" (38 × 24 × 44cm)	15 × 10 × 19¾" (38 × 25 × 50cm)	15 × 10 × 19¾" (38 × 25 × 50cm)	15 × 13⅜ × 19⅝" (38 × 34 × 50cm)
Net Weight	22½ lb. (10.2kg)	22½ lb. (10.2kg)	26 lb. (11.8kg)	26 lb. (11.8kg)	28⅝ lb. (13kg)
Electrical Requirements	115V 60Hz 1250w	115V 60Hz 1250w	115V 60Hz 1250w	220V 50/60Hz 3100w	220V 50/60Hz 3100w
Mfr. No.	440-0052	441-0052	441-0072	441-0071	441-0121
Cat. No.	**13-872-120**	**13-874-497**	**13-874-485**	**13-874-484**	**13-874-486**
Each	4151.00	4690.00	4941.00	4941.00	5068.00

Thermo Scientific* Haake* C and DC Heating Circulators

Analog or digital controls—choice of water, oil, alcohol bath media

Space-saving heating circulators with choice of controllers feature wide temperature range, powerful pressure pump and choice of bath capacities.

13-874-363

Choice of temperature ranges and capacities:

- Lows of 25°, 32°C; or 35°C; highs of 100°C
- Capacities of 3 or 5L (¾ to 1⁵⁄₁₆ gal.)
- CFC-free refrigerant

Temperature control options

- Analog or PID control
- Store and select up to three fixed temperatrures
- Real Temperature Adjustment (RTA) corrects displayed temperature against measured value, ensuring compliance with ISO 9000 standards
- Visual alarms that notify of shutdown at the first sign of excessively high temperature, motor overload, low liquid level
- Fault Identification System (FIS) clearly shows reason for any alarm, shuts off all safety-related parts

Powerful pumps with flexible control

- Pressure pumps with 300mbar pressure, 12.5L/min. maximum flowrate
- Turbulence Reduction System (TRS) automatically adjusts pump performance to viscosity of bath fluid

C10 Controller

- Analog control via rotary knob and fine adjustment control
- LED indicators for POWER ON, HEAT/CONTROL ON, FAULT
- Real Temperature Adjustment (RTA) corrects displayed temperature against any measured value, ensuring that circulator can be used in accordance with ISO 9000 standards
- Fault Identification System
- Manufactured with ISO 9001: 2000-certified processes

DC Controllers add:

- Microprocessor with PID control
- Touchpad and dual LED displays; show menu options and actual or set temperature selections separately, HEAT/CONTROL ON
- Separate LED and switch select from three stored fixed temperatures
- Resolution to 0.1 or 0.01°C
- DC30 model has RS-232 interface (optional software available)

APPLICATIONS:

Ideal for controlling temperatures on external systems such as density meters, viscometers, photometers, refractometers, autoclaves, and reaction vessels.

ORDERING INFORMATION:

Suitable for water, oil, alcohol or other standard bath media as recommended by the manufacturer.

INCLUDES:

All circulators come with two fittings (for 8 and 12mm tubing), tap water cooling coil, bath cover and operations manual. C10 models come with mercury-free 0° to 100°C checking thermometer with 0.5°C divisions

CERTIFICATIONS:

CE marked

Model	C10-P5/U	DC10-P5/U	C10-B3	DC10-B3	DC30-B3
Bath Capacity	1⅜ gal. (5L)	1⅜ gal. (5L)	¾ gal. (3L)	¾ gal. (3L)	¾ gal. (3L)
Temperature Range	25° to 100°C	25° to 100°C	32° to 100°C	32° to 100°C	35° to 100°C
Accuracy	±0.04°C	±0.02°C	±0.04°C	±0.02°C	±0.01°C
Heater Wattage	1000w	1200w	1000w	1200w	1200w
Display Type	Analog/ON-OFF	Digital/PID	Analog/ON-OFF	Digital/PID	Digital/PID
Pump					
Max. Flowrate	300mbar	300mbar	300mbar	300mbar	300mbar
Max. Flowrate	12.5L (3¼ gal.)/min.	12.5L (3¼ gal.)/min.	12.5L (3¼ gal.)/min.	12.5L (3¼ gal.)/min.	12.5L (3¼ gal.)/min.
Reservoir Material	Polyphenyleneoxide	Polyphenyleneoxide	Stainless steel	Stainless steel	Stainless steel
Reservoir L x W x D	5¾ × 5½ × 5⅞" (14.5 × 14 × 15cm)	5¾ × 5½ × 5⅞" (14.5 × 14 × 15cm)	4 × 5⅛ × 6" (10 × 13 × 15cm)	4 × 5⅛ × 6" (10 × 13 × 15cm)	4 × 5⅛ × 6" (10 × 13 × 15cm)
Overall L x W x H	13 × 6¼ × 14⅛" (33 × 16 × 36cm)	13 × 6¼ × 14⅛" (33 × 16 × 36cm)	11¾ × 7⅞ × 14½" (30 × 20 × 37cm)	11¾ × 7⅞ × 14½" (30 × 20 × 37cm)	11¾ × 7⅞ × 14½" (30 × 20 × 37cm)
Net Weight	11⅜ lb. (5.2kg)	11⅞ lb. (5.4kg)	15⅝ lb. (7.1kg)	16 lb. (7.3kg)	16⅛ lb. (7.3kg)
Power Consumption	1050w	1250w	1050w	1250w	1250w
Electrical Requirements	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz
Mfr. No.	425-1852	426-1852	425-1702	426-1702	426-3702
Cat. No.	**13-874-377**	**13-874-363**	**13-874-357**	**13-874-578**	**13-874-366**
Each	1538.00	1978.00	1801.00	2182.00	2617.00

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* Haake* Open-Bath Circulators

Clear polyacrylic or stainless steel

Get the construction, controller, temperature range, and features that best meet your needs in one unit.

- Two-speed pumps reduce bath turbulence
- 5⅞ or 7⅞" (15 or 20cm) deep baths accommodate large objects
- Stainless-steel baths have handles and drain reservoir for easy handling and cleaning

Analog Control (C10 models)

- Set bath temperatures with ±0.04°C stability
- Come with a checking thermometer, 0° to 100°C with divisions at 0.5°C

Digital/PID Control (DC10 and DC30 models)

- Temperature stability to ±0.01° or ±0.02°C
- Three user-defined preset temperature settings, Real Temperature Adjustment (RTA), and Fault Identification System (FIS)
- DC30 also has an RS-232-C port for computer interface applications

13-874-575

13-874-353

ORDERING INFORMATION:

Both water and oil can be used in the DC30 models.

INCLUDES:

Each unit comes with a directable nozzle and bath bridge to fix the circulator onto the bath. Models C10-W5P and DC10-W5P come with an external circulation set and tap-water cooling coil.

Stainless-Steel Baths

Model	Haake DC30-W13/B	Haake C10-W19/B	Haake DC10-W19/B	Haake DC30-W19/B	Haake DC10-W46/B
Bath Capacity	3⅜ gal. (13L)	5 gal. (19L)	5 gal. (19L)	5 gal. (19L)	12⅛ gal. (46L)
Temperature					
Range	25° to 200°C	25° to 100°C	25° to 100°C	25° to 200°C	25° to 100°C
Stability	±0.01°C	±0.04°C	±0.02°C	±0.01°C	±0.02°C
Heater	1200w	1000w	1200w	1200w	1200w
Display/Control	Digital/PID	Analog/ON-OFF	Digital/PID	Digital/PID	Digital/PID
Pump					
Max. Flowrate	17 / 10L (4½ / 2⅝ gal.)/min.	17 / 10L (4½ / 2⅝ gal.)/min.	17 / 10L (4½ / 2⅝ gal.)/min.	17 / 10L (4½ / 2⅝ gal.)/min.	17 / 10L (4½ / 2⅝ gal.)/min.
Max. Pressure	300mbar	300mbar	300mbar	300mbar	300mbar
Reservoir L x W x D	6⅞ × 11⅞ × 5⅞" (17.5 × 30 × 15cm)	13¾ × 11¾ × 5⅞" (35 × 30 × 15cm)	13¾ × 11¾ × 5⅞" (35 × 30 × 15cm)	13¾ × 11¾ × 5⅞" (35 × 30 × 15cm)	27½ × 11¾ × 7⅞" (70 × 30 × 20cm)
Overall L x W x H	14⅛ × 13⅜ × 13¾" (36 × 34 × 35cm)	21¼ × 13⅜ × 13¾" (54 × 34 × 35cm)	21¼ × 13⅜ × 13¾" (54 × 34 × 35cm)	21¼ × 13⅜ × 13¾" (54 × 34 × 35cm)	35⅞ × 14⅛ × 15¾" (91 × 36 × 40cm)
Net Weight	19⅜ lb. (8.8kg)	19⅞ lb. (9kg)	19⅞ lb. (9kg)	19⅞ lb. (9kg)	51⅜ lb. (23.3kg)
Power Consumption	1250w	1050w	1250w	1250w	1250w
Electrical Requirements	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz
Mfr. No.	426-3142	425-1192	426-1192	426-3192	426-1462
Cat. No.	**13-874-575**	**13-874-355**	**13-874-360**	**13-874-576**	**13-874-574**
Each	2734.00	2074.00	2375.00	2815.00	3233.00

Polyacrylic Baths

Model	Haake C10-W5P	Haake DC10-W5P	Haake C10-W12P	Haake DC10-W12P
Bath Capacity	1⅜ gal. (5L)	1⅜ gal. (5L)	3⅛ gal. (12L)	3⅛ gal. (12L)
Temperature				
Range	30° to 65°C	30° to 65°C	30° to 65°C	30° to 65°C
Stability	±0.04°C	±0.0°2C	±0.04°C	±0.02°C
Heater	1000w	1200w	1000w	1200w
Display/Control	Analog/ON-OFF	Digital/PID	Analog/ON-OFF	Digital/PID
Pump				
Max. Flowrate	8.5/12.5L (3¼/2¼gal.)/min.	8.5/12.5L (3¼/2¼gal.)/min.	17 / 10L (4½ / 2⅝ gal.)/min.	17 / 10L (4½ / 2⅝ gal.)/min.
Max. Pressure	300mbar	300mbar	300mbar	300mbar
Reservoir L x W x D	9½ × 4¾ × 5⅞" (24 × 12 × 15cm)	9½ × 4¾ × 5⅞" (24 × 12 × 15cm)	6¾ × 11¾ × 5⅞" (17 × 30 × 15cm)	6¾ × 11¾ × 5⅞" (17 × 30 × 15cm)
Overall L x W x H	15¾ × 6¾ × 13⅜" (40 × 17 × 34cm)	15¾ × 6¾ × 13⅜" (40 × 17 × 34cm)	13⅜ × 12¼ × 13⅜" (34 × 31 × 34cm)	13⅜ × 12¼ × 13⅜" (34 × 31 × 34cm)
Net Weight	13¼ lb. (6kg)	13¼ lb. (6kg)	13¼ lb. (6kg)	13¼ lb. (6kg)
Power Consumption	1050w	1250w	1050w	1250w
Electrical Requirements	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz
Mfr. No.	425-1052	426-1052	425-1122	426-1122
Cat. No.	**13-874-353**	**13-874-570**	**13-874-573**	**13-874-361**
Each	1667.00	2032.00	1528.00	1978.00

Thermo Scientific* Neslab* Heating Circulators

13-873-316, 13-873-322, 13-873-324, 13-873-330

Ultraquick heatup

- High heating capacity (ambient +12° to +200°C) make ultraquick heatup possible
- Precise temperature stability (±0.01°C) provides repeatable results
- Tap-water cooling coil maintains temperatures near ambient and provides rapid cool-down from elevated temperatures
- Hydroseal lid design minimizes moisture
- State-of-the-art controller technology automatically ensures units perform at peak when necessary and save energy during lower demand
- Four capacities
- Small footprints optimize bench space
- Strong pump circulates long distances or to open or closed containers
- Seamless stainless-steel tank resists corrosion and is easy to clean
- Reservoir drain permits quick and tidy fluid changes
- Drain also allows tubing to be added after bath is filled

Digital One Controller

- User-selectable resolution at 0.1° or 0.01°C
- User-adjustable low- and high-temperature alarm limits
- User-selectable fault conditions
- Automatic reservoir refill port
- Low reservoir fluid level shutoff

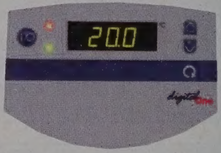
Digital Plus Controller

Same features as Digital One Controller plus:

- Remote sensor port, RS-232 and RS-485 communication ports
- ON/OFF timer with clock
- Audible safety alarm with mute
- Temperature offset display

20.0
digital Plus

Digital Plus Controller for 13-873-318, -322, -326, -330



Digital One Controller for 13-873-316, -320, -324, -328

ORDERING INFORMATION:
With cover. For 115V 60Hz. (Other voltages are available; contact your Fisher Scientific Customer Service Representative.)

CERTIFICATIONS:
UL listed, CE marked

Contd. on next page.

Thermo Scientific* Neslab* Heating Circulators, Contd.

Model	**Neslab EX-7**	**Neslab EX-10**	**Neslab EX-17**	**Neslab EX-35**
Bath Capacity	1⅞ gal. (7L)	2⅝ gal. (10L)	4½ gal. (17L)	9¼ gal. (35L)
Heater	800w	800w	1600w	1600w
Temperature				
Range	Ambient plus 12°C to +200°C	Ambient plus 12°C to +200°C	Ambient plus 12°C to +200°C	Ambient plus 12°C to +200°C
Accuracy	±0.01°C	±0.01°C	±0.01°C	±0.01°C
Display	Digital/PID	Digital/PID	Digital/PID	Digital/PID
Pump				
Flowrate	15L (4 gal.)/min. at 0' head	15L (4 gal.)/min. at 0' head	15L (4 gal.)/min. at 0' head	15L (4 gal.)/min. at 0' head
Max. Head	16' max.	16' max.	16' max.	16' max.
Reservoir L x W x D	7¼ × 6⅝ × 6" (18.3 × 16.8cm × 15.2cm)	9⅜ × 8⅝ × 6" (23.9 × 22.4 × 15.2cm)	9⅜ × 8¾ × 9" (23.9 × 22.4 × 22.9cm)	15½ × 8¾ × 12" (39.4 × 22.4 × 30.5cm)
Overall L x W x H	17½ × 9¼ × 14⅝" (44.5 × 23.5 × 37.1cm)	18¼ × 11⅜ × 14⅝" (46.4 × 28.9 × 37.1cm)	18¼ × 11⅜ × 17⅝" (46.4 × 28.9 × 44.8cm)	25⅜ × 11⅜ × 20⅝" (64.5 × 28.9 × 52.4cm)
Shipping Weight	30 lb. (13.6kg)	35 lb. (15.9kg)	39 lb. (17.7kg)	56 lb. (25.5kg)
Electrical Requirements	115V 60Hz, 9A	115V 60Hz, 9A	115V 60Hz, 16A	115V 60Hz, 16A
Digital One Models				
Mfr. No.	275003200000	276003200000	277003200000	279003200000
Cat. No.	**13-873-316**	**13-873-320**	**13-873-324**	**13-873-328**
Each	1644.99	1745.00	1787.76	1969.16
Digital Plus Models				
Mfr. No.	275003200100	276003200100	277003200100	279003200100
Cat. No.	**13-873-318**	**13-873-322**	**13-873-326**	**13-873-330**
Each	2355.64	2649.08	2774.52	3219.95

ACCESSORIES

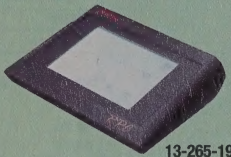
Thermo Scientific* Neslab* RPC Programmable Controller

Easy to learn and use

For use with any Thermo Scientific Neslab heating or refrigerating circulator that has a Digital Plus controller. RPC Touchscreen Controller can control, monitor and change temperature setpoint, remote sensor temperature, ON/OFF timer, temperature offset, temperature alarm limits, and readout resolution of 0.1° or 0.02°C.

- Large (120 x 90mm) touchscreen LCD is easy to read and menu driven
- Displays large icons for quick function selection
- Features multistep programming, 16 programs in memory, spreadsheet formatting, and graphical display of current ramp step
- RS-232 port for computer connection

INCLUDES:
Wall-mounting bracket, 10' (3m) serial communications connector cable, and power supply with cord (60Hz only)



13-265-196

Electrical Requirements	Mfr. No.	Cat. No.	Each
115V 60Hz	604012000401	**13-265-196**	939.39

Bath Fluids for Thermo Scientific* Neslab* Baths

Use ethylene glycol for low-temperature applications to -30°C, silicone oil for high temperature applications to +150°C.

Description	Mfr. No.	Cat. No.	Each
Silicone Oil	610000000000	**13-265-154**	686.16
Ethylene Glycol	610000000001	**13-265-155**	233.15

LOOKING FOR MORE?

Fisher Scientific carries a wide range of bath accesories from bath fluids to bath covers and clamps. In addition to those in this catalog, you can find accessories online.

Visit www.fishersci.com and search for Bath Accessories

Fisher Scientific* Isotemp* Heating Circulators

High performance, excellent value

- Temperature control from ambient +15°C to 150° or 200°C
- Answer demanding temperature control requirements in a wide variety of applications
- Built with strong pumps, powerful heaters and a small footprint to maximize bench space
- Excellent choice as open bath to immerse samples or to pump to an external application

Multiple sizes, three controllers, nine models

- Choose from 6L low profile, 13 and 28L baths, each available with one of three controllers
- Stainless-steel seamless deep-drawn reservoirs resist staining, are easy to clean; 28L reservoirs have built-in drain for easier cleaning

Choice of three easy-to-use controllers

- Programmable controller offers multistep programming: store two 10-step programs with setpoint intervals from 0 to 999 hr., with stability and resolution of ±0.01°C and wide temperature range
- Digital controller offers same precision, accuracy, and features without multistep ramping
- Standard controller offers temperature range, stability and resolution for less-demanding applications

Powerful pump

- Industrial-grade pump delivers 10' (3m) of vertical pumphead for more efficient heat exchange; lets you locate circulator at a distance from application, or under lab bench
- Efficient reservoir agitation, better fluid uniformity even for heavy immersion loads
- For use with bath fluid that has viscosity of 50cS or less

From left to right: 13-874-3 (see next page), 13-874-1, 13-874-5 (see next page)

Built-in safety features

- Redundant user-adjustable thermostats plus overtemperature and low-liquid-level cutouts prevent temperature drift and thermal runaway
- Standard controller has visual alarm; digital and programmable controllers have audible/visual alarms
- Thermally protected pump: no burnout even if jammed

Faster heatup

- Long-life high-wattage heaters for rapid fluid heatup
- Assure fluid compatibility, even when applications produce fluctuating temperatures
- Excellent temperature control for applications requiring heated fluid work areas or pumping to an external application

Controller Bath Type	**Programmable Controller Models**			**Digital Controller Models**
Model	**3016HP**	**3013HP**	**3028HP**	**3016HD**
Bath Capacity	1½ gal. (6L)	3½ gal. (13L)	7⅜ gal. (28L)	1½ gal. (6L)
Temperature				
Range[1]	Ambient +15° to 200°C (392°F)	Ambient +15° to 150°C (302°F)	Ambient +15° to 150°C (302°F)	Ambient +15° to 200°C (392°F)
Stability[2]	±0.01°C	±0.01°C	±0.01°C	±0.01°C
Heater	800w	800w	800w	800w
Control	PID	PID	PID	PID
Display				
Type	2-line LCD	2-line LCD	2-line LCD	2-line LCD
Resolution	0.1° or 0.01° in °C, °F, or °U	0.1° or 0.01° in °C, °F, or °U	0.1° or 0.01° in °C, °F, or °U	0.1° or 0.01° in °C, °F, or °U
Pump				
Type	Pressure	Pressure	Pressure	Pressure
Pressure at Opsig[3]	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)
Reservoir L x W x D	5¼ × 8 × 6" (13 × 20 × 15cm)	5¼ × 9 × 8" (13 × 23× 20cm)	12 × 10¼ × 8" (30 × 26 × 20cm)	5¼ × 8 × 6" (13 × 20 × 15cm)
Overall L x W x H	14¾ × 9¼ × 14" (37 × 23 × 36cm)	15½ × 10⅞ × 15⅜" (39 × 28 × 39cm)	22¾ × 13¼ × 15⅜" (58 × 33 × 39cm)	14¾ × 9¼ × 14" (37 × 23 × 36cm)
Shipping Weight	34 lb. (15kg)	45 lb. (20kg)	96 lb. (44kg)	34 lb. (15kg)
Electrical Requirements	115V 60Hz, 8A	115V 60Hz, 8A	115V 60Hz, 8A	115V 60Hz, 8A
Cat. No.	**13-874-34**	**13-874-38**	**13-874-42**	**13-874-1**
Each	2917.00	3099.00	3297.00	2314.00

[1] *Low-end temperatures are specified using water as a test fluid. The low-end limits will be valid in an ambient of 20°C at nominal line voltage.*

[2] *Stability is measured in the center of the work area with cover installed, at fluid temperature of 60°C, no external heat load, all voltages and frequencies, with water as the fluid.*

[3] *Operating at fluid temperature of 20°C, ambient 21°C, with tap water as the fluid.*

*Trademark. See Trademark Reference.

Prices subject to change.

Programmable Controller

- Multistep programming
- RS-232-C interface
- Remote temperature control of external systems (with optional probe)
- Adjustable PID control
- Two-line LCD
- Overtemperature/low-level cutouts with audible/visual alarms
- Moisture-tight seamless keypad
- Temperature display in °C, °F, or °U (user defined); 0.1° or 0.01° resolution

Programmable Controller

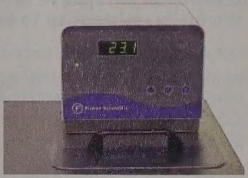
Digital Controller

- Adjustable PID control
- Two-line LCD
- RS-232-C interface
- Overtemperature/low-level cutouts with audible/visual alarms
- Moisture-tight seamless keypad
- Temperature display in °C, °F, or °U (user defined); 0.1° or 0.01°resolution

Digital Controller

Standard Controller

- Adjustable PID control
- Low cost alternative for routine temperature control
- Single-line easy-read LED display
- Overtemperature/low-level cutouts with visual alarms
- Moisture-tight seamless keypad
- Temperature display in °C or °F; 0.1° resolution


Standard Controller

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

ORDERING INFORMATION:

Stainless-steel reservoir; other wetted parts are corrosion-resistant 300 Series stainless steel or Ryton* polymer. Circulators include stainless-steel ¼ NPT inlet and outlet fittings, serrated adapter for ⅜" I.D. tubing.

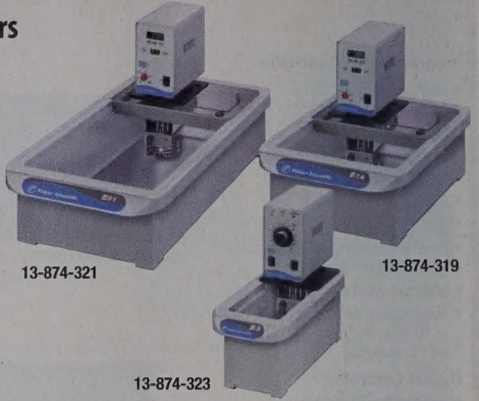
NOTE:

Other voltages are available. Contact your Fisher Scientific Customer Service Representative for information.

		Standard Controller Models		
3013HD	**3028HD**	**3016HS**	**3013HS**	**3028HS**
3⅜ gal. (13L)	7⅜ gal. (28L)	1½ gal. (6L)	3½ gal. (13L)	7⅜ gal. (28L)
Ambient +15° to 150°C (302°F)	Ambient +15° to 150°C (302°F)	Ambient +15° to 150°C (302°F)	Ambient +15° to 150°C (302°F)	Ambient +15° to 150°C (302°F)
±0.01°C	±0.01°C	±0.05°C	±0.05°C	±0.05°C
800w	800w	800w	800w	800w
PID	PID	PID	PID	PID
2-line LCD	2-line LCD	1-line LED	1-line LED	1-line LED
0.1° or 0.01° in °C, °F, or °U	0.1° or 0.01° in °C, °F, or °U	0.1° in °C or °F	0.1° in °C or °F	0.1° in °C or °F
Pressure	Pressure	Pressure	Pressure	Pressure
15L/min. (4 gal./min.)	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)
5¼ × 9 × 8"	12 × 10¼ × 8"	5¼ × 8 × 6"	5¼ × 9 × 8"	12 × 10¼ × 8"
(13 × 23 × 20cm)	(30 × 26 × 20cm)	(13 × 20 × 15cm)	(13 × 23× 20cm)	(30 × 26 × 20cm)
15½ × 10⅞ × 15⅜"	22¾ × 13¼ × 15⅜"	14¾ × 9¼ × 14"	15½ × 10⅞ × 15⅜"	22¾ × 13¼ × 15⅜"
(39 × 28 × 39cm)	(58 × 33 × 39cm)	(37 × 23 × 36cm)	(39 × 28 × 39cm)	(58 × 33 × 39cm)
45 lb. (20kg)	96 lb. (44kg)	34 lb. (15kg)	45 lb. (20kg)	96 lb. (44kg)
115V 60Hz, 8A	115V 60Hz, 8A	115V 60Hz, 8A	115V 60Hz, 8A	115V 60Hz, 8A
13-874-3	**13-874-5**	**13-874-36**	**13-874-40**	**13-874-44**
2510.00	2647.00	1824.00	1873.00	2097.00

Fisher Scientific* Isotemp* Open-Bath Circulators

Economical alternative to stainless-steel baths; thermally resistant up to 60° or 100°C


13-874-321

13-874-319

13-874-323

Feature integral water baths made of clear acrylic or rigid modified polyphenyleneoxide (PPO) for high durability at a cost lower than stainless steel. Baths maintain working temperatures from 22° or 25° to 60° or 100°C for capacities ranging from 5 to 21L. Use of optional bath covers helps to maintain temperature; see 13-641-736, -737, -738, on page p.129.

- Handles and supports enhance usability
- Fitted bridge plate holds temperature control unit in place
- With integrated overload protection; adjustable, user-resettable, overtemperature cutoff; and low-liquid-level protection
- Available in analog or digital models, both of which feature zero switching that eliminates RF interference

Analog Models

- Dial indication with fine adjustment
- ON/OFF control with IC sensor
- Mercury-free checking thermometer

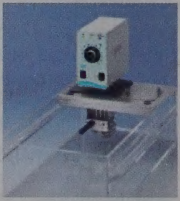
Digital Models

- Electronic PID temperature control
- Four navigation keys for easy operation
- User-defined fixed temperatures with separate Real Temperature Adjustment (RTA) for each
- Fault Identification System (FIS) alarm indication
- LED readout
- User-adjustable correction factor to meet ISO 9004 standards

WARRANTY:
Two years on parts and labor

13-875-110

13-875-113


13-875-112

Acrylic Models	2100 A5	2100 A12	2100 A18	2150 A5	2150 A12	2150 A18
Reservoir Capacity	5L (1¼ gal.)	12L (3⅛ gal.)	18L (4.0 gal)	5L (1¼ gal.)	12L (3⅛ gal.)	18L (4.0 gal)
Temperature Range	25° to 60°C	25° to 60°C	25° to 60°C	25° to 60°C	25° to 60°C	25° to 60°C
Temperature Accuracy	±0.04°C	±0.04°C	±0.04°C	±0.02°C	±0.02°C	±0.02°C
Display Type	Analog	Analog	Analog	Digital	Digital	Digital
Resolution	0.1°C	0.1°C	0.1°C	0.1°C	0.1°C	0.1°C
Heater Capacity	1000w	1000w	1000w	1200w	1200w	1200w
Pump Flowrate	14L (4 gal./min.)	14L (4 gal./min.)	14L (4 gal./min.)	14L (4 gal./min.)	14L (4 gal./min.)	14L (4 gal./min.)
Reservoir L x W x D	4⅝ × 9 7/16 × 5⅞" (12 × 24 × 15cm)	11⅞ × 6¾ × 5⅞" (30 × 17 × 15cm)	11⅞ × 13⅜ × 5⅞" (30 × 34 × 15cm)	4⅝ × 9 7/16 × 5⅞" (12 × 24 × 15cm)	11⅞ × 6¾ × 5⅞" (30 × 17 × 15cm)	11⅞ × 13⅜ × 5⅞" (30 × 34 × 15cm)
Overall L x W x H	6⅞ × 15⅞ × 13⅜" (17 × 40 × 34cm)	12⅞ × 13⅜ × 13⅜" (31 × 34 × 34cm)	12⅞ × 20 1/16 × 13⅜" (31 × 51 × 34cm)	6⅞ × 15⅞ × 13⅜" (17 × 40 × 34cm)	12⅞ × 13⅜ × 13⅜" (31 × 34 × 34cm)	12⅞ × 20 1/16 × 13⅜" (31 × 51 × 34cm)
Power Consumption	1050VA	1050VA	1050VA	1250VA	1250VA	1250VA
Electrical Reqts.	115V/60Hz	115V/60Hz	115V/60Hz	115V/60Hz	115V/60Hz	115V/60Hz
Cat. No.	**13-875-110**	**13-875-111**	**13-875-112**	**13-875-113**	**13-875-114**	**13-875-115**
Each	1240.00	1490.00	1610.00	1637.00	1948.00	2110.00

PPO Models	2100-B5	2150-B5	2100-B14	2150-B14	2100-B21	2150-B21
Reservoir Capacity	5L (1¼ gal.)	5L (1¼ gal.)	14L (3⅝ gal.)	14L (3⅝ gal.)	21L (5½ gal.)	21L (5½ gal.)
Temperature Range	25° to 100°C	25° to 100°C	22° to 100°C	22° to 100°C	22° to 100°C	22° to 100°C
Temperature Accuracy	±0.04°C	±0.02°C	±0.04°C	±0.02°C	±0.04°C	±0.02°C
Display Type	Analog	Digital	Analog	Digital	Analog	Digital
Resolution	0.1°C	0.01°C	0.1°C	0.01°C	0.1°C	0.01°C
Heater Capacity	1000w	1200w	1000w	1200w	1000w	1200w
Pump Flowrate	14L (4 gal./min.)	14L (4 gal./min.)	14L (4 gal./min.)	14L (4 gal./min.)	14L (4 gal./min.)	14L (4 gal./min.)
Reservoir L x W x D	6⅝ × 5 × 6¼" (17 × 13 ×16cm)	6⅝ × 5 × 6¼" (17 × 13 ×16cm)	7⅜ × 11¾ × 6¼" (19 × 30 × 16cm)	7⅜ × 11¾ × 6¼" (19 × 30 × 16cm)	14⅞ × 11¾ × 6¼" (38 × 30 × 16cm)	14⅞ × 11¾ × 6¼" (38 × 30 × 16cm)
Overall L x W x H	12⅞ × 6¼ × 14" (33 × 16 × 36cm)	12⅞ × 6¼ × 14" (33 × 16 × 36cm)	14⅞ × 12⅞ × 14" (38 × 33 × 36cm)	14⅞ × 12⅞ × 14" (38 × 33 × 36cm)	21 × 12⅞ × 14" (54 × 33 × 36cm)	21 × 12⅞ × 14" 54 × 33 × 36cm)
Power Consumption	1050VA	1250VA	1050VA	1250VA	1050VA	1250VA
Electrical Reqts.	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz
Cat. No.	**13-874-323**	**13-874-320**	**13-874-324**	**13-874-319**	**13-874-318**	**13-874-321**
Each	1097.00	1645.00	1368.00	1882.00	1511.00	1996.00

*Trademark. See Trademark Reference.

Prices subject to change.

Fisher Scientific Isotemp* Open-Bath Circulators, Contd.

ACCESSORIES

For Fisher Scientific* Isotemp* Open Bath Circulators

Bath Covers. Flat, stainless steel.

For Models	Cat. No.	Each
2100-B5, 2150-B5	**13-641-737**	46.00
2100-B14, 2150-B14	**13-641-736**	55.00
2100-B21, 2150-B21	**13-641-738**	65.33

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Thermo Scientific* Precision* Digital Circulating Water Baths

High-performance digital baths

Uniformity obtained by combining digital solid-state controller with sensitive platinum temperature probe and thorough bath circulation. Well-suited for research, quality control, and legal or referee tests.

- Metal-protected heating element allows use of oil or water as bath medium and provides long, dependable service
- Digital/LED temperature display is independent of controller
- Set temperature in 0.1°C increments
- Manual high-limit safety thermostat prevents thermal runaway
- Circulating pump has stainless-steel impeller and fan-cooled motor
- All stainless-steel construction
- Outer body finished with baked epoxy-polyester

INCLUDES:

Stainless-steel gable cover, diffuser shelf, 3-wire cord and plug

COMPLIANCE:

Uniformity of ±0.05°C at 37°C with bath covered meets Class IIA rating by ASTM* Test Method E 715. UL listed.

Thermo SCIENTIFIC
Precision

15-474-100

Model	**260**	**265**	**270**
Capacity (2" from top)	5 gal. (19L)	9 gal. (34.5L)	24 gal. (89L)
Temperature			
Range	Ambient +5°C to 70°C without cover (99.9°C with cover)	Ambient +5°C to 60°C without cover (99.9°C with cover)	Ambient +5°C to 60°C without cover (99.9°C with cover)
Resolution at 37°C w/cover	±0.05°C	±0.05°C	±0.05°C
Uniformity at 37°C w/cover	±0.05°C	±0.05°C	±0.05°C
Reservoir L × W × D	12 × 15 × 7½" (30 × 38 × 19cm)	12 × 27 × 7½" (30 × 69 × 19cm)	18 × 36 × 9½" (46 × 91 × 24cm)
Overall L × W × H	14 × 24½ × 9½" (36 × 62 × 24cm)	14 × 36½ × 9½" (36 × 93 × 24cm)	20 × 45 × 12" (51 × 114 × 30cm)
Power Consumption	1000w	1550w	1550w
Electrical Requirements	120V 50/60Hz, 8.8A	120V 50/60Hz, 12.9A	120V 50/60Hz, 12.9A
Mfr. No.	51221035	51221039	51221036
Cat. No.	**15-474-100**	**15-474-106**	**15-474-105**
Each	2126.00	2325.52	2842.00

Thermo Scientific* Lindberg/Blue M* General-Purpose Circulating Water Baths

Advanced microprocessor control

Set and maintain temperatures ranging from 5°C above ambient to 100°C with ±0.1°C uniformity. Maximum temperature depends on altitude and load. An accessory gable cover is recommended for the most efficient operation above 60°C, and the stainless-steel gable cover is recommended for temperatures above 75°C.

- Microprocessor control with resistance temperature detector probe (included) provides simple, accurate and repeatable temperature control
- Microprocessor control also ptimizes parameters during operation
- Digital display simultaneously reads setpoint and water temperature
- Recessed control module is protected from debris and moisture
- Unit features dual independent overtemperature safety systems
- Adjustable high-limit control prevents overtemperature conditions at any point over bath operating range
- Unit automatically interrupts heat, flashes visual warning and resets when temperature returns to normal
- Fixed overtemperature safety function shuts off bath power, which is reset manually by pushbutton
- Powerful single-stage centrifugal pump with independent supply/return ports supplies maximum circulation and maintains precise temperature uniformity throughout the liquid medium

15-453-1D

- Built to withstand the most critical applications in demanding laboratory environments
- Cabinets and tanks are Type 304 stainless steel to resist chemicals and simplify cleaning
- Moisture-proof blanketed fiber glass insulation surrounds the tank, improving temperature stability and energy efficiency
- Rounded corners provide better water circulation, improved uniformity and easier cleaning
- Built-in drain with ON/OFF valve is standard
- Nonskid rubber feet protect lab bench

INCLUDES:
Reversible stainless-steel rack that allows for optional reduction of working depth by 2" (5cm), temperature probe, 10' (3m) power cord with plug, and mounting clip for immersion glass thermometer (thermometer sold separately).

COMPLIANCE:
UL and CUL listed

Model	WB1110A	WB1120A	WB1130A	WB1140A
Capacity	11L (2.9 gal.)	26.5L (7 gal.)	56L (14.8 gal.)	100.7L (26.6 gal.)
Temperature				
Range	5°C above ambient to 100°C	5°C above ambient to 100°C	5°C above ambient to 100°C	5°C above ambient to 100°C
Uniformity	±0.1°C	±0.1°C	±0.1°C	±0.1°C
Control	Microprocessor	Microprocessor	Microprocessor	Microprocessor
Display				
Type	Digital	Digital	Digital	Digital
Resolution	0.1°C	0.1°C	0.1°C	0.1°C
Pump Type	Centrifugal	Centrifugal	Centrifugal	Centrifugal
Pump Pressure	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)	15L/min. (4 gal./min.)
Reservoir L × W × D	12 × 7½ × 7½" (30 × 19 × 19cm)	18 × 12 × 7½" (46 × 30 × 19cm)	20 × 18 × 9½" (51 × 46 × 24cm)	36 × 18 × 9½" (91 × 46 × 24cm)
Overall L × W × H	18 × 14 × 12½" (46 × 36 × 32cm)	29 × 14 × 12½" (74 × 36 × 32cm)	30 × 20 × 14½" (76 × 51 × 37cm)	46 × 20 × 14½" (117 × 51 × 37cm)
Shipping Weight	39 lb. (17kg)	50 lb. (23kg)	79 lb. (36kg)	105 lb. (48kg)
Power Consumption	840w	1440w	2490w	2490w
Electrical Requirements	120V 50/60Hz, 7A	120V 50/60Hz, 12A	120V 50/60Hz, 21A	120V 50/60Hz, 21A
Mfr. No.	WB1110A	WB1120A	WB1130A	WB1140A
Cat. No.	**15-453-1D**	**15-453-1E**	**15-453-1F**	**15-453-425**
Each	2205.00	2421.00	2691.00	3297.00

ACCESSORIES

Thermo Scientific* Lindberg/Blue M* Gable Covers for General-Purpose Circulating Water Baths

Prevent cross-contamination by diverting condensation to sides for return to bath medium

- Reduce moisture loss and water accumulation on the bench
- Stainless steel or semi-transparent polycarbonate
- Can be attached to side of bath
- Includes handle

For Bath Model	WB1110A	WB1120A	WB1130A/C	WB1140A
L × W × H	14 × 8½ × 5½" (36 × 22 × 14cm)	19 × 14 × 5½" (48 × 36 × 14cm)	21 × 20 × 6" (53 × 51 × 15cm)	36½ × 20 × 6" (93 × 51 × 15cm)
Polycarbonate				
Mfr. No.	118107	118108	118109	118110
Cat. No.	**15-453-202**	**15-453-202A**	**15-453-202B**	**15-453-202C**
Each	309.27	347.01	369.03	383.71
Stainless Steel				
Mfr. No.	38576G01	38576G02	38576G03	38576G04
Cat. No.	**15-453-203A**	**15-453-203B**	**15-453-203C**	**15-453-203D**
Each	301.41	453.60	483.94	513.38

CIRCULATORS—IMMERSION

Thermo Scientific* Haake* Immersion Circulators

No low-liquid-level cutout

Maintain temperatures from 25° to 200°C in tanks, aquaria, jar baths, or other vessels with capacities up to 50L (13¼ gal.) and up to 5¾" deep (14.5cm). Circulators have a Turbulence Reduction System that reduces turbulence development in open baths and automatically adjusts pump performance to the application. Temperature control options include simple ON/OFF (analog model) or PID (digital models).

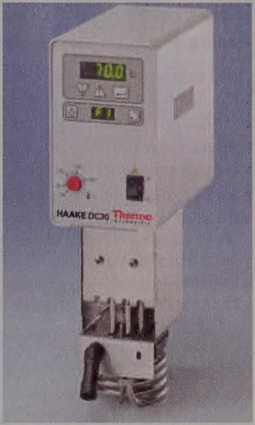
- Digital circulators feature a touchpad front panel display that shows menu options and temperature selections separately
- Select and save up to three different fixed temperatures simultaneously
- Real Temperature Adjustment (RTA) corrects the displayed temperature against any measured value, ensuring that the circulator can be used in accordance with ISO 9000 standards
- Controllers on all models shut down at first sign of excessively high temperature (user-set), low liquid level or motor overload
- Models C10 and DC10 have visual alarms
- Models DC30 and DL30 have visual and audible alarms; also feature RS-232-C interface
- DL30 model has an extra-long immersion depth that can accommodate deeper containers or vessels
- Units clip to side of vessel or lab stand and comes with mounting bracket

INCLUDES:

Analog model comes with a 0° to 100°C thermometer

CERTIFICATIONS:

All models are certified under the IEC 1010 Electrical and Mechanical Safety Code.



13-874-364

Model	Haake C10	Haake DC10	Haake DC30	Haake DL30
Immersion Depth	2⅞ to 5¾" (7.5 to 14.5cm)	2⅞ to 5¾" (7.5 to 14.5cm)	3⅜ to 5¾" (8.5 to 14.5cm)	3⅜ to 7½" (8.5 to 19cm)
Temperature Range	25° to 100°C	25° to 100°C	25° to 200°C	25° to 200°C
Temperature Accuracy	±0.04°C	±0.02°C	±0.01°C	±0.01°C
Temperature Control	ON/OFF	PID	PID	Digital
RTA/ETC Capability	----	RTA	RTA	RTA
Display Type	Analog	Digital	Digital	Digital
Display Resolution	----	0.1°/0.01°C	0.1°/0.01°C	0.1°/0.01°C
Heater	1000w	1200w	1200w	1200w
Pump	Pressure	Pressure	Pressure	Pressure
Pump Pressure	17L/min. (4½ gal./min.)	17L/min. (4½ gal./min.)	17L/min. (4½ gal./min.)	17L/min. (4½ gal./min.)
Overal L × W × H	6 × 3¾ × 12½" (15 × 10 × 32cm)	6½ × 4 × 12½" (16 × 10 × 32cm)	6½ × 4 × 12½" (16 × 10 × 32cm)	6½ × 4 × 14½" (16.5 × 10 × 37cm)
Net Weight	6⅝ lb. (3kg)	6⅝ lb. (3kg)	7 lb. (3.2kg)	7⅞ lb. (3.6kg)
Power Consumption	1050w	1250w	1250w	1550w
Electrical Requirements	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz
Mfr. No.	425-1002	426-1002	426-3002	427-3002
Cat. No.	**13-874-352**	**13-874-358**	**13-874-364**	**13-874-405**
Each	997.00	1384.00	1823.00	2182.00

LOOKING FOR MORE?

Fisher Scientific can offer you the choice of hundreds of thermometers. To review all your choices...

Visit www.fishersci.com and search for Thermometer

Fisher Scientific* Isotemp* Immersion Circulators

Analog or digital models with microprocessor control

Clamp an Isotemp immersion circulator to open baths, jar-style baths, or ring stands to make a constant temperature bath for your specific application.

- Quiet pressure pump provides 14L/min. flow
- Long-life motor won't burn out even if jammed
- Secure to bath or stand with built-in clamp
- If application requires external circulation, just connect ½"-I.D. (1.3cm) tubing to pump nozzle
- Adjust nozzle to change direction of flow
- Microprocessor PID (Proportional Integral Derivative) temperature control anticipates the approach to selected temperature setpoint and prevents overshoot
- Large heaters provide quick heatup and recovery
- Low-watt-density heater won't scorch bath fluids
- Low-liquid-level cutoff with visual alarm
- Zero switching that eliminates RF interference
- Corrosion-resistant, stainless-steel wetted parts

Digital Model 2150

- Easy-to-read LED shows setpoint or actual temperature at the touch of a button
- Resolution 0.1°C
- Set temperature from 25° to 200°C and maintain stability of ±0.02°C
- Big, bright green display lets you monitor temperatures from across the lab

Analog Model 2100

- With thermometer readout (thermometer not supplied) sets temperature from 25° to 100°C
- Stability of ±0.1°C

WARRANTY:

Two-years on parts and labor.

NOTE:

Model 2150 can be used with bath fluids that have a maximum viscosity of 30cS at working temperature range. Model 2100 should not be used with fluids that exceed 5cS at room temperature. Strongly recommended that only water be used as the heat transfer medium with the Model 2100.

13-873-44A

13-873-45A

Model	2100	2150
Immersion Depth	3 to 9½" (7.5 to 24cm)	3 to 9½" (7.5 to 24cm)
Temperature Range	25° to 100°C	25° to 200°C
Temperature Stability	±0.1°C	±0.02°C
Temperature Control	Analog	Digital
Display Type	Thermometer†	LED
Display Resolution	0.1°C	0.1°C
Heater	1000w	1200w
Pump Pressure	14L/min. (3¾ gal./min.)	14L/min. (3¾ gal./min.)
Overall L × W × H	5 × 4 × 12½" (13 × 10 × 32cm)	5 × 4 × 12½" (13 × 10 × 32cm)
Shipping Weight	9 lb. (4.1kg)	9 lb. (4.1kg)
Electrical Requirements	115V 60Hz, 11A	115V 60Hz, 11A
Cat. No.	13-873-44A	13-873-45A
Each	803.00	1440.00

† Thermometer not supplied.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

*Trademark. See Trademark Reference.

Fisher Scientific* Isotemp* Open Baths

Team with immersion circulator for simple, constant-temperature bath

- Stainless-steel refrigerated and unrefrigerated models, or clear acrylic unrefrigerated models
- Reservoir capacities: 13 or 28L (stainless steel); 8, 16, or 21L (acrylic)

Stainless-Steel Models

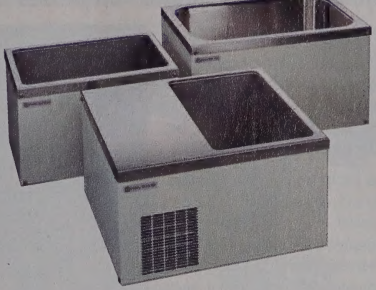
- Use with water or other bath fluids, such as silicone fluids
- In rugged housing with scratch-resistant exterior coating
- For work down to 0°C (32°F), choose refrigerated bath with CFC-free refrigerant; operates on 115V 50/60Hz

Acrylic Models

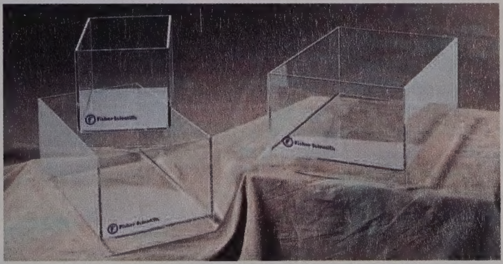
- Optically clear sides let you easily monitor samples
- Maximum operating temperature of 70°C (158°F)
- To ensure sample visibility, use acrylic baths with water
- Combine acrylic bath, immersion circulator and magnetic stirrer for controlled heating and stirring of samples in containers
- Low-profile stirrer will fit in 2¼"-high (5.7cm) space under acrylic tank

WARRANTY:

Two-years on parts and labor



Front, 13-873-12A. Rear, 13-873-10, 13-873-11.



Left: top, 13-873-13; bottom, 13-873-14. Right, 13-873-15.

	Stainless-Steel Open Bath			Acrylic Open Bath		
Model	Refrigerated	Unrefrigerated	Large Capacity Unrefrigerated	Small	Medium	Large
Capacity	3⅜ gal. (13L)	3⅜ gal. (13L)	7⅜ gal. (28L)	2⅛ gal. (8L)	4¼ gal. (16L)	5½ gal. (21L)
Reservoir L × W × D[†]	11 × 9 × 7½" (28 × 23 × 19cm)	11⅝ × 9⅜ × 8⅜" (14 × 24 × 21cm)	19⅜ × 11⅜ × 8⅜" (49 × 29 × 21cm)	11½ × 7½ × 7" (29 × 19 × 18cm)	18 × 10 × 7" (46 × 25.5 × 18cm)	18 × 12 × 7" (46 × 30.5 × 18cm)
Overall L × W × H	16 × 21½ × 11½" (40.5 × 54.5 × 29cm)	13¼ × 10⅜ × 9" (33.5 × 27 × 23cm)	21 3/16 × 13 × 9" (54 × 33 × 23cm)	12 × 8 × 8½" (30.5 × 20 × 22cm)	18½ × 10½ × 8½" (47 × 27 × 22cm)	18 × 12½ × 8½" (46 × 32 × 22cm)
Electrical Requirements	115V 60Hz	None	None	None	None	None
Cat. No.	**13-873-12A**	**13-873-10**	**13-873-11**	**13-873-13**	**13-873-14**	**13-873-15**
Each	1664.00	466.00	657.00	162.00	178.00	262.00
Electrical Requirements	220V 50Hz	----	----	----	----	----
Cat. No.	**13-873-12B**	----	----	----	----	----
Each	1934.00	----	----	----	----	----

[†] *A Fisher Scientific Isotemp immersion circulator would occupy approximately 6L × 5"W (15 × 13cm) of chamber.*

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Thermo Scientific* Haake* EK Series Immersion Coolers

Use with open-bath circulators for cooling of smaller volumes, removing reaction heat or replacing tap water, dry ice, or liquid nitrogen cooling

EK20 and EK30 Immersion Coolers

- Equipped with an air-cooled cooling circuit
- EK20 is designed for baths with a 15cm depth, reaches -25°C in 5L Dewar vessel
- EK30 is designed for baths with a depth of at least 20cm; reaches -30°C in 5L Dewar vessel
- Vessels of other sizes can also be cooled

EK45 Immersion Cooler

- Equipped with an air-cooled cooling circuit
- Multipurpose cooler with integrated controller
- Digital temperature display
- Achieves temperatures down to -45°C in a 5L Dewar vessel
- Temperature accuracy of approx. 1° to 2°C; improved accuracy is possible using a stirrer

13-875-706

13-875-708

ORDERING INFORMATION:
Optional wall-mounting holder available; contact your Fisher Scientific Customer Service Representative for details. Manufactured with ISO 9001: 2000-certified processes.

INCLUDES:
Cooler with immersion cooling coil, operations manual. EK45 Electronic controller comes with Pt100 sensor; sensor is approximately $\frac{1}{4}$" dia. (6mm) × $1\frac{15}{16}$"L (50mmL) with $98\frac{3}{8}$"L (2.5m) cable.

COMPLIANCE: CE mark

Model	EK20	EK30	EK45
Temperature Range	-25° to +150°C	-30° to +150°C	-45° to +40°C
Cooling Capacity			
at 20°C	300w	400w	350w
at -10°C	150w	250w	250w
at -40°C	----	----	50w
Hose Length	59" (150cm)	59" (150cm)	59" (150cm)
Cooling Coil Dimensions (Dia. x L)	$3\frac{3}{16} \times 5\frac{2}{3}$" (81 × 145mm)	$3\frac{3}{16} \times 7\frac{11}{16}$" (81 × 195mm)	$3\frac{3}{16} \times 7\frac{11}{16}$" (81 × 195mm)
Overall Dimensions (L x W x H)	$9\frac{1}{16} \times 18\frac{1}{8} \times 15$" (23 x 46 x 38cm)	$9\frac{1}{16} \times 18\frac{1}{8} \times 15$" (23 x 46 x 38cm)	$9\frac{1}{16} \times 18\frac{1}{8} \times 15$" (23 x 46 x 38cm)
Net Weight	48.5 lb. (22kg)	50.7 lb. (23kg)	66.1 lb. (30kg)
Electrical Requirements	115V 60Hz	115V 60Hz	115V 60Hz
Mfr. No.	322-1202	323-1302	328-1452
Cat. No.	**13-875-706**	**13-875-707**	**13-875-708**
Each	1754.00	2180.00	2755.00

CHILLERS

Thermo Scientific* Neslab* ThermoFlex* Recirculating Chillers

Reliable, easy-to-use chillers optimized for the most demanding applications

Use for analytical instrumentation; laser equipment; medical equipment; packaging; research and university labs.

High reliability plus superior perfromance

- Robust refrigeration system is designed for continuous use in a variety of installations
- Temperature setpoint range of 5° to 40°C (41° to 104°F) with ±0.1°C stability
- Recirculation system incorporates highly reliable plumbing connections to eliminate leaks
- Integrated air and fluid filters to minimize wear to mechanical parts, for lower maintenance costs and improved system reliability
- Up to 10% greater cooling capacity than comparable units: 900w or 1400w cooling capacity at 60Hz
- Lower noise, ensuring a pleasant work environment
- Deliver continuous cooling capacity up to 900 or 1400 watts

Easy to Use

- Quick-start guide enables trouble-free system start-up
- Snap in-and-out air and fluid filters promote quick and simple maintenance
- Innovative recirculation system includes integrated funnel and visual indicator for operator convenience
- Intuitive controller allows customer-defined alarms to be set for various parameters, ensuring that your process is always under control
- Easy-to-read LCD
- Integrated pressure relief ensures application pressure limits are kept within range

13-266-130

ORDERING INFORMATION:
Dimensions, 24.7L × 14.2W × 27.4"H (62.7 × 36 × 68.6cm). Net weight, 126 lb. (57.2kg). Operating temperature: 10° to 40°C (50° to 104°F).

Additional models available with up to 5000w capacity; for details, consult your Fisher Scientific Customer Service Representative or visit Web site.

COMPLIANCE:
NRTL Certified to CSA and UL Standards; CE-Marked

Model	Electrical Requirements	Pump Type	Pumping Speed	Cat. No.	Each
900 PD1	115V 60Hz, 15A circuit	Positive Displacement (PD1)	2.1 gal./min. (7.8L/min.) at 60psi	**13-266-130**	3451.00
900 PD2	115V 60Hz, 15A circuit	Positive Displacement (PD2)	4.1 gal./min. (15.5L/min.) at 60psi	**13-266-131**	3841.00
900 PD1	230V 50Hz, 16A circuit	Positive Displacement (PD1)	1.7 gal./min. (6.4L/min.) at 60psi	**13-266-132**	3740.00
900 PD2	230V 50Hz, 16A circuit	Positive Displacement (PD2)	3.3 gal./min. (12.5L/min.) at 60psi	**13-266-133**	4150.00
1400 PD1	115V 60Hz, 20A circuit	Positive Displacement (PD1)	2.1 gal./min. (7.8L/min.) at 60psi	**13-266-134**	3809.00
1400 PD2	115V 60Hz, 20A circuit	Positive Displacement (PD2)	4.1 gal./min. (15.5L/min.) at 60psi	**13-266-135**	4219.00
1400 PD1	208V 60Hz, 15A circuit	Positive Displacement (PD1)	2.1 gal./min. (7.8L/min.) at 60psi	**13-266-136**	3809.00
1400 PD2	208V 60Hz, 15A circuit	Positive Displacement (PD2)	4.1 gal./min. (15.5L/min.) at 60psi	**13-266-137**	4219.00
1400 PD1	230V 50Hz, 16A circuit	Positive Displacement (PD1)	1.7 gal./min. (6.4L/min.) at 60psi	**13-266-138**	4118.00
1400 PD2	230V 50Hz, 16A circuit	Positive Displacement (PD2)	3.3 gal./min. (12.5L/min.) at 60psi	**13-266-139**	4528.00

*Trademark. See Trademark Reference.

GENERAL PURPOSE

Fisher Scientific* Isotemp* Digital-Control Water Baths

Programmable, digital, dual-temperature control

Ideal for industrial, clinical, pharmaceutical, or biomedical procedures.

- Microprocessor PID temperature control from ambient to 100°C; multiple built-in safety features
- Low-profile design for easy access; acrylic or stainless-steel covers

Controller Features

- PID control for ±0.24°C uniformity, ±0.5°C accuracy/stability at 37°C
- Display shows °C or °F; easy to read from across the room

Safety Features

- Low-profile and front-panel controls for easier access, safer operation
- Dual thermostats guard against thermal runaway
- Hinged acrylic or stainless-steel gable covers have fins that keep hands away from hot vapors
- Covers stay open at 90° or, with quick-release hinge, lift off completely for use with large glassware
- Heating elements will not burn out if bath accidentally runs dry

Design Features

- Corrosion-resistant exterior; easy-to-clean acrylic enamel coating
- Temperature-resistant plastic rim insulates, resists leaks, keeps its shape and won't dry out or crack like caulked seals
- Exterior stays cool even after hours of operation
- Deep-drawn, stainless-steel reservoirs and perforated sample trays
- Rounded reservoir corners and sample trays with finger holes

Model Selection

- **Shallow-form Model 202S** is perfect for heating samples in microcentrifuge tubes and for other molecular-biology procedures
- **Model 215** features two chambers with separate controls
- **Models 220 and 228** have movable control panel
- **Models 210, 215, 220 and 228** include drain pump to empty reservoir

15-462 Series

ORDERING INFORMATION:

Accessory concentric ring covers available: see 15-462-30, 15-462-31, p. 137. Accessory stainless-steel gable covers available: see 15-462-32 through 15-462-35 on p. 137. Additional voltages and models with analog controllers available; for analog-control models, see next page.

WARRANTY:

One year

SPECIFICATIONS	
Temperature Range, Maximum w/Lid	Ambient to 100°C (212°F)
Temperature Accuracy at 37°C	±0.5°C
Temperature Uniformity at 37°C	±0.24°C
Temperature Stability at 37°C	±0.5°C
Temperature Control	PID
Display	Digital
Resolution	±0.1°C

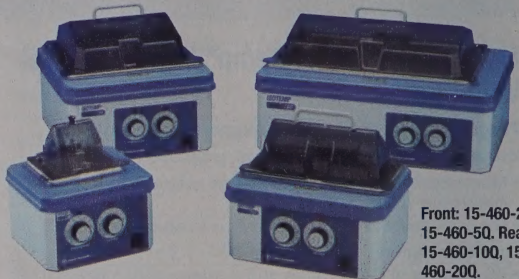
Model	**202**	**202S Shallow Form**	**205**	**210**	**215 Dual Chamber**	**220**	**228**
Capacity	½ gal. (2L)	½ gal. (2L)	1⅜ gal. (5L)	2⅝ gal. (10L)	1⅜/2⅝ gal. (5L/10L)	5¼ gal. (20L)	7⅜ gal. (28L)
Reservoir L × W × D	5¼ × 5⅞ × 6" (13 × 14.8 × 15cm)	5⅞ × 11¾ × 2 1/2" (14.8 × 30 × 6cm)	5⅞ × 11¾ × 6" (14.8 × 30 × 15cm)	12⅞ × 11¾ × 6" (33 × 30 × 15cm)	11¾ × 5⅞ × 6"/ 11¾ × 12⅞ × 6" (30 × 15 × 14.8cm/ 30 × 33 × 15cm)	11¾ × 19¾ × 6" (30 × 50 × 15cm)	11¾ × 19¾ × 8" (30 × 50 × 20cm)
Overall L × W × H	9⅞ × 10¾ × 7⅝" (25 × 27 × 19cm)	10½ × 14⅛ × 6¼" (27 × 36 × 16cm)	10½ × 14⅛ × 7⅝" (27 × 36 × 19cm)	16⅜ × 15⅜ × 8⅞" (42 × 39 × 23cm)	16⅜ × 24⅜ × 8⅞" (42 × 62 × 23cm)	16⅜ × 24⅜ × 8⅞" (42 × 62 × 23cm)	16⅜ × 24⅜ × 10⅞" (42 × 62 × 28cm)
Shipping Weight	7¼ lb. (3.3kg)	8⅞ lb. (4.0kg)	9⅞ lb. (4.5kg)	16½ lb. (7.5kg)	24½ lb. (11.1kg)	22¼ lb. (10.1kg)	26 lb. (11.8kg)
With Acrylic Gable Covers							
Electrical Reqts.	120V 50/60Hz, 1.7A	120V 50/60Hz, 1.7A	120V 50/60Hz, 2.5A	120V 50/60Hz, 5.8A	120V 50/60Hz, 8.3A	120V 50/60Hz, 8.3A	120V 50/60Hz, 8.3A
Cat. No.	**15-462-2Q**	**15-462-2SQ**	**15-462-5Q**	**15-462-10Q**	**15-462-15Q**	**15-462-20Q**	**15-462-28Q**
Each	768.76	790.59	873.88	997.23	1713.72	1284.87	1697.32
Electrical Reqts.	230V 60Hz, 1.7A	230V 60Hz, 1.7A	230V 60Hz, 2.5A	230V 60Hz, 5.8A	230V 60Hz, 8.3A	230V 60Hz, 8.3A	230V 60Hz, 8.3A
Cat. No.	**15-462-3Q**	**15-462-3SQ**	**15-462-6Q**	**15-462-11Q**	**15-462-16Q**	**15-462-21Q**	**15-462-29Q**
Each	749.86	870.02	918.67	1090.79	1812.75	1364.53	1714.60
With Stainless-steel Gable Covers							
Electrical Reqts.	120V 50/60Hz, 1.7A	120V 50/60Hz, 1.7A	120V 50/60Hz, 2.5A	120V 50/60Hz, 5.8A	120V 50/60Hz, 8.3A	120V 50/60Hz, 8.3A	120V 50/60Hz, 8.3A
Cat. No.	**15-462-S2Q**	**15-462-S2SQ**	**15-462-S5Q**	**15-462-S10Q**	**15-462-S15Q**	**15-462-S20Q**	**15-462-S28Q**
Each	820.57	952.18	1045.56	1204.05	1798.88	1353.16	1734.08
Electrical Reqts.	230V 60Hz, 1.7A	230V 60Hz, 1.7A	230V 60Hz, 2.5A	230V 60Hz, 5.8A	230V 60Hz, 8.3A	230V 60Hz, 8.3A	230V 60Hz, 8.3A
Cat. No.	**15-462-S3Q**	**15-462-S3SQ**	**15-462-S6Q**	**15-462-S11Q**	**15-462-S16Q**	**15-462-S21Q**	**15-462-S29Q**
Each	854.89	924.19	889.83	1062.99	1894.78	1201.78	1409.69

Fisher Scientific* Isotemp* Economy Analog-Control Water Baths

Easy-to-use, front-mounted controls

Economical, general-purpose water baths are ideal for industrial, clinical, pharmaceutical, and biomedical procedures. Seven models, including shallow-form and dual-chamber, with capacities from 2 to 28L. Shallow-form Model 102S is perfect for heating samples in microcentrifuge tubes and for other molecular biology procedures. Model 115 has two chambers, each with its own temperature control panel.

- Precise temperature control up to 100°C (212°F)
- Capacities from 2 to 28L
- Easy-to-use controls on front panel for full access and safe operation
- Dual thermostats guard against thermal runaway; elements won't burn out even if bath runs dry
- Choice of acrylic or stainless-steel covers
- Hinged stainless-steel or see-through acrylic gable covers have unique fins that keep hands away from hot vapors; stay open at 90° position or lift off to accommodate large glassware
- Corrosion-resistant exterior with acrylic enamel finish; temperature-resistant plastic rim fits snugly to insulate and prevent leaks
- Outside of the bath stays cool to the touch even after hours of operation
- Low-profile design makes access convenient
- Deep-drawn stainless-steel reservoirs are seamless to prevent leaks; rounded corners make cleaning easy



Front: 15-460-2Q, 15-460-5Q. Rear: 15-460-10Q, 15-460-20Q.

ORDERING INFORMATION:

Concentric ring covers and stainless-steel gable covers are available separately; see p. 137.

INCLUDES:

120V models come with line cord and grounded NEMA 5-15P plug. Sample tray, thermometer clip, and nonhazardous-liquid, partial immersion (76mm) thermometer (-10° to +110°C) come with each bath.

WARRANTY:

One year on parts, labor and travel

CERTIFICATIONS:

All models are CSA approved.

Model	**102**	**102S Shallow Form**	**105**	**110**	**115 Dual Chamber**	**120**	**128**
Capacity	½ gal. (2L)	½ gal. (2L)	1⅜ gal. (5L)	2⅝ gal. (10L)	1⅜/2⅝ gal. (5/10L)	5¼ gal. (20L)	7⅜ gal. (28L)
Temperature							
Maximum, With Lid	100°C (212°F)	100°C (212°F)	100°C (212°F)	100°C (212°F)	100°C (212°F)	100°C (212°F)	100°C (212°F)
Maximum, Without Lid	85°C (185°F)	70°C (158°F)	75°C (167°F)	75°C (167°F)	75°C (167°F)	75°C (167°F)	75°C (167°F)
Uniformity/Stability at 37°C	±0.2°C	±0.2°C	±0.2°C	±0.2°C	±0.2°C	±0.2°C	±0.2°C
Reservoir L × W × D	5¼ × 5⅞ × 6" (13 × 15 × 15cm)	5⅞ × 11¾ × 2½" (15 × 30 × 6cm)	5⅞ × 11¾ × 6" (15 × 30 × 15cm)	12⅞ × 11¾ × 6" (33 × 30 × 15cm)	11¾ × 5⅞ × 6"/ 11¾ × 12⅞ × 6" (30 × 15 × 15cm/ 30 × 33 × 15cm)	11⅜ × 19¾ × 8" (30 × 50 × 20cm)	11⅜ × 19¾ × 8" (30 × 50 × 20cm)
Overall L × W × H	9⅞ × 10¾ × 7⅝" (25 × 27 × 19cm)	10½ × 14½ × 7⅝" (27 × 36 × 19cm)	10½ × 14⅛ × 7⅝" (27 × 36 × 19cm)	16⅜ × 15⅜ × 8⅞" (42 × 39 × 23cm)	16⅜ × 24⅜ × 8⅞" (42 × 62 × 23cm)	16⅜ × 24⅜ × 8⅞" (42 × 62 × 23cm)	16⅜ × 24⅜ × 10⅞" (42 × 62 × 28cm)
Shipping Weight	7 1/4 lb. (3.3kg)	8 13/16 lb. (4.0kg)	9 15/16 lb. (4.5kg)	16½ lb. (7.5kg)	24½ lb. (11.1kg)	22¼ lb. (10.1kg)	26 lb. (11.8kg)
Acrylic Gable Covers							
Electrical Requirements	120V 50/60Hz, 1.7A	120V 50/60Hz, 1.7A	120V 50/60Hz, 2.5A	120V 50/60Hz, 5.8A	120V 50/60Hz, 8.3A	120V 50/60Hz, 8.3A	120V 50/60Hz, 8.3A
Cat. No.	**15-460-2Q**	**15-460-2SQ**	**15-460-5Q**	**15-460-10Q**	**15-460-15Q**	**15-460-20Q**	**15-460-28Q**
Each	548.26	544.72	666.33	800.84	1535.38	948.69	1154.30
Stainless-Steel Gable Covers							
Electrical Requirements	120V 50/60Hz, 1.7A	120V 50/60Hz, 1.7A	120V 50/60Hz, 2.5A	120V 50/60Hz, 5.8A	120V 50/60Hz, 8.3A	120V 50/60Hz, 8.3A	120V 50/60Hz, 8.3A
Cat. No.	**15-460-S2Q**	**15-460-S2SQ**	**15-460-S5Q**	**15-460-S10Q**	**15-460-S15Q**	**15-460-S20Q**	**15-460-S28Q**
Each	676.08	670.26	800.80	963.51	1697.16	963.71	1156.46

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

LOOKING FOR MORE?

Fisher Scientific carries a wide range of bath fluids, from oils to silicone anbd waxes. In addition to those in these section, you can find these items online.

Visit www.fishersci.com and search for Bath Fluid

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

15-462-31Q

Concentric Ring Covers

Fit Fisher Scientific* Isotemp* Models 110/210, 120/220, and 128/228 water baths

- Evaporate liquids or melt solids such as agar
- Cover for 10L bath has four holes; cover for 20 and 28L baths has six holes
- Each hole has removable center lid and concentric stainless-steel rings
- Rings can be removed from inner ring outward, producing diameters to accommodate various sizes of lab containers

WARRANTY:
One year

For Model	No. of Holes	Cat. No.	Each
110, 210	4	**15-462-30Q**	307.88
120, 128, 220, 228	6	**15-462-31Q**	370.68

Stainless-steel Gable Covers

WARRANTY:
One year

For Models	Cat. No.	Each
2L	**15-462-32Q**	175.53
2L Shallow-form, 5L	**15-462-33Q**	189.88
10L	**15-462-34Q**	202.28
20L, 28L	**15-462-35Q**	212.46

Fisher Scientific* HiTemp* Bath

Ideal for applications requiring temperatures above 100°C (212°F)

11-481Q

Just place appropriate heating media—water, oil, bath wax, or sand—in bath reservoir. Attach sample container to accessory support rod at top rear of bath, flip on power switch, and select temperature with front control knob.

- Operates from ambient temperature to 275°C (527°F)
- Factory-calibrated temperature controller with back-up safety relay ensures quick response and minimal overshoot
- Controls the 1250w heater and maintains bath constancy to ±2°C
- Cabinet is packed with insulation to minimize heat loss
- Cast-aluminum reservoir holds round- or flat-bottom container with up to 1 gal. (4L) capacity
- Top rim controls spills and overflows
- Rugged, cold-rolled steel cabinet is finished with baked acrylic enamel for easy maintenance

ORDERING INFORMATION:
Bath is 13½L × 13½W × 12"H (34 × 34 × 30cm). Bowl is 8" square (20 × 15cm) × 6" deep (15cm). Reservoir capacity is 1¼ gal. (5L). Unit has ½ × 27 threaded hole for mounting accessory support rod 14-667R; order separately. Bath oil also available separately; order 02-20.

INCLUDES:
Three-wire cord and plug

WARRANTY:
One year

CERTIFICATIONS:
CSA approved

Electrical Requirements	Cat. No.	Each
120V 50/60Hz, 11A	**11-481Q**	1130.38
240V 50/60Hz, 5.5A	**11-481-1**	1262.61

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Thermo Scientific* Precision* General-Purpose Water Baths

Eight models, including dual-chamber and shallow-form, with analog or digital control

- Rugged, high-performance baths maintain water temperature from ambient to 99.9°C with ±0.2°C uniformity (at 37°C)
- Hydraulic thermostat sensitive to ±0.1°C is located in the chamber for accurate temperature control, and a second thermostat is included for safety
- Direct-contact tubular heating elements provide fast, uniform heat transfer
- Dual-chamber models have independent controls for operating at different temperatures
- 180 Series analog baths are ideal for applications in which temperature setpoints seldom change—feature variable analog temperature control, backup high-limit safety thermostat, and illuminated power switch
- 280 Series microprocessor-controlled baths allow temperature setpoint with 0.1°C precision at just the push of a button—features include bright three-digit LED temperature readout, built-in calibration capability, and automatic overtemperature protection
- All models feature seamless, deep-drawn stainless-steel bath chambers
- Stainless-steel adjustable diffuser shelf and shelf legs, fiberglass insulation, and switch with amber indicator light are standard on all baths
- Models 181 and 281 have polypropylene covers; others have stainless-steel gable covers

ORDERING INFORMATION:
Supplied without racks

CERTIFICATIONS:
UL listed, CSA approved, CE marked

Thermo SCIENTIFIC
Precision

15-474-71

Model	**180/280 Shallow Form**	**181/281**	**182/282**	**183/283**	**184/284**	**185/285**	**186/286**	**188/288 Dual Chamber**
Capacity[1]	⅜ gal. (1.5L)	¾ gal. (2.5L)	1½ gal. (5.5L)	3⅛ gal. (12L)	5⅛ gal. (19.5L)	4¾ gal. (18L)	11⅜ gal. (43L)	(12L)[2]
Max. Operating Temperature[3]	95°C	99.9°C	99.9°C	99.9°C	99.9°C	99.9°C	99.9°C	99.9°C
Temperature Uniformity[4]	±0.2°	±0.2°	±0.2°	±0.2°	±0.2°	±0.2°	±0.2°	±0.2°
Temperature Sensitivity[4]	±0.1°	±0.1°	±0.1°	±0.1°	±0.1°	±0.1°	±0.1°	±0.1°
Heater	225w	225w	300w	400w	600w	600w	1200w	800w
Reservoir L x W x D	6 × 11½ × 2" (15 × 29 × 5cm)	6 × 5 × 6" (15 × 13 × 15cm)	11½ × 6 × 6" (29 × 15 × 15cm)	11½ × 12 × 6½" (29 × 32 × 15cm)	14 × 12 × 8" (36 × 30 × 20cm)	19½ × 11½ × 6" (50 × 29 × 15cm)	16 × 28 × 6½" (41 × 71 × 17cm)	11½ × 12½ × 6"[2] (29 × 32 × 15cm)
Overall L x W x H[5]	8 × 14 × 9¾" (20 × 36 × 25cm)	9¾ × 8 × 11½" (25 × 20 × 30cm)	15¼ × 8 × 13" (39 × 20 × 33cm)	15¼ × 14¾ × 13" (39 × 38 × 33cm)	18¾ × 15¾ × 13" (48 × 40 × 33cm)	23 × 13¾ × 13" (58 × 35 × 33cm)	20¾ × 31½ × 13" (53 × 80 × 33cm)	15¼ × 29 × 13" (39 × 74 × 33cm)
Shelf L x W	5 × 10½" (12 × 26cm)	4½ × 4" (11 × 10cm)	10½ × 5" (26 × 12cm)	10½ × 11½" (26 × 29cm)	12 × 10" (34 × 25cm)	17 × 9" (43 × 22cm)	13½ × 25½" (34 × 64cm)	10½ × 11½" (26 × 29cm)
Weight	12 lb. (5.4kg)	12 lb. (5.4kg)	16 lb. (7.3kg)	20 lb. (9.1kg)	25 lb. (11.3kg)	30 lb. (13.6kg)	56 lb. (25.4kg)	40 lb. (18.1kg)
With Analog Control								
Electrical Requirements	115V 50/60Hz, 2.0A	115V 50/60Hz, 2.0A	115V 50/60Hz, 2.5A	115V 50/60Hz, 3.5A	115V 50/60Hz, 5.2A	115V 50/60Hz, 5.2A	115V 50/60Hz, 10.4A	115V 50/60Hz, 7.0A
Mfr. No.	51221070	51221064	51221073	51221060	51221075	51221065	51221072	51221061
Cat. No.	**15-474-22**	**15-474-10**	**15-474-15**	**15-474-25**	**15-474-18**	**15-474-35**	**15-474-20**	**15-474-30**
Each	549.96	564.95	622.46	770.42	872.46	919.39	1307.15	1376.54
International Models with Analog Control								
Electrical Requirements	----	230V 50/60Hz, 1.0A	230V 50/60Hz, 1.3A	230V 50/60Hz, 1.8A	230V 50/60Hz, 2.6A	230V 50/60Hz, 2.6A	230V 50/60Hz, 5.2A	230V 50/60Hz, 3.5A
Mfr. No.	----	51221211	51221068	51221062	51221069	51221066	51221074	51221063
Cat. No.	----	**15-474-11**	**15-474-16**	**15-474-26**	**15-474-19**	**15-474-36**	**15-474-21**	**15-474-31**
Each	----	629.60	691.85	830.62	970.41	681.76	1498.01	1528.58
With Digital Control								
Electrical Requirements	115V 50/60Hz, 2.0A	115V 50/60Hz, 2.0A	115V 50/60Hz, 2.5A	115V 50/60Hz, 3.5A	115V 50/60Hz, 5.2A	115V 50/60Hz, 5.2A	115V 50/60Hz, 10.4A	115V 50/60Hz, 7.0A
Mfr. No.	51221044	51221046	51221048	51221050	51221052	51221054	51221056	51221058
Cat. No.	**15-474-65**	**15-474-67**	**15-474-69**	**15-474-71**	**15-474-73**	**15-474-75**	**15-474-77**	**15-474-79**
Each	758.83	809.21	825.18	958.23	1099.88	1165.31	1558.16	1907.71

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[1] Chamber capacity measured with bath filed to 1" (2.5cm) from top.

[2] Each Chamber.

[3] With gable cover in place. Maximum temperature with chamber uncovered is apprximately 65°C.

[4] At 37°C.

[5] With cover.

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* Precision* Reciprocating Shaker Baths

Accurate temperature control and quiet reciprocal shaking action

15-455

- Set temperature (in increments of 0.1°C) and oscillation speed via control-panel touchpad
- Shaking frequency: 30 to 200 strokes/min.
- Stroke length adjustable at ½, 1, or 1½" (13, 25, or 38mm)
- Microprocessor-controlled proportional integral temperature control and solid-state sensing probe provide excellent temperature sensitivity
- With adjustable high-limit thermostat and indicator light
- Low-watt-density nickel alloy immersion-type heaters
- Epoxy-polyester coated, stainless-steel exterior

ORDERING INFORMATION:
Replacement gable covers available; order online.

INCLUDES:
Stainless-steel chamber and gable cover

CERTIFICATIONS:
UL listed

Model	25	50
Capacity[1]	14.5L (3⅞ gal.)	26.5L (7 gal.)
Temperature Range[2]	Ambient to 70°C	Ambient to 70°C
Uniformity at 37°C (with cover)	±0.05°C	±0.1°C
Reservoir L × W × D	12 × 15 × 7½" (30 × 38 × 19cm)	12 × 27 × 7½" (30 × 69 × 19cm)
Overall L × W × H	14 × 24½ × 9½" (36 × 62 × 24cm)	14½ × 36½ × 9½" (37 × 93 × 24cm)
Electrical Requirements	120V 50/60Hz	120V 50/60Hz
Mfr. No.	51221080	51221081
Cat. No.	**15-455**	**15-455-5**
Each	3135.72	4629.60

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[1] Filled to 3½" (89mm) from top of bath.
[2] To 99.9°C with cover.

ACCESSORIES

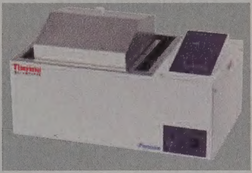
Glassware Clamps

Size Glassware Held by Clips	Capacity Model 25	Capacity Model 50	Mfr. No.	Cat. No.	Each
13 to 25mm Test Tubes	25 Tubes	60 Tubes	51200837	**15-455-15A**	65.03
25mL Flask	20 Flasks	48 Flasks	51200848	**15-455-15B**	52.59
50mL Flask	15 Flasks	36 Flasks	51200819	**15-455-15C**	61.87
125mL Flask	9 Flasks	24 Flasks	51200842	**15-455-15D**	52.59
250mL Flask	6 Flasks	14 Flasks	51220205	**15-455-15E**	52.59
500mL Flask	4 Flasks	12 Flasks	51200820	**15-455-15F**	52.59
1000mL Flask	2 Flasks	5 Flasks	51200821	**15-455-15G**	131.34

Thermo Scientific* Precision* Shallow-Form Shaking Bath and Dubnoff Incubator/Bath

Provide gentle, uniform reciprocal shaking motion at constant temperature

15-453-205


15-453-200

- Tray depth of only 3½" (8.9cm) is perfect for small samples with optional Microcentrifuge Tube Racks (15-453-201J); also accommodate optional flask glassware clamps
- With gable cover, temperature range is ambient +5° to 99.9°C; uniformity and sensitivity at 37°C, ±0.05°C
- Strokes per minute: 30 to 200
- Stroke length: ½, 1, and 1½" (13, 25, and 38mm)
- Corrosion-resistant, stainless-steel interior and exterior
- Chamber volume with bath filled to 3½" (89mm) from top: 14.5L (3⅞ gal.)
- Usable chamber: 11½L × 11W × 3½"D (29 × 28 × 9cm)
- Overall, 14L × 24½W × 9½"H (36 × 62 × 24cm)

ORDERING INFORMATION:
Flowmeter is optional accessory. Tube racks and replacement gable covers and gassing hoods available online.

INCLUDES:
Gable cover, built-in dial-type thermometer, and water-level regulator. Dubnoff Bath also includes one large and two small gassing hoods, specifically designed for biochemical and biological reactions that require gas-conditioned atmosphere.

Bath Type	Electrical Requirements	Mfr. No.	Cat. No.	Each
Shallow-form	120V 50/60Hz	51221079	**15-453-205**	3273.48
Shallow-form	240V 50/60Hz[†]	51221078	**15-453-201B**	4244.86
Dubnoff	120V 50/60Hz	51221076	**15-453-200**	4629.60

[†] International model

ACCESSORIES

Flowmeter

N_2/O_2 Flowmeter for Dubnoff Bath.

Mfr. No.	Cat. No.	Each
51200802	**15-453-201E**	540.39

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Thermo Scientific* Haake* Shaking Water Bath SWB25

High safety level for constant operation, plus accurate PID temperature control

Shaking water bath features:

- Horizontal shaking motion
- Stainless-steel bath reservoir
- LED digital display; PID control
- Temperature Range: 25.0° to 90°C
- Shaking frequency and temperature are adjusted via keypad and digital display
- Heater and control sensor are underneath bath for easy cleaning
- Fluid level can vary from 50 to 180mm to accommodate sample vessels of differing heights
- Optional transparent plastic gable-shaped bath cover (13-872-130) prevents water spillage caused by turbulence; recommended for temperatures above 70°C

ORDERING INFORMATION:

Optional accessories include swivelling Transparent Gable Cover (13-872-130); second shaking carriage for rapid interchange; tap water cooling coil. Contact your Fisher Scientific Customer Service Representative for details.

INCLUDES:

One Shaking Carriage Plate (without clamps; order clamps separately below).

Model	SWB25
Capacity	$6\frac{7}{8}$ gal. (26L)
Display	LED
Control Type	PID
Temperature Range	22° to 90°C; 20° to 90°C with tap water cooling
Temperature Accuracy	±0.2°C
Heater Wattage	1.5kw
Overtemperature Protection	Adjustable
Agitation Rate	20 to 200min.$^{-1}$
Shaking Motion	15mm Horizontal
Reservoir L × W × D	$11\frac{13}{16} \times 19\frac{11}{16} \times 7\frac{7}{8}$" (30 × 50 × 20cm)
Overall L × W × H	$13\frac{3}{8} \times 25\frac{9}{16} \times 10\frac{9}{32}$" (34 × 65 × 26cm)
Net Weight	$39\frac{11}{16}$ lb. (18kg)
Electrical Requirements	115V 60Hz
Mfr. No.	375-0002
Cat. No.	**13-874-369**
Each	3541.00

13-874-369

13-874-369 with Transparent Gable Cover

ACCESSORIES

Flask Clamps

Fix flasks or beakers onto shaking carriage plate or basic rack of Thermo Scientific* Haake* Shaking Water Bath.

For Flask Size	No. per Plate	Mfr. No.	Cat. No.	Each
25mL	40	000-8732	**13-872-134**	33.00
50mL	32	000-1980	**13-872-135**	36.00
100mL	18	000-1982	**22-269-415**	39.00
250mL	12	000-1990	**13-872-136**	44.00
500mL	8	000-1994	**13-872-137**	49.00
1000mL	5	000-1995	**13-872-138**	61.00

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Thermo Scientific* Lab-Line* Reciprocating Shaking Baths

Precise analog or digital control of temperature, speed and time

Digital model is ideal for applications such as tissue, metabolic, enzymatic and cell studies. Analog model is ideal for cell culture studies, bacterial studies, electrophoresis gel destaining, blood plasma thawing, microbiological studies, tissue flotations and hybridization.

- 15 to 250 oscillations/min.
- Adjustable stroke length from ½" (1.3cm) to 1½" (3.8cm) in ¼" (0.64cm) increments
- Temperature control from above ambient to 65°C (98°C with optional gable cover)
- Control and uniformity of ±0.1°C at 37°C
- Stainless-steel universal trays have handles and adjustable springs to hold racks and other objects during shaking; ensure uniform temperature throughout bath
- Platform insert (14-280-47) secures flasks using standard flask clamps that fit predrilled holes in platform
- Overtemperature safety feature with independent thermostat provides additional backup by controlling heat if main temperature controller fails

Digital Reciprocating Shaker Model 4682

- View speed, time and temperature on three individual displays
- Built-in memory retains setpoints if power fails; shaking automatically resumes once power is restored
- Visual/audible alarms indicate low water level or deviation in speed over setpoint
- Locked rotor protection stops shaking if blockage occurs, preventing motor damage
- Seamless stainless-steel chamber prevents leakage
- Low level-water alarm protects samples

Analog Reciprocating Shaker Model 3582

- Shaker mechanism has independent power switch, allowing unit to be used as a constant temperature water bath
- Adjustable temperature, stroke and speed provide versatility
- Excellent ±0.1°C uniform water temperature
- Optional gassing hood allows for nonambient atmosphere applications
- Easy-to-read LED temperature display

ORDERING INFORMATION:

Chamber dimensions, 19½D × 11½W × 8"H (49 × 29 × 20cm). Exteriors measure 31½L × 16½W × 11¼"H (80 × 42 × 29cm). Shipping weight, 46 lb. (21kg). For use with standard flasks, require platform insert (14-280-47) and flask clamps, sold separately.

INCLUDES:

Stainless-steel tray, handles and springs to hold racks and other objects.

WARRANTY:

Two years

Model	**4682**	**3582**
Capacity	5 gal. (20L)	5 gal. (20L)
Shaking Rate	15 to 250 oscillations/min.	15 to 250 oscillations/min.
Temperature Range	Ambient to 65°C (98°C with optional gable cover)	Ambient to 65°C (98°C with optional gable cover)
Temperature Uniformity	±0.1°C at 37°C (in flask)	±0.1°C at 37°C (in flask)
Electrical Requirements	120V 50/60Hz, 1400w, 11.6A	120V 50/60Hz, 1400w, 11.6A
Mfr. No.	4682	3582
Cat. No.	**11-688-36**	**14-280-45**
Each	5331.00	3761.00

11-688-36

14-280-45

ACCESSORIES

For Thermo Scientific* Lab-Line* Reciprocating Water Baths

- Platform insert and one or more flask clamps are required to hold flasks in place
- Flask clamps fit into predrilled holes in platform insert; platform holds eleven 25mL clamps, five 250mL clamps, three 500mL clamps
- Gable cover extends temperature range to 98°C

Description	Mfr. No.	Cat. No.	Each
Platform Insert	3582-33	**14-280-47**	104.52
25mL Flask Clamp	30151	**22-262-769**	20.10
250mL Flask Clamp	30154	**14-272-4B**	25.45
500mL Flask Clamp	30156	**22-256-959**	29.78
Stainless-Steel Gable Cover	3582-39	**14-280-50**	327.41

New Brunswick Scientific* Model C76 Water Bath Shaker

Built to run continuously—all day, every day

- Designed for continuous-duty orbital shaking
- Broad 50 to 300rpm speed range permits gentle as well as vigorous agitation and aeration
- Features push-button setpoints, self-diagnostic status lights and alarms that warn of any deviation from control tolerances
- LED digital display shows temperature in 0.1°C increments and speed in 1rpm increments
- Visible warning signal indicates when temperature deviates more than 1°C and speed more than 5rpm from setpoints
- Front and rear snap-in baffles minimize splashing
- Bath accommodates flasks, tubes and dishes for staining, destaining and hybridization

14-278-180 Water Bath Shaker with optional gable cover and accessory platform

Model	C76
Shaking Motion	Orbital, ½“ dia. (1.3cm)
Agitation Rate	50 to 300rpm (±2rpm)
Rate Indication	Digital LED, in 1rpm increments
Drive Motor	Variable speed AC
Timer	0.1 to 99.9 hr.
Temperature Range	7°C above ambient (or coolant temperatures using optional cooling coil) to 80°C †
Temperature Accuracy	±0.25°C
Temperature Indication	Digital LED, in 1rpm increments
Overall L x W x H	27 × 21½ × 18½“ (68 × 54 × 47cm)
Bath L x W x D	20½ × 13½ × 8¼“(51 × 34 × 21cm)
Platform L x W	16½ × 12“(42 × 31cm)
Net Weight	115 lb.(52kg)
Electrical Requirements	115V 50/60Hz
Mfr. No.	M1248 0002
Cat. No.	**14-278-180**
Each	5035.00

† Stainless-steel gable cover required for temperatures above 60°C. Order separately (Cat. No. 14-284-36).

Workload Capacities‡	
Flask Size	**Capacity**
50mL	31
125mL	22
250/300mL	13
500mL	8
1L	6
2L	2
Test Tube Diameter	**Capacity**
13mm	60
16mm	36
20mm	29
25mm	18

‡ For flasks, with accessory platform. For test tubes, with accessory test-tube rack.

ACCESSORIES

Gable Covers For New Brunswick Scienitific* Model C76 Water Bath Shaker

- Plexiglas* cover permits temperatures up to 60°C
- Stainless-steel cover required for temperatures above 60°C

Description	Mfr. No.	Cat. No.	Each
Plexiglas Cover	M1231 2010	**14-284-37**	627.00
Stainless-steel Cover	M1231 2000	**14-284-36**	627.00

Dedicated Use Flask Platforms

- Designed for one specific flask size
- Choose one full-size (16½ L × 12"W [42 × 31cm]) platform or two half-size platforms for shaking versatility.

INCLUDES:

Clamps

REQUIRED ACCESSORIES:

Use of half-size platforms requires subplatform (14-284-46); order separately.

Flask Size	No. of Clamps	Mfr. No.	Cat. No.	Each
Full-Size Platforms				
125mL	20	M1231 9934	**14-284-34**	728.00
250, 300mL	13	M1231 9935	**14-284-35**	684.00
500mL	8	M1231 9936	**14-284-16**	614.00
Half-Size Platforms††				
125mL	8	AG7125	**14-284-20**	371.46
250mL	5	AG7250	**14-284-21**	360.45

†† Require subplatform. Order separately (14-284-46).

Test Tube Racks

Require subplatform (14-284-46); order separately.

Tube Dia.	No. of Places	Mfr. No.	Cat. No.	Each
13mm	60	AG7 TT13	**14-284-22**	280.00
16mm	36	AG7 TT16	**14-284-23**	280.00
20mm	29	AG7 TT20	**14-284-24**	280.00
25mm	18	AG7 TT25	**14-284-25**	280.00

Flask Clamps for C-76 Shaker

Use with universal platforms

- Stainless steel
- Come complete with required screws
- Fitted with coiled wire springs for added stability at elevated speeds

Description	Mfr. No.	Cat. No.	Each
Erlenmeyer Clamps			
10mL	ACE 10S	**14-281-20**	15.00
25mL	M1190 9004	**14-284-41**	16.00
50mL	M1190 9000	**14-278-160**	17.00
125mL	M1190 9001	**14-278-161**	18.25
250mL	M1190 9002	**14-278-162**	26.00
500mL	M1190 9003	**14-278-163**	30.00
1000mL	ACE 1000S	**14-281-26**	38.00
2000mL	ACE 2000S	**14-281-27**	57.00
4000mL	ACE 4000S	**14-281-28**	66.00
6000mL	ACE 6000S	**14-281-29**	82.00
Fernbach Clamp			
2800mL	ACFE 2800S	**14-281-30**	76.00

*Trademark. See Trademark Reference.

ACCESSORIES

Subplatform for New Brunswick Scientific* Model C76 Water Bath Shaker

Use as mounting base for two half-size platforms or four test-tube racks.

Mfr. No.	Cat. No.	Each
M12319939	**14-284-46**	190.71

Universal Platform

- Holds different combinations of flask clamps
- Maximum number of flasks: 82 (10mL), 16 (25mL), 14 (50 or 125mL), 8 (250mL), 6 (500mL), 4 (1L), or 2 (2L)
- Measures 16½W × 12"L (42 × 30cm)

Mfr. No.	Cat. No.	Each
M1231 9930	**14-284-45**	439.55

Stovall* Three-in-One Shaking Water Bath

Use as a shaking water bath, constant temperature bath or shaker

15-453-213

- Portable, versatile workhorse comprised of a lightweight, quick-heating water bath and The Belly Dancer Shaker
- Bath can be removed from shaker and used separately
- Microprocessor-controlled PID system
- Displays setpoint and actual water temperature

Shaker Features

- Gentle undulating motion
- Speed adjustable from 0 to 100rpm
- Orbital action with 1" (2.5cm) throw
- Platform pitch adjustable from flat to 8°
- 7 × 7" (18 × 18cm) acrylic, open-sided platform
- 5 lb. (2.25kg) load capacity
- Measures 8L × 8W × 4¾"H (20 × 20 × 12cm)

Water Bath Features

- Temperature range of 30° to 75°C
- Temperature ramp-up: approx. 3°C/min.
- Stability: ±0.2°C at setpoint
- PID microprocessor control maintains water temperature within ±0.1°C between 35° and 72°C
- Easily mobile: weighs just 7½ lb. with lid
- Exterior measures 12¼L × 12¼W × 4"H (31 × 31 × 10.2cm)
- Stainless-steel chamber measures 10⅜L × 10⅜W × 3¼"D (26.4 × 26.4 × 8.3cm)
- Shaker and Water Bath together are perfect for Northern/Southern filter blot hybridizations, filter washes, in-situ washes and hybridizations, electrophoretic gel manipulation, acceleration of protein gel staining, hot staining protocols and recombinate DNA technology.
- Constant Temperature Bath used alone is ideal for protocols not requiring agitation such as heat inactivation of serums, restriction enzyme digests, and protein assays.
- Shaker is useful alone for non-temperature-sensitive stainings, washings, and probes involved in gel and blotting techniques.

INCLUDES:

Shaker/Bath combination comes with The Belly Dancer Shaker modified to include temperature control plus Stovall Hybridization Water Bath.

Electrical Requirements	Mfr. No.	Cat. No.	Each
115V 50/60Hz, 6.26A	CMBAA115S	**15-453-213**	2515.00
220V 50/60Hz, 4.25A	CMBAA220S	**15-453-214**	2550.00

SPECIALTY

Thermo Scientific* Precision* Electrically Heated Concentric Ring Steaming Baths

15-496 15-491

Evaporate liquids, solvents, or melt solids such as agar

- Concentric rings can be removed from inner cover outward to accommodate containers of all sizes
- Constructed of stainless-steel with epoxy polyester-coated steel support stand
- Rings are flanged-formed stainless steel
- Center ring cover is 1" diameter (25mm)
- Rings progress out from cover in 1" (2.5cm) increments
- Copper-clad immersion heater is controlled with four-position heater switch
- Maximum temperature, 100°C (212°F)

ORDERING INFORMATION:

Baths may also be flush-mounted in benchtop. Wiring of switch must be completed onsite.

INCLUDES:

Constant water level device (with ¼" inlet for water supply), adjustable drain tube, and welded angle-iron support frame with hot-rolled steel legs, fasteners and lockwashers

Model	4-Hole	8-Hole	8-Hole
Capacity	11.3L (3 gal.)	26.5L (7 gal.)	26.5L (7 gal.)
Time to 100°C	63 minutes	65 minutes	65 minutes
Number of Holes × Dia.	4 × 5" (13cm)	2 × 6"; 4 × 5"; 2 × 4" (15cm; 13cm; 10cm)	2 × 6"; 4 × 5"; 2 × 4" (15cm; 13cm; 10cm)
No. of Rings/Hole	5	6/5/4	6/5/4
L × W × H (with support frame)	15 × 15 × 13" (38 × 38 × 33cm)	15½ × 29 × 13½" (39 × 74 × 34cm)	15½ × 29 × 13½" (39 × 74 × 34cm)
Wattage	1100	2000	2000
Amperage	9.2	16.7	8.3
Voltage (AC/DC), 50/60Hz	120	120	240
Mfr. No.	2896	2898	2899
Cat. No.	**15-496**	**15-491**	**15-491-1**
Each	1045.92	1425.27	1686.40

Thermo Scientific* Precision* Coliform Incubator Baths

Push-button controls for easy use

Ideal for testing fecal coliforms in water or sewage at 35°, 41°, 44.5°, or 45.5°C (95°, 106°, 112°, or 114°F) ±0.2°C (±0.4°F) as required by APHA, U.S. EPA, AWWA and WPCF. Designed to test *E. coli* in food at 45.5°C (114°F) ±0.05°C (±0.1°F) as required by U.S. FDA and AOAC regulations.

- Centrifugal pump circulates water throughout chamber
- Microprocessor controller maintains precise control even with a full load or without cover
- Control to factory-preset temperatures of 35°, 41.5°, 44.5°, or 45.5°C (95°, 106°, 112°, or 114°F)

Large-capacity Unit

- Holds up to 288 fecal coliform or 150 *E. coli* cultures
- Accepts three (15-459-2) Petri dish racks
- Stainless-steel bath chamber
- Chamber volume: 9.1 gal. (34.5L)
- Solid-state controls
- Bath chamber dimensions: 12L × 27W × 7½"D (31 × 69 × 19cm)
- Shipping weight: 60 lb. (27.2kg)

Small-capacity Unit

- Holds up to ninety-six 50mm Petri dishes or 50 test tubes up to 20 × 150mm
- Accepts one (15-459-2) Petri dish rack
- ON/OFF switch activates both heater and pump
- Stainless-steel bath chamber
- Chamber volume: 4.8 gal. (17.5L)
- Bath chamber dimensions: 12L × 14W × 8"D (30 × 36 × 20cm)
- Shipping weight: 35 lb. (15.9kg)

REQUIRED ACCESSORIES:
ASTM* 91C Thermometer (15-173-24C)

15-459-12
15-459-15

CERTIFICATIONS:
UL listed

L × W × H	Electrical Requirements	Mfr. No.	Cat. No.	Each
Large-capacity Model				
½" (36 × 91 × 24cm)	115V 50/60Hz	2862	**15-459-15**	2184.00
Small-capacity Model				
½" (39 × 47 × 24cm)	115V 50/60Hz	2860	**15-459-12**	1976.00
½" (39 × 47 × 24cm)	230V 50/60Hz	2861	**15-459-13**	2128.00

ACCESSORIES

Dish Rack for Coliform Incubator Bath

Holds up to eighty 50mm Petri dishes

- Stainless steel
- With two rack-retaining clips
- 15-459-15 Bath holds three racks; 15-459-12 and 15-459-13 each hold one

Mfr. No.	Cat. No.	Each
51200804	**15-459-2**	196.56

Boekel* Unheated Shallow Concentric Ring Bath

Ideal for gentle flask, bottle, and test tube heating

- Minimizes water loss through evaporation
- Stainless steel, with flat bottom, reinforced edge, steam escape outlet, welded handles
- Seven concentric rings

15-518B

ORDERING INFORMATION:
8 dia. × 2¾"D (20 × 7cm)

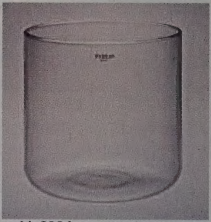
Mfr. No.	Cat. No.	Each
1445 8	**15-518B**	278.00

Pyrex* Cylindrical Jars

Can also be used as animal jars

General-purpose cylindrical jars are suitable for use as instrument covers and solution containers.

- Mold-blown to ensure uniformity
- Uniform wall thickness provides mechanical strength
- Without handle
- No flange at open end
- Ground open end


11-823J

ALERT:
Do not use with heat, pressure or vacuum applications.

Capacity	O.D. × H	Mfr. No.	Cat. No.	Each	Case of 4
7.5L (2 gal.)	8¾ × 10" (22.2 × 25.4cm)	6942 7L	**11-823E**	----	940.51
9.25L (2½ gal.)	10⅛ × 10" (25.7 × 25.4cm)	6942 9L	**11-823G**	334.11	----
17L (4½ gal.)	12 × 12" (30.5 × 30.5cm)	6942 17L	**11-823J**	456.26	----
26.5L (7 gal.)	12 × 18" (30.5 × 45.7cm)	6942 27L	**11-823K**	525.65	----
32L (8½ gal.)	16 × 12" (40.6 × 30.5cm)	6942 32L	**11-823M**	845.36	----

*Trademark. See Trademark Reference.

Prices subject to change.

Boekel* Microcooler II Benchtop Refrigerated Bath

Convenient alternative to refrigerated water baths

05-450-5

Ideal for sample storage or incubation at temperatures from ambient to 4°C. "Press to set" temperature selection makes it simple to maintain difficult subambient temperatures in applications such as ligation reactions or oocytes storage.

- LCD makes temperature monitoring easy
- Microprocessor controller ensures convenient and accurate temperature setting
- Peltier thermoelectric cooling device provides years of reliable service
- Seamless aluminum well and supplied rack accommodate 24 microcentrifuge tubes (1.5mL size)

ORDERING INFORMATION:

- Dimensions, 11¾L × 9¾W × 7¼"H (29.8 × 24.8 × 18.4cm)
- Weight, 10 lb. (4.5kg)
- For 115V 60Hz, 0.8A, 100w

INCLUDES:

Smoked acrylic plastic lid

Mfr. No.	Cat. No.	Each
260010	**05-450-5**	1165.15

Nalgene* Multipurpose Jar Baths with Covers

Can also be used as aquaria, terraria, bell jars and freeze-drying chambers

11-823-14

- Transparent polycarbonate jars with ⅛" thick (3mm) walls
- Lightweight, economical, autoclavable, resist breakage
- Drill, tap, or apply clamps to jars to attach heating or cooling equipment

INCLUDES:

Covers

ALERT:

Larger jars 11-823-18 and 11-823-16 not suitable for vacuum applications. Do not autoclave 11-823-14, 11-823-15 and 11-823-17 if used for vacuum applications.

Capacity	O.D. × H	Mfr. No.	Cat. No.	Each
1.2L (1 qt.)	5¼ × 4" (13.3 × 10.1cm)	DS53000504	**11-823-14**	51.90
2.2L (½ gal.)	5 × 7" (13.3 × 19cm)	DS53000507	**11-823-15**	68.20
4.7L (1 gal.)	6⅝ × 9⅜" (17 × 23.7cm) †	DS53009609	**11-823-17**	88.20
8.3L (2 gal.)	8¾ × 10" (22.2 × 25.3cm) ‡	DS53009910	**11-823-18**	141.75
18.8L (4½ gal.)	12 × 12" (30.5 × 30.5cm)	DS53009212	**11-823-16**	215.75

† ⅝" (1.7cm) narrower at bottom than at top.
‡ ⅜" (1cm) narrower at bottom than at top.

Cannon* CT-500 Constant-Temperature Bath

Maintains temperatures ±0.01°C between 20° and 100°C, meeting ASTM* D 445 precision specification for kinematic viscosity measurements using glass capillary viscometers

22-315-629

- Two electric heating elements rapidly heat bath medium to any desired temperature within the operating range
- Built-in cooling coil, when connected to tap water or cooling system (not included), permits operation at or near ambient temperature†
- Selector switch on the front panel facilitates rapid setting of 10 temperatures for kinematic viscosity determinations: 20°, 25°, 30°, 40°, 50°, 60°, 70°, 80°, 90°, and 100°C
- After setting, the bath will equilibrate to within a fraction of 1° of the desired temperature
- Separate fine-tuning control allows temperature adjustment to within ±0.01°C
- VARIABLE setting on the front panel sets any temperature within the operating range
- Cylindrical 17L (4½ gal.) clear glass bath chamber vessel measures 12H × 12" dia. (30.5 × 30.5cm)
- Stainless-steel baffle in the center provides a plain reflective background for viewing instruments
- Top cover has seven 2" (5.1cm) holes for viscometer holders
- Two additional ⅜" (1cm) holes accommodate thermometers
- Safety features include a bath thermistor that senses any over-temperature fault condition
- If such a condition occurs, all power is removed from the bath until an operator resets the overtemperature limit circuit
- A liquid-level sensor prevents the control circuit from heating the bath until a safe operating level is obtained
- Power is also removed from bath heaters if the control thermistor is disconnected

COMPLIANCE:

ASTM D 445

Model	CT-500
Capacity	17L (4½ gal.)
Overall L x W x H	14¼ × 16 × 24" (36.2 × 40.7 × 61cm)
Reservoir H x Dia.	12 × 12" (30.5 × 30.5cm)
Temperature Range	20° to 100°C
Temperature Stability	±0.01°C
Net Weight	48 lb. (22kg)
Shipping Weight	75 lb. (34kg)
Electrical Requirements	100-130V 50/60Hz
Mfr. No.	9726-A10
Cat. No.	**22-315-629**
Each	3962.07

† Cooling medium should be circulated at 10° to 15°C below the desired temperature when operating near ambient.

Thermo Scientific* AquaTec Water Preservation Cell

Prevents microbe contamination in CO_2 incubators and water baths for up to 6 months

15-453-271

A revolutionary way to protect your valuable samples from waterborne contaminants, without harsh chemicals. Simply place the 3"L cell into the water reservoir of any CO_2 incubator or water bath. AquaTec prevents contamination up to six months, and from more than 600 types of bacteria, viruses, molds and fungi. Developed specifically for laboratory applications across a broad range of biological research temperature environments, AquaTec delivers virtually maintenance-free microbe protection.

- Safe to handle—requires no gloves and no special disposal protocol
- Self-regulates to maintain effectiveness regardless of water level
- Easy to use in equipment from any manufacturer
- Comes with suction cup for easy mounting on reservoir wall at your option
- Replacement reminder assures uninterrupted water protection

Description	Mfr. No.	Cat. No.	Pack of 4
AquaTec Water Preservation Cell	50109579	**15-453-271**	199.11

*Fisherbrand** Silicone Bath Fluids

Provide thermal stability over a variety of temperature ranges

- Suitable for use in stainless-steel reservoirs
- Supplied in 1 gal. (3.8L) container

Fluid	Temperature Range	Freeze Point	Viscosity at 25°C	Mfr. No.	Cat. No.	Each
DC510	50° to 150°C (122° to 302°F)	-70°C	50cS	2101	**13-874-60B**	700.10
DC550	100° to 200°C (212° to 392°F)	-50°C	125cS	2201	**13-874-60C**	540.23
DC710	150° to 250°C (302° to 482°F)	-22°C	500cS	2301	**13-874-60D**	606.38

Techne* Hollow Plastic Balls

Reduce heat loss up to 75%; can also reduce evaporation loss by 87%

14-220-30

- Polypropylene balls are usable at temperatures to 100°C (212°F)
- Reduce fumes, odors and splashing
- Available in a variety of sizes for different size baths

Diameter	Quantity Needed/ Sq. Ft.	Quantity Each Pack	Mfr. No.	Cat. No.	Pack
⅜" (10mm)	1076	5000	4010100	**14-220-30**	350.32
¾" (20mm)	270	500	4011000	**14-220-31**	79.31
¾" (20mm)	270	2000	4010200	**14-220-33**	150.31
1" (25mm)	172	1000	4010300	**14-220-32**	325.00
1½" (38mm)	74	1000	4010400	**14-220-34**	325.00

BEAKERS

REUSABLE

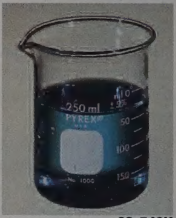
Pyrex* Griffin Beakers

Strengthened rim with flare trimmed back

- With pouring spout
- Extra-large marking spot
- 10 to 50mL sizes suitable for microanalysis
- 10mL size is not graduated
- 250 through 4000mL capacity beakers have double graduated metric scale

COMPLIANCE:

Designed to ASTM* E960 requirements.



02-540K

Capac.	Grad. Range	Grad. Interval	Mfr. No.	Cat. No.	Pack of	Case of
10mL	----	----	1000-10	**02-540C**	12/56.37	4 Pk./169.08
20mL	5–15mL	5mL	1000-20	**02-540E**	12/50.13	4 Pk./146.34
30mL	5–25mL	10mL	1000-30	**02-540F**	12/47.08	4 Pk./144.86
50mL	10–40mL	10mL	1000-50	**02-540G**	12/47.08	4 Pk./144.86
100mL	20–80mL	10mL	1000-100	**02-540H**	12/51.17	4 Pk./153.26
150mL	20–140mL	10mL	1000-150	**02-540J**	12/51.59	4 Pk./146.34
250mL	25–200mL	25mL	1000-250	**02-540K**	12/50.30	4 Pk./146.84
400mL	25–325mL	25mL	1000-400	**02-540L**	12/59.07	4 Pk./172.55
600mL	50–500mL	50mL	1000-600	**02-540M**	6/38.18	6 Pk./164.26
800mL	50–750mL	50mL	1000-800	**02-540N**	6/50.04	4 Pk./151.29
1000mL	50–1000mL	50mL	1000-1L	**02-540P**	6/70.71	4 Pk./206.41
1500mL	200–1400mL	100mL	1000-1XL	**02-540Q**	4/55.21	4 Pk./166.78
2000mL	200–2000mL	100mL	1000-2L	**02-540R**	4/93.46	2 Pk./136.45
3000mL	250–2500mL	125mL	1000-3L	**02-540S**	1/41.11	6/175.94
4000mL	500–3500mL	250mL	1000-4L	**02-540T**	1/75.75	6/324.33

Pyrex* Vista* Griffin Beakers

Provides balance between thermal shock resistance and mechanical strength

- With pouring spout
- Extra-large marking spot
- 10mL size is not graduated
- 250 through 1000mL beakers have a double graduated metric scale

COMPLIANCE:

Designed to ASTM* E 960 requirements.

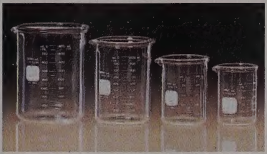
07-250-056

Capac.	Grad. Range	Grad. Interval	Mfr. No.	Cat. No.	Pack of	Case of
10mL	----	----	70000-10/EMD	**07-250-050**	12/41.10	2 Pk./60.00
20mL	5-15mL	5mL	70000-20/EMD	**07-250-051**	12/35.35	2 Pk./51.60
30mL	5-25mL	10mL	70000-30/EMD	**07-250-052**	12/35.35	2 Pk./51.60
50mL	10-40mL	10mL	70000-50/EMD	**07-250-053**	12/35.35	2 Pk./51.60
100mL	20-80mL	10mL	70000-100/EMD	**07-250-054**	12/37.35	2 Pk./54.52
150mL	20-140mL	10mL	70000-150/EMD	**07-250-055**	12/35.35	2 Pk./51.60
250mL	25-200mL	25mL	70000-250/EMD	**07-250-056**	12/32.20	2 Pk./47.00
400mL	25-325mL	25mL	70000-400/EMD	**07-250-057**	12/38.23	2 Pk./55.81
600mL	50-500mL	50mL	70000-600/EMD	**07-250-058**	6/24.04	2 Pk./35.09
1000mL	50-1000mL	50mL	70000-1L/EMD	**07-250-059**	6/45.79	2 Pk./66.84

Pyrex* Heavy-Duty Griffin Beakers

For use under harsh conditions such as mechanized washing

- With pouring spout
- Extra-large marking spot
- 250 through 4000mL beakers have double graduated metric scales



COMPLIANCE:
Designed to ASTM* E 960 requirements.

From left: 02-555-25H, 02-555-25F, 02-555-25D, 02-555-25C

Capac.	Grad. Range	Grad. Interval	Mfr. No.	Cat. No.	Pack of	Case of
150mL	20–140mL	20mL	1003-150	**02-555-25A**	12/94.81	4 Pk./276.86
250mL	25–200mL	25mL	1003-250	**02-555-25B**	12/90.47	4 Pk./273.40
400mL	25–325mL	25mL	1003-400	**02-555-25C**	12/121.99	4 Pk./356.46
600mL	50–500mL	50mL	1003-600	**02-555-25D**	6/71.72	6 Pk./311.47
1000mL	50–1000mL	50mL	1003-1L	**02-555-25F**	6/131.10	4 Pk./396.26
2000mL	200–1800mL	200mL	1003-2L	**02-555-25H**	4/178.59	2 Pk./270.02
4000mL	500–3500mL	250mL	1003-4L	**02-555-25K**	1/94.30	4/263.68

Vycor* Griffin Beakers for Extreme Temperatures

Withstand up to 900°C (1652°F) unless cracked, chipped or abraded

- With pouring spout
- High thermal and chemical resistance
- Stable with acids, mild alkalis, steam
- Without graduations

02-541A

Capac.	Mfr. No.	Cat. No.	Each	Case of
250mL	11000-250	**02-541A**	473.80	8/2703.14
400mL	11000-400	**02-541B**	----	6/2884.20

Pyrex* Tall Form Beakers

- With pouring spout
- Extra-large marking spot

COMPLIANCE:
Designed to ASTM* E 960 requirements.

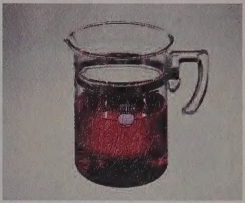
From left: 02-546G, 02-546F, 02-546C

Capac.	Grad. Range	Grad. Interval	Mfr. No.	Cat. No.	Pack of	Case of
100mL	20–80mL	10mL	1060-100	**02-546A**	12/62.37	4 Pk./182.12
200mL	25–150mL	25mL	1060-200	**02-546B**	12/63.52	4 Pk./192.05
300mL	25–250mL	25mL	1060-300	**02-546C**	12/72.92	4 Pk./212.90
400mL	25–325mL	25mL	1060-400	**02-546D**	6/38.19	6 Pk./173.44
500mL	50–450mL	50mL	1060-500	**02-546E**	6/42.07	5 Pk./158.80
600mL	50–550mL	50mL	1060-600	**02-546F**	6/54.40	4 Pk./164.50
1000mL	50–950mL	50mL	1060-1L	**02-546G**	6/72.97	3 Pk./165.44

Pyrex* Beaker with Glass Handle

Ideal for handling hot solutions

- Molded glass handle secured with stainless-steel strap
- Fits into recess in beaker wall
- Without graduations



02-543

Capac.	Mfr. No.	Cat. No.	Each	Case of 8
Beaker with handle				
3000mL	1010	**02-543**	310.78	1912.50
Replacement Beaker (without handle)				
3000mL	1010-BO	**02-543-5**	94.08	578.94

Pyrex* Pharmaceutical Beakers

With double spout and double scale

- With marking spot
- Graduated in mL and oz.
- Heavy wall construction

NOTE:
Do not subject directly to heat source.

02-558B

Capac./Scale	Grad. Range	Grad. Interval	Mfr. No.	Cat. No.	Each	Case of
125mL/4 oz.	5–125mL	5mL	6480-125	**02-558A**	51.05	12/421.87
250mL/8 oz.	10–250mL	10mL	6480-250	**02-558B**	66.40	12/549.22
500mL/16 oz.	25–500mL	25mL	6480-500	**02-558C**	86.38	12/714.56
1000mL/32 oz.	50–1000mL	50mL	6480-1L	**02-558D**	104.58	6/432.82
2000mL/64 oz.	50–2000mL	50mL	6480-2L	**02-558E**	159.96	6/661.63

Kimax* Griffin Beaker Starter Pack

Ideal for start-up requirements, when variety is preferred or when space or glassware needs are limited

- With pouring spout
- Matte-finish enameled marking spot
- Accurate to ±5%
- Uniform, sturdy walls

02-555-2

ORDERING INFORMATION:
One each per case: 50, 100, 250, 600 and 1000mL

COMPLIANCE:
Designed from ASTM* E 960 Type I requirements.

Mfr. No.	Cat. No.	Case
14080-01	**02-555-2**	25.54

Kimax* Griffin Beakers

Thick, beaded, slightly flared top

- With pouring spout
- Matte-finish enameled marking spot
- 20 to 4000mL sizes have white scales for approximate volume
- Accurate to ±5%
- Uniform, sturdy walls

COMPLIANCE:

Designed from ASTM* E 960 Type I requirements.

150ml
KIMAX
USA
NO. 14000
APPROX. VOLUMES
100
60
20

02-539J

Capac.	Grad. Range	Grad. Interval	Mfr. No.	Cat. No.	Pack of	Case of
10mL	----	----	14000-10	**02-539C**	12/56.06	4 Pk./163.69
20mL	5–15mL	5mL	14000-20	**02-539-1**	12/48.54	4 Pk./141.71
30mL	5–25mL	10mL	14000-30	**02-539F**	12/48.20	4 Pk./140.73
50mL	10–40mL	10mL	14000-50	**02-539G**	12/48.20	4 Pk./140.73
100mL	20–80mL	10mL	14000-100	**02-539H**	12/50.88	4 Pk./148.55
150mL	20–140mL	20mL	14000-150	**02-539J**	12/48.70	4 Pk./142.19
250mL	25–200mL	25mL	14000-250	**02-539K**	12/48.70	4 Pk./142.19
400mL	25–325mL	25mL	14000-400	**02-539L**	12/57.23	4 Pk./167.11
600mL	50–500mL	50mL	14000-600	**02-539M**	6/36.49	6 Pk./159.79
800mL	50–750mL	50mL	14000-800	**02-539N**	6/50.21	4 Pk./146.59
1000mL	50–1000mL	50mL	14000-1000	**02-539P**	6/68.53	4 Pk./200.10
1500mL	200–1400mL	200mL	14000-1500	**02-539Q**	4/55.34	4 Pk./161.58
2000mL	200–2000mL	100mL	14000-2000	**02-539R**	4/90.60	2 Pk./132.26
4000mL	500–3500mL	500mL	14000-4000	**02-539T**	1/71.75	6/314.07

Kimax* Heavy-Duty Beakers

Heavy construction prolongs life

- With pouring spout
- With marking spot
- Have white scale for approximate volume
- Thick, uniform walls with extra wall thickness in tooled top rim
- Accurate to ±5%

COMPLIANCE:

Designed from ASTM* E 960 Type II requirements.

NOTE:

Not recommended for use on hotplates with thermal gradients or without agitation.

KIMAX
NO. 14000
APPROX. VOLUMES
150
100
50

02-555-20A

Capac.	Grad. Range	Grad. Interval	Mfr. No.	Cat. No.	Pack of	Case of
250mL	25–200mL	25mL	14005-250	**02-555-20A**	12/91.09	4 Pk./265.17
400mL	25–325mL	25mL	14005-400	**02-555-20B**	12/118.68	4 Pk./345.90
600mL	50–500mL	50mL	14005-600	**02-555-20C**	6/69.24	6 Pk./302.36
1000mL	50–1000mL	50mL	14005-1000	**02-555-20E**	6/131.94	4 Pk./384.55
2000mL	200–1800mL	200mL	14005-2000	**02-555-20G**	4/179.79	2 Pk./262.00
4000mL	500–3500mL	500mL	14005-4000	**02-555-20J**	1/87.89	4/255.84

Kimax* Colorware Low-Form Beakers

Kimax KG-33 glass beakers with brightly colored graduations and marking spot

- With pouring spout
- Matte-finish marking spot can be marked with ordinary pencil
- Colors make graduated scale easy to read

COMPLIANCE:

Designed from ASTM* E 960 Type I requirements.

10-200-20

Capacity	Grad. Range	Grad. Interval	Mfr. No.	Cat. No.	Case of
Raging Red					
50mL	10– 40mL	10mL	14000R-50	**10-200-51**	12/35.39
100mL	20–80mL	10mL	14000R-100	**10-200-6**	12/37.36
150mL	20–140mL	20mL	14000R-150	**10-200-10**	12/35.76
250mL	25–200mL	25mL	14000R-250	**10-200-14**	12/35.76
400mL	25–325mL	25mL	14000R-400	**10-200-18**	12/42.03
600mL	50–500mL	50mL	14000R-600	**10-200-22**	6/26.79
1000mL	100–1000mL	50mL	14000R-1000	**10-200-26**	6/50.27
Sunny Yellow					
50mL	10–40mL	10mL	14000Y-50	**10-200-3**	12/35.39
100mL	20–80mL	10mL	14000Y-100	**10-200-52**	12/37.36
150mL	20–140mL	20mL	14000Y-150	**02-539-18**	12/35.76
250mL	25–200mL	25mL	14000Y-250	**10-200-15**	12/35.76
400mL	25–325mL	25mL	14000Y-400	**10-200-19**	12/42.03
600mL	50–500mL	50mL	14000Y-600	**10-200-23**	6/26.79
1000mL	100–1000mL	50mL	14000Y-1000	**10-200-27**	6/50.27
Cool Green					
50mL	10–40mL	10mL	14000G-50	**10-200-50**	12/35.39
100mL	20–80mL	10mL	14000G-100	**10-200-49**	12/37.36
150mL	20–140mL	20mL	14000G-150	**02-539-16**	12/35.76
250mL	25–200mL	25mL	14000G-250	**10-200-13**	12/35.76
400mL	25–325mL	25mL	14000G-400	**10-200-17**	12/42.03
600mL	50–500mL	50mL	14000G-600	**10-200-21**	6/26.79
1000mL	100–1000mL	50mL	14000G-1000	**10-200-25**	6/50.27
Bright Blue					
50mL	10–40mL	10mL	14000B-50	**10-200**	12/35.39
100mL	20–80mL	10mL	14000B-100	**10-200-48**	12/37.36
150mL	20–140mL	20mL	14000B-150	**02-539-15**	12/35.76
250mL	25–200mL	25mL	14000B-250	**10-200-12**	12/35.76
400mL	25–325mL	25mL	14000B-400	**10-200-16**	12/42.03
600mL	50–500mL	50mL	14000B-600	**10-200-20**	6/26.79
1000mL	100–1000mL	50mL	14000B-1000	**10-200-24**	6/50.27

Kimax* Tall-Form Beakers

With or without pouring spout

- Matte-finish area for marking
- Graduated to indicate approximate volumes
- Berzelius style with flared top, reinforcing bead

COMPLIANCE:

Designed from ASTM* E 960 Type III (with spout) and Type IV (without spout) requirements.

200ml
KIMAX
USA
NO. 14030

02-539-8

Capac.	Grad. Range	Grad. Interval	Mfr. No.	Cat. No.	Pack of	Case of
With Spout						
100mL	20–80mL	10mL	14030-100	**02-539-7**	12/59.84	4 Pk./174.61
200mL	25–150mL	25mL	14030-200	**02-539-8**	12/63.54	4 Pk./185.40
300mL	25–250mL	25mL	14030-300	**02-539-9**	12/70.92	4 Pk./206.98
400mL	25–325mL	25mL	14030-400	**02-539-6**	6/38.44	6 Pk./168.11
600mL	50–500mL	50mL	14030-600	**02-539-11**	6/54.80	4 Pk./159.90
1000mL	50–950mL	50mL	14030-1000	**02-539-12**	6/73.45	3 Pk./160.75
Without Spout						
100mL	20–80mL	10mL	14020-100	**10-310-5**	----	12/53.53
200mL	25–150mL	25mL	14020-200	**10-310-7**	----	12/49.03
300mL	25–250mL	25mL	14020-300	**10-310-8**	----	12/61.76
400mL	25–325mL	25mL	14020-400	**10-310-9**	----	6/34.48
600mL	50–500mL	50mL	14020-600	**10-310-11**	----	6/43.63
1000mL	50–950mL	50mL	14020-1000	**10-310-6**	----	6/80.90

Nalgene* Low-Form Polypropylene Griffin Beakers

Provide excellent chemical resistance and convenient stacking

- No-drip, single-spout design
- Easy-to-read silk-screened graduations, size code, resin code, catalog number, maximum temperature and "No Flame" symbol
- Autoclavable
- Manufactured with ISO 90001:2000-certified process

COMPLIANCE:

Meet ISO/DIS 7056 International Standards for Laboratory Plasticware Accuracy.

NALGENE®
250 mL

02-591-10D

Capac.	Mfr. No.	Cat. No.	Pack of	Case of
30mL	1201-0030	**02-591-10AA**	12/37.97	4 Pk./101.25
50mL	1201-0050	**02-591-10A**	12/37.97	4 Pk./101.25
100mL	1201-0100	**02-591-10B**	12/46.12	4 Pk./123.00
150mL	1201-0150	**02-591-10C**	12/59.25	4 Pk./158.00
250mL	1201-0250	**02-591-10D**	6/41.12	6 Pk./164.50
400mL	1201-0400	**02-591-10E**	6/59.19	6 Pk./236.75
600mL	1201-0600	**02-591-10F**	4/51.19	6 Pk./204.75
1000mL	1201-1000	**02-591-10G**	3/48.29	4 Pk./128.75
2000mL	1201-2000	**02-591-10H**	1/35.13	6/140.50
4000mL	1201-4000	**02-591-10J**	1/60.66	4/161.75

*Fisherbrand** Low-Form Polypropylene Beakers

Smooth, tapered design facilitates easy handling and pouring

- Resistant to most acids, bases, and many commonly used solvents
- Shatter resistant
- Easy-to-read, blue printed graduations
- "No Flame" symbol and SPI recycling code
- Antilock feature prevents beakers from sticking together when stacked
- Autoclavable
- Withstand temperatures up to 121°C (250°F)

02-591-30

Capacity	Cat. No.	Pack of
25mL	**02-591-25**	10/16.35
50mL	**02-591-26**	10/16.35
100mL	**02-591-27**	10/20.36
250mL	**02-591-28**	10/33.40
400mL	**02-591-29**	10/47.01
500mL	**02-591-30**	10/51.86
600mL	**02-591-31**	5/30.09
1000mL	**02-591-32**	5/44.98
2000mL	**02-591-33**	1/18.61
3000mL	**02-591-34**	1/20.15
5000mL	**02-591-35**	1/28.27

*Fisherbrand** "Square Ratio" Polypropylene Beaker Set

With permanently colored graduation scales and marking areas

- Straight sides for maximum stability
- All sizes have pouring spouts
- Withstand temperatures to 135°C (275°F)
- Autoclavable

NOTE:

Not for use on burners.

02-591-16

Cat. No.	Pack of 5	Case of 10 Pack
02-591-16	32.65	276.69

*Fisherbrand** Low-Form Polypropylene Beakers with Handles

For safe and easy pouring

- Convenient spout
- Made of chemical-resistant polypropylene
- Graduated in L and mL
- Autoclavable

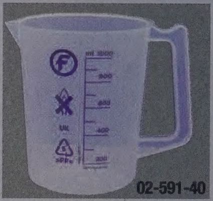
02-543-36C

Capacity	Cat. No.	Case of
250mL	**02-543-36A**	24/118.93
500mL	**02-543-36B**	24/134.43
1000mL	**02-543-36C**	24/139.63
2000mL	**02-543-36D**	12/93.37
3000mL	**02-543-36E**	12/122.33
5000mL	**02-543-36F**	12/408.12

*Fisherbrand** Intermediate Form Polypropylene Beakers with Handles

Chemical resistant, with a convenient pouring spout

- With ergonomic, comfortable handles for safer pouring
- Beaker bottoms are designed so they won't slide or create suction and stick to laboratory countertops
- Graduations in L and mL are in easy-to-read blue print
- Autoclavable



02-591-40

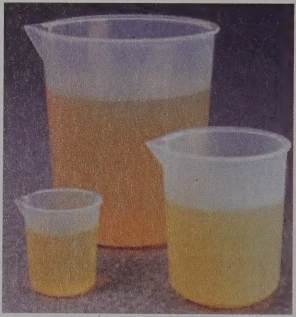
Capacity	Cat. No.	Pack of
50mL	**02-591-36**	5/22.07
100mL	**02-591-37**	5/22.87
250mL	**02-591-38**	1/6.85
500mL	**02-591-39**	1/7.44
1000mL	**02-591-40**	1/8.68
2000mL	**02-591-41**	1/10.82
3000mL	**02-591-42**	1/12.68
5000mL	**02-591-43**	1/35.93

Nalgene* PFA Griffin Beakers

Stand up to the toughest lab use

- With pour spout
- Translucent PTFE polyfluoroalkoxy resin construction
- Highly resistant to most chemicals including the strongest sulfuric, nitric, chromic, and phosphoric acids
- Withstand extreme temperatures from -270° to +250°C (-454° to +482°F)
- Autoclavable

NOTE:
Not for use on hotplates.



From left: 02-591-22A, 02-591-40H, 02-591-22C

Capacity	Mfr. No.	Cat. No.	Each	Case of
Without handle, not graduated				
30mL	1510-0030	**02-591-40A**	37.45	6/149.81
50mL	1510-0050	**02-591-22A**	44.73	6/178.92
100mL	1510-0100	**02-591-40C**	52.32	6/209.28
150mL	1510-0150	**02-591-22B**	70.84	6/283.35
250mL	1510-0250	**02-591-22C**	96.87	6/387.48
400mL	1510-0400	**02-591-22D**	119.41	4/318.40
600mL	1510-0600	**02-591-40G**	171.21	4/456.57
1000mL	1510-1000	**02-591-40H**	253.03	4/674.75
With handle, graduated				
1000mL	DS1511-1000	**02-592-5A**	240.90	----
3000mL	DS1511-3000	**02-592-5B**	333.17	----

Vollrath Stainless-Steel Beakers

- Noncorrosive stainless steel
- Won't rust, chip or peel
- Can be heated
- Seamless construction, smooth inner surface for easy cleaning

02-583C

With Spout

Capacity	Cat. No.	Each	Case of
125mL	**02-583A**	87.70	12/768.24
250mL	**02-583B**	54.46	12/477.05
600mL	**02-583C**	63.79	6/279.35
1200mL	**02-583D**	89.45	6/391.76
4000mL	**02-583G**	152.20	6/666.54

02-584B

Without Spout

Capacity	Cat. No.	Each	Case of
1200mL	**02-584B**	41.71	6/182.66
2000mL	**02-584C**	49.27	6/215.75
3100mL	**02-584D**	57.87	6/253.43
3800mL	**02-584E**	64.42	6/282.10
5700mL	**02-584F**	82.58	6/361.68
7600mL	**02-584G**	82.03	4/239.53

*Trademark. See Trademark Reference.

Chemware* PTFE Griffin Beakers

Noncontaminating and inert to highly corrosive reagents such as hydrofluoric acid

- Broad spout for easy pouring
- Nonwettable, unbreakable and heat resistant
- Ideal for digestion
- Can be heated on hotplate up to 288°C (550°F) when proper care is exercised
- Specially molded bottom allows rapid heat transfer
- Unlike most PTFE beakers, these will boil water when covered
- Easy to clean

02-586-1 Series

APPLICATIONS:

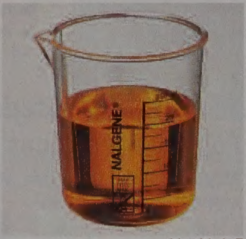
Ideal for digestion.

Capacity	Mfr. No.	Cat. No.	Each
1mL	D1069032	**02-586-1A**	12.49
3mL	D1069033	**02-586-1B**	14.86
5mL	D1069034	**02-586-1C**	17.10
10mL	D1069320	**02-586-1D**	20.52
30mL	D1069035	**02-586-1E**	34.55
50mL	D1069036	**02-586-1F**	38.59
100mL	D1069037	**02-586-1G**	33.97
250mL	D1069038	**02-586-1H**	56.65
400mL	D1069039	**02-586-1J**	78.77
600mL	D1069040	**02-586-1K**	117.10
1000mL	D1069041	**02-586-1M**	170.52

Nalgene* Polymethylpentene Beakers

Transparent as glass with excellent chemical resistance

- No-drip, single-spout design
- Silk-screened graduations, size code, resin code, catalog number, maximum temperature and "No Flame" symbol
- Withstand continuous use at 150°C (302°F), intermittent use to 175°C (347°F)
- Autoclavable
- Manufactured with ISO 9001:2000-certified processes



02-591-15E

NOTE:

Not for use on hotplates.

Capacity	Mfr. No.	Cat. No.	Pack of	Case of
30mL	1203-0030	**02-591-15A**	12/57.50	3 Pk./115.00
50mL	1203-0050	**02-591-15B**	12/57.50	3 Pk./115.00
100mL	1203-0100	**02-591-15C**	12/69.76	3 Pk./139.50
150mL	1203-0150	**02-591-15D**	12/91.63	3 Pk./183.25
250mL	1203-0250	**02-591-15E**	6/59.62	4 Pk./159.00
400mL	1203-0400	**02-591-15F**	6/89.06	4 Pk./237.50
600mL	1203-0600	**02-591-15G**	4/72.51	3 Pk./145.00
1000mL	1203-1000	**02-591-15H**	3/66.28	4 Pk./176.75
2000mL	1203-2000	**02-591-15J**	1/48.71	4/129.90
4000mL	1203 4000	**02-591-15AA**	1/74.82	4/199.50

Nalgene* Polymethylpentene Beakers with Handles

Transparent, autoclavable, and break resistant

- Excellent resistance to acids, bases, aliphatic alcohols
- Good resistance to aldehydes and esters
- Transparent to microwaves
- Rectangular handle
- Withstand continuous exposure to temperatures as high as 150°C (302°F) and intermittent temperatures to 175°C (347°F)
- Molded-in graduations in oz. and mL
- Meet ISO/DIN 7056 standards

02-591-9A

NOTE:

Not for use on hotplates.

Capacity	Mfr. No.	Cat. No.	Each	Case of 6
1000mL	1223-1000	**02-591-9A**	59.47	237.89
3000mL	1223-3000	**02-591-9C**	69.21	276.85

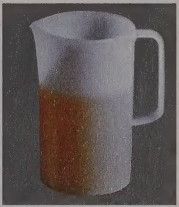
Nalgene* HDPE Beakers with Handles

Extra-heavy wall for safe handling of acids, alkalis, hot solutions

Graduated in mL and oz.

NOTE:

Not for use on hotplates.



02-543-20B

Capacity/Scale	Mfr. No.	Cat. No.	Each	Case of 6
1000mL/32 oz.	1220-1250	**02-543-20A**	51.63	206.52
3000mL/96 oz.	1220-2500	**02-543-20B**	60.29	241.15

DISPOSABLE

*Fisherbrand** Polypropylene Disposable Beakers

Unbreakable; can be thrown away after use or steam-autoclaved for reuse

- Highly resistant to strong acids, organic solvents and other common laboratory reagents
- Special "dripless" lip
- Rib construction permits stacking without binding
- Base allows beaker to sit flat during use
- Graduated in mL and oz.

01-291-11

Capacity	Grad. Interval	Cat. No.	Pack of	Case of
15mL	5mL/⅛ oz.	**01-291-8**	100/15.68	10 Pk./138.80
30mL	5mL/¼ oz.	**01-291-9**	100/19.09	10 Pk./168.90
50mL	5mL/¼ oz.	**01-291-10**	100/20.82	10 Pk./184.27
100mL	5mL/½ oz.	**01-291-7**	100/28.75	10 Pk./254.45
150mL	5mL/½ oz.	**01-291-11**	100/49.08	10 Pk./434.38
250mL	10mL/1 oz.	**01-291-5**	50/29.93	10 Pk./264.87
400mL	25mL/1 oz.	**01-291-12**	50/40.88	10 Pk./361.73
600mL	50mL/1 oz.	**01-291-6**	25/23.59	20 Pk./417.57

*Fisherbrand** Tri-Cornered Polypropylene Beakers

Unaffected by commonly used acids, alkalis and solvents

- Tri-cornered lip for dripless pouring
- Sturdy enough for autoclaving and reuse, yet inexpensive enough to be disposable
- Easy-to-read graduations in L and mL
- Accurate to ±5.0%

14-955-111A

Capacity	Cat. No.	Case of 100
50mL	**14-955-111A**	54.00
100mL	**14-955-111B**	62.59
250mL	**14-955-111C**	89.39
400mL	**14-955-111D**	101.78
800mL	**14-955-111E**	104.60
1000mL	**14-955-111F**	145.14

*Fisherbrand** Graduated Polystyrene Beakers

Economical throwaway beakers make excellent sample containers

- Four-way pour spout for flexibility
- Chemical resistant to dilute or weak acids, aqueous solutions, alcohols, and bases
- Withstand temperatures to 93°C (200°F)
- Graduations in mL and oz., accurate to ±2%

08-732-124

Capacity	Cat. No.	Case of
150mL	**08-732-123**	100/34.27
250mL	**08-732-124**	100/41.39
800mL	**08-732-125**	100/64.57
1000mL	**08-732-126**	100/83.88

*Fisherbrand** Beakers with Pouring Lip

For urine or sputum

- Clear polystyrene
- Top-to-bottom channel for Quantity Not Sufficient specimen and strip tests
- Resistant to dilute or weak acids
- Stackable
- Graduated in oz., cc and mL

14-955-112

Capacity	Cat. No.	Case of 500
6½ oz. (190mL)	**14-955-112**	118.20

*Fisherbrand** Polystyrene Beakers

Ideal for use as sample containers

- 20mL size is useful in flame photometry
- 5mL size can be used in atomic absorption spectroscopy and flame photometry

ORDERING INFORMATION:
Packaged in cardboard sleeves of 100.

08-732-121

Capacity	Cat. No.	Pack of
5mL	**08-732-119**	1000/73.82
10mL	**08-732-121**	1000/116.91
20mL	**08-732-120**	500/107.15
50mL	**08-732-122**	500/144.40

*Fisherbrand** Stackable Polypropylene Cups

Sturdy enough for reuse, yet economical enough to throw away

- Multipurpose heavy-gauge specimen cups
- Can be sterilized or frozen
- Withstand temperatures as high as 121°C (248°F) or as low as 0°C (32°F)
- Molded graduations both in cc and fl. oz.
- Autoclavable

14-375-278, -279

Capacity	Cat. No.	Each
120cc	**14-375-278**	19.82
500cc	**14-375-279**	33.55

*Trademark. See Trademark Reference.

Prices subject to change.

BELL JARS

Pyrex* Bell Jars with Top Knob

Ground finish bottom flange ensures tight seal

- Fully annealed
- Rated at 1-atmosphere vacuum

02-626B

O.D. × H	Mfr. No.	Cat. No.	Pack of 2
5½ × 10⅜" (14 × 26cm)	6885-140	**02-626A**	645.79
6½ × 12⅜" (16.5 × 31.5cm)	6885-165	**02-626B**	1108.23
8 11/16 × 16 11/16" (22 × 42cm)	6885-222	**02-626C**	1367.95

WARNING

Do not use in heat or pressure applications.

Pyrex* Bell Jars with Beaded Opening

Made from specially selected mold-blown blanks

- Finely ground finish on bottom flange assures tight sealing with ground glass plates
- Flame-cut opening is beaded for greater strength
- Bearing surface increases when No. 5½ rubber stopper is used
- Rated at 1-atmosphere vacuum

11-850-37

O. D. × H	Mfr. No.	Cat. No.	Price
6½ × 11" (165 × 279mm)	6888-165	**11-850-37**	500.13
8¾ × 15" (222 × 381mm)	6888-222	**02-630C**	729.34

WARNING

Do not use in heat or pressure applications.

Nalgene* Polyetherimide Vacuum Chamber

Complete vacuum unit connects to any vacuum source or mechanical pump

- Withstands full vacuum without risk of implosion or shattering
- Useful as a controlled environment chamber for degassing operations and freeze drying

Specifications:

- Rim connector accepts ¼" I.D. (6mm) tubing
- Neoprene gaskets
- Gasket O.D., 12⅝" (32cm)

INCLUDES:

Amber bell jar; gasketed white polycarbonate vacuum plate

01-060B

Capacity	O.D. × H	Mfr. No.	Cat. No.	Each
2⅛ gal. (8.3L)	8¾ × 10" (22 × 25cm)	5305-0910	**01-060B**	237.75
5 gal. (18.9L)	12 × 12" (30 × 30cm)	5305-1212	**01-060D**	377.75

Nalgene* Polycarbonate Vacuum Chamber

Especially useful for demonstrations of vacuum procedures

Intended for applications using nonaggressive chemicals.

Specifications:

- Rim connector accepts ¼" I.D. (6mm) tubing
- Gasket O.D., 7½" (19cm)
- Capacity, 1¼ gallon (4.7L)

INCLUDES:

Clear bell jar; white polypropylene plate

01-060A

O.D. × H	Mfr. No.	Cat. No.	Each	Case of 2
6⅝ × 9⅜" (17 × 24cm)	5305-0609	**01-060A**	174.46	232.62

WARNING

Do not expose jar to partially halogenated hydrocarbons or their vapors. Avoid direct exposure of all chemicals to the polycarbonate plate. Do not autoclave when used for vacuum service.

BENCH PROTECTORS

*Fisherbrand** Absorbent Surface Protector

Disposable sheets of absorbent paper with polyethylene backing

- Ideal for preventing glass breakage, protecting benches, absorbing liquids, and lining humidity chambers and fume cupboards
- Paper side quickly absorbs liquids and keeps spills from spreading
- Polyethylene side prevents liquids from reaching work area and is useful for sample recovery

12-007-187

W × L	Cat. No.	Pack of 50	Case of 8 Pack
18 × 22½" (46 × 57cm)	**12-007-187**	89.17	631.31

*Fisherbrand** Absorbent Underpads

Quickly absorb liquids and keep spills from spreading

- Made with high-absorbency fibers
- Cushioned surface minimizes breakage of delicate labware
- Polyethylene backing is chemical resistant, and the spunbond top layer provides durability even when wet
- Lie flat, hugging the benchtop to prevent sliding
- Absorb up to 750mL/m²

14-206-63

W x L	Cat. No.	Price	Case of
Mats			
20 × 24" (51 × 61cm)	**14-206-62**	Pk. of 50/53.90	5 Pk./208.00
20 × 36" (51 × 91cm)	**14-206-63**	Pk. of 25/41.10	5 Pk./160.00
Rolls in dispenser packs			
20" × 100' (51cm × 30m)	**14-206-64**	Ea./59.20	4/199.00
20" × 250' (51cm × 76m)	**14-206-65**	Ea./109.50	----

*Fisherbrand** Lab Matting

Easy to clean, easy to cut

- Clear polyethylene ribbed matting cushions instruments, reduces glassware breakage
- Protects drawers, shelves, and benches from chemicals, spills, and dirt
- Five times thicker (0.036" [9mm]) than normal shelf liner, but won't ripple; lies flat

14-203A

W x L	Cat. No.	Each
30" × 15' (76cm × 4.4m)	**14-203A**	24.49
30" × 100' (76cm × 30m)	**14-203B**	146.93

*Fisherbrand** Absorbent Surface Liners

Economical protection for benchtops, floors, and carts

- Soft, durable, and highly absorbent multilayer liner cushions surfaces and absorbs and retains spills
- Waterproof polypropylene backing resists most chemicals
- Easily cut to desired size
- White

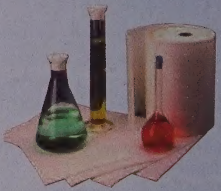
14-127-47, 14-127-46

W × L	Cat. No.	Case of
Dispenser Box		
20" x 50' (51cm x 15.2m)	**14-127-46**	6/186.70
Roll		
20" x 300' (51cm x 91.4m)	**14-127-47**	1/118.24

*Fisherbrand** Polyethylene Foam Surface Liners

Help to prevent breakage on benchtops

- Cushion sensitive instruments and valuable glassware against vibration and breakage
- Provide surface protection from chemicals, heat, dirt, and broken glass
- Tape, staple, or tack in place
- Easily cut to desired size
- Easy to clean
- No chlorofluorocarbon blowing agents used
- White



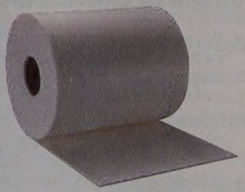
14-127 Series

W x L	Cat. No.	Case of
Rolls, ⅛"thick		
12" × 50' (30.5cm × 15.2m)	**14-127-48**	2/109.35
18" × 50' (45.7cm × 15.2m)	**14-127-49**	2/146.85
30" × 50' (76.2cm × 15.2m)	**14-127-50**	2/234.65
Sheets, ¼" thick		
10½ × 12" (26.7 × 30.5cm)	**14-127-52**	24/71.75
16 × 21" (40.6 × 53.3cm)	**14-127-53**	12/90.60

*Trademark. See Trademark Reference.

Nalgene* Polyethylene CleanSheets* Bench/Drawer Liner

Ideal sink liner, titration background


12-007-105

- Made of ⅛" (3.2mm) thick closed-cell polyethylene foam
- Smooth, resilient, nonabsorbent
- Offers excellent chemical resistance
- Can be cut to any size or shape

W x L	Mfr. No.	Cat. No.	Each	Case of 2
12" × 50' (31cm × 15.2m)	6283-1250	**12-007-104**	173.90	231.87
18" × 50' (46cm × 15.2m)	6283-1850	**12-007-105**	245.00	326.66
30" × 50' (76cm × 15.2m)	6283-3050	**12-007-106**	395.07	526.75

VersiDry* Super-Absorbent Fume Hood/Floor Mats

Feature durable cloth-like top layer that won't fall apart even when wet

14-206-60

- Polyethylene backing resists even the harshest of chemicals
- Mats lie flat, are skid resistant
- Absorb up to 1050mL/m^2
- 14-206-59 fits most standard hoods; 14-206-60 sized for floor matting

ORDERING INFORMATION:
Cat. No. 14-206-59 contains two packs of 50; 14-206-60 contains two packs of 25.

W x L	Mfr. No.	Cat. No.	Case of
18 × 20" (46 × 51cm)	74218-00	**14-206-59**	100/193.50
18 × 40" (46 × 102cm)	74240-00	**14-206-60**	50/186.62

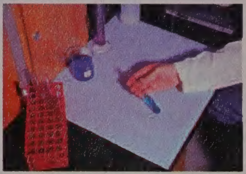
LOOKING FOR MORE?

Fisher Scientific carries many more bench protectors than are shown here. For a complete selection, look to our web site.

Visit www.fishersci.com and search for Bench Protectors

VersiDry* Super-Absorbent Underpads

Absorb spills and cushion breakable items


14-206-38

- Feature durable cloth-like top layer that won't fall apart even when wet
- Polyethylene backing resists even the harshest of chemicals
- Underpads lie flat and are skid resistant—use as bench protector, tray liner, floor mat, cage liner or surgical mat
- Ideal replacement for the blue diaper
- Absorb up to 1050mL/m^2

W x L	Mfr. No.	Cat. No.	Pack of 25	Case of
Mats				
18 × 20" (46 × 51cm)	74018-00	**14-206-38**	----	350/262.31
18 × 40" (46 × 102cm)	74040-00	**14-206-41**	43.84	7 Pk./262.31
20 × 43" (51 × 110cm)	74043-00	**14-206-58**	67.57	6 Pk./358.79
Rolls in dispenser packs				
20" × 100' (51cm × 30m)	74050-00	**14-206-39**	----	4/283.79
20" × 250' (51cm × 76m)	74000-00	**14-206-37**	----	1/146.26

VersiDry* Surface Protectors

Cellulose fibers quickly absorb spills

14-206-32

- Cushioned surface minimizes breakage of delicate labware
- Polyethylene backing resists even the harshest of chemicals
- Use as bench protector, shelf liner, cabinet liner or wiper for isolated spills
- Absorb up to 750mL/m^2

W x L	Mfr. No.	Cat. No.	Case of
Mats			
18 × 20" (46 × 51cm)	62080-00	**14-206-32**	350/211.92
Rolls (in dispenser packs)			
20" × 100' (51cm × 30m)	62070-00	**14-206-29**	4/248.55
20" × 300' (51cm × 91m)	62050-00	**14-206-27**	1/131.69
Rolls			
20" × 150' (51cm × 46m)	62065-00	**14-206-28**	2/123.00
20" × 300' (51cm × 91m)	62060-00	**14-206-30**	2/244.04

Chemware* PTFE Laboratory Matting

Chemically inert—resists adhesion of practically any material

- Corrosion- and break-resistant lining for benches, shelves, sinks, and drain boards helps to reduce glassware breakage
- Useful as mesh bag for dipping parts in corrosive chemicals and solvents
- Easy to clean
- Diamond-shaped PTFE mesh sheeting is 1/16" thick (1.6mm) with 1/4" (6mm) openings

14-206-40

W × L	Mfr. No.	Cat. No.	Each
12" × 10' (31cm × 3m)	D1069328	**14-206-40**	270.16

Bytac* Surface Protectors

Put the protection of FEP fluoropolymer on any surface

14-206-53

- Made of an overlay of FEP film bonded to a support backing of vinyl or aluminum (backing is coated with pressure-sensitive acrylic adhesive)
- Protect benchtops, fume hoods, temporary tables, walls/ceilings, splash screens, walls of spray booths, and other lab surfaces
- Help protect surfaces against absorption of toxic or radioactive chemicals
- Corrosive chemicals, paint, oil, grease, and sticky substances wipe off easily with damp sponge
- Cut easily with scissors
- Install easily—simply peel off protective paper from adhesive backing and apply to surface

ORDERING INFORMATION:

Bytac protector with vinyl backing recommended for temperatures up to 93°C (200°F); with aluminum foil backing, can be used up to 182°C (360°F).

W × L	Mfr. No.	Cat. No.	Each
Aluminum Backing			
12½" × 15' (32cm × 4.6m)	D9860012	**14-206-53**	130.91
25" × 15' (64cm × 4.6m)	D1069329	**14-206-42**	286.44
Vinyl Backing			
12½" × 15' (32cm × 4.6m)	D9860005	**14-206-52**	130.91
25" × 15' (64cm × 4.6m)	D1069324	**14-206-44**	244.32

Benchkote* Surface Protectors

Suitable for saturation with disinfectant

12-007-180

- High-quality absorbent paper coated on one side with an impermeable layer of polyethylene that prevents liquids from reaching benchtops
- Paper side absorbs solvents, toxic liquids, pathogens and radiochemicals and can be written on with ink or pencil
- Help reduce exposure to bloodborne pathogens for meeting OSHA regulations

Benchkote Plus

- Sheets and rolls have a thicker absorbent layer than standard Benchkote protectors and can absorb more than 0.75L/m^2

COMPLIANCE:

Comply with OSHA Regulation 29CFR 1910.1030

W × L	Mfr. No.	Cat. No.	Price
Benchkote Sheets			
18 × 22½" (46 × 57cm)	2300-916	**12-007-180**	Pk. of 50/108.41
Benchkote Rolls			
18" × 164' (46cm × 50m)	2300-731	**12-007-182A**	Ea./190.59
36" × 164' (92cm × 50m)	2300-772	**12-007-182B**	Ea./382.07
Benchkote Plus Sheets			
19 × 23" (50 × 60cm)	2301-6150	**12-007-183A**	Pk. of 50/130.68
Benchkote Plus Roll			
23" × 164' (60cm × 50m)	2301-6160	**12-007-183B**	Ea./257.50

Dispenser Pack

Fifty Benchkote* sheets in handy dispenser.

W × L	Mfr. No.	Cat. No.	Each
18 × 22½" (46 × 57cm)	2300-594	**12-007-181**	119.70

BEFORE YOU BUY A STOMACHER®

When your protocol requires a Stomacher, use the real thing: Seward® has been bringing safe and efficient sample blending to labs everywhere for over 30 years.

3 STEPS TO CHOOSING THE RIGHT STOMACHER

Step 1. Consider your sample sizes

Wide range—From as small as 250µL to as large as 80mL

Small to mid-range—From 5mL to 80mL

Mid- to large-sized—From 80mL to 400mL

X-large—From 1000mL to 3500mL

Step 2. Consider application needs and special features, including

Preprogrammed cycle times—Save time and improve reproducibility of results.

Continuous cycle feature—Super-convenient for long cycle times.

Temperature control up to 60°C—Certain organisms require heat for extraction, such as Trichinella.

Push-button control and acoustic "end of run" signal—For added convenience.

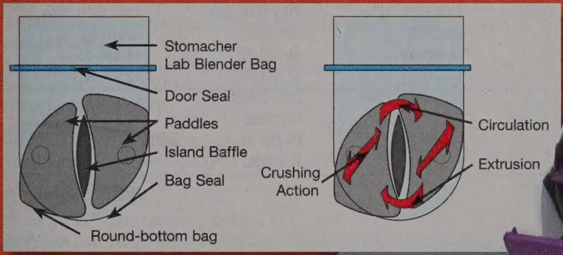
Ability to process large, bulky cartridge filters or fibers—Perfect for large-scale samples as well as environmental applications.

Step 3. Select the appropriate blender bag

Strainer bags—Excellent for processing gritty samples that could cause pipet blockage.

Closure bags—Ideal for sample collection or to prevent sample loss; double-walled bags are perfect for working with high-risk, biohazardous samples.

Heavy-duty bags—Withstand extended heating times.



400C Stomacher

sponsored by:

brinkmann

SEWARD STOMACHER BAGS ARE

Sterile—Irradiated at 25–50 kGy.

Super-strong—Extruded virgin LDPE manufactured to be ≥65 µm thick.

Split-resistant—Bottom welding prevents splitting at the seam, a common drawback of other brands.

Burst-tested—Ensures bags do not rupture, even during the toughest sample processing applications.

Seward bags are thicker and stronger than any other bag on the market, and they will not burst, split or leak. They keep your blender clean, your work fast, and you safe from harm.

For a full selection of Seward Stomacher blenders and bags available through Brinkmann, see p. 158.

BLENDERS

Brinkmann*/Seward* Stomacher* Lab Blenders

Blend materials that cannot be handled by conventional blenders

Fast, reliable paddle action applies pressure to contained samples, forcing out organisms and homogenizing the sample.

- Samples contained in sterile, disposable bags miminize risk of cross-contamination during transportation, processing, and disposal; eliminates the need to sterilize blender between procedures
- Time settings adjustable to 30, 60, or 120 sec., or continuous processing on all models except those with enhanced temperature control

Model 80 MicroBiomaster

- Processes sample volumes as small as 250µL

Model 80

- Compact size conserves bench space

Model 400C

- Homogenizes using a combination of crushing and stirring
- Programmable memory stores three paddle speeds and times (1 sec. to 99 min. 59 sec.)

Model 3500

- Gentle paddle action for blending powders and reliably washing organisms and chemical residues from filters standard on all 3500 Models

Model 3500W

- Perfect to extract *Cryptosporidium* and *Giardia* parasites from water filters
- Accommodates bulky filters and large volumes of washing solutions
- Remove viruses and bacteria from tissues and organs
- Remove organisms from swabs, filters, tissue biopsies and fecal samples
- Test sterility of creams, ointments and dry powders

WARRANTY:
Three years on all models

13-874-750

14-285-29

Model	80 MicroBiomaster	80	400C	3500	3500W
Capacity	250µL to 80mL	5 to 80mL	80 to 400mL	1000 to 3500mL	1000 to 3500mL
Speed Range	200 to 260rpm	200/230/260rpm	200/230/260rpm	200/230/260rpm	200/230/260rpm
Dimensions L × W × D	12¹¹⁄₁₆ × 11½ × 7½" (32.3 × 29.2 × 19.1cm)	12¹¹⁄₁₆ × 11½ × 7½" (32.2 × 29.2 × 19.0cm)	13¼ × 13¼ × 11" (33.6 × 33.6 × 27.9cm)	19 × 19 × 17½" (48.3 × 48.3 × 44.4cm)	19 × 19 × 17½" (48.3 × 48.3 × 44.4cm)
Weight	35 lb. (16kg)	35 lb. (16kg)	51 lb. (23kg)	79 lb. (36kg)	79 lb. (36kg)
Electrical Requirements	115V 60Hz, 75w	110V 60Hz, 75w	110V 60Hz, 170w	110V 60Hz, 90w	110V 60Hz, 90w
Mfr. No.	30010020	30010019	30010108	30010205	30010302
Cat. No.	**13-874-750**	**14-285-27**	**14-285-29**	**14-285-32**	**14-285-33**
Each	4957.00	5210.00	5670.00	12,100.00	12,600.00
Electrical Requirements	230V 60Hz, 75w	----	220V 60Hz, 170w	220V 60Hz, 90w	----
Mfr. No.	030010030	----	30010159	30010256	----
Cat. No.	**13-874-751**	----	**14-285-30**	**14-285-31**	----
Each	4957.00	----	5670.00	12,100.00	----

ACCESSORIES

Stomacher* Lab Blenders Bags

To ensure optimum sample blending

- Sterile (gamma-irradiated) polyethylene bags
- 65µm thick for high-impact strength (9.2MPa tensile, 27.1MPa ultimate) even at low temperatures
- Permeability (g/m²/24 hr.): 1.2 water vapor, 12,000 oxygen, 2000 carbon dioxide
- Closure bags feature wire closure strip across bag top and rounded corners
- Strainer bags have inner plastic mesh to protect from punctures

For Stomacher Model	Type	Mfr. No.	Cat. No.	Case of
Classic Bags (square-bottom style)				
80	Standard	30020057	**14-285-26**	2000/173.00
400	Standard	30020103	**14-285-25**	500/92.50
400†	Standard	30020146	**14-285-7‡**	500/146.00
400	Closure	30020219	**14-285-9**	250/175.00
400	Strainer	30020251	**14-285-21**	200/233.00
3500 Series	Standard	30020316	**14-285-23**	250/201.00
Circulator Bags (round-bottom style)				
400C	Standard	30020120	**14-285-24**	500/92.50
400C†	Standard	30020162	**14-285-8‡**	500/152.00
400C	Closure	30020235	**14-285-20**	250/175.00
400C	Strainer	30020278	**14-285-22**	200/233.00

† *Also, in packs of 5.*

‡ *For discontinued Model 400 (14-550-5G, -5H). Bags for Model 400C can also be used in Model 400.*

*Trademark. See Trademark Reference.

Prices subject to change.

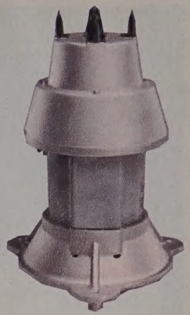
14-509-7M

14-509-17

14-509-7A

14-509-66

14-509-60



14-509-31

Waring* Laboratory Blenders

Choice of seven blender styles with a variety of speed selections to meet the requirements of the most demanding mixing and blending applications.

- Single-, Two-, Three- and Variable-Speed Models
- Cloverleaf design
- Available from mini to extra-large capacity and heavy-duty 3hp motor
- Explosion-Resistant and Hazardous-Location Models
- Choice of glass and/or stainless-steel containers
- Sturdy, diecast metal bases and stainless-steel blades
- All durably constructed for years of dependable service
- Epoxy-coated bases with chrome top pieces on all models, except for the aluminum and steel base (Hazardous-Location Model)
- Heat-resistant borosilicate glass (integral handle) or stainless-steel (attached handles)
- Two-piece vinyl and styrene lids on all models except for Three-Speed Extra-Large-Capacity Model (two-piece stainless-steel lid, gasket, and two clampdown latches)

ORDERING INFORMATION:

Electrical requirements for all models: 115/120V 50/60Hz

INCLUDES:

Base, container, 3-wire grounded cord and plug.

CERTIFICATIONS:

Select models UL-listed; see ordering chart.

ACCESSORIES

Mini-Sample Containers

Stainless-steel blending assemblies are for use with 1L (34 oz.) capacity blenders (nominal capacity; actual capacity depends on container used).

- Snap-fit cover
- Cloverleaf design

14-509-18A

Capacity	Cat. No.	Each
12 to 37mL	14-509-18A	240.00
37 to 110mL	14-509-18B	245.00
50 to 250mL	14-509-18C	270.00

ACCESSORIES

Waring* Laboratories Stainless-steel Dry Blending Container

Fits 1L (34 oz.) capacity blenders (nominal capacity; actual capacity depends on container used).

- One-piece stainless-steel lid with knob
- Stainless-steel handle
- Special blade for dry homogenizing and pulverizing
- 500mL approximate working capacity

08-413-16

REQUIRED ACCESSORIES:
Some applications such as soil processing require Adapter (14-509-16) and larger motor units.

Cat. No.	Each
08-413-16	515.00

Glass Container

Fits 34 oz. (1L) capacity blenders (nominal capacity; actual capacity depends on container used). Without cover or blending assembly.

Cat. No.	Each
14-509-11A	42.00

Stainless-Steel Blade Assembly

Two-piece construction fits 14-509-11A container.

Cat. No.	Each
14-509-12	25.00

LOOKING FOR MORE BLENDER BAGS?

Fisherbrand* Blender Bags can be found in the Bags section.

For Specifications and Ordering Information, see next page.

Waring* Laboratory Blenders, Contd.

Specifications and Ordering Information for Waring* Blenders

Capacity (Nominal)	Container	Base	Overall H (max)	RPM	Features	Amps/Watts/hp	Cat. No.	Each
Single Speed								
34 oz. (1L)	40 oz. (1.2L) glass	Epoxy coated; chrome top; 7" dia. (18cm)	16" (41cm)	22,000	Processes up to 1.2L (34 oz.) of material with high liquid content. Water load, 20 oz. (590mL). Motor is mounted on rubber cushions.	3.6/432/0.4	**14-509-10†**	250.00
Two Speed, with Timer								
34 oz. (1L)	40 oz. (1.2L) glass	Epoxy coated; chrome top; 8½L × 7¼"W (22 × 18cm)	16" (41cm)	18,000/22,000	Processes up to 1.2L (34 oz.) of material with high liquid content. Water load, 20 oz. (590mL). Mechanical timer for 1- to 180-second timing cycle, positive push-button solid-state speed control, timer light.	3.6/432/0.4	**14-509-7M†**	360.00
34 oz. (1L)	1 qt. (946mL) stainless steel	Epoxy coated; chrome top; 8½L × 7¼"W (22 × 18cm)	15" (38cm)	18,000/22,000	(Same as 14-509-7M, above.)	3.6/432/0.4	**14-509-7P†**	420.00
Two Speed, Commercial								
34 oz. (1L)	40 oz. (1.2L) glass	Epoxy coated; chrome top; 8½L × 7¼"W (22 × 18cm)	16" (41cm)	18,000/22,000	Processes up to 1.2L (34 oz.) of material with high liquid content. Water load, 20 oz. (590mL). High torque motor, push-button solid-state speed control.	3.6/432/0.4	**14-509-19†**	312.00
34 oz. (1L)	1 qt. (946mL) stainless steel	Epoxy coated; chrome top; 8½L × 7¼"W (22 × 18cm)	15" (38cm)	18,000/22,000	(Same as 14-509-19, above.)	3.6/432/0.4	**14-509-17†**	365.00
Two Speed, Explosion Resistant								
34 oz. (1L)	40 oz. (1.2L) glass	Epoxy coated; 7" dia. (18cm)	16" (41cm)	18,000/22,000	For use with volatile substances; has completely sealed base unit. Requires external compressed air to cool and purge motor, with minimum delivery of 10 SCFM (283L/min.) discharging at 10psig (69kPag).	3.6/432/0.7	**14-509-7A**	1195.00
Three Speed, Extra-Large-Capacity								
128 oz. (3.8L)	Two-handle stainless-steel container	Epoxy coated; 8L × 8¼"W (20 × 21cm)	26" (66cm)	16,000/18,000/ 20,000-20,000 (pulse)	Processes up to 1 gal. (3.8L) of free-flowing material with high liquid content. Use with 14-509-16 Adapter and accessory containers to process smaller quantities of heavier materials. Heavy-duty 3.75hp motor. Base available without container (see next model).	15.0/1800/3.0	**14-509-66**	1780.00
Base only	None. Accepts 128 oz. (3.8L) stainless-steel container	Epoxy coated; 8L × 8¼"W (20 × 21cm)	26" (66cm)		(Same as 14-509-66, above.)	15.0/1800/3.75	**14-509-65**	1252.00
Variable Speed								
34 oz. (1L)	40 oz. (1.2L) glass	Epoxy coated; chrome top; 7¼W × 8½"L (18 × 22cm)	16" (41cm)	1000-22,000	Variable speed adjustments for mixing, stirring, blending, or homogenizing. ON/OFF switch allows for preadjusted speeds for reproducible results.	3.0/360/0.4	**14-509-60**	675.00
34 oz. (1L)	34 oz. (1L) stainless steel	Epoxy coated; chrome top; 7¼W × 8½"L (18 × 22cm)	15" (38cm)	1000-22,000	(Same as 14-509-60, above.)	3.0/360/0.4	**14-509-38**	717.00
Hazardous Location								
Base only	None. Accepts 34 oz. (1L) container	Aluminum and steel; 10" dia. (25cm)	15" (38cm)	18,500	Processes highly volatile materials. Prevents electrical arcing and heat generated within the motor housing from igniting ambient atmospheres in hazardous locations. With totally enclosed, single-phase, one-speed universal motor, required for explosion prevention. UL listed for use in Class 1, Group D Hazardous locations when used with 14-509-37 Stainless-steel Container and 14-509-32 Switch (purchased separately).	8.0/920/0.7	**14-509-31†, ‡**	6181.00

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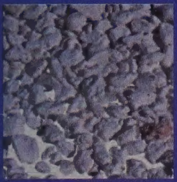
† UL listed.

‡ UL listed for use in Class 1, Group D Hazardous locations when 14-509-31 base unit is used with 14-509-37 container and 14-509-32 switch (both available through your Fisher Scientific Customer Service Representative).

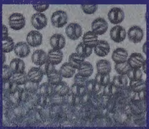
BOILING AIDS

Boiling Aids

Control the roll. These chips minimize bumping and spread the boiling area. Most resist most chemicals, are noncontaminating, and won't scratch glassware.


B365-250

Chemware
PTFE Boiling
09-191-20


11-311A

09-191-12

Description	Quantity	Cat. No.	Each	Case of
Boileezers* Alumina Granules	250g Bottle	**B365-250**	38.94	6/184.75
Chemware* PTFE Boiling Stones	450g Bottle	**09-191-20**	59.76	----
Carbon Chips	227g Jar	**09-191-12**	13.38	12/137.19
Perforated Glass Beads (4mm O.D.)	454g Bottle	**11-311A**	49.47	----
Perforated Beads (6mm O.D.)	454g Bottle	**11-311C**	45.67	----

Visit www.fishersci.com and search for Boiling Aids

BOTTLES

GLASS—BOSTON ROUNDS

*Fisherbrand** Clear Boston Rounds

Economical, high quality bottles for storing liquid samples

- Type III soda lime glass
- Clear for easy viewing of contents
- Narrow mouth

02-911-780, -752, -778, -781

With Poly-Seal*-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	20mm-400	**02-911-782**	48/104.18
2 oz. (60mL)	20mm-400	**02-911-783**	24/51.22
4 oz. (125mL)	22mm-400	**02-911-784**	24/64.54
8 oz. (250mL)	24mm-400	**02-911-785**	12/45.64
16 oz. (500mL)	28mm-400	**02-911-750**	12/53.26
32 oz. (1000mL)	33mm-400	**02-911-751**	12/70.91

With Polyvinyl-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	20mm-400	**02-911-779**	48/96.65
2 oz. (60mL)	20mm-400	**02-911-752**	24/52.55
2 oz. (60mL)	20mm-400	**02-911-790**	288/295.98
4 oz. (125mL)	22mm-400	**02-911-780**	24/58.78
4 oz. (125mL)	22mm-400	**02-911-730**	160/411.82
8 oz. (250mL)	24mm-400	**02-911-781**	12/36.02
8 oz. (250mL)	24mm-400	**02-911-732**	108/324.09
16 oz. (500mL)	28mm-400	**02-911-777**	12/46.09
16 oz. (500mL)	28mm-400	**02-911-726**	60/254.49
32 oz. (1000mL)	33mm-400	**02-911-778**	12/92.12

With PTFE Faced PE-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	20mm-400	**02-911-786**	48/137.65
2 oz. (60mL)	20mm-400	**02-911-787**	24/72.93
4 oz. (125mL)	22mm-400	**02-911-788**	24/82.23
8 oz. (250mL)	24mm-400	**02-911-789**	12/48.13
16 oz. (500mL)	28mm-400	**02-911-753**	12/63.59
32 oz. (1000mL)	33mm-400	**02-911-754**	12/93.22

With Rubber-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	20mm-400	**02-911-756**	48/54.19
2 oz. (60mL)	20mm-400	**02-911-757**	24/33.78
4 oz. (125mL)	22mm-400	**02-911-759**	24/36.61
8 oz. (250mL)	24mm-400	**02-911-760**	12/23.90
16 oz. (500mL)	28mm-400	**02-911-755**	12/31.01
32 oz. (1000mL)	33mm-400	**02-911-758**	12/43.45

Bottles Only

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	20mm-400	**02-911-940**	432/323.51
2 oz. (60mL)	20mm-400	**02-911-944**	288/229.48
4 oz. (125mL)	22mm-400	**02-911-945**	160/157.81
8 oz. (250mL)	24mm-400	**02-911-872**	108/217.46
16 oz. (500mL)	28mm-400	**02-911-939**	60/97.84
32 oz. (1000mL)	33mm-400	**02-911-927**	12/57.20

*Fisherbrand** Coated and Cleaned Clear Boston Rounds

Safety-Coated Clear Boston Rounds

Ideal for field sampling applications

- Shatter-resistant coating reduces chance of breakage
- If broken, safety coating will contain contents long enough for disposal
- Non-slip coating also allows greater ease of stability, wet or dry
- Narrow mouth
- Not autoclavable

02-911-921

Capacity	Screw Cap Size	Cat. No.	Case of
With Poly-Seal*-Lined Caps			
8 oz. (250mL)	24mm-400	**02-911-973**	12/113.42
16 oz. (500mL)	28mm-400	**02-911-971**	12/151.30
32 oz. (1000mL)	33mm-400	**02-911-972**	12/113.91
With Polyvinyl-Lined Caps			
8 oz. (250mL)	24mm-400	**02-911-818**	12/120.74
16 oz. (500mL)	28mm-400	**02-911-819**	12/81.74
32 oz. (1000mL)	33mm-400	**02-911-820**	12/112.85
With PTFE-Faced, PE-Lined Caps			
8 oz. (250mL)	24mm-400	**02-911-821**	12/64.11
16 oz. (500mL)	28mm-400	**02-911-822**	12/144.66
32 oz. (1000mL)	33mm-400	**02-911-823**	12/99.16
With Rubber-Lined Caps			
250mL	22mm-400	**02-911-910**	12/98.62
500mL	28mm-400	**02-912-318**	12/165.79
Bottles Only			
8 oz. (250mL)	24mm-400	**02-911-860**	108/525.44
16 oz. (500mL)	28mm-400	**02-911-921**	60/200.29
32 oz. (1000mL)	33mm-400	**02-911-922**	30/151.32

Custom-Cleaned Boston Rounds

- With attached PTFE-faced, PE-lined caps
- Containers and caps are noncertified and precleaned with USP Purified Water for visible particulates in a clean process area
- Custom packaging and certification available upon request

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	20mm-400	**02-912-009**	48/101.53
2 oz. (60mL)	20mm-400	**02-912-010**	24/61.50
4 oz. (125mL)	22mm-400	**02-912-011**	24/73.63
8 oz. (250mL)	24mm-400	**02-912-012**	12/42.89
16 oz. (500mL)	28mm-400	**02-912-013**	12/60.43
32 oz. (1000mL)	33mm-400	**02-912-014**	12/85.73

Certified Low-Particulate Boston Rounds

- With PTFE-lined caps
- Containers and caps are cleaned to five particles or less per milliliter at 0.5 microns with USP Purified Water or Water for Injection in a Class 100/10 cleanroom
- Custom processing, packaging and certification available by special request

CERTIFICATIONS:

Certificate of Analysis is included.

Capacity	Screw Cap Size	Cat. No.	Case of
4 oz. (125mL)	22mm-400	**02-911-889**	24/304.82
8 oz. (250mL)	24mm-400	**02-911-892**	12/152.30
16 oz. (500mL)	28mm-400	**02-911-879**	12/184.61
32 oz. (1000mL)	33mm-400	**02-911-914**	12/219.41

Wheaton Clear Boston Rounds

- Well suited for storage and sampling of liquids; clear Type III soda-lime glass provides visibility of contents
- Narrow mouth enables liquids to be carefully poured to prevent spillage
- Caps are chemical resistant and conform to EPA and FDA regulations

02-911-349

With Poly-Seal*-lined Caps

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
1 oz. (30mL)	20mm-400	W216812	**02-911-332**	48/92.79
2 oz. (60mL)	20mm-400	W216813	**02-911-333**	24/46.32
4 oz. (120mL)	22mm-400	W216814	**02-911-334**	24/57.27
8 oz. (240mL)	24mm-400	W216815	**02-911-335**	12/38.77
16 oz. (473mL)	28mm-400	W216816	**02-911-336**	12/47.29
32 oz. (946mL)	33mm-400	W216817	**02-911-337**	12/62.99

With Polyvinyl-lined Caps

- Available in partitioned Convenience or Valu-Bulk* cartons
- Convenience Pack bottles come with Hazard Communication labels for content identification, and Tamper Evident labels to protect integrity of samples in transit or long-term storage.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
Convenience Pack				
1 oz. (30mL)	20mm-400	W216800	**02-911-320**	48/82.39
2 oz. (60mL)	20mm-400	W216801	**02-911-321**	24/47.19
4 oz. (120mL)	22mm-400	W216802	**02-911-322**	24/52.15
8 oz. (240mL)	24mm-400	W216803	**02-911-323**	12/47.19
16 oz. (473mL)	28mm-400	W216804	**02-911-324**	12/51.49
32 oz. (946mL)	33mm-400	W216805	**02-911-325**	12/76.35
Valu-Bulk Pack				
2 oz. (60mL)	20mm-400	W216825	**02-911-345**	288/410.42
4 oz. (120mL)	22mm-400	W216826	**02-911-346**	160/393.15
8 oz. (240mL)	24mm-400	W216827	**02-911-347**	108/412.19
16 oz. (473mL)	28mm-400	W216828	**02-911-348**	60/321.80
32 oz. (946mL)	33mm-400	W216829	**02-911-349**	12/190.51

Contd. on next page.

*Trademark. See Trademark Reference.

Prices subject to change.

Wheaton Clear Boston Rounds, Contd.

With TFE-lined Caps

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
1 oz. (30mL)	20mm-400	W216806	**02-911-326**	48/110.41
2 oz. (60mL)	20mm-400	W216807	**02-911-327**	24/57.80
4 oz. (120mL)	22mm-400	W216808	**02-911-328**	24/65.46
8 oz. (240mL)	24mm-400	W216809	**02-911-329**	12/42.67
16 oz. (473mL)	28mm-400	W216810	**02-911-330**	12/54.83
32 oz. (946mL)	33mm-400	W216811	**02-911-331**	12/76.39

With 14B White Rubber-lined Caps

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
1 oz. (30mL)	20mm-400	W216818	**02-911-338**	48/96.73
2 oz. (60mL)	20mm-400	W216819	**02-911-339**	24/48.15
4 oz. (120mL)	22mm-400	W216820	**02-911-340**	24/55.19
8 oz. (240mL)	24mm-400	W216821	**02-911-341**	12/33.87
16 oz. (473mL)	28mm-400	W216822	**02-911-342**	12/54.17
32 oz. (946mL)	33mm-400	W216823	**02-911-343**	12/77.40

Fisherbrand* Amber Boston Rounds

Value priced bottles for light sensitive solvents, chemicals, and samples

- Type III soda lime glass
- Narrow mouth

With Poly-Seal*-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
½ oz. (15mL)	18mm-400	**02-911-861**	720/1029.07
1 oz. (30mL)	20mm-400	**02-912-339**	48/80.87
2 oz. (60mL)	20mm-400	**02-911-734**	24/59.49
2 oz. (60mL)	20mm-400	**02-911-898**	288/319.19
4 oz. (125mL)	22mm-400	**02-911-735**	24/65.96
4 oz. (125mL)	22mm-400	**02-911-895**	160/140.19
8 oz. (250mL)	24mm-400	**02-911-736**	12/77.60
8 oz. (250mL)	24mm-400	**02-911-900**	108/166.07
16 oz. (500mL)	28mm-400	**02-911-743**	12/57.26
16 oz. (500mL)	28mm-400	**02-911-878**	60/201.74
32 oz. (1000mL)	33mm-400	**02-911-744**	12/73.64
32 oz. (1000mL)	33mm-400	**02-911-899**	30/90.58

With Polyvinyl-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
½ oz. (15mL)	18mm-400	**02-911-793**	720/911.47
1 oz. (30mL)	20mm-400	**02-912-337**	48/66.80
2 oz. (60mL)	20mm-400	**02-911-746**	24/55.01
2 oz. (60mL)	20mm-400	**02-911-742**	288/310.05
4 oz. (125mL)	22mm-400	**02-911-748**	24/58.78
4 oz. (125mL)	22mm-400	**02-911-723**	160/436.55
8 oz. (250mL)	24mm-400	**02-911-749**	12/57.34
8 oz. (250mL)	24mm-400	**02-911-724**	108/304.48
16 oz. (500mL)	28mm-400	**02-911-745**	12/71.49
16 oz. (500mL)	28mm-400	**02-911-725**	60/228.65
32 oz. (1000mL)	33mm-400	**02-911-747**	12/106.52
32 oz. (1000mL)	33mm-400	**02-911-729**	30/219.74

02-911-905, -744, -902, -735

With PTFE-faced, PE-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	20mm-400	**02-912-338**	48/82.14
2 oz. (60mL)	20mm-400	**02-911-737**	24/71.52
4 oz. (125mL)	22mm-400	**02-911-740**	24/78.59
8 oz. (250mL)	24mm-400	**02-911-741**	12/53.72
16 oz. (500mL)	28mm-400	**02-911-738**	12/68.27
32 oz. (1000mL)	33mm-400	**02-911-739**	12/90.87

With Rubber-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
2 oz. (60mL)	20mm-400	**02-912-340**	24/32.29
4 oz. (125mL)	22mm-400	**02-912-341**	24/35.66
8 oz. (250mL)	24mm-400	**02-912-342**	12/22.85
16 oz. (500mL)	28mm-400	**02-912-343**	12/29.65
32 oz. (1000mL)	33mm-400	**02-912-344**	12/43.02

Bottles Only

Capacity	Screw Cap Size	Cat. No.	Case of
½ oz. (15mL)	18mm-400	**02-911-794**	720/693.49
2 oz. (60mL)	20mm-400	**02-911-908**	288/323.27
4 oz. (125mL)	22mm-400	**02-911-904**	160/161.43
8 oz. (250mL)	24mm-400	**02-911-905**	108/132.29
16 oz. (500mL)	28mm-400	**02-911-902**	60/118.86
32 oz. (1000mL)	33mm-400	**02-911-903**	30/90.42

*Fisherbrand** Coated and Cleaned Amber Boston Rounds

Safety-Coated Amber Boston Rounds

- Narrow mouth

02-911-901, -970

Capacity	Screw Cap Size	Cat. No.	Case of
With Poly-Seal*-lined Caps			
4 oz. (125mL)	22mm-400	**02-911-896**	24/116.94
8 oz. (250mL)	24mm-400	**02-911-970**	12/116.39
16 oz. (500mL)	28mm-400	**02-911-969**	12/77.86
32 oz. (1000mL)	33mm-400	**02-911-901**	12/109.72
With Polyvinyl-lined Caps			
4 oz. (125mL)	22mm-400	**02-911-897**	24/110.96
8 oz. (250mL)	24mm-400	**02-911-813**	12/60.57
16 oz. (500mL)	28mm-400	**02-911-812**	12/82.73
32 oz. (1000mL)	33mm-400	**02-911-816**	12/112.73
With PTFE-lined Caps			
4 oz. (125mL)	22mm-400	**02-911-894**	24/119.54
8 oz. (250mL)	24mm-400	**02-911-815**	12/64.06
16 oz. (500mL)	28mm-400	**02-911-817**	12/84.45
32 oz. (1000mL)	33mm-400	**02-911-814**	12/120.54

Custom Cleaned Boston Rounds

- With attached PTFE-faced, PE-lined caps
- Containers and caps are noncertified and precleaned with USP Purified Water for visible particulates in a clean process area
- Custom packaging and certification available upon request

Capacity	Screw Cap Size	Cat. No.	Case of
2 oz. (60mL)	20mm-400	**02-911-999**	24/63.06
4 oz. (125mL)	22mm-400	**02-912-001**	24/73.63
8 oz. (250mL)	24mm-400	**02-912-002**	12/42.12
16 oz. (500mL)	28mm-400	**02-911-998**	12/60.98
32 oz. (1000mL)	33mm-400	**02-912-000**	12/84.04

Certified Clean Boston Rounds

- With attached PTFE-faced, PE-lined caps
- Cleaned per EPA guidelines for Semi-Volatiles, Pesticides, PCBs and Metals

CERTIFICATIONS:

Certificate of Analysis is attached to each lot.

Capacity	Screw Cap Size	Cat. No.	Case of
8 oz. (250mL)	24mm-400	**02-911-928**	12/29.60
34 oz. (1000mL)	33mm-400	**02-911-833**	12/52.12

Wheaton Amber Boston Rounds

Amber Type II soda lime glass protects light-sensitive solutions

- Narrow mouth enables liquids to be carefully poured to prevent spillage
- Caps are chemical resistant and conform to EPA and FDA regulations

02-911-377

With Poly-Seal*-lined Caps

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
1 oz. (30mL)	20mm-400	W216848	**02-911-362**	48/73.19
2 oz. (60mL)	20mm-400	W216849	**02-911-363**	24/50.51
4 oz. (125mL)	22mm-400	W216850	**02-911-364**	24/58.56
8 oz. (250mL)	24mm-400	W216851	**02-911-365**	12/68.99
16 oz. (500mL)	28mm-400	W216852	**02-911-366**	12/48.71
32 oz. (1000mL)	33mm-400	W216853	**02-911-367**	12/66.59

With Polyvinyl-lined Caps

- Available in partitioned Convenience Pack or Valu-Bulk* cartons
- Convenience Pack bottles come with Hazard Communication labels for content identification, and Tamper Evident labels to protect integrity of samples in transit or long-term storage

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
Convenience Pack				
1 oz. (30mL)	20mm-400	W216836	**02-911-350**	48/70.30
2 oz. (60mL)	20mm-400	W216837	**02-911-351**	24/48.87
4 oz. (125mL)	22mm-400	W216838	**02-911-352**	24/53.33
8 oz. (250mL)	24mm-400	W216839	**02-911-353**	12/39.10
16 oz. (500mL)	28mm-400	W216840	**02-911-354**	12/54.23
32 oz. (1000mL)	33mm-400	W216841	**02-911-355**	12/80.34
Valu-Bulk Pack				
2 oz. (60mL)	20mm-400	W216860	**02-911-374**	288/338.32
4 oz. (125mL)	22mm-400	W216861	**02-911-375**	160/531.91
8 oz. (250mL)	24mm-400	W216862	**02-911-376**	96/401.41
16 oz. (500mL)	28mm-400	W216863	**02-911-377**	60/279.33
32 oz. (1000mL)	33mm-400	W216864	**02-911-378**	30/268.58

With PTFE Faced PE-lined Caps

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
1 oz. (30mL)	20mm-400	W216842	**02-911-356**	48/81.03
2 oz. (60mL)	20mm-400	W216843	**02-911-357**	24/60.70
4 oz. (125mL)	22mm-400	W216844	**02-911-358**	24/69.70
8 oz. (250mL)	24mm-400	W216845	**02-911-359**	12/47.63
16 oz. (500mL)	28mm-400	W216846	**02-911-360**	12/57.99
32 oz. (1000mL)	33mm-400	W216847	**02-911-361**	12/82.17

With Rubber-lined Caps

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
2 oz. (60mL)	20mm-400	W216854	**02-911-368**	24/48.70
4 oz. (125mL)	22mm-400	W216855	**02-911-369**	24/55.38
8 oz. (250mL)	24mm-400	W216856	**02-911-370**	12/32.82
16 oz. (500mL)	28mm-400	W216857	**02-911-371**	12/54.59
32 oz. (1000mL)	33mm-400	W216858	**02-911-372**	12/78.16

*Trademark. See Trademark Reference.

GLASS—FRENCH SQUARES

*Fisherbrand** Clear French Squares

Square shape allows you to maximize storage space in the lab

02-912-017, 02-911-383,-887

- Wide mouth for easy filling
- Clear glass allows for easy viewing of contents

With Poly-Seal*-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
½ oz. (15mL)	20mm-400	**02-911-402**	48/97.54
1 oz. (30mL)	24mm-400	**02-911-403**	48/101.22
2 oz. (60mL)	28mm-400	**02-911-404**	48/115.49
4 oz. (125mL)	33mm-400	**02-911-405**	24/53.76
4 oz. (125mL)	33mm-400	**02-911-875**	120/299.01

With Polyvinyl-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
½ oz. (15mL)	20mm-400	**02-911-379**	48/107.14
½ oz. (15mL)	20mm-400	**02-912-302**	576/324.58
1 oz. (30mL)	24mm-400	**02-911-380**	48/113.44
1 oz. (30mL)	24mm-400	**02-911-397**	280/728.27
2 oz. (60mL)	28mm-400	**02-911-381**	48/129.91
2 oz. (60mL)	28mm-400	**02-911-398**	240/403.48
4 oz. (125mL)	33mm-400	**02-911-382**	24/81.19
4 oz. (125mL)	33mm-400	**02-911-399**	120/246.57
8 oz. (250mL)	43mm-400	**02-911-383**	24/98.14
8 oz. (250mL)	43mm-400	**02-911-400**	84/228.17
16 oz. (500mL)	48mm-400	**02-911-401**	40/157.62
16 oz. (500mL)	48mm-400	**02-911-384**	24/130.28
32 oz. (1000mL)	58mm-400	**02-912-017**	12/122.16

With PTFE Faced, PE-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
½ oz. (15mL)	20mm-400	**02-911-385**	48/134.07
1 oz. (30mL)	24mm-400	**02-911-386**	48/157.18
2 oz. (60mL)	28mm-400	**02-911-387**	48/177.08
4 oz. (125mL)	33mm-400	**02-911-388**	24/104.41
8 oz. (250mL)	43mm-400	**02-911-389**	24/147.71
16 oz. (500mL)	48mm-400	**02-911-390**	24/180.87
32 oz. (1000mL)	58mm-400	**02-912-016**	12/175.22

With Rubber-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
½ oz. (15mL)	20mm-400	**02-911-391**	48/116.82
1 oz. (30mL)	24mm-400	**02-911-392**	48/117.07
2 oz. (60mL)	28mm-400	**02-911-393**	48/134.87
4 oz. (125mL)	33mm-400	**02-911-394**	24/86.60
8 oz. (250mL)	43mm-400	**02-911-395**	24/99.30
16 oz. (500mL)	48mm-400	**02-911-396**	24/151.78
32 oz. (1000mL)	58mm-400	**02-912-300**	12/94.58

Bottles Only

Capacity	Screw Cap Size	Cat. No.	Case of
½ oz. (15mL)	20mm-400	**02-912-301**	576/247.80
1 oz. (30mL)	24mm-400	**02-911-946**	280/228.88
2 oz. (60mL)	28mm-400	**02-911-947**	240/220.08
4 oz. (125mL)	33mm-400	**02-911-887**	120/209.75
8 oz. (250mL)	43mm-400	**02-912-297**	84/141.13
16 oz. (500mL)	48mm-400	**02-911-877**	40/87.64
32 oz. (1000mL)	58mm-400	**02-911-884**	24/90.99

*Fisherbrand** Certified Low-Particulate Clear French Squares

- Containers and caps are cleaned to five particles or less per milliliter at 0.5 microns with USP Purified Water or Water for Injection in a Class 100/10 cleanroom
- Custom processing, packaging and certification are available by special request.
- PTFE-lined caps included

CERTIFICATIONS:

Certificate of Analysis is included with each case.

02-911-893

Capacity	Screw Cap Size	Cat. No.	Case of
4 oz. (125mL)	33mm-400	**02-911-890**	24/278.17
8 oz. (250mL)	43mm-400	**02-911-893**	24/328.14
32 oz. (1000mL)	58mm-400	**02-911-885**	12/359.45

*Fisherbrand** Clear Glass Tablet Squares

- Packed with caps attached

02-912-296

Capacity	Screw Cap Size	Cat. No.	Case of
With Poly-Seal*-Lined Caps			
1 oz (30mL)	33mm-400	**02-911-993**	288/355.75
2 oz. (60mL)	33mm-400	**02-912-308**	144/84.85
With Polyvinyl-Lined Caps			
1 oz. (30mL)	33mm-400	**02-911-881**	288/306.96
With PTFE-Faced, PE-Lined Caps			
2 oz. (60mL)	33mm-400	**02-911-994**	288/376.03
2 oz. (60mL)	33mm-400	**02-911-995**	144/223.21
Bottles Only			
2 oz. (60mL)	33mm-400	**02-912-296**	144/91.02

GLASS—GRADUATED MEDIUM ROUNDS

*Fisherbrand** Graduated Valumetric* Bottles

Store a variety of liquids and solids—dry powders, specimens and soil samples

- Printed graduations show milliliters and fluid ounces
- Wide mouth for easy filling
- Clear glass allows for easy viewing of contents

APPROXIMATE VOLUME
200
150
100

02-911-456

With Poly-Seal*-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	33mm-400	**02-911-463**	48/82.49
1 oz. (30mL)	33mm-400	**02-911-470**	432/786.03
2 oz. (60mL)	38mm-400	**02-911-464**	48/93.86
2 oz. (60mL)	38mm-400	**02-911-471**	288/674.58

With Polyvinyl-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	33mm-400	**02-911-453**	48/106.21
1 oz. (30mL)	33mm-400	**02-911-465**	432/935.99
2 oz. (60mL)	38mm-400	**02-911-454**	48/114.05
2 oz. (60mL)	38mm-400	**02-911-466**	288/1129.72
4 oz. (125mL)	48mm-400	**02-911-455**	24/70.72
4 oz. (125mL)	48mm-400	**02-911-467**	144/454.78
8 oz. (250mL)	58mm-400	**02-911-456**	24/88.42
8 oz. (250mL)	58mm-400	**02-911-468**	96/458.30
16 oz. (500mL)	70mm-400	**02-911-457**	24/127.76
16 oz. (500mL)	70mm-400	**02-911-469**	48/287.12

With PTFE-Faced, PE-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	33mm-400	**02-911-458**	48/145.15
2 oz. (60mL)	38mm-400	**02-911-459**	48/190.70
4 oz. (125mL)	48mm-400	**02-911-460**	24/135.97
8 oz. (250mL)	58mm-400	**02-911-461**	24/161.25
16 oz. (500mL)	70mm-400	**02-911-462**	24/205.04

With Rubber-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	33mm-400	**02-911-473**	48/111.07
2 oz. (60mL)	38mm-400	**02-911-474**	48/116.54
4 oz. (125mL)	48mm-400	**02-911-475**	24/86.45
8 oz. (250mL)	58mm-400	**02-911-476**	24/102.59
16 oz. (500mL)	70mm-400	**02-912-303**	24/111.70

With Foil-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	33mm-400	**02-911-923**	48/90.10
2 oz. (60mL)	38mm-400	**02-911-924**	48/105.69
4 oz. (125mL)	48mm-400	**02-911-925**	24/80.45
8 oz. (250mL)	58mm-400	**02-911-926**	24/84.21
16 oz. (500mL)	70mm-400	**02-911-911**	24/122.12

Bottles Only

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	33mm-400	**02-911-941**	432/340.48
2 oz. (60mL)	38mm-400	**02-912-255**	288/282.83
4 oz. (125mL)	48mm-400	**02-912-256**	144/158.81
8 oz. (250mL)	58mm-400	**02-912-257**	96/135.63
16 oz. (500mL)	70mm-400	**02-912-119**	48/93.80

*Fisherbrand** Certified Low-Particulate Graduated Valumetric* Bottles

- With PTFE-lined or PTFE-faced PE-lined caps
- Containers and caps are cleaned to five particles or less per milliliter at 0.5 microns with USP Purified Water or Water for Injection in a Class 100/10 cleanroom
- Custom processing, packaging and certification available by special request

APPROXIMATE VOLUME

02-911-866, 02-911-880, 02-912-040

CERTIFICATIONS:

A Certificate of Analysis is included with each case.

Capacity	Screw Cap Size	Cat. No.	Case of
With PTFE Caps			
1 oz. (30mL)	33mm-400	**02-911-865**	48/543.18
2 oz. (60mL)	38mm-400	**02-911-866**	48/580.60
4 oz. (125mL)	48mm-400	**02-912-039**	24/315.53
8 oz. (250mL)	58mm-400	**02-912-040**	24/370.45
16 oz. (500mL)	70mm-400	**02-911-880**	24/442.59
With PTFE-Faced PE-Lined Caps			
4 oz. (125mL)	48mm-400	**02-912-314**	24/148.22
8 oz. (250mL)	58mm-400	**02-912-315**	24/148.12
16 oz. (500mL)	70mm-400	**02-912-316**	24/179.73

GLASS—JARS

*Fisherbrand** Clear Glass Testing Jars

- Packed with caps attached

02-911-883

Capacity	Screw Cap Size	Cat. No.	Case of 180
With Polyvinyl-Lined Caps			
2 oz. (60mL)	43mm-400	**02-911-883**	540.08
With PTFE-Faced, PE-Lined Caps			
2 oz. (60mL)	43mm-400	**02-911-964**	363.27
Jars Only			
2 oz. (60mL)	43mm-400	**02-912-116**	103.30

*Fisherbrand** Clear Straight-Sided Jars

Premium quality and outstanding value

02-912-345

- Clear for easy viewing of contents
- Straight sides allow for complete removal of contents
- Wide mouth for easy filling

With Polyvinyl-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	43mm-400	**02-911-920**	48/140.80
2 oz. (60mL)	53mm-400	**02-911-773**	24/68.79
4 oz. (125mL)	58mm-400	**02-911-775**	24/75.09
8 oz. (250mL)	70mm-400	**02-911-776**	12/62.16
16 oz. (500mL)	89mm-400	**02-911-772**	12/72.83
32 oz. (1000mL)	89mm-400	**02-911-774**	12/91.19

With PTFE-Faced, PE-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	43mm-400	**02-911-912**	48/200.13
1 oz. (30mL)	43mm-400	**02-912-306**	384/880.24
2 oz. (60mL)	53mm-400	**02-911-763**	24/120.64
2 oz. (60mL)	53mm-400	**02-911-791**	144/379.41
4 oz. (125mL)	58mm-400	**02-911-764**	24/134.33
8 oz. (250mL)	70mm-400	**02-911-765**	12/123.18
16 oz. (500mL)	89mm-400	**02-911-761**	12/142.81
32 oz. (1000mL)	89mm-400	**02-911-762**	12/161.49

With Rubber-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of 24
4 oz. (125mL)	58mm-400	**02-912-345**	82.82

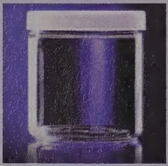
Bottles Only

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	43mm-400	**02-912-304**	384/181.09
2 oz. (60mL)	53mm-400	**02-911-996**	144/142.05
4 oz. (125mL)	58mm-400	**02-911-997**	24/27.09
8 oz. (250mL)	70mm-400	**02-911-876**	12/18.53
16 oz. (500mL)	89mm-400	**02-912-118**	12/37.21
32 oz. (1000mL)	89mm-400	**02-912-305**	12/45.15

*Fisherbrand** Coated and Cleaned Straight-Sided Jars

Safety-Coated Jars

- Clear, glass jar with attached caps



02-911-824

Capacity	Screw Cap Size	Cat. No.	Case of 12
With Polyvinyl-Lined Caps			
8 oz. (250mL)	70mm-400	**02-911-825**	66.32
16 oz. (500mL)	89mm-400	**02-911-824**	168.90
32 oz. (1000mL)	89mm-400	**02-911-867**	276.25
With PTFE-Faced PE-Lined Caps			
8 oz. (250mL)	70mm-400	**02-911-827**	185.83
16 oz. (500mL)	70mm-400	**02-911-868**	220.55
32 oz. (1000mL)	89mm-400	**02-911-721**	138.20

Certified Clean Jars

- Cleaned per EPA guidelines for Semi-Volatiles, Pesticides, PCBs and Metals
- With attached caps

CERTIFICATIONS:

Certificate of Analysis is attached to each lot.

Capacity	Screw Cap Size	Cat. No.	Case of
2 oz. (60mL)	53mm-400	**02-912-309**	24/52.10
4 oz. (125mL)	58mm-400	**02-912-310**	24/55.93
8 oz. (250mL)	70mm-400	**02-912-311**	24/46.50
17 oz. (500mL)	89mm-400	**02-912-312**	12/43.33
34 oz. (1000mL)	89mm-400	**02-912-313**	12/52.40

*Fisherbrand** Amber Straight-Sided Jars

For light-sensitive soil samples and environmental applications

- Type III soda-lime glass
- Straight sides allow for complete removal of contents
- Wide mouth for easy filling

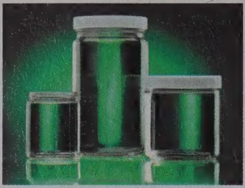
02-911-859, 02-912-045

Capacity	Screw Cap Size	Cat. No.	Case of
With PTFE-Faced PE-Lined Caps			
4 oz. (125mL)	58mm-400	**02-912-045**	24/90.00
8 oz. (250mL)	70mm-400	**02-911-859**	12/67.47
Jars Only			
4 oz. (125mL)	58mm-400	**02-912-298**	24/37.70

Wheaton Clear Straight-Sided Wide Mouth Jars

Excellent for storage of dry materials and specimens, visible through clear Type III soda-lime glass

- Wide mouths provide easy access to contents when using spoons or spatulas
- Chemical-resistant caps conform to EPA and FDA regulations.


02-911-407, -410, -408

With Polyvinyl-lined Caps

- Available in partitioned Convenience or Valu-Bulk* cartons
- Each case of Convenience Pack Bottles includes Hazard Communication labels for proper content identification and Tamper Evident labels to protect sample integrity in transit or long-term storage

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
Convenience Pack				
2 oz. (60mL)	53mm-400	W216903	**02-911-406**	24/64.63
4 oz. (120mL)	58mm-400	W216904	**02-911-407**	24/69.09
8 oz. (240mL)	70mm-400	W216905	**02-911-408**	12/55.17
16 oz. (473mL)	89mm-400	W216906	**02-911-409**	12/64.68
32 oz. (946mL)	89mm-400	W216907	**02-911-410**	12/84.03
Valu-Bulk Pack				
2 oz. (60mL)	53mm-400	W216914	**02-911-417**	144/581.09
4 oz. (120mL)	58mm-400	W216915	**02-911-418**	24/165.26
8 oz. (240mL)	70mm-400	W216916	**02-911-419**	24/155.61
16 oz. (473mL)	89mm-400	W216917	**02-911-420**	12/67.68
32 oz. (946mL)	89mm-400	W216918	**02-911-421**	12/76.50

With TFE-lined Caps

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
2 oz. (60mL)	53mm-400	W216908	**02-911-411**	24/113.26
4 oz. (120mL)	58mm-400	W216909	**02-911-412**	24/126.04
8 oz. (240mL)	70mm-400	W216910	**02-911-413**	12/91.65
16 oz. (473mL)	89mm-400	W216911	**02-911-414**	12/131.59
32 oz. (946mL)	89mm-400	W216912	**02-911-415**	12/137.07

With 14B White Rubber-lined Caps

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
4 oz. (120mL)	58mm-400	W216913	**02-911-416**	24/77.75

GLASS—JUGS

*Fisherbrand** Clear Glass Jugs

Sample visibility and premium quality for an exceptional value

- Narrow mouth enables careful pouring and prevents spillage
- 38mm-400 screw caps attached

02-912-307

Capacity	Cap Lining	Cat. No.	Case of
64 oz. (2000mL)	Poly-Seal	**02-912-307**	6/46.60
130 oz. (3840mL)	Poly-Seal	**02-912-272**	4/46.38
64 oz. (2000mL)	Polyvinyl	**02-912-279**	6/90.10
130 oz. (3840mL)	Polyvinyl	**02-912-273**	4/67.16
64 oz. (2000mL)	PTFE-faced polyethylene	**02-912-280**	6/62.92
130 oz. (3840mL)	PTFE-faced polyethylene	**02-912-278**	4/60.31
64 oz. (2000mL)	Rubber	**02-912-275**	6/36.12
130 oz. (3840mL)	Rubber	**02-912-274**	4/31.44

*Fisherbrand** Amber Glass Jugs

Protect your light-sensitive materials for an economical cost

- Narrow mouth enables careful pouring and prevents spillage
- 38mm-400 screw caps attached

02-912-271

Capacity	Cap Lining	Cat. No.	Case of
130 oz. (3840mL)	Poly-Seal	**02-911-862**	4/43.59
130 oz. (3840mL)	Polyvinyl	**02-912-277**	4/65.16
80 oz. (2365mL)	PTFE-faced polyethylene	**02-912-271**	6/66.54
130 oz. (3840mL)	PTFE-faced polyethylene	**02-912-276**	4/67.95
130 oz. (3840mL)	Rubber	**02-912-270**	4/31.45

GLASS—NARROW MOUTHS

Pyrex* Large-Capacity Bottles

For distilled water and solutions

- 2½-, 3½-gallon sizes are conventional bottle shape
- 5- and 12-gallon sizes are similar to carboys
- Tooled necks
- Graduated bottles have black enamel graduations in double scale (liters and gallons) and are graduated in 500mL increments

02-887C, 02-887-5

ORDERING INFORMATION:
Bottles take No. 12 size stoppers (not included).

Capacity	Mfr. No.	Cat. No.	Each	Case of
Ungraduated				
2½ gal. (9.5L)	1595 2X	**02-887A**	207.70	4/589.65
3½ gal. (13.25L)	1595 3X	**02-887B**	263.85	4/747.00
5 gal. (19L)	1595 5	**02-887C**	273.36	----
12 gal. (45.5L)	1595 12	**02-887D**	590.35	----
Graduated				
2½ gal. (9.5L)	1596 9L	**02-887-1**	230.16	4/648.68
3½ gal. (13.25L)	1596 13L	**02-887-3**	281.81	4/798.97
5 gal. (19L)	1596 19L	**02-887-5**	280.12	----

PyrexPlus* Large-Capacity Bottles

PVC coating to help prevent breakage and reduce spills

- Similar to graduated Pyrex* Large-Capacity Bottles
- Autoclavable at 121°C (250°F); resist thermal shock
- Black enamel graduations at 500mL increments

ORDERING INFORMATION:
Bottles take No. 12 size stoppers (not included).

ALERT:
Do not place over direct heat or flame.

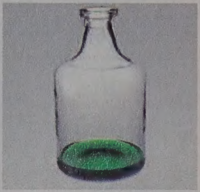
02-887G

Capacity	Mfr. No.	Cat. No.	Each
2½ gal. (9.5L)	61596 9L	**02-887E**	345.50
3½ gal. (13.25L)	61596 13L	**02-887F**	316.86
5 gal. (19L)	61596 19L	**02-887G**	383.82

Kimax* Solution Bottles

With sloping shoulders and tooled necks for uniform fit with No. 12 rubber stoppers

COMPLIANCE:
Five-gallon size is designed in accordance with Fed. Spec. DD-B-597.


03-422-12

Capacity	Mfr. No.	Cat. No.	Case of 1
2½ gal. (9.5L)	14950 25	**10-310-16**	134.34
3½ gal. (13.25L)	14950 35	**10-310-17**	175.33
5 gal. (19L)	14950 500	**03-422-12**	266.05
12 gal. (45.5L)	14950 120	**03-422-12A**	580.18

Kimax* Glass Sampling Bottle

Square cross section

- Particularly useful for water sampling, milk dilutions, and tissue culture work.
- Autoclavable, black phenolic, rubber-lined caps included

02-945-10

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of 48
6⅘ oz. (200mL)	28mm-400	14250 200	**02-945-10**	153.69

Wheaton Second Skin* Plastic-Coated Glass Safety Bottles

PVC coated

- Retain contents and most glass fragments for safe, easy disposal
- Coating is inert and highly resistant to strong acids, alkalis, and most solvents
- Coating reduces risk of personal injury or contamination
- Black foil-lined caps included
- Screw cap size: 38mm-430
- Not autoclavable

COMPLIANCE:
Helps meet OSHA requirements for safe handling and disposal of toxic or noxious substances.

03-439-50B

Capacity	Glass	Mfr. No.	Cat. No.	Each	Case of
80 oz. (2.3L)	Clear flint	220738	**03-439-50A**	14.98	6/76.84
1 gal. (3.8L)	Amber flint	220939	**03-439-50B**	21.76	4/74.39

GLASS—WIDE MOUTHS

*Fisherbrand** Clear Standard Wide Mouth Bottles

Good for storing dry materials and specimens

- Wide mouth for easy entry and retrieval during storage and packaging applications
- Commonly used for liquid and dry storage and packaging applications
- Excellent choice for general reservoir requirements.
- Type III soda-lime glass
- Clear for easy viewing of contents

02-912-114

With Polyvinyl-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
4 oz. (125mL)	48mm-400	**02-911-731**	24/72.34
8 oz. (250mL)	58mm-400	**02-911-916**	24/91.40
16 oz. (500mL)	63mm-400	**02-911-917**	24/104.03
32 oz. (1000mL)	70mm-400	**02-911-919**	12/82.14
64 oz. (2000mL)	83mm-400	**02-911-891**	6/73.08
129 oz. (3810mL)	89mm-400	**02-911-918**	4/67.20

With PTFE-faced, PE-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
4 oz. (125mL)	48mm-400	**02-911-768**	24/72.36
8 oz. (250mL)	58mm-400	**02-911-770**	24/87.27
16 oz. (500mL)	63mm-400	**02-911-767**	24/104.45
32 oz. (1000mL)	70mm-400	**02-911-913**	12/82.29
64 oz. (2000mL)	83mm-400	**02-911-769**	6/71.81
129 oz. (3810mL)	89mm-400	**02-911-766**	4/67.18

Bottles Only

Capacity	Screw Cap Size	Cat. No.	Case of
4 oz. (125mL)	48mm-400	**02-911-942**	24/24.71
8 oz. (250mL)	58mm-400	**02-911-943**	24/32.41
16 oz. (500mL)	63mm-400	**02-911-871**	24/59.34
32 oz. (1000mL)	70mm-400	**02-912-114**	12/35.84
64 oz. (2000mL)	83mm-400	**02-911-869**	6/39.72
129 oz. (3810mL)	89mm-400	**02-912-117**	4/32.58

*Fisherbrand** Amber Wide-Mouth Packers

Value-priced bottles ideal for storing dry materials

- Amber glass for light-sensitive powders
- Wide mouth for easy filling and for complete removal of contents

02-911-937

With Poly-Seal*-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of 24
1 oz. (30mL)	28mm-400	**02-911-444**	44.53
2 oz. (60mL)	33mm-400	**02-911-445**	56.15
4 oz. (125mL)	38mm-400	**02-911-446**	58.43

With Polyvinyl-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
0.20 oz. (6mL)	20mm-400	**02-911-852**	720/1202.13
0.27 oz. (8mL)	20mm-400	**02-911-857**	912/1393.29
½ oz. (15mL)	28mm-400	**02-911-799**	624/1494.59
1 oz. (30mL)	28mm-400	**02-911-432**	24/41.32
1 oz. (30mL)	28mm-400	**02-911-447**	432/626.24
2 oz. (60mL)	33mm-400	**02-911-433**	24/62.34
2 oz. (60mL)	33mm-400	**02-911-448**	216/388.53
4 oz. (125mL)	38mm-400	**02-911-434**	24/72.28
4 oz. (125mL)	38mm-400	**02-911-449**	180/359.66
8 oz. (250mL)	45mm-400	**02-911-435**	24/99.82
8 oz. (250mL)	45mm-400	**02-911-450**	84/395.99
16 oz. (500mL)	53mm-400	**02-911-436**	12/60.98
16 oz. (500mL)	53mm-400	**02-911-451**	60/190.57
32 oz. (1000mL)	53mm-400	**02-911-437**	12/83.36
32 oz. (1000mL)	53mm-400	**02-911-452**	36/165.21

With PTFE-Faced, PE-lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	28mm-400	**02-911-438**	24/71.52
2 oz. (60mL)	33mm-400	**02-911-439**	24/84.49
4 oz. (125mL)	38mm-400	**02-911-440**	24/101.80
8 oz. (250mL)	45mm-400	**02-911-441**	24/135.10
16 oz. (500mL)	53mm-400	**02-911-442**	12/87.84
32 oz. (1000mL)	53mm-400	**02-911-443**	12/113.40
42 oz. (1250mL)	70mm-400	**02-911-796**	6/89.99
85 oz. (2500mL)	70mm-400	**02-911-854**	12/353.03

Bottles Only

Capacity	Screw Cap Size	Cat. No.	Case of
0.20 oz. (6mL)	20mm-400	**02-912-299**	720/850.10
½ oz. (15mL)	28mm-400	**02-911-798**	624/1152.38
1 oz. (30mL)	28mm-400	**02-911-935**	432/226.65
2 oz. (60mL)	33mm-400	**02-911-936**	216/195.91
4 oz. (125mL)	38mm-400	**02-911-888**	180/266.24
8 oz. (250mL)	45mm-400	**02-911-938**	84/112.51
16 oz. (500mL)	53mm-400	**02-911-934**	60/116.40
32 oz. (1000mL)	53mm-400	**02-911-937**	36/102.31

*Trademark. See Trademark Reference.

*Fisherbrand** Coated and Cleaned Amber Wide-Mouth Packers

Safety-Coated Amber Wide-Mouth Packers

Ideal for field sampling applications

02-911-829, -906, 02-912-317

- Shatter-resistant coating reduces chance of breakage
- If broken, safety coating contains contents long enough for disposal
- Nonslip coating also allows greater ease of stability when wet or dry
- Not autoclavable

Capacity	Screw Cap Size	Cat. No.	Case of
With Polyvinyl-lined Caps			
8 oz. (250mL)	45mm-400	**02-911-832**	24/246.66
16 oz. (500mL)	53mm-400	**02-911-828**	12/105.84
32 oz. (1000mL)	53mm-400	**02-911-829**	12/137.02
With PTFE-faced PE-lined Caps			
8 oz. (250mL)	45mm-400	**02-911-863**	24/167.82
16 oz. (500mL)	53mm-400	**02-911-830**	12/131.81
32 oz. (1000mL)	53mm-400	**02-911-831**	12/173.22
Bottle Only			
8 oz. (250mL)	45mm-400	**02-912-317**	24/94.39
16 oz. (500mL)	53mm-400	**02-911-906**	12/68.84
32 oz. (1000mL)	53mm-400	**02-911-907**	12/79.15

Custom Cleaned Amber Wide-Mouth Packers

- Containers and caps are noncertified and precleaned with USP Purified Water for visible particulates in a clean process area
- Custom packaging and certification available upon request.
- Attached PTFE-faced, PE-lined caps attached

Capacity	Screw Cap Size	Cat. No.	Case of
2 oz. (60mL)	33mm-400	**02-911-930**	24/52.27
4 oz. (125mL)	38mm-400	**02-911-932**	24/60.44
8 oz. (250mL)	45mm-400	**02-911-933**	24/67.73
16 oz. (500mL)	53mm-400	**02-911-929**	12/39.25
32 oz. (1000mL)	53mm-400	**02-911-931**	12/49.82

Certified Clean Amber Wide Mouth-Packers

- Cleaned per EPA guidelines for Semi-Volatiles, Pesticides, PCBs and Metals.
- Attached PTFE-faced PE-lined caps attached

CERTIFICATIONS:
A Certificate of Analysis is attached to each lot.

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	28mm-400	**02-912-004**	24/65.94
2 oz. (60mL)	33mm-400	**02-912-005**	24/80.10
4 oz. (125mL)	38mm-400	**02-912-007**	12/47.21
8 oz. (250mL)	45mm-400	**02-912-008**	12/57.32
17 oz. (500mL)	53mm-400	**02-912-003**	12/69.71
34 oz. (1000mL)	53mm-400	**02-912-006**	12/95.67

Pyrex* Round Wide-Mouth Media Storage Bottles

NEW

Designed for heavy-duty storage as well as mixing and sampling

13-700-404, -405, -403

- Extra wide mouth (69mm inner diameter) gives easier access for pouring and removing pastes, powders and larger items
- Neck opening is five times larger than on GL45 threaded bottles—easier to add or remove powders and easier to clean
- High thermal shock resistance; usable up to 500°C and in microwave ovens
- Pyrex bottles can be sterilized by autoclaving or dry heat; polypropylene caps can be autoclaved
- Permanent white enamel graduations and marking spot
- Traceability Code for easier documentation

INCLUDES:
Linerless, one-piece, autoclavable, orange polypropylene plug-seal. GLS80 threaded cap with drip-free pouring rim.

ALERT:
Do not tighten caps immediately after autoclaving, as the vacuum resulting from cooling can cause breakage.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of 10
16 oz. (500mL)	80 GLS	1397-500	**13-700-403**	129.28
32 oz. (1L)	80 GLS	1397-1L	**13-700-404**	158.72
64 oz. (2L)	80 GLS	1397-2L	**13-700-405**	418.06

Wheaton Glass Wide-Mouth Bottles with Second Skin* Safety Coating

Coating protects bottles from damage

- Clear bottles of Type III soda-lime glass with PVC coating
- Retain contents and most glass fragments for safer, simpler disposal
- Inert coating is highly resistant to strong acids, alkalis, and most solvents
- Help meet OSHA requirements for safe handling and disposal of toxic or noxious substances

03-439-60B, -60C, -60A

With Polyvinyl-lined Caps

Capacity	Mfr. No.	Cat. No.	Case of 12
8 oz. (240mL)	216627	**03-439-60A**	80.64
16 oz. (473mL)	216629	**03-439-60B**	83.72
32 oz. (946mL)	216631	**03-439-60C**	103.81

Bottles Only

Capacity	Mfr. No.	Cat. No.	Pack of 12
8 oz. (240mL)	216637	**03-439-60J**	62.55
16 oz. (473mL)	216639	**03-439-60K**	65.46
32 oz. (946mL)	216641	**03-439-60F**	74.65

Wheaton Clear Standard Wide-Mouth Bottles

Ideal for the storage of dry materials and specimens

- Type III soda-lime glass
- Clear for easy viewing of contents
- Wide mouth for easy access to contents
- Rounded shoulders

02-911-422, -196, -430

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
With Polyvinyl-lined Caps				
4 oz. (125mL)	48mm-400	W216924	**02-911-422**	24/55.60
8 oz. (250mL)	58mm-400	W216925	**02-911-423**	24/70.04
16 oz. (500mL)	63mm-400	W216926	**02-911-424**	24/92.33
64 oz. (2000mL)	83mm-400	W216927	**02-911-425**	6/53.97
128 oz. (4000mL)	89mm-400	W216928	**02-911-426**	4/61.94
With TFE-lined Caps				
4 oz. (125mL)	48mm-400	W216929	**02-911-427**	24/83.70
8 oz. (250mL)	58mm-400	W216930	**02-911-428**	24/106.70
16 oz. (500mL)	63mm-400	W216931	**02-911-429**	24/123.02
64 oz. (2000mL)	83mm-400	W216932	**02-911-430**	6/73.51
128 oz. (4000mL)	89mm-400	W216933	**02-911-431**	4/65.17
Bottles Only				
4 oz. (125mL)	48mm-400	W216934	**02-912-195**	24/25.05
8 oz. (250mL)	58mm-400	W216935	**02-912-196**	24/32.35
16 oz. (500mL)	63mm-400	W216936	**02-912-197**	24/45.95
64 oz. (2000mL)	83mm-400	W216937	**02-912-198**	6/32.05
128 oz. (4000mL)	89mm-400	W216938	**02-912-199**	4/32.14

PLASTIC—BOSTON ROUNDS

*Fisherbrand** LDPE Boston Rounds

- Constructed of low-density polyethylene
- Natural color
- Poly-Seal*-lined caps included

02-911-909, -873, -967

Capacity	Screw Cap Size	Cat. No.	Case of
½ oz. (15mL)	15mm-415	**02-911-968**	48/53.91
1 oz. (30mL)	18mm-410	**02-912-015**	48/64.29
2 oz. (60mL)	18mm-410	**02-911-965**	48/74.56
4 oz. (125mL)	24mm-410	**02-911-966**	48/97.54
8 oz. (250mL)	24mm-410	**02-911-967**	48/170.58
16 oz. (500mL)	28mm-400	**02-911-909**	24/86.15
32 oz. (1000mL)	38mm-430	**02-911-873**	24/181.06

Nalgene* HDPE Boston Round Bottles

Designed for demanding lab use

- With polypropylene caps
- Durable, uniform walls are resistant to splitting or puncturing
- Ideal for storing, shipping and packaging liquids for long periods
- Rigid and translucent, with excellent chemical resistance
- Can be used with most corrosives
- Good for freezer use to -100°C
- Manufactured in compliance with ISO 13485:2003 quality requirements.

02-923 Series

INCLUDES:

Leakproof[†], linerless caps included

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
⅛ oz. (4mL)	13mm-415	2002 9125	**02-923-6A**	12/11.01	6 Pk./44.00
¼ oz. (8mL)	20mm-415	2002 9025	**02-923-11A**	12/11.18	6 Pk./44.70
½ oz. (15mL)	20mm-415	2002 9050	**02-923-8A**	12/12.33	6 Pk./49.30
1 oz. (30mL)	20mm-415	2002 0001	**02-923A**	12/16.52	6 Pk./66.10
2 oz. (60mL)	20mm-415	2002 0002	**02-923B**	12/17.01	6 Pk./68.00
4 oz. (125mL)	24mm-415	2002 0004	**02-923C**	12/21.78	6 Pk./87.10
6 oz. (175mL)	24mm-415	2002 0006	**02-923CC**	12/30.94	6 Pk./123.75
8 oz. (250mL)	24mm-415	2002 0008	**02-923D**	12/31.13	6 Pk./124.50
16 oz. (500mL)	28mm-415	2002 0016	**02-923E**	12/44.16	4 Pk./117.75
16 oz. (500mL)	38mm-430	2002 9016	**02-923-11F**	12/68.06	4 Pk./181.50
32 oz. (1000mL)	38mm-430	2002 0032	**02-923F**	6/39.75	4 Pk./106.00
Bulk Packed					
1 oz. (30mL)	20mm-415	312002-0001	**03-313-78A**	1000/645.00	----
2 oz. (60mL)	20mm-415	312002-0002	**03-313-78B**	1000/659.50	----
4 oz. (125mL)	24mm-415	312002-0004	**03-313-78C**	500/432.75	----
6 oz. (175mL)	24mm-415	312002-0006	**03-313-78D**	250/304.50	----
8 oz. (250mL)	24mm-415	312002-0008	**03-313-78E**	250/308.00	----
16 oz. (500mL)	28mm-415	312002-0016	**03-313-78F**	125/218.25	----
16 oz. (500mL)	38mm-430	312002-9016	**03-313-78G**	125/333.50	----
32 oz. (1000mL)	38mm-430	312002-0032	**03-313-78H**	50/155.50	----

[†] Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

Nalgene* Amber HDPE Boston Round Bottles

Designed for demanding lab use

- Opaque amber HDPE with opaque amber polypropylene caps
- Durable, uniform walls are resistant to splitting or puncturing
- Leakproof[†], linerless caps included
- Manufactured in compliance with ISO 13485:2003 quality requirements

COMPLIANCE:

Meet USP requirements for light-resistant containers.

02-923-56, 03-313-60, 03-313-56

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of
4 oz. (125mL)	24mm-415	312004-0004	**03-313-56**	500/662.75
8 oz. (250mL)	24mm-415	312004-0008	**03-313-60**	250/449.25
16 oz. (500mL)	28mm-415	312004-0016	**02-923-55**	125/331.75
32 oz. (1000mL)	38mm-430	312004-0032	**02-923-56**	50/223.25

[†] For definition of "leakproof," see p. 172.

Nalgene* Polypropylene Boston Round Bottles

Excellent chemical resistance

- Ideal for lab applications requiring excellent chemical resistance and autoclaving of containers with or without contents
- Translucent; better clarity than HDPE or LDPE
- Leakproof[†] polypropylene screw caps included

NOTE:

Completely disengage threads or remove caps before autoclaving.

02-925 and 02-923-11 Series

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
⅛ oz. (4mL)	13mm-415	2006 9125	**02-923-11E**	12/14.53	6 Pk./58.10
¼ oz. (8mL)	20mm-415	2006 9025	**02-923-11D**	12/15.30	6 Pk./61.20
½ oz. (15mL)	20mm-415	2006 9050	**02-923-8G**	12/16.25	6 Pk./65.00
1 oz. (30mL)	20mm-415	2006 0001	**02-925A**	72/84.90	----
2 oz. (60mL)	20mm-415	2006 0002	**02-925B**	12/21.60	6 Pk./86.40
4 oz. (125mL)	24mm-415	2006 0004	**02-925C**	12/29.63	6 Pk./118.50
8 oz. (250mL)	24mm-415	2006 0008	**02-925D**	12/43.19	6 Pk./172.75
16 oz. (500mL)	28mm-415	2006 0016	**02-925E**	12/64.03	4 Pk./170.75
32 oz. (1000mL)	38mm-430	2006 0032	**02-925F**	6/52.41	4 Pk./139.75

[†] For definition of "leakproof," see p. 172.

PLASTIC- JARS

*Fisherbrand** Polypropylene Jars

- Natural color
- With or without caps

02-912-261

Capacity	Screw Cap Size	Cat. No.	Case of
With Linerless Caps			
1 oz. (30mL)	43mm-400	**02-912-025**	72/78.69
2 oz. (60mL)	43mm-400	**02-912-026**	48/84.34
4 oz. (125mL)	58mm-400	**02-912-028**	36/64.76
8 oz. (250mL)	89mm-400	**02-912-029**	36/104.34
16 oz. (500mL)	89mm-400	**02-912-024**	24/95.51
32 oz. (1000mL)	120mm-400	**02-912-027**	24/175.68
Jars Only			
2 oz. (60mL)	53mm-400	**02-912-260**	546/195.48
4 oz. (125mL)	58mm-400	**02-912-261**	432/195.31
8 oz. (250mL)	89mm-400	**02-912-258**	112/145.63

*Fisherbrand** Wide-Mouth Polypropylene Jars

Higher temperature resistance than LDPE or HDPE

- Handles up to 135°C (275°F) for short periods and 100°C (212°F) continuously
- Brittleness temperature of 0°C (32°F)
- Rigid walls
- Excellent chemical resistance
- Can be sterilized by all normal methods, except dry heat and radiation
- Polypropylene linerless screw caps included

NOTE:

Completely disengage threads or remove cap before autoclaving.

02-891B Jar (shown with 02-896D Bottle)

Capacity	Screw Cap Size	Cat. No.	Pack of
1 oz. (30mL)	43mm	**02-891A**	72/80.30
2 oz. (60mL)	53mm	**02-891B**	48/57.40
4 oz. (125mL)	70mm	**02-891C**	36/64.71
8 oz. (250mL)	89mm	**02-891D**	36/103.79
16 oz. (500mL)	89mm	**02-891E**	24/89.98
32 oz. (1000mL)	120mm	**02-891F**	24/146.98

Nalgene* Straight-Side Jars

Polycarbonate Jars

Useful for collecting and storing pastes, solids, specimens, and lab supplies

- Excellent for coldroom and refrigerated use
- Transparent polycarbonate jars
- With wide mouths and no shoulders to trap materials
- Nontoxic; autoclavable
- White polypropylene screw caps included

02-925 Series

NOTE:
Completely disengage threads or remove caps before autoclaving.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
Clear					
½ oz. (15mL)	38mm-400	2116-0015	**02-925-1D**	4/14.10	12 Pk./112.75
1 oz. (30mL)	43mm-400	2116-0030	**02-925-1A**	4/16.94	12 Pk./135.50
2 oz. (60mL)	53mm-400	2116-0060	**02-925-1B**	4/19.31	12 Pk./154.50
4 oz. (125mL)	70mm-400	2116-0125	**02-925-1C**	4/33.07	6 Pk./132.25
8 oz. (250mL)	70mm-400	2116-0250	**02-925-1G**	4/37.82	6 Pk./151.25
16 oz. (500mL)	120mm-400	2116-0500	**02-925-1H**	4/59.81	4 Pk./159.50
32 oz. (1000mL)	120mm-400	2116 1000	**02-925-1J**	4/71.82	4 Pk./191.50
Blue					
4 oz. (125mL)	70mm-400	2116-1004	**02-925-4A**	24/143.50	----
8 oz. (250mL)	70mm-400	2116-1008	**02-925-4B**	24/166.75	----
16 oz. (500mL)	120mm-400	2116-1016	**02-925-4C**	16/176.00	----
32 oz. (1000mL)	120mm-400	2116-1032	**02-925-4D**	16/211.00	----
Green					
4 oz. (125mL)	70mm-400	2116-2004	**02-925-5A**	24/143.50	----
8 oz. (250mL)	70mm-400	2116-2008	**02-925-5B**	24/166.75	----
16 oz. (500mL)	120mm-400	2116-2016	**02-925-5C**	16/176.00	----
32 oz. (1000mL)	120mm-400	2116-2032	**02-925-5D**	16/211.00	----

Polypropylene Jars

4 and 8 oz. sizes fit Osterizer* and other blenders with Mason jar threads

- Translucent polypropylene jars
- Excellent chemical resistance
- Withstand formaldehyde and autoclaving
- Linerless white polypropylene or white resin caps included

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
With white polypropylene caps					
½ oz. (15mL)	38mm-400	2118 9050	**11-815-10G**	12/25.25	6 Pk./101.00
1 oz. (30mL)	43mm-400	2118 0001	**11-815-10A**	12/26.94	6 Pk./107.75
2 oz. (60mL)	53mm-400	2118 0002	**11-815-10B**	12/28.50	4 Pk./76.00
With white resin caps					
4 oz. (125mL)	70mm-400	2118 0004	**11-815-10C**	12/44.76	3 Pk./89.50
8 oz. (250mL)	70mm-400	2118 0008	**11-815-10D**	6/28.56	6 Pk./114.25
16 oz. (500mL)	120mm-400	2118 0016	**11-815-10E**	6/42.94	4 Pk./114.50
32 oz. (1000mL)	120mm-400	2118 0032	**11-815-10F**	6/61.13	4 Pk./163.00

*Fisherbrand** Polystyrene Jars

- Clear
- With or without caps

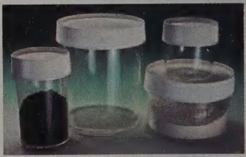
02-912-266, -265

Capacity	Screw Cap Size	Cat. No.	Case of
With Foamed PE-Lined Caps			
1 oz. (30mL)	43mm-400	**02-911-792**	72/79.53
2 oz. (60mL)	53mm-400	**02-912-267**	48/81.45
4 oz. (125mL)	58mm-400	**02-912-268**	36/74.81
8 oz. (250mL)	89mm-400	**02-912-269**	36/115.67
16 oz. (500mL)	89mm-400	**02-912-265**	24/92.20
32 oz. (1000mL)	120mm-400	**02-912-266**	24/176.80
Jars Only			
8 oz. (250mL)	89mm-400	**02-912-263**	168/214.84
16 oz. (500mL)	89mm-400	**02-912-262**	112/149.27

Nalgene* Transparent Polymethylpentene Jars

Straight-sided jars with white screw caps

- Caps have recessed tops for stacking
- Excellent chemical resistance
- Excellent museum jars, formaldehyde loss approximately 2% a year
- 4 and 8 oz. sizes fit Osterizer* and other blenders with Mason jar threads
- Autoclavable
- White polypropylene screw caps included



11-823 Series

NOTE:
Completely disengage threads or remove caps before autoclaving.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of 4	Case of
2 oz. (60mL)	53mm-415	2117 0060	**02-925-2B**	19.70	12 Pk./157.59
4 oz. (125mL)	70mm-400	2117 0125	**11-823-30**	33.19	6 Pk./132.75
8 oz. (250mL)	70mm-400	2117 0250	**11-823-31**	37.96	6 Pk./151.82
16 oz. (500mL)	120mm-400	2117 0500	**11-823-32**	60.03	4 Pk./160.10
32 oz. (1000mL)	120mm-400	2117 1000	**11-823-33**	72.08	4 Pk./192.22

Nalgene* Gray Polycarbonate Straight-Side Jars

Excellent for coldroom and refrigerated use

Provide nontoxic, high impact resistance labware option.

- Transparent gray polycarbonate jars
- Four and 8 oz. sizes fit Osterizer* blenders and blenders with Mason jar threads
- Autoclavable
- White polypropylene screw caps included

11-815-9 Series

NOTE:
Completely disengage threads or remove caps before autoclaving.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of 4	Case of
4 oz. (125mL)	70mm-400	2119 0125	**11-815-9C**	33.19	6 Pk./132.75
8 oz. (250mL)	70mm-400	2119 0250	**11-815-9D**	37.96	6 Pk./151.82
16 oz. (500mL)	120mm-400	2119 0500	**11-815-9E**	60.03	4 Pk./160.10
32 oz. (950mL)	120mm-400	2119 1000	**11-815-9F**	72.08	4 Pk./192.22

Biomedical Polymers Screw-Top Multipurpose Containers

Designed for the collection, transport and storage of specimens and samples

- Nongraduated, white containers
- Polypropylene offers excellent chemical resistance
- Containers and lids are autoclavable
- Screw-top lid has three-ply polypropylene copolymer liner that forms a tight seal, preventing leaks and odors
- Screw-top lids included

02-544 Series

Capacity	Mfr. No.	Cat. No.	Case of 25
8 oz. (237mL)	BMP-CN-902	**02-544-225**	68.57
16 oz. (473mL)	BMP-CN-906	**02-544-226**	90.49
32 oz. (946mL)	BMP-CN-910	**02-544-227**	171.50

PLASTIC-JUGS

*Fisherbrand** HDPE Jugs

- Choose round or square
- Foamed PE-lined cap included

Type	Capacity	Screw Cap Size	Cat. No.	Case of
Round	½ gal. (2L)	38mm-400	**02-912-115**	40/211.61
Square	1 gal. (4L)	38mm-400	**02-911-992**	4/57.22

Nalgene* LDPE and Polypropylene Jugs

One-third the weight of glass, for easy carrying and handling

- Large handle permits use with rubber gloves for safe handling of corrosive liquids
- Offset pour spout for easier pouring
- Polypropylene jugs are autoclavable
- Leakproof†
- Polypropylene screw caps included

NOTE:
Completely disengage threads or remove caps before autoclaving polypropylene jugs.

02-923-10A

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of 6
LDPE Jugs					
1 gal. (4L)	38mm-430	2220 0010	**02-923-10A**	39.63	158.50
2 gal. (8L)	53mm-B	2220 0020	**02-923-10B**	69.57	278.25
Polypropylene Jugs					
1 gal. (4L)	38mm-430	2221 0010	**02-960-10A**	45.94	183.75
2 gal. (8L)	53mm-B	2221 0020	**02-960-10B**	85.25	341.00

† *For definition of "leakproof," see below.*

PLASTIC—NARROW MOUTHS, ROUND

*Fisherbrand** Leak-Resistant HDPE Narrow-Mouth Bottles

Economical bottles with a double-seal, leak-resistant closure

- Translucent HDPE
- No drip lip ensures safe, clean pouring
- Linerless screw caps attached

02-912-323, -324, -321

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	20mm-410	**02-912-319**	72/81.12
2 oz. (60mL)	20mm-410	**02-912-320**	72/82.69
4 oz. (125mL)	24mm-410	**02-912-321**	72/91.78
8 oz. (250mL)	24mm-410	**02-912-322**	72/123.34
16 oz. (500mL)	28mm-410	**02-912-323**	48/128.66
32 oz. (1000mL)	38mm-430	**02-912-324**	24/91.41

†Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

*Fisherbrand** HDPE Bulk-Packaged Field-Sample Bottles

Excellent chemical resistance

- Bulk packaging makes these containers ideal for field sampling and for storing and transporting liquids
- Rigid and translucent
- Polypropylene screw caps included

02-895D

Capacity	Screw Cap Size	Cat. No.	Case of
4 oz. (125mL)	24mm	**02-895A**	500/317.03
8 oz. (250mL)	24mm	**02-895B**	250/227.35
16 oz. (500mL)	28mm	**02-895C**	125/169.12
32 oz. (1000mL)	38mm-430	**02-895D**	50/108.35

*Fisherbrand** Amber Narrow-Mouth HDPE Bottles

Protect light-sensitive materials during sampling, shipping or storage

- Amber polypropylene screw caps included

COMPLIANCE:
U.S. Pharmacopoeia 661†

NOTE:
Fisherbrand HDPE containers can be used for long-term storage, but direct UV exposure should be avoided.

03-007 Series

Capacity	Screw Cap Size	Cat. No.	Pack of	Case of
4 oz. (125mL)	24mm	**03-007-46**	12/15.14	6 Pk./68.24
8 oz. (250mL)	24mm	**03-007-47**	12/18.80	6 Pk./96.39
16 oz. (500mL)	28mm	**03-007-48**	12/45.83	4 Pk./122.23
32 oz. (1L)	38mm-430	**03-007-49**	6/12.21	4 Pk./32.56
64 oz. (2L)	38mm-430	**03-007-50**	1/7.80	6 Pk./31.20

†U.S. Pharmacopoeia 661(Containers, Light Transmission) states that a "light resistant" container must comply with requirements for maximum light transmission. Fisherbrand amber bottles pass the USP light transmission test. USP criteria states that a container greater than 20mL in size cannot allow more than 10% light transmission for any wavelength between 290 and 450 nanometers, measured every 20nm.

†Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

*Fisherbrand** HDPE Cylinder Rounds

Ideal for storing, shipping, and packaging liquids for long periods

- Rigid and translucent
- Shoulder permits pouring of small quantities without spilling
- Narrow mouth
- Natural color
- With or without caps

02-911-979, -980, -983, -982

Capacity	Screw Cap Size	Cat. No.	Case of
With Polyethylene Foam-lined Caps			
2 oz. (60mL)	24mm-410	**02-911-979**	48/53.94
2 oz. (60mL)	24mm-410	**02-912-112**	800/359.56
4 oz. (125mL)	24mm-410	**02-911-980**	48/87.39
8 oz. (250mL)	24mm-410	**02-911-981**	48/76.66
8 oz. (250mL)	24mm-410	**02-911-962**	230/192.30
16 oz. (500mL)	24mm-410	**02-911-982**	24/89.50
16 oz. (500mL)	24mm-410	**02-912-293**	180/175.33
32 oz. (1000mL)	24mm-410	**02-911-983**	12/49.73
32 oz. (1000mL)	28mm-400	**02-912-294**	77/117.46
Without Caps			
4 oz. (125mL)	24mm-410	**02-911-989**	425/181.28
8 oz. (250mL)	24mm-410	**02-911-963**	230/123.66
12 oz. (360mL)	38mm-400	**02-912-281**	216/304.61
16 oz. (500mL)	24mm-410	**02-911-800**	180/358.84
32 oz. (1000mL)	28mm-400	**02-911-988**	162/137.28

Nalgene* FEP Bottles

Ideal for cryogenic experiments, trace metal analysis, organic solvents

- Autoclavable and transparent; chemical and corrosion resistant
- Withstand -105° to +150°C (-157° to +302°F)
- Leakproof†, Tefzel* ETFE screw caps included

NOTE:
Completely disengage threads or remove caps before autoclaving.

02-923-30 Series

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
1 oz. (30mL)	20mm-415	1600 0001	**02-923-30AA**	35.39	8/188.75
2 oz. (60mL)	20mm-415	1600 0002	**02-923-30BB**	42.99	8/229.25
4 oz. (125mL)	24mm-415	1600 0004	**02-923-30A**	64.32	6/257.25
8 oz. (250mL)	24mm-415	1600 0008	**02-923-30B**	105.66	4/281.75
16 oz. (500mL)	28mm-415	1600 0016	**02-923-30C**	128.53	4/342.75
32 oz. (1000mL)	38mm-415	1600 0032	**02-923-30D**	183.19	4/488.50
64 oz. (2000mL)	38mm-430	1600 0064	**02-923-30E**	312.00	2/416.00

† For definition of "leakproof," see left.

*Trademark. See Trademark Reference.

Nalgene* Opaque FEP Bottles

Useful for pollution sampling and analysis

- Black FEP bottles
- Zero transmission of both visible and UV light to 5000Å
- Bottles and caps withstand temperatures from -105° to +150°C (-157° to +302°F)
- Leakproof†, black Tefzel* ETFE screw caps included

02-923-35G, -35E

ORDERING INFORMATION:

Packaged individually

NOTE:

Completely disengage threads or remove caps before autoclaving.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of 4
16 oz. (500mL)	28mm-400	DS1620-0016	**02-923-35E**	369.49
32 oz. (1000mL)	38mm-400	DS1620-0032	**02-923-35G**	520.06

† For definition of "leakproof," see below.

Nalgene* HDPE Sample Bottles

Ideal for field sampling

- Economical, recyclable, resist breakage
- Translucent HDPE; allows viewing of liquid level
- Leakproof†, polypropylene screw caps included

03-313-2B

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
1 oz. (30mL)	20mm-415	2089 0001	**03-313-2A**	72/39.27
2 oz. (60mL)	20mm-415	2089 0002	**03-313-2B**	72/46.07
4 oz. (125mL)	24mm-415	2089 0004	**03-313-2C**	72/54.33
8 oz. (250mL)	24mm-415	2089 0008	**03-313-2D**	72/77.42
16 oz. (500mL)	28mm-415	2089 0016	**03-313-2E**	48/76.60
32 oz. (1000mL)	38mm-430	2089 0032	**03-313-2F**	24/60.19

† For definition of "leakproof," see below.

†Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

Nalgene* Amber Narrow-Mouth HDPE Bottles

Perfect for storage, shipping and packaging of light-sensitive material

- Good for freezer use to -100°C
- Excellent chemical resistance to most acids, bases and alcohols
- Leakproof† amber polypropylene screw caps included

02-923-5D, -5A, -5F, -5C, -5E, -5B, -5E

COMPLIANCE:

Meet U.S. Pharmacopeia XXIII requirements for maximum light transmission.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
⅛ oz. (4mL)	13mm-415	2004 9125	**02-923-8F**	12/18.25	6 Pk./73.00
¼ oz. (8mL)	20mm-415	2004 9025	**02-923-11C**	12/19.20	6 Pk./76.80
½ oz. (15mL)	20mm-415	2004 9050	**02-923-8E**	12/20.08	6 Pk./80.30
1 oz. (30mL)	20mm-415	2004 0001	**02-923-5A**	12/26.76	6 Pk./107.00
2 oz. (60mL)	20mm-415	2004 0002	**02-923-5B**	12/28.19	6 Pk./112.75
4 oz. (125mL)	24mm-415	2004 0004	**02-923-5C**	12/34.13	6 Pk./136.50
8 oz. (250mL)	24mm-415	2004 0008	**02-923-5D**	12/46.25	6 Pk./185.00
16 oz. (500mL)	28mm-415	2004 0016	**02-923-5E**	12/68.25	4 Pk./182.00
32 oz. (1000mL)	38mm-430	2004 0032	**02-923-5F**	6/57.09	4 Pk./152.25

† For definition of "leakproof," see left.

Nalgene* HDPE Diagnostic Bottles

Natural or opaque white HDPE

- Durable, uniform walls are resistant to splitting or puncturing
- Natural HDPE bottles include leakproof†, linerless, polypropylene caps
- Manufactured in compliance with ISO 9001 quality requirements.

03-313-25A, -20B, -24A

ORDERING INFORMATION:

Caps not included with opaque white bottles; sold separately (Cat. No. 02-923-143).

COMPLIANCE:

Opaque white bottles meet USP requirements for light-resistant containers.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of 2000
Natural HDPE, with caps				
⅛ oz. (3.4mL)	13mm-415	312002-9125	**03-313-20B**	654.75
¼ oz. (8mL)	20mm-415	312002-9025	**03-313-24A**	682.50
½ oz. (15mL)	20mm-415	312002-9050	**03-313-25A**	712.50
Opaque White HDPE, without caps				
¼ oz. (8mL)	20mm-415	362008-9025	**02-923-142**	509.25
½ oz. (15mL)	20mm-415	362008-9050	**02-923-141**	545.50

† For definition of "leakproof," see left.

Nalgene* Amber HDPE Diagnostic Bottles

Resist splits and punctures

- Opaque amber HDPE with opaque amber polypropylene caps
- Meet USP requirements for light-resistant containers
- Designed for demanding lab use
- Durable, uniform walls are resistant to splitting or puncturing
- Leakproof†, linerless caps
- Manufactured in compliance with ISO 9001 quality requirements

03-313-24B, 03-313-25B

INCLUDES:

Opaque amber polypropylene caps

COMPLIANCE:

Meet USP requirements for light-resistant containers.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of
¼ oz. (8mL)	20mm-415	312004-9025	**03-313-24B**	2000/761.00
½ oz. (15mL)	20mm-415	312004-9050	**03-313-25B**	2000/787.75

† For definition of "leakproof," see below.

Nalgene* Amber Narrow-Mouth HDPE Sample Bottles

Protect light-sensitive liquids during sampling, shipping or storage

- Amber HDPE reduces UV light transmission.
- Leakproof†, amber polypropylene screw caps included

03-313-1E, -1F, -1C

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
1 oz. (30mL)	20mm-415	DS2085 0001	**03-313-1A**	72/79.90
2 oz. (60mL)	20mm-415	DS2085 0002	**03-313-1B**	72/84.10
4 oz. (125mL)	24mm-415	DS2085 0004	**03-313-1C**	72/102.00
8 oz. (250mL)	24mm-415	DS2085 0008	**03-313-1D**	72/138.00
16 oz. (500mL)	28mm-415	DS2085 0016	**03-313-1E**	48/135.75
32 oz. (1000mL)	38mm-430	DS2085 0032	**03-313-1F**	24/113.50

† For definition of "leakproof," see below.

†Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

Nalgene* Narrow-Mouth HDPE Packaging Bottles

Ideal for diagnostics, biologicals, specialty chemicals, reagents, adhesives and veterinary pharmaceuticals

- Injection blow molded for uniform wall thickness and strength
- Tough plastic construction; guaranteed leakproof†
- Made from high-purity, food-grade resins; no plasticizers, fillers or extenders
- Polypropylene caps included

COMPLIANCE:

Manufactured in compliance with ISO 13485:2003 quality requirements

03-313-11 Series

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of
1 oz. (30mL)	20mm-415	312089-0001	**03-313-11A**	1000/392.00
2 oz. (60mL)	20mm-415	312089-0002	**03-313-11B**	1000/399.25
4 oz. (125mL)	24mm-415	312089-0004	**03-313-11C**	500/222.50
8 oz. (250mL)	24mm-415	312089-0008	**03-313-11D**	250/168.75
16 oz. (500mL)	28mm-415	312089-0016	**03-313-11E**	125/121.25
32 oz. (1000mL)	38mm-430	312089-0032	**03-313-11F**	50/80.00

† For definition of "leakproof," see below left.

Nalgene* Amber Narrow-Mouth Packaging Bottles

Opaque amber HDPE with opaque amber polypropylene caps

- Injection blow molded for uniform wall thickness and strength
- Tough plastic construction; guaranteed leakproof†
- Made from high-purity, food grade resins; no plasticizers, fillers or extenders
- Ideal for diagnostics, biologicals, specialty chemicals, reagents, adhesives and veterinary pharmaceuticals
- Manufactured in compliance with ISO 13485:2003 quality requirements

03-313-8 Series

COMPLIANCE:

Meet USP requirements for light-resistant containers.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of
1 oz. (30mL)	20mm-415	312085-0001	**03-313-8A**	1000/443.00
2 oz. (60mL)	20mm-415	312085-0002	**03-313-8B**	1000/450.50
4 oz. (125mL)	24mm-415	312085-0004	**03-313-8C**	500/251.50
8 oz. (250mL)	24mm-415	312085-0008	**03-313-8D**	250/190.50
16 oz. (500mL)	28mm-415	312085-0016	**03-313-8E**	125/137.00
32 oz. (1000mL)	38mm-430	312085-0032	**03-313-8F**	50/90.25

† For definition of "leakproof," see left.

*Trademark. See Trademark Reference.

Prices subject to change.

Nalgene* Narrow-Mouth Sterile HDPE Bottles

Provide excellent chemical resistance

- Manufactured and packaged in a controlled environment to minimize biological and particulate contamination
- Shrink-wrapped trays are packed in double-polybagged cartons for cleanroom applications
- White polypropylene caps included

01-288 Series

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
¼ oz. (8mL)	20mm-415	342002-9025	**01-288-30**	980/411.00
½ oz. (15mL)	20mm-415	342002-9050	**01-288-31**	896/393.00
1 oz. (30mL)	20mm-415	342089-0001	**01-288-33**	864/452.00
2 oz. (60mL)	20mm-415	342089-0002	**01-288-34**	540/347.75
4 oz. (125mL)	24mm-415	342089-0004	**01-288-36**	240/169.00
8 oz. (250mL)	24mm-415	342089-0008	**01-288-37**	180/170.25
16 oz. (500mL)	28mm-415	342089-0016	**01-288-39**	120/181.25
32 oz. (1000mL)	38mm-430	342089-0032	**01-288-40**	24/70.10

Nalgene* Low-Particulate HDPE Bottles

Excellent for storing high-purity chemicals

- Average particle level of less than 30 particles per mL at 0.3µm and greater
- Nonsterile; leakproof†
- Suitable for use as inner containers in UN combination packaging
- Polypropylene screw caps included

03-313-87 Series

INCLUDES:
Certificate of quality per Nalgene specifications

COMPLIANCE:
IP2 bottles have been hydrostatically tested to meet UN Performance Capability requirements of 15psi (103 kPa).

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
4 oz. (125mL)	24mm	38-2099-0125	**03-313-87A**	72/108.75
8 oz. (250mL)	24mm	38-2099-0250	**03-313-87B**	72/156.00
16 oz. (500mL)	28mm	38-2099-0500	**03-313-87C**	48/147.25
32 oz. (1000mL)	38mm-430	38-2099-1000	**03-313-87D**	24/130.75

† For definition of "leakproof," see p. 178.

Nalgene* LDPE Narrow-Mouth Bottles

Ideal for trace metal analysis

- Translucent, impact resistant and extremely low in trace metal content
- Leakproof†
- Good for freezer use to -100°C
- Excellent chemical resistance to most acids, bases and alcohols
- Polypropylene screw caps included

02-924-6C

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
¼ oz. (8mL)	20mm	2003 9025	**02-923-11B**	12/11.28	6 Pk./45.10
½ oz. (15mL)	20mm	2003 9050	**02-923-8C**	12/12.43	6 Pk./49.70
1 oz. (30mL)	20mm	2003 0001	**02-924-6A**	12/16.62	6 Pk./66.50
2 oz. (60mL)	20mm	2003 0002	**02-924-6B**	12/17.21	6 Pk./68.80
4 oz. (125mL)	24mm	2003 0004	**02-924-6C**	12/21.98	6 Pk./87.90
8 oz. (250mL)	24mm	2003 0008	**02-924-6D**	12/31.38	6 Pk./125.50
16 oz. (500mL)	28mm	2003 0016	**02-924-6E**	12/44.34	4 Pk./118.25
16 oz. (500mL)	38mm-430	2003 9016	**02-923-11G**	12/69.19	4 Pk./184.50
32 oz. (1L)	38mm-430	2003 0032	**02-924-6F**	6/39.75	4 Pk./106.00

† For definition of "leakproof," see p.178.

Nalgene* LDPE Bottles with Shoulder Loops

Suitable for corrosive chemicals

- With shoulder loops (except ½ gal. size)
- One-third the weight of glass
- Good for freezer use to -100°C
- Leakproof†, polypropylene screw caps included

02-923G

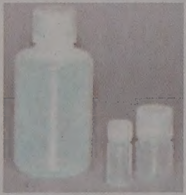
Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of 6
½ gal. (2L)	38mm-430	2202 0005	**02-923G**	20.00	80.00
1 gal. (4L)	38mm-430	2202 0010	**02-923J**	27.75	111.00
2 gal. (8L)	53mm-B	2202 0020	**02-923K**	47.13	188.50

† For definition of "leakproof," see p. 178

Wheaton Leak-Resistant HDPE Bottles with Caps

High-density polyethylene bottles with polyethylene caps

- Leak-resistant double-seal closure remains tight over extended periods of time
- No-drip pour lip facilitates safe dispensing, preventing liquid from dripping down the side of the container
- Polyethylene caps included



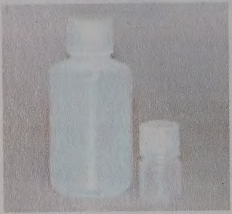
03-083-14, -11, -12

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
½ oz. (15mL)	20mm-410	209044	**03-083-10**	72/46.02
1 oz. (30mL)	20mm-410	209045	**03-083-11**	72/61.60
2 oz. (60mL)	20mm-410	209046	**03-083-12**	72/62.99
4³⁄16 oz. (125mL)	24mm-410	209047	**03-083-13**	72/81.97
8⅝ oz. (250mL)	24mm-410	209048	**03-083-14**	72/116.62
17 oz. (500mL)	28mm-410	209049	**03-083-15**	48/109.72
34 oz. (1000mL)	38mm-430	209050	**03-083-16**	24/98.82
⅛ oz. (4mL)	13mm-425	209041	**03-083-8**	72/49.98
⁵⁄16 oz. (8mL)	20mm-410	209043	**03-083-9**	72/40.91

Wheaton Leak-Resistant Plastic Bottles

No-drip pour lip facilitates clean, safe pouring

- Leak-resistant, double-seal closure system
- Caps remain tight over an extended time
- Available in polypropylene, or high- or low-density polyethylene
- Choose narrow or wide mouth, natural or amber
- Ideal for short- and long-term storage and packaging
- Convenience packed
- Caps included



03-083-6, -3

03-083-25, -24, -23

Narrow-Mouth Natural LDPE Bottles

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
3/10 oz. (8mL)	20mm-410	208923	**03-083-1**	12/8.28	6 Pk./41.39
½ oz. (15mL)	20mm-410	208924	**03-083-2**	72/46.02	----
1 oz. (30mL)	20mm-410	208925	**03-083-3**	72/61.60	----
2 oz. (60mL)	20mm-410	208926	**03-083-4**	12/12.28	6 Pk./62.99
4 oz. (125mL)	24mm-410	208927	**03-083-5**	12/15.98	6 Pk./81.97
8 oz. (250mL)	24mm-410	208928	**03-083-6**	12/22.74	6 Pk./116.62
16 oz. (500mL)	28mm-410	208929	**03-083-7**	12/32.09	4 Pk./109.72

Narrow-Mouth Natural Polypropylene Bottles

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
1/10 oz. (4mL)	13mm-425	209161	**03-083-26**	72/58.06	----
3/10 oz. (8mL)	20mm-410	209163	**03-083-27**	12/11.49	6 Pk./57.44
½ oz. (15mL)	20mm-410	209164	**03-083-28**	72/61.14	----
1 oz. (30mL)	20mm-410	209165	**03-083-29**	72/79.66	----
2 oz. (60mL)	20mm-410	209166	**03-083-30**	12/15.81	6 Pk./81.07
4 oz. (125mL)	24mm-410	209167	**03-083-31**	12/21.48	6 Pk./110.15
8 oz. (250mL)	24mm-410	209168	**03-083-32**	72/160.87	----
16 oz. (500mL)	28mm-410	209169	**03-083-33**	12/46.65	4 Pk./159.48
32 oz. (1000mL)	38mm-430	209170	**03-084-00**	24/111.62	----

Leak-Resistant Amber HDPE Bottles

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
1/10 oz. (4mL)	13mm-425	209121	**03-083-17**	72/67.16
3/10 oz. (8mL)	20mm-410	209123	**03-083-18**	72/70.85
½ oz. (15mL)	20mm-410	209124	**03-083-19**	72/74.55
1 oz. (30mL)	20mm-410	209125	**03-083-20**	72/99.13
2 oz. (60mL)	20mm-410	209126	**03-083-21**	72/103.24
4 oz. (125mL)	24mm-410	209127	**03-083-22**	72/126.31
8 oz. (250mL)	24mm-410	209128	**03-083-23**	12/33.44
16 oz. (500mL)	28mm-410	209129	**03-083-24**	48/168.72
32 oz. (1000mL)	38mm-430	209130	**03-083-25**	24/141.66

Nalgene* Large-Capacity Polycarbonate Bottles

Excellent impact resistance

- Clear polycarbonate bottles
- 16 oz. and ¼ gal. sizes are good for smaller volume applications where contents need to be seen
- ½ and ⅔ gal. sizes can be used as culture vessels for batch, suspension or nonattached roller culturing
- 1 and 2 gallon sizes have shoulder loops
- Good for freezer use to -135°C
- Leakproof†, polypropylene screw caps included

02-960-52 Series

NOTE:

Before autoclaving, completely disengage threads or remove cap.
Autoclave empty. Repeated autoclaving will shorten the bottle life.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
16 oz. (½L)	38mm-430	2205 0016	**02-960-52E**	4/39.19	6 Pk./156.75
¼ gal. (1L)	38mm-430	2205 0032	**02-960-52F**	4/54.76	6 Pk./219.00
½gal. (2L)	38mm-430	DS2205 0210	**02-960-52C**	1/25.22	----
9/16 gal. (2.5L)	38mm-430	DS2205 0250	**02-960-52D**	1/28.32	----
1 gal. (4L)	38mm-430	DS2205 0010	**02-960-52A**	1/51.51	----
2 gal. (8L)	53mm-B	DS2205 0020	**02-960-52B**	1/82.09	----

† For definition of "leakproof," see below.
Note: Bottle neck design is protected by US Trademark Reg. No. 2857283.

†Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

*Trademark. See Trademark Reference.

Nalgene* Heavy-Duty Polyethylene Bottles

Rigid, thick-walled, HDPE bottles

- Serve as shipping containers for liquids, dry chemicals.
- Leakproof[†], white polypropylene screw caps included

02-923-4, -1, -2

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Price	Case of
32 oz. (1L)	53mm-B	2125 1000	**02-923-1**	6/92.82	4 Pk./247.50
64 oz. (2L)	53mm-B	2125 2000	**02-923-2**	2/41.12	6 Pk./164.50
128 oz. (4L)	83mm-B	2125 4000	**02-923-4**	Ea./47.50	6/190.00

† For definition of "leakproof," see p. 180.

Nalgene* PFA Narrow Mouths

Temperature, chemical and corrosion resistant

- Withstand -270° to +250°C (-454° to +482°F)
- Inert to virtually all chemicals except molten alkali metals, fluorine at high temperatures, and complex halogenated compounds at high temperatures and pressures
- Packaged individually
- Leakproof[†], linerless PFA screw caps; included

NOTE:
Completely disengage threads or remove cap before autoclaving.

02-923-35H

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
1 oz. (30mL)	20mm-415	DS1630 0001	**02-923-35H**	272.25	----
2 oz. (60mL)	20mm-415	DS1630 0002	**02-923-35J**	327.75	----
4 oz. (125mL)	38mm-430	1630 0004	**02-923-35K**	83.19	6/332.75
8 oz. (250mL)	38mm-430	1630 0008	**02-923-35L**	118.50	4/316.00
16 oz. (500mL)	38mm-430	1630 0016	**02-923-35M**	163.50	4/436.00
32 oz. (1000mL)	38mm-430	1630 0032	**02-923-35N**	257.91	4/687.75

† For definition of "leakproof," p. 180.

Nalgene* Polypropylene Diagnostic Bottles

ORDERING INFORMATION:
Caps sold separately (Cat. No. 03-700-27).

02-923-120

Capacity	Finish	Mfr. No.	Cat. No.	Case of 2000
1/8 oz. (3.4mL)	13mm-415	362006-9125	**02-923-120**	452.06

Nalgene* Large Polypropylene Bottles

Ideal for corrosive chemicals and distilled water storage

- Autoclavable
- One-third the weight of glass
- Built-in shoulder loops on 1- and 2-gallon sizes only
- Translucent; better clarity than LDPE bottles
- Leakproof[†], polypropylene screw caps included

NOTE:
Completely disengage threads or remove cap before autoclaving.

02-924B

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of 6
½ gal. (2L)	38mm-430	2203 0005	**02-924A**	25.75	103.00
1 gal. (4L)	38mm-430	2203 0010	**02-924B**	36.50	146.00
2 gal. (8L)	53mm-B	2203 0020	**02-924C**	60.88	243.50

† For definition of "leakproof," p. 180.

Nalgene* Large Amber Polypropylene Bottles

Ideal for storing light-sensitive materials

- Autoclavable
- 1- and 2-gallon sizes have shoulder loop
- Leakproof[†], polypropylene screw caps included

COMPLIANCE:
Comply with U.S. Pharmacopeia XXIII requirements for maximum allowable light transmission.

NOTE:
Completely disengage threads or remove cap before autoclaving.

02-884-6 Series

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of 6
½ gal. (2L)	38mm-430	2204 0005	**02-884-6A**	26.75	107.00
1 gal. (4L)	38mm-430	2204 0010	**02-884-6B**	36.50	146.00
2 gal. (8L)	53mm-B	2204 0020	**02-884-6D**	57.44	229.75

† For definition of "leakproof," p. 180.

PLASTIC—WIDE MOUTHS, ROUND

*Fisherbrand** Leak-Resistant HDPE Wide-Mouth Bottles

Economical bottles with a double-seal, leak-resistant cap

- Translucent HDPE
- No drip lip ensures safe, clean pouring
- Linerless screw caps attached

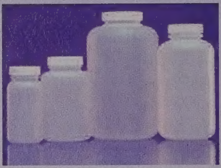
02-911-955, -958, -975

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	28mm-410	**02-911-974**	72/82.85
2 oz. (60mL)	28mm-410	**02-911-975**	72/85.74
4 oz. (125mL)	38mm-410	**02-911-958**	72/100.95
8 oz. (250mL)	43mm-410	**02-911-961**	72/152.40
16 oz. (500mL)	53mm-410	**02-911-955**	48/147.45
32 oz. (1000mL)	63mm-415	**02-911-976**	24/116.40

*Fisherbrand** HDPE Wide-Mouth Round Bottles

Good for storing solids or liquids

- Translucent HDPE
- Wide mouth for easy filling


02-912-031, -021, -020, -018

With Foamed PE-Lined Caps

Capacity	Screw Cap Size	Cat. No.	Case of
1 oz. (30mL)	28mm-400	**02-912-037**	48/86.81
1 oz. (30mL)	28mm-400	**02-912-104**	1650/650.77
2 oz. (60mL)	33mm-400	**02-912-031**	48/36.59
2 oz. (60mL)	33mm-400	**02-912-019**	950/580.14
4 oz. (125mL)	38mm-400	**02-912-032**	48/104.40
4 oz. (125mL)	38mm-400	**02-912-021**	500/364.57
8 oz. (250mL)	53mm-400	**02-912-034**	48/61.16
8 oz. (250mL)	53mm-400	**02-912-022**	260/262.09
16 oz. (500mL)	53mm-400	**02-912-030**	24/45.83
16 oz. (500mL)	53mm-400	**02-912-018**	137/172.64
32 oz. (1000mL)	53mm-400	**02-912-038**	12/58.48
32 oz. (1000mL)	53mm-400	**02-912-020**	72/125.45
64 oz. (2000mL)	89mm-400	**02-912-033**	6/69.92
64 oz. (2000mL)	89mm-400	**02-911-990**	75/268.16
96 oz. (3000mL)	89mm-400	**02-912-035**	4/54.09
96 oz. (3000mL)	89mm-400	**02-912-103**	33/129.04
130 oz. (3840mL)	89mm-400	**02-912-036**	4/41.20

Bottles Only

Capacity	Screw Cap Size	Cat. No.	Case of
4 oz. (125mL)	38mm-400	**02-911-886**	500/537.47
8 oz. (250mL)	53mm-400	**02-912-105**	260/258.23
16 oz. (500mL)	53mm-400	**02-912-110**	137/183.63
32 oz. (1000mL)	53mm-400	**02-912-023**	72/407.66
130 oz. (3840mL)	89mm-400	**02-911-874**	4/41.10

*Fisherbrand** Amber Wide-Mouth HDPE Bottles

NEW

Reduce UV light transmission to protect light-sensitive liquids

- Amber high-density polyethylene
- Wide mouth allows easy retrieval of grab samples and reduces turbulence when filling
- Amber polypropylene screw caps included

03-007-52, -53, -51

COMPLIANCE:
U.S. Pharmacopoeia 661[†]

NOTE:
Fisherbrand HDPE containers can be used for long-term storage, but direct UV exposure should be avoided.

Capacity	Screw Cap Size	Cat. No.	Pack of	Case of
2 oz. (60mL)	28mm	**03-007-51**	12/18.80	6 Pk./75.21
4 oz. (125mL)	38mm	**03-007-52**	12/20.65	6 Pk./82.59
8 oz. (250mL)	43mm	**03-007-53**	12/31.48	6 Pk./125.91
16 oz. (500mL)	53mm	**03-007-54**	12/42.83	4 Pk./114.21
32 oz. (1L)	63mm	**03-007-55**	6/49.04	4 Pk./130.77

[†] U.S. Pharmacopoeia 661(Containers, Light Transmission) states that a "light resistant" container must comply with requirements for maximum light transmission. Fisherbrand amber bottles pass the USP light transmission test. USP criteria states that a container greater than 20mL in size cannot allow more than 10% light transmission for any wavelength between 290 and 450 nanometers, measured every 20nm.

*Fisherbrand** Bulk-Packaged Field Sample Bottles

Ideal for field sampling

- Translucent bottles feature all the same characteristics and advantages of Fisherbrand HDPE Wide Mouth Round Bottles except in bulk packaging
- Polypropylene screw caps included

02-895-1C

Capacity	Screw Cap Size	Cat. No.	Case of
4 oz. (125mL)	38mm	**02-895-1A**	500/352.17
8 oz. (250mL)	43mm	**02-895-1B**	250/261.95
16 oz. (500mL)	53mm	**02-895-1C**	125/192.24
32 oz. (1000mL)	63mm	**02-895-1D**	50/120.66

Fisherbrand* PET Bottles

Transparent PET bottles provide a clear view of contents

- Lightweight, with good chemical resistance
- Can withstand temperatures from -20° to +80°C (-4° to +176°F)
- Can be EtO sterilized; not autoclavable
- Snap-on caps included

03-319C

Capacity	Neck Opening	Cat. No.	Case of 50
1 oz. (30mL)	25mm	**03-319A**	87.40
1⅝ oz. (50mL)	36mm	**03-319B**	111.59
3⅜ oz. (100mL)	34mm	**03-319C**	132.78

Fisherbrand* Wide-Mouth LDPE Bottles

Translucent for better visibility; ungraduated

- Virtually unbreakable, yet very flexible
- Chemically resistant to most weak and strong acids and organic solvents, but can be slowly attacked by strong oxidizing agents and some solvents that can cause softening and swelling
- Maximum use temperature 80°C (176°F) with brittleness temperature of -100°C (-148°F)
- Bottles can be radiation, gas, EtO or chemically sterilized; not autoclavable
- Polypropylene screw caps included

02-896-1E

Capacity	Screw Cap Size	Cat. No.	Pack of	Case of
1 oz. (30mL)	28mm	**02-896-1A**	12/22.23	6 Pk./88.91
2 oz. (60mL)	28mm	**02-896-1B**	12/23.10	6 Pk./92.40
4 oz. (125mL)	38mm	**02-896-1C**	12/28.11	6 Pk./112.45
8 oz. (250mL)	43mm	**02-896-1D**	12/41.77	6 Pk./167.10
16 oz. (500mL)	53mm	**02-896-1E**	12/59.54	4 Pk./158.77
32 oz. (1000mL)	63mm	**02-896-1F**	6/52.20	4 Pk./139.21

Fisherbrand* HDPE Round Bottles

Rigid, translucent bottles are suitable for storing a variety of items including liquids, solids, and chemicals

- Leakproof†
- Higher temperature-use rating than LDPE—up to 120°C (248°F) for short periods and 110°C (230°F) for continuous uses
- Brittleness temperature at -100°C (-148°F)
- Bottles may be radiation, EtO, or chemically sterilized; not autoclavable
- Polypropylene screw caps included

02-896-2D, 2B

Capacity	Screw Cap Size	Cat. No.	Pack of	Case of
1 oz. (30mL)	28mm	**02-896-2A**	12/23.15	6 Pk./92.60
2 oz. (60mL)	28mm	**02-896-2B**	12/23.45	6 Pk./93.80
4 oz. (125mL)	38mm	**02-896-2C**	12/28.21	6 Pk./112.85
8 oz. (250mL)	43mm	**02-896-2D**	12/42.45	6 Pk./169.80
16 oz. (500mL)	53mm	**02-896-2E**	12/59.03	4 Pk./157.42
32 oz. (1000mL)	63mm	**02-896-2F**	6/53.71	4 Pk./143.23

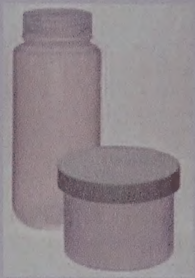
† For definition of "leakproof," see right.

Fisherbrand* Wide-Mouth Polypropylene Bottles

Higher temperature resistance than LDPE or HDPE

- Handle up to 135°C (275°F) for short periods and 100°C (212°F) continuously
- Brittleness temperature of 0°C (32°F)
- Rigid walls
- Excellent chemical resistance
- Can be sterilized by all normal methods, except dry heat and radiation
- Polypropylene linerless screw caps included

NOTE:
Completely disengage threads or remove cap before autoclaving.



02-896D, 02-891B

Capacity	Screw Cap Size	Cat. No.	Pack of	Case of
1 oz. (30mL)	28mm	**02-896A**	12/24.81	6 Pk./99.24
2 oz. (60mL)	33mm	**02-896B**	12/25.40	6 Pk./101.60
4 oz. (125mL)	38mm	**02-896C**	12/33.30	6 Pk./133.19
8 oz. (250mL)	45mm	**02-896D**	12/51.39	6 Pk./205.56
16 oz. (500mL)	55mm	**02-896E**	12/69.88	4 Pk./186.35
32 oz. (1000mL)	65mm	**02-896F**	6/59.24	4 Pk./157.96

† For definition of "leakproof," see below.

Fisherbrand* Clear PET Wide-Mouth Packers

- Foamed polyethylene lined or PTFE-lined caps attached

02-911-795

Capacity	Screw Cap Size	Cat. No.	Case of
With Foamed PE-lined Caps			
2 oz. (60mL)	33mm-400	**02-911-849**	48/16.83
4 oz. (120mL)	38mm-400	**02-911-795**	48/20.35
8 oz. (250mL)	45mm-400	**02-911-808**	48/102.97
With PTFE-lined Caps			
4 oz. (125mL)	38mm-400	**02-912-350**	576/1070.68

*† Fisher Scientific assigns the term "leakproof" to bottle/closure systems with closures smaller than 100mm after they are filled with water, are inverted, and withstand air pressure of 2psig for 2 minutes; or to bottle/closure systems of 100 or 120mm after they are filled with water and inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Fisher Scientific advises customers to test Fisherbrand* bottles and closures under conditions of their planned applications.*

*Fisherbrand** Wide-Mouth Graduated LDPE Bottles

NEW

Wide-mouth bottles provide easy filling and pouring

03-415-503, -502, -501, -500

Inner surfaces are smooth and rounded for thorough emptying and cleaning.

- Translucent for better visibility
- FDA-compliant LDPE is virtually unbreakable, yet flexible
- Ideal for general storage of liquids and powders
- Chemically resistant to most weak and strong acids and organic solvents
- Maximum use temperature: 80°C (176°F)
- Can be radiation, gas, EtO or chemically sterilized

Closures

- Polypropylene caps have valve-seal design for perfect, leakproof† fit with molded pouring lip and seal
- Deep square threads withstand vibration and help prevent closure back-off
- Ribbed caps provide good grip for tight closure and easy opening
- Protruding neck ring under cap holds shrink-wrap securely in place

INCLUDES:
Polypropylene screw caps

NOTE:
Not autoclavable. Strong oxidizing agents and some solvents can cause softening and swelling.

Capacity	Screw Cap Size	Cat. No.	Case of
4 oz. (125mL)	38mm	**03-415-500**	12/35.75
8 oz. (250mL)	45mm	**03-415-501**	12/52.57
16 oz. (500mL)	53mm	**03-415-502**	6/40.08
32 oz. (1000mL)	53mm	**03-415-503**	6/62.28

† *For definition of "leakproof," see p.183.*

Nalgene* Polypropylene Wide-Mouth Packaging Bottles

Tough plastic construction; guaranteed leakproof†

02-923 and 03-313 Series

- Injection blow molded for uniform wall thickness and strength
- Made from high-purity, food grade resins; no plasticizers, fillers or extenders

INCLUDES:
Polypropylene caps

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of
1 oz. (30mL)	28mm-415	312187-0001	**02-923-131**	1000/515.75
2 oz. (60mL)	28mm-415	312187-0002	**02-923-69**	1000/524.50
4 oz. (125mL)	38mm-415	312187-0004	**03-313-14C**	500/292.50
8 oz. (250mL)	43mm-415	312187-0008	**03-313-14D**	250/221.50
16 oz. (500mL)	53mm-415	312187-0016	**03-313-14E**	125/159.25
32 oz. (1000mL)	63mm-415	312187-0032	**02-923-67**	50/104.50

† *For definition of "leakproof," see right.*

Nalgene* HDPE Wide-Mouth Packaging Bottles

Injection blow molded for uniform wall thickness and strength

03-313-15 Series

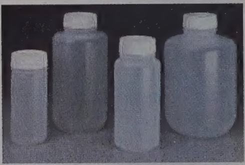
- Tough plastic construction; guaranteed leakproof†
- Made from high-purity, food grade resins; no plasticizers, fillers or extenders

INCLUDES:
Polypropylene caps

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of
1 oz. (30mL)	28mm-415	312189-0001	**03-313-15A**	1000/441.75
2 oz. (60mL)	28mm-415	312189-0002	**03-313-15B**	1000/449.25
4 oz. (125mL)	38mm-415	312189-0004	**03-313-15C**	500/250.25
8 oz. (250mL)	43mm-415	312189-0008	**03-313-15D**	250/189.75
16 oz. (500mL)	53mm-415	312189-0016	**03-313-15E**	125/136.50
32 oz. (1000mL)	63mm-415	312189-0032	**03-313-15F**	50/90.00

† *For definition of "leakproof," see below.*

Nalgene* Polypropylene Mason Jar Bottles


11-825 Series

- 70mm necks take fixtures or closures with Mason jar threads, such as Osterizer* blenders
- Neck ring for shrink seal

INCLUDES:
Polypropylene screw caps

NOTE:
Completely disengage threads or remove cap before autoclaving.

Capacity	Mfr. No.	Cat. No.	Price	Case of
16 oz. (500mL)	2115 0500	**11-825A**	Pk. of 6/83.53	4 Pk./222.75
32 oz. (1000mL)	2115 1000	**11-825B**	Pk. of 6/97.31	4 Pk./259.50
64 oz. (2000mL)	2115 2000	**11-825C**	Pk. of 4/86.38	3 Pk./172.75
96 oz. (3000mL)	2115 3000	**11-825D**	Ea./27.25	6 /109.00

†Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

Nalgene* FEP Bottles with Tefzel* ETFE Closures

Excellent chemical and temperature resistance

- Clear; leakproof[†]
- Withstand temperatures from -105°C (-157°F)
- Ideal for high- or low-temperature work, trace metal analysis and applications with organic solvents

02-924-15 Series

INCLUDES:
Tefzel ETFE caps

NOTE:
Before autoclaving, completely disengage threads or remove caps.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
4 oz. (125mL)	33mm-415	2100 0004	**02-924-15A**	75.56	6/302.25
8 oz. (250mL)	43mm-415	2100 0008	**02-924-15C**	117.38	4/313.00
16 oz. (500mL)	48mm-415	2100 0016	**02-924-15E**	145.88	4/389.00
32 oz. (1000mL)	53mm-415	2100 0032	**02-924-15G**	208.13	4/555.00
64 oz. (2000mL)	53mm-415	2100-0064	**02-925-111**	455.25	----

[†] *For definition of "leakproof," see p. 184.*

Nalgene* Translucent HDPE Sample Bottles

Economical and disposable bottles that resist breakage

- For field sampling
- Translucent HDPE polyethylene
- Wide mouth for easy retrieval of grab samples, reduced turbulence when filling
- Leakproof[†]

03-313-4 Series

INCLUDES:
Polypropylene screw caps

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
1 oz. (30mL)	28mm-415	2189 0001	**03-313-4A**	72/53.40
2 oz. (60mL)	28mm-415	2189 0002	**03-313-4B**	72/62.01
4 oz. (125mL)	38mm-415	2189 0004	**03-313-4C**	72/70.30
8 oz. (250mL)	43mm-415	2189 0008	**03-313-4D**	72/98.60
16 oz. (500mL)	53mm-415	2189 0016	**03-313-4E**	48/97.00
32 oz. (1000mL)	63mm-415	2189 0032	**03-313-4F**	24/99.40

[†] *For definition of "leakproof," see p. 184.*

Nalgene* Wide-Mouth HDPE Bottles for Chemicals or Specimens

Suitable for shipping liquids

- Translucent HDPE
- Leakproof[†]
- Good for freezer storage to -100°C
- Excellent chemical resistance to most acids, bases and alcohols

02-893 Series

INCLUDES:
Polypropylene screw caps

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
1 oz. (30mL)	28mm-415	2104 0001	**02-893-5A**	12/25.31	6 Pk./101.25
2 oz. (60mL)	28mm-415	2104 0002	**02-893-5B**	12/25.88	6 Pk./103.50
4 oz. (125mL)	38mm-415	2104 0004	**02-893-5C**	12/30.81	6 Pk./123.25
8 oz. (250mL)	43mm-415	2104 0008	**02-893-5D**	12/46.81	6 Pk./187.25
16 oz. (500mL)	53mm-415	2104 0016	**02-893-5E**	12/62.63	4 Pk./167.00
32 oz. (1000mL)	63mm-415	2104 0032	**02-893-5F**	6/57.00	4 Pk./152.00
48 oz. (1500mL)	63mm-415	2104 0048	**10-346-9**	24/172.00	----

[†] *For definition of "leakproof," see p. 184.*

Nalgene* HDPE Bottles with 100mm Screw Caps

Use with dry chemicals, water sampling, and collecting 24-hour urine specimens

- Leakproof[†]
- Good for freezer use to -100°C
- Excellent chemical resistance to most acids, bases and alcohols

INCLUDES:
100mm polypropylene screw caps

11-815-11A

Capacity	Mfr. No.	Cat. No.	Each	Case of 6
½ gal. (2L)	2120 0005	**11-815-11A**	19.10	76.40
1 gal. (4L)	2120 0010	**11-815-11B**	27.26	109.00

[†] *For definition of "leakproof," see p. 184.*

Nalgene* Amber Wide-Mouth HDPE Sample Bottles

Reduce UV light transmission and protect light-sensitive liquids

- Wide mouth for easy cleaning
- Leakproof[†]

INCLUDES:
Amber polypropylene screw caps

03-313-3D

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
1 oz. (30mL)	28mm-415	DS2185 0001	**03-313-3A**	72/106.75
2 oz. (60mL)	28mm-415	DS2185 0002	**03-313-3B**	72/109.00
4 oz. (125mL)	38mm-415	DS2185 0004	**03-313-3C**	72/126.00
8 oz. (250mL)	43mm-415	DS2185 0008	**03-313-3D**	72/187.75
16 oz. (500mL)	53mm-415	DS2185 0016	**03-313-3E**	48/164.00
32 oz. (1000mL)	63mm-415	DS2185 0032	**03-313-3F**	24/145.50

[†] *For definition of "leakproof," see p. 184.*

Nalgene* Amber Wide-Mouth HDPE Bottles

Protect light-sensitive materials during shipping or storage

- Easy-to-fill wide mouth
- High-density polyethylene
- Good for freezer storage to -100°C
- Excellent chemical resistance to most acids, bases and alcohols
- Leakproof†

02-925-3D

INCLUDES:

Amber polypropylene screw caps

COMPLIANCE:

Comply with USP XXIII requirements for maximum light transmission.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
1 oz. (30mL)	28mm-415	2106 0001	**02-925-3A**	12/35.76	6 Pk./143.00
2 oz. (60mL)	28mm-415	2106 0002	**02-925-3B**	12/36.50	6 Pk./146.00
4 oz. (125mL)	38mm-415	2106 0004	**02-925-3C**	12/36.50	6 Pk./169.00
8 oz. (250mL)	43mm-415	2106 0008	**02-925-3D**	12/42.26	6 Pk./251.50
16 oz. (500mL)	53mm-415	2106 0016	**02-924-22**	12/62.87	4 Pk./219.50
32 oz. (1000mL)	63mm-415	2106 0032	**02-925-3E**	6/73.12	4 Pk./195.00

† For definition of "leakproof," see p. 184.

Nalgene* LDPE Wide-Mouth Bottles

Translucent bottles provide better visibility than HDPE bottles

- Flexible, with excellent impact resistance
- Good for freezing to -100°C
- Excellent chemical resistance to most acids, bases and alcohols
- Leakproof†

02-893-4 Series

INCLUDES:

Polypropylene screw caps

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
1 oz. (30mL)	28mm-415	2103 0001	**02-893-4F**	12/24.98	6 Pk./99.90
2 oz. (60mL)	28mm-415	2103 0002	**02-893-4A**	12/25.56	6 Pk./102.25
4 oz. (125mL)	38mm-415	2103 0004	**02-893-4B**	12/30.57	6 Pk./122.25
8 oz. (250mL)	43mm-415	2103 0008	**02-893-4C**	12/46.38	6 Pk./185.50
16 oz. (500mL)	53mm-415	2103 0016	**02-893-4D**	12/62.53	4 Pk./166.75
32 oz. (1000mL)	63mm-415	2103 0032	**02-893-4E**	6/57.00	4 Pk./152.00

† For definition of "leakproof," see p. 184.

Nalgene* Polypropylene Wide-Mouth Bottles

Use for storing chemicals and specimens

- Excellent chemical resistance to most acids, bases and alcohols
- Autoclavable, but completely disengage threads or remove cap first
- Leakproof†

02-893 Series

INCLUDES:

Polypropylene screw caps

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
1 oz. (30mL)	28mm-415	2105 0001	**02-893AA**	12/27.57	6 Pk./110.25
2 oz. (60mL)	28mm-415	2105 0002	**02-893BB**	12/27.75	6 Pk./111.00
4 oz. (125mL)	38mm-415	2105 0004	**02-893A**	12/36.13	6 Pk./144.50
8 oz. (250mL)	43mm-415	2105 0008	**02-893B**	12/56.00	6 Pk./224.00
16 oz. (500mL)	53mm-415	2105 0016	**02-893C**	12/80.07	4 Pk./213.50
32 oz. (1000mL)	63mm-415	2105 0032	**02-893D**	6/64.50	4 Pk./172.00

† For definition of "leakproof," see p. 184.

Nalgene* Heavy-Duty Polypropylene Vacuum Bottles

Sturdy, thick-walled bottle, ideal for heavy-duty biotechnology lab use

- Autoclavable and chemical resistant; leakproof†
- Can withstand repeated room-temperature vacuum applications
- Rugged 53B and 83B closures of polypropylene with TPE gaskets
- Use as a waste aspirator bottle or as autoclavable vessel for scaleup activities in cell culture applications

Left to right, front: 02-923-5, 02-923-3, 06-443A; back: 02-923-11

INCLUDES:

Polypropylene caps

NOTE:

Completely disengage threads or remove caps before autoclaving

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Price	Case of
8 oz. (250mL)	53B	2126 0250	**02-923-3**	Cs. of 6/63.80	----
¼ gal. (1L)	53B	2126 1000	**06-443A**	Pk. of 6/211.03	4 Pk./562.75
½ gal. (2L)	53B	2126 2000	**06-443B**	Pk. of 2/84.50	6 Pk./338.00
1⅛ gal. (4L)	83B	2126 4000	**02-923-5**	Ea./67.69	6/270.75
1¼ gal. (5L)	83B	2126 5000	**02-923-11**	Ea./85.32	4/227.50

† For definition of "leakproof," see p. 184.

Nalgene* Polypropylene Bottles with 100mm Screw Caps

For large volumes

- Autoclavable
- Excellent chemical resistance to most acids, bases and alcohols
- Translucent; better clarity than HDPE

11-815-12A

INCLUDES:

100mm screw caps

NOTE:

Completely disengage threads or remove caps before autoclaving.

Capacity	Mfr. No.	Cat. No.	Each	Case of 6
½ gal. (2L)	2121 0005	**11-815-12A**	22.67	90.70
1 gal. (4L)	2121 0010	**11-815-12B**	30.19	120.75

*Trademark. See Trademark Reference.

Prices subject to change.

Nalgene* Transparent Polymethylpentene Bottles

Withstand temperatures from 20° to 175°C (68° to 347°F)

- Chemical resistant; leakproof†
- Autoclavable
- Polypropylene screw caps included

02-924-20C

NOTE:
Completely disengage cap before autoclaving.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of 4	Case of
4 oz. (125mL)	33mm-415	2107 0004	**02-924-20A**	68.50	6 Pk./274.00
8 oz. (250mL)	43mm-415	2107 0008	**02-924-20C**	76.81	6 Pk./307.25
16 oz. (500mL)	48mm-415	2107 0016	**02-924-20E**	97.50	4 Pk./260.00
32 oz. (1000mL)	53mm-415	2107 0032	**02-924-20G**	130.97	4 Pk./349.25

† *For definition of "leakproof," see p. 178.*

Scienceware* Polypropylene Mason Jar Bottles

Rigid walls and 70mm G threaded neck

- Polypropylene screw caps have seal ring and grip lugs around edge
- Autoclavable at 121°C (250°F)

11-815-13A

Capacity	Mfr. No.	Cat. No.	Price	Case of
16 oz. (473mL)	F10913 0000	**11-815-13A**	Pk. of 6/40.95	4 Pk./140.00
32 oz. (946mL)	F10914 0000	**11-815-13B**	Pk. of 6/60.11	4 Pk./209.10
64 oz. (1.9L)	F10915 0000	**11-815-13C**	Pk. of 3/46.02	4 Pk./157.33
128 oz. (3.8L)	F10916 0000	**11-815-13D**	Pk. of 2/51.07	3 Pk./130.94
256 oz. (7.6L)	F10917 0000	**11-815-13E**	Ea./39.19	6/200.98

Wheaton Leak-Resistant Wide-Mouth HDPE Bottles

Natural and Amber HDPE Bottles

- Leak-resistant, double-seal closure system
- Attached closures remain tight over an extended time
- Available in polypropylene, or high- or low-density polyethylene
- Ideal for short- and long-term storage and packaging
- Convenience packed

02-911-273, 03-083-47, -46, -48

03-083-38, -36, -35

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
Natural				
1 oz. (30mL)	28mm-410	209545	**03-083-39**	72/93.47
2 oz. (60mL)	28mm-410	209546	**03-083-40**	72/95.73
4 oz. (125mL)	38mm-410	209547	**03-083-41**	72/113.65
8 oz. (250mL)	43mm-410	209548	**03-083-42**	72/171.63
16 oz. (500mL)	53mm-410	209549	**03-083-43**	48/158.15
32 oz. (1000mL)	63mm-415	209550	**02-911-272**	48/185.80
Amber				
1 oz. (30mL)	28mm-410	209625	**03-083-125**	72/129.95
2 oz. (60mL)	28mm-410	209626	**03-083-45**	72/133.14
4 oz. (125mL)	38mm-410	209627	**03-083-46**	72/153.94
8 oz. (250mL)	43mm-410	209628	**03-083-47**	72/229.15
16 oz. (500mL)	53mm-410	209629	**03-083-48**	48/200.43
32 oz. (1000mL)	63mm-415	209630	**02-911-273**	48/205.72

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of 12	Case of
1 oz. (30mL)	28mm-410	209425	**03-083-34**	17.89	6 Pk./91.75
2 oz. (60mL)	28mm-410	209426	**03-083-35**	18.34	6 Pk./94.06
4 oz. (125mL)	38mm-410	209427	**03-083-36**	21.98	6 Pk./112.71
8 oz. (250mL)	43mm-410	209428	**03-083-37**	32.97	6 Pk./169.06
16 oz. (500mL)	53mm-410	209429	**03-083-38**	45.21	4 Pk./154.55

Natural Polypropylene Bottles

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
1 oz. (30mL)	28mm-410	209665	**03-083-49**	72/100.91
2 oz. (60mL)	28mm-410	209666	**03-083-50**	72/101.84
4 oz. (125mL)	38mm-410	209667	**03-083-51**	72/133.31
8 oz. (250mL)	43mm-410	209668	**03-083-52**	72/206.79
16 oz. (500mL)	53mm-410	209669	**03-083-53**	48/197.23

PLASTIC—WIDE MOUTHS, SQUARE

*Fisherbrand** Graduated Square HDPE Bottles

Save valuable shelf space—while providing greater materials storage

- Graduated in mL
- Ideal for shipping and storing solid chemicals, liquids and pastes
- Wide mouth for convenient cleaning, sample filling and retrieval
- HDPE screw cap with LDPE inner security seal eliminates leaks
- Attachment holes on closure and bottle shoulder permit attachment of identification tag or custody seal

03-311-3B, -3C

Capacity	Neck I.D.	Cat. No.	Pack of	Case of
7/8 oz. (25mL)	19mm	**03-311-3A**	10/12.51	----
1¾ oz. (50mL)	23mm	**03-311-3B**	10/15.45	10 Pk./130.90
3⅜ oz. (100mL)	35mm	**03-311-3C**	10/26.19	10 Pk./221.95
8 oz. (250mL)	35mm	**03-311-3D**	10/29.15	10 Pk./247.04
16 oz. (500mL)	50mm	**03-311-3E**	6/25.42	6 Pk./129.97
32 oz. (1000mL)	60mm	**03-311-3F**	6/42.90	4 Pk./145.40
64 oz. (2000mL)	60mm	**03-311-3G**	6/85.38	2 Pk./144.71

*Fisherbrand** HDPE Wide-Mouth Oblong Bottles

- Natural color

02-911-959, -948, -957, -954

With foamed PE-lined caps

Capacity	Screw Cap Size	Cat. No.	Case of
2 oz. (60mL)	33mm-400	**02-911-977**	48/44.13
2 oz. (60mL)	33mm-400	**02-911-978**	950/568.82
4 oz. (125mL)	38mm-400	**02-911-952**	48/83.30
4 oz. (125mL)	38mm-400	**02-911-953**	500/381.50
5½ oz. (160mL)	38mm-400	**02-911-954**	48/57.09
8 oz. (250mL)	43mm-400	**02-911-957**	48/69.82
8 oz. (250mL)	43mm-400	**02-911-956**	250/287.02
16 oz. (500mL)	43mm-400	**02-911-959**	168/243.94
16 oz. (500mL)	43mm-400	**02-911-960**	24/53.27
32 oz. (1000mL)	53mm-400	**02-911-948**	116/297.96
32 oz. (1000mL)	53mm-400	**02-911-949**	12/38.85
42 oz. (1250mL)	53mm-400	**02-911-950**	6/27.78

Bottles Only

Capacity	Screw Cap Size	Cat. No.	Case of
5½ oz. (160mL)	38mm-400	**02-912-106**	400/212.65
16 oz. (500mL)	43mm-400	**02-912-107**	160/185.54
32 oz. (1000mL)	53mm-400	**02-912-108**	116/198.97

Corning* Square Polycarbonate Storage Bottles

NEW

Ideal for storage, mixing or sampling

13-700-412, -402, -400, -401

Easier to handle; require less space on the shelf or in the autoclave.

- Polycarbonate resin makes them more break resistant than other glass or plastic bottles
- 45mm size cap provides larger access for liquid transfer
- Screened graduations are easier to see when compared to molded
- Sterile; individually packaged
- Large marking spot
- Linear tear packaging
- Can be autoclaved once at 121°C and 15psi
- Linerless, one-piece, autoclavable orange GL45 threaded polypropylene plug-seal caps included

APPLICATIONS:
Pharmaceutical and cell culture laboratories, academic institutions, life science applications, and any application that requires storage, mixing or sampling.

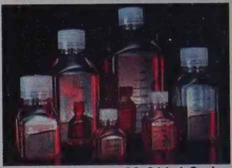
NOTE:
Repeated autoclaving weakens polycarbonate and is not recommended.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of 24
4 oz. (125mL)	45mm	431430	**13-700-400**	87.84
8 oz. (250mL)	45mm	431431	**13-700-401**	118.80
16 oz. (500mL)	45mm	431432	**13-700-412**	149.04
32 oz. (1L)	45mm	431433	**13-700-402**	199.26

Nalgene* Square Polycarbonate Bottles

Durable bottles for storage of aqueous solutions and short-term storage of media

- Autoclavable, transparent bottles
- Mouths are wider than conventional narrow-mouth bottles
- With molded-in graduations and drip-proof spout
- 64 oz. (2L) capacity has white polypropylene cap and molded-in hand grips
- Leakproof†, polypropylene screw closures included



03-311-1 Series

NOTE:
Remove cap or completely disengage threads before autoclaving. Autoclave empty. Repeated autoclaving will shorten bottle life.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
1 oz. (30mL)	20mm	2015 0030	**03-311-1J**	12/52.17	8 Pk./278.25
2 oz. (60mL)	24mm	2015 0060	**03-311-1K**	12/69.14	8 Pk./368.75
4 oz. (125mL)	38mm-430	2015 0125	**03-311-1A**	6/50.43	8 Pk./269.00
8 oz. (250mL)	38mm-430	2015 0250	**03-311-1B**	6/59.39	8 Pk./316.75
16 oz. (500mL)	38mm-430	2015 0500	**03-311-1C**	4/54.69	6 Pk./218.75
32 oz. (1L)	38mm-430	2015 1000	**03-311-1D**	4/73.00	6 Pk./292.00
64 oz. (2L)	53mm B	2015 2000	**03-309**	6/146.00	----

† For definition of "leakproof," see p. 178.

Nalgene* Square Polypropylene Bottles

Repeatedly autoclavable and resistant to acids, alcohols, and bases

- Mouths are wider than conventional narrow-mouth bottles
- Square shape saves shelf space
- Translucent bottles provide visible liquid level
- Useful between 0° and 135°C (32° and 275°F)
- With molded-in graduations and drip-proof spout for easier measuring and dispensing
- Leakproof†, polypropylene caps included

03-310 Series

NOTE:
Remove cap or completely disengage threads before autoclaving.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
1 oz. (30mL)	20mm	2016 0030	**03-310**	12/26.01	6 Pk./104.00
2 oz. (60mL)	24mm	2016 0060	**03-310-1**	12/27.54	6 Pk./110.17
4 oz. (125mL)	38mm-430	2016 0125	**03-310-2**	12/35.18	6 Pk./140.75
8 oz. (250mL)	38mm-430	2016 0250	**03-310-3**	12/54.82	6 Pk./219.25
16 oz. (500mL)	38mm-430	2016 0500	**03-310-4**	12/77.35	4 Pk./206.25
32 oz. (1000mL)	38mm-430	2016 1000	**03-310-5**	6/63.18	4 Pk./168.50

† For definition of "leakproof," see p. 178.

Note: Bottle neck design is protected by US Trademark Reg. No. 2857283. Square bottle with arched shoulders design is protected by US Trademark Reg. No. 2857279.

*Trademark. See Trademark Reference.

Prices subject to change.

Nalgene* Square HDPE Bottles

Molded-in graduations and drip-proof spout for easier measuring and dispensing

- Made from translucent HDPE
- Leakproof[†] but not autoclavable
- Mouths are wider than conventional narrow-mouth bottles
- Square shape saves shelf space
- Can be used to -100°C (-148°F)
- Polypropylene screw caps included

03-311-1 Series

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
1 oz. (30mL)	20mm	2018 0030	**03-311-1N**	12/19.87	6 Pk./79.50
2 oz. (60mL)	24mm	2018 0060	**03-311-1P**	12/20.26	6 Pk./81.00
4 oz. (125mL)	38mm-430	2018 0125	**03-311-1Q**	12/23.71	6 Pk./94.80
8 oz. (250mL)	38mm-430	2018 0250	**03-311-1R**	12/36.13	6 Pk./144.50
16 oz. (500mL)	38mm-430	2018 0500	**03-311-1S**	12/49.69	4 Pk./132.50
32 oz. (1000mL)	38mm-430	2018 1000	**03-311-1T**	6/45.85	4 Pk./122.25

[†] *For definition of "leakproof," see p. 178.*

Nalgene* HDPE Large Square Bottle

Molded-in handgrips provide greater convenience and safety when pouring

- Useful for collecting, storing and transporting dry chemicals, environmental samples, reagents and distilled water
- Good for freezing to -100°C
- Excellent chemical resistance to most acids, bases and alcohols
- Square shape saves space, handles easily
- Wide mouth gives easy access
- Leakproof[†], polypropylene caps included

02-925-4

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of 6
1 gal. (4L)	100mm-415	2123 0010	**02-925-4**	31.13	124.50

[†] *For definition of "leakproof," see p. 178.*

Nalgene* Polypropylene Large Square Bottle

Excellent for storing and autoclaving contaminated slides and other small lab equipment

- Autoclavable; wide mouth
- Molded-in hand grips
- Translucent; better clarity than HDPE
- Polypropylene screw caps included

NOTE:

Completely disengage threads or remove cap before autoclaving.

03-313

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of 6
1 gal. (4L)	100mm-415	2122 0010	**03-313**	35.00	140.00

Nalgene* Amber Rectangular HDPE Bottles

Help protect light-sensitive liquids or dry materials

- Good for freezing to -100°C
- Excellent chemical resistance to most acids, bases and alcohols
- Leakproof[†], amber polypropylene screw closures included

COMPLIANCE:

Meet U.S. Pharmacopeia XXIII requirements for maximum light transmission.

02-924-10A

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
4 oz. (125mL)	28mm-415	2009 0004	**02-924-10A**	12/42.07	6 Pk./168.25
8 oz. (250mL)	38mm-415	2009 0008	**02-924-10C**	12/56.37	6 Pk./225.50
16 oz. (500mL)	48mm-415	2009 0016	**02-924-10E**	12/80.44	4 Pk./214.50
32 oz. (1000mL)	53mm-415	2009 0032	**02-924-10G**	6/91.88	4 Pk./245.00
64 oz. (2000mL)	63mm-415	2009 0064	**02-924-10J**	4/94.50	3 Pk./189.00

[†] *For definition of "leakproof," see p. 178.*

Nalgene* Rectangular HDPE Bottles

Excellent for sampling, transporting or storing liquids or dry materials

- Good for freezing to -100°C
- Space-saving rectangular style
- Sturdy wall construction, straight sides and wide mouth for easy filling
- Leakproof[†], polypropylene screw caps included

02-924-5E, -5C

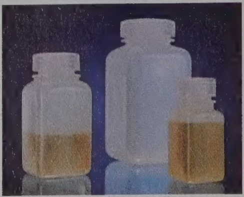
Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
4 oz. (125mL)	28mm-415	2007 0004	**02-924-5A**	12/26.76	6 Pk./107.00
8 oz. (250mL)	38mm-415	2007 0008	**02-924-5C**	12/39.01	6 Pk./156.00
16 oz. (500mL)	48mm-415	2007 0016	**02-924-5E**	12/60.57	4 Pk./161.50
32 oz. (1000mL)	53mm-415	2007 0032	**02-924-5G**	6/70.03	4 Pk./186.75
64 oz. (2000mL)	63mm-415	2007 0064	**02-924-5J**	4/77.50	3 Pk./155.00

[†] *For definition of "leakproof," see p. 178.*

Nalgene* Square HDPE Bottles

Square shape saves shelf space

- Good for freezer use to -100°C
- Ideal for transporting samples
- Leakproof† polypropylene screw caps included



03-312B, 03-312C, 03-312AA

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
2 oz. (60mL)	28mm-415	2114 0002	**03-312AA**	12/42.44	6 Pk./169.75
6 oz. (175mL)	38mm-415	2114 0006	**03-312A**	12/42.44	6 Pk./169.75
8 oz. (250mL)	43mm-415	2114 0008	**03-312B**	12/56.93	6 Pk./227.75
16 oz. (500mL)	53mm-415	2114 0016	**03-312C**	12/80.63	4 Pk./215.00
32 oz. (1000mL)	63mm-415	2114 0032	**03-312D**	6/60.28	4 Pk./160.75

† *For definition of "leakproof," see p. 178.*

Nalgene* Square Polypropylene Bottles

Wide mouth for easy cleaning, sample filling and retrieval

- Leakproof† polypropylene bottle and cap
- Square design saves space; has large area for labeling
- Resistant to acids, alcohols and bases
- Translucent; better clarity than HDPE bottles
- Autoclavable

03-311-2B, -2C

NOTE:
Completely disengage threads or remove cap before autoclaving.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
2 oz. (60mL)	28mm-415	2110 0002	**03-311-2A**	72/111.75	----
6 oz. (175mL)	38mm-415	2110 0006	**03-311-2B**	72/172.75	----
8 oz. (250mL)	43mm-415	2110 0008	**03-311-2C**	72/245.25	----
16 oz. (500mL)	53mm-415	2110 0016	**03-311-2D**	12/86.53	4 Pk./230.75
32 oz. (1000mL)	63mm-415	2110 0032	**03-311-2E**	24/169.00	----

† *For definition of "leakproof," see p. 178.*

Nalgene* HDPE Wide-Mouth Square Bottles

Designed for demanding lab use

- Wide mouth for easy filling and pouring
- Square shape saves shelf space
- Durable, uniform walls are resistant to splitting or puncturing
- Leakproof†, linerless polypropylene caps
- Manufactured using ISO 13485:2003-certified processes.

02-923 Series

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of
2 oz. (60mL)	28mm-415	312114-0002	**02-923-74**	1000/1006.25
6 oz. (175mL)	38mm-415	312114-0006	**02-923-75**	250/406.25
8 oz. (250mL)	43mm-415	312114-0008	**02-923-73**	250/546.00
16 oz. (500mL)	53mm-415	312114-0016	**02-923-72**	125/386.50
32 oz. (1000mL)	63mm-415	312114-0032	**02-923-105**	50/231.50

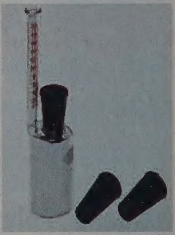
† *For definition of "leakproof," see p. 178.*

SPECIALTY—BABCOCK

Kimax* Babcock Bottles for Cheese Testing

Paley centrifuge bottles feature large stoppered opening next to neck to accommodate both liquids and solids

- Let you pour sample directly into body, eliminating the danger of sample sticking to neck
- Stir bar can also be used through opening to smooth or spread out sample
- Graduated to 20% in 0.2% subdivisions, or to 50% with 0.5% increments
- Bottles are marked with permanent brown stain
- Sample size: 9g
- Overall height: 165mm
- Both bottles can be used for cheese testing, but the 20% bottle can also perform ice cream tests
- Three rubber stoppers included



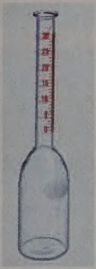
12-725-25

Graduated To	Tolerance	Mfr. No.	Cat. No.	Case of 3
20%	±0.2%	508 20	**12-725-25**	148.44
50%	±0.5%	509 50	**02-943-10**	148.44

Kimax* Babcock Bottles for Cream Testing

With "Sealed 3" marking

- Bottles graduated to 50% in 0.5% subdivisions
- Graduations are marked with permanent brown stain
- Overall height: 165mm
- Marked "Sealed 3" for states requiring this special designation



12-700-30

Graduated To	Sample Size	Tolerance	Mfr. No.	Cat. No.	Case of 12
50%	9g	±0.25%	2085S 50	**12-705-1**	143.16
50%	18g	±0.5%	2015S 50	**12-700-30**	184.08

Kimax* Babcock Bottle for Gasoline Testing

For determination of unsaturated hydrocarbons in gasoline

- Recommended for use in tests like E8 of the Barrett Company
- Modified design permits use of about four times the oil permitted in an ordinary Babcock bottle
- Durable white scale; neck capacity, 10mL
- Graduated to 100% in 2% subdivisions
- Tolerance: ±1%
- Overall height: 164mm

06-904

COMPLIANCE:

Designed for Babcock Method according to U.S. Bureau of Mines, Technical Paper 323, Method 550.1.

Mfr. No.	Cat. No.	Pack of 6	Case of 2 Packs
15066 10	**06-904**	**206.90**	302.04

Kimax* Babcock Bottles for Milk Testing

8% Bottle with "Sealed 3" marking

- Graduations marked with permanent brown stain
- Vertical line allows direct reading of percent butterfat
- Neck is graduated to 8% in 0.1% subdivisions
- Tolerance: ±0.1%
- Sample size: 18g
- Overall height: 165mm

COMPLIANCE:

Meets specifications of AOAC and Fed. Spec. DD-B-603

12-700-17

Graduated To	Tolerance	Mfr. No.	Cat. No.	Case of 12
8%	±0.1%	1003S 8	**12-700-17**	208.32

Kimax* Babcock Bottles for Ice Cream Testing

- Graduated to 10% in 0.1% subdivisions
- Scale is marked with permanent brown stain on neck
- Sample size: 18g
- Overall height: 165mm

12-700-15

Graduated To	Tolerance	Mfr. No.	Cat. No.	Case of 12
10%	±0.1%	1025 10	**12-700-15**	179.76

SPECIALTY—BOD

Pyrex* Water Sampling/Reagent Bottle

- With interchangeable stopper ground to a 1:10 taper

ORDERING INFORMATION:

Dia. × H: $2\frac{1}{4} \times 5\frac{19}{32}$" (57 × 142mm).

COMPLIANCE:

Meets APHA requirements

125 mL
PYREX

03-374

Capacity	Mfr. No.	Cat. No.	Case of 24
4 oz. (125mL)	1580 125	**03-374**	1056.72

Kimax*-35 300mL BOD Bottles

For sampling and incubation of aqueous samples for biochemical oxygen demand (BOD) analysis

Flared mouth forms a water seal to prevent air from being drawn into the bottle during incubation, while shoulder radius provides an interior shape that sweeps entrapped air out of the stopper opening.

- Type 1, Class B borosilicate glass
- Stopper design ensures that no air is entrapped in sample
- Available numbered and unnumbered

02-885A shown with optional 02-939 snap lid

- Optional snap lid secures stopper in bottle and reduces evaporation of water seal during incubation (sold separately, 02-939)

ORDERING INFORMATION:
Dia. × H: 2¾ × 6½" (69 × 165mm); neck I.D. approximately ⅔" (16.7mm)

COMPLIANCE:
Conforms to ASTM* E 438

No. Sequence	Mfr. No.	Cat. No.	Case of 24
With Stopper			
01-24	15070 01	**02-885B**	271.92
25-48	15070 25	**02-885C**	274.32
Unnumbered	15070 00	**02-885A**	261.12
Without Stopper			
Unnumbered	15070G 00	**02-940-1A**	222.48

Wheaton BOD Bottles

With glass robotic or pennyhead stoppers

Borosilicate glass bottles in 60 or 300mL sizes, numbered or unnumbered.

Bottles

- Borosilicate glass, 60 or 300mL, numbered or unnumbered
- With permanent marking areas; numbered versions are also bar-coded
- Specially designed shoulder radius sweeps all air from inside the bottle during filling
- 300mL bottles are recommended for the five-day BOD test referenced in *Standard Methods for the Examination of Water and Wastewater*, 18th Edition, 5210B, 1992

02-926-27

Stoppers

- Interchangeable 400-glass stoppers have tapered bottoms that also prevent air entrapment
- Flared mouth of bottle forms a water seal around stoppers that prevents air from being drawn in during incubation
- Stopper joint is compatible with the probes of the leading BOD and DO meters
- Glass robotic stoppers are compatible with most robotic systems

02-926-8

ORDERING INFORMATION:
Dimensions: 300mL bottles are 2¾ diameter × 6½" high (69 × 165mm); 60mL bottles are 1¾ diameter × 4½" high (43 × 115mm).

APPLICATIONS:
Use to incubate diluted samples of sewage, sewage effluents, polluted waters and industrial wastes to determine the amount of oxygen required during stabilization of decomposable organic matter by aerobic biochemical action.

Capacity	No. Sequence	Mfr. No.	Cat. No.	Case of
With Robotic Stoppers				
300mL	1–24	227497-01	**02-926-27**	24/261.02
300mL	25–48	227497-02	**02-926-28**	24/261.02
300mL	49–72	227497-03	**02-926-29**	24/261.02
300mL	73–96	227497-04	**02-926-30**	24/261.02
300mL	97–120	227497-05	**02-926-31**	24/261.02
300mL	121–144	227497-06	**02-926-32**	24/261.02
300mL	145–168	227497-07	**02-926-33**	24/261.02
300mL	169–192	227497-08	**02-926-34**	24/261.02
300mL	193–216	227497-09	**02-926-35**	24/261.02
300mL	217–240	227497-10	**02-926-36**	24/261.02
300mL	241–264	227497-11	**02-926-37**	24/261.02
300mL	265–288	227497-12	**02-926-38**	24/261.02
300mL	289–312	227497-13	**02-926-39**	24/261.02
300mL	313–336	227497-14	**02-926-40**	24/261.02
300mL	337–360	227497-15	**02-926-41**	24/261.02
300mL	361–384	227497-16	**02-926-42**	24/261.02
300mL	385–408	227497-17	**02-926-43**	24/261.02
300mL	409–432	227497-18	**02-926-44**	24/261.02
300mL	Unnumbered	227497-00	**02-926-26**	24/250.14
60mL	1–36	227494-01	**02-926-13**	36/635.58
60mL	37–72	227494-02	**02-926-14**	36/635.58
60mL	73–108	227494-03	**02-926-15**	36/635.58
60mL	Unnumbered	227494-00	**02-926-12**	36/542.25
With Pennyhead Stoppers†				
300mL	1–24	227497-01G	**02-926-8**	24/261.02
300mL	25–48	227497-02G	**02-926-9**	24/261.02
300mL	49–72	227497-03G	**02-926-11**	24/261.02
300mL	73–96	227497-04G	**02-926-25**	24/261.02
300mL	97–120	227497-05G	**02-926-90**	24/261.02
300mL	121–144	227497-06G	**02-926-91**	24/261.02
300mL	145–168	227497-07G	**02-926-92**	24/261.02
300mL	169–192	227497-08G	**02-926-93**	24/261.02
300mL	193–216	227497-09G	**02-926-94**	24/261.02
300mL	217–240	227497-10G	**02-926-95**	24/261.02
300mL	241–264	227497-11G	**02-926-96**	24/261.02
300mL	Unnumbered	227497-00G	**02-926-7A**	24/250.14

† Additional sequences are available; contact your Fisher Scientific Customer Service Repesentative.

***Fisher**brand** Plastic Centrifuge Bottles with Caps

Durable polypropylene or polycarbonate bottles

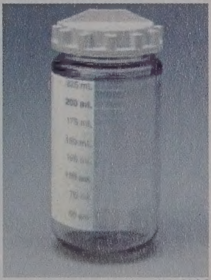
- Available with standard caps for low-speed work and sealing caps for high-speed applications
- Wide-mouth design for easy filling and decanting
- Autoclavable to 121°C (248°F)

14-375-359, -350, -352

Material	Material	Cap	Cat. No.	Pack of 4	Case of
250mL Capacity					
61 × 129mm	Polypropylene	Polypropylene Screw Cap	**14-375-350**	29.24	9/228.89
61 × 130mm	Polycarbonate	Polypropylene Screw Cap	**14-375-352**	42.47	9/332.34
61 × 129mm	Polypropylene	Noryl* Sealing Cap	**14-375-351**	62.37	9/488.16
61 × 130mm	Polycarbonate	Noryl Sealing Cap	**14-375-353**	71.44	9/559.09
500mL Capacity					
68 × 168mm	Polypropylene	Polypropylene Screw Cap	**14-375-355**	33.918	6/176.93
68 × 169mm	Polycarbonate	Polypropylene Screw Cap	**14-375-359**	87.69	6/457.52
68 × 168mm	Polypropylene	Noryl Sealing Cap	**14-375-354**	82.06	6/428.12
68 × 169mm	Polycarbonate	Noryl Sealing Cap	**14-375-356**	87.67	6/457.40

Thermo Scientific* Centrifuge Bottles

Choose polypropylene or polycarbonate bottles with seal or screw cap



05-432A

O.D. × L	Material	Cap	Max. RCF	Features	Mfr. No.	Cat. No.	Pack of 12
250mL Capacity							
60.8 × 125mm	Polypropylene	Polypropylene Screw Cap	8250×G	Fits Thermo Scientific IEC* rotors and adapters	2502	**05-432A**	113.00
60.8 × 125mm	Polypropylene	Sealing Cap	27,000×G	Leak-resistant cap; wide mouth with writing surface. Fits Thermo Scientific IEC rotors and adapters	2503	**05-433A**	192.48
500mL Capacity							
69.7 × 166mm	Polycarbonate	Sealing Cap	13,850×G	Leak-resistant cap; wide mouth with printed graduations and writing surface	2501	**05-433C**	178.78
750mL Capacity							
98 × 135mm	Polypropylene	Polypropylene Screw Cap	8250×G	Fits Thermo Scientific IEC rotors	2273	**05-112-76**	103.64
1000mL Capacity							
98 × 175mm	Polypropylene	Polypropylene Screw Cap	7400×G	Fits Thermo Scientific IEC and Composite rotors	2939	**05-430-45C**	192.85

Nalgene* Centrifuge Bottles

A wide range of centrifuge bottles with special features to meet your needs

05-564-2

O.D. × L	Material	Cap	Max. RCF[1]	Features	Mfr. No.	Cat. No.	Pack of	Case of
175mL Capacity								
61.5 × 135.6mm	Nalgene Polystyrene	HDPE Screw Cap	5800×G	Sterile, conical-bottom bottle with molded graduations	3145 0175	**05-579-30**[2]	12/59.15	4 Pk./157.75
200mL Capacity								
60 × 130mm	Nunc* Polypropylene	Polyethylene Screw Cap	7500×G	Sterile, conical-bottom bottle fits most 250 and 500mL swinging-bucket rotors	376813	**14-962-17**[2]	48/103.76	----
250mL Capacity								
60.7 × 133.4mm	Nalgene Polypropylene Copolymer	Sealing Cap	27,500×G	For cell, serum, or blood separations	3141 0250	**05-564-1**[3]	4/91.75	9 Pk./550.50
61.5 × 135.1mm	Nalgene Polycarbonate	Sealing Cap	27,500×G	Ensures leakproof[4] performance at maximum speed	3140 0250	**05-564**[3]	4/105.09	9 Pk./630.50
61.8 × 127.7mm	Nalgene Polypropylene Copolymer	Polypropylene Screw Cap[5]	13,200×G6	Ideal for cell, serum, or blood separations	3120 0250	**05-562-23**[3]	4/43.04	9 Pk./258.25
61.8 × 127.6mm	Nalgene Polycarbonate	Polypropylene Screw Cap	27,500×G5	Transparent bottle for interferon production	3122 0250	**05-579-20**[3]	4/62.46	9 Pk./374.75
60.0 × 128.8mm	Nalgene PTFE FEP	Tefzel* ETFE Screw Cap	4000×G5	Resists most acids, bases, and organic solvents; withstands temperatures from -100° to +4°C.	3127 0250	**05-562-21**[3]	1/134.32	6/537.25
61.2 × 131.9mm	Nalgene Polyethylene	Polypropylene Screw Cap	8000×G	Withstands temperatures down to -100°C	3121 0250	**05-562-50**[3]	6/51.50	6 Pk./206.00
500mL Capacity								
69.5 × 160mm	Polypropylene Copolymer	Sealing Cap	13,700×G	For cell, serum, or blood separations	3141 0500	**05-564-3**	4/120.68	6 Pk./482.75
69.5 × 160mm	Polycarbonate	Sealing Cap	13,700×G	Ensures leakproof[4] performance at maximum speed	3140 0500	**05-564-2**	4/128.81	6 Pk./515.25
69.5 × 170.2mm	Polypropylene Copolymer	Polypropylene Screw Cap	4800×G	Fits Beckman*, Thermo Scientific IEC*, and Thermo Scientific Sorvall* rotors	3120 9500	**05-562-20**	4/49.68	6 Pk./198.75
73.8 × 169.8mm	Polypropylene Copolymer	Polypropylene Screw Cap	4800×G	Ideal for cell, serum, or blood separations	3120 0500	**05-562-24**	4/52.12	6 Pk./208.50
1000mL Capacity								
97.5 × 184.5mm	Polypropylene Copolymer	Polypropylene Screw Cap[5]	7100×G	For cell, serum, or blood separations	3120 1000	**05-562-25**	4/99.66	4 Pk./265.75
97.6 × 188.4mm	Polycarbonate	Polypropylene Screw Cap[5]	7100×G	Transparent bottle for interferon production	3122 1000	**05-579-25**	4/132.84	4 Pk./354.25
97.7 × 179mm	Polypropylene Copolymer	Polypropylene Screw Cap[5]	7100×G	Sized to fit certain Thermo Scientific IEC rotors	3120 1010	**05-562-26**	4/102.09	4 Pk./272.25
98.1 × 180.2mm	Polycarbonate	Polypropylene Screw Cap[5]	7100×G	Sized to fit certain Thermo Scientific IEC rotors	3122 1010	**05-579-26**	4/136.03	4 Pk./362.75

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[1] Maximum force varies greatly among glass bottles, depending on factors such as the rotor, size of the load, quality of the glass, and the age and condition of the bottle. Only after testing the bottle in actual conditions can the maximum force be determined.

[2] Requires adapter cushion; contact your Fisher Scientific Customer Service Representative.

*[3] Use 05-579-13 (visit **www.fishersci.com**) to fit Thermo Scientific* Sorvall* GSA rotors.*

[4] Bottles designated as "leakproof" will not leak during ordinary use outside a centrifuge.

*[5] For maximum speed use Nalgene Sealing-Cap assembly (05-563-1D); to order, visit **www.fishersci.com**.*

Pyrex* Glass Centrifuge Bottles

Permit concentration of sediment for decanting operations

- Closure not included; use a No. 6 rubber stopper
- Large white marking area
- Heavy wall construction

05-586

Capacity	O.D. × L	Mfr. No.	Cat. No.	Case of
200mL	60 × 141mm	1260 200	**05-586B**	1/54.44
250mL	60 × 143mm	1260 250	**05-586**	12/376.65
500mL	73 × 175mm	1260 500	**05-586A**	6/235.96

DISPENSING

*Fisher*brand* LDPE Dispensing Bottles

Versatile, reliable bottles and spouts

- LDPE bottles and spouts with sealer caps
- Sealer snaps on easily after use and gives tight seal
- Spout openings are standard 0.03" (0.08cm)
- Can be enlarged by cutting back with scissors

03-402B, -402C

Capacity	Screw Cap Size	Cat. No.	Pack of 12	Case of
½ oz. (15mL)	15mm-415	**03-402A**	12.16	4 Pk./41.22
1 oz. (30mL)	18mm-400	**03-402B**	12.57	4 Pk./42.61
2 oz. (60mL)	18mm-400	**03-402C**	14.32	4 Pk./48.55
4 oz. (125mL)	24mm-400	**03-402D**	18.89	3 Pk./48.02
6 oz. (180mL)	24mm-400	**03-402E**	21.64	3 Pk./55.01
8 oz. (250mL)	24mm-400	**03-402F**	24.86	3 Pk./63.20
16 oz. (500mL)	28mm-400	**03-402G**	35.50	2 Pk./60.16

Nalgene* FEP Drop-Dispensing Bottle

Dripless dropping of strong liquids

- Ideal for dispensing strong acids/alkalis, reagents, and solvents
- Dispenses drops without drips
- Transparent FEP resin construction
- Autoclavable (with tips uncapped)
- Tefzel* ETFE closure and captive plug for safe storage

03-007

Capacity	Mfr. No.	Cat. No.	Each	Case of 4
1 oz. (30mL)	2414 0030	**03-007**	58.25	155.33

Nalgene* LDPE Drop-Dispensing Bottles

Dispense a drop at a time with one hand

- Easy to fill and leakproof†
- Captive spout cap will not pop or leak when bottle is squeezed
- Dispenser top consists of polypropylene screw cap with spout and cap

03-006-3

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
½ oz. (15mL)	20mm-400	2411 0015	**03-006-1**	12/35.88	6 Pk./143.50
1 oz. (30mL)	20mm-400	2411 0030	**03-006-2**	12/47.50	6 Pk./190.00
2 oz. (60mL)	20mm-400	2411 0060	**03-006-3**	12/56.07	4 Pk./149.50
4 oz. (125mL)	24mm-400	2411 0125	**03-006**	12/67.88	4 Pk./181.00
8 oz. (250mL)	24mm-400	2411 0250	**03-006-4**	6/43.32	6 Pk./173.25

† For definition of "leakproof," see p. 178.

Nalgene* Polypropylene Copolymer Dispensing Bottles

Autoclavable, noncontaminating

- Linerless, noncontaminating with captive spout caps
- Fine, steady stream when squeezed
- Can be used to dispense sterile solutions
- Autoclave full, with tips uncapped
- Leakproof† blue polypropylene dropping closures with caps

03-007-1A

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of 6
4 oz. (125mL)	24mm-400	DS2420-0125	**03-007-1A**	43.40
8 oz. (250mL)	24mm-400	DS2420-0250	**03-007-1C**	49.20

† For definition of "leakproof," see p. 178.

Nalgene* Unitary* LDPE Drop-Dispensing Bottles

Convenient one-hand/one-drop dispensing

- Molded-in side arm spigot
- Leakproof†, including leak-tight plug for side spout
- 8 oz. (250mL) size has wide mouth for easy filling
- Polypropylene screw cap

03-409-13A, -13B

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
4 oz. (125mL)	24mm-400	2410 0125	**03-409-13A**	6/41.74	8 Pk./222.58
8 oz. (250mL)	38mm-400	2410 0250	**03-409-13B**	4/32.33	9 Pk./193.97

† For definition of "leakproof," see p. 178.

DROPPING

*Fisher*brand* LDPE Dropping Bottle

Constructed of low-density polyethylene

- Includes tip and cap

02-911-870

Capacity	Screw Cap Size	Cat. No.	Case of 48
2 oz. (60mL)	24mm-410	**02-911-870**	184.19

*Fisherbrand** Amber Glass Dropping Bottles

Ideal for light-sensitive chemicals

- Amber glass protects light-sensitive chemicals
- Half-moon shape prevents rolling
- Screw cap with rubber bulb and glass pipet included

02-983A

Capacity	Cat. No.	Case of
1 oz. (30mL)	**02-983A**	72/373.00
2 oz. (60mL)	**02-983B**	36/87.94

Nalgene* LDPE Bottles with Dropper Control Tip

One-drop dispensing and excellent chemical resistance

- Leakproof[†]
- Contact-clear or white
- Dropper control tip snaps into place for a secure fit
- Dispensing tip and caps included

ORDERING INFORMATION:
Case of 25 bottles with assorted-color closures contains five bottles of each color (white, red, yellow, green, blue).

03-007-16A, -17A

Capacity	Screw Cap Size	Cap Color	Mfr. No.	Cat. No.	Case of 25
Clear					
⅛ oz. (4mL)	15mm-415	White	2750-9125	**03-007-16A**	25.55
¼ oz. (8mL)	15mm-415	White	2750-9025	**03-007-16B**	28.25
½ oz. (15mL)	15mm-415	White	2750-9050	**03-007-16C**	29.55
⅛ oz. (4mL)	15mm-415	Assorted	2752-9125	**03-007-18A**	28.25
¼ oz. (8mL)	15mm-415	Assorted	2752-9025	**03-007-18B**	30.90
½ oz. (15mL)	15mm-415	Assorted	2752-9050	**03-007-18C**	32.25
White					
⅛ oz. (4mL)	15mm-415	White	2751-9125	**03-007-17A**	25.55
¼ oz. (8mL)	15mm-415	White	2751-9025	**03-007-17B**	28.25
½ oz. (15mL)	15mm-415	White	2751-9050	**03-007-17C**	29.55
⅛ oz. (4mL)	15mm-415	Assorted	2753-9125	**03-007-19A**	28.25
¼ oz. (8mL)	15mm-415	Assorted	2753-9025	**03-007-19B**	30.90
½ oz. (15mL)	15mm-415	Assorted	2753-9050	**03-007-19C**	32.25

[†] *For definition of "leakproof," see p. 178.*

Nalgene* LDPE Bottles with Dropper Assembly

Narrow-mouth bottle with dropping pipet

- 03-337-10E has polyethylene dropping pipet and bulb; others have neoprene bulb
- Polypropylene screw caps included

03-337-10A, -10C

Capacity	Cap Size	Mfr. No.	Cat. No.	Pack of	Case of
1 oz. (30mL)	20mm-400	2416 0030	**03-337-10E**	12/43.28	6 Pk./173.15
2 oz. (60mL)	20mm-400	2416 0060	**03-337-10A**	12/58.81	4 Pk./156.84
4 oz. (125mL)	24mm-400	2416 0125	**03-337-10C**	6/57.82	8 Pk./308.39

Kimble* Glass Dropping Bottles

Convenient all-in-one configuration

- Constructed of GG-33 borosilicate glass
- Ground-in glass pipet and rubber bulb included

02-992B

Capacity	Mfr. No.	Cat. No.	Each	Pack of 12
1 oz. (30mL)	FS15035 30	**02-992A**	59.10	517.60
2 oz. (60mL)	FS15035 60	**02-992B**	56.33	493.41

Wheaton Barnes Square Dropping Bottle

Wheaton brand "400" borosilicate glass

- Glass pipet with rubber-bulb stopper included

02-980

Capacity	Mfr. No.	Cat. No.	Case of 36
1 oz. (30mL)	211523	**02-980**	98.03

ACCESSORIES

Replacement Pipet

With rubber bulb. As supplied with 02-980.

Mfr. No.	Cat. No.	Case of 100
211533	02-981	191.88

*Trademark. See Trademark Reference.

IMPORTANT TERMS TO KNOW

Low Particulate Processed—Low-particle processing is designed to remove particulate contaminants @ 0.5µm from glass and plastic containers to levels as low as <5pcs/mL.

Depyrogenated—Depyrogenation is the destruction and removal of fever producing substances commonly known as endotoxins. Effective depyrogenation must reduce endotoxin content by at least 99.9% or 3 logs. Containers processed to this standard are referred to as Pyrogen-free™.

DNase/RNase Processing—Containers are processed to remove traces of DNA and RNA resulting from human contact, bacterial contamination or contact with any biological substance.

TOC Processed—Total Organic Carbon as a measure of the amount of carbon covalently bound in organic molecules in a water sample. TOC processed containers are cleaned and certified to as low as 10ppb TOC as background.

WFI (Water For Injection)—WFI is purified to exceed USP specifications for TOC, conductivity, bacterial and endotoxin levels to provide a final product that meets FDA requirements. WFI water is a highly effective cleaning agent used in many scientific cleaning processes.

Steam Sterilization—Steam sterilization involves the application of steam, heat and pressure to destroy all viable forms of life including bacterial spores, to an acceptable sterility assurance level (SAL) of 10^{-6}. Steam sterilization does not remove endotoxins.

Gamma Radiation Sterilization—A gamma radiation dose, sufficient to destroy all viable forms of life including bacterial spores, is applied to achieve an acceptable sterility assurance level (SAL) of 10^{-6}.

BEFORE YOU BUY PROCESSED CLEAN CONTAINERS

PROCESS	APPLICATION
Low Particle Processed	Applications in the pharmaceutical, biotech, medical, and semiconductor industries; anywhere cleanrooms or controlled environments are utilized
Depyrogenated	Injectable or parenteral drugs, lyophilization, final packaging prior to drug delivery, stability studies, clinical trials
DNase/RNase Processed	Applications in molecular biology, pharmaceutical, biotech and medical research
TOC Processed	Validation of water systems, equipment validations, cleaning validations, and monitoring low levels of organic contaminants in numerous applications
Steam Sterilization	Injectable or parenteral drugs, lyophilization, final packaging prior to drug delivery, stability studies, clinical trials
Gamma Radiation Sterilization	Injectable or parenteral drugs, lyophilization, final packaging prior to drug delivery, stability studies, clinical trials
Sterile Foil Wrap	Injectable or parenteral drugs, stability studies, clinical trials
Surface Modification	Proteins, assays of blood serum, pharmacological assays of therapeutic drugs

Sterile Foil-Wrap—Glassware is sterilized via a validated dry-heat, foil-wrap method. Stoppers, seals and other closures are sterilized via autoclave methods.

Surface Modification—Glass, and in some cases plastic, containers are processed to provide controlled surface characteristics. Silanization and siliconization are two common methods of surface modification that yield a hydrophobic, nonreactive surface.

sponsored by:

Ep
SCIENTIFIC PRODUCTS
SPECIALTY WATER
TOC-FREE WATER

Processed Clean Containers

EP Scientific Environmental Containers

For laboratories and remediation companies

Various styles and sizes of certified clean and noncleaned, assembled-only containers prepared in two ways:

Level 1

- Each case is custody sealed
- Every container is labeled with a lot number for traceability to the enclosed Certificate of Analysis
- Processed one of two ways:
  1. *Cleaning Procedure A* for clear and amber glass 2 oz. (60mL) or larger, recommended for semivolatile, pesticide, and metal sampling
  2. *Cleaning Procedure B* for 1⅜ oz. (40mL) borosilicate glass vials and some larger bottles, recommended for volatile sampling

Level 3

- No EPA certification
- Can receive any cleaning procedure

CERTIFICATIONS:
Level 1 containers are certified to meet or exceed EPA standards for metals, pesticides, volatiles, and semivolatiles, depending on the procedure.

NOTE:
EP Scientific also offers custom cleaning services for additional applications. Contact your Fisher Scientific Customer Service Representative for more information.

Boston Round Bottles

- Clear or amber glass
- Level 1 bottles processed with Cleaning Procedure A
- Polypropylene caps with PTFE liners included

CERTIFICATIONS:
Certified for semivolatiles, pesticides, and metals sampling

12-100-130, -126, -128, -132

			Certified (L1)			Noncleaned; assembled only (L3)		
Color	**Capacity**	**Screw Cap Size**	**Mfr. No.**	**Cat. No.**	**Case of**	**Mfr. No.**	**Cat. No.**	**Case of**
Amber	4 oz. (125mL)	24mm-414	115-125A	**12-100-122**	12/31.11	315-125A	**12-100-123**	12/24.77
Amber	8 oz. (250mL)	24mm-414	114-250A	**12-100-124**	12/34.51	314-250A	**12-100-125**	12/23.16
Amber	16 oz. (500mL)	28mm-400	113-500A	**12-100-126**	12/39.40	313-500A	**12-100-127**	12/29.92
Clear	16 oz. (500mL)	28mm-400	113-500C	**12-100-128**	12/44.20	313-500C	**12-100-129**	12/27.98
Amber	32 oz. (1L)	33mm-430	112-01A	**12-100-130**	12/44.00	312-01A	**12-100-131**	12/38.15
Clear	32 oz. (1L)	33mm-430	112-01C	**12-100-132**	12/48.27	312-01C	**12-100-133**	12/39.31

Boston Round Open Closure Bottles

- Amber glass
- Level 1 bottles processed with Cleaning Procedure B
- Polypropylene caps with PTFE-resin/silicone septum included

CERTIFICATIONS:
Certified for volatile sampling

12-100-136, -134, -138

		Certified (L1)			Noncleaned; assembled only (L3)		
Capacity	**Screw Cap Size**	**Mfr. No.**	**Cat. No.**	**Case of**	**Mfr. No.**	**Cat. No.**	**Case of**
4 oz. (125mL)	24mm-414	S114-125A	**12-100-134**	12/36.47	S314-125A	**12-100-135**	12/20.78
8 oz. (250mL)	24mm-414	S114-250A	**12-100-136**	12/37.80	----	----	----
32 oz. (1L)	33mm-430	142-01A/WS	**12-100-138**	12/61.53	342-01A/WS	**12-100-139**	12/41.83

Contd. on next page.

Clear Straight-Sided Jars

- Clear glass in tall- or short-height configurations
- Available in Cleaning Procedures A or B
- Polypropylene caps with PTFE liners included

CERTIFICATIONS:

Level 1 jars processed with Cleaning Procedure A certified for use in semi-volatiles, pesticides, and metals sampling.
Level 1 jars processed with Cleaning Procedure B certified for volatiles sampling.

12-100-160, -151, -149, -155

			Certified (L1)			Noncleaned; assembled only (L3)		
Capacity	**Cleaning Process**	**Screw Cap Size**	**Mfr. No.**	**Cat. No.**	**Case of**	**Mfr. No.**	**Cat. No.**	**Case of**
Tall Height								
4 oz. (125mL)	A	48mm-400	130-04CTL	**12-100-147**	24/53.92	330-04CTL	**12-100-148**	24/42.75
4 oz. (125mL)	B	48mm-400	142-04CTL	**12-100-150**	24/53.92	----	----	----
8 oz. (250mL)	A	58mm-400	131-08CTL	**12-100-153**	24/65.68	331-08CTL	**12-100-154**	24/45.92
16 oz. (500mL)	A	63mm-400	132-16CTL	**12-100-157**	12/45.74	332-16CTL	**12-100-158**	12/31.84
Short Height								
2 oz. (60mL)	A	53mm-400	130-02C	**12-100-142**	24/61.28	330-02C	**12-100-143**	24/36.42
2 oz. (60mL)	B	53mm-400	142-02C	**12-100-144**	24/59.94	----	----	----
4 oz. (125mL)	A	58mm-400	130-04C	**12-100-145**	24/57.75	330-04C	**12-100-146**	24/41.21
4 oz. (125mL)	B	58mm-400	142-04C	**12-100-149**	24/56.59	----	----	----
8 oz. (250mL)	A	70mm-400	131-08C	**12-100-151**	24/65.00	331-08C	**12-100-152**	24/44.07
16 oz. (500mL)	A	89mm-400	132-16C	**12-100-155**	12/49.35	332-16C	**12-100-156**	12/32.96
16 oz. (500mL)	B	89mm-400	142-16C	**12-100-159**†	12/47.77	----	----	----
32 oz. (1L)	A	89mm-400	133-32C	**12-100-160**	12/54.65	333-32C	**12-100-161**	12/42.84

† Not a standard stock item; minimum case quantities required. Contact your Fisher Scientific Customer Service Representative for more information.

Storage Jugs

- Amber glass Level 1 jugs
- Processed with Cleaning Procedure A
- Polypropylene caps with PTFE liners included

CERTIFICATIONS:

Certified for use in semivolatiles, pesticides, and metals sampling.

12-100-140, -141

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
80 oz. (2.5L)	33mm-430	110-80A	**12-100-140**	6/45.47
128 oz. (4L)	33mm-430	111-04A	**12-100-141**	4/40.78

Amber Straight-Sided Jars

- Amber glass
- Level 1 jars processed with Cleaning Procedure A
- Polypropylene caps with PTFE liners included

CERTIFICATIONS:

Certified for use in semivolatiles, pesticides, and metals sampling.

12-100-166, -163, -164, -162

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
2 oz. (60mL)	51mm-400	130-02A	**12-100-162**	24/62.01
4 oz. (125mL)	58mm-400	130-04A	**12-100-163**	24/58.54
8 oz. (250mL)	70mm-400	131-08A	**12-100-164**	24/70.39
32 oz. (1L)	89mm-400	133-32A	**12-100-166**	12/28.55

Contd. on next page.

EP Scientific Environmental Containers, Contd.

Amber Wide-Mouth Packers

- Amber glass
- Processed with Cleaning Procedure A
- Polypropylene caps with PTFE resin liners included

CERTIFICATIONS:
Level 1 packers certified for semivolatiles, pesticides, and metals sampling.

Left to right (rear): 12-100-177, -179, -175; (front): -169, -171, -167, -173.

		Certified (L1)			Noncleaned; assembled only (L3)		
Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of	Mfr. No.	Cat. No.	Case of
2 oz. (60mL)	33mm-400	120-02A	**12-100-167**	24/50.99	320-02A	**12-100-168**	24/28.24
4 oz. (125mL)	38mm-400	120-04A	**12-100-169**	12/29.58	320-04A	**12-100-170**	12/18.70
8 oz. (250mL)	45mm-400	121-08A	**12-100-171**	12/35.26	321-08A	**12-100-172**	12/20.39
16 oz. (500mL)	53mm-400	122-16A	**12-100-173**	12/45.06	332-16A	**12-100-174**	12/28.49
32 oz. (1L)	53mm-400	123-32A	**12-100-175**	12/56.25	323-32A	**12-100-176**	12/33.69
40 oz. (1.5L)	70mm-400	123-40A	**12-100-177†**	24/123.69	323-40A	**12-100-178**	24/105.86
80 oz. (2.5L)	70mm-400	123-80A	**12-100-179**	4/53.36	323-80A	**12-100-180**	4/42.37

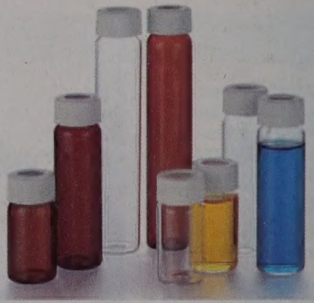
† Not a standard stock item; minimum case quantities required. Contact your Fisher Scientific Customer Service Representative for more information.

EPA VOA Open Top Vials

- Amber or clear glass
- Processed with Cleaning Procedure B
- Polypropylene caps with 0.060" or 0.125" PTFE/silicone septa included

ORDERING INFORMATION:
Chipboard divider packaging

CERTIFICATIONS:
Level 1 vials certified for volatile organic sampling.



12-100-109, -103, -102, -120, -100, -112, -110, -111

			Certified (L1)			Noncleaned; assembled only (L3)		
Capacity	Screw Cap Size	Septa Size	Mfr. No.	Cat. No.	Case of	Mfr. No.	Cat. No.	Case of
Clear								
20mL	24mm-414	0.125"	139-20CEP	**12-100-100**	72/112.61	339-20C	**12-100-112**	72/87.60
40mL	24mm-414	0.125"	140-40CEP	**12-100-110**	72/100.50	340-40C	**12-100-111**	72/80.59
40mL	24mm-414	0.125"	140-40CDB	**12-100-104**	144/194.88	340-40CDB	**12-100-106**	144/143.80
40mL	24mm-400	0.060"	140-40CEPTS	**12-100-114**	72/100.73	----	----	----
60mL	24mm-414	0.125"	140-60C	**12-100-102**	144/301.50	340-60C	**12-100-113**	144/265.77
Amber								
20mL	24mm-414	0.125"	139-20AEP	**12-100-109**	72/112.61	339-20A	**12-100-116**	72/87.60
40mL	24mm-414	0.125"	141-40AEP	**12-100-103**	72/100.73	341-40A	**12-100-117**	72/78.83
40mL	24mm-414	0.125"	141-40ADB	**12-100-105**	144/194.87	341-40ADB	**12-100-119**	144/142.21
40mL	24mm-400	0.060"	141-40AEPTS	**12-100-118**	72/100.73	----	----	----
60mL	24mm-414	0.125"	141-60A	**12-100-120**	144/301.50	341-60A	**12-100-121**	144/259.96

† 100 Series jars are not cleaned.
‡ Tare weighted.

*Trademark. See Trademark Reference.

I-Chem* Environmental Sample Type III Glass Jars and Bottles

High-quality containers cleaned to EPA standards

300 Series

- Processed, assembled, and packaged in strict accordance with I-Chem Performance-Based Specifications
- Quality control analyses performed
- Certificates of Analyses certify that products meet or exceed all analyte specifications established in the latest U.S. EPA *Specifications and Guidance for Contaminant-Free Sample Containers* document
- Certificate of Analysis (included) has a manual and laser-readable bar code of the Production Number for absolute traceability
- Bar-code label attached to each container with Production Number and Unique Container Identification Number
- Production Number also on box description label and can be used to reliably trace the container to I-Chem's internal documents and laboratory data
- Analysis labels are included in each case

200 Series

- Processed, assembled, and packaged in strict accordance with I-Chem Performance-Based Specifications
- Quality control analyses performed
- Certificates of Analyses certify that products meet or exceed all analyte specifications established in the latest U.S. EPA *Specifications and Guidance for Contaminant-Free Sample Containers* document
- Bar-code labels and Certificates of Analysis not provided (Certificate of Analysis available on request)
- Production Number on box description label

100 Series

- Same quality materials and materials specifications as 200 and 300 Series
- Not processed nor certified
- Analysis labels not included

05-719 Series

INCLUDES

Attached blue or black polypropylene closures with PTFE liners. Liners sized to remain firmly in caps.

ORDERING INFORMATION:

Replacement closures available; contact your Fisher Scientific Customer Service Representative.

Tall Wide-Mouth Amber Glass Jars and Bottles

		300 Series			200 Series			100 Series†		
Capacity	**Dia. × H**	**Mfr. No.**	**Cat. No.**	**Case of**	**Mfr. No.**	**Cat. No.**	**Case of**	**Mfr. No.**	**Cat. No.**	**Case of**
Cleaned for semivolatile, pesticide/PCB, and metal analyses†										
2 oz. (60mL)	1¾ × 3⅛" (4.4 × 7.9cm)	341-0060	**05-719-287**	24/78.44	241-0060	**05-719-288**	24/68.21	141-0060	**05-719-289**	24/57.98
4 oz. (120mL)	2 × 3 13/16" (5.1 × 9.7cm)	341-0120	**05-719-291**	12/43.53	241-0120	**05-719-52**	12/37.85	141-0120	**05-719-292**	12/32.16
8 oz. (250mL)	2½ × 4¾" (6.4 × 12.1cm)	341-0250	**05-719-66**	12/47.48	241-0250	**05-719-63**	12/41.28	141-0250	**05-719-294**	12/35.10
16 oz. (500mL)	3⅛ × 5⅞" (7.9 × 14.9cm)	341-0500	**05-719-77**	12/51.21	241-0500	**05-719-74**	12/44.73	141-0500	**05-719-69**	12/38.02
32 oz. (950mL)	3 3/16 × 7¼" (8.1 × 18.4cm)	341-0950	**05-719-298**	12/62.76	241-0950	**05-719-80**	12/54.57	141-0950	**05-719-79**	12/46.79
44 oz. (1250mL)	4⅛ × 7⅝" (10.5 × 19.5cm)	341-1250	**05-719-467**	6/40.76	241-1250	**14-965-34**	6/35.44	141-1250	**14-965-33**	6/28.34
Cleaned for volatile organic analysis										
32 oz. (950mL)	3 3/16 × 7¼" (8.1 × 18.4cm)	V341-0950	**05-719-487**	12/72.16	V241-0950	**05-719-488**	12/62.76	----	----	----

† *100 Series jars are not cleaned.*

Short Wide-Mouth Amber Glass Jars

- Cleaned for semivolatile, pesticide/PCB, and metal analyses†
- Ideal for soil, sludge, and sediment sampling

Left to right: 05-719-521B, -14, -521D

		300 Series			200 Series			100 Series†		
Capacity	**Dia. × H**	**Mfr. No.**	**Cat. No.**	**Case of**	**Mfr. No.**	**Cat. No.**	**Case of**	**Mfr. No.**	**Cat. No.**	**Case of**
2 oz. (60mL)‡	2 × 2⅛" (5.1 × 5.4cm)	340-0060	**05-719-14**	24/78.82	240-0060	**05-719-520A**	24/68.54	140-0060	**05-719-519A**	24/58.26
4 oz. (120mL)	2⅜ × 2½" (6 × 6.4cm)	340-0120	**05-719-521B**	24/86.71	240-0120	**05-719-520B**	24/75.40	140-0120	**05-719-519B**	24/64.09
16 oz. (500mL)‡	4¼ × 3⅜" (10.8 × 8.6cm)	340-0500	**05-719-521D**	12/70.94	240-0500	**05-719-520D**	12/61.69	140-0500	**14-965-32**	12/52.69

† *100 Series jars are not cleaned.*
‡ *Black cap.*

Contd. on next page.

I-Chem Environmental Jars & Bottles, Contd.

Tall Wide-Mouth Clear Glass Jars

Left to right: 05-719-270, -273, -275A, -58, -89

		300 Series			200 Series			100 Series[†]		
Capacity	Dia. × H	Mfr. No.	Cat. No.	Case of	Mfr. No.	Cat. No.	Case of	Mfr. No.	Cat. No.	Case of
Cleaned for semivolatile, pesticide/PCB, metal, and cyanide analyses[†]										
4 oz. (125mL)	1⅞ × 4" (4.8 × 10.2cm)	321-0125	**05-719-58**	12/43.53	221-0125	**05-719-56**	12/37.85	121-0125	**05-719-54**	12/32.16
8 oz. (250mL)	2¼ × 4¹³⁄₁₆" (5.7 × 12.2cm)	321-0250	**05-719-270**	12/47.48	221-0250	**05-719-62**	12/41.28	121-0250	**05-719-271**	12/35.10
16 oz. (500mL)	2⅝ × 6½" (6.7 × 16.5cm)	321-0500	**05-719-273**	12/51.21	221-0500	**05-719-73**	12/44.73	121-0500	**05-719-68**	12/38.02
32 oz. (1L)	3⅝ × 6½" (9.2 × 16.5cm)	321-1000	**05-719-89**	12/62.76	221-1000	**05-719-85**	12/54.57	121-1000	**05-719-81**	12/46.79
64 oz. (2L)[‡,††]	4⅞ × 8½" (12.4 × 21.6cm)	321-2000	**05-719-275A**	6/48.67	221-2000	**05-719-281B**	6/42.32	121-2000	**05-719-281A**	6/35.98
128 oz. (4L)[‡]	6 × 9⅝" (15.2 × 24.4cm)	321-4000	**05-719-279**	4/64.17	221-4000	**05-719-280**	4/55.88	121-4000	**05-719-281**	4/48.01
Cleaned for volatile organic analysis										
4 oz. (125mL)	1⅞ × 4" (4.8 × 10.2cm)	V321-0125	**05-719-471**	12/50.05	V221-0125	**05-719-472**	12/43.53	----	----	----
8 oz. (250mL)	2¼ × 4¹³⁄₁₆" (5.7 × 12.2cm)	V321-0250	**05-719-473**	12/54.12	----	----	----	----	----	----
32 oz. (1L)	3⅝ × 6½" (9.2 × 16.5cm)	V321-1000	**05-719-475**	12/72.16	V221-1000	**05-719-476**	12/62.76	----	----	----

[†] 100 Series jars are not cleaned.
[‡] Black cap.
[††] Cleaned for metals analysis only.

Boston Round Style Amber Glass Bottles

Left to right: 05-719-176, -91, -78, -183

		300 Series			200 Series			100 Series[†]		
Capacity	Dia. × H	Mfr. No.	Cat. No.	Case of 12	Mfr. No.	Cat. No.	Case of 12	Mfr. No.	Cat. No.	Case of 12
Cleaned for semivolatile, pesticide/PCB, and metal analyses[†]										
4 oz. (125mL)	1⅞ × 4⅝" (4.8 × 11.8cm)	349-0125	**05-719-176**	27.78	249-0125	**05-719-177**	24.16	149-0125	**05-719-178**	20.53
8 oz. (250mL)	2⅜ × 5¹¹⁄₁₆" (6 × 14.4cm)	349-0250	**05-719-183**	31.75	249-0250	**05-719-64**	27.61	149-0250	**05-719-184**	23.46
16 oz. (500mL)	3 × 6¹⁵⁄₁₆" (7.6 × 17.6cm)	349-0500	**05-719-78**	39.68	249-0500	**05-719-75**	34.51	149-0500	**05-719-70**	29.33
32 oz. (950mL)	4 × 8⅞" (10.2 × 22.5cm)	349-1000	**05-719-91**	51.34	249-1000	**05-719-87**	44.86	149-1000	**05-719-83**	38.13
Cleaned for volatile organic analysis										
32 oz. (950mL)	4 × 8⅞" (10.2 × 22.5cm)	V349-1000	**05-719-489**	58.78	V249-1000	**05-719-490**	51.34	----	----	----

[†] 100 Series jars are not cleaned.

Contd. on next page.

*Trademark. See Trademark Reference.

Prices subject to change.

Boston Round Style Clear Glass Bottles

Left to right: 05-719-159, -90, -163, -170

		300 Series			200 Series			100 Series†		
Capacity	**Dia. × H**	**Mfr. No.**	**Cat. No.**	**Case of 12**	**Mfr. No.**	**Cat. No.**	**Case of 12**	**Mfr. No.**	**Cat. No.**	**Case of 12**
Cleaned for semivolatile, pesticide/PCB, and metal analyses†										
4 oz. (125mL)	1¾ × 4⅝" (4.4 × 11.8cm)	329-0125	**05-719-159**	27.86	229-0125	**05-719-160**	24.22	129-0125	**05-719-161**	20.60
8 oz. (250mL)††	2⁹⁄₁₆ × 5¹¹⁄₁₆" (13.5 × 14.4cm)	329-0250	**05-719-163**	31.84	229-0250	**05-719-164**	27.69	129-0250	**05-719-165**	23.54
16 oz. (500mL)††	3 × 6⁹⁄₁₆" (7.6 × 16.7cm)	329-0500	**05-719-170**	39.80	229-0500	**05-719-171**	34.60	129-0500	**05-719-172**	29.41
32 oz. (1L)††	3⅝ × 8⁹⁄₁₆" (9.2 × 21.7cm)	329-1000	**05-719-90**	51.48	229-1000	**05-719-86**	44.99	129-1000	**05-719-82**	38.24

† 100 Series jars are not cleaned.
†† Cleaned for metals analysis only.

Short Wide-Mouth Clear Glass Jars and Bottles

Left to right: 05-719-57, -65, -275, -257, -76

		300 Series			200 Series			100 Series†		
Capacity	**Dia. × H**	**Mfr. No.**	**Cat. No.**	**Case of**	**Mfr. No.**	**Cat. No.**	**Case of**	**Mfr. No.**	**Cat. No.**	**Case of**
Cleaned for semivolatile, pesticide/PCB, and metal analyses†										
2 oz. (60mL)	2⅛ × 1¹³⁄₁₆" (5.4 × 4.6cm)	320-0060	**05-719-257**	24/78.44	220-0060	**05-719-51**	24/68.21	120-0060	**05-719-258**	24/57.98
2 oz. (60mL) ‡	2⅛ × 1¹³⁄₁₆" (5.4 × 4.6cm)	320-0060FTW	**05-719-056**	24/155.17	220-0060FTW	**05-719-397**	24/134.93	----	----	----
4 oz. (125mL)	2⅜ × 2⅛" (6 × 5.4cm)	320-0125	**05-719-57**	24/86.28	220-0125	**05-719-55**	24/75.03	120-0125	**05-719-53**	24/63.77
8 oz. (250mL)	2⅞ × 3⅜" (7.3 × 8.6cm)	320-0250	**05-719-65**	12/47.48	220-0250	**05-719-61**	12/41.28	120-0250	**05-719-59**	12/35.10
16 oz. (500mL)	3½ × 3¾" (8.9 × 9.5cm)	320-0500	**05-719-76**	12/51.21	220-0500	**05-719-72**	12/44.73	120-0500	**05-719-67**	12/38.02
64 oz. (2L)	5½ × 6⅛" (14 × 15.6cm)	320-2000	**05-719-275**	6/48.67	220-2000	**05-719-276**	6/42.32	120-2000	**05-719-277**	6/35.98
Cleaned for volatile organic analysis										
4 oz. (125mL)	2⅜ × 2⅛" (6 × 5.4cm)	V320-0125	**05-719-500**	24/99.24	V220-0125	**05-719-499**	24/86.28	----	----	----
8 oz. (250mL)	2⅞ × 3⅜" (7.3 × 8.6cm)	V320-0250	**05-719-481**	12/54.12	V220-0250	**05-719-482**	12/47.48	----	----	----
16 oz. (500mL)	3½ × 3¾" (8.9 × 9.5cm)	V320-0500	**05-719-483**	12/58.64	V220-0500	**05-719-484**	12/51.21	----	----	----

† 100 Series jars are not cleaned.
†† Cleaned for metals analysis only.

Contd. on next page.

I-Chem Environmental Jars & Bottles, Contd.

05-719-187, -181, -169

4 and 8 oz. Boston Round Septa Bottles

- Type III glass bottles
- Blue open-top polypropylene closures with 0.125" PTFE/silicone septa
- I-Chem* molded-in septa retainer ring holds septum firmly in place without bonding to caps

			300 Series			200 Series			100 Series†		
Color	**Capacity**	**Dia. × H**	**Mfr. No.**	**Cat. No.**	**Case of 12**	**Mfr. No.**	**Cat. No.**	**Case of 12**	**Mfr. No.**	**Cat. No.**	**Case of 12**
Clear	8 oz. (250mL)	2 5/16 × 5 11/16" (5.9 × 14.4cm)	5329 0250	**05-719-167**	35.43	S229-0250	**05-719-168**	30.81	S129-0250	**05-719-169**	26.18
Amber	4 oz. (125mL)	1⅞ × 4⅝" (4.8 × 11.7cm)	S349-0125	**05-719-180**	31.01	S249-0125	**05-719-181**	26.96	S149-0125	**05-719-182**	22.92
Amber	8 oz. (250mL)	2⅜ × 5 11/16" (6 × 14.4cm)	S349-0250	**05-719-186**	35.43	S249-0250	**05-719-187**	30.81	S149-0250	**05-719-188**	26.18

† *100 Series jars are not cleaned.*

Amber Glass Jugs

- Ideal for transporting field blank water

05-719-94, -96

		300 Series			200 Series			100 Series†		
Capacity	**Dia. × H**	**Mfr. No.**	**Cat. No.**	**Case of**	**Mfr. No.**	**Cat. No.**	**Case of**	**Mfr. No.**	**Cat. No.**	**Case of**
Cleaned for semivolatile and pesticide/PCB analyses†										
80 oz. (2.36L)	5 × 12¼" (12.7 × 31.1cm)	345-2360	**05-719-94**	6/49.75	245-2360	**05-719-93**	6/43.26	145-2360	**05-719-92**	6/36.78
128 oz. (4L)	6 × 14" (15.2 × 35.6cm)	345-4000	**05-719-96**	4/41.76	245-4000	**05-719-95**	4/36.40	145-4000	**05-719-175**	4/31.02

† *100 Series jars are not cleaned.*

Septa-Jar* Wide-Mouth Containers

- Type III glass jars
- Increase accuracy of soil headspace analysis by eliminating sample transfer step to minimize volatile loss
- Short containers in amber or clear glass—amber glass protects samples from UV light
- Each has blue polypropylene open-top cap with bonded PTFE resin/silicone septum ultrasonically bonded to cap

ORDERING INFORMATION:
Replacement caps are available; contact your Fisher Scientific Customer Service Representative.

CERTIFICATIONS:
300 and 200 Series septa jars are certified for volatile organic analysis.

05-719-456, -450

			300 Series			200 Series			100 Series†		
Color	**Capacity**	**Dia. × H**	**Mfr. No.**	**Cat. No.**	**Case of**	**Mfr. No.**	**Cat. No.**	**Case of**	**Mfr. No.**	**Cat. No.**	**Case of**
Tall Height											
Clear	4 oz. (125mL)	1⅞ × 4" (4.8 × 10.2cm)	S321-0125	**05-719-311**	12/48.44	S221-0125	**05-719-312**	12/42.12	S121-0125	**05-719-313**	12/35.81
Clear	8 oz. (250mL)	2¼ × 4 13/16" (5.7 × 12.2cm)	S321-0250	**05-719-450**	12/52.59	S221-0250	**05-719-451**	12/45.95	S121-0250	**05-719-452**	12/39.06
Short Height											
Clear	2 oz. (60mL)	2⅛ × 1 13/16" (5.4 × 4.6cm)	S320-0060	**05-719-456**	24/87.13	S220-0060	**05-719-457**	24/75.77	S120-0060	**05-719-458**	24/64.41
Clear	4 oz. (120mL)	2⅜ × 2⅛" (6.0 × 5.4cm)	S320-0125	**05-719-459**	24/95.85	S220-0125	**05-719-460**	24/83.34	S120-0125	**05-719-461**	24/70.85
Amber	4 oz. (125mL)	2⅜ × 2½" (6.0 × 6.3cm)	S340-0120	**05-719-207**	24/95.85	S240-0120	**05-719-523B**	24/83.34	S140-0120	**05-719-449**	24/70.85

† *100 Series jars are not cleaned.*

*Trademark. See Trademark Reference.

Prices subject to change.

EP Scientific EP Preserved* Containers

Chemical preservatives for the environmental sampling field

- Most commonly requested chemical preservatives in choice of containers and sizes

INCLUDES:

Certificate of Analysis for container and reagent

12-100 Series

Container Style	Chemical Preservative	Mfr. No.	Cat. No.	Case of
Volatile Organics Analysis				
40mL Clear Glass Vial	0.2mL 1:1 Hydrochloric Acid	PP140-40CEP.2HA	**12-100-255**	72/131.70
40mL Clear Glass Vial	0.2mL 1:1 Hydrochloric Acid	PP140-40CDB.2HA	**12-100-184**	144/247.76
40mL Amber Glass Vial	0.2mL 1:1 Hydrochloric Acid	PP141-40AEP.2HA	**12-100-183**	72/127.89
40mL Amber Glass Vial	0.2mL 1:1 Hydrochloric Acid	PP141-40ADB.2HA	**12-100-185**	144/247.76
1L Amber Boston Round	5mL 1:1 Hydrochloric Acid	PP112-01A.5HA	**12-100-273**	12/71.02
Metals Analysis				
125mL HDPE Cylinder	0.5mL 1:1 Nitric Acid	PP156-125W.5NA	**12-100-341**	48/150.74
250mL HDPE Cylinder	1.0mL 1:1 Nitric Acid	PP157-250W.1NA	**12-100-186**	24/81.70
500mL HDPE Cylinder	2.0mL 1:1 Nitric Acid	PP151-500W.2NA	**12-100-187**	24/92.81
1L HDPE Cylinder	5.0mL 1:1 Nitric Acid	PP150-01W.5NA	**12-100-344**	12/58.53
Nitrate/Nitrite, Chemical Oxygen Demand, Oil and Grease/TPH Analysis				
250mL Clear Glass Boston Round	0.5mL 1:1 Sulfuric Acid	PP114-250A.5SA	**12-100-188**	12/55.63
1L Clear Glass Boston Round	5.0mL 1:1 Sulfuric Acid	PP112-01A.5SA	**12-100-189**	12/68.97
Cyanides Analysis				
500mL HDPE Cylinder	1.0mL 10 Normal Sodium Hydroxide	PP151-500W.1SH	**12-100-192**	24/92.81

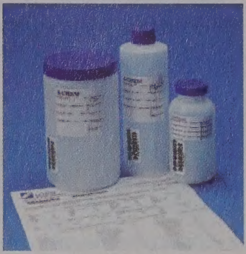
LOOKING FOR PRESAMPLING CONTAINERS?

EP Scientific offers many presampling containers not listed here. For custom quotes and help determining the correct amount of preservative for your specific containers and needs, contact your Fisher Scientific Customer Service Representative.

I-Chem* High-Density Polyethylene Jars, Bottles, and Packers

Meet or exceed U.S. EPA analyte specifications and detection/quantitation limits for applications like metal analyses

- 300 Series HDPE containers
- Bar-coded labels assist data collection; can be used with automated sample tracking systems
- "3 of 9" barcode format—the recognized standard for environmental field data collection
- Label encodes unique identification and production numbers for traceability
- Virgin container from each lot retained for one year should additional testing be required
- Variety of styles and sizes to meet testing requirements
- Polypropylene caps included



05-719-239, -145, -151

INCLUDES:

Certificate of Analysis and listing of all analytes with detection/quantitation limits.

Capacity	Dia. × H	Mfr. No.	Cat. No.	Case of
Cylinder Round				
8 oz. (250mL)	2 × 6⅛" (5.1 × 15.6cm)	313-0250	**05-719-146**	24/46.51
16 oz. (500mL)	2⅝ × 7⅜" (6.7 × 18.7cm)	313-0500	**05-719-145**	24/55.39
32 oz. (1L)	3⅛ × 9$\frac{9}{16}$" (7.9 × 24.3cm)	313-1000	**05-719-88**	12/32.76
Wide-Mouth Jars				
8 oz. (250mL)	2⅞ × 3$\frac{7}{16}$" (7.3 × 8.7cm)	311-0250	**05-719-245**	48/126.29
16 oz. (500mL)	3¾ × 4⅝" (9.5 × 11.8cm)	311-0500	**05-719-242**	24/82.95
32 oz. (1L)	3⅝ × 6⅝" (9.2 × 16.8cm)	311-1000	**05-719-239**	12/51.24
Boston Round Style				
4 oz. (125mL)	1¾ × 4$\frac{5}{16}$" (4.4 × 11cm)	319-0125	**05-719-151**	48/105.28
16 oz. (500mL)	3 × 6$\frac{9}{16}$" (7.6 × 16.7cm)	319-0500	**05-719-251**	24/89.49
32 oz. (1L)	3½ × 8⅝" (8.9 × 21.9cm)	319-1000	**05-719-248**	12/46.65
Wide-Mouth Packers				
8 oz. (250mL)	2½ × 4⅜" (6.4 × 11.1cm)	312-0250	**05-719-149B**	24/44.31
16 oz. (500mL)	2$\frac{13}{16}$ × 6" (7.1 × 15.2cm)	312-0500	**05-719-149C**	24/70.12
32 oz. (950mL)	3¾ × 7" (9.5 × 17.8cm)	312-0950	**05-719-149D**	12/39.78

I-Chem Certified* High-Density Polyethylene Nalgene* Containers

Standard-format bar-code labels attached to each container

- Excellent for soil, sludge or sediment samples
- Bar code can be used with automated sample tracking systems to assist in environmental field data collection
- Choose wide-mouth clear or amber, or narrow-mouth clear polyethylene bottles

COMPLIANCE:
I-Chem Certified* to meet the EPA's Performance Based Specifications for metals analysis and water quality parameters.

05-719-358E, -358C, -358F, -358D

		Wide Mouth			Narrow Mouth		
Capacity	**Dia. × H**	**Mfr. No.**	**Cat. No.**	**Case of**	**Mfr. No.**	**Cat. No.**	**Case of**
Clear							
4 oz. (125mL)	2 × 3⅞"H (5 × 9.8cm)	N311-0125	**05-719-351**	72/110.10	N319-0125	**05-719-358C**	72/108.61
8 oz. (250mL)	2⅜ × 5⅛"H (6 × 13cm)	N311-0250	**05-719-353**	72/136.01	N319-0250	**05-719-358D**	72/134.01
16 oz. (500mL)	$2\frac{15}{16}$ × 6⅝"H (7.5 × 16.8cm)	N311-0500	**05-719-349**	48/109.56	N319-0500	**05-719-358E**	48/107.51
32 oz. (1000mL)	$3\frac{9}{16}$ × $7\frac{11}{16}$"H (9 × 19.5cm)	N311-1000	**05-719-357**	24/82.40	N319-1000	**05-719-358F**	24/76.01
Amber							
4 oz. (125mL)	2 × 3⅞"H (5 × 9.8cm)	N301-0125	**05-719-339**	72/131.15	----	----	----
8 oz. (250mL)	$2\frac{7}{16}$ × $5\frac{3}{16}$"H (6.2 × 13.2cm)	N301-0250	**05-719-341**	72/162.72	----	----	----
16 oz. (500mL)	$2\frac{15}{16}$ × 6⅝"H (7.5 × 16.8cm)	N301-0500	**05-719-343**	48/126.83	----	----	----
32 oz. (1L)	$3\frac{9}{16}$ × $7\frac{11}{16}$"H (9 × 19.5cm)	N301-1000	**05-719-345**	24/104.74	----	----	----

I-Chem* Field-Temp* Cooler Thermometer

Designed for quick, accurate temperature readings from environmental shipping coolers

- Mercury free
- Encased in I-Chem 40mL vial filled with deionized water
- Engraved with unique serial number traceable to NIST* standards; useful for tracking purposes

INCLUDES:
Certificate of NIST traceability

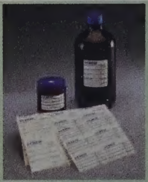
05-719-530

Temperature Range	Subdiv.	Mfr. No.	Cat. No.	Each
-10° to +20°C	0.5°C	ER-0040	**05-719-530**	24.28

ACCESSORIES

I-Chem* Container Labels

- For I-Chem jars, bottles and containers


05-719-333, -334, -338

For	L × W	Mfr. No.	Cat. No.	Pack of 96
Paper Container Labels				
All 20, 40, and 60mL vials	1¼ × $2\frac{5}{16}$" (3.1 × 5.9cm)	502	**05-719-334**	19.30
All 40 and 60mL vials	2½ × $2\frac{5}{16}$" (6.4 × 5.9cm)	501	**05-719-338**	22.73
Vinyl Container Labels				
All 40 and 60mL vials	2½ × $2\frac{5}{16}$" (6.4 × 5.9cm)	503	**05-719-333**	22.73

ACCESSORIES

I-Chem* Environmental Custody Seals

- For I-Chem jars, bottles and containers
- Provide an extra measure of security and complement your chain-of-custody procedures
- Cannot be removed without destroying the label

05-719-337

L × W	Mfr. No.	Cat. No.	Case of 100
1 × 7" (2.5 × 18cm)	500	**05-719-337**	23.66

I-Chem* Bulk-Pack HDPE Bottles

Durable general-purpose bottles

- Made from clear HDPE with no special processing or certification
- Conveniently packaged in bulk quantities

ORDERING INFORMATION:
Purchase caps separately.

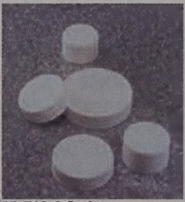
05-712-224, -214, -225

Capacity	Cap No.	Mfr. No.	Cat. No.	Case of
Cylinder Rounds				
8 oz. (250mL)	05-712-222	013-0250BP	**05-712-214**	230/47.62
16 oz. (500mL)	05-712-223	013-0500BP	**05-712-225**	162/62.46
32 oz. (1000mL)	05-712-223	013-1000BP	**05-712-224**	77/35.43
Wide-Mouth Packers				
4 oz. (120mL)	05-712-217	012-0120BP	**05-712-200**	500/85.47
8 oz. (250mL)	05-712-219	012-0250BP	**05-712-212**	250/71.22
16 oz. (500mL)	05-712-215	012-0500BP	**05-712-213**	180/82.05
32 oz. (950mL)	05-712-215	012-0950BP	**05-712-216**	90/110.51

I-Chem* Bulk-Pack Caps

- Foam-lined caps made to fit I-Chem Bulk-Pack HDPE Bottles.
- Made from white polypropylene with no special processing or certification

ORDERING INFORMATION:
Conveniently packaged in bulk quantities.


05-712-2 Series

Screw Cap Size	Mfr. No.	Cat. No.	Case of
24mm-410	067-2410WBP	**05-712-222**	250/37.71
28mm-410	067-2810WBP	**05-712-223**	200/37.13
38mm-400	067-3800WBP	**05-712-217**	500/46.42
48mm-400	067-4800WBP	**05-712-219**	250/43.52
53mm-400	067-5300WBP	**05-712-215**	200/39.45

Nalgene* Wide-Mouth EP Tox/TCLP Bottle

Specially designed for U.S. EPA Method 1311: Toxicity Characteristic Leaching Program (TCLP)

- 2.2L temperature-resistant PTFE resin FEP bottle has wide mouth for testing large-sized samples
- Ideal at high and low temperatures for trace metal analysis and applications with organic solvents
- Natural color permits easy viewing of sample
- Autoclavable
- Leakproof†
- PTFE resin-lined polypropylene caps included

NOTE:
Completely disengage threads before autoclaving.

02-924-15H

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of 2
2.2L	100mm-400	2101 2200	**02-924-15H**	300.56	400.75

† For definition of "leakproof," see p. 178.

Nalgene* Narrow-Mouth HDPE Sample Bottles

Suitable for long-term storage

Single-use, environmental sampling bottles, guaranteed leakproof† for safe sampling, shipping and storage.

- Break-resistant translucent HDPE construction
- Not precleaned
- Polypropylene caps attached

ORDERING INFORMATION:
Conveniently packaged in bulk quantities.

NOTE:
Direct UV exposure should be avoided.

03-313-5C, -5D

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
4 oz. (125mL)	24mm	33 2089 0004	**03-313-5A**	500/339.50
8 oz. (250mL)	24mm	33-2089-0008	**03-313-5B**	250/244.25
16 oz. (500mL)	28mm	33-2089-0016	**03-313-5C**	125/181.75
32 oz. (1000mL)	38mm-430	33-2089-0032	**03-313-5D**	50/114.25

† For definition of "leakproof," see p. 178.

Nalgene* Wide-Mouth HDPE Sample Bottles

Wide mouth makes cleaning easier

Single-use, environmental sampling bottles guaranteed leakproof† for safe sampling, shipping and storage.

- Break-resistant translucent HDPE construction
- Suitable for long-term storage
- Not supplied precleaned
- Polypropylene caps attached

ORDERING INFORMATION:
Packaged in bulk quantities.

NOTE:
Direct UV exposure should be avoided.

Left to right: 03-313-6A, -6C, -6D, -6B

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
4 oz. (125mL)	38mm	33-2189-0004	**03-313-6A**	500/382.00
8 oz. (250mL)	43mm	33-2189-0008	**03-313-6B**	250/289.25
16 oz. (500mL)	53mm	33-2189-0016	**03-313-6C**	125/209.75
32 oz. (1000mL)	63mm	33-2189-0032	**03-313-6D**	50/137.00

† *For definition of "leakproof," see p. 178.*

FLUORINATED

Nalgene* HDPE Bottle with Fluorinated Surface

Provides improved barrier properties, reduced solvent absorption and penetration

Enhances long-term performance and prevents permeation loss.

- Safe, durable, fluorinated HDPE bottle has fluorocarbon surface, inside and out
- Usable for toxic sample containment and with most acids, alkalis, and aggressive organic solvents
- Leakproof†
- Fluorinated white polypropylene screw caps included

02-925-5

Capacity	Mfr. No.	Cat. No.	Each	Case of 6
½ gal. (2L)	2124 0005	**02-925-5**	26.06	104.25

† *For definition of "leakproof," see p. 178.*

Nalgene* HDPE Fluorinated Bottles and Carboys

Enhance long-term performance, prevent permeation loss

Improved barrier properties, reduced solvent absorption and penetration.

- Fluorocarbon surfaces inside and out
- Heavy-duty walls are safe, durable, resistant to splitting and punctures
- Useful with most acids, alkalis and aggressive organic solvents
- Leakproof†
- Available with narrow or wide mouths
- HDPE screw caps included

Left to right: 03-312-19, -13, -15, -14, -22, -23, -20

Capacity	Mfr. No.	Cat. No.	Price	Case of
Narrow Mouth				
8 oz. (250mL)	2097-0008	**03-312-13**	Pk. of 12/42.82	6 Pk./171.25
16 oz. (500mL)	2097-0016	**03-312-14**	Pk. of 12/60.00	4 Pk./160.00
32 oz. (1000mL)	2097-0032	**03-312-15**	Pk. of 6/52.97	4 Pk./141.25
64 oz. (2000mL)	2097-0005	**03-312-16**	Ea./27.38	6/109.50
1 gal. (4L)	2097-0010	**03-312-17**	Ea./37.69	6/150.75
2½ gal. (10L)	2097-0020	**03-312-18**	Ea./91.68	6/366.75
5 gal. (20L)	2097-0050	**03-312-19**	Ea./126.09	4/336.25
Wide Mouth				
4 oz. (100mL)	2197-0004	**03-312-20**	Pk. of 12/40.13	6 Pk./160.50
8 oz. (250mL)	2197-0008	**03-312-21**	Pk. of 12/60.94	6 Pk./243.75
16 oz. (500mL)	2197-0016	**03-312-22**	Pk. of 12/84.09	4 Pk./224.25
32 oz. (1000mL)	2197-0032	**03-312-23**	Pk. of 6/76.50	4 Pk./204.00

† *For definition of "leakproof," see p. 178.*

INTERNATIONAL SHIPPING

Nalgene* HDPE Wide-Mouth IP2 Bottles

Safe, durable, resistant to splitting and punctures

- Leakproof† HDPE bottles
- Wide mouths for easy filling with dry or liquid materials
- IP2 marking, material, volume, registration notch and brand name molded into bottom
- Polypropylene screw caps included

COMPLIANCE:
Meet international hazardous material shipping standards which incorporate United Nations Performance-Oriented Packaging regulations.

Left to right: 02-923-6, -9, -8, -7

Capacity	Mfr. No.	Cat. No.	Pack of	Case of
4 oz. (125mL)	2199-0004	**02-923-6**	12/34.32	6 Pk./137.25
8 oz. (250mL)	2199-0008	**02-923-7**	12/51.94	6 Pk./207.75
16 oz. (500mL)	2199-0016	**02-923-8**	12/71.90	4 Pk./191.75
32 oz. (1000mL)	2199-0032	**02-923-9**	6/65.34	4 Pk./174.25

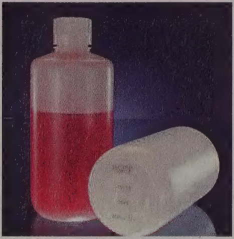
† *For definition of "leakproof," see p. 178.*

Nalgene* HDPE Narrow-Mouth IP2 Bottles

Meet international hazmat shipping standards

Designed to resist splitting and puncturing from shipping shocks.

- Heavy-duty walls; leakproof†
- IP2 marking, material, volume, registration notch and brand name molded into bottom
- Polypropylene screw caps included



03-312-11

COMPLIANCE:

Meet international hazardous material shipping standards which incorporate United Nations Performance-Oriented Packaging regulations.

Capacity	Mfr. No.	Cat. No.	Price	Case of
1 oz. (30mL)	2099-0001	**03-312-6**	Pk. of 12/18.38	6 Pk./73.50
2 oz. (60mL)	2099-0002	**03-312-7**	Pk. of 12/18.56	6 Pk./74.25
4 oz. (125mL)	2099-0004	**03-312-8**	Pk. of 12/24.19	6 Pk./96.75
8 oz. (250mL)	2099-0008	**03-312-9**	Pk. of 12/34.69	6 Pk./138.75
16 oz. (500mL)	2099-0016	**03-312-10**	Pk. of 12/49.13	4 Pk./131.00
32 oz. (1000mL)	2099-0032	**03-312-11**	Pk. of 6/43.69	4 Pk./116.50
1 gal. (4L)	2099-0010	**03-312-12**	Ea./31.25	6/125.00

† For definition of "leakproof," see p. 178.

MEDIA

Pyrex* Low-Actinic Media/Solution Bottles

Ideal for storing and transporting light-sensitive materials

Small Wide-Mouth Bottles

- Graduated in mL increments
- Permanent white enamel graduations and marking spots
- Thread size, GL45; neck opening, 29mm I.D.
- Orange autoclavable polypropylene plug-seal caps (06-414-2A) with replaceable drip-free clear pouring rings (06-414-2B)

Large Narrow-Mouth Bottles

- Tooled necks for increased mechanical strength and uniform stopper fit
- Accept No. 12 rubber stoppers (not included)
- Available in two sizes: conventional 9.5L bottle and carboy-shaped 19L size

06-423-2B

COMPLIANCE:

Large narrow-mouth bottles meet ASTM* E 438, Type I, Class A requirements.

Capacity	Dia. × H	Mfr. No.	Cat. No.	Case of
Small Wide-Mouth				
25mL	36.5 × 70mm	51395 25	**13-646-20**	4/64.77
50mL	46 × 88mm	51395 50	**13-646-21**	4/67.87
100mL	56 × 100mm	51395 100	**06-423-2A**	4/79.96
250mL	70 × 138mm	51395 250	**06-423-2B**	4/118.56
500mL	86 × 176mm	51395 500	**06-423-2C**	4/144.38
1000mL	101 × 225mm	51395 1L	**06-423-2D**	4/167.40
Large Narrow-Mouth				
9.5L	187 × 470mm	51595-2X	**08-549-13A**	1/216.61
19L	292 × 508mm	51595-5	**08-549-13C**	1/310.16

Pyrex* Brand Reusable Media/ Solution Bottles

Heavy duty, for media, buffers, aqueous, and nonaqueous solutions

- Graduated in mL increments
- Orange autoclavable polypropylene plug-seal caps and drip-free clear polypropylene pouring rings, that withstand temperatures up to 140°C (284°F), are included on sizes 50 mL through 10L

NOTE:

Optional red melamine caps and PTFE rings are available for applications requiring temperatures to 180°C (356°F).

Left to right: 06-414-1D, 06-423A, 06-414-1A, 06-414-1C, 06-423A with 06-414-2C caps

Capacity	Mfr. No.	Cat. No.	Case of
25mL†	1395 25	**06-423A**	10/77.92
50mL†	1395 50	**06-423B**	10/77.38
100mL	1395 100	**06-414-1A**	10/79.61
250mL	1395 250	**06-414-1B**	10/88.48
500mL	1395 500	**06-414-1C**	10/105.68
1L	1395 1L	**06-414-1D**	10/129.75
2L	1395 2L	**06-414-1E**	10/341.74
5L	1395 5L	**06-414-1F**	1/119.21
10L	1395 10L	**06-414-1G**	1/183.40

† Replacement caps not available.

WARNING

Bottles larger than 2L should not have caps tightened immediately after autoclaving, nor should they be used with bottle-top filter units or other applications involving vacuum pressure, as breakage may occur.

ACCESSORIES

Caps for Pyrex* Laboratory Bottles

- Choose orange polypropylene caps for temperatures to 140°C (284°F)
- Red PBT caps for temperatures to 180°C (356°F).

Style	Mfr. No.	Cat. No.	Case of
Orange Plug-seal	1395 45LTC	**06-414-2A**	20/50.06
Red Plug-seal	1395 45HTC	**06-414-2C**	10/95.38

Pyrex* Reusable Laboratory Bottle Pouring Rings

- As supplied with Pyrex media/solution bottles
- Choose clear rings for temperatures to 140°C (284°F)
- Red rings for temperatures to 180°C (356°F)

Color	Mfr. No.	Cat. No.	Case of 50
Clear‡	1395 45LTR	**06-414-2B**	46.63
Red	1395 45HTR	**06-414-2D**	107.01

‡ As supplied with Pyrex Laboratory Bottles.

Pyrex* Square Media/Solution Bottles and Caps

Require 13–20% less space than round bottles

- Heavy-duty borosilicate glass
- Slight convex curvature of square sides minimizes glass-to-glass contact during sterilization and creates easy-to-reach corners for cleaning
- White enamel graduations, large marking spot, and molded glass ridge indicate full capacity
- Linerless, orange, autoclavable polypropylene plug-seal caps and drip-free clear polypropylene pouring rings that withstand temperatures up to 140°C (284°F) included

Left to right: 06-414-8, -6, -7 with 06-414-11 caps

NOTE:

For syringe sampling or reagent introduction, use with polybutylene terephthalate (PBT) caps with aperture (sold separately).

Capacity	Screw Thread Size	W × H†	Mfr. No.	Cat. No.	Case of 10
100mL	GL32	50 ×109mm	1396-100	**06-414-5**	91.43
250mL	GL45	64 × 143mm	1396-250	**06-414-6**	102.40
500mL	GL45	78 × 181mm	1396-500	**06-414-7**	127.72
1000mL	GL45	94 × 222mm	1396-1L	**06-414-8**	166.26

† Height includes cap.

WARNING

Bottles should not have caps tightened immediately after autoclaving, nor should they be used for vacuum applications, as breakage may occur.

ACCESSORIES

Caps for Pyrex* Media Bottles

- High-temperature (180°C [356°F]) red PBT caps with opening to accommodate septa or for reagent addition

Screw Thread Size	Mfr. No.	Cat. No.	Case of 10
GL25	1395-25HTSC	**06-414-11**	33.47
GL32	1395-32HTSC	**06-414-10**	38.96
GL45	1395-45HTSC	**06-414-9**	67.28

PyrexPlus* Media/Solution Bottles

Protective PVC coating helps to prevent glass from shattering

Heavy-duty borosilicate glass bottles are ideal for storage as well as for mixing and sampling.

- Autoclavable up to 121°C (249°F); resistant to thermal shock
- Teal enameled graduations and marking spot
- Glass bead indicates full capacity
- Autoclavable, one-piece teal polypropylene plug-seal cap with drip-free pouring ring included

06-423-3B

ORDERING INFORMATION:

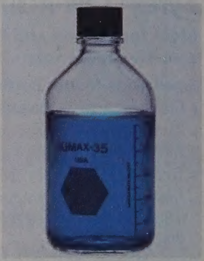
Thread size, GL45. Neck opening, 29mm I.D. For replacement caps and pouring rings, see p. 203.

Capacity	Dia. × H	Mfr. No.	Cat. No.	Case of 4
100mL	56 × 100mm	61626 100	**06-423-3A**	83.13
250mL	70 × 138mm	61626 250	**06-423-3B**	102.87
500mL	86 × 176mm	61626 500	**06-423-3C**	131.29
1000mL	101 × 225mm	61626 1L	**06-423-3D**	160.92
2000mL	136 × 262mm	61626 2L	**06-423-3E**	248.63

Kimax* Media Bottles

Designed for easy pouring and handling

- Available with or without graduations
- 1000mL size features finger grips molded into the side wall and is available with two GPI thread sizes
- All bottles have screw-thread finish
- With or without black phenolic closures with 14B rubber liners



06-421-8

Capacity	Dia. × H	GPI Thread	Mfr. No.	Cat. No.	Case of
Graduated with 14B white rubber-lined closures					
125mL	55 × 123mm	33mm-430	61110R 125	**06-421-7**	48/165.98
500mL	88 × 192mm	33mm-430	61110R 500	**06-421-8**	24/162.48
1000mL	102 × 225mm	38mm-430	61110R 1000	**06-421-9**	12/101.11
1000mL	102 × 226mm	33mm-430	61111R 1000	**06-421-10**	12/103.26
Graduated with PTFE-faced 14B white rubber-lined closures					
125mL	55 × 123mm	33mm-430	61110T 125	**06-421-11**	48/177.39
500mL	88 × 192mm	33mm-430	61110T 500	**06-421-12**	24/175.82
1000mL	102 × 225mm	38mm-430	61110T 1000	**06-421-13**	12/108.32
1000mL	102 × 226mm	33mm-430	61111T 1000	**06-421-14**	12/109.63
Ungraduated without closures					
125mL	55 × 119mm	33mm-430	61100 125	**06-421-1**	48/89.31
250mL	70 × 147mm	33mm-430	61100 250	**06-421-3**	48/148.36
500mL	88 × 188mm	33mm-430	61100 500	**06-421-2**	24/113.06
1000mL	102 × 222mm	38mm-430	61100A 1000	**06-421-5**	12/73.85
1000mL	102 × 222mm	33mm-430	61100 1000	**06-421-6**	12/73.85
Graduated without closures					
125mL	55 × 119mm	33mm-430	61110 125	**06-421-15**	48/127.54
250mL	70 × 147mm	33mm-430	61110 250	**06-421-17**	48/184.84
500mL	88 × 188mm	33mm-430	61110 500	**06-421-16**	24/139.50
1000mL	102 × 222mm	38mm-430	61110A 1000	**06-421-19**	12/88.66
1000mL	102 × 222mm	33mm-430	61110 1000	**06-421-4**	12/88.66

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*Trademark. See Trademark Reference.

Kimax* GL 45 Media/Storage Bottles

Perfect for mixing, storing or transporting culture media, chemicals or solvents

- Autoclavable Type 1 borosilicate glass
- Permanent white-enamel graduations and marking spots
- Approx. 30mm I.D. GL 45 screw-thread opening
- Linerless blue polypropylene cap autoclavable to 140°C (284°F) and replaceable, drip-free, clear polypropylene pour ring included

02-542C

ORDERING INFORMATION:

Cap and ring also sold separately; contact your Fisher Scientific Customer Service Representative.

Capacity	Grad. Range	Grad. Interval	Approx. O.D. × H	Mfr. No.	Cat. No.	Case of
100mL	20-80mL	10mL	56 × 100mm	14395 100	**02-542A**	10/77.20
250mL	50-200mL	25mL	70 × 138mm	14395 250	**02-542B**	10/86.23
500mL	100-400mL	50mL	86 × 176mm	14395 500	**02-542C**	10/102.88
1000mL	100-900mL	50mL	101 × 225mm	14395-1000	**02-542D**	10/124.70
2000mL	400-1800mL	100mL	136 × 262mm	14395 2000	**02-542E**	4/131.89
5000mL	1000-4500mL	250mL	186 × 355mm	14395 5000	**06-421-30**	1/108.73
10,000mL	2000-9000mL	500mL	234 × 435mm	14395 10000	**06-421-31**	1/187.72

ACCESSORIES

Kimax* Caps for Media Bottles

Choose black phenolic caps with either plain 14B rubber liners or PTFE-faced 14B rubber liners; or polypropylene caps with bonded PTFE-faced silicone liners to eliminate glue contamination and loose liners.

GPI Thread	Mfr. No.	Cat. No.	Case of
Polypropylene, with bonded PTFE-faced silicone liners			
33mm-430	73808 33430	**03-340-30**	48/40.09
38mm-430	73808 38430	**03-340-31**	48/44.02
Phenolic, with PTFE-faced 14B white rubber liners			
33mm-430	73802 33430	**06-422-1A**	144/168.50
38mm-430	73802 38430	**06-422-1B**	144/193.87
Phenolic, with 14B rubber liners			
33mm-430	73803 33430	**06-422-2A**	144/88.31
38mm-430	73803 38430	**06-422-2B**	144/112.94

Nalgene* PETG Square Media Bottles

Space-saving square design with molded-in graduations

Feature transparency and reduced permeability to CO_2/O_2—perfect for media storage.

- Made from durable, break-resistant polyethylene terephthalate copolyester, glycol modified (PETG)
- White closures have heat-shrink band around closure and neck, providing tamper-evident seal for assurance of sterility
- 2L size has molded-in handgrips.
- High-density polyethylene screw caps included

Left to right (back): 03-312-3, 03-311-1X, 03-312-5, 03-312-1; front: 03-311-1W, -1V

ORDERING INFORMATION:

Packed in shrink-wrapped trays.

CERTIFICATIONS:

Bottles and closures are certified radiation sterilized (SAL 10^{-6}), nonpyrogenic, and noncytotoxic.

Capacity	Mfr. No.	Cat. No.	Case of
With White Closure			
1 oz. (30mL)	2019-0030	**03-311-1V**	96/152.75
2 oz. (60mL)	2019-0060	**03-311-1W**	96/197.75
4 oz. (125mL)	2019-0125	**03-312-1**	48/139.50
8 oz. (250mL)	2019-0250	**03-312-3**	48/172.25
16 oz. (500mL)	2019-0500	**03-312-4**	24/124.25
32 oz. (1L)	2019-1000	**03-312-5**	24/165.00
64 oz. (2L)	2019-2000	**03-311-1X**	12/141.50
With Natural Closure			
1 oz. (30mL)	342020-0030	**22-030-595**	280/290.00
2 oz. (60mL)	342020-0060	**22-030-596**	200/250.25
4 oz. (125mL)	342020-0125	**09-923-16A**	96/129.75
8 oz. (250mL)	342020-0250	**09-923-16E**	60/127.00
16 oz. (500mL)	342020-0500	**09-923-16B**	40/96.30
32 oz. (1000mL)	342020-1000	**09-923-16C**	24/115.50
64 oz. (2000mL)	342020-2000	**09-923-16D**	12/125.75

Nalgene* B³ Media Bag* System

Sterile, ready to use, disposable

Gamma-sterilized (to 10^{-6} Sterility Assurance Level), single-use, biocompatible bags. Ideal for storing, delivering, and handling biomedia and critical reagents.

01-814-220

- Comprised of multilayered film with high barrier properties for UV light, CO_2, O_2 and water vapor
- Traceable by manufacturing lot number embossed on bag
- Standard three-port filling/ evacuation system includes two EVA tubing ports with ⅜" (9.5mm) hose barbs and one septum port.
- Built-in handle

ORDERING INFORMATION:
Individually sealed in double-lined cartons for cleanroom use.

COMPLIANCE:
Film, tubing and hose barbs comply with USP Class VI, USP (661) Noncytotoxic, Nonpyrogenic, and European Pharmacopeia Abnormal Toxicity testing.

Capacity	Mfr. No.	Cat. No.	Case of 10
16 oz. (500mL)	342950-0500	**01-814-220**	234.50
1⅓ gal. (5L)	342950-0010	**01-814-221**	271.75
2⅔ gal. (10L)	342950-0020	**01-814-222**	292.25
5¼ gal. (20L)	342950-0050	**01-814-223**	332.50

Wheaton Nongraduated Media/ Lab Bottles

Autoclavable and versatile

Borosilicate glass bottles ideal for mixing and storing culture media when fitted with a rubber-lined screw cap, or for use with distilled water, analytical standards and reagents when fitted with a polyethylene-lined screw cap.

06-407, -412, 06-451-278, 06-410

- Large opening, special lip and sloping shoulders for easy pouring, cleaning
- Clear glass for maximum content visibility or amber glass for light-sensitive materials
- Autoclavable bottles and rubber-lined caps

COMPLIANCE:
Meet USP Type 1 standard.

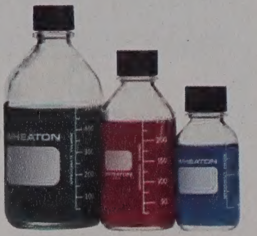
Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
Clear glass without cap				
125mL	33mm-430	219415	**06-407**	48/124.54
250mL	33mm-430	219417	**06-408**	48/192.57
500mL	33mm-430	219419	**06-409**	24/132.34
1000mL	38mm-430	219420	**06-410**	24/188.97
Clear glass with polyethylene-lined cap				
125mL	33mm-430	219495	**06-411**	48/172.65
250mL	33mm-430	219497	**06-412**	48/235.71
500mL	33mm-430	219499	**06-451-278**	24/160.82
1000mL	38mm-430	219500	**06-451-279**	24/233.99
Clear glass with rubber-lined cap				
125mL	33mm-430	219575	**06-414**	48/153.05
250mL	33mm-430	219577	**06-415**	48/211.49
500mL	33mm-430	219579	**22-263 008**	24/152.39
1000mL	38mm-430	219580	**06-451-280**	24/234.75
Amber glass without cap				
125mL	33mm-430	219885	**06-451-290**	48/255.05

Wheaton Graduated Media/Lab Bottles

Rugged space-savers

- Heavy walls prevent breakage
- Sturdier than Erlenmeyer flasks
- Smaller diameter at base conserves space in sterilizers and freezers
- Large opening, special lip, sloping shoulders
- Graduated in mL to show approximate volumes

COMPLIANCE:
Meets USP Type 1 requirements.



06-404D, -404B, -404A

Capacity	Dia. × H	Mfr. No.	Cat. No.	Each	Case of
Without cap (Autoclavable)					
125mL	55 × 123mm	219435	**03-439-67D**	----	48/135.63
250mL	67 × 152mm	219437	**03-439-67E**	----	48/193.08
500mL	88 × 192mm	219439	**03-439-67F**	----	24/148.91
1000mL	103 × 235mm	219440	**03-439-67G**	----	24/187.55
With rubber-lined cap (Autoclavable)					
125mL	55 × 123mm	219755	**06-404A**	4.52	48/173.54
250mL	67 × 152mm	219757	**06-404B**	5.78	48/222.12
500mL	88 × 192mm	219759	**06-404D**	8.89	24/170.76
1000mL	103 × 235mm	219760	**06-404E**	11.06	24/212.40
With PTFE-faced, rubber-lined cap (Autoclavable)					
125mL	55 × 123mm	219815	**06-404F**	----	48/186.03
250mL	67 × 152mm	219817	**06-404G**	----	48/231.85
500mL	88 × 192mm	219819	**02-940-20**	----	24/184.65
1000mL	103 × 235mm	219820	**06-404-1**	12.00	24/230.39
With LDPE-lined phenolic cap (Not Autoclavable)					
125mL	55 × 123mm	219715	**06-451-281**	----	48/194.65
250mL	67 × 152mm	219717	**06-451-282**	----	48/261.94
500mL	88 × 192mm	219719	**06-451-283**	----	24/196.32
1000mL	103 × 235mm	219720	**06-451-284**	----	24/238.99

*Trademark. See Trademark Reference.

ACCESSORIES

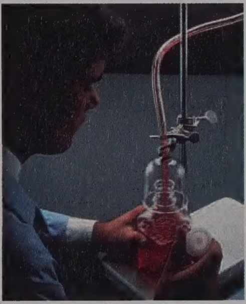
Caps for Wheaton Bottles

Black phenolic caps with screw thread; polyethylene- or rubber-lined.

Screw Cap Size	Mfr. No.	Cat. No.	Pack of 200
Polyethylene-lined cap			
33mm-430	240080	**06-450-7**	159.80
38mm-430	240081	**06-450-8**	186.93
Rubber-lined cap			
33mm-430	240280	**06-450-34**	164.47
38mm-430	240281	**06-450-35**	208.83

Nalgene* Polycarbonate Filling Bell

Ideal for use in microbiological and cell culture applications



09-751

Transparent, autoclavable filling bell fits most common media bottles. Use to transfer sterile media aseptically from large containers to media bottles or culture vessels.

- Nontoxic polycarbonate will not shatter
- Bell lip beaded for added strength
- Equipped with autoclavable polypropylene tubing adapter that accepts ¼, ⅜, and ½" I.D. (6, 9, and 13mm) tubing
- Bell I.D., 2⅞" (70mm)
- Dripless inner fill tube has length of 2½" (63mm); O.D., ⅜" (9mm); I.D., ¼" (6mm)

ORDERING INFORMATION:

Overall height with tubing adapter, 4½" (114mm).

Mfr. No.	Cat. No.	Each
DS03900070	**09-751**	33.00

Pyrex* Filling Bells

Ideal for aseptically filling culture tubes and bottles

- Rubber tubing is attached to top of tubulation while receiving vessel is placed inside bell
- Use with Pyrex aspirator bottles with bottom sidearm tubulation to aseptically dispense sterile media and solutions

11-850-07

O.D. × H	Tubulation O.D.	Mfr. No.	Cat. No.	Case of 2
2 × 3¾" (51 × 95mm)	⅜" (11mm)	3965-50	**11-850-07**	73.50

Pyrex* Filling Bells with Male Luer Tip

For aseptically filling small-necked flasks using syringe needles or cannulas

- Male Luer tip allows for aseptic filling of small-necked flasks using syringe needles or cannulas
- Rubber tubing is attached to top of tubulation while receiving vessel is placed inside bell
- Use with Pyrex aspirator bottles with bottom sidearm tubulation to aseptically dispense sterile media and solutions

11-850-08

O.D. × H	Tubulation O.D.	Mfr. No.	Cat. No.	Case of 2
¾ × 3⅛" (20 × 80mm)	⅜" (11mm)	3970-20	**11-850-09**	56.37
4¼ × 5½" (109 × 140mm)	½" (12.7mm)	3970-100	**11-850-08**	158.14

MICROBIOLOGY

Corning* Milk Dilution Bottles

Narrow- or wide-mouth borosilicate glass bottles with or without graduations

- Available ungraduated or graduated at standard 99mL with accuracy of ±1mL
- Threaded neck with screw cap
- Capacity: 5½ oz. (160mL)
- Autoclavable phenolic screw cap with glued-in rubber liner included

02-943-5

COMPLIANCE:

Meet requirements stated in *APHA Standard Methods for the Examination of Dairy Products*

Mouth	Mfr. No.	Cat. No.	Pack of 12	Case of 48
Graduated				
Narrow	1372 160	**02-944-5**	100.89	297.98
Wide	1373 160	**02-943-7**	119.69	354.56
Ungraduated				
Narrow	1367 160	**02-943-5**	72.33	212.84
Wide	1368 160	**02-943-6**	94.27	278.77

Corning* Coliform Sample Container

Automatically dechlorinates sample

- Sterile-by-process, disposable container comes with a tablet of sodium thiosulfate for dechlorination
- Snap-tight lid with locking arrow assures sterility has not been compromised; leaktight when sealed properly
- Tie-down leash on the cap assures it will stay closed during transit

09-730-91

ORDERING INFORMATION:

Also available without the sodium thiosulfate tablet for samples that do not require dechlorination.

INCLUDES:

Labels (09-730-91 only)

COMPLIANCE:

Fill line meets U.S. EPA tolerance requirements.

Description	Mfr. No.	Cat. No.	Case of 100
With Tablet	1700 100	**09-730-91**	60.96
Without Tablet	1705 100	**09-730-91A**	55.82

Kimax*-35 Milk Dilution Bottles

Designed from requirements for milk dilution bottles given in APHA Standard Methods for the Examination of Dairy Products

- Available plain or graduated at 99mL level with accuracy of ±1mL
- 5½ oz. (160mL) capacity, square 45 × 45mm cross section, smooth marking spot, and 28-400 GPI thread finish
- Autoclavable black phenolic screw cap with cemented-in rubber liner included

03-422-13

Style	Mfr. No.	Cat. No.	Case of 48
Plain	14915 160	**03-422-13**	211.68
Graduated	14925 160	**03-422-11**	294.24

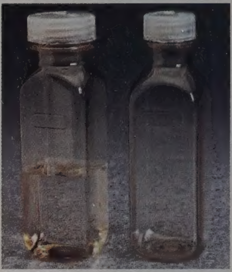
Nalgene* Dilution Bottles

Comply with *Standard Methods*

Choose from two types of dilution bottles in narrow- and wide-mouth configurations. Both include autoclavable, linerless polypropylene screw caps.

Polysulfone Dilution Bottles

- Ideal for use with food products
- Excellent chemical resistance to bases and weak acids
- Transparent, graduated at both 90mL (±1mL) for 0.1 dilutions and 99mL (±1mL) for 0.01 dilutions
- Withstand temperatures from -100° to +165°C (-148° to +329°F)



02-945-5C, -5A

NOTE: Do not autoclave with Tween* wetting agent or with media containing Tween wetting agent

Polypropylene Copolymer Dilution Bottles

- Contact-clear polypropylene copolymer resists effects of strong acids, alcohols and bases
- Temperature range from -40° to +121°C (-40° to +250°F)
- Graduated at 90 and 99mL
- Accurate to ±4mL
- Withstand repeated washing and autoclaving, even with Tween wetting agent

COMPLIANCE:

Comply with dilution methodology described in *Standard Methods for the Examination of Water and Wastewater (17th ed.)* and *Standard Methods for the Examination of Dairy Products (15th ed.)*

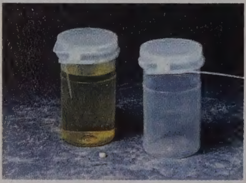
Cap Size	Capac. to Neck	Capac. to Brim	Mfr. No.	Cat. No.	Pack of 12	Case of 4 Pk.
Polysulfone Bottles						
28mm	200mL (6⅞ oz.)	210mL (7¼ oz.)	2500 0280	**02-945-5A**	115.59	308.25
38mm	205mL (7 oz.)	220mL (7⅜ oz.)	2500 0380	**02-945-5C**	135.66	361.75
Polypropylene Copolymer Bottles						
28mm	200mL (6⅞ oz.)	210mL (7¼ oz.)	2505 0280	**02-945-4A**	74.53	198.75
38mm	205mL (7 oz.)	220mL (7⅜ oz.)	2505 0380	**02-945-4B**	86.91	231.75

I-Chem* Security-Snap* BacT Bottles

Ideal for all types of bacteriological sampling, including coliform testing

Sterile, nontoxic polypropylene containers with a 10mg sodium thiosulfate tablet for Field-Ready* chlorinated sample collection, or without a tablet for situations in which chlorine is not present.

- Break-away security seal assures container sterility
- Security-Snap flip-top cap design helps prevent closure contamination
- Closure snaps down tightly with a positive snap
- Tethered sealing strap prevents tampering and spillage
- Use with I-Chem custody seals (05-719-337, order online)
- Clear and nonautofluorescent for chromogenic/fluorogenic substrate tests
- 140mL brim capacity meets 120mL minimum volume requirements
- 100mL fill line is accurate within ±2.5mL
- 1" (2.5cm) of headspace between fill line and closure



05-719-361, -362

COMPLIANCE:

Meet all requirements for microbiology sample containers (*EPA Manual for the Certification of Laboratories Analyzing Drinking Water*). Headspace permits mixing in accordance with EPA requirements for membrane filtration procedures.

Description	Mfr. No.	Cat. No.	Case of 250
With tablet	411G10R27	**05-719-361**	146.62
Without tablet	411 0125	**05-719-362**	135.34

*Trademark. See Trademark Reference.

Prices subject to change.

BD* Sterility Bottles

Glass sterility bottles available with a variety of media

- Transparent labels for easy viewing and identification of medium
- Labels are laminated acetate to resist alcohol or chlorine treatment for cleanroom use
- Prepared bottles for sterility testing and microbial limits

Wide-Mouth Bottles

- Openings are 48mm in diameter to accommodate bulky samples

DF9066-78-0, DF9082-74

ORDERING INFORMATION:
Supplied in packs of 10 bottles.

INCLUDES:
Certificate of Analysis

COMPLIANCE:
Conform to harmonized USP requirements.

Medium	Cap Type	Volume	Cat. No.	Pack of 10
Fluid A (0.1% Peptic Digest of Animal Tissue)	Septum w/Flip Cap	100mL	**DF9082-74**	56.80
	Septum/Screw Cap	300mL	**DF9065-78-0**	144.95
Fluid D (0.1% Peptic Digest of Animal Tissue and 0.1% Polysorbate 80)	Septum w/Flip Cap	100mL	**DF9083-74**	51.65
	Septum/Screw Cap	300mL	**DF9066-78-0**	144.95
Fluid Thioglycollate Medium	Wide Mouth	100mL	**DF9062-74-7**	59.30
	Septum w/Flip Cap	100mL	**B99108**	102.93
	Septum w/Large Screw Cap	100mL	**BB99417**	208.97
	Septum w/Large Screw Cap	500mL	**L99112**	238.61
Lactose Broth (Fluid Lactose Medium)	Wide Mouth	90mL	**DF9070-73**	80.55
Potato Dextrose Agar	Septum w/Large Screw Cap	500mL	**B299906**	200.74
Tryptic Soy Broth (Soybean-Casein Digest Agar Medium)	Wide Mouth	90mL	**DF9061-73**	90.00
	Wide Mouth	100mL	**DF9061-74-8**	61.05
Trypticase* Soy Broth	Septum w/Flip Cap	100mL	**B99107**	104.95
	Septum w/Large Screw Cap	500mL	**B99113**	239.92
R2A Agar	Septum w/Large Screw Cap	500mL	**222-273-15**	238.43
Standard Methods Agar	Screw Cap	200mL	**BB99094**	149.53
	Septum w/Large Screw Cap	500mL	**B99102**	277.53
Violet Red Bile Agar w/MUG	Septum w/Large Screw Cap	200mL	**L99128**	180.70

PETROLEUM TESTING

*Fisherbrand** Clear Oil Sample Bottle

For process sampling in the petrochemical and refinery industries

- Clear glass for easy viewing of contents
- 4 oz. (125mL)
- Cork plug included

02-911-472

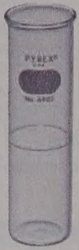
Cat. No.	Case of 144
02-911-472	538.26

Pyrex* Cloud and Pour Point Jar

For use in ASTM* procedures D 97, D 1500 and D 2500

- Cylindrical flat-bottom jar
- Graduation circle approximately 2" (51mm) above the bottom assists in sample measurement
- With heavy beaded rim

ORDERING INFORMATION:
Dimensions, (H × O.D.) 4¾ × 1⅜" (121 × 35mm).



13-416

Mfr. No.	Cat. No.	Case of 36
6902	**13-416**	378.82

Kimax* Graduated Cold Test Jar

For use in ASTM* procedures D 97 and D 2500

Method determines lowest temperature at which oil will pour and temperature at which solid substances crystallize.

- Cylindrical flat-bottom jar
- Sample level graduation mark 2⅛" (54mm) from inside bottom

ORDERING INFORMATION:
Dimensions, 4⅞ × 1⅜" (125 × 35mm)

13-415

Mfr. No.	Cat. No.	Pack of 12	Case of 36
32501 99	**13-415**	167.37	365.86

REAGENT

Pyrex* Reagent Bottles with Pyrex Hollow $ Stoppers

For storing reagents, sera, vaccines, colloidal solutions and similar liquids

- Plain narrow-mouth bottles with ground necks

02-940C

Capacity	Stopper $ No.	Mfr. No.	Cat. No.	Pack of	Case of
4 oz. (125mL)	19	1500 125	**02-940B**	6/152.82	8 Pk./900.06
8 oz. (250mL)	19	1500 250	**02-940C**	1/29.76	36/704.01
17 oz. (500mL)	24	1500 500	**02-940D**	1/38.51	24/605.84
34 oz. (1000mL)	29	1500 1L	**02-940E**	1/63.04	24/1040.91
68 oz. (2000mL)	29	1500 2L	**02-940F**	1/144.71	6/608.42

PyrexPlus* Reagent Bottles with Pyrex* Hollow $ Stoppers

Feature special coating for added safety

- Plain narrow-mouth bottles
- Combine the chemical inertness of Pyrex borosilicate glass with a special polymer coating for added safety
- Fully autoclavable to 121°C (250°F) and resistant to thermal shock

NOTE:
Do not place over direct heat or flame.

02-886-6

Capacity	Stopper $ No.	Mfr. No.	Cat. No.	Each	Case of
4 oz. (125mL)	19	61500 125	**02-886-3**	----	12/421.93
8 oz. (250mL)	19	61500 250	**02-886-4**	42.54	6/175.12
17 oz. (500mL)	24	61500 500	**02-886-5**	54.19	6/223.42
1 qt. (1L)	29	61500 1L	**02-886-6**	88.22	6/364.63
1/2 gal. (2L)	29	61500 2L	**02-886-7**	136.47	----

Kimax* Reagent Bottles

Tooled top and narrow mouth for accurate rubber stopper fit

- Borosilicate glass
- Stoppers available separately; order online at **www.fishersci.com**

COMPLIANCE:
Meet ASTM* E 438-92, Type I, Class A requirements.

02-886-8H

Capacity	Neck I.D.	Stopper $ No.	Mfr. No.	Cat. No.	Case of
1000mL	27mm	6	15093 1000	**02-886-8D**	6/83.33
2000mL	27mm	6	15093 2000	**02-886-8E**	4/272.46
5000mL	42mm	10	15093 10000	**02-886-8F**	1/151.42
10L	58mm	11.5	15093 10000	**02-886-8G**	1/220.09
20L	58mm	11.5	15093 20000	**02-886-8H**	1/321.63

Kimax* Reagent Bottles with Flathead Color-Coded PTFE $ Stoppers

- Narrow-mouth solution bottles
- Flathead color-coded PTFE stoppers included

COMPLIANCE:
Meet ASTM* E 438-92, Type I, Class A requirements.

02-920-1B

Capacity	Stopper $ No.	Stopper Color	Mfr. No.	Cat. No.	Case of
3½ oz. (100mL)	14	Red	15097 100	**02-920-1A**	1/18.76
8 oz. (250mL)	19	Gray	15097 250	**02-920-1B**	6/120.27
17 oz. (500mL)	24	Blue	15097 500	**02-920-1C**	6/144.54
34 oz. (1000mL)	29	Green	15097 1000	**02-920-1D**	6/237.59
68 oz. (2000mL)	29	Green	15097 2000	**02-920-1E**	4/382.08

Wheaton Amber Glass Reagent Bottle with Hood Stopper

Ideal for shelf storage

- Amber borosilicate glass bottle with narrow mouth
- Protects light-sensitive reagents and solutions
- Ground-glass octagon flat stopper provides excellent seal; protects top lip of bottle from dust
- Resists breakage

02-918B

Capacity	Stopper Size $	Mfr. No.	Cat. No.	Case of
3⅜ oz. (100mL)	14/23	W215255	**02-911-306**	6/97.97
8 oz. (250mL)	19/26	215257	**22-308-622**	10/190.88
17 oz. (500mL)	24/29	215259	**02-918B**	10/257.85

ROLLER

Corning* Disposable Roller Bottles

Promote cell attachment

Left to right: 06-413, 06-415-7, 06-415-3, 09-761-113

Made from optically clear virgin polystyrene and tissue culture–treated.

- Seamless, one-piece construction reduces the chance of damage from accidental drops
- Extra-large neck permits easy access to interior
- Sterile

ORDERING INFORMATION:
490cm2 size is ungraduated and comes with a plug seal cap; larger bottles feature black printed graduations and easy-grip caps. 06-443-8 has vented cap for continuous gas exchange.

CERTIFICATIONS:
Certified nonpyrogenic for consistent performance.

Surface Area	Capacity	Packaging	Mfr. No.	Cat. No.	Case of
490cm^2	1300mL	2/bag	430195	**06-413**	40/203.80
850cm^2	2200mL	2/bag	430849	**06-415-6**	40/280.31
850cm^2	2200mL	2/bag	431198	**06-443-8†**	40/336.40
850cm^2	2200mL	5/bag	430851	**06-415-7**	40/291.41
850cm^2	2200mL	22/bag	431321	**03-374-300**	44/275.84
850cm^2	2200mL	20/tray	431133	**09-761-113**	20/139.47
1750cm^2	4900mL	5/bag	430699	**06-415-3**	20/328.84

† With vented cap.

Corning* Expanded-Surface Roller Bottles

Twice the usable growth area, less space required

06-415-8

Ribbed design provides twice the usable growth area of traditional 850cm^2 bottles, but with the same outside dimensions. Reduces the space required in roller racks and incubators.

- 1700cm^2 surface area
- Tissue culture–treated to optimize cell attachment
- Virgin polystyrene
- Sterile
- Windows on two sides for easy pouring and microscopic viewing
- With vented or nonvented easy-grip caps and black printed graduations

ORDERING INFORMATION:
Packaged two bottles per bag, six bottles per bag or 20 bottles per tray.

CERTIFICATIONS:
Certified nonpyrogenic

Surface Area	Cap Type	Packaging	Mfr. No.	Cat. No.	Case of
1700cm^2	Easy-grip	2/bag	430852	**06-415-8**	40/477.70
1700cm^2	Easy-grip	6/bag	430853	**06-415-10†**	40/490.04
1700cm^2	Easy-grip	20/tray	431135	**09-761-114**	20/234.08

† With vented cap.

Corning* Polystyrene Roller Bottles

Treated with patented Corning CellBIND* surface treatment

08-757-210

May eliminate the need for tedious, time-consuming, expensive and low-stability biological coatings such as poly-D-lysine to improve cell attachment. 07-201-221 has expanded-surface design for twice the surface area with the same exterior dimensions.

Features

- Easy Grip Vent Cap is designed for applications requiring consistent gas exchange; features large knurls designed for ergonomic handling
- Manufactured from virgin polystyrene
- Supplied with HDPE caps
- One-piece seamless construction with printed graduations; neck O.D., 48mm
- Printed lot numbers aid in product traceability
- Sterilized by gamma irradiation

CellBIND Surface Treatment

- Improves cell attachment leading to increased cell growth and yields
- Results in more consistent and even cell attachment
- Helps adapt cells to reduced serum or serum-free conditions
- Reduces premature cell detachment from confluent cultures
- Not a coating, requires no refrigeration or special handling; stable at room temperature
- Can be handled with same techniques as standard tissue culture-treated products

COMPLIANCE:
Both resins meet the USP Class VI requirements for plastic containers and closures.

CERTIFICATIONS:
Certified nonpyrogenic

Surface Area	Cap Type	Packaging	Mfr. No.	Cat. No.	Case of
Smooth Surface					
850cm^2	Easy Grip	2/bag	3907	**05-539-105**	40/667.44
850cm^2	Easy Grip Vent	2/bag	431329	**08-757-210**	40/698.40
Expanded Surface					
1700cm^2	Easy Grip	20/tray	431134	**07-201-221**	20/511.70

LOOKING FOR MICROCARRIERS?

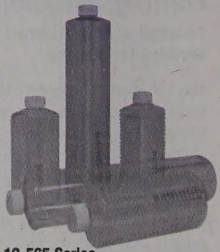
For a complete selection of microcarriers, go to Cell Culture section and look through Growth Environments.

Nunc* InVitro PETG Roller Bottles

Excellent substrate for adherent cells

Rugged material yields superior impact resistance over glass or polystyrene while providing an excellent gas and vapor barrier.

- Excellent for freezing down to -40°C
- Standard smooth surface or patented expanded surface (XPS)[1]
- Quick-action ergonomic closure and easy-to-read graduations
- Gamma-radiation sterilized
- Lot number on each bottle maximizes traceability



12-565 Series

Surface Area	Packaging	Mfr. No.	Cat. No.	Case of
Smooth Surface				
1050cm^2	5/sleeve	1060-05	**12-565-526**	20/145.50
1050cm^2	20/sleeve	1060-20	**12-565-527**	20/141.00
1800cm^2	22/sleeve	1860-22	**12-565-529**	22/370.50
Expanded Surface				
1700cm^2	20/sleeve	1760-20	**12-565-528**	20/249.50
2100cm^2	5/sleeve	2160-05	**12-565-530**	20/321.75
2100cm^2	20/sleeve	2160-20	**12-565-531**	20/311.50
4200cm^2	22/sleeve	4260-22	**12-565-532**	22/676.25
Smooth Surface, with Vented Closures				
1050cm^2	22/sleeve	1060-85	**12-575-120**	20/172.25
Accessories				
48mm Vented	300/case	3080-01	**12-575-121**	300/387.23

[1] *U.S. Patent Nos. 4,824,787; 4,962,787; and 5,010,013.*

BD Falcon* Roller Bottles

Compatible with manual and automated filling systems

Ideal for use in research and manufacturing applications involving the scale-up of mammalian cells for purposes of virus propagation and bioproduct production.

- Available with smooth 850cm^2 growth area configuration or pleated 1450cm^2 growth area configuration
- One-piece BD Tufrol* polystyrene manufactured using a proprietary process that provides high impact resistance
- Sterilized by gamma irradiation, non-pyrogenic
- Vented cap has integral hydrophobic 0.2μm membrane filter
- Supplied with easy ON/OFF standard or vented-style caps designed to prevent misthreading and provide a secure seal

Front, 06-413-15; Back, 06-419-9

NOTE:

Custom packaging and lot control available. Contact your Fisher Scientific Customer Service Representative.

Growth Area	Cap Type	Packaging	Mfr. No.	Cat. No.	Case of 20
Smooth Surface					
850cm^2	Standard	2/bag	353007	**06-413-9**	139.37
850cm^2	Standard	20/bag	353008	**06-413-15**	138.00
850cm^2	Standard	20/double bag	353088	**02-940-26**	142.23
850cm^2	Vented	2/bag	353068	**08-772K**	162.17
Pleated Surface					
1450cm^2	Standard	20/bag	353079	**06-419-9**	230.96
1450cm^2	Vented	20/bag	353069	**08-772H**	271.43

SERUM

Wheaton Serum Bottles and Vials

High chemical durability

- Borosilicate glass
- Can be sterilized repeatedly
- Clear or amber

COMPLIANCE:

Meet requirements for Class A of the United States Pharmacopeia for Type I glass.

06-406A, 06-406D, 06-406C

Capacity	Dia. × H	I.D. × O.D. at Mouth	Mfr. No.	Cat. No.	Case of
Clear					
0.07 oz. (2mL)	17.5 × 35mm	7 × 13mm	223712	**06-406A**	288/129.24
$^{1}/_{4}$ oz. (5mL)	23 × 47mm	13 × 20mm	223738	**06-406C**	288/137.45
$^{3}/_{8}$ oz. (10mL)	25 × 54mm	13 × 20mm	223739	**06-406D**	288/192.34
$^{11}/_{16}$ oz. (20mL)	32 × 58mm	13 × 20mm	223742	**06-406E**	288/234.95
1 oz. (30mL)	37 × 63mm	13 × 20mm	223743	**06-406F**	288/289.39
1$^{11}/_{16}$ oz. (50mL)	43 × 73mm	13 × 20mm	223745	**06-406G**	288/363.13
2.0 oz. (60mL)	41 × 91mm	13 × 20mm	223746	**06-406H**	144/202.63
3$^{7}/_{16}$ oz. (100mL)	52 × 95mm	13 × 20mm	223747	**06-406J**	144/279.24
4$^{1}/_{4}$ oz. (125mL)	54 × 107mm	13 × 20mm	223748	**06-406K**	144/392.77
Amber					
$^{1}/_{4}$ oz. (5mL)	23 × 47mm	13 × 20mm	223760	**06-402A**	288/247.23
$^{3}/_{8}$ oz. (10mL)	25 × 54mm	13 × 20mm	223761	**06-402B**	288/273.99
$^{11}/_{16}$ oz. (20mL)	32 × 58mm	13 × 20mm	223762	**06-402C**	288/310.46
1 oz. (30mL)	37 × 63mm	13 × 20mm	223763	**06-402D**	288/380.30
1$^{11}/_{16}$ oz. (50mL)	43 × 73mm	13 × 20mm	223764	**06-402E**	288/484.35
3$^{7}/_{16}$ oz. (100mL)	52 × 95mm	13 × 20mm	223766	**06-402F**	144/361.17

Wheaton Serum Tubing Vials

Clear or amber borosilicate glass

- Clear vials made from Wheaton-33* low extractable borosilicate glass tubing to ensure uniform wall thickness
- Amber vials made from Wheaton "300" brand borosilicate glass
- Withstand extreme temperature variations
- Necks finished for aluminum crimp seals
- Blowback feature of neck and specially designed bottom radius for lyophilization applications

ORDERING INFORMATION:

Packaged in shrink-wrapped modules to reduce particulate contamination.

COMPLIANCE:

Meet ASTM* Type 1, Class A and USP Type 1 standards

Left to right: 06-406-37, 06-446C, 06-446J, 06-446H, 06-446G

Capacity	Dia. × H	I.D. × O.D. at Mouth	Mfr. No.	Cat. No.	Case of
Clear					
0.07 oz. (2mL)	15 × 32mm	7 × 13mm	223683	**06-406-37**	144/49.61
0.10 oz. (3mL)	17 × 38mm	7 × 13mm	223684	**06-446C**	144/50.90
0.17 oz. (5mL)	22 × 40mm	13 × 20mm	223685	**06-446D**	144/63.45
0.34 oz. (10mL)	24 × 50mm	13 × 20mm	223686	**06-406-38**	144/74.61
0.68 oz. (20mL)	31 × 58mm	13 × 20mm	223687	**06-446E**	120/87.68
Amber					
0.07 oz. (2mL)	15 × 32mm	7 × 13mm	223693	**06-446G**	144/64.41
0.17 oz. (5mL)	22 × 40mm	13 × 20mm	223695	**06-446H**	144/74.31
0.34 oz. (10mL)	24 × 50mm	13 × 20mm	223696	**06-446J**	144/92.47

Wheaton Stoppers for Serum Bottles and Vials

- Provide airtight covers
- Five styles, in red natural rubber† or gray butyl
- Flange-type stoppers are secured with aluminum crimp seals
- Slotted and three-prong plug stoppers are for freeze-dry applications

06-447H

06-477E

06-406-11B

06-447K

Formulation	I.D. × O.D. at Mouth	Mfr. No.	Cat. No.	Case of 1000
Sleeve				
Red Rubber	5 × 11mm	224100-020	**06-447A**	133.29
Red Rubber	7 × 13mm	224100-060	**06-406-10A**	320.33
Red Rubber	13 × 20mm	224100-161	**06-406-10B**	291.99
Flange, Straight Plug				
Red Rubber	5 × 11mm	224100-030	**06-447B**	100.01
Red Rubber	7 × 13mm	224100 070	**06-406-11A**	102.90
Red Rubber	13 × 20mm	224100-172	**06-406-11B**	139.14
Gray Butyl Isoprene Blend/40 PTFE Faced	7 × 13mm	224100-072	**06-406-11D**	557.39
Gray Butyl	13 × 20mm	224100-173	**06-447J**	179.07
Flange, Snap-on				
Red Rubber	7 × 13mm	224100-080	**06-447C**	113.02
Gray Butyl	7 × 13mm	224100-081	**06-447D**	122.48
Red Rubber	13 × 20mm	224100-180	**06-447K**	181.78
Gray Butyl	13 × 20mm	224100-181	**06-447F**	179.07
Flange, Slotted Plug				
Gray Butyl	7 × 13mm	224100-093	**06-447E**	116.54
Gray Butyl	13 × 20mm	224100-193	**06-406-12**	172.01
Gray Butyl	13 × 20mm	224100-194	**06-447G**	155.58
Flange, 3-prong Plug				
Gray Butyl	13 × 20mm	224100-202	**06-447H**	154.05

† This product contains dry natural rubber.

Wheaton Stoppers for Serum Bottles and Vials, Contd.

Wheaton Aluminum Seals

- Standard aluminum color

06-406-15C

Mouth O.D.	Mfr. No.	Cat. No.	Pack of 100	Case of 1000
One-piece; Aluminum Seals				
20mm	224178-01	**11-126-12**	----	69.38
13mm	224182-01	**06-406-14A**	----	64.38
20mm	224183-01	**06-406-14B**	----	69.38
30mm	224187-01	**06-406-17**	----	96.08
TFE-lined on one side; Rubber Septa				
13mm	224222-01	**06-406-16**	----	353.67
20mm	224223-01	**06-406-15A**	120.76	1032.15
Tear-off				
20mm	224193-01	**06-406-15**	----	61.94
Flip Cap				
13mm	224202	**06-406-16C**	----	118.82
20mm	224203	**06-406-15B**	----	175.31
Tear Cap				
20mm	224208	**06-406-15C**	----	202.56

SPRAY

*Fisherbrand** Wash Bottles with Adjustable Spray

Handle hot/cold, aqueous/solvent-based solutions

Fully adjustable spray pattern: “fine mist” for TLC plates; “needle” for rinsing glassware; “big stream” for powerful jet needed to wash filters. 1000mL bottle has double-headed design, with side-fill opening to ensure contamination-free solutions.

03-405

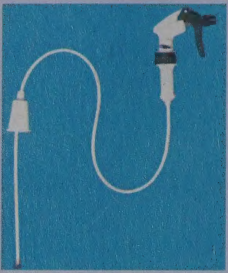
- Bottle is made of high-density polyethylene; sprayer is polypropylene
- Trigger allows one-handed, controlled delivery with light pressure
- Engraved markings show how much fluid is left
- Squat shape takes up little bench space and ensures a low center of gravity
- 1000mL bottle dip-tube has an easy-access filter to prevent clogging

Capacity	Cat. No.	Price
235mL	**03-405A**	Pk. of 3/21.79
1000mL	**03-405**	Ea./31.82

*Fisherbrand** Spray-Anywhere Adjustable Sprayer

Quickly change any bottle into a wash bottle and any reagent into a spray

Virtually unbreakable and chemical resistant, polypropylene sprayer is ideal for hot, cold, aqueous and solvent-based solutions. Continuously adjustable spray suits every lab requirement: "fine-mist" for TLC plates, "needle" to rinse glassware, "big-stream" to pump a continuous forceful jet to wash filters.



14-648-48

- Closed position prevents evaporation and air/dust contamination, maintains solution purity
- Easy one-handed operation: trigger-controlled delivery with very light pressure
- Contoured shape for comfortable grip and reduced finger fatigue
- Instant-off release prevents messy drips on the lab bench
- Cone-shaped universal adapter bung fits virtually all glass, plastic and metal containers, bottles and flasks (container not included)
- Can be gas or chemically sterilized; dishwasher safe

ORDERING INFORMATION:
Fits bottles with 1 to 1⅜" I.D. (2.5 to 3.5cm). Tube length, 32" (81.3cm).

Cat. No.	Each
14-648-48	12.65

LOOKING FOR CARBOYS?

Fisherbrand* HDPE Wide-Mouth Carboys have a wide neck that allows easy access for cleaning or filling.

Features:
- Chemical resistant
- Available with or without spigots
- Can be used at temperatures down to -100°C (-148°F)
- Molded handgrips allow easy lifting or carrying

For more information about Fisherbrand Carboys, and for our complete selection of glass, polyethylene, polypropylene and polycarbonate carboys, check out the Carboys section, beginning on p. 248.

Nalgene* Aerosol Spray Bottle

Reusable; fills and pressurizes manually

No external source of compressed air required—Airspray* System uses air pressure to propel contents from container.

- Translucent polypropylene permits visible volume check
- Comes with two nozzles

NOTE:
Not for use with solvents.

15-232-8

Capacity	Mfr. No.	Cat. No.	Each	Case of 4
6¾ oz. (180mL)	2430 0200	**15-232-8**	15.88	42.35

Dynalon* Quick Mist* HDPE Sprayer Bottles

Trigger-type operation provides fine mist with large pattern

- Trigger assembly made from chemical-resistant polypropylene
- Valve and intake easily cleaned
- Dispenses thin liquids

NOTE:
Not for use with food products.

03-438-12B

Capacity	Mfr. No.	Cat. No.	Price	Case of 24
16 oz. (500mL)	605144	**03-438-12A**	Pk. of 6/43.76	127.78
32 oz. (1000mL)	605154	**03-438-12B**	Ea./9.10	159.47

***Fisher**brand** **500mL Easy-Squeeze Wash Bottles**

Easy to fill, read, use

02-897-7

Bottles have wide mouths for easy filling and easy-to-read, color-coded silkscreened labels. Tips can be easily cut back to increase flow. When not in use, bottles relieve internal pressure without dripping.

- Translucent, sputter-free, low-density polyethylene (LDPE)
- Label information includes:
  - Chemical name
  - National Fire Protection Association (NFPA) codes and symbols
  - Chemical Abstracts Service (CAS) number
  - Hazard codes
  - Laboratory protective equipment information
  - arget organ information
  - Recommended fill level
  - LDPE recycling code
  - Bottle volume capacity
  - "For Dispensing Only, Not Recommended For Storage" statement

ORDERING INFORMATION:
Available in cases of six, all with the same label; in a 6-bottle Solvent Pack (one each labeled acetone, deionized water, ethanol, isopropanol, methanol and universal); or 6-bottle Cleaning Pack (one each labeled acetone, bleach, deionized water, saline, soap and universal bottles).

INCLUDES:
Come with colored polypropylene closures with PTFE membrane (except 02-897-2, which has an HDPE closure).

NOTE:
Not recommended for use above 60°C (140°F).

Description	Cat. No.	Case of 6
Acetone	**02-897-1**	27.78
Bleach	**02-897-2**	27.78
Deionized water	**02-897-3**	27.78
Distilled water	**02-897-4**	27.78
Ethanol	**02-897-5**	27.78
Isopropanol	**02-897-6**	27.78
Methanol	**02-897-7**	27.78
Saline	**02-897-8**	27.78
Soap	**02-897-9**	27.78
Universal	**02-897-10**	27.78
Water	**02-897-11**	27.78
Solvent Pack	**02-897-12**	27.78
Cleaning Pack	**02-897-13**	27.78

***Fisher**brand** **Labeled Wash Bottles**

Color coded and leakproof†, with one-piece cap and nozzle assemblies

03-409-23 Series

Molded leakproof polyethylene bottles with wide mouth for easy filling.

- Easy-to-read, color-coded silkscreened labels ensure instant identification and include:
  - Department of Transportation (DOT) and National Fire Protection Association (NFPA) codes and symbols
  - Chemical Abstract Service (CAS) numbers where applicable
  - Protective equipment
  - Target organ information
  - Inks resist chemical to be contained
  - Toluene bottle is red with white labeling to set it apart; all others are translucent

ORDERING INFORMATION:
Capacity 500mL, except 03-409-23Q, which has a 1000mL capacity. Available in cases of six, all with the same label, or in a six-bottle assortment: one 500mL bottle each of acetone, ethanol, isopropanol, methanol, toluene and water.

NOTE:
Toluene bottle is for short-term use only, not for long-term storage.

Description	Cat. No.	Pack of 6
Acetone	**03-409-23A**	27.09
Acetone‡	**03-409-23Q**	32.03
Bleach	**03-409-23L**	27.09
Deionized Water	**03-409-23M**	27.09
Distilled Water	**03-409-23K**	27.09
Ethanol	**03-409-23B**	27.09
Isopropanol	**03-409-23C**	27.09
Machine Oil	**03-409-23R**	27.09
Methyl Ethyl Ketone	**03-409-23S**	27.09
Methanol	**03-409-23D**	27.09
Saline	**03-409-23J**	27.09
Soap	**03-409-23P**	27.09
Toluene	**03-409-23E**	27.09
Universal	**03-409-23N**	27.09
Water	**03-409-23G**	27.09
Variety Pack	**03-409-23H**	27.09

† Fisher Scientific assigns the term leakproof to bottle/closure systems with closures smaller than 100mm after they are filled with water, are inverted, and withstand air pressure of 2psig for 2 minutes; or to bottle/closure systems of 100 or 120mm after they are filled with water and inverted for 15 minutes, and no water escapes.
Note: these tests, using other liquids, may not yield the same results. To ensure safe usage, Fisher Scientific advises customers to test Fisherbrand bottles and closures under conditions of their planned applications.*

‡ 1000mL.

Fisherbrand* Red Washing/Dispensing Bottles

Red for dangerous contents

- Polyethylene bottle with integral, one-piece, molded polypropylene cap and nozzle to eliminate leakage
- Rigid spout permits controlled delivery: single drop or fine stream
- Tip may be cut back to increase flow

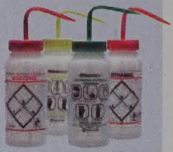
03-409-16A

Capacity	Cat. No.	Pack of 6	Case of
8 oz. (250mL)	**03-409-16A**	28.36	6 Pk./145.44
16 oz. (500mL)	**03-409-16B**	32.44	4 Pk./110.90

Fisherbrand* Solvent-Venting Wash Bottles

LDPE bottles with wide mouth for easy filling

- Patented two-piece venting assembly prevents solvent pressure buildup, internal evaporation and resultant solvent drip from the spout
- Polypropylene closures are color coded for quick identification



03-409-37, -35, -33, -36

ORDERING INFORMATION:
Prelabeled with six common solvents; also available unlabeled.

NOTE:
Use only with solvents compatible with LDPE.

Label Description	Cat. No.	Pack of 3
Acetone	**03-409-37**	19.30
Ethanol	**03-409-36**	19.30
Ethyl Acetate	**03-409-30**	19.30
Isopropanol	**03-409-35**	19.30
Methanol	**03-409-33**	19.30
Methyl Ethyl Ketone (MEK)	**03-409-31**	19.30
Unlabeled	**03-409-34**	19.30

Fisherbrand* Translucent White Wash Bottles

Versatile bottles deliver single drop or fine stream

- LDPE with one-piece polypropylene screw cap and nozzle
- Tip may be cut back to increase flow

03-409-23T

Capacity	Cat. No.	Pack of	Case of
4 oz. (125mL)	**03-409-22A**	6/24.82	8 Pk./169.71
8 oz. (250mL)	**03-409-23T**	6/28.19	6 Pk./144.58
16 oz. (500mL)	**03-409-22C**	6/33.13	4 Pk./113.25
32 oz. (1000mL)	**03-409-22D**	4/21.92	3 Pk./56.20

Nalgene* Color-Coded LDPE Wash Bottles

Colored bent-stem closure lets you color-code reagents

- LDPE bottles with polypropylene screw closure/stem and draw tube
- Closure and stem are molded in one piece for leakproof[†] service
- Tip can be cut back to increase flow
- Closure size is 28mm

Left to right: 03-409-17E, 03-409-17F, 03-409-17C, 03-409-17D

Capacity	Color	Mfr. No.	Cat. No.	Pack of 6	Case of 4 Pk.
16 oz. (500mL)	Yellow	2422 2500	**03-409-17F**	41.59	110.91
16 oz. (500mL)	Blue	2422 3500	**03-409-17E**	41.59	110.91
16 oz. (500mL)	Green	2422 4500	**03-409-17D**	41.59	110.91
16 oz. (500mL)	Red	2422 5500	**03-409-17C**	41.59	110.91

† For definition of "leakproof," see below.

Nalgene* Economy LDPE Wash Bottles

Leakproof[†], uniform dispensing

- LDPE bottles, tubing
- Polypropylene bent-stem closure
- Through-the-top tubing with closure and stem molded in one piece
- Molded delivery tip can be cut back to increase flow

03-409-10AA

Capacity	Mfr. No.	Cat. No.	Pack of	Case of
4 oz. (125mL)	2401 0125	**03-409-10AA**	6/22.69	8 Pk./121.00
8 oz. (250mL)	2401 0250	**03-409-10BB**	6/25.76	6 Pk./103.00
16 oz. (500mL)	2401 0500	**03-409-10CC**	6/30.90	4 Pk./82.40
32 oz. (1L)	2401 1000	**03-409-10DD**	4/26.01	3 Pk./52.00

† For definition of "leakproof," see below.

[†] Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** These tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

*Trademark. See Trademark Reference.

Prices subject to change.

Nalgene* FEP Solvent Wash Bottles

Highly chemical resistant

03-409-12E, 03-409-12A

- With Tefzel* ETFE screw closures and tubing
- Closures and stem molded in one piece
- Useful for rinsing with or dispensing strong solvents or liquids
- Provide contamination-free dispensing
- Transparent, autoclavable, leakproof†

Capacity	Cap Size	Mfr. No.	Cat. No.	Each	Case of
4 oz. (125mL)	24mm-400	2403 0125	**03-409-12A**	86.35	4/230.25
8 oz. (250mL)	24mm-400	2403 0250	**03-409-12C**	129.66	4/345.75
16 oz. (500mL)	38mm-400	2403 0500	**03-409-12E**	176.07	4/469.50
32 oz. (1000mL)	38mm-400	2403 1000	**03-409-12G**	220.69	2/294.25

† *For definition of "leakproof," see p. 222.*

Nalgene* Fluorinated Solvent Wash Bottle

Low permeability and excellent chemical resistance

Solvent Wash Bottle
Solvent Wash Bottle
03-409-17B, 03-409-17A

- Translucent fluorinated HDPE wash bottle with red polypropylene closure and stem
- Bright red lettering silk-screened on bottle reads "Solvent Wash Bottle"
- Low permeability and excellent chemical resistance to many organic solvents used in HPLC, TLC, and gas chromatography
- Useful over a temperature range from 0° to 90°C (32° to 194°F)

Capacity	Cap Size	Mfr. No.	Cat. No.	Pack of 2	Case of
8 oz. (250mL)	24mm-400	2421 0250	**03-409-17A**	21.20	18 Pk./254.32
16 oz. (500mL)	38mm-430	2421 0500	**03-409-17B**	23.68	12 Pk./189.46

Nalgene* Polypropylene Copolymer Autoclavable Wash Bottle

Reduce risk of contamination

Useful for dispensing sterile water or reagents wherever it is necessary to reduce the risk of contamination.

- Blue polypropylene screw closure and stem molded in one piece
- Contact clear, autoclavable
- Chemical resistant, leakproof†
- Can be stored at temperatures as low as 0° to 5°C (32° to 41°F) without becoming brittle

NALGENE*
AUTOCLAVABLE
03-409-14A

Capacity	Cap Size	Mfr. No.	Cat. No.	Pack of 6	Case of 4 Pk.
16 oz. (500mL)	28mm	2405 0500	**03-409-14A**	54.39	145.04

† *For definition of "leakproof," see p. 222.*

Nalgene* Unitary* Wash Bottles

Easy squeezing, easier filling

- Bottle and tubulation molded in one piece of LDPE with polypropylene screw closures
- Wide mouth for easier filling
- Flexible walls make squeezing easy
- Dispensing tube gives ultrafine stream or can be cut back to increase flow
- Leakproof†

03-409-10C

Capacity	Mfr. No.	Cat. No.	Pack of	Case of
4 oz. (125mL)	2402 0125	**03-409-10C**	6/32.53	8 Pk./173.50
8 oz. (250mL)	2402 0250	**03-409-10D**	4/24.70	9 Pk./148.25
16 oz. (500mL)	2402 0500	**03-409-10E**	4/30.13	6 Pk./120.50
24 oz. (750mL)	2402 0750	**03-409-10EE**	4/37.12	6 Pk./148.50
32 oz. (1000mL)	2402 1000	**03-409-10F**	2/22.35	6 Pk./89.40

† *For definition of "leakproof," see p. 222.*

Nalgene* Right-to-Know Narrow-Mouth LDPE Wash Bottles

Flexible for convenient dispensing, translucent for viewing contents

Isopropanol
Distilled Water
Methanol
Ethyl Alcohol

03-409-11D, 03-409-11E, 03-409-11C, 03-409-11B

LDPE bottles have narrow mouths, one-piece molded closure and spout, draw tube welded to closure so they can't separate. Sodium Hypochlorite bottle is white LDPE with HDPE closure for light-protective barrier qualities between 280 and 450nm; all others have polypropylene closures.

- Tips can be cut back to increase flow
- Silk-screened labels with chemical-resistant inks:
    - Chemical name
    - International Chemical (ICS) formula
    - Chemical Abstract System (CAS) number
    - DOT and NFPA codes/symbols
    - Color-coded bar on bottle corresponds to closure color to prevent cross-contamination
    - Break-resistant and leakproof†

ORDERING INFORMATION:
Available in packs of the same 16 or 32 oz. (500 or 1000mL) bottle, or in a 5-bottle (16 oz./500mL only) assortment pack consisting of one each acetone, ethyl alcohol, isopropanol, methanol, and distilled water.

COMPLIANCE:
Meet requirements of OSHA Hazard Communication Regulation [29 CFR 1910.1200(f)(4)].

Description	Mfr. No.	Cat. No.	Pack of	Case of
16 oz. (500mL) Capacity; 28mm Closure Size				
Acetone	2425 0501	**03-409-11A**	6/51.50	4 Pk./137.33
Ethyl Alcohol	2425 0502	**03-409-11B**	6/49.59	4 Pk./132.24
Isopropanol	2425 0504	**03-409-11D**	6/49.59	4 Pk./132.24
Methanol	2425 0503	**03-409-11C**	6/49.59	4 Pk./132.24
Distilled Water	2425 0505	**03-409-11E**	6/49.59	4 Pk./132.24
Sodium Hypochlorite (Bleach)	2425 0506	**03-409-9A**	6/49.59	4 Pk./132.24
Assorted	2425 0500	**03-409-11L**	5/43.00	4 Pk./114.68
32 oz. (1000mL) Capacity; 38mm Closure Size				
Ethyl Alcohol	2425 1002	**03-409-11G**	4/43.27	3 Pk./86.53
Isopropanol	2425 1004	**03-409-11J**	4/43.27	3 Pk./86.53
Methanol	2425 1003	**03-409-11H**	4/43.27	3 Pk./86.53
Distilled Water	2425 1005	**03-409-11K**	4/43.27	3 Pk./86.53
Sodium Hypochlorite (Bleach)	2425 1006	**03-409-11N**	4/43.27	3 Pk./86.53

† For definition of "leakproof," see below.

Kontes* Guth* Unitized* Wash Bottle

One-handed sanitary manipulation

- Index finger controls flow by means of air vent
- 32 oz. (1000mL) borosilicate glass flask
- Neoprene rubber parts
- Consists of stopper assembly with delivery tube and stopper; flask assembly with aspirator bulb, and air check valves

03-403

Mfr. No.	Cat. No.	Each
1011	**03-403**	137.61

Nalgene* Unitary* Safety Wash Bottles

Wide mouth for faster, easier filling; red for easy identification

- LDPE for use with acids, alcohols and bases
- One-piece design offers safety from chemical splash when removing closure
- Bottle and tubulation molded in one piece eliminates possible contamination from a delivery tube
- With leakproof† linerless polypropylene closure

03-409-16D, -16C

Capacity	Mfr. No.	Cat. No.	Pack of 4
8 oz. (250mL)	DS2408-0250	**03-409-16C**	26.26
16 oz. (500mL)	DS2408-0500	**03-409-16D**	43.86

† For definition of "leakproof," see below.

†Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** These tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

Nalgene* Vented Right-To-Know Unitary* Wash Bottles

Keep hazardous volatile liquids in the bottle and off the lab bench

- LDPE with PTFE membrane
- Bottle and tubulation molded into one piece to prevent chemical splash when removing the lid and contamination when filling
- No draw tube assembly for picking up unwanted spilled chemicals on surfaces
- Unique 38mm colored vented closure designed to prevent dripping
- Leakproof†, break-resistant, translucent
- Sturdy polypropylene closures (HDPE on Sodium Hypochloride bottles)
- Color-coded bar corresponds to closure, preventing cross-contamination
- Prelabeled with ICS name and formula, as well as DOT and NFPA symbols for chemical handling, hazard, care, and storage of six commonly used chemicals

03-409-19A, -20A, -20D, -20C, 21E, 20B

COMPLIANCE:
Meet OSHA requirements for workplace chemical container labeling.

Capacity	Cap Color	Mfr. No.	Cat. No.	Pack of	Case of
Acetone					
8 oz. (250mL)	Red	2436-0251	**03-409-19A**	4/35.71	9 Pk./214.30
16 oz. (500mL)		2436-0501	**03-409-20A**	4/37.71	6 Pk./150.81
32 oz. (1L)		2436-1001	**03-409-21A**	2/31.43	6 Pk./125.72
Ethyl Alcohol					
8 oz. (250mL)	White	2436-0252	**03-409-19B**	4/35.71	9 Pk./214.30
16 oz. (500mL)		2436-0502	**03-409-20B**	4/37.71	6 Pk./150.81
32 oz. (1L)		2436-1002	**03-409-21B**	12/131.80	----
Methanol					
8 oz. (250mL)	Green	2436-0253	**03-409-19C**	36/223.95	----
16 oz. (500mL)		2436-0503	**03-409-20C**	4/37.71	6 Pk./150.81
32 oz. (1L)		2436-1003	**03-409-21C**	2/31.43	6 Pk./125.72
Isopropanol					
8 oz. (250mL)	Yellow	2436-0254	**03-409-19D**	36/223.95	----
16 oz. (500mL)		2436-0504	**03-409-20D**	4/37.71	6 Pk./150.81
32 oz. (1L)		2436-1004	**03-409-21D**	2/31.43	6 Pk./125.72
Distilled Water					
8 oz. (250mL)	Natural	2436-0255	**03-409-19E**	4/35.71	9 Pk./214.30
16 oz. (500mL)		2436-0505	**03-409-20E**	4/37.71	6 Pk./150.81
32 oz. (1L)		2436-1005	**03-409-21E**	2/31.43	6 Pk./125.72
Sodium Hypochloride (Bleach)					
8 oz. (250mL)	White	2436-0256	**03-409-19F**	4/35.71	9 Pk./214.30
16 oz. (500mL)		2436-0506	**03-409-20F**	4/37.71	6 Pk./150.81
32 oz. (1L)		2436-1006	**03-409-21F**	12/125.72	----

† *For definition of leakproof, see p. 224*

WEIGHING

*Fisherbrand**

Weighing Bottles

Two types of rugged glass bottles

- Lamp-blown glass
- Sturdy bottoms prevent chipping and facilitate cleaning

03-415E, 03-420A

Approx. Capacity	I.D. × H	Cat. No.	Each	Pack of 12
Tall, Cylindrical Form				
10mL	25 × 40mm	**03-415B**	52.91	437.92
16mL	25 × 50mm	**03-415C**	57.99	479.86
30mL	30 × 60mm	**03-415E**	55.59	460.05
70mL	40 × 80mm	**03-415H**	93.75	775.88
115mL	40 × 120mm	**03-415K**	49.84	529.24
Low, Flat Form				
35mL	50 × 30mm	**03-420A**	126.72	1048.68
50mL	60 × 30mm	**03-420B**	111.01	918.67
82mL	70 × 33mm	**03-420C**	162.68	1346.26

Kimax* Weighing Bottles

Tall, cylindrical form with ＄ caps or stoppers

With Outside ＄ Ground Caps

- Caps protect bottle in case of tipping; have open bottom
- Prevent material from touching cap edges, provide increased headroom
- Designed from Fed. Spec. NNN-B-1493, Type I, Style I

With ＄ Stoppers

- Plug stopper fits into internally ground body; has closed bottom
- Designed from Fed. Spec. NNN-B-1493, Type I, Style III

03-422D, 03-415-5D

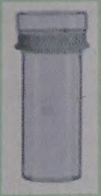
Approx. Capacity	I.D. × H†	＄ Joint No.	Mfr. No.	Cat. No.	Pack of 6	Case of
With ＄ Outside Ground Caps						
12mL	25 × 40mm	29/12	15146 2540	**03-422C**	143.52	3 Pk./314.28
16mL	25 × 50mm	29/12	15146 2550	**03-422D**	143.52	3 Pk./314.28
30mL	30 × 60mm	34/12	15146 3060	**03-422E**	161.85	3 Pk./354.42
45mL	40 × 50mm	45/12	15146 4050	**03-422F**	203.61	2 Pk./297.24
70mL	40 × 80mm	45/12	15146 4080	**03-422G**	212.25	2 Pk./309.84
92mL	40 × 100mm	45/12	15146 40100	**03-422H**	230.74	2 Pk./336.84
With ＄ Stoppers						
7mL	15 × 50mm	14/10	15145 1550	**03-415-5A**	110.47	4 Pk./322.56
12mL	25 × 40mm	24/12	15145 2540	**03-415-5C**	109.00	4 Pk./318.24
16mL	25 × 50mm	24/12	15145 2550	**03-415-5D**	118.69	4 Pk./346.56
30mL	30 × 60mm	29/12	15145 3060	**03-415-5E**	142.12	3 Pk./311.22
45mL	40 × 50mm	40/12	15145 4050	**03-415-5F**	196.62	2 Pk./287.04
70mL	40 × 80mm	40/12	15145 4080	**03-415-5G**	190.05	2 Pk./277.44
85mL	50 × 60mm	50/12	15145 5060	**10-310-24**	179.40	----

† *Height dimensions do not include the caps/stoppers.*

ACCESSORIES

Kimax* Cap-Style Stopper

For use with Kimax brand 03-422 Series weighing bottles, previous page.



03-422C bottle with 10-310-28 stopper

O.D. × H	₮ Joint No.	Mfr. No.	Cat. No.	Each
1¼ × ⅞" (3.3 × 2.4cm)	29/12	15180 2912	**10-310-28**	14.41
1½ ×⅞" (3.9 × 2.4cm)	34/12	15180 3412	**03-422-13B**	17.50
2 × 1" (5.0 × 2.6cm)	45/12	15180 4512	**10-310-29**	19.25

Kimax* Low-Form Weighing Bottles

Low-form cylindrical weighing bottles

- Plug-style stopper with closed bottom fits into internally ground body

COMPLIANCE:
Designed from Fed. Spec. NNN-B-1493, Type I, Style III

03-420-5A

Approx. Capacity	I.D. × H	₮ Joint No.	Mfr. No.	Cat. No.	Case of 6
35mL	50 × 30mm	50/12	15165 5030	**03-420-5A**	186.00
50mL	60 × 30mm	60/12	15165 6030	**03-420-5B**	213.90
82mL	70 × 33mm	71/15	15165 7033	**03-420-5C**	242.82

CARRIERS

*Fisherbrand** Safety Bottle Carriers

Hold one 5 pt. or 1 gal. (2.5 or 4L) bottle

- Thick molded rubber safely cushions glass bottles
- Circular cup in the bottom centers bottle with 1" (2.5cm) between wall and bottle
- Integral molded handle

03-439, 03-439A

Color	Cat. No.	Each
Black	**03-439**	171.15
Red	**03-439A**	156.68

*Fisherbrand** Polyethylene Safety Bottle Carriers

Carry up to eight bottles

- Heavy-duty, high-density polyethylene (HDPE)
- Safe and easy method of carrying bottles

ORDERING INFORMATION:
Dimensions: (L × W × H), 14½ 7½ × 6¼" (36.8 × 19.1 × 15.9cm)

03-439-75B

Style	Cat. No.	Each
Unpartitioned	**03-439-75A**	111.46
8 compartments	**03-439-75D**	177.46
6 compartments	**03-439-75B**	158.47
2 compartments	**03-439-75C**	132.74

Nalgene* Collapsible Carrier

Transports up to six 1 gal. (4L) containers

- Folds flat to save valuable storage space
- Made of white polypropylene and stainless steel
- Molded-in handgrips for easy carrying
- Lightweight, durable

03-439-1C

ORDERING INFORMATION:
Open, measures 13¾L × 20¾W × 10¾"H (35 × 53 × 27cm). Folds to 13¾L × 20¾W × 2¾"H (35 × 53 × 7cm); five folded carriers fit into same space as one open unit.

NOTE:
Not autoclavable.

Mfr. No.	Cat. No.	Each	Case of 4
7155 1421	**03-439-1C**	85.35	227.60

Nalgene* 4-in-1 EZ Tote* Bottle Carrier

Versatile carrier can be easily reconfigured to accommodate 500mL, 1L, or 4L bottles

- Carries eight 500mL, six 1L, or two 4L bottles
- Reconfigureable partitions
- Holds up to 28 lb. (12.7kg)
- Manufactured from 3mil corrugated HDPE plastic
- Stores flat and easy to assemble
- Blue

02-923-170

ORDERING INFORMATION:
Dimensions: 13L × 8W × 13½"H (33 × 23 × 34cm)

NOTE:
Do not autoclave.

Mfr. No.	Cat. No.	Case of 4
6565-0001	**02-923-170**	103.89

Nalgene* 500mL Bottle Carrier

Holds up to six standard 500mL reagent bottles in any profile

- Sturdy, comfortable handle is molded into the base
- Cover latches securely
- Linear LDPE provides greater rigidity and impact resistance
- Bright yellow for safety
- Can be stacked empty or full

03-439-31

ORDERING INFORMATION:
Dimensions (L × W × H): 14 × 10 × 11" (35 × 25 × 28cm)

Mfr. No.	Cat. No.	Each	Case of 6
6505-0010	**03-439-31**	109.32	437.25

Nalgene* Safety Bottle Carriers

Ideal for transporting acid and chemical bottles

- Impact-resistant, low-density polyethylene carrier and lid
- Clear polycarbonate viewing insert in top of lid
- Locking handle
- Cushions against breakage

03-439-29

Accommodates	Mfr. No.	Cat. No.	Each	Case of 6
½ gal.	6501 2500	**03-439-28**	93.12	372.47
1 gal.	6501 4000	**03-439-29**	109.45	437.80

Scienceware* Bottle Carrier with Carrying Handle

Compact design holds up to six 500 or 250mL bottles

- Blue polypropylene
- Recessed base eliminates sliding bottles

03-409-24

ORDERING INFORMATION:
Dimensions with handle, 11¼L × 7⅝W × 8⅞"H (28.6 × 19.4 × 22.5cm)

Mfr. No.	Cat. No.	Each
F11640 0001	**03-409-24**	29.93

CLOSURES

*Fisherbrand** Polyvinyl-Lined Plastic Caps

Excellent moisture barrier

- Liner consists of 1mm polyvinyl film bonded to 1mm HDPE on a #30 white pulp paper backing

02-911 and 02-912 Series Caps

Screw Cap Size	Cat. No.	Case of
20mm-400	**02-911-804**	576/232.14
22mm-400	**02-912-284**	576/340.98
24mm-400	**02-912-285**	12/11.07
28mm-400	**02-912-286**	576/384.74
33mm-400	**02-912-287**	12/14.81
33mm-400	**02-911-835**	2100/788.11
38mm-400	**02-912-288**	576/563.74
43mm-400	**02-912-289**	576/739.35
43mm-400	**02-912-282**	1760/935.66
45mm-400	**02-912-290**	576/560.60
45mm-400	**02-911-841**	1520/1041.41
48mm-400	**02-912-291**	12/29.47
53mm-400	**02-912-292**	12/13.60
53mm-400	**02-911-844**	1080/831.27
58mm-400	**02-912-086**	12/29.46
63mm-400	**02-912-087**	12/27.36
70mm-400	**02-912-088**	12/32.88
70mm-400	**02-911-853**	640/829.73
83mm-400	**02-912-089**	144/341.69
89mm-400	**02-912-090**	144/387.41
24mm-410	**02-912-083**	576/194.89
8mm-425	**02-912-084**	576/181.16
13mm-425	**02-912-081**	576/123.38
15mm-425	**02-912-325**	576/141.89

Contd. on next page.

*Fisherbrand** White Polypropylene Caps with PTFE Liners

Usable with analytical lab samples, high-purity chemicals, strong acids, and solvents

- Economical caps ideal for environmental samples, pharmaceuticals, and diagnostic reagents
- Screw cap sizes for narrow- and wide-mouth bottles

02-911 and 02-912 Series Caps

Size	Cat. No.	Pack of	Case of
8mm-425	**02-912-102**	500/159.99	----
13mm-425	**02-912-064**	100/60.89	5 Pk./220.55
13mm-425	**02-911-797**	13500/3952.42	----
15mm-425	**02-912-065**	500/222.70	----
18mm-400	**02-912-066**	100/57.23	5 Pk./207.31
20mm-400	**02-912-067**	100/82.88	5 Pk./300.24
22mm-400	**02-912-068**	500/396.56	----
24mm-400	**02-912-069**	100/163.22	5 Pk./591.29
28mm-400	**02-912-070**	100/222.81	5 Pk./807.12
28mm-400	**02-912-044**	3000/2637.99	----
33mm-400	**02-912-071**	100/223.61	5 Pk./810.02
33mm-400	**02-911-836**	2100/2569.78	----
38mm-400	**02-912-072**	500/1000.42	----
43mm-400	**02-912-073**	500/994.76	----
45mm-400	**02-912-074**	500/1062.89	----
48mm-400	**02-912-075**	100/354.14	5 Pk./1282.86
53mm-400	**02-912-076**	100/424.96	5 Pk./1539.43
58mm-400	**02-912-077**	100/479.25	5 Pk./1736.07
63mm-400	**02-912-085**	288/959.28	----
70mm-400	**02-912-078**	144/630.20	----
83mm-400	**02-912-079**	144/1004.42	----
89mm-400	**02-912-080**	144/1180.66	----

*Fisherbrand** Rubber-Lined Plastic Caps

Resilient, resistant to moisture vapor

- Black, rubber-lined caps
- Packaged in 12 packs

02-912-046

Cap Size	Cat. No.	Case of
18mm-400	**02-912-046**	576/374.57
20mm-400	**02-912-047**	576/434.16
22mm-400	**02-912-048**	576/500.01
24mm-400	**02-912-049**	576/571.48
28mm-400	**02-912-050**	576/461.60
33mm-400	**02-912-051**	576/593.75
38mm-400	**02-912-052**	576/665.30
43mm-400	**02-911-864**	576/1843.97
58mm-400	**02-911-848**	288/447.51

*Fisherbrand** Poly-Seal*-Lined Plastic Caps

Stress-crack resistant, black caps

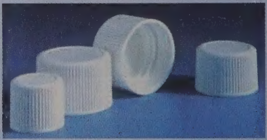
- Manufactured from LDPE

02-911 and 02-912 Series Poly-Seal-Lined Plastic Caps

Size	Cat. No.	Pack of	Case of
13mm-425	**02-912-057**	576/199.58	----
15mm-425	**02-912-058**	576/204.82	----
18mm-400	**02-912-059**	12/10.58	48 Pk./367.92
20mm-400	**02-912-054**	576/368.36	----
20mm-400	**02-911-803**	5500/1746.15	----
22mm-400	**02-912-056**	12/8.45	48 Pk./293.99
24mm-400	**02-912-055**	12/9.86	48 Pk./343.11
24mm-400	**02-911-806**	4200/1497.64	----
24mm-400	**02-912-060**	576/267.62	----
28mm-400	**02-912-061**	12/10.99	48 Pk./382.12
28mm-400	**02-912-101**	3100/754.89	----
33mm-400	**02-912-062**	12/12.53	48 Pk./435.98
33mm-400	**02-912-091**	2300/686.18	----
38mm-400	**02-912-063**	12/27.35	48 Pk./951.28
38mm-400	**02-911-727**	1600/1080.77	----

*Fisherbrand** Foamed PE-Lined Plastic Caps

- General purpose, white caps lined with polyethylene



02-911-807, 02-912-093, 02-912-851, 02-911-837

Cap Size	Cat. No.	Pack of
24mm-410	**02-911-807**	500/84.65
24mm-410	**02-912-092**	3500/397.69
28mm-400	**02-911-809**	500/93.18
28mm-400	**02-912-095**	4300/288.96
33mm-400	**02-911-837**	576/194.83
33mm-400	**02-912-096**	3000/249.43
38mm-400	**02-911-839**	576/218.62
38mm-400	**02-912-097**	500/178.27
38mm-400	**02-912-053**	2250/144.56
43mm-400	**02-912-326**	3000/348.67
48mm-400	**02-912-098**	1700/278.75
53mm-400	**02-912-099**	500/108.59
53mm-400	**02-912-093**	1300/387.67
58mm-400	**02-912-328**	1000/351.82
63mm-400	**02-911-851**	288/205.14
89mm-400	**02-912-330**	12/190.94
89mm-400	**02-912-094**	370/272.15

Fisherbrand* Unlined Plastic Caps

02-911-840

Screw Cap Size	Cat. No.	Case of
43mm-400	**02-911-840**	576/194.82
43mm-400	**02-912-331**	2200/219.18
48mm-400	**02-912-332**	1700/209.35
53mm-400	**02-911-845**	288/117.15
53mm-400	**02-912-333**	1300/180.67
58mm-400	**02-911-847**	288/118.39
58mm-400	**02-912-334**	1100/233.45
63mm-400	**02-912-335**	900/119.79
70mm-400	**02-912-100**	760/178.31
89mm-400	**02-911-856**	144/120.56
89mm-400	**02-912-336**	456/190.57

Corning* Black Phenolic Caps with PTFE Liners

Resist temperature and steam in autoclaving

- Phenolic screw caps have glued-in rubber lining firmly bonded to an interface of PTFE, providing a highly inert sealing face

02-883-8C

Size	Mfr. No.	Cat. No.	Case of
13mm-415	9998 13	**02-883-8C**	288/221.06
15mm-415	9998 15	**02-883-8D**	288/221.06
18mm-415	9998 18	**02-883-8E**	192/181.55
24mm-410	9998 241	**02-883-8B**	144/230.67
24mm-400	9998 24	**02-883-8A**	12/30.17

Kimble* Black Phenolic Screw Caps

Bond between liner and cap retains adhesive properties even after repeated autoclaving

With PTFE-faced rubber liner

- Identified in ASTM* specification E 982-94, Class B requirements

With 14B rubber liner (SBR)

- Has fewer threads than regular GPI caps for easier application and removal
- Not recommended for use with standard GPI finishes usually found on blown-molded bottles
- Identified in ASTM specification E 982-94, Class A requirements

14-930-14G

GPI Thread	Mfr. No.	Cat. No.	Case of
With PTFE-Faced Rubber Liner			
13-415	45066C-13	**14-930-15D**	300/219.00
15-415	45066C-15	**14-930-15E**	300/219.00
24-410	45066C-24	**14-930-15J**	150/235.50
With 14B Rubber Liner (SBR)			
38-430	45066B-38	**14-930-14G**	150/291.00

Nalgene* Colored Closures

Polypropylene closures are easy to identify

- Reduce chance of cross contamination
- Opaque; protect contents from UV light when used with opaque Nalgene bottles
- One-piece, linerless, with integrally molded seal ring
- Fit Nalgene narrow-mouth bottles up to 1000mL
- Well-defined closure knurl makes gripping and capping easy
- Guarantee leakproof†, when used with Nalgene narrow-mouth bottles

03-700229, 02-923-143, 03-700-27

COMPLIANCE:

Meet FDA 21CFR177.1520 for food and beverage use. Materials meet CONEG regulations for heavy metal content.

Diameter	Color	Mfr. No.	Cat. No.	Case of 2000
20mm	Natural	362150-0200	**03-700-27**	281.25
20mm	White	362150-1200	**02-923-143**	281.25
20mm	Amber	362150-7200	**03-700-29**	281.25

† *For definition of "leakproof" see page 178.*

BRUSHES

BEAKER

Fisherbrand* White Nylon Bristle Brush

Heavy-duty brush for cleaning beakers, jars, and similar containers

- Extra-heavy bristle with double-tufted end
- Wooden handle
- Chemical-resistant

03-536

Overall Length	Bristle L × Dia.	Cat. No.	Each	Pack of 6
16" (41cm)	5 × 2⅞" (13 × 7cm)	**03-536**	49.15	252.05

Fisherbrand* Heavy-Duty Brushes

Spiral-wound bristles for cleaning beakers

- Spiral-wound bristles
- Extra-heavy tuft end
- Wooden handle

03-541-5

Overall Length	Bristle L x Dia.	Cat. No.	Each	Pack of 12
12" (30cm)	4 × 2½" (10 × 6.4cm)	**03-541**	24.80	254.40
16" (41cm)	5 × 3" (13 × 7.6cm)	**03-541-5**	32.00	328.05

Fisherbrand* Low-Cost Brush

Economical brush for beakers

- Two rows of bristles provide slightly oval shape
- End tuft for cleaning corners
- Wooden handle

03-555

Overall Length	Bristle L x Dia.	Cat. No.	Each	Pack of 12
16" (41cm)	6 x 3" (15 x 7.6cm)	**03-555**	14.80	151.45

FLASK

*Fisherbrand** Adaptable-to-Container Brush

Useful for cleaning a wide variety of glassware

- Single-row bristles
- Attached to heavy wire handle by swivel joint
- Handle with ring for hanging

03-565

Overall Length	Bristle L x Dia.	Cat. No.	Each	Pack of 12
12" (30cm)	4¼ × 1½" (10.8 × 3.8cm)	**03-565**	12.55	128.75

*Fisherbrand** Brush with Extension for Flask Curves

For cleaning bottom curves and inside shoulders of flasks and bottles

- White unbleached hog bristles
- Extended bristled end
- Plastic shaft and handle

03-571-5

Overall Length	Bristle L x Dia.	Cat. No.	Each	Pack of 12
16" (41cm)	4 × 1½" (10 × 3.8cm)	**03-571-5**	14.10	144.50

*Fisherbrand** Flexible-Handle Brushes

Soft, single row of bristles fits easily into flask necks

- Plastic handle bends to allow fitting of bristles to container shape
- Handle has hanging ring

03-570A

Flask Size	Overall Length	Bristle L x Dia.	Cat. No.	Each	Pack of 12
250mL	12" (30cm)	3½ × 1⅜" (8.9 × 3.5cm)	**03-570A**	9.85	96.60
500mL	14" (36cm)	4 × 1½" (10 × 3.8cm)	**03-570B**	10.05	98.95
1000mL	17" (43cm)	5 × 1¾" (12.7 × 4.4cm)	**03-570C**	12.60	123.90

TEST TUBE

*Fisherbrand** Budget-Priced Brushes

Economical brushes for test tubes

- 03-576 is nylon with radial tufted end; rest are unbleached white hog bristles
- Galvanized wire handles resist rust and corrosion

03-573

Overall Length	Bristle L × Dia.	Cat. No.	Price	Case of 144
10½" (27cm)	4 × 1⅜" (10 × 3.5cm)	**03-573**	Ea./3.60	394.85
½" (24cm)	3½ × ¾" (8.9 × 1.9cm)	**03-574**	Pk. of 12/31.15	319.45
9" (23cm)	3 × 7/16" (7.6 × 1.1cm)	**03-576**	Pk. of 12/26.70	273.65

*Fisherbrand** Stainless-Steel Handled Brushes

Stiff, white nylon bristles for cleaning test tubes

- Bristles are chemical resistant
- Radial tufted end
- Stainless-steel handle is rustproof, corrosion resistant

03-572-5

Overall Length	Bristle L × Dia.	Cat. No.	Pack of 12	Case of 12 Pack
11" (28cm)	4 × 1⅜" (10 × 3.5cm)	**03-572-5**	73.80	783.45
9" (23cm)	3½ × ¾" (8.9 × 1.9cm)	**03-578**	61.20	649.65

*Fisherbrand** Nylon Tufted Brush

Unbleached bristles with tuft for test tubes

- Unbleached white hog bristles
- Black, nylon tuft, 1" (2.5cm)
- Galvanized wire handle

03-590

Overall Length	Bristle L × Dia.	Cat. No.	Pack of 12	Case of 12 Pack
10" (25cm)	3 × 1⅜" (7.6 × 3.5cm)	**03-590**	50.50	517.95

SPECIAL PURPOSE

*Fisherbrand** Centrifuge Tube Brush

For 15mL centrifuge tubes

- Tapered bristle portion, ½" dia. (1.3cm) at tip
- Galvanized wire handle

03-608

Overall Length	Bristle L x Dia.	Cat. No.	Pack of 12	Case of 12 Pack
9" (23cm)	3½ x 1 13/16" (8.9 x 2cm)	**03-608**	28.25	289.55

*Fisherbrand** Buret Brushes

Wire handle galvanized to resist rust and corrosion

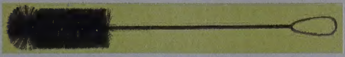
- 03-614 features tapered bristle section

03-614

Buret Size	Overall Length	Bristle L × Dia.	Cat. No.	Price	Case of
25 × 50mL	36" (91cm)	3¼ × ¾" (8.2 × 1.9cm)	**03-614**	Pk. of 12/96.50	6 Pk./ 512.25
75 × 100mL	36" (91cm)	5¼ × 1¼" (13.3 × 3.2cm)	**03-615**	Ea./6.25	12/62.35

*Fisherbrand** Nessler Tube Brushes

For low- and high-form Nessler tubes



03-621A

- Full bristles to make complete contact with cylinder walls and bottom
- 03-621A is natural black bristle; others are black nylon
- Radial, double-fan tip
- Galvanized wire handle

Overall Length	Bristle L × Dia.	Cat. No.	Each	Pack of 12
For Low-form Nessler Tubes				
12" (30cm)	4 × 1¾" (10 × 4.4cm)	**03-621A**	7.70	76.65
20" (51cm)	6 × 2⅜" (15.2 × 6cm)	**03-621B**	14.35	147.20
30" (76cm)	6 × 2⅜" (15.2 × 6cm)	**03-621C**	----	156.97
For High-form Nessler Tubes				
19" (48cm)	4 × 1" (10 × 2.5cm)	**03-622**	7.70	76.95

*Fisherbrand** Funnel or Graduate Brush

Two rows of tapered bristles

03-560

- Bristles securely fastened to flat metal strip which inserts into black plastic handle
- Tapered bristle section

Overall Length	Bristle L x Dia.	Cat. No.	Each	Pack of 12
13" (33cm)	6 × 2¼" (15.2 × 5.7cm)	**03-560**	22.30	228.70

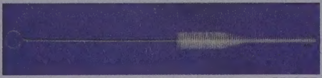
LOOKING FOR GLASSWARE?

Fisher Scientific offers a wide selection of glassware for all laboratory needs. To review these products, please refer to the following sections:Beakers, Bottles, Cylinders, Flasks, Pipets, Tubes, Watch Glasses.

PIPET

*Fisherbrand** Transfer Pipet Brush

Cone-shaped brush with stiff nylon bristles for cleaning transfer pipets



03-625

Overall Length	Bristle L x Dia.	Cat. No.	Each	Pack of 12
17" (43cm)	7½ × 15⁄16" (19 × 2.4cm)	**03-625**	6.50	64.90

NARROW TUBE

*Fisherbrand** Stiff Bristled Brushes

Clean tubes to 7⁄16" dia. (1.1cm)

03-635

Overall Length	Bristle L x Dia.	Cat. No.	Pack of 12	Case of 12 Pack
12" (30cm)	3 × ½" (7.6 × 1.3cm)	**03-635**	25.60	262.40
24" (61cm)	½" (7.6 × 1.3cm)	**03-637**	39.40	403.70

*Fisherbrand** Soft Nylon Bristle Brush

For cleaning funnel stems and capillary tubes

03-636

Overall Length	Bristle L x Dia.	Cat. No.	Pack of 12	Case of 12 Pack
12" (30cm)	2½ × ½" (6.3 × 1.3cm)	**03-636**	28.40	291.40

BJ Long Pipe Cleaner Brushes

Cut at any length for cleaning small pipets, stopcocks, capillary tubes

- May be used for slightly larger sizes by bending in moderate zig-zag pattern

03-642A

For Tubing Diameter	Overall Length	Cat. No.	Case of 6 Rolls
1.5 to 3mm	53' (16.2m)	**03-642A**	111.56
2.5 to 5mm	53' (16.2m)	**03-642B**	118.37

GENERAL PURPOSE

*Fisherbrand** Brass Wire Brush

For cleaning corroded or dirty metal surfaces

- Wooden handle
- Handle length, 5" (13cm)

03-685

Overall Length	Bristle L x W	Cat. No.	Each	Pack of 12
10" (25cm)	5 × ⅝" (12.7 × 1.6cm)	**03-685**	39.49	405.03

LOOKING FOR MORE?

Browse our extensive offering of brushes for cleaning glassware of any size or shape on our Web site.

Visit www.fishersci.com and search for Brushes

*Fisherbrand** Flat Camel's Hair Brushes

For dusting sensitive instruments

- Hair mounted with metal ferrule
- Wooden handle

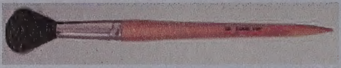
03-665A

Overall Length	Hair L × W	Cat. No.	Each	Pack of 12
6½" (17cm)	¾ × ½" (1.9 × 1.3cm)	**03-665A**	12.40	127.00
6½" (17cm)	1 × 1¼" (2.5 × 2.5cm)	**03-665B**	14.80	151.45
8¼" (21cm)	1¼ × 2" (3.2 × 5.0cm)	**03-665D**	30.40	311.70

*Fisherbrand** Long Handled Camel's Hair Brush

For dusting balances

- Slightly pointed tip and full body tapering toward handle



03-661

Overall Length	Bristle L x Dia.	Cat. No.	Each	Pack of 12
9" (23cm)	1½ × ¾" (3.8 × 1.9cm)	**03-661**	16.20	166.17

*Fisherbrand** StaticAway* Antistatic Brush

Dissipates static and whisks away dust, lint, and dirt from balance pans, optics, cuvets, slides, film, microscopes, electronics, computer monitors

- Blend of natural hair, synthetic conductive fiber, and a conductive composite handle
- Prevent inaccurate balance readings by eliminating pan weight variances caused by static
- Won't scratch critical surfaces
- Washable

Fisher Scientific

03-405-1

Overall Length	Bristle L × W × Thickness	Cat. No.	Each
2½" (6.4cm)	1¼ × 2½ × ¼" (3.1 × 6.4 × 0.6cm)	**03-405-1**	22.68

*Fisherbrand** Table-Dusting Brushes

For dusting tables and lab benches

- Soft-bristle brush
- Handle, 5"L (13cm)

03-680

Overall Length	Bristle L x W	Cat. No.	Each	Pack of 6
12⅝" (32cm)	7½ × 2" (19 × 5cm)	**03-680**	32.42	166.25

BUCKETS

BUCKETS

Whether you're storing specimens, mixing chemicals, or cleaning up spills, we have the bucket you'll need. For even more choices and details, go to our Web site and search on keyword *Buckets.*

03-687-22

Description	Cat. No.	Each	Case of
Polypropylene			
8 qt. (7.6L), natural, with cover	**03-687-40**	34.94	6/179.17
8 qt. (7.6L), white	**03-687-22**	39.27	6/157.09
HDPE			
2½ qt. (9.5L), white	**03-687-30**	75.19	6/300.75
LDPE			
14 qt. (13.2L), yellow	**13-308**	55.43	6/221.75
Polyethylene			
10 qt. (9.5L)	**03-687-10**	----	6/99.12
Stainless Steel			
12½ qt. (11.8L)	**03-687A**	140.76	3/308.24

Visit www.fishersci.com and search for Buckets

BURETS

MANUAL

Pyrex* Burets with Colored Markings

Class A

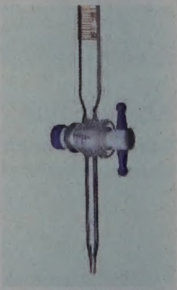
- Tips carefully drawn to ensure accuracy
- Accurate bore tubing in body

INCLUDES:

No. 2 Teflon* fluorocarbon-resin stopcock and dust cap

COMPLIANCE:

Meet ASTM* E 694, E 542, and E 287



03-701-25 Series

Capacity	Subdivision	Tolerance	Mfr. No.	Cat. No.	Each
10mL	0.05mL	±0.02mL	2103 10	**03-701-25A**	121.94
25mL	0.10mL	±0.03mL	2103 25	**03-701-25B**	130.36
50mL	0.10mL	±0.05mL	2103 50	**03-701-25C**	139.59
100mL	0.20mL	±0.10mL	2103 100	**03-701-25D**	176.74

Pyrex* Burets with Pyrex Stopcock

Class A

- Precision bore tubing assures accuracy between any two points
- Durable colored graduations are sharply defined and easy to read

03-791-5

INCLUDES:

Carefully ground ₸ stopcock, 2mm bore stopcock plug, and dust cover

COMPLIANCE:

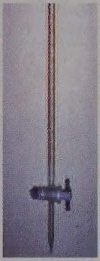
Meet ASTM*E 287 and E 42

Capacity	Subdivision	Tolerance	Mfr. No.	Cat. No.	Each
10mL	0.05mL	±0.02mL	2130-10	**11-850-01**	150.33
25mL	0.10mL	±0.03mL	2130-25	**03-791-5**	165.91
50mL	0.10mL	±0.05mL	2130-50	**03-747**	180.97

Pyrex* Burets with Colored Scale

Class B

- Ideal for use in educational and institutional labs
- Tips carefully drawn to ensure accuracy and proper drainage rate
- Durable, colored enamel markings



03-701-26 Series

INCLUDES:

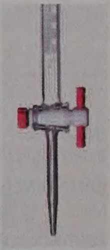
No. 2 PTFE stopcock plug and dust cap

Capacity	Subdivision	Tolerance	Mfr. No.	Cat. No.	Each
10mL	5/100mL	±0.04mL	2122A 10	**03-701-26A**	100.81
25mL	1/10mL	±0.06mL	2122A 25	**03-701-26B**	104.21
50mL	1/10mL	±0.10mL	2122A 50	**03-701-26C**	105.59
100mL	2/10mL	±0.20mL	2122A 100	**03-701-26D**	127.37

Kimax* Precision Bore Burets with PTFE Stopcock

Class A

- Precision bore tubing
- Durable white scale
- Permanently marked with individual serial number



03-700-22 Series

INCLUDES:

No. 2 PTFE stopcock and KimKap* dust cap

COMPLIANCE:

Meet ASTM* E 287. 4½" (115mm) delivery stem on 10mL size meets ASTM D 664

CERTIFICATIONS:

A certificate is provided to indicate instrument traceability to standards provided by NIST*.

Capacity	Subdivision	Tolerance	Mfr. No.	Cat. No.	Each
10mL	0.05mL	±0.02mL	17027F 10	**03-700-22A**	160.73
25mL	0.10mL	±0.03mL	17027F 25	**03-700-22B**	171.31
50mL	0.10mL	±0.05mL	17027F 50	**03-700-22C**	177.04
100mL	0.20mL	±0.10mL	17027F 100	**03-700-22D**	196.57

Kimax* Burets with 3-Way PTFE Stopcock

Class A

- Precision bore tubing
- Durable white scale
- Permanently marked with individual serial number
- Filling tube accepts ¼" I.D. flexible tubing

INCLUDES:

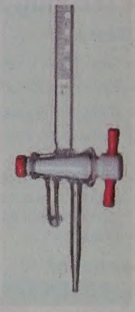
No. 2 PTFE stopcock and KimKap* dust cap

COMPLIANCE:

Meet ASTM*E 287

CERTIFICATIONS:

A certificate is provided to indicate instrument traceability to standards provided by NIST*.



03-724-10 Series

Capacity	Subdivision	Tolerance	Mfr. No.	Cat. No.	Each
25mL	0.10mL	±0.03mL	17052F 25	**03-724-10A**	143.65
50mL	0.10mL	±0.05mL	17052F 50	**03-724-10B**	150.84
100mL	0.20mL	±0.10mL	17052F 100	**03-724-10C**	193.25

Kimax* Buret with Funnel Top and PTFE Stopcock

Class A

- Easy to fill with precision bore tubing
- Durable white scale
- Permanently marked with individual serial number

INCLUDES:

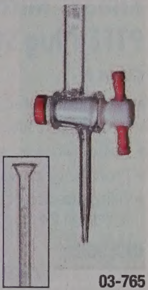
Diagonal No. 2 PTFE stopcock

COMPLIANCE:

Meets ASTM*E 287

CERTIFICATIONS:

A certificate is provided to indicate instrument traceability to standards provided by NIST*.



Buret top configuration

03-765

Capacity	Subdivision	Tolerance	Mfr. No.	Cat. No.	Each
50mL	0.1mL	±0.05mL	17094F 50	**03-765**	154.02

Kimax* Reservoir Fill Burets

Class A

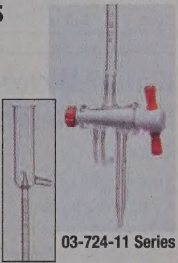
- Durable black scale
- Permanently marked with individual serial number
- Filling tube and overflow tube accept ¼" O.D. flexible tubing
- Self-zeroing

INCLUDES:

No. 2 PTFE stopcock

COMPLIANCE:

Meet ASTM* E 287



Buret top configuration

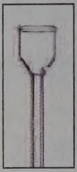
03-724-11 Series

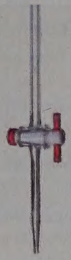
Capacity	Subdivision	Tolerance	Mfr. No.	Cat. No.	Each
10mL	0.05mL	±0.02mL	17054F 10	**03-724-11**	179.07
25mL	0.10mL	±0.03mL	17054F 25	**03-724-11A**	179.19
50mL	0.10mL	±0.05mL	17054F 50	**03-724-11B**	185.13
100mL	0.20mL	±0.10mL	17054F 100	**03-724-11C**	219.57

Kimax* Microburets with PTFE-Plug Stopcock

Class A

- Type I, Style I, Fed. Spec. NNN-B-789
- Precision bore tubing
- Durable white scale
- Permanently marked with individual serial number
- No. 3 rubber stopper, carrying short length of glass tubing, can be inserted into funnel top when desirable to fill buret from below by suction


Buret top configuration


20-105 Series

INCLUDES:
No. 2 PTFE-plug stopcock

CERTIFICATIONS:
A certificate is provided to indicate instrument traceability to standards provided by NIST*.

Capacity	Subdivision	Tolerance	Mfr. No.	Cat. No.	Each
5mL	0.01mL	±0.01mL	17110F 5	**20-105A**	249.68
10mL	0.02mL	±0.02mL	17110F 10	**20-105B**	249.68

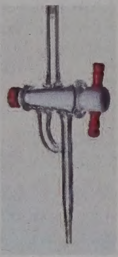
Kimax* Microburets with 3-Way PTFE-Plug Stopcock

Class A

- Type I, Style II, Fed. Spec. NNN-B-789
- Precision bore tubing
- Durable white scale
- Permanently marked with individual serial number
- Filling tube accepts ¼" I.D. flexible tubing—filling is through the stopcock

INCLUDES:
Three-way No. 2 PTFE stopcock

CERTIFICATIONS:
A certificate is provided to indicate instrument traceability to standards provided by NIST*.


20-106 Series

Capacity	Subdivision	Tolerance	Mfr. No.	Cat. No.	Each
5mL	0.01mL	±0.01mL	17115F 5	**20-106C**	280.45
10mL	0.02mL	±0.02mL	17115F 10	**20-106B**	248.75

Kimax* Burets with PTFE-Plug Stopcock

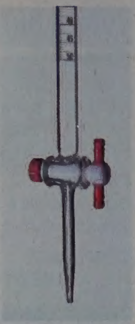
Class B

- Permanently colored black scale

INCLUDES:
No. 2 PTFE-plug stopcock and KimKap* dust cap

COMPLIANCE:
Meet ASTM* E 287

NOTE:
If glass body breaks, stopcock plug can be used in replacement glass body 03-700-21C, (sold separately).


03-700-20 Series

Capacity	Subdivision	Tolerance	Mfr. No.	Cat. No.	Each
10mL	0.05mL	±0.04mL	17026F 10	**03-700-20A**	98.22
25mL	0.10mL	±0.06mL	17026F 25	**03-700-20B**	98.22
50mL	0.10mL	±0.10mL	17026F 50	**03-700-20C**	107.38
100mL	0.20mL	±0.20mL	17026F 100	**03-700-20D**	124.09

ACCESSORIES

Replacement Glass Body for 03-700-20C Buret

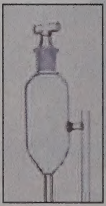
- With Lubri-Flo* stopcock barrel
- Without PTFE plug

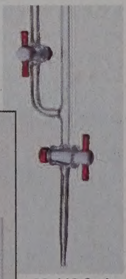
Capacity	Mfr. No.	Cat. No.	Each
50mL	17026G 50	**03-700-21C**	72.28

Kimax* Microburets with Integral Reservoir

Class A

- Type I, Style I, Fed. Spec. NNN-B-789
- Precision bore tubing
- Durable white scale
- Permanently marked with individual serial number
- Reservoir capacity: Approximately 70mL


Buret top configuration


20-112 Series

INCLUDES:
₮ 14/20 stopper in reservoir and two No. 2 PTFE-plug stopcocks.

COMPLIANCE:
Meet ASTM* E 694

CERTIFICATIONS:
A certificate is provided to indicate instrument traceability to standards provided by NIST*.

Capacity	Subdivision	Tolerance	Mfr. No.	Cat. No.	Each
2mL	0.01mL	±0.01mL	17132F 2	**20-112A**	260.34
5mL	0.01mL	±0.01mL	17132F 5	**20-112B**	282.92
10mL	0.05mL	±0.02mL	17132F 10	**20-112C**	269.41

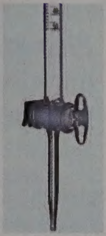
Kimax* Buret with Black Scale

Class B

- Durable black ceramic enamel scale

INCLUDES:
Straight Ꞩ No. 2 glass stopcock and KimKap* dust cap

COMPLIANCE:
Meets ASTM*E 287


03-693C

Capacity	Subdivision	Tolerance	Mfr. No.	Cat. No.	Each
50mL	0.10mL	±0.10mL	17026 50	**03-693C**	84.92

Nalgene* Acrylic Burets

Class B

- Durable, transparent body with polymethylpentene tip
- Unaffected by diluted acids and bases (except hydrofluoric acid and ammonium hydroxide) used as titrants

INCLUDES:
Leakproof† TFE stopcock and plug

COMPLIANCE:
Meet ASTM* E 287

03-705 Series

NOTE:
Not recommended for use with organic solvents and alcohol.

Capacity	Subdivision	Tolerance	Mfr. No.	Cat. No.	Each	Case of 4
25mL	0.10mL	±0.06mL	3650 0025	**03-705B**	103.88	277.00
50mL	0.10mL	±0.10mL	3650 0050	**03-705C**	117.56	313.50
100mL	0.20mL	±0.20mL	3650 0100	**03-705D**	132.19	352.50

†Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** These tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

BUDGET PRICED

*Fisherbrand** Manual Student Burets

With blue markings

- Well suited for both educational and routine laboratory work

INCLUDES:
Straight Ꞩ glass stopcock

03-700 Series

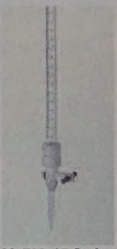
Capacity	Subdivision	Tolerance	Cat. No.	Each	Case of 12
10mL	0.05mL	±0.05mL	**03-700A**	74.70	761.95
25mL	0.10mL	±0.06mL	**03-700B**	69.25	706.35
50mL	0.10mL	±0.10mL	**03-700C**	114.85	1171.45
100mL	0.20mL	±0.20mL	**03-700D**	113.55	1158.20

Pyrex* Burets with Locking Stopcock

Replaceable components for cost savings

- Easy-to-read, wear-resistant white enamel graduations in 0.10mL increments
- Barrel tooled at top and bottom
- Ground tip for accurate fluid control and leak-resistance

INCLUDES:
Locking PTFE fluorocarbon resin stopcock


03-700-15 Series

Capacity	Tolerance	Mfr. No.	Cat. No.	Pack of 2	Case of 3 Pack
25mL	±0.06mL	2116 25	**03-700-15A**	176.39	395.09
50mL	±0.10mL	2116 50	**03-700-15B**	183.44	411.49

Kimax* Burets with Threaded Closure Fit

Educational grade

- Economical and versatile
- Accept PTFE stopcock assembly with threaded closure to prevent dislodging
- Tube has a reinforced top with tooled lower end
- Ground tip fits into lower end of stopcock assembly

INCLUDES:
KimKap* dust cap

03-857 Series

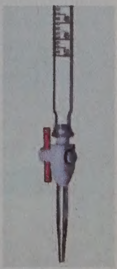
Capacity	Subdivisions	Mfr. No.	Cat. No.	Each
25mL	0.1mL	17121H 25	**03-857A**	66.51
50mL	0.1mL	17121H 50	**03-857B**	69.29

Kimax* Burets with Replaceable PTFE Stopcock

Replaceable glass barrels and tips

- Borosilicate glass construction
- Permanent brown scale on the 25mL size and black on the 50mL

INCLUDES:
KimKap* dust cap and 2mm PTFE-plug stopcock


03-700-12 Series

Capacity	Subdivisions	Mfr. No.	Cat. No.	Each	Case of 6
25mL	0.1mL	17021H 25	**03-700-12A**	91.05	398.76
50mL	0.1mL	17021H 50	**03-700-12B**	93.94	411.42

ACCESSORIES

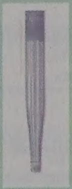
Replacement Glass Barrels

- For 03-700-12 Series burets
- Without stopcock, tip, or dust cap

Capacity	Mfr. No.	Cat. No.	Case of 6
25mL	17021J 25	**03-700-13A**	----
50mL	17021J 50	**03-700-13B**	132.62

Replacement Glass Tips

- For 03-700-12 Series and 03-857 Series burets
- Fit 25 and 50mL sizes



10-310-31

Mfr. No.	Cat. No.	Case of 6
17034H 99	**10-310-31**	32.17

Replacement PTFE Stopcock Assembly

- For 03-700-12 Series burets
- Assembly is PTFE and free of expansion/contraction problems.

Stopcock Bore	Mfr. No.	Cat. No.	Each
2mm	41006F 2	**10-310-165**	49.11

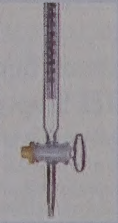
SCHELLBACH

*Fisherbrand** Schellbach Burets

With straight $\overline{\mathsf{S}}$ glass stopcock

- Accentuate meniscus for easy reading
- Accuracy established within the limits of error allowed by NIST*

Buret top confrigruation



03-740 Series

Capacity	Subdivision	Tolerance	Cat. No.	Each	Case of
25mL	0.10mL	±0.06mL	**03-740A**	141.65	12/1444.85
50mL	0.10mL	±0.10mL	**03-740B**	133.40	12/1360.70
100mL	0.20mL	±0.20mL	**03-740C**	166.10	6/847.10

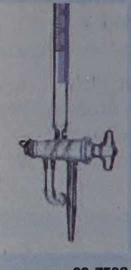
*Fisherbrand** Schellbach Burets with Three-Way Stopcock

Automatic zeroing

- Calibrated to a tip at top
- Tip located in overflow cup with drain at side
- Black graduations with Schellbach stripe

COMPLIANCE:
Meet ASTM* E 287

Buret top configuration



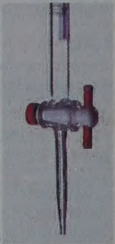
03-750C

Capacity	Subdivision	Tolerance	Cat. No.	Each	Case of 6
25mL	0.10mL	±0.06mL	**03-750A**	328.51	1684.69
50mL	0.10mL	±0.10mL	**03-750B**	309.11	1585.18
100mL	0.20mL	±0.20mL	**03-750C**	369.59	1895.31

Kimax* Schellbach Burets

With straight PTFE-plug No. 2 stopcock and KimKap*dust cap

- Durable black ceramic enamel scale
- Blue line on a broader white band running vertically behind the scale
- Meniscus is read at narrowest point of blue line above the true meniscus, ensuring greater accuracy



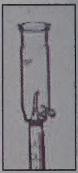
03-740-5 Series

Capacity	Subdivision	Tolerance	Mfr. No.	Cat. No.	Each
25mL	0.10mL	±0.06mL	17150F 25	**03-740-5A**	84.54
50mL	0.10mL	±0.10mL	17150F 50	**03-740-5B**	86.98

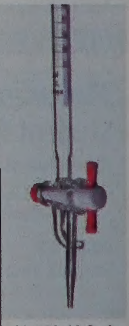
Kimax* Schellbach Burets with Three-Way Stopcock

No. 2 stopcock with automatic PTFE plug

- Durable black ceramic enamel scale
- Schellbach stripping applied to back opposite scaletop
- Overflow tube at top and filling tube at stopcock accept ¼" I.D. flexible tubing
- Calibrated to self-zero tip at top



Buret top configuration



03-750-10 Series

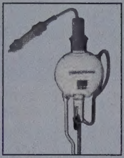
Capacity	Subdivisions	Tolerance	Mfr. No.	Cat. No.	Each
25mL	0.10mL	±0.06mL	17170F 25	**03-750-10A**	184.47
50mL	0.10mL	±0.10mL	17170F 50	**03-750-10B**	198.43

AUTOMATIC

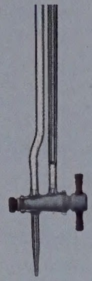
Fisherbrand* Machlett Automatic Burets

Class A

- Gravity filling eliminates errors and guards against deterioration of liquids affected by air
- Half turn of PTFE-plug stopcock fills buret; another half turn dispenses liquid
- Overflow is automatically drawn back into reservoir through tube connecting reservoir with overflow tube
- With stopcock handle in horizontal position, all action stops
- Single air intake on reservoir neck is protected by drying tube, which removes moisture from incoming air
- Can be used in multiples by connecting central storage vessel to each reservoir neck opening—when used in this way, detachable drying tube is placed on storage vessel



Buret top configuration



03-847-1 Series

Capacity	Subdivision	Tolerance	Reservoir Capacity	Cat. No.	Each
2mL	0.01mL	±0.01mL	500mL	**03-847-1A**	359.13
5mL	0.02mL	±0.01mL	1000mL	**03-847-1B**	413.13
10mL	0.05mL	±0.02mL	1000mL	**03-847-1C**	417.21
25mL	0.10mL	±0.03mL	2000mL	**03-847-1D**	450.80
50mL	0.10mL	±0.05mL	2000mL	**03-847-1E**	506.29

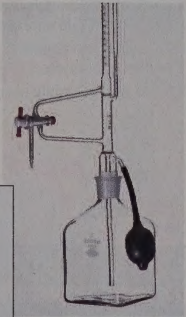
Kimax* Automatic Burets with Bottles

Class A

- \$ joints fit into reagent bottles with \$ necks
- Constructed with overflow tubes that return directly to reservoir
- For air intake, overflow cups have hose connection for attaching drying tube; second drying tube provided for use between rubber bulb and reservoir
- Precision bore tubing permanently marked with individual serial number
- Durable black ceramic enamel scale

CERTIFICATIONS:

A certificate is provided to indicate instrument traceability to standards provided by NIST*.



03-848-2 Series

Buret top configuration

Capacity	Sub-division	Grad. Intervals	Reservoir Capacity	\$ Joint No.	Mfr. No.	Cat. No.	Each
10mL	0.05mL	0.5-10	1000mL	29	17124F 10	**03-848-2A**	530.90
25mL	0.10mL	1.0-25	1000mL	29	17124F 25	**03-848-2B**	530.86
50mL	0.10mL	1.5-50	2000mL	34	17124F 50	**03-848-2C**	551.67
100mL	0.20mL	3.0-100	2000mL	34	17124F 100	**03-848-2D**	717.20

Kimax* Automatic Burets

Class B

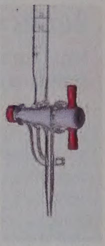
- For industrial and educational applications
- Calibrated "To Deliver" from tip of overflow tube
- Refill through inlet tube on stopcock and automatically adjust for zero
- Inlet and overflow tubes accept ¼" I.D. flexible tubing
- Durable black ceramic enamel scale
- Graduations at top are omitted since diameter in this portion varies due to sealing of overflow cup

INCLUDES:

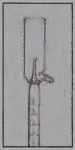
No. 2 PTFE-plug three-way stopcock

COMPLIANCE:

Designed from ASTM* E 287



03-727 Series



Buret top configuration

Capacity	Subdivision	Tolerance	Mfr. No.	Cat. No.	Each
10mL	0.05mL	±0.04mL	17051F 10	**03-789-5E**	161.76
25mL	0.10mL	±0.06mL	17051F 25	**03-727A**	152.17
50mL	0.10mL	±0.10mL	17051F 50	**03-727B**	152.17
100mL	0.20mL	±0.20mL	17051F 100	**03-727C**	185.06

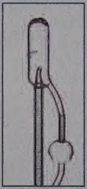
Fisherbrand* Acid-Dispensing Burets

Class A

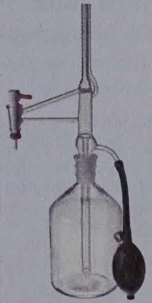
- Precision-grade burets have \$ joints that fit into the neck of reservoir bottles

INCLUDES:

PTFE stopcock, reservoir, and aspirator bulb



Buret top configuration



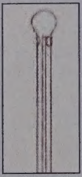
03-846 Series

Capacity	Subdivision	Tolerance	Reservoir Capacity	\$ Joint No.	Cat. No.	Each
10mL	0.05mL	±0.02mL	1000mL	24/40	**03-846AT**	352.44
25mL	0.10mL	±0.03mL	1000mL	24/40	**03-846BB1**	363.15
50mL	0.10mL	±0.05mL	2000mL	29/42	**03-846BT**	390.94

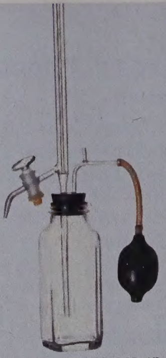
*Fisherbrand** Automatic Burets with Stopcock

Ideal for storing standard solutions

INCLUDES:
Clear or amber glass reservoir bottle, rubber stopper, one glass buret with central filling tube, rubber bulb, glass and rubber tubing connections, and Ŧ glass stopcock



Buret top configuration



03-842-1B

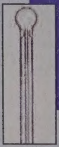
Capacity	Subdivision	Reservoir Capacity	Cat. No.	Each
With clear glass reservoir				
10mL	0.10mL	500mL	**03-842-1A**	210.10
25mL	0.10mL	500mL	**03-842-1B**	197.90
With amber glass reservoir				
25mL	0.10mL	500mL	**03-842-2B**	179.85

*Fisherbrand** Automatic Burets with Pinch Valve

With storage bottle

- Insert bead into rubber tubing
- Pinch to stop the flow of liquids

INCLUDES:
Glass buret with central filling tube, clear or amber glass reservoir bottle and delivery tip, rubber stopper, rubber bulb, glass air tube, and glass bead



Buret top configuration

03-843-1B

Capacity	Subdivision	Reservoir Capacity	Cat. No.	Each
With clear glass reservoir				
10mL	0.10mL	500mL	**03-843-1A**	224.40
25mL	0.10mL	500mL	**03-843-1B**	199.55
With amber glass reservoir				
10mL	0.10mL	500mL	**03-843-2A**	257.30
25mL	0.10mL	500mL	**03-843-2B**	171.25

ACCESSORIES

Replacement Burets for 03-842 Series

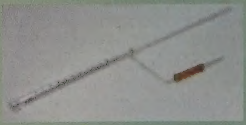
For 03-842-1 and 03-842-2 Series. With Ŧ glass stopcock.

03-842-3B

Capacity	Cat. No.	Each
10mL	**03-842-3A**	186.85
25mL	**03-842-3B**	214.55

Replacement Burets for 03-843 Series

For 03-843-1 and 03-843-2 Series.



03-843-3A

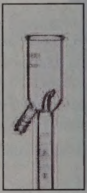
Capacity	Cat. No.	Each	Case of 12
10mL	**03-843-3A**	193.00	- - - -
25mL	**03-843-3B**	188.80	1925.75

Pyrex* Automatic Burets with Two Rotaflo* Stopcocks

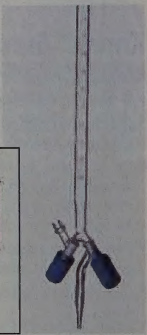
No lubricants or O-rings necessary

Two Rotaflo stopcocks seal completely but are less likely to freeze up.

- Rotaflo design permits fine control, high accuracy
- One stopcock controls titrant delivery; second stopcock (on side arm) controls filling
- Automatic zero feature is conventional overflow tip variety
- Wear-resistant white enamel markings



Buret top configuration



03-832 Series

Capacity	Subdivision	Tolerance	Stopcock Bore	Mfr. No.	Cat. No.	Each
25mL	0.10mL	±0.06mL	3.0mm	2110 25	**03-832A**	323.03
50mL	0.10mL	±0.1mL	3.0mm	2110 50	**03-832B**	320.25

Nalgene* Break-Resistant Self-Zeroing Automatic Burets

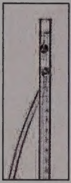
Easy to use and safer than glass

- Crystal-clear acrylic body with polymethylpentene stopcock and tip, and PTFE plug
- Unaffected by dilute mineral acids and bases except hydrofluoric acid and ammonium hydroxide

INCLUDES:
Squeeze-bottle filling assembly, 36" (91cm) clear plastic tubing, and buret cover

COMPLIANCE:
Meet ASTM E* 287

NOTE:
Not for use with alcohol, organic solvents.


Buret top configuration

03-834 Series (clamp not included).

Capacity	Subdivisions	Tolerance	Reservoir Capacity	Mfr. No.	Cat. No.	Each	Case of 4
10mL	0.1mL	±0.04mL	500mL	3640 0010	**03-834A**	115.22	307.25
25mL	0.1mL	±0.06mL	500mL	3640 0025	**03-834B**	124.22	331.25
50mL	0.1mL	±0.10mL	1000mL	3640 0050	**03-834C**	138.47	369.25
100mL	0.2mL	±0.20mL	1000mL	3640 0100	**03-834D**	148.59	396.25

Scienceware* Automatic Self-Zeroing Glass Burets

Large separable base for stability

- Borosilicate glass burets mounted to polyethylene screw caps that fit onto polyethylene reservoirs
- Squeezing reservoir forces liquid into buret
- Overfill drains back to reservoir when pressure is released
- White 0.1mL subdivisions

INCLUDES:
Drain arm with 2mm bore glass stopcock

03-830

Capacity	Reservoir Capacity	Base Diameter	Mfr. No.	Cat. No.	Each
10mL	500mL	4¾" (12cm)	F37915 0510	**03-829**	155.00
25mL	500mL	4¾" (12cm)	F37915 0525	**03-830**	180.00
10mL	1000mL	5½" (14cm)	F37915 1010	**03-831**	160.00
25mL	1000mL	5½" (14cm)	F37915 1025	**03-832**	185.00

Brinkmann* Metrohm* 765 Series Dosimat Automatic Burets

Perform GLP dosing test automatically

20-751-142

- Versatile dispensing instruments for titrating and dosing operations feature six modes
- Can be used as an electronic dropping funnel in synthesis lab and pilot plant
- Easy-to-read LCD shows total volume added
- Resolution of 1µL when using a 10mL buret
- Nonvolatile memory stores up to 10 user-specific methods
- Keyboard access to automatic preparation of standard solutions; pipetting, diluting and dispensing; and results calculation
- Digital setting of discharge and filling rates
- With RS-232-C data interface to connect to balance, printer or computer—can be remotely controlled via a computer
- Continuous dispensing available when used in tandem with second 765 Dosimat unit
- Accommodate auxiliary pipetting equipment

ORDERING INFORMATION:
Dimensions: 10L × 11W × 14"H (25 × 28 × 36cm). Certification and accessories available through your Fisher Scientific Customer Service Representative.

INCLUDES:
Trigger to remotely add reagents

Buret Capacity	Mfr. No.	Cat. No.	Each
With Magnetic Stirrer			
10mL	20 75 112 6	**20-751-126**	3700.00
20mL	20 75 114 2	**20-751-142**	3700.00
50mL	20 75 116 9	**20-751-169**	3700.00
Without Magnetic Stirrer			
5mL	20 75 100 2	**20-751-002**	3330.00
50mL	20 75 106 1	**20-751-061**	3330.00

Brinkmann* Metrohm* 776 Series Dosimat Automatic Burets

Perform GLP dosing test manually

- Universal dispensing units for liquid handling offer six modes
- Offer same nonvolatile memory, digital setting, keyboard access to functions, and auxiliary equipment accommodation as 765 Dosimat series
- Can also be used with titrators with pulse control
- Easy-to-read LCD shows total volume added
- Resolution of 1µL when using a 10mL buret

ORDERING INFORMATION:
Dimensions: 10L × 11W × 14"H (25 × 28 × 36cm). Certification and accessories available through your Fisher Scientific Customer Service Representative.

INCLUDES:
Trigger to remotely add reagent

20-755-849

Buret Capacity	Mfr. No.	Cat. No.	Each
With Magnetic Stirrer			
5mL	20 75 580 6	**20-755-806**	2620.00
20mL	20 75 584 9	**20-755-849**	2620.00
50mL	20 75 586 5	**20-755-865**	2620.00
Without Magnetic Stirrer			
10mL	20 75 572 5	**20-755-725**	2240.00
20mL	20 75 574 1	**20-755-741**	2240.00
50mL	20 75 576 8	**20-755-768**	2240.00

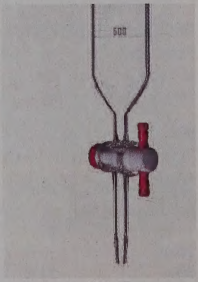
DISPENSING

Kimax* Dispensing Burets

For industrial and clinical labs

- Reliable, well-annealed, with durable colored white scale.

INCLUDES:
No. 4 stopcock with PTFE plug



03-789-5B

Capacity	Subdiv.	Tolerance	Mfr. No.	Cat. No.	Each	Case of 2
250mL	1mL	±2.0mL	17080F 250	**03-789-5A**	267.46	- - - -
500mL	5mL	±2.5mL	17080F 500	**03-789-5B**	203.91	296.40
1000mL	10mL	±5.0mL	17080F 1000	**03-789-5C**	278.69	406.84

SPECIAL PURPOSE

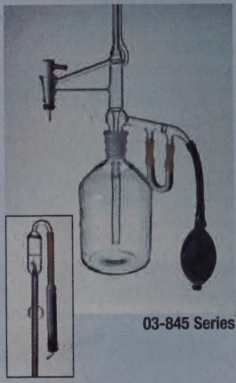
*Fisherbrand** Automatic Burets for Petroleum Neutralization

Class A

- Borosilicate glass construction
- Petroleum sample is dissolved in beaker, then titrated with standard acid or base reagent from buret until neutralized
- Buret reading indicates amount of reagent dispensed to reach neutralization
- Air openings on buret have drying tubes filled with activated alumina for absorption of vapors and moisture
- Absorbent can be regenerated by heating

INCLUDES:
PTFE fluorocarbon resin stopcock, reagent bottle and aspirator bulb

COMPLIANCE:
Meet ASTM* D 974



03-845 Series

Buret top configuration

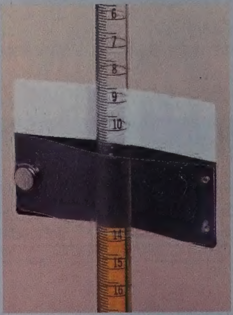
Capacity	Subdivisions	Tolerance	Reservoir Capacity	₮ Joint No.	Cat. No.	Each
5mL	0.02mL	±0.01mL	1000mL	24/40	**03-845AAT**	447.25
10mL	0.05mL	±0.02mL	1000mL	24/40	**03-845AT**	416.32
25mL	0.10mL	±0.03mL	1000mL	24/40	**03-845BBT**	476.43
50mL	0.10mL	±0.05mL	2000mL	29/42	**03-845BT**	544.73

ACCESSORIES

*Fisherbrand** Meniscus Reader

Simplifies buret readings

- Vinylite* reader provides background that is white above and black beneath
- Transparent front strap with snap holds reader in place
- Slide up or down to position black demarcation just below meniscus
- For dark liquids, illuminate from behind to make meniscus visible (black background provides shield against glare)
- For clearer liquids, ordinary illumination produces black reflection that defines meniscus sharply



03-872

Cat. No.	Each	Case of 12
03-872	26.58	271.10

*Trademark. See Trademark Reference.

Prices subject to change.

Nalgene* Economical Self-Zeroing Buret Filler Kit

No funneling, no spills

- Converts any conventional glass or plastic 25 or 50mL buret into an automatic-filling, self-zeroing buret to save time, and add convenience
- Insert adjustable fill tube into buret to zero mark, squeeze bottle, then release
- Excess titrant in buret is drawn back into bottle, automatically zeroing buret
- Reverse adapter plug to switch from 25 to 50mL buret or to store or transport titrating reagents

INCLUDES:

1000mL low-density polyethylene squeeze bottle, 4' length (1.2m) of clear, flexible PVC tubing, fill tube, adapter and closure for reagent bottle.

03-860

Mfr. No.	Cat. No.	Each	Case of 4
3645 2550	03-860	27.81	74.17

BURNERS

ALCOHOL

Wheaton Alcohol Burner

Ideal for microscopy applications

- Designed for use with isopropyl or denatured ethyl alcohol
- Soda-lime glass
- Low-heat flame

ORDERING INFORMATION:

Dia. × H: 3 × 3$\frac{15}{16}$" (75 × 100mm)

INCLUDES:

Ground-glass stopper

04-245-1

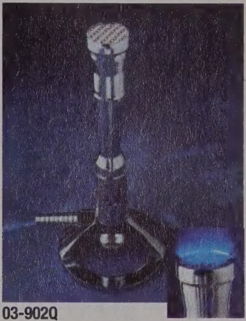
Mfr. No.	Cat. No.	Pack of 6
237070	04-245-1	163.31

GAS

Fisher Scientific* accuFlame* Natural Gas Burner

Stainless-steel grid top for better flame adjustment

- Provides better Meker Cone definition for easier fine tuning
- Distributes flame through 100 separate openings for uniform heating; flame arrester prevents flashback
- Provides twice the heat output (2930w/10,000 BTU/hr.) of straight-tube burners
- Features Venturi tube for thorough mixing of gas and air, and adjustable gas orifices and air shutter for complete combustion
- Burns natural gas at 10 cu. ft./hr.
- Rustproof chrome-plated brass body with no-tip, zinc-aluminum alloy base



03-902Q

REQUIRED ACCESSORIES:

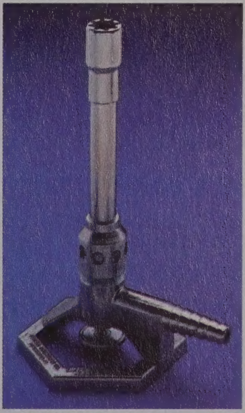
¼" I.D. gas supply tubing recommended (not included)

Grid Diameter	Height	Heat Value	Cat. No.	Each
1½" (3.8cm)	8⅝" (22cm)	800–1200 BTU/ft.^{3} (29.8–44.7MJ/m^3)	03-902Q	80.26

Fisher Scientific* Adjustable-Flame Burners

Ideal for very slow heating or quick boiling

- Pittsburgh-Universal straight-tube burners have flames adjustable from ¾ to 12" (20 to 305mm)
- Obtain heat output of over 1465w (5000 BTU/hr.)
- Consume 5 cu. ft./hr. of gas
- Flame retainer (supplied) prevents flame lifting or extinguishing
- Adjustable air and gas controls ensure complete combustion
- Tapered, serrated gas connection
- Nonferrous, rustproof construction
- Separate models for natural and LP gases

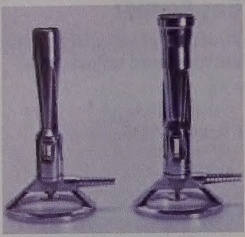


03-962Q

Heat Value	O.D. × H	Cat. No.	Each
Natural Gas Type			
800–1200 BTU/ft.^{3} (29.8–44.7MJ/m^3)	½ × 6½" (13 × 165mm)	03-962Q	77.19
LP Gas Type			
2400–3300 BTU/ft.^{3} (89.4–122.9MJ/m^3)	½ × 6" (13 × 165mm)	03-962PQ	74.80

Fisher Scientific* Standard Grid-Top Adjustable-Flame Burners

Separate models for artificial and LP gases



03-900Q, 03-902PQ

- Channel flame through 100 separate openings for uniform heating
- Provide twice the heat output (2930w/10,000 BTU/hr.) of straight tube burners
- Feature Venturi tube for thorough mixing of air and gas, and adjustable air shutter and gas orifices for complete combustion (uses 10 cu. ft. per hour of gas)
- ⅜" thick (10mm) stainless-steel grid prevents flashback
- Rustproof chromium-plated brass body and no-tip, zinc-aluminum alloy base
- LP model operates best on Philgas*, Shellgas, and Pyrofax*; also operates with propane and butane

REQUIRED ACCESSORIES:
¼" I.D. gas supply tubing recommended (not included)

Grid Dia.	Height	Heat Value	Cat. No.	Each
Artificial Gas Type				
1 3/16" (3cm)	7½" (19cm)	150–600 BTU/ft.^{3} (5.6–22.4MJ/m^3)	**03-900Q**	127.69
LP Gas Type				
1½" (3.8cm)	8⅝" (22cm)	2400–3300 BTU/ft.^{3} (89.4–122.9MJ/m^3)	**03-902PQ**	92.61

Fisher Scientific* Economy Burners

Nonferrous, rustproof construction

03-917Q

- Two large adjustable air inlets produce clear, blue, efficient flame
- Tapered, serrated gas inlet provides secure tubing connection
- Flame retainer (supplied) prevents flame lifting or extinguishing
- Tip-resistant base
- Separate models for natural and LP gases

COMPLIANCE:
Meet NIST* Standards and Fed. Spec. NNN-B-795, including 1465w (5000 BTU/hr.) requirement

Heat Value	O.D. × H	Cat. No.	Each
Natural Gas Type			
800–1200 BTU/ft.^{3} (29.8–44.7MJ/m^3)	½ × 6½" (13 × 165mm)	**03-917Q**	32.54
LP Gas Type			
2400–3300 BTU/ft.^{3} (89.4–122.9MJ/m^3)	½ × 6½" (13 × 165mm)	**03-917PQ**	40.67

Fisher Scientific* Small-Size Burners

For natural, artificial, and LP gases

- Heat output, 1465w (5000 BTU/hr.)
- Adjustable air supply and tapered, serrated gas connection
- Nonferrous construction

ORDERING INFORMATION:
Dimensions: 3¼H (8cm) × ½" O.D. (1.3cm)

04-067PQ

Heat Value	Cat. No.	Each
Natural Gas Type		
800–1200 BTU/ft.^{3} (29.8–44.7MJ/m^3)	**04-067NQ**	42.02
Artificial Gas Type		
150–600 BTU/ft.^{3} (5.6–22.4MJ/m^3)	**04-067AQ**	40.69
LP Gas Type		
2400–3300 BTU/ft.^{3} (89.4–122.9MJ/m^3)	**04-067PQ**	40.95

Fisher Scientific* Portable Bunsen Burner

Compact and portable

Fisher Scientific

14-648-15

Ideal for soldering, heat shrink tubing, wire annealing, bending glass, plastic or metal, sterilizing, electronics, or repairing metal tubing leaks. Quickly heats anything under the fume hood or out in the field to 2500°F (1371°C).

- Self-igniting with an automatic piezoelectric-ignition button for an instant, adjustable, antiflare flame
- Temperature is controllable by varying the gas flow to the burner
- Tough aluminum body holds 20cc of butane and is easily refilled
- Single filling provides 1½ hours of operating time
- Burner can be held in hand or used with the built-in, hands-free stand

ORDERING INFORMATION:
Height: 6½" (16.5cm). Diameter: 2" (5.1cm). Filled weight: 7 oz. (0.2kg). Butane fill sold separately, order Cat. No. 14-648-2.

INCLUDES:
Bunsen head, two tips (blowtorch and solder). Burner Kit (14-648-7) includes burner, Bunsen head, six attachment tips (heat shrink tubing, precision soldering, hot knife cutting, polyfoam cutting, interchangeable tip, and hot blowtorch), wire cutter, needle-nose pliers, plastic carrying case.

Description	Cat. No.	Each
Portable Bunsen Burner	**14-648-15**	60.34
Portable Bunsen Burner Kit	**14-648-7**	72.51

Argos Fireboy* Safety Burners

03-391-173

03-391-174

Easy, safe operation without a pilot flame

Portable (Fireboy Plus) and nonportable (Fireboy Eco) burners are ideal for laboratory procedures requiring flame sterilization.

Fireboy Plus Bunsen Burner

- Portable
- Can be operated using in-house gas (propane, butane, town or natural gas) and electricity
- Functions independently when equipped with a disposable gas cartridge adapter (sold separately) and battery
- **Continuous Mode:** Ignited flame remains on until turned off; safety timer can be set from 10–60 minutes
- **Foot Switch Mode:** Hands-free operation—depress foot switch to ignite, release foot switch to extinguish flame
- **Sensor Mode:** Flame ignites when hand passes within 6–8cm of infrared sensor; safety switch allows flame to be extinguished after 3–12 seconds

Fireboy Eco Bunsen Burner

- Nonportable
- Operates by foot switch only
- Ideal for use in laminar flow hoods
- Can be operated independent of in-house gas when equipped with gas cartridge and adapter

INCLUDES:

Fireboy Plus: Power supply, 7.2V battery, and three nozzles for propane/butane, mixed and natural gas.

Fireboy Eco: Three nozzles and a foot switch.

COMPLIANCE:

CE marked, UL listed

Description	Mfr. No.	Cat. No.	Each
Fireboy Plus Portable Bunsen Burner	143 000	**03-391-173**	695.45
Fireboy Eco Bunsen Burner	143 100	**03-391-174**	569.00

ACCESSORIES

For use with Fireboy* Plus and Fireboy Eco Safety Bunsen Burners

Description	Mfr. No.	Cat. No.	Pack of
Butane gas cartridges	145 015	**03-391-179**	6/70.07
Connecting gas cartridge adapter (for use independently of line)	143 225	**03-391-178**	1/98.78
External battery charger (excludes transformer)†	143 305	**03-391-181**	1/76.05
Footswitch and connecting cable	143 200	**03-391-175**	1/52.68
Power supply transformer	143 476	**03-391-182**	1/55.31
Rechargeable battery, 7.2V/60mA	143 300	**03-391-180**	1/44.56
Splash protection dome	143 210	**03-391-177**	1/79.01
Windshield	143 205	**03-391-176**	1/26.49

† External charger (03-391-181) can be connected to Fireboy Plus power supply.

Touch-O-Matic* Bunsen Burner

Safer than continuous open flame of conventional Bunsen burner

03-975

Simply depress ON/OFF platform with side of hand to release gas stream, and continuous pinpoint pilot light ignites gas to produce full flame. Release platform and flame goes out to conserve gas.

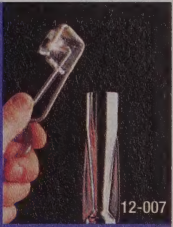
- ON/OFF platform doubles as convenient hand rest
- Removable and rotatable shield protects pilot and flame from drafts (shield comes wrapped in tissue paper)
- Sturdy, diecast zinc construction is easy to clean
- For use with mixed gas only; butane, natural and propane gas nozzles can be purchased separately (contact your Fisher Scientific Customer Service Representative for ordering information)
- With tapered gas inlet tube; accepts ¼ to 5⁄16" I.D. tubing

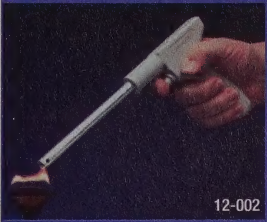
Mfr. No.	Cat. No.	Each
002806-000	**03-975**	167.42

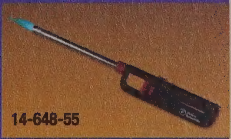
LIGHTERS

Lighters

Light burners, ovens, torches and more safely, conveniently


12-007


12-002


14-648-55

- **Fisherbrand* double-lock model prevents accidental ignition**
- **Scienceware* lighter has a self-contained electric generator**
- **Shurlite * hooded lighter protects file which produces the spark**

Description	Cat. No.	Price	Case of
Fisherbrand Double-Lock Piezoelectric Lighter	**14-648-55**	Ea./11.63	----
Scienceware Piezoelectric Gas Lighter	**12-002**	Ea./28.83	----
Shurlite Hooded Gas Lighter	**12-007**	Ea./5.45	10/45.45
Shurlite Lighter Flints	**12-007-5**	Pk. of 5/4.69	40 Pk./156.40

For more details and choices, visit www.fishersci.com and search for Lighters

CALCULATORS

Fisher Scientific* Solar-Powered, Big-Digit Calculator

Performs all arithmetic calculations

- Features memory, percent, and floating decimal point
- Oversized keys and ½"-high (1.3cm) digits permit easy reading and operation
- Requires no batteries or other independent power source

12-099-20

ORDERING INFORMATION:
Dimensions: 4¼L × 2⅜W × ¼"H (10.8 × 6.0 × 0.6cm). Weight: 2 oz. (57g).

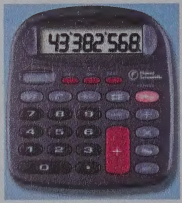
INCLUDES:
Pocket carrying case

Cat. No.	Each
12-099-20	14.07

Fisher Scientific* Solar Desktop Calculator

Solar-powered unit can be read in any light

- Performs chain calculations
- Oversized keys with 8- or 12-digit, ¾" LCD display, angled to eliminate reflected glare
- 12-digit unit permits calculating numbers as large as 999,999,999,999 and as small as .000000000001 without using scientific power notations or symbols
- Tough ABS plastic case is ideal for rough lab use
- Feet protect the unit from spills


12-099-24

ORDERING INFORMATION:
Dimensions: 6½L × 4½W × 3⁄16"H (16.5 × 11.4 × 0.9cm).
Weight: 4 oz. (113kg).

INCLUDES:
Built-in solar panels and instructions

Description	Cat. No.	Each
8-Digit	12-099-24	15.59
12-Digit	12-099-25	20.43

Fisher Scientific* Credit-Card-Sized Metric Conversion Calculator

Performs multiple conversions and calculator functions

Unit provides fast and accurate answers for 126 types of metric conversions. Simply enter a number, press an arrow, and read the exact metric or U.S. equivalent with decimal point in place.

14-648-50

- Converts length, area, volume, weight, liquid, energy, and temperature
- Performs English (Imperial) conversions and has all routine calculator functions
- With raised keys, large digits (½"), and a bright, 8-digit LCD for easy reading and operation
- Credit-card size makes it perfect for carrying anywhere

ORDERING INFORMATION:
Dimensions: 2½L × 4¼W ×½"H (6.4 × 11.4 × 1.3cm). Weight: 1 oz. (28g).

INCLUDES:
1.5V alkaline battery and integrated protective cover

Cat. No.	Each
14-648-50	28.51

Fisher Scientific* 12-Digit Calculator with Oversized Display

With oversized, raised keys for easy operation

12-099-23

- Performs all arithmetic calculations
- Features memory, percent, floating decimal point, ratios, and grand totals
- Displays answer to 12 places with ½"-high (1.3cm) digits
- Powered via solar panel or silver-oxide battery

ORDERING INFORMATION:
Dimensions: 4½L × 2½W × ⅝"H (11.4 × 6.4 × 1.6cm).
Weight: 3 oz. (85g).

INCLUDES:
Chemical-resistant ABS plastic case, built-in solar panels, and silver oxide battery.

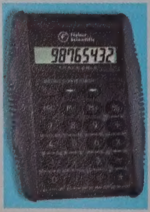
Cat. No.	Each
12-099-23	60.69

Fisher Scientific* Metric Conversion Calculator

Change lab measurements to U.S. or metric in an instant

Provides fast and accurate answers for 126 types of metric conversions.

- Converts length, area, volume, weight, liquid, energy, and temperature
- Performs English (Imperial) conversions and has all routine calculator functions
- With 8-digit, ½" high LCD, raised oversized keys and rubberized side grips for easy handling
- Automatic flip-open LCD cover converts to a benchtop stand


12-099

ORDERING INFORMATION:
Dimensions: 3¾L × 3W × ½"H (9.5 × 7.6 × 1.3cm). Weight: 2 oz. (57g).

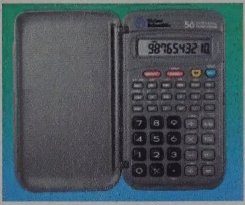
INCLUDES:
Backup battery and instructions.

Cat. No.	Each
12-099	83.58

*Trademark. See Trademark Reference.

Fisher Scientific* Pocket-Sized Scientific Calculator

Ideal for virtually all routine calculations performed in scientific labs, including square roots, percentages, and raising to powers


12-099-21

Performs more than 50 functions including science, math, common/hyperbolic trigonometric, logs/natural logs, powers, roots, reciprocals, factorials, percentages, hexadecimals, random number generation, and degree/decimal conversion.

- Statistical features include standard deviation, mean, sum of squares, sum of data, and much more
- Easy-to-use, raised keys and large, easy-to-read, ¼"H, 10-digit, two-digit exponent LCD
- Three-key memory and "Forever Memory" store data when the unit is off
- Automatic power-down function conserves battery life

ORDERING INFORMATION:
Dimensions: 5L × 3W × ½"H (12.7 × 7.6 × 1.3cm). Weight: 1½ oz. (43g).

INCLUDES:
Backup battery and instructions.

Cat. No.	Each
12-099-21	24.86

CALIPERS

Fisher Scientific* Traceable* Digital Carbon Fiber Calipers

Switch between inches and millimeters easily

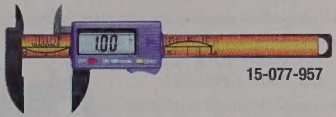
For measuring the outside or inside diameter. Ergonomically designed. No lubrication is ever required on the ultra-smooth slide bar.

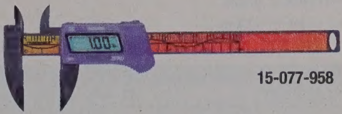
- Large digital display: 0.3"H
- Made of strong composite carbon fiber
- Greater-than or less-than results without calculations
- Zero button instantly resets unit at any position
- Runs on the supplied battery for 10,000 hours
- Resolution: 0.01" and 0.1mm
- Accuracy: ±0.01" and ±0.2mm

4" version
- Range: 0 to 4" (0 to 100mm)
- Dimensions: 7 × 2.5"
- Weight: 1 oz.

6" version
- Range: 0 to 6" (0 to 150mm)
- Dimensions: 9.5 × 3"
- Weight: 2 oz.

COMPLIANCE:
Individually serial-numbered Traceable Certificate is provided from our ISO 17025 calibration laboratory accredited by A2LA. Indicates traceability to standards provided by NIST*.

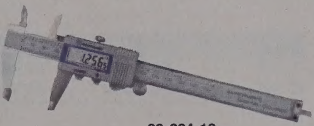

15-077-957


15-077-958

Description	Mfr. No.	Cat. No.	Each
4"	3417	**15-077-957**	25.55
6"	3418	**15-077-958**	27.60

Fisher Scientific* Traceable* Digital Calipers

Switch from inches to millimeters, set jaws closed, or read differential measurements with the touch of a button


06-664-16

- ⅓"-high digital display
- Durable hardened stainless steel
- Resolution: 0.0005" or 0.01mm
- Accuracy: ±0.001" or ±0.03mm

9" version
- Range 0 to 6" (0 to 150mm)
- Dimensions: 9 × 3"
- Weight: 5 oz.

11" version
- Range: 0 to 8" (0 to 200mm)
- Dimensions: 11 × 3"
- Weight: 6 oz.

INCLUDES:
Runs on supplied 1.5V Button Cell 357 Battery for 10,000 hours. (Replace with Cat. No. 02-440-1C.)

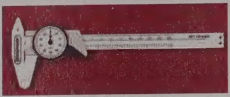
CERTIFICATIONS:
Supplied with serial-numbered certificate from an ISO 17025 calibration laboratory indicating traceability to NIST* standards.

Readings	Cat. No.	Each
0 to 6" (0 to 150mm)	**14-648-17**	78.66
0 to 8" (0 to 200mm)	**06-664-16**	108.20

Scienceware* Dial-Type Vernier Calipers with Metric Scale to 150mm

Nonconducting and corrosion resistant

- Black numbers on white background
- 150mm scale with 0.1mm subdivisions plus 1.3" (33mm) diameter dial
- Dial is adjustable for zero and differential measurements
- Upper scale reads in millimeters, lower scale in inches
- Fine adjustment thumb roller
- Polymeric plastic
- Length: 8¾" (22.2cm)

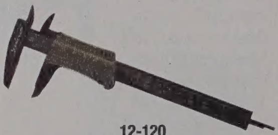

12-122

Mfr. No.	Cat. No.	Each
H13416 0001	12-122	73.50

Scienceware* Vernier Calipers Double Scales to 150mm

Will not scratch like metal

- Luminescent green numbers on black background
- 150mm scale with 0.1mm subdivisions, plus 6" scale with 0.005" subdivisions
- Upper scale reads in millimeters, lower scale in inches
- Quick, simple thumb roller
- Polymeric plastic
- Length: 9" (23cm)


12-120

Mfr. No.	Cat. No.	Each
H13415 0000	12-120	48.29

Walter Stern Vernier Calipers with Double Scales to 120mm

Metric and English scales

- 120mm scale with 1mm divisions, 0 to 5" in 1⁄16" divisions
- Readable on Vernier scale to 0.1mm and 1⁄128"
- Fast roller adjustment
- Polished steel

12-130

Mfr. No.	Cat. No.	Each
602A	12-130	26.60

LOOKING FOR MORE MEASURING TOOLS?

Additional measuring implements can be found in the Rulers and Measuring Devices section.

CALORIMETERS

IKA* 2000 Analytical Calorimeters

Compact, integrated, modular calorimeters with a high level of automation and simple handling characteristics

Determine gross calorific values of liquid and solid samples using isoperibolic (static jacket) or dynamic (reduced-time) working methods.

- Convenient operating console to access automated features
- Water handling system automatically tempers, fills, and empties inner vessel
- Automatic oxygen filling of decomposition vessel
- Automatic sample ignition
- C 2000 measuring cell with control unit
- KV 600 Digital Cooling Water Supply to provide cooling water to the calorimeter
- Choice of 115V and 230V versions

14-505-131

Basic Version 1 Package

- C 5010 Decomposition Vessel

Basic Version 2 Package

- C 5012 Halogen-resistant Decomposition Vessel for quantitative decomposition of sulfur and halogens

INCLUDES:

Interface connections for scale, printer, monitor, sample rack

COMPLIANCE:

Validation according to DIN 51900, ASTM* 240D, ISO 1928, BSI

CERTIFICATIONS:

GHOST-certified

Description	Electrical Requirements	Mfr. No.	Cat. No.	Each
C 2000 Calorimeter Basic Version 1 Package	115V 50/60Hz	8801891	**14-505-131**	19,465.80
	230V 50/60Hz	8801890	**14-505-132**	19,465.80
C 2000 Calorimeter Basic Version 2 Package	115V 50/60Hz	8801991	**14-505-133**	21,317.00

Specifications Table on next page.

LOOKING FOR DECOMPOSITION SYSTEMS?

You can find the IKA Analytical AOD 1 Decomposition System and other IKA products online.

Visit www.fishersci.com and search for IKA Decomposition System

IKA* 2000 Analytical Calorimeters, Contd.

SPECIFICATIONS

Temperature	20° to 25°C (68° to 77°F) Constant Permissable Ambient 18°C (77°F)/25°C (64.4°F) with KV 600 Cooling Water Supply, depending on working mode
Permissable Humidity	80%
Working Range	40.000 J
Min. Flowrate	15⅞ gal./hr. (60L/hr.)
Operating Oxygen Pressure	435psi (30bar)
Pressure with KV 600 Cooling Water Supply	4.4psi (0.3bar)
Working Modes	Isoperibol: 25°C (77°F), 30°C (86°F) Dynamic: 25°C (77°F), 30°C (86°F)
Reproducibility (Based on analysis of 1g benzoic acid NBS 39i)	Isoperibol: 0.05% RSD Dynamic: 0.1% RSD
Measurement Time	Isoperibol: Up to 22 minutes Dynamic: Up to 7 minutes
Power Input	1.8kW
Weight	66¼ lb. (30kg)
Dimensions (L × W × H)	17⅜ × 17¾ × 19¾" (44 × 45 × 50cm)

ACCESSORIES

IKA* Calorimeter Oxygen Bombs

Description	For Use With	Mfr. No.	Cat. No.	Each
Standard C 5010 Oxygen Bomb				
Stainless steel with fixed ignition wire	14-505-131 and 14-505-132	7114000	**14-505-135**	1917.80
Halogen-resistant C 5012 Oxygen Bomb				
Stainless-steel catalytic-activated wall; for combustion/decomposition of halogen- and sulfur-containing samples	14-505-133 and 14-505-134	7215000	**14-505-136**	3658.30

IKA* C 200 Calorimeter System

NEW

Space-saving and economical combustion calorimeter for determining gross calorific values of liquid and solid samples

- Manual handling for water and oxygen filling
- Four different working methods—isoperibolic, dynamic, manual and time controlled—for ideal adjustment of different operating tasks
- Ignition and calculation of gross calorific done automatically in modes other than manual
- Manual operating mode features user-activated ignition and end of measurement with calculations performed by user
- Calwin C 5040 software for monitoring and visualization of measuring procedure allows data export to Excel* and/or Word*
- With external power pack, complies with global voltages from 100-240V AC, 50/60Hz

14-505-200

Description	Mfr. No.	Cat. No.	Each
115V	8802501	**14-505-200**	9840.00
230V	8802500	**14-505-201**	9840.00

COMPLIANCE:

Validation according to DIN 51900, ASTM* 240D, ISO 1928, ASTM D4809, ASTM D5865, ASTM D5468, ASTM E711.

CERTIFICATIONS:

GHOST-certified

SPECIFICATIONS

Temperature	20° to 25°C (68° to 77°F) Constant Permissable Ambient
Permissable Humidity	80%
Working Range	40,000 J
Working Modes	Isoperibolic Dynamic Manual Time-Controlled
Reproducibility (Based on analysis of 1g benzoic acid NBS 39i)	Isoperibol: 0-1% RSD Dynamic: 0-1% RSD
Measurement Time	Isoperibol: approx. 17 minutes Dynamic: approx. 8 minutes Manual: approx. 17 minutes Time controlled: 14 minutes
Power Input	150W
Weight	21kg
Dimensions (L × W × H)	15¾ × 15¾ × 15¾" (40 × 40 × 40cm)

CARBOYS

GLASS

Pyrex* Aspirator Bottles with Tubulation

Serrated outlet for flexible tubing

- Neck takes cork or rubber stopper

REQUIRED ACCESSORIES:
Tubing

02-972-2

Capacity	Stopper No.	Approx. O.D. of Outlet	Mfr. No.	Cat. No.	Each	Case of
8½ oz. (250mL)	2	10mm	1220 250	**02-972B**	----	18/648.12
17 oz. (500mL)	4	10mm	1220 500	**02-972C**	----	12/810.24
34 oz. (1L)	6	10mm	1220 1L	**02-972D**	88.29	6/364.64
½ gal. (2L)	6	15mm	1220 2L	**02-972E**	112.18	6/474.97
1 gal. (4L)	10	15mm	1220 4L	**02-972F**	181.76	----
2½ gal. (9.5L)	12	15mm	1220 2X	**02-972-1**	271.79	----
3½ gal. (13.2L)	12	15mm	1220 3X	**02-972-2**	324.33	----
5 gal. (19L)	12	15mm	1220 5	**02-972G**	463.35	----

PyrexPlus* Aspirator Bottles with Tubulation

Protective PVC coating reduces breakage and contains glass and liquids in case of accident

- Neck takes cork or rubber stopper
- Side outlet is left uncoated for tubing attachment
- Autoclavable up to 121°C (250°F)

REQUIRED ACCESSORIES:
Tubing

ALERT:
Do not place over direct heat or flame. Do not heat above 121°C (250°F) moist heat or 110°C (230°F) dry heat.

02-972K

Capacity	Stopper No.	Approx. O.D. of Outlet	Mfr. No.	Cat. No.	Each	Case of
8½ oz. (250mL)	2	10mm	61220 250	**02-972H**	----	6/279.44
17 oz. (500mL)	4	10mm	61220 500	**02-972J**	----	6/435.59
34 oz. (1L)	6	10mm	61220 1L	**02-972K**	----	4/350.40
½ gal. (2L)	6	12.5mm	61220 2L	**02-972L**	----	4/621.37
1 gal. (4L)	10	12.5mm	61220 4L	**02-972M**	187.48	----
3½ gal. (13.2L)	12	12.5mm	61220 3X	**02-972N**	423.63	----

Kimax* Aspirator Bottles with Tubulation

Bottom glass hose-connection outlet is fused to bottle

- With tooled top
- Narrow mouth for rubber stopper
- With white enamel marking spot

ORDERING INFORMATION:
8½ oz. (250mL) and 17 oz. (500mL) sizes accept 5⁄16" I.D. (8mm) tubing. 34 oz. (1L) and larger accept ⅜" I.D. (9.5mm) flexible tubing.

REQUIRED ACCESSORIES:
Tubing

COMPLIANCE:
Meet ASTM* E 438 Type I, Class A requirements.

02-973-1E

Capacity	Stopper No.	Mfr. No.	Cat. No.	Case of
8½ oz. (250mL)	2	14607 250	**02-973-1A**	6/221.87
17 oz. (500mL)	4	14607 500	**02-973-1B**	1/57.73
34 oz. (1L)	6	14607 1000	**02-973-1C**	1/57.48
½ gal. (2L)	6	14607 2000	**02-973-1D**	1/84.40
1¼ gal. (5L)	10	14607 5000	**02-973-1E**	1/133.26
2½ gal. (10L)	11½	14607 10000	**02-973-1F**	1/247.85
5¼ gal. (20L)	11½	14607 20000	**02-973-1G**	1/492.13

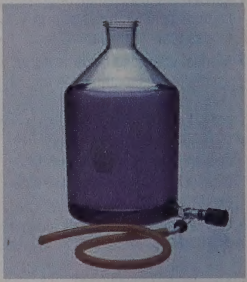
Kimax* Valved Outlet Reservoir Bottles with Tubulation

With detachable, quick-release connector

- Tooled top, narrow mouth for rubber stopper
- Graduated with approximate capacity scale
- Bottom outlet controlled with an 8mm valve and can be used with ¼" (6mm) flexible tubing (not supplied)

REQUIRED ACCESSORIES:
Flexible tubing

COMPLIANCE:
Meet ASTM* E 438 Type I, Class A requirements.



02-973-2C (order tubing separately)

Capacity	Stopper No.	Mfr. No.	Cat. No.	Case of 1
½ gal. (2L)	6	14612F 2000	**02-973-2A**	255.06
2½ gal. (10L)	11½	14612F 10000	**02-973-2C**	760.72
5¼ gal. (20L)	11½	14612F 20000	**02-973-2D**	741.16

LOOKING FOR STOPPERS?

Every lab needs stoppers. See our Fisherbrand* Cork and Rubber Stoppers online.

Visit www.fishersci.com and search for Stoppers

POLYCARBONATE

Nalgene* Round Clearboys*

Transparent polycarbonate carboys are tougher, lighter, and safer than glass

- Ideal for distilled water, medial and other culture preparations
- Molded graduations in 5L/1 gallon increments
- Suitable for mixing, storing and freezing aqueous-based reagents and biologicals
- 83mm neck accepts Top Works* and other accessories based on 83B cap
- Autoclavable
- Carboys without spigots are graduated "To Contain"
- Leakproof (see definition below)

02-962-7G

Two Styles Available

- Carboys with spigots are graduated "To Deliver" and include spigot closure
- Polypropylene cap and TPE gasket

ALERT:

Completely disengage cap threads and disassemble spigot before autoclaving

Capacity	Cap Size	Mfr. No.	Cat. No.	Each	Case of 4
With Spigots					
2½ gal. (10L)	83mm	2317 0020	**02-962-7G**	220.60	588.25
5¼ gal. (20L)	83mm	2317 0050	**02-962-7H**	285.75	762.00
Without Spigots					
2½ gal. (10L)	83mm	2251-0020	**02-962-6A**	144.84	386.25
5¼ gal. (20L)	83mm	2251-0050	**02-962-6B**	206.34	550.25

Nalgene* Rectangular Clearboys*

Space-saving design

- Suitable for storing and freezing aqueous-based reagents and biologicals
- Clear polycarbonate
- Wide neck with 100mm polypropylene closure simplifies cleaning
- Autoclavable
- Leakproof (see definition)

Two Styles Available

- Carboys with Spigots are graduated "To Deliver" and include spigot closure

02-961-55A

- Carboys without Spigots are graduated "To Contain"

ALERT:

Completely disengage closure threads and disassemble spigot before autoclaving.

Capacity	Cap Size	Mfr. No.	Cat. No.	Each	Case of
With Spigots					
2¼ gal. (9L)	100mm	2322 0020	**02-963-10A**	236.32	6/945.25
5¼ gal. (20L)	100mm	2322 0050	**02-963-10C**	299.82	4/799.50
Without Spigots					
2¼ gal. (9L)	100mm	DS2213 0020	**02-961-55A**	----	1/135.25
5¼ gal. (20L)	100mm	DS2213 0050	**02-961-55C**	----	1/185.75

[†] Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

POLYETHYLENE

*Fisherbrand** HDPE Wide-Mouth Carboys

Wide neck allows easy access for cleaning or filling

- Chemical resistant
- Can be used at temperatures down to -100°C (-148°F)
- Molded handgrips allow easy lifting or carrying
- Leakproof (see definition)

12-565-635, -637, -642

Carboys with Spigots

Convenient dispensing and storage of stock solutions

- Spigot features spring-loaded lever action
- Will automatically shut off when released, or set in a locked position
- Graduated in liters "To Deliver"

INCLUDES:

Polypropylene screw cap

Capacity	Cap Size	Cat. No.	Each	Case of
1¼ gal. (5L)	100mm	**12-565-641**	117.96	6/471.83
2⅝ gal. (10L)	100mm	**12-565-642**	147.44	6/589.75
5¼ gal. (20L)	100mm	**12-565-643**	188.40	4/502.40

Carboys without Spigots

Graduated in liters "To Contain"

INCLUDES:

Polypropylene screw cap

Capacity	Cap Size	Cat. No.	Each	Case of
1¼ gal. (5L)	100mm	**12-565-635**	53.78	6/215.11
2⅝ gal. (10L)	100mm	**12-565-636**	69.39	6/277.57
5¼ gal. (20L)	100mm	**12-565-637**	105.50	4/281.33

Nalgene* HDPE Carboys

Tough, rigid, translucent

- Convenient wide mouth for filling, transferring, and cleaning
- Graduated "To Deliver" in gallons and liters
- Leakproof (see definition)
- Polypropylene screw cap, steel handles included

Carboys with Spigots

- Have spigot with two fluoropolymer O-rings and handy tubing adapter
- Spigot closure provides positive fluid control

02-963-6B

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
2¼ gal. (9L)	100mm	2320 0020	**02-963-6A**	143.56	6/574.25
5¼ gal. (20L)	100mm	2320 0050	**02-963-6B**	179.63	4/479.00

Carboys without Spigots

- Polypropylene screw cap, steel handles included

02-961-10B

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
2¼ gal. (9L)	100mm	2211 0020	**02-961-10A**	77.51	6/310.00
5¼ gal. (20L)	100mm	2211 0050	**02-961-10B**	113.44	4/302.50

Carboys with Tubulation

- One-piece tubulation is molded to bottle for extra strength
- Accommodate ½" I.D. (13mm) tubing
- Polypropylene screw cap included

02-962-5B

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
2¼ gal. (9L)	100mm	2303 0020	**02-962-5A**	84.05	6/336.17
5¼ gal. (20L)	100mm	2303 0050	**02-962-5B**	113.49	4/302.63

Nalgene* LDPE Round Carboys

Carboys with Spigots

- Molded-in graduations in liters and gallons; graduated "To Deliver"
- Leakproof (see definition below)
- Polypropylene screw cap included

ORDERING INFORMATION:
Supplied with shoulder loop on 1-gallon size, shoulder handles on all other sizes.

02-963B

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
1 gal. (4L)	38mm-430	2318 0010	**02-963AA**	99.76	6/399.00
2½ gal. (10L)	83B	2318 0020	**02-963A**	143.13	6/572.50
5¼ gal. (20L)	83B	2318 0050	**02-963BB**	171.47	4/457.25
6½ gal. (25L)	83B	2318 0065	**02-963B**	130.25	----
13 gal. (50L)	83B	2318 0130	**02-963C**	197.50	----

Carboys without Spigots

- Built-in shoulder handles
- Molded-in graduations in 5L and 1 gal. increments; graduated "To Contain"
- No. 13½ rubber stopper may be used as a sealing aid
- Leakproof (see definition below)
- Polypropylene screw cap included

02-961E

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
2½ gal. (10L)	83B	2210 0020	**02-961D**	73.38	6/293.50
4 gal. (15L)	83B	2210 0040	**02-961E**	88.87	4/237.00
5¼ gal. (20L)	83B	2210 0050	**02-961A**	101.44	4/270.50
6½ gal. (25L)	83B	2210 0065	**02-961B**	125.16	4/333.75
13 gal. (50L)	83B	2210 0130	**02-961C**	149.00	----

†Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** These tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

Contd. on next page.

*Trademark. See Trademark Reference.

Prices subject to change.

Nalgene* LDPE Round Carboys, Contd.

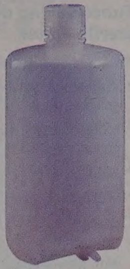
Carboys with Tubulation

- Low-density polyethylene tubulation and carboys molded in one piece for strength
- Molded-in graduations in 1 gal. and 5L increments; graduated "To Deliver"
- Leakproof (see previous page)

ORDERING INFORMATION:

Built-in shoulder loop on ½- and 1-gallon sizes; shoulder handles on 2½-, 5¼-, 13-gallon sizes.

Sizes ½- and 1-gallon take ¼" I.D. (6.4mm) tubing; 2½-, 5¼-gallon sizes take ½" (13mm); 13-gallon sizes take ⅝" (16mm).



02-962C

INCLUDES:

Polypropylene screw cap

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
1/2 gal. (2L)	38mm-430	2302 0005	**02-962B†**	31.30	6/125.22
1 gal. (4L)	38mm-430	2302 0010	**02-962C†**	38.58	6/154.33
2 1/2 gal. (10L)	83B	2302 0020	**02-962D**	78.28	6/313.14
5 1/4 gal. (20L)	83B	2302 0050	**02-962E**	100.25	4/267.33
13 gal. (50L)	83B	DS2302 0130	**02-962G**	169.17	----

† Not graduated.

Nalgene* LDPE Wide-Mouth Carboys

Ideal for mixing powders

- Convenient wide-mouth opening and wide shoulder handles
- Molded-in graduations in 1 gal. and 5L increments; graduated "To Contain"
- Leakproof (see previous page)

02-961-60C

INCLUDES:

Polypropylene screw cap

Capacity	Closure Size	Mfr. No.	Cat. No.	Each	Case of
2½ gal. (10L)	100mm	2234 0020	**02-961-60A**	72.44	6/289.75
4 gal. (15L)	100mm	2234 0030	**02-961-60C**	89.32	6/357.25
5¼ gal. (20L)	100mm	2234 0050	**02-961-60E**	102.19	4/272.50

Nalgene* LDPE Safety Dispensing Jugs

With polypropylene screw closures and pour-spout plug permanently attached to jug

- With wide-shoulder handle for easy carrying; bottom handle gives additional support
- Pour spout reduces splash
- Leakproof (see previous page)

02-923-15C

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of 4
2½ gal. (10L)	83B	2340-0020	**02-923-15A**	186.66	497.75
5¼ gal. (20L)	83B	2340-0050	**02-923-15C**	231.65	617.75

POLYPROPYLENE

*Fisherbrand** Polypropylene Wide-Mouth Carboys

Wide neck with 100mm polypropylene closure allows easy access for cleaning or filling

- Chemical-resistant containers are autoclavable and meet FDA Requirements for Food Use
- Molded handgrips allow easy lifting or carrying
- Leakproof (see definition below)

Carboys with Spigots

- Spigot features spring-loaded lever action
- Automatically shuts off when released, or set in a "locked" open position
- Provide convenient dispensing and storage of stock solutions
- Graduated in liters "To Deliver"

INCLUDES:

Polypropylene screw cap

12-565-634, -640

Capacity	Closure Size	Cat. No.	Each	Case of
1¼ gal. (5L)	100mm	**12-565-638**	131.54	6/526.17
2⅝ gal. (10L)	100mm	**12-565-639**	164.50	6/658.00
5¼ gal. (20L)	100mm	**12-565-640**	210.57	4/561.53

Carboys without Spigots

- Graduated in liters "To Contain"

INCLUDES:

Polypropylene screw cap

Capacity	Closure Size	Cat. No.	Each	Case of
1¼ gal. (5L)	100mm	**12-565-632**	63.31	6/253.25
2⅝ gal. (10L)	100mm	**12-565-633**	90.49	6/361.96
5¼ gal. (20L)	100mm	**12-565-634**	132.11	4/352.29

Replacement Parts

- For use with Fisherbrand* HDPE and polypropylene wide-mouth carboys

Description	Cat. No.	Each	Case of 12
Spigot	**12-565-644**	34.63	277.03
Closure, 100mm	**12-565-645**	60.95	----

Fisher Scientific assigns the term "leakproof" to bottle/closure systems with closures smaller than 100mm after they are filled with water, are inverted, and withstand air pressure of 2psig for 2 minutes; or to bottle/closure systems of 100 or 120mm after they are filled with water and inverted for 15 minutes, and no water escapes. ***Note:*** *these tests, using other liquids, may not yield the same results. To ensure safe usage, Fisher Scientific advises customers to test Fisherbrand* bottles and closures under conditions of their planned applications.*

Nalgene* Autoclavable Carboys

Polypropylene for temperature resistance and rigidity

- Molded-in graduations in 1 gal. and 5L increments; graduated "To Contain"
- Ideal for use with culture media, distilled water
- Integral shoulder handles for easy lifting
- Neck will accept No. 13½ rubber stopper
- Leakproof (see definition next page)

INCLUDES:

White polypropylene screw closures

02-960-20A

Standard, without Fittings

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
2½ gal. (10L)	83B	2250 0020	**02-960-20C**	89.06	6/356.25
5¼ gal. (20L)	83B	2250 0050	**02-960-20A**	127.12	4/339.00
13 gal. (50L)	83B	2250 0130	**02-960-20B**	----	6/356.25

WARNING

Completely disengage threads or remove cap before autoclaving. Not recommended for hazardous materials.

With Bottom Tubulation

- Bottom tubulation molded in one piece with bottle for strength and leak resistance
- Outlet low on bottle for more complete drainage

ORDERING INFORMATION:

Both sizes accept ½" I.D. (1.3cm) tubing.

02-960-22, 02-960-23
(Tubing not included)

INCLUDES:

Polypropylene screw cap

NOTE:

A hose clamp should be used when attaching tubing to ensure tight fit.

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Case of
2½ gal. (10L)	83B	2301 0020	**02-960-22**	6/487.50
5¼ gal. (20L)	83B	2301 0050	**02-690-23**	4/416.25

With Spigots

- Polypropylene body and spigot with spigot closure
- Base of spigot is molded to carboy
- Entire unit autoclavable (only when empty)

INCLUDES:

Polypropylene screw cap

02-963-2B

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
2½ gal. (10L)	83B	2319-0020	**02-963-2A**	159.32	6/637.25
5¼ gal. (20L)	83B	2319-0050	**02-963-2B**	199.59	4/532.25
13 gal. (50L)	83B	2319-0130	**02-963-2C**	235.50	----

Nalgene* Rectangular Carboys

Space-saving design for solutions, media and sterile water

- Wide-mouth opening for easy filling, transferring, cleaning
- With sturdy stainless-steel handle, polypropylene body
- Molded graduations in 5L/1 gallon increments
- Autoclavable
- Leakproof (see definition below, right)

Carboys with Spigots

- Feature polypropylene spigots, with fluoropolymer O-rings
- Spigot closure included
- Graduated "To Deliver"

Carboys without Spigots

- Graduated "To Contain"

02-963-5A

INCLUDES:

Screw cap

Capacity	Closure Size	Mfr. No.	Cat. No.	Each	Case of
With Spigots					
2¼ gal. (9L)	100mm	2321 0020	**02-963-5A**	172.07	6/688.25
5¼ gal. (20L)	100mm	2321 0050	**02-963-5C**	216.56	4/577.50
Without Spigots					
2¼ gal. (9L)	100mm	2212 0020	**02-961-53A**	106.19	6/424.75
5¼ gal. (20L)	100mm	2212 0050	**02-961-53C**	151.68	4/404.50

WARNING

Completely disengage closure threads and disassemble spigot before autoclaving.

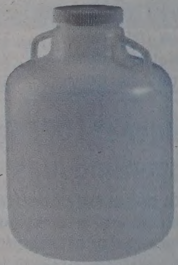
Nalgene* Wide-Mouth Carboys

Ideal for microbiological labs, especially when handling large volumes of powders or other solid samples

- Convenient wide-mouth opening and shoulder handles
- Molded-in graduations in 1 gal. and 5L increments; graduated "To Contain"
- Excellent chemical resistance
- Autoclavable
- Polypropylene body
- Leakproof (see definition at right)

INCLUDES:

White polypropylene screw cap


02-961-65C

Capacity	Closure Size	Mfr. No.	Cat. No.	Each	Case of
2½ gal. (10L)	100mm	2235 0020	**02-961-65A**	95.06	6/380.22
5¼ gal. (20L)	100mm	2235 0050	**02-961-65C**	131.69	4/351.19

WARNING

Completely disengage threads or remove closure before autoclaving.

Nalgene* Heavy-Duty Vacuum Carboys

Extra-thick walls to withstand applications of full vacuum up to 8 hours at 20°C

- Use as a vacuum trap with 02-923 Series Nalgene filling/venting closures
- Biologically inert, food-grade, natural-color polypropylene resin conforms to USP Class VI and noncytotoxic standards
- Autoclavable when closure threads are disengaged and vessel is empty
- Leakproof for vacuum uses (see definition below)

INCLUDES:

White polypropylene screw cap

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
2½ gal. (10L)	83B	2226 0020	**02-960-14**	148.32	6/593.25
5¼ gal. (20L)	83B	2226 0050	**02-960-15**	212.34	4/566.25

WARNING

Not rated for pressure use.

Nalgene* Carboys with 3" Sanitary Neck Design

Ideal for use with Nalgene Top Works* closures to create aseptic fluid-handling systems

- Combine the versatility of standard Nalgene carboys with the benefits of a 3" (7.6cm) sanitary flanged throat
- Meet the cleanability requirements of the pharmaceutical and biotech markets
- Autoclavable

02-963-8B

Capacity	Mfr. No.	Cat. No.	Case of 1
2½ gal. (10L)	2630 0010	**02-963-8A**	161.60
5¼ gal. (20L)	2630 0020	**02-963-8B**	202.51
13 gal. (50L)	2630 0050	**02-963-8C**	269.59

Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

Nalgene* Carboys with 1½" Sanitary Flanges

With welded-in sanitary fitting for use as a dispensing port

- Autoclavable polypropylene
- Provides secure hookup for use as a supply reservoir to systems such as a fermentor or chromatography column
- Graduated in 1 gal. and 5L increments
- Leakproof (see definition below)
- Noncytotoxic
- Accepts No. 13½ rubber stopper

02-963-3B

INCLUDES:

Size 83B closure

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each
2½ gal. (10L)	83B	2640 0020	**02-963-3A**	295.25
5¼ gal. (20L)	83B	2640 0050	**02-963-3B**	300.50
13 gal. (50L)	83B	2640 0130	**02-963-3C**	360.25

WARNING

Remove all metal clamps, disengage threads, and remove cap before autoclaving.

JERRICANS AND LOWBOYS

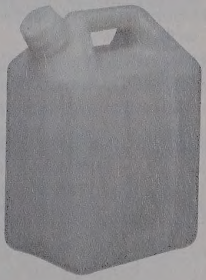
Nalgene* Fluorinated Jerricans

Coating reduces solvent absorption and penetration, providing excellent chemical resistance and improved long-term storage with minimal volume loss

- Treated with fluorocarbon coating
- Long, integral spout and built-in handle
- Graduated in liters and gallons
- Leakproof (see definition left)

INCLUDES:

White, fluorinated polypropylene screw cap, size 53B (53mm)



02-960-13

Capacity (To Shoulder)	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
2½ gal. (10L)	53B	2242 0025	**02-960-12**	74.31	6/297.25
5¼ gal. (20L)	53B	2242 0050	**02-960-13**	106.59	4/284.25

Nalgene* HDPE Jerricans

Have wide stance and low center of gravity

- Graduated in liters and gallons
- Integral spout and built-in handle
- Strap-fastened cap provided
- Recessed bottom aids handling
- Leakproof (see definition next page)

Jerricans with Second 38mm Port

- Both polypropylene caps are tethered to container
- Use secondary port to fill in place as reservoir in applications where front opening is plumbed to the host equipment

02-961-50C

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of
With Single Port					
1½ gal. (6L)	53B	2240 0015	**02-961-50A**	53.13	6/212.50
2½ gal. (10L)	53B	2240 0025	**02-961-50B**	59.01	6/236.00
3½ gal.(13L)	53B	2243-0013	**02-960-23**	----	4/200.25
5¼ gal. (20L)	53B	2240 0050	**02-961-50C**	85.69	4/228.50
With Two Ports					
3½ gal.(13L)	53B, 38mm	2243 9013	**02-960-24**	240.15	----

Scienceware* Jerricans

NEW

Wide base ensures stability

Heavy side panels include a large, smooth molded-in area for clear labeling and additional information.

- High density polyethylene
- Built-in spout retracts into the collar to conserve shelf space when transported or stored
- Separate air vent cap for smooth pouring and venting as needed
- Molded-in top handle and hand grip on the bottom
- Heavy side panels
- Graduated in liters and U.S. gallons
- Extra headspace for expansion of contents

11-865-133, -131, -132

Capacity	Mfr. No.	Cat. No.	Each	Case of
5L	H109350000	**11-865-131**	30.40	12/311.79
10L	H109360000	**11-865-132**	39.64	6/203.26
20L	H109370000	**11-865-133**	64.49	6/342.43

Nalgene* Low-Profile, HDPE Lowboys

Perfect for dispensing most liquids, including reagents, distilled water and titrants

- Tolerate strong acids and bases
- Can be stacked up to three high
- Special contour handle allows easy one-handed carrying—even when full
- With four acidproof, pressure-sensitive identification labels
- Leakproof (see definition next page)

02-963-4

Capacity	Screw Cap Size	Mfr. No.	Cat. No.	Each	Case of 4
2 gal. (8L)	63N	2323 0008	**02-963-4A**	141.92	378.47
4 gal. (15L)	63N	2323 0015	**02-963-4**	162.39	433.04

WARNING

Not recommended for use with aggressive organic solvents.

Nalgene* Heavy-Duty Wide-Mouth Jug

Translucent, high-density polyethylene jug graduated in liters and gallons

- Ideal for storing solids or powders
- Features wide mouth, molded-in handle and recessed bottom
- Wide stance and low center of gravity adds stability
- Space-saving rectangular shape
- Large neck allows easy cleaning

INCLUDES:

120mm polypropylene screw cap

NOTE:

Not leakproof

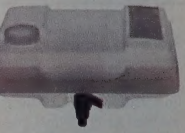
02-960-11

Capacity (To shoulder)	Mfr. No.	Cat. No.	Each	Case of 4
5¼ gal. (20L)	2241 0050	**02-960-11**	124.32	331.50

Nalgene* Autoclavable Polypropylene Lowboys

Can be stacked up to three high

- Space-saving flat rectangular design permits storing in cramped quarters such as refrigerators or cabinets
- Chemical resistant
- With polypropylene spigot and 63mm screw cap
- Leakproof (see definition next page)



02-963-4C

Capacity	Mfr. No.	Cat. No.	Each	Case of 4
2 gal. (8L)	2324 0008	**02-963-4B**	169.90	453.07
4 gal. (15L)	2324 0015	**02-963-4C**	195.85	522.25

WARNING

Disengage threads and dismount spigot before autoclaving.

ACCESSORIES

Nalgene* Top Works* Closures

With silicone stoppers and drop tubes

Provide elastomeric seal for aseptic handling of various fluids in pharmaceutical and biotechnology applications. Long drop tube can be cut to fit multiple bottle sizes.

- For use with Nalgene bottles and carboys
- Available with two, three, or no tubing ports
- Reusable and autoclavable
- Polypropylene
- Closure inserted with silicone stopper/tubing assembly

02-923-15K

COMPLIANCE:

USP Class VI requirements

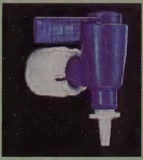
Closure Size	Tubing I.D.	Mfr. No.	Cat. No.	Each
Without tubing ports				
83B	----	2135 8300	**02-923-15P**	142.75
With two tubing ports				
53B	1 × ¼"; 1 × 1½"	2135 5302	**02-923-15M**	140.50
83B	1 × ¼"; 1 × 1½"	2135 8302	**02-923-15Q**	197.50
With three tubing ports				
38-430	1 × ¼"; 2 × ⅛"	2135 3803	**02-923-15K**	128.75
53B	1 × ⅜"; 2 × ¼"	2135 5303	**02-923-15N**	158.75
83B	1 × ⅜"; 2 × ¼"	2135 8303	**02-923-15R**	247.75

ACCESSORIES

Replacement Spigots

For Nalgene* carboys

- Take ⅝" I.D. tubing
- 02-963-7 supplied with adapter for ¼ or 5⁄16" tubing



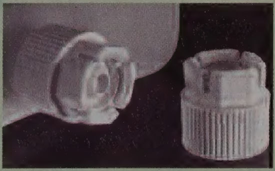
02-963-7

Description	Mfr. No.	Cat. No.	Each	Case of
Polypropylene	6422 0010	**02-963-7**	34.95	12/279.60
Tefzel*	6432 0010	**02-963-7D**	76.03	2/101.38

Spigot Closure

For Nalgene* bottles, jars, carboys

- Polypropylene lock nut and plug
- Replaces 02-963-7 to provide leakproof seal (see definition) when autoclaving liquids in a carboy



02-963-7E

Mfr. No.	Cat. No.	Pack of 4	Case of 6 Pack
6423 0010	**02-963-7E**	28.48	113.93

Nalgene* Barbed Bulkhead Fittings

Convert Nalgene closures for fluid transfer operations

- Use ¼" size on 53mm or larger closures; ½" size on 83mm or larger closures
- Fittings are barbed at both ends to accept tubing for inside and outside container
- Autoclavable
- Leakproof (see definition below)

15-315 Series

INCLUDES:

Instructions, drilling template and two each of polypropylene barbed fitting, acetyl nuts and silicone gaskets.

Tubing Size	Mfr. No.	Cat. No.	Pack of 2	Case of 12 Pk.
¼" (6.4mm)	6149 0002	**15-315-2**	15.19	121.45
½" (13mm)	6149 0001	**15-315-1**	17.89	143.13

Nalgene* Filling/Venting Closures

For use on Nalgene carboys and bottles with 53B or 83B closures

- For aseptic transfer of liquids to and from Nalgene carboys
- Autoclavable

INCLUDES:

Two pieces of Nalgene 50 platinum-cured silicone tubing and filling splash guard.

02-923-13Z

Closure Size	Tubing I.D.	Mfr. No.	Cat. No.	Each	Case of 6
53mm	¼" (6.4mm)	2162 0531	**02-923-13Y**	36.39	145.54
83mm	¼" (6.4mm)	2162 0831	**02-923-13Z**	41.79	167.12
83mm	½" (13mm)	2162 0830	**02-923-15**	41.79	167.12

[†] Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

CARTS

Thermo Scientific* Hamilton* Max/Lab* Mobile Instrument Carts

Ideal for adapting workstations to stand-up or sit-down procedures, for meeting ADA applications, or for transporting heavy instruments between labs

Available in four adjustable styles with a variety of upper shelf and suspended drawer/cabinet configurations, including optional components. See individual model specifications.

- Maximum height of frame: 78⅜" (199cm)
- Load-bearing capacity of all models: 900 lb. (408kg)

Mobile Cart, 48" (122cm) Overall Width

- With fixed bottom shelf and 48W × 31"L (122 × 79cm) laminate top on adjustable-height frame
- Optional components available

Full-height Mobile Cart, 72" (183cm) Overall Width

- Features two or three 36W × 18"L (91 × 46cm) upper adjustable shelves and one or two 36W × 31"L (91 × 79cm) laminate tops on adjustable-height frame
- Available with or without fixed bottom shelf, suspended cabinet with lock (choice of two depths), and suspended drawer with lock
- Optional cabinets and drawers available

Full-height Mobile Cart, 60" (152cm) Overall Width

- With one 60W × 18"L (152 × 46cm) upper adjustable shelf and one 60W × 31"L (152 × 79cm) laminate top on an adjustable-height frame
- Available with or without fixed bottom shelf, suspended cabinet with lock, and suspended drawer with lock
- Optional cabinets and drawers available

HMM1CLAB002

Mobile Cart with Upper Frame (to make full-height assembly)

- Features either a 48W × 18"L (122 × 46cm) or a 72W × 18"L (183 × 46cm) upper adjustable shelf; either a 48W × 31"L (122 × 79cm) or a 72W × 31"L (183 × 79cm) laminate top on an adjustable-height frame
- Available with or without suspended cabinet with lock
- Suspended drawer optional on select models

Tops (W × L)	Fixed Bottom Shelf	Upper Adjustable Shelf (W × L)	Suspended Cabinet (W × L × H)	Suspended Drawer (W × L × H)	Cat. No.	Each
Mobile Cart, 48" (122cm) overall width						
One 48 × 31" (122 × 79cm)	Yes	Available as option†	Available as option†	Available as option†	**HMMICLAB008**	1697.46
Full-height Mobile Carts, 72" (83cm) Overall Width						
Two 36 × 31" (91 × 79cm)	No	Two 36 × 18" (91 × 46cm)	One 30 × 22¼ × 25" (76 × 57 × 64cm)	One 30 × 22¼ × 3" (76 × 57 × 8cm)	**HMMICLAB001**	4384.05
Two 36 × 31" (91 × 79cm)	Yes	Two 36 × 18" (91 × 46cm)	Available as option†	Available as option†	**HMMICLAB002**	3349.71
One 36 × 31" (91 × 79cm)	No	Three 36 × 18" (91 × 46cm)	Available as option†	Available as option†	**HMMICLAB003**	2289.47
Two 36 × 31" (91 × 79cm)	No	Two 36 × 18" (91 × 46cm)	One 30 × 22¼ × 19" (76 × 57 × 48cm)	One 30 × 22¼ × 3" (76 × 57 × 8cm)	**HMMICLAB004**	4498.40
Full-height Mobile Carts, 60" (152cm) Overall Width						
One 60 × 31" (152 × 79cm)	No	One 60 × 18" (152 × 46cm)	One 24 × 22¼ × 19" (61 × 57 × 48cm)	One 30 × 22¼ × 3" (76 × 57 × 8cm)	**HMMICLAB005**	3101.64
One 60 × 31" (152 × 79cm)	No	One 60 × 18" (152 × 46cm)	Available as option†	One 30 × 22¼ × 3" (76 × 57 × 8cm)	**HMMICLAB006**	2238.76
One 60 × 31" (152 × 79cm)	Yes	One 60 × 18" (152 × 46cm)	Available as option†	Available as option†	**HMMICLAB007**	2206.84
Mobile Carts with Upper Frame						
One 48 × 31" (122 × 79cm)	No	One 48 × 18" (122 × 46cm)	Available as option†	Available as option†	**HMMICLAB009**	1827.43
One 48 × 31" (122 × 79cm)	No	One 48 × 18" (122 × 46cm)	One 36 × 22¼ × 25" (91 × 57 × 64cm)	None	**HMMICLAB010**	3045.62
One 72 × 31" (183 × 79cm)	No	One 72 × 18" (183 × 46cm)	Available as option†	Available as option†	**HMMICLAB011**	2120.30

*† Visit **www.fishersci.com** or contact your Fisher Scientific Customer Service Reperesentative for ordering information.*

Fisher Scientific* Mini-Dolly Folding Cart

Ideal platform cart to move chemicals, carboys, computer paper, filing boxes, and scientific equipment

- Load capacity: 265 lb. (120kg)
- Constructed of ABS plastic and chrome-plated steel with low, nonskid platform
- Eliminates lifting required by high-shelf carts
- Easy-roll wheels swivel for added maneuverability
- Plastic guard on four sides protects walls
- Folds for storage

ORDERING INFORMATION:
Weight: 20 lb. (9.1kg).

INCLUDES:
Three bungee cords

Platform Length	Width	Cat. No.	Each
25½" (65cm)	17¾" (45cm)	**04-681**	109.16

04-681

Fisher Scientific* Aluminum Foldup Cart

Moves heavy lab chemicals, drums, and cases of glassware with ease

- Load capacity 330 lb. (150kg)
- Sturdy aluminum alloy construction with telescoping platform for longer loads
- Folds up to briefcase size for easy storage or transport
- Rolls easily on large, solid rubber wheels
- Handle adjusts to two heights: 27 and 30" (69 and 76cm)
- Rubber bumpers on all four corners protect walls from accidental scuffs

11-928-1

ORDERING INFORMATION:
Weight: 20 lb. (9kg).

INCLUDES:
Three bungee cords

Platform Length	Width	Cat. No.	Each
18 to 28" (46 to 65cm)	16" (41cm)	**11-928-1**	173.05

Fisher Scientific* Aluminum Foldup Hand Truck

Folds completely to briefcase size for easy storage

- Load capacity: 220 lb. (100kg)
- Sturdy aluminum alloy construction for moving cartons, chemicals, gas cylinders, etc.
- 6½" dia. (16.5cm) solid-rubber wheels easily move heavy loads
- Handle extends from 28 to 42" (71 to 107cm)

11-928-2

ORDERING INFORMATION:
Weight: 15 lb. (6.8kg).

INCLUDES:
Three bungee cords

Platform Length	Width	Cat. No.	Each
9½" (24cm)	14" (36cm)	**11-928-2**	154.06

Labconco* Variable-Height Bench

Easy-to-adjust bench can be set at four heights

- Load capacity: 540 lb. (245kg)
- 2" (5cm) welded tubular frame
- 1⅛" (3cm) thick fiber-resin work surface is melamine high-pressure laminate
- Heavy-duty bench height adjustable from 29⅝ and 37⅜" (75 to 95cm) using steel pins and nuts
- Baked-on epoxy powder coating resists abrasion and corrosion
- 5" dia. (12.7cm) nonmarking polyurethane casters with toe locks maneuver easily and absorb vibration

11-926-110

ORDERING INFORMATION:
Shipped fully assembled. Weight: 111 lb. (50.3kg).

WARRANTY:
Lifetime guarantee

W x L	Mfr. No.	Cat. No.	Each
38 × 28" (96.5 × 71.1cm)	8075000	**11-926-110**	2000.00

Labconco* Instrument Cart/Desk

Ideal instrument cart, desk or lab table

- Load capacity: 400 lb. (181kg)
- 1" (2.5cm) square steel tubing welded frame
- Phenolic board work surface is melamine high-pressure laminate that resists stains and corrosion
- Centered support bar permits seating on either side
- Baked-on epoxy powder coating resists abrasion and corrosion
- 4" dia. (10.2cm) hard rubber casters maneuver easily and absorb vibration; toe locks on two casters keep cart in position

11-923

ORDERING INFORMATION:
Shipped fully assembled. Weight: 40 lb. (18kg).

WARRANTY:
Lifetime guarantee

L x W x H	Mfr. No.	Cat. No.	Each
19 × 42⅛ × 31⅝" (48.3 × 107 × 80.3cm)	8052500	**11-923**	530.78

Thermo Scientific* Hamilton* Low-Profile Mobile Cart

Stores conveniently and easily under desks and work surfaces

- Load capacity: 300 lb. (136kg)
- Four 3" dia. (8cm) lockable casters

HM950H040

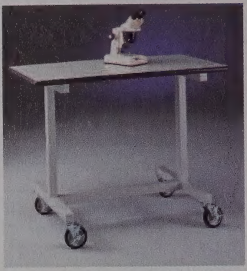
- ¾" thick (2cm) top with antique white plastic laminate and black PVC edgebanding

L x W x H	Cat. No.	Each
30 × 24 × 12" (76 × 61 × 30cm)	**HM950H040**	387.32

Labconco* Mobile Bench

Heavy-duty auxiliary bench moves freely from lab to lab

- Load capacity: 540 lb. (250kg)
- Made of epoxy-coated 2" (5cm) square frame with 1⅛" thick (29mm) melamine-laminated work surface
- 5" diameter (12.7cm) nonmarking polyurethane casters with toe-operated locks


11-926-101

ORDERING INFORMATION:
Weight: 105 lb. (48kg)

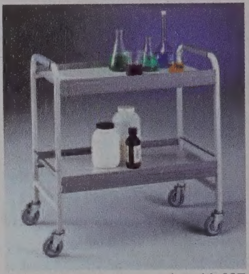
WARRANTY:
Lifetime guarantee.

L x W x H	Mfr. No.	Cat. No.	Each
48 × 24 × 37¼" (122 × 61 × 95cm)	8060000	**11-926-101**	1430.00

Labconco* Chemical Cart

With an acid-, alkali-, and heat-resistant finish

- Load capacity: 400 lb. (181kg)
- Strong, welded 1" (2.5cm) square, epoxy-coated steel frame; shelves bolted to frame for added strength
- Shelves of phenolic board with high-pressure melamine laminate surface resist damage by acids, alkalis, and high heat
- Top shelf has PVC extrusions on two sides to prevent containers from sliding off; bottom shelf also has rigid plastic guard rails on both ends
- 4" dia. (10cm) hard rubber-tired casters provide for easy movement and control; two with toe locks


11-927

ORDERING INFORMATION:
Weight: 50 lb. (23kg)

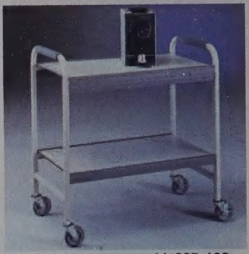
WARRANTY:
Lifetime guarantee

L x W x H	Mfr. No.	Cat. No.	Each
19 × 34⅞ × 36⅜" (48 × 89 × 92cm)	8020000	**11-927**	695.00

Labconco* Portable Table

Mobile workstation that rolls out of sight when not in use

- Load capacity: 400 lb. (181kg)
- 1" (2.5cm) square epoxy-coated steel frame
- Transports heavy instruments and bulky equipment safely
- Two open phenolic board shelves with high-pressure melamine-laminate surface resist stains and corrosion
- 4" dia. (10cm) casters; two with toe locks


11-925-108

ORDERING INFORMATION:
Weight: 50 lb. (23kg).

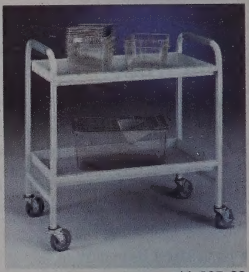
WARRANTY:
Lifetime guarantee.

L x W x H	Mfr. No.	Cat. No.	Each
19 × 34⅞ × 36⅜" (48 × 89 × 92cm)	8025000	**11-925-108**	555.00

Labconco* Pan Cart

Holds a wide variety of general lab equipment

- Load capacity: 400 lb. (181kg)
- Strong, versatile lab cart made of 1" (2.5cm) epoxy-coated square steel tubing frame
- Welded crossbars under the center of the pans provide support and minimize vibration noise
- Two watertight, 2" deep (5cm) epoxy-coated steel pans with ergonomic, extruded rubber handle grips
- Removable gray rubber mats line pans, prevent loads from shifting
- 4" (10cm) nonmarking casters; two with toe locks


11-925-20

ORDERING INFORMATION:
Weight: 50 lb. (23kg).

WARRANTY:
Lifetime guarantee.

L x W x H	Mfr. No.	Cat. No.	Each
19 × 34⅞ × 36⅜" (48 × 89 × 92cm)	8047500	**11-925-20**	775.00

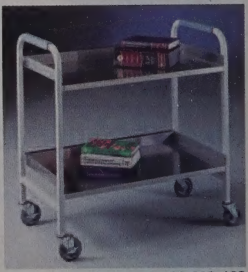
Labconco* Stainless-Steel Laboratory Cart

Holds a variety of lab supplies, equipment and containers

- Load capacity: 400 lb. (181kg)
- Two removable stainless-steel pans are 2" deep (5cm) on three sides; one open side for easy transfer from countertop to cart
- Durable, welded frame with glacier white, corrosion-resistant, baked-on epoxy powder coating
- 4" dia. (10cm) hard rubber casters stabilize movement over rough, uneven floors; two casters have toe locks

ORDERING INFORMATION:
Shipped fully assembled. Weight: 50 lb. (23kg).

WARRANTY:
Lifetime guarantee.


11-926-102

L x W x H	Mfr. No.	Cat. No.	Each
19⅛ × 34⅞ × 36$^{3}/_{8}$" (49 × 89 × 92cm)	8019000	**11-926-102**	840.00

Labconco* Glassware Carts

Carry glassware, plasticware and small instruments

11-925-21

- Load capacity: 400 lb. (181kg)
- Durable glacier white, epoxy-coated 18 gauge welded tubular steel frame with ergonomic, extruded rubber handle grips and ID tag
- Available with two 18L × 32W × 4"H (46 × 81 × 10cm) or four 18L × 16W × 4"H (46 × 41 × 10cm) removable vinyl-coated wire baskets
- Removable plastic drip pan catches spills
- 4" dia. (10cm) casters, two with toe locks

ORDERING INFORMATION:
Shipped fully assembled.
Weight: 50 lb. (23kg).

WARRANTY:
Lifetime guarantee.

L x W x H	Mfr. No.	Cat. No.	Each
Two-Basket Style			
19⅛ × 34⅞ × 36⅜" (49 × 89 × 92cm)	8032500	**11-928**	705.00
Four-Basket Style			
19⅛ × 34⅞ × 36⅜" (49 × 89 × 92cm)	8045000	**11-925-21**	705.00

Guard-Rail Utility Cart

Protective guard rail helps eliminate spills and breakage of materials

11-954-751

- Load capacity: 500 lb. (230kg)
- Welded stainless-steel construction for durability and easy sanitation
- Three fixed, open shelves with 2" (5cm) wraparound guard rail
- Integrated push handle allows for easy maneuverability of cart
- Standard handle and leg bumpers protect cart, walls and doorways from damage
- Four 4" dia. (10cm) rubber-cushioned, swivel casters for maneuverability

ORDERING INFORMATION:
Shipped assembled. Weight: 45 lb. (20.4kg).

L x W x H	Cat. No.	Each
31 × 19 × 33¾" (79 × 48 × 86cm)	**11-954-751**	592.00

InterMetro* Standard-Duty Three-Shelf Utility Carts

Dependable, attractive carts available with solid and wire shelves

91-134

- Load capacity: 800 lb. (363kg)
- Fully interchangeable Super Erecta* shelves
- Center shelf can be positioned at any height in 1" (2.5cm) increments
- One-piece stainless-steel or chrome handles (depends on model) add rigidity and durability
- 18" (46cm) carts have 4" dia. (10cm) casters; 21" (53cm) wide carts have 5" dia. (13cm) casters
- Models available with solid shelves, wire shelves, or a combination

Solid Shelves

- 18-gauge stainless steel, doubly thick at the edges for rigidity and strength
- Raised edges help contain spills and make cleanup easier
- Sturdy corner castings facilitate mounting

Wire Shelves

- Chrome-plated with trademarked truss design for added strength
- Corners slide easily over special tapered snap-together plastic sleeves to fasten them securely in place

ORDERING INFORMATION:
Shipped knocked down. Assemble/disassemble quickly and easily without tools.

L x W x H	Weight	Mfr. No.	Cat. No.	Each
Three Solid Shelves; Stainless-Steel Handles				
18 × 24 × 38" (46 × 61 × 97cm)	48 lb. (21.8kg)	MW203	**91-132**	895.68
21 × 36 × 38" (53 × 91 × 97cm)	66 lb. (29.9kg)	MW206	**91-133**	969.71
Two Solid, One Wire Shelf; Chrome Handles				
18 × 24 × 38" (46 × 61 × 97cm)	46 lb. (20.9kg)	MW301	**91-134**	616.80
18 × 30 × 38" (46 × 76 × 97cm)	52 lb. (23.6kg)	MW302	**11-926-100**	739.88
18 × 36 × 38" (46 × 91 × 97cm)	57 lb. (25.9kg)	MW303	**91-135**	729.14
One Solid, Two Wire Shelves; Chrome Handles				
18 × 24 × 38" (46 × 61 × 97cm)	43 lb. (19.5kg)	MW401	**91-136**	494.59
21 × 36 × 38" (53 × 91 × 99cm)	59 lb. (26.8kg)	MW404	**91-137**	596.60
Three Wire Shelves; Chrome Handles				
18 × 30 × 38" (46 × 76 × 97cm)	43 lb. (19.5kg)	MW703	**91-138**	391.49

Standard-Duty Utility Cart

Ideal for light-duty transport and storage

11-954-750

- Load capacity: 300 lb. (136kg)
- Durable welded stainless-steel construction cleans and sanitizes easily
- Designed for continuous transport even over uneven floor surfaces
- Integrated push handle for easy handling
- Three fixed, open shelves with reinforced, hemmed front for added strength
- Sound-deadening panels under shelves restrict vibrations and noise
- Bumpers on legs and handles protect walls and furniture
- Four 3½" dia. (8.9cm) rubber-cushioned, swivel casters for maneuverability

ORDERING INFORMATION:
Shipped assembled. Weight: 29 lb. (13.2 kg)

L x W x H	Cat. No.	Each
27½ × 16¼ × 32⅛" (70 × 41 × 82cm)	**11-954-750**	281.75

Rubbermaid* Flat-Shelf Utility Carts

Made from durable, structural foam to eliminate denting, rusting, and bending

11-825-84A

- Load capacity: 250 lb. (113kg) per shelf
- All-plastic construction and 5" dia. (12.7cm) casters provide quiet operation and easy maintenance
- Easy to maneuver with quiet, mark-resistant casters
- Rounded corners prevent damage to walls and doorways
- Handle bin holds tools and other items
- Top-shelf "moat" keeps parts and accessories in place
- Mounting bracket serves as cord wrap and is ideal for holding soft wastebaskets

ORDERING INFORMATION:
Color, beige. Also available in black; contact your Fisher Scientific Customer Service Representative for ordering information.

L x W x H	Weight	Mfr. No.	Cat. No.	Each
37⅝ × 19 3/16 × 33 5/16" (96 × 49 × 85cm)	33 lb. (15kg)	4505 BEIGE	**11-926-84A**	238.81
43⅞ × 25⅝ × 33 5/16" (111 × 65 × 85cm)	42½ lb. (19.3kg)	4525 BEIGE	**11-926-86A**	265.75

Rubbermaid* Heavy-Duty Utility Carts

Perfect for transporting equipment and heavy loads in any environment

11-926-75

- Load capacity: 500 lb. (227kg)
- Sturdy structural foam construction resists alkalis, solvents, and dilute acids
- Won't chip, flake, or dent
- Molded in cup holder and compartments for small parts and tools
- Two deeply recessed seamless shelves help contain accidental spills and keep shelf contents in place
- Rounded external edges prevent damage to walls and furniture; rounded inside corners won't trap residue—making cleaning easier
- Comfortable molded handle for firm grip
- Two fixed and two swivel nonmarking, 5" dia. (13cm) casters

ORDERING INFORMATION:
Color, beige. Shipped unassembled. Assemble in minutes using screwdriver and pliers. Optional middle shelf available separately. Carts also available in black. Contact your Fisher Scientific Customer Service Representative for ordering information.

L x W x H	Weight	Mfr. No.	Cat. No.	Each
39 × 18 × 33" (99 × 46 × 84cm)	31 lb. (14kg)	4500-88 Beige	**11-926-75**	238.71
45 × 26 × 33" (114 × 66 × 84cm)	45 lb. (20.4kg)	4520-88	**11-926-85**	294.25

Rubbermaid* X-tra* Carts

Large shelves hold small baths, centrifuges, pH meters, and other equipment

11-926-97

- Load capacity: 300 lb. (135kg)
- Tough HPDE construction resists chips, dents, scratches, and rust
- Shelves feature easy-to-clean surfaces, rounded interior corners, and raised edges to keep small items from slipping off
- Ergonomically designed handles on both cart ends
- Quiet-rolling, nonmarking 4" dia. (10cm) casters

Utility Carts

- Choice of three-shelf models in three styles: open, enclosed on two ends, and enclosed on three sides (virtually a cabinet on wheels)
- Also available in four-shelf open style

Instrument Cart

- Ideal for securely transporting tools and smaller equipment
- Three-shelf design; open top and middle shelves; enclosed bottom shelf has lockable doors
- Sliding drawer mounted underneath top shelf

11-926-89

11-926-42

11-926-87

ORDERING INFORMATION: Assembly required. No special tools needed.

Description	Weight	Mfr. No.	Cat. No.	Each
White Three-Shelf Utility Carts, L x W x H: 20 × 40½ × 37¾" (51 × 103 × 96cm)				
Open cart	43 lb. (19.5kg)	4091 WHITE	**11-926-87**	299.91
Enclosed on 2 ends	45 lb. (20.4kg)	4092 WHITE	**11-926-88**	424.15
Enclosed on 3 sides	51 lb. (23.1kg)	4093 WHITE	**11-926-89**	484.41
Black Four-Shelf Utility Cart, L x W x H: 20 × 40½ × 51" (51 × 103 × 130cm)				
Open cart	52 lb. (23.6kg)	409600BK	**11-926-97**	392.18
Gray Three-Shelf Instrument Cart, L x W x H: 20 × 40½ × 37¾" (51 × 103 × 96cm)				
With lockable doors/sliding drawer	52 lb. (23.6kg)	4094 GRAY	**11-926-42**	482.16

Rubbermaid* Heavy-Duty Utility Cart with Aluminum Uprights

Versatile, functional cart for easy transport

11-926-71

- Load capacity: 200 lb. (91kg)
- Durable, easy-to-clean all plastic construction with three molded shelves; resists rust, dents, chips and fading
- Features brushed aluminum uprights, molded-in color, and ergonomically designed easy-grip handles on each end of cart
- Four 4" dia. (10cm) nonmarking, swivel casters for quiet maneuverability

ORDERING INFORMATION:
Color, platinum. Also available in black and off-white; contact your Fisher Scientific Customer Representative for ordering information. Shipped unassembled.

L x W x H	Weight	Mfr. No.	Cat. No.	Each
33⅝ × 18⅝ × 37¾" (85 × 47 × 96cm)	30 lb. (13.6kg)	3424 BEIGE	**11-926-71**	261.05

*Trademark. See Trademark Reference.

CELL BIOLOGY

APOPTOSIS ASSAYS

Thermo Scientific* Cellomics* HitKit* HCS Reagent Kits

Assay-ready reagents produce cells optimized for fluorescent imaging

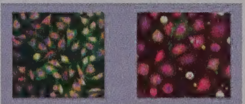
Rapidly incorporate high-content assays into your drug discovery efforts with proprietary and exclusively licensed fluorescent reagents designed to achieve the highest emission of light for each fluorophore. Background fluorescence and non-specific cross-talk minimized for increased sensitivity, specificity, and signal-to-noise ratios. Sample preparation protocols have been optimized to produce high-quality cell preparations and are automation compatible for maximum productivity and reproducibility.

- Compatible with a wide range of cell types
- No cell lysis, purification, or filtration steps
- Fluorescence-based assays provide sensitive quantitative and qualitative results without radioactivity
- Prepared cells may be analyzed directly via standard fluorescence microscopy
- Kits include all imaging-tested reagents and detailed protocols needed for sample preparation
- Pre-validated on the Thermo Scientific* Cellomics* ArrayScan* HCS Reader

Multiparameter Apoptosis 1 HitKit*

Contain three spectrally distinct fluorophores that report various cellular targets

- Multiplexed assay quantifies three features of apoptosis: nuclear morphology (condensation/fragmentation), mitochondrial mass/potential, and cytoskeletal changes (f-actin content) specifically and reliably in whole cells
- Quantification on a cell-by-cell basis; allowing direct cross-correlation of features
- No cell lysis, purification, or filtration steps
- Versatile assay is widely applicable to a variety of cell types



L929 cells treated with 2.5µM paclitaxel for 30 hr. (right), and untreated (left). F-actin appears in green (Alexa Fluor 488 Phalloidin), nuclei appear in blue (Hoechst), and mitochondria appear in red (Mito Tracker Red). Images acquired using a Thermo Scientific* Cellomics* ArrayScan* HCS Reader.

INCLUDES:

MitoTracker* Red CMXRos; Alexa Fluor* 488 conjugated phalloidin; Hoechst dye; Wash buffer (10X); Positive control compound (Paclitaxel); Permeabilization buffer (10X); Plate seals

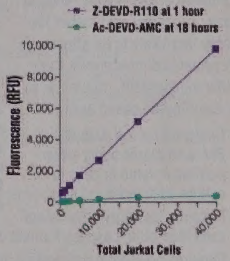
Description	Evaluation Size	Cat. No.	Each
Multiparameter Apoptosis I	5 x 96	**K04-0001-1**	504.00

Promega* Apo-ONE* Homogeneous Caspase-3/7 Assay Kit

Provides a fluorescent method for the fast and sensitive measurement of active caspase-3 and -7 in a homogeneous format

Substrate and buffer solutions are combined to make the Apo-ONE Caspase-3/7 Reagent which is added directly to samples. The amount of fluorescent product generated is representative of the amount of active caspase-3/7 present in the sample.

- May be used with purified enzyme preparations, cell extracts, or cultures of adherent, suspension, or primary cells; compatible with use in cuvets and 96- or 384-well plate
- Simple "add, mix, and measure" protocol and high assay sensitivity decreases time to result; requires fewer cells than comparable caspase assays
- Single reagent addition format is compatible with high throughput applications
- PR-G7792 provides sufficient reagents to perform 10 assays of 100µL/well in a 96-well plate or 40 assays of 25µL/well in a 384-well plate
- PR-G7790 provides sufficient reagents for 100, 100µL assays or 400, 25µL assays
- PR-G7791 provides sufficient reagents to perform 1000, 100µL assays or 4000, 25µL assays
- Apo-ONE Homogeneous Caspase-3/7 Buffer is also available separately



Apoptosis was induced in Jurkat cells by treatment with anti-Fas antibody for five hours. Apo-ONE Homogeneous Caspase-3/7 Buffer containing either Z-DEVD-R110 or Ac-DEVD-AMC (Cat. No. PR-G5961) was added to the cells and incubated at room temperature. Z-DEVD-R110 data were collected one hour post-addition. Ac-DEVD-AMC data were collected 18 hours post-addition. Because of inherent differences in the fluor signals, significantly different incubation times were required for the two substrates.

INCLUDES:

Apo-ONE Caspase Substrate Z-DEVD-R110, 100X; Apo-ONE Homogeneous Caspase Buffer

STORAGE CONDITIONS:

Store at -20°C, protected from light and moisture.

Description	Quantity	Cat. No.	Each
Apo-ONE Homogeneous Caspase-3/7 Assay Kit	10 assays	**PR-G7792**	56.28
	100 assays	**PR-G7790**	311.75
	1000 assays	**PR-G7791**	1602.00
Apo-ONE Homogeneous Caspase-3/7 Buffer	100mL	**PR-G7781**	1121.00

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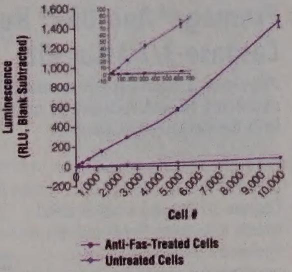
† This product is covered by U.S. Patents 4,557,862 and 4,640,893 and is sold for research use only. All other uses, including but not limited to use as a clinical diagnostic or therapeutic, require a separate license. Please contact Promega Corporation for details relating to obtaining a license for such other use.

Promega* Caspase-Glo* 3/7 Assay Kit

Provides a homogeneous luminescent assay that measures caspase-3/7 activities

Utilizes a proluminescent caspase-3/7 DEVD-aminoluciferin substrate and a proprietary thermostable luciferase in a single reagent optimized for caspase-3/7 activity, luciferase activity, and cell lysis. Stabilized luciferase improves assay performance across a wide range of assay conditions and makes the assay less likely to be affected by compound interference than other luminescent-, fluorescent-, or colorimetric-based assays.



Jurkat cells were treated with anti-Fas mAb for 4.5 hours to induce apoptosis; an identical population of cells was left untreated. Luminometer readings were taken after one hour of incubation with Caspase-Glo 3/7 Reagent.

- Designed for use with 96- or 384-well plates using either purified enzyme or cells in culture as sample
- Requires less enzyme or fewer cells than other caspase formats due to low background luminescence
- Requires no sample preparation, manipulation, or extended incubation times—maximum sensitivity is achieved in as little as one-half to one hour
- "Add-mix-measure" protocol makes the assay easy to automate
- Extended-glow signal allows the plates to be read over a three-hour period for batch processing—no injectors required
- PR-G8090 contains sufficient reagents for 25 assays at 100μL per assay in a 96-well format or 400 assays at 25μL per assay in a 384-well format
- PR-G8091 contains sufficient reagents for 100, 100μL assays or 400, 25μL assays
- P7-809C contains sufficient reagents for 1000, 100μL assays or 4000, 25μL assays
- PR-G8092 contains sufficient reagents for 1000, 100μL assays or 4000, 25μL assays

INCLUDES:
Caspase-Glo 3/7 Substrate; Caspase-Glo 3/7 Buffer

STORAGE CONDITIONS:
Store at -20°C.

Assays/96 wells	Assays/384 wells	Size	Cat. No.	Each
25	100	2.5mL	**PR-G8090**	94.48
100	400	10mL	**PR-G8091**	311.75
1000	4000	100mL	**PR-G8092**	1602.00
1000	4000	10 × 10mL	**P7-809C**	2397.00

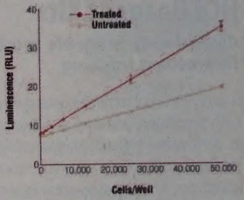
[†] *Patent pending.*

[2] *The method of recombinant expression of* Coleoptera luciferase *is covered by U.S. Patent Nos. 5,583,024; 5,674,713; and 5,700,673.*

Promega* Caspase-Glo* 8 and Caspase-Glo 9 Assay Systems

Highly sensitive homogeneous luminescent assays that measure either caspase-8 or caspase-9 activity

The addition of a single Caspase-Glo reagent in an "add-mix-read" format results in cell lysis, followed by caspase cleavage of the substrate, and generation of a stable "glow-type" luminescent signal. The signal generated is proportional to the amount of caspase activity present.



Sensitivity of the Caspase-Glo 8 Assay in apoptotic Jurkat cells with MG-132 Inhibitor added to the Caspase-Glo 8 Reagent.

- Utilize a proprietary thermostable luciferase, Ultra-Glo* Recombinant Luciferase, which improves performance across a wide range of assay conditions
- Do not require sample preparation, sample manipulation, or extended incubation time—maximum sensitivity is achieved in as little as a half hour
- Provide excellent signal-to-noise ratios and superior sensitivity, allowing assays to be performed in 96- or 384-well formats
- Easily automated

INCLUDES:
Caspase-Glo 8 Buffer or Caspase-Glo 9 Buffer; Caspase-Glo 8 Substrate or Caspase-Glo 9 Substrate

STORAGE CONDITIONS:
Store at -20°C protected from light.

Assays/96 wells	Assays/384 wells	Size	Cat. No.	Each
Caspase Glo-8 Assays				
25	100	2.5mL	**PR-G8200**	94.48
100	400	10mL	**PR-G8201**	311.75
1000	4000	100mL	**PR-G8202**	1602.00
Casapse-Glo 9 Assays				
25	100	2.5mL	**PR-G8210**	94.48
100	400	10mL	**PR-G8211**	311.75
1000	4000	100mL	**PR-G8212**	1602.00

[†] *U.S. Patent 6,602,677, Australian Patent 754312 and other patents pending.*

[‡] *The method of recombinant expression of* Coleoptera luciferase *is covered by U.S. Patents 5,583,024; 5,674,713; and 5,700,673.*

LOOKING FOR MORE LIFE SCIENCE PRODUCTS?

See the following sections: Array Analysis, Cell Biology, Cell Culture (formally Tissue Culture), Cloning and Expression, Electroporation, Electrophoresis, Luminometers, Microplates and Microplate Instrumentation, Nucleic Acid Research, PCR, Protein Characterization, Detection and Purification, RNA Technologies, Transfection and Transformation

*Trademark. See Trademark Reference.

Prices subject to change.

Promega* DeadEnd* Fluorometric TUNEL System

Detects and quantifies apoptotic cells within a cell population

The DeadEnd Fluorometric TUNEL System measures the fragmented DNA of apoptotic cells by catalytically incorporating fluorescein-12-dUTP at 3′-OH DNA ends using the enzyme Terminal Deoxynucleotidyl Transferase (TdT), which forms a polymeric tail using the principle of the TUNEL (TdT-mediated dUTP Nick-End Labeling) assay (1). The fluorescein-12-dUTP-labeled DNA can then be visualized directly by fluorescence microscopy or quantitated by flow cytometry.

- Classic TUNEL System measures nuclear DNA fragmentation at the single cell level or in cell suspensions
- Nonradioactive
- Direct incorporation of fluorescent nucleotides reduces number of incubation steps and saves time
- Compatible with cultured cells as well as formalin-fixed, paraffin-embedded tissue sections

INCLUDES:

Plastic coverslips for simplified sample handling

STORAGE CONDITIONS:

Store reagents at –20°C. Store the Nucleotide Mix away from light.

Size	Cat. No.	Each
60 reactions	**PR-G3250**	409.75

Promega* DeadEnd* Colorimetric TUNEL System

Provides rapid detection of apoptotic cells in situ at the single cell level

The DeadEnd Colorimetric TUNEL System end-labels the fragmented DNA of apoptotic cells using a modified TUNEL (TdT-mediated dUTP Nick-End Labeling) assay. Biotinylated nucleotide is incorporated at the 3′-OH DNA ends using the enzyme Terminal Deoxynucleotidyl Transferase (TdT). Horseradish-peroxidase-labeled streptavidin (Streptavidin HRP) is then bound to these biotinylated nucleotides, which are detected using the peroxidase substrate, hydrogen peroxide, and the stable chromogen, diaminobenzidine (DAB). Using this procedure, apoptotic nuclei are stained dark brown.

- Modified TUNEL Assay measures nuclear DNA fragmentation
- Versatile system is compatible with both tissue sections and cultured colorimetric detection is effective in thick tissue sections and enables assessment of cell morphology

INCLUDES:

DAB substrate and H_2O_2 plus plastic coverslips for easy sample handling

Size	Cat. No.	Each
40 reactions	**PR-G7130**	405.75
20 reactions	**PR-G7360**	280.75

DRUG SCREENING ASSAYS

Promega* P450-Glo* CYP450 Assay Systems

Provide homogeneous, luminescent methods for measuring cytochrome P450 activity

- Measure the activity of P450s from recombinant or native fractions[1, 2]
- Test the effects of analytes including drugs and new chemical entities on P450 activities
- Simple "add-and-read" procedures feature high sensitivity, low background signals, and broad dynamic range
- Scalable to 384-well format
- Eliminate interference from fluorescent test compounds
- Exhibit "glow-type" signal with a half-life of over two hours, eliminating the need for luminometers with injectors and allowing for batch plate processing
- Formulation reduces the incidence of false positives

INCLUDES:

Luciferin Detection Reagent; P450-Glo Buffer; 5mM Luciferin-CEE, -ME, -H, or -BE

STORAGE CONDITIONS:

Store all components at -20°C, protected from light.

Description	Size	Cat. No.	Each
P450-Glo CYP1A1 Assay	10mL	**PRV8751**	97.49
	50mL	**PRV8752**	282.35
P450-Glo CYP1B1 Assay	10mL	**PRV8761**	97.49
P450-Glo CYP1A2 Assay	10mL	**PRV8771**	97.49
	50mL	**PRV8772**	282.35
P450-Glo CYP2C8 Assay	50mL	**PRV8782**	282.35
P450-Glo CYP2C9 Assay	10mL	**PRV8791**	97.49
	50mL	**PRV8792**	282.35
P450-Glo CYP3A4 Assay	50mL	**PRV8802**	282.35
P450-Glo CYP3A4 Assay (Luciferin-PFBE)	10mL	**PRV8901**	97.00
	50mL	**PRV8902**	282.00
P450-Glo CYP3A7 Assay	10mL	**PRV8811**	97.49
P450-Glo CYP2C19 Screening Assay	10mL	**P22888A**	97.49
	50mL	**P22888B**	282.35
P450-Glo CYP2D6 Screening Assay	10mL	**P22889A**	97.49
	50mL	**P22889B**	282.35

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[1] *U.S. Pat. No. 6,602,677, Australian Pat. No. 754312 and other patents pending.*

[2] *The method of recombinant expression of* Coleoptera luciferase *is covered by U.S. Patents 5,583,024, 5,674,713 and 5,700,673.*

Promega* P450-Glo* CYP450 Screening Systems

Provide a complete set of reagents for performing luminescent cytochrome P450 assays

Membranes are prepared from baculovirus-infected insect cells and contain human cytochrome P450 and P450 reductase (and cytochrome b5 for CYP2C9 and CYP3A4)[1]. Reaction is performed by incubating a luminogenic cytochrome P450 substrate with a cytochrome P450 enzyme and the NADPH Regeneration System.

- Each system includes a membrane fraction devoid of cytochrome P450 activity as a negative control
- Assays are ideal for testing the effects of drugs and new chemical entities on cytochrome P450 enzyme activities
- Glow-type reaction produces a stable signal and eliminates the need for strictly timed luminescence detection
- Protocols are configured for multiwell plate formats but can be easily adapted for single-tube applications
- Easily scalable to 384-well plate format
- Luminescent format eliminates the need for time-consuming analyses such as HPLC
- Highly predictive results with Z′ values greater than 0.8 in either 96- or 384-well plate formats
- No interference by fluorescent compounds
- Excellent sensitivity due to broad dynamic range and low background
- Low false-positive rate

INCLUDES:

Membrane preparation containing recombinant human cytochrome P450 enzyme; Luminogenic cytochrome P450 substrate appropriate for the enzyme; NADPH Regeneration System; Reaction buffer; Luciferin Detection Reagent; Luciferin-Free Water

STORAGE CONDITIONS:

Store the CYP1A2, CYP2C9 and CYP3A4 membranes at -70°C. Avoid multiple freeze-thaw cycles of all components.

Description	Quantity	Cat. No.	Each
CYP1A2 System	1000 assays	**PR-V9770**	715.00
CYP2C9 System	1000 assays	**PR-V9790**	715.00
CYP3A4 System	1000 assays	**PR-V9800**	715.00
CYP2C19 System	1000 assays	**PR-V9880**	715.00
CYP2D6 System	1000 assays	**PR-V9890**	715.00

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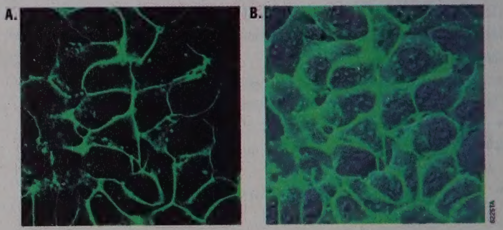
[1] *The method of recombinant expression of* Coleoptera luciferase *is covered by U.S. Pat. Nos. 5,583,024, 5,674,713 and 5,700,673.*

LABELING

Promega* HaloTag* Interchangeable Labeling Technology

Multiple applications from one genetic construct: Add fluorescent labels, affinity handles or immobilize HaloTag fusion protein to a solid support



Live cell imaging of a truncated human ß-integrin HaloTag Fusion protein. HEK 293 cells that stably express ß-integrin HaloTag fusion protein were labeled with 1µM HaloTag Alexa Fluor* 488 Ligand. Panel A: HaloTag Alexa Fluor 488 fluorescence. Panel B: Overlaid HaloTag Alexa Fluor 488 fluorescence and transmitted light.

- Create a HaloTag fusion protein with one easy cloning step
- HaloTag protein creates strong and very specific covalent bonds with the different HaloTag ligands
- Cell membrane permeable fluorescent ligands allow imaging of live or fixed cells
- HaloTag PEG-Biotin Ligand for pull-down applications

APPLICATIONS:

Protein localization, Protein trafficking, Protein capture, Cell-to-gel analysis, Protein:protein interactions

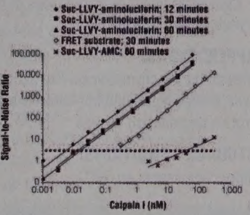
Description	Size	Concentration	Cat. No.	Each
HaloTag pHT2 Vector	20µg	----	**PRG8241**	150.56
HaloTag TMR Ligand	30µL	5mM	**PRG8251**	489.61
HaloTag diAcFAM Ligand	30µL	5mM	**PRG8271**	489.61
HaloTag Coumarin Ligand	30µL	5mM	**PRG8581**	475.59
HaloTag Biotin Ligand	30µL	5mM	**PRG8281**	489.61
HaloTag PEG-Biotin Ligand	30µL	5mM	**PRG8591**	475.59
HaloTag Alexa Fluor 488 Ligand	30µL	1mM	**PRG1001**	493.40
HaloTag Oregon Green Ligand	30µL	1mM	**PRG2801**	493.40

PROTEASE ASSAYS

Promega* Calpain-Glo* Assay System

Homogeneous, luminescent assay measures calpain 1 (μ) and 2 (m) activities

Provides a succinyl, proluminescent calpain substrate in a buffer system optimized for calpain and luciferase activities. The addition of the calpain reagent results in calpain cleavage of the substrate and rapid development of a glow-type luminescent signal produced by the luciferase reaction. The signal is proportional to the amount of calpain activity present.



Sensitivity of the Calpain-Glo* Protease Assay compared to fluorescent assays.

- ▸ Designed for use with purified enzyme preparations
- ▸ Maximum sensitivity is reached in as little as 10 min.
- ▸ Add-mix-measure protocol makes the assay easy to automate
- ▸ Avoids inherent fluorescent background signals, providing excellent signal-to-background readings, and is linear over 4 logs of calpain concentration

APPLICATIONS:

Measures calpain activity and/or inhibition in a multiwell format

STORAGE CONDITIONS:

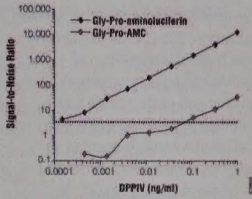
Store components at -20°C protected from light.

Quantity	Cat. No.	Each
50mL	**PR-G8502**	612.00
10mL	**PR-G8501**	238.00

U.S. Pat. No. 6,602,677, Australian Pat. No. 754312 and other patents and patents pending. The method of recombinant expression of Coleoptera luciferase *is covered by U.S. Patents 5,583,024; 5,674,713; and 5,700,673.*

Promega* DPPIV-GLO* Protease Assay

Homogeneous, luminescent assay that measures dipeptidyl peptidase IV (DPPIV) activity



Sensitivity of the DPPIV-Glo Protease Assay compared to a fluorescent assay.

DPPIV is a serine protease that cleaves N-terminal dipeptides from polypeptides with L-proline or L-alanine at the penultimate position. The DPPIV-Glo Assay provides a proluminescent DPPIV substrate, Gly-Pro-aminoluciferin, in a buffer system optimized for DPPIV and luciferase activities. The addition of a single DPPIV-Glo* Reagent in an "add-mix-measure" format results in DPPIV cleavage of the substrate and generation of a "glow-type" luminescent signal produced by the luciferase reaction. In this homogeneous, coupled-enzyme format, the signal is proportional to the amount of DPPIV activity present. The assay is designed for use with purified enzyme preparations.

- ▸ The homogeneous protocol makes the assay highly amenable to automation
- ▸ More sensitive than fluorescent-based DPPIV assays; in contrast to fluorescent assays, the luminescent assay avoids inherent fluorescent background signals and thus provides excellent signal-to-background readings
- ▸ Linear over more than 3 logs of DPPIV concentration and can detect less than 1pg/mL enzyme
- ▸ Maximum signal (and maximum sensitivity) of the assay is reached in as little as 30 minutes after reagent addition and is not dependent on accumulation of cleaved product
- ▸ Stable signal allows plates to be read over an extended period of time

APPLICATIONS:

DPPIV enzyme activity determination, Kinetic studies of DPPIV inhibitor

STORAGE CONDITIONS:

-20°C protected from light

Size	Cat. No.	Each
10mL	**PRG8350**	235.88
50mL	**PRG8351**	610.00

Promega* Pgp-Glo* Assay System

Detects effects of compounds on recombinant human P-glycoprotein (Pgp) in a cell membrane fraction

Assay[1] relies on ATP dependence of light-generating reaction of firefly luciferase. Proprietary stabilized firefly luciferase and proprietary luciferase assay formulation to minimize incidence of false positives.

- ▸ Provides necessary reagents to perform luminescent P-glycoprotein (Pgp) ATPase assays
- ▸ Stable glow-type signal allows for multiple sample processing without concerns of variability over time
- ▸ Low false-positive rate
- ▸ Simple protocol makes assay suitable for high-throughput screening in multiwell plates

APPLICATIONS:

Screening drugs and new chemical entities for capacity to modulate Pgp ATPase activity

STORAGE CONDITIONS:

Membranes must be stored at -70°C and are stable for up to five freeze-thaw cycles; for best results, dispense Pgp membranes into single use aliquots. All other components can be stored at -70° or -20°C, protected from light. Reconstituted ATP Detection Reagent can be stored at -20°C for up to three months (or 4°C for one week) without loss of activity. When stored and handled properly, system is stable for up to six months from date of purchase.

Description	Quantity	Cat. No.	Each
Pgp-Glo Assay System	10mL	**PR-V3591**	195.56
Pgp-Glo Assay System with P-glycoprotein	10mL	**PR-V3601**	395.75

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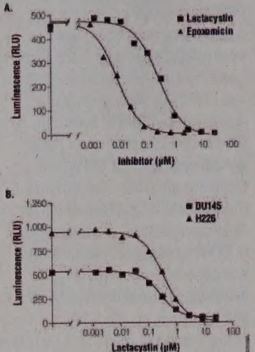
[1] *The method of recombinant expression of* Coleoptera luciferase *is covered by U.S. Pat. Nos. 5,583,024, 5,674,713 and 5,700,673.*

Promega* Proteasome-Glo* Cell-Based Assay System

Measures the chymotrypsin-like protease activity of the proteasome complex in cultured cells

Provides a luminogenic proteasome substrate, Suc-LLVY-amnioluciferin, in a buffer optimized for cell permeabilization, proteasome activity and luciferase activity. Addition of the Proteasome-Glo Cell-Based Assay Reagent in an add-mix-measure format results in proteasome cleavage of the substrate and rapid generation of a luminescent signal produced by the luciferase reaction.

- Obtain activity data directly from a cellular environment
- Add-mix-measure protocol minimizes handling steps and makes the assays amenable to automation
- Maximum sensitivity is reached 10-30 minutes after reagent addition



Monitoring proteasome inhibition using different inhibitors and cell lines.

- Avoids inherent fluorescent background signals, providing excellent signal-to-background readings
- Assays are linear over three logs of cell number or four logs of proteasome concentration

APPLICATIONS:

Measuring the chymotrypsin-like activity of the proteasome in cultured cells; screening of inhibitor libraries and monitoring proteasome-regulated protein degradation in cells

STORAGE CONDITIONS:

Store components at -20°C.

Quantity	Cat. No.	Each
10mL	**PR-G8660**	350.44
5 × 10mL	**PR-G8661**	1110.00
2 × 50mL	**PR-G8662**	1800.00

U.S. Pat. No. 6,602,677, Australian Pat. No. 754312 and other patents and patents pending. The method of recombinant expression of Coleoptera luciferase *is covered by U.S. Patents 5,583,024; 5,674,713; and 5,700,673.*

REPORTER ASSAYS

Promega* Bright-Glo* Luciferase Assay System

Designed to meet the needs of continuous-process systems

- Provides robust, homogeneous assay chemistry that achieves high sensitivity and approximately half-hour signal half-life
- Does not require sample processing prior to assay—cells may be grown and assayed in the same multiwell plate
- Produces up to tenfold greater light intensity than other homogeneous luciferase assay reagents
- Less sensitive to mixing conditions, sample evaporation, and pipetting errors than other systems, resulting in improved assay reproducibility
- Easy to use—no need to thaw or measure substrate before use
- Also suitable for use in lower throughput applications that require high sensitivity and ease of use

INCLUDES:

Bright-Glo Luciferase Assay Substrate; Bright-Glo Luciferase Assay Buffer

STORAGE CONDITIONS:

Store substrate at -20°C; store buffer below 25°C.

Quantity	Cat. No.	Each
10mL	**PR-E2610**	96.20
100mL	**PR-E2620**	604.00
10 × 100mL	**PR-E2650**	5308.00

U.S. Pat. No. 5,744,320, Australian Pat. No. 721172, European Pat. No. 0 833 939, Canadian Pat. No. 2,221,522, Japanese Pat. No. 3601606 and Korean Pat. No. 10-438880 have been issued to Promega Corporation for quenching reagents and assays for enzyme-mediated luminescence.
U.S. Patents 5,283,179; 5,641,641; 5,650,289; and 5,814,471; Australian Patent 649289 and other patents and patents pending.
The method of recombinant expression of Coleoptera *luciferase is covered by U.S. Patents 5,583,024; 5,674,713; and 5,700,673.*
Certain applications of this product may require licenses from others.

Promega* Steady-Glo* Luciferase Assay System

Provides long-lived luminescence when added to cultured cells

- Ideal for quantitation of firefly luciferase expression in mammalian cells by batch processing of 96- and 384-well plates
- Can process several thousand samples per hour with high reproducibility under standard laboratory conditions
- Provides signal half-lives over five hours in commonly used cell culture media without prior sample processing
- Results in greater assay sensitivity than other extended-lifetime firefly luciferase assay reagents
- Less sensitive to mixing conditions for improved assay reproducibility
- Compatible with many tissue culture media, including those containing up to 10% serum

STORAGE CONDITIONS:

Store substrate at -20°C; store buffer below 25°C.

SYSTEM CONFIGURATIONS

	PR-E2510	PR-E2520	PR-E2550
Steady-Glo Luciferase Assay Substrate	1 vial	1 vial	10 × 1 vial
Steady-Glo Luciferase Assay Buffer	10mL	100mL	10 × 100mL

Quantity	Cat. No.	Each
10mL	**PR-E2510**	77.20
100mL	**PR-E2520**	554.00
10 × 100mL	**PR-E2550**	4713.00

This product does not convey a license to use recombinant Renilla *luciferase under U.S. Pat. Nos. 5,292,658, 5,418,155 and related patents. Promega sells licensed* Renilla *luciferase vectors, which may be used in conjunction with this product.*
Certain applications of this product may require licenses from others.
Patent Pending.

*Trademark. See Trademark Reference.

Prices subject to change.

Promega* Dual-Glo* Luciferase Assay System

Generates both firefly and *Renilla* luciferase luminescence signals

Homogeneous reagent system enables fast and simple quantitation of stable luminescence from two reporter genes in a single sample. The activity of the primary reporter is correlated with the effect of specific stimuli and the activity of the co-transfected control reporter provides an internal control to normalize results.

- Co-reporter minimizes effects of cell number, cell health, transfection efficiency, and nonspecific cellular responses
- Cells may be assayed for both reporters directly in growth medium—no preconditioning or prelysing necessary
- Stable signal may be measured for up to two hours after reagent addition—ideal for batch or continuous processing of 96- and 384-well plates
- Two-step assay is suitable for any luminometer—no on-board injectors required
- Linear range extends over at least six logs of enzyme concentration for each reporter

INCLUDES:

Dual-Glo Luciferase Buffer; Dual-Glo Luciferase Substrate; Dual-Glo Stop & Glo* Buffer; Dual-Glo Stop & Glo Substrate

STORAGE CONDITIONS:

Substrates at -20°C; store Dual-Glo Buffers below 25°C.

Quantity	Cat. No.	Each
10mL	**PR-E2920**	190.40
100mL	**PR-E2940**	1121.00
10 × 100mL	**PR-E2980**	9638.00

U.S. Patents 5,283,179; 5,641,641; 5,650,289; and 5,814,471; Australian Patent 649289 and other patents and patents pending.
U.S. Patent 5,744,320; Australian Patent 721172; Canadian Patent 2,221,522 and other patents and patents pending.
The method of recombinant expression of Coleoptera *luciferase is covered by U.S. Patents 5,583,024; 5,674,713; and 5,700,673.*
Certain applications of this product may require licenses from others.
This product does not convey a license to use recombinant Renilla *luciferase under U.S. Patents 5,292,658; 5,418,155; and related patents. Promega sells licensed* Renilla *luciferase vectors, which may be used in conjunction with this product.*

European Pat. No. 0 833 939, Canadian Pat. No. 2,221,522, Japanese Pat. No. 3601606 and Korean Pat. No. 10-438880 have been issued to Promega Corporation for quenching reagents and assays for enzyme-mediated luminescence.

U.S. Pat. Nos. 7,078,181, 7,108,996 and 7,118,878 have been issued to Promega Corporation for a method for increasing luminescence assay sensitivity. Other patents are pending.

Promega* Dual-Luciferase* Reporter (DLR*) Assay Systems

Combine the speed and sensitivity of two luciferase reporter enzymes into an integrated single-tube dual reporter assay

Provide immediate, sequential quantitation of both firefly and sea pansy (*Renilla reniformis*) luciferases in cell lysates or cell-free translation systems for internal normalization of gene expression measurements. Supplied Passive Lysis Buffer (also available separately) can be used to rapidly prepare cell lysates from cells grown in 96-well plates.

- Offer a linear range that extends 7 logs
- Sensitive enough to allow study of weak promoters, low-level expression/regulation, and expression in cells that transfect poorly
- Complete both assays in approximately four seconds when used with reagent auto injectors

Dual-Luciferase Reporter 1000 Assay System

- Developed for larger volume users
- Configured for use in 96-well luminometry plates
- Supplies additional volume of both assay reagents to allow for priming of reagent injectors

INCLUDES:

Luciferase Assay Buffer II; Luciferase Assay Substrate (lyophilized product); Stop & Glo Buffer; Passive Lysis 5X Buffer; Stop & Glo Reagent Bottle (PR-E1980 only

STORAGE CONDITIONS:

Store at -20°C.

Description	Quantity	Cat. No.	Each
Dual-Luciferase Reporter Assay System	100 Assays	**PR-E1910**	171.40
	10 x 100 Assays	**PR-E1960**	1107.00
Dual-Luciferase Reporter 1000 Assay System	1000 Assays	**PR-E1980**	1045.00
Passive Lysis 5X Buffer	30mL	**PR-E1941**	54.20

U.S. Pat. Nos. 7,078,181, 7,108,996 and 7,118,878 have been issued to Promega Corporation for a method for increasing luminescence assay sensitivity. Other patents are pending.
This product does not convey a license to use recombinant Renilla *luciferase under U.S. Pat. Nos. 5,292,658, 5,418,155 and related patents. Promega sells licensed* Renilla *luciferase vectors, which may be used in conjunction with this product.*
The method of recombinant expression of Coleoptera *luciferase is covered by U.S. Pat. Nos. 5,583,024, 5,674,713 and 5,700,673.*
U.S. Pat. No. 5,744,320, Australian Pat. No. 721172, European Pat. No. 0 833 939, Canadian Pat. No. 2,221,522, Japanese Pat. No. 3601606 and Korean Pat. No. 10-438880 have been issued to Promega Corporation for quenching reagents and assays for enzyme-mediated luminescence.
U.S. Pat. Nos. 5,283,179, 5,641,641, 5,650,289 and 5,814,471, Australian Pat. No. 649289, European Pat. No. 0 553 234 and Japanese Pat. No. 3171595 have been issued to Promega Corporation for a beetle luciferase assay method, which affords greater light output with improved kinetics as compared to the conventional assay.
Certain applications of this product may require licenses from others.

Promega* EnduRen* Live Cell Substrate

Allows measurement of *Renilla* luciferase luminescence for at least 24 hours after substrate addition

- Utilizes engineered coelenterazine to produce up to ten-fold higher signal-to-background ratios than wildtype coelenterazines
- Enables luminescent reporter assays with live cells, conserving test compounds
- Creates response profiles in real time to generate more data-rich results
- Accommodates assays in microplate format without the need for autoinjectors
- Quantitates low expression levels for reporter gene assays and bioluminescence resonance energy transfer (BRET)
- Permits multiplexing when paired with any lytic assay

STORAGE CONDITIONS:

Store at -20°C.

Quantity	Cat. No.	Each
0.34mg	**PR-E6481**	114.43
3.4mg	**PR-E6482**	712.00

Patent pending.
Certain applications of this product may require licenses from others.
This product does not convey a license to use recombinant Renilla *luciferase under U.S. Patents 5,292,658; 5,418,155 and related patents. Promega offers licensed* Renilla *luciferase vectors, which may be used in conjunction with this product.*

Promega* Luciferase Assay Systems

Extremely sensitive and rapid systems for the quantification of firefly luciferase

The Luciferase Assay System is a homogeneous assay system; the cells containing the luciferase must be lysed before addition to the reagent. Cell Culture Lysis Reagent and Reporter Lysis Buffer may be used with the Luciferase Assay System for reporter quantitation in mammalian cells. This system may also be used for quantitation in plant and bacterial cells, but Reporter Lysis Buffer is not suitable for these applications.

- Linear results are seen over at least eight orders of magnitude of enzyme concentration
- Patented technology has allowed less than 10^{-20} moles of luciferase to be measured under optimal conditions
- Systems typically provide 100-fold greater sensitivity than the chloramphenicol acetyltransferase (CAT) assay
- Cell lysis, sample preparation, and assays can be performed in as little as five minutes
- Reporter Lysis Buffer allows luciferase, CAT, and β-galactosidase assays to be performed from the same cell extract
- Simple procedure eliminates the need for autoinjectors and rapid mixing protocols when using single-tube luminometers
- Protocol can be adapted for use with scintillation counters
- System components are also available separately

System Configurations					
	PR-E1500	PR-E1501	PR-E4550	PR-E4030	PR-E4530
Luciferase Assay Substrate	1 vial	10 × 1 vial	1 vial	1 vial	10 × 1 vial
Luciferase Assay Buffer	10mL	10 × 10mL	105mL	10mL	10 × 10mL
Cell Culture Lysis 5X Reagent	30mL	----	----	----	----
Reporter Lysis 5X Buffer	----	----	----	30mL	10 × 30mL

Description	Quantity	Cat. No.	Each
Systems			
Luciferase Assay System	100 assays	**PR-E1500**	73.20
Luciferase Assay System, 10-pack	1000 assays	**PR-E1501**	495.75
Luciferase 1000 Assay System	1000 assays	**PR-E4550**	475.75
Luciferase Assay System w/Reporter Lysis Buffer	100 assays	**PR-E4030**	73.20
Luciferase Assay System Freezer Pack	1000 assays	**PR-E4530**	596.00
Components			
Luciferase Assay Reagent[1]	1000 assays	**PR-E1483**	475.75
Luciferase Cell Culture Lysis 5X Reagent	30mL	**PR-E1531**	37.20
Reporter Lysis 5X Buffer	30mL	**PR-E3971**	37.20

[1] *A premix of Luciferase Assay Substrate and Luciferase Assay Buffer.*

U.S. Patents 5,283,179; 5,641,641; 5,650,289; and 5,814,471; Australian Patent 649289 and other patents and patents pending.

The method of recombinant expression of Coleoptera luciferase *is covered by U.S. Patents 5,583,024; 5,674,713; and 5,700,673.*

Certain applications of this product may require licenses from others.

Promega* QuantiLum* Recombinant Luciferase

Recombinant source eliminates the possibility of seasonal and regional variability that may be found in luciferase purified from natural sources

- Expressed from a cloned gene from the North American firefly, *Photinus pyralis*
- Provides the reliability and dependability needed when performing research or producing kits using bioluminescence reagents
- Specific Activity: ≥2.0×10^{10} light units/mg protein
- SDS-PAGE Purity: >95%

STORAGE CONDITIONS:

Store at -70°C; avoid multiple freeze-thaw cycles.

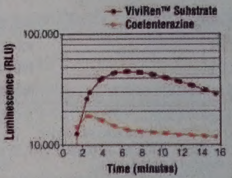
Quantity	Concentration	Cat. No.	Each
1mg	10–15mg/mL	**PR-E1701**	56.28
5mg	10–15mg/mL	**PR-E1702**	227.86

The method of recombinant expression of Coleoptera luciferase *is covered by U.S. Patents 5,583,024; 5,674,713; and 5,700,673.*

Promega* ViviRen* Live Cell Substrate

Proprietary coelenterazine generates three- to fivefold brighter *Renilla* luciferase luminescence from live cells under normal growth conditions than wildtype coelenterazine

- Produces up to 100-fold higher signal-to-noise ratios than coelenterazine
- Provides sensitive quantitation—ideal for miniaturized formats, low-level expression, and CCD imagers
- Permits real-time measurement in multiwell plates
- Suitable for the generation of kinetic profiles for reporter gene, bioluminescence resonance energy transfer (BRET), and ddRNAi applications
- Can be multiplexed with assays that lyse cells with minimal *Renilla* luciferase luminescence carryover into the lysed-cell signals



Luminescence reaches near-maximum levels within minutes of ViviRen Live Cell Substrate or coelenterazine addition. CHO cells stably expressing *Renilla* luciferase were exposed to 20µM of ViviRen Live Cell Substrate or coelenterazine approximately 1.5 min. after continuous luminescent reading was initiated.

STORAGE CONDITIONS:

Store PR-E6491 at -70°C; store PR-E6492 and PR-E6495 at -20°C.

Quantity	Format	Cat. No.	Each
0.37mg (100 assays of 100µL each)	60mM in 10µL DMSO	**PR-E6491**	114.43
3.7mg (1000 assays of 100µL each)	Solid	**PR-E6492**	712.00

Patent pending.

Certain applications of this product may require licenses from others.

This product does not convey a license to use recombinant Renilla *luciferase under U.S. Patents 5,292,658; 5,418,155 and related patents. Promega offers licensed* Renilla *luciferase vectors, which may be used in conjunction with this product.*

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* Cellomics* HitKit* HCS Reagent Kits

Assay-ready reagents produce cells optimized for fluorescent imaging

Rapidly incorporate high-content assays into your drug discovery efforts with proprietary and exclusively licensed fluorescent reagents designed to achieve the highest emission of light for each fluorophore. Background fluorescence and non-specific cross-talk minimized for increased sensitivity, specificity, and signal-to-noise ratios. Sample preparation protocols have been optimized to produce high-quality cell preparations and are automation compatible for maximum productivity and reproducibility.

- Compatible with a wide range of cell types
- No cell lysis, purification, or filtration steps
- Fluorescence-based assays provide sensitive quantitative and qualitative results without radioactivity
- Prepared cells may be analyzed directly via standard fluorescence microscopy
- Kits include all imaging-tested reagents and detailed protocols needed for sample preparation
- Pre-validated on the Thermo Scientific* Cellomics* ArrayScan* HCS Reader

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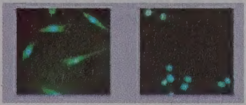
ATF-2 Activation HitKit*

Designed for assays based on indirect immuno-fluorescence



Images of immunofluorescently stained NIH3T3 cells before (left) and after (right) activation of ATF-2 by anisomycin. Cells were stimulated with 200ng/mL anisomycin for 30 min. and then prepared using the HitKit protocol. Nuclei appear blue (Hoechst) and ATF-2 appears green (Alexa Fluor* 488). Images were acquired using a Thermo Scientific* Cellomics* ArrayScan* HCS Reader.

Responding to the inflammatory cytokines and cellular stressors including genotoxicity and ischemia/reperfusion, ATF-2 is activated through threonines 69 and 71 by members of the SAPK family. Once activated, ATF-2 forms complexes with Jun family or other ATF family members. These complexes bind to the cAMP Response Element found in the promoters of many genes, stimulating gene transcription. Because ATF-2 must be in the nucleus to induce gene expression, its translocation is a definitive measure of its activation, and marks an earlier event than reporter gene expression.

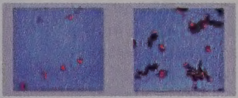
- Earlier and more definitive measure of ATF-2 activation relative to electophoretic mobility shift or gene reporter assays
- Cells may be analyzed directly via standard fluorescence microscopy; or any HCS Imaging System
- Prepared cells are ready for analysis in less than 3 hr. post-test compound incubation
- Kit protocol requires no cell lysis, purification or filtration steps
- Sensitive quantitative and qualitative results without radioactivity
- Validated protocol included with all necessary stains and components

INCLUDES:

ATF-2 primary antibody; Alexa Fluor 488— conjugated secondary antibody; Hoechst dye; Positive control compound; Wash buffer (10X); Permeabilization buffer (10X)

Target	Evaluation Size	Cat. No.	Each
ATF-2 Activation	5 x 96	**K01-0010-1**	403.00

Cell Motility HitKit*



Images of tracks (black) generated by A549 cells in the absence (unstimulated, left) or presence (stimulated, right) of serum. Cells appear as red fluorescent spots due to the cytoplasmic staining (rhodamine-conjugated phalloidin). Images were acquired by a Thermo Scientific* Cellomics* ArrayScan* HCS Reader.

The Cell Motility HitKit HCS Reagent Kit provides High Content Screening (HCS)-quality fluorescence reagents and a protocol optimized for visualizing and quantifying cell movement by directly measuring the size of tracks generated by migrating cells.

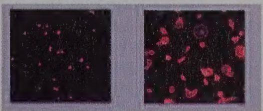
- Versatile assay is widely applicable to a variety of cell types
- Validated protocol for sample preparation/processing requires 2.5 hours post-compound incubation
- Assay utilizes fluorescence reagents and requires no cell lysis, purification or filtration steps; and no handling of radioactive isotopes
- Cells prepared with the HitKit reagents may be analyzed directly via standard fluorescence microscopy; or any HCS imaging systems

INCLUDES:

Blue fluorescent microspheres; Rhodamine—conjugated phalloidin; Wash buffer (10X); Permeabilization buffer (10X); Plate seals

Description	Evaluation Size	Cat. No.	Each
Cell Motility	5 × 96	**K08-0001-1**	504.00

Cell Spreading HitKit*



Images of fluorescently labeled PC-3 cells acquired using the Thermo Scientific* Cellomics* ArrayScan* HCS Reader. Left panel: a composite image of cells treated for 3 hrs. with the Negative Control Compound (supplied with the kit); nuclei appear blue (Hoechst Dye) and cytoplasm appears red (Rhodamine-Conjugated Phallodin). Right panel Image of cells that were incubated for 33 hrs.

The Cell Spreading HitKit HCS Reagent Kit provides High Content Screening (HCS)-quality fluorescence reagents and a validated, optimized protocol necessary to quantify the spreading of cells by directly measuring their areas using a fluorescent cytoskeletal marker, rhodamine-conjugated phalloidin.

- Assay is versatile and widely applicable to a variety of cell types
- Validated protocol for sample preparation/processing requires approximately 1.5 hours post-compound incubation

Contd. on next page.

Thermo Scientific* Cellomics* Cell Spreading HitKit*, Contd.

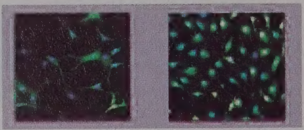
- Utilizes fluorescent reagents and requires no cell lysis, purification, or filtration steps; and no handling of radioactive isotopes
- Cells prepared with the HitKit HCS Reagent Kits may be analyzed directly via standard fluorescent microscopy; or using any HCS Imaging System

INCLUDES:
Rhodamine — conjugated phalloidin; Negative control compound (Cytochalasin D); Hoechst dye; Wash buffer (10X); Permeabilization buffer (10X); Plate seals

Description	Evaluation Size	Cat. No.	Each
Cell Spreading	5 x 96	**K06-0001-1**	504.00

ERK MAPK Activation HitKit*

Designed for assays based on indirect immuno-fluorescence



Images of fluorescently labeled NIH3T3 cells before (left) and after (right) activation of ERK by PMA (100ng/mL for 30 min.). Cells were prepared according to the HitKit protocol. Nuclei appear blue (Hoechst) and ERK appears green (Alexa Fluor* 488). Images were acquired by a Thermo Scientific* Cellomics* ArrayScan* HCS Reader.

Mitogen-activated protein kinase (MAPK) pathways regulate a broad range of cellular processes including gene transcription, cytoskeletal organization, metabolic homeostasis, cell growth, and apoptosis. MAPKs are activated by concomitant Tyr and Thr phosphorylation, catalyzed by members of the MAP Kinase Kinase (MKK) family. MKKs, in turn, are activated by Ser/Thr phosphorylation, catalyzed by protein kinases of several families collectively termed Mitogen-Activated Protein Kinase Kinase Kinases (MAPKKK). Upon activation of this pathway, MAPK is phosphorylated and translocated to the nucleus of cells.

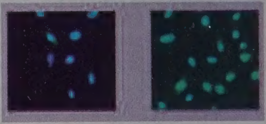
- A more biologically relevant measure of kinase activation relative to Western blots or in vitro kinase assays
- No cell lysis, purification, or filtration steps
- Immunofluorescence based assay provides sensitive quantitative and qualitative results without radioactivity
- Kit antibody preferentially binds to dually phosphorylated (fully active) ERK, with minimized cross-reactivity to other MAPKs
- Manual sample preparation/processing requires approximately three hours post-compound treatment

INCLUDES:
phospho-ERK primary antibody; Alexa Fluor 488* conjugated secondary antibody; Hoechst dye; wash buffer (10X); positive control compound (PMA); permeabilization buffer (10X); Detergent buffer (10X); plate seals

Target	Evaluation Size	Cat. No.	Each
ERK MAPK Activation	5 x 96	**K01-0007-1**	504.00

c-Jun Activation HitKit*

Designed for assays based on indirect immuno-fluorescence



Images of fluorescently labeled HeLa cells before and after activation of c-Jun by anisomycin (500ng/mL for 25 min.). The left panel shows c-Jun localization in unstimulated cells. Nuclei appear blue due to low levels of nuclear (phosphorylated) c-Jun. The right panel shows c-Jun localization in stimulated cells. Blue-green color of nuclei is due to colocalization.

Because c-Jun must be in the nucleus to induce gene expression, its translocation is a definitive measure of its activation, and marks an earlier event than reporter gene expression.

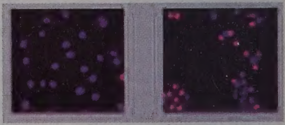
- Quantify endogenous c-Jun activation specifically and reliably in whole cells
- Immunofluorescence-based screening assay provides sensitive quantitative and qualitative results without radioactivity
- No cell lysis, purification, or filtration steps
- No need to generate stable clonal lines; entire assay completed in 3 hr. (post-stimulation)
- Earlier and more definitive measure of transcription factor activation relative to electophoretic mobility shift or gene reporter assay

INCLUDES:
phospho-c-Jun primary antibody; Alexa Fluor* 488—conjugated secondary antibody; Hoechst dye; positive control compound; wash buffer (10X); permeabilization buffer (10X); detergent buffer (10X); positive control compound (Anisomycin) (10X); plate seals (10X)

Target	Evaluation Size	Cat. No.	Each
c-Jun Activation	5 x 96	**K01-0003-1**	403.00

Mitotic Index HitKit*

Detects mitotic cells by the presence of phosphorylated histone core protein



Images taken from the Thermo Scientific* Cellomics* ArrayScan* HCS Reader of MDCK cells, while the right panel was treated with the mitotic inhibitor vinblastine (25nM for 10 hrs.). Blue channel indicates nuclei, pink channel indicates mitotic bodies.

The Mitotic Index assay is used to characterize proliferating cells and to identify compounds that inhibit or induce mitotic progression. Compounds that inhibit mitotic progression result in an increase in the mitotic index of a population.

- Cells prepared with the HitKit reagents may be analyzed directly via standard fluorescence microscopy; or HCS imaging systems
- Simple sample preparation/processing requires less than 2.5h after compound treatment
- Functional whole cell assay is more accurate and biologically relevant than flow cytometric analysis
- No cell lysis, purification, or filtration steps
- Kit antibody binds to epitope abundant in mitotic cells with high sensitivity and specificity

Contd. on next page.

Thermo Scientific* Cellomics* Mitotic Index HitKit*, Contd.

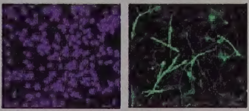
INCLUDES:

Mitotic Index primary antibody; Alexa Fluor* 488 conjugated secondary antibody; Hoechst dye; Positive control compound; Wash buffer (10X); Permeabilization buffer (10X); Anti-Mitotic control compound (Vinblastine); Plate seals (10X); Block (100X)

Description	Evaluation Size	Cat. No.	Each
Mitotic Index	5 x 96	K05-0001-1	504.00

Neurite Outgrowth HitKit*

The Neurite Outgrowth HitKit HCS Reagent Kit product provides a solution for quantifying neurite outgrowth by combining High Content Screening (HCS)-quality fluorescence reagents with a validated, automation-compatible protocol.



A primary human brain culture was prepared with the Neurite Outgrowth HitKit Reagents. All of the cells' nuclei were labeled with Hoechst Dye (left). Only the neurons and their neurites were labeled with the neuron-specific marker (right).

- Neuronal-specific fluorescent reagent identifies neuronal cell bodies and neurites in a heterogeneous cell population without isolation steps
- Validated protocol for sample preparation and processing requires approximately 2.5h post-compound treatment and is automation compatible
- Cells prepared with the HitKit reagents may be analyzed directly via standard fluorescence microscopy; or HCS imaging systems.
- No radioactivity, cell lysis, purification, or filtration steps

INCLUDES:

Neuronal-specific primary antibody; Alexa Fluor* 488 conjugated secondary antibody; Hoechst dye; wash buffer (10X); permeabilization buffer (10X); detergent buffer (10X); plate seals

Description	Evaluation Size	Cat. No.	Each
Neurite Outgrowth	5 x 96	K07-0001-1	504.00

NFAT Activation HitKit*

Designed for assays based on indirect immuno fluorescence

Images of HeLa cells before (left) and after (right) activation of NFAT by thapsigargin. Cells were stimulated with 60nM thapsigargin for 40 min., and then prepared using the HitKit reagents and protocol. Nuclei appear blue (Hoeschst) and NFAT appears green (Alexa Fluor 488). Images were acquired by a Thermo Scientific* Cellomics* ArrayScan* HCS Reader.

Transcription factors belonging to the NFAT (Nuclear Factor of Activated T cells) family are know to regulate cytokine expression in T cells, and thus are intimately involved in regulation of early events of immune response regulation. Normally found in the cytoplasm, NFAT translocates to the nucleus upon dephosphorylation via binding to calcinerin (calcium/calmodulin-dependent phosphatase). Upon translocation, NFAT forms complexes with AP-1 proteins to regulate gene expression.

- Cell-based assay provides an earlier and more definitive measure of NFAT activation relative to electophoretic mobility shift or gene reporter assays
- Immunofluorescence-based screening assay provides sensitive quantitative and qualitative results without radioactivity
- Protocol requires no cell lysis, purification, or filtration steps
- Cells prepared with the HitKit reagents may be analyzed directly via standard fluorescent microscopy; or HCS imaging systems

INCLUDES:

NFAT primary antibody; Alexa Fluor* 488-conjugated secondary antibody; Hoechst dye; block (100X); wash buffer (10X); permeabilization buffer (10X); plate seals

Target	Evalutation Size	Cat. No.	Each
NFAT-1 Activation	5 x 96	K01-0011-1	403.00

NFκB Activation HitKit*

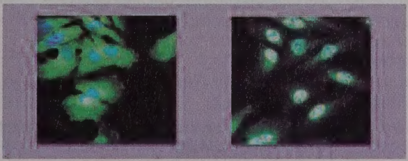
Designed for assays based on indirect immunofluorescence

- All reagents and protocols included for optimized sample preparation
- No cell lysis, purification, or filtration steps
- Fluorescent conjugates; no handling of radioactive isotopes
- Cells prepared with the HitKit reagents may be analyzed directly via standard fluorescence microscopy; or HCS imaging system

INCLUDES:

NFκB primary antibody; Alexa Fluor* 488 - conjugated secondary antibody; Hoechst dye; wash buffer (10X); permeabilization buffer (10X); detergent buffer (10X)

Target	Evaluation Size	Cat. No.	Each
NFkB Activation	5 x 96	K01-0001-1	402.25



Images of immunofluorescently stained HeLa cells before and after activation of NFκB by IL-1. Cells were stimulated with 25ng/mL IL-1 for 20 min. and prepared according to the HitKit protocol. (Left) Image of the NFκB channel in unstimulated cells. (Right) Image of the NFκB channel in stimulated cells. Both images were aquired from a Thermo Scientific* Cellomics* Array Scan* HCS Reader.

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Thermo Scientific* Cellomics* HitKits*, Contd.

Multiplexed NFkB and c-Jun Activation HitKit*

Provide a highly effective tool for the simultaneous quantification of NFkB and c-Jun activation in the same cell

- Allow direct measurements of NFkB and phospho-c-jun translocation from the cytoplasm to the nucleus
- Optimized protocol requiring no cell lysis, purification or filtration steps
- Primary antibodies are specific for their targets and have minimal cross-reactivity with other targets
- Sensitive results without radioactivity
- Available as multiplex (orange NFkB and green c-Jun) or singleplex kits (NFkB only)

INCLUDES:

- Thermo Scientific* Pierce* DyLight* 549 conjugated goat anti-rabbit IgG, Hoechst dye, wash buffer (10X Dulbecco's PBS), permeabilization buffer (10X Dulbecco's PBS with 1% Triton* X-100), blocking buffer (10X), thin plate seals
- NFkB and c-Jun Activation Kit Multiplex also contains: NFkB primary antibody, c-Jun primary antibody, Alexa Fluor* 488 conjugated goat anti-mouse IgG

Target	Quantity	Cat. No.	Each
NFkB and c-Jun Activation	1 x 96	**8400301**	300.56
	5 x 96	**8400302**	650.00
NFkB only	1 x 96	**8400401**	226.27
	5 x 96	**8400402**	500.94

Oxidative Stress 1 HitKit*

Designed for assays based on indirect immuno fluorescence

The method's principle is that reactive oxygen species convert non-fluorescent dihydroethidium to fluorescent ethidium, which intercalates into DNA. The DNA binding dye, Hoechst 33342, is used to identify the nuclei of the individual cells, and then the DHE fluorescence is measured to evaluate whether oxidative stress occurred.

- Robust assays—Z' values are >0.3 for multiplexed and singleplexed assays
- HitKits have been validated in high content screening (HCS) assays for reliable and reproducible results
- Validated on Thermo Scientific* Cellomics* ArrayScan* HCS readers; also works on other HCS platforms and fluorescent microscopes
- HitKits work on all HCS platforms offering flexibility in end-user instrumentation
- Optimized protocol and reagent preparations included
- No optimization or assay development required

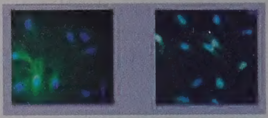
INCLUDES:

Dihydroethidium (DHE); Hoechst 33342 Dye; wash buffer (10X Dulbecco's PBS); thin Plate Seal Assembly

Description	Quantity	Cat. No.	Each
Oxidative Stress I Kit	1 x 96 wells	**8401001**	226.27
Oxidative Stress I Kit	5 x 96 wells	**8401002**	500.94

p38 MAPK Activation HitKit*

Designed for assays based on indirect immuno-fluorescence



Images of fluorescently labeled HeLa cells before (left) and after (right) activation of p38 MAPK by TNF-α (100ng/mL for 15 min.). Cells were prepared according to the HitKit protocol. Nuclei appears blue (Hoechst) and ERK appears green (Alexa Fluor* 488). Images were acquired using a Thermo Scientific* Cellomics* ArrayScan* HCS Reader.

The MAPK super family comprises c-Jun N-terminal kinases (JNKs), also known as stress activated protein kinases (SAPKs); extracellular signal-regulated kinases (ERKs); and p38 kinases, each of which forms a separate pathway. The kinase members that populate each pathway are sequentially activated by phosphorylation. Upon activation, p38 MAPK translocates into the nucleus where it phosphorylates one or more nuclear substrates, effecting transcriptional changes and other cellular processes involved in cell growth, division, differentiation, inflammation, and death. p38 MAPK is activated by a variety of chemical stress inducers including hydrogen peroxide, heavy metals, anisomycin, sodium salicylate, LPS, and biological inducers such as certain growth factors and cytokines (e.g. Tumor Necrosis Factor-α, TNF-α).

- A more biologically relevant measure of kinase activation relative to Western blots or in vitro kinase assays
- No cell lysis, purification, or filtration steps
- Immunofluorescence based assay provides sensitive results without radioactivity
- Kit antibody preferentially binds to dually phosphorylated (fully active) p38, with minimized cross-reactivity to other MAPKs
- Manual sample preparation/processing requires approximately 3 hours post-compound treatment

INCLUDES:

phospho-p38 MAPK primary antibody; Alexa Fluor 488-conjugated secondary antibody; Hoechst dye; Block (100X); wash buffer (10X); permeabilization buffer (10X); plate seals

Target	Quantity	Cat. No.	Each
p38 MAPKActivation	5 x 96	**K01-0004-1**	504.00

Multiplexed phospho-53 (ser15) and p53 Detection HitKit*

Enables the simultaneous quantitative monitoring and correlation of levels of total p53 and phosphorylated (ser15) p53 within the same cell

- Uses a fixed end-point assay based on immunofluorescence detection in cells grown on standard high-density microplates
- Optimized protocol requiring no cell lysis, purification or filtration steps
- Primary antibodies are specific for their targets and have minimal cross-reactivity with other targets
- Nonradioactive

INCLUDES:

phospho-p53 primary antibody, p53 primary antibody, Thermo Scientific* Pierce* DyLight* 549 conjugated goat anti-rabbit IgG, Alexa Fluor* 488 conjugated goat anti-mouse IgG, Hoechst dye, wash buffer (10X Dulbecco's PBS), permeabilization buffer (10X Dulbecco's PBS with 1% Triton* X-100), blocking buffer (10X), thin plate seals

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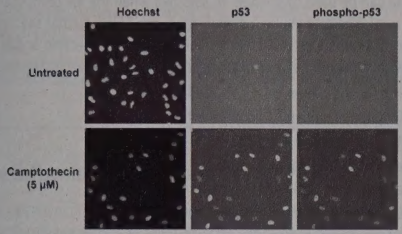
Thermo Scientific* Cellomics* Multiplexed phospho-53 (ser15) and p53 Detection HitKit*, Contd.



Staining of p53 and phospho-p53 in A549 cells treated with media only (Untreated) or with 5μM camptothecin for 20 hrs. (Camptothecin 5μM). Proteins were detected according to the kit protocol. The cells were imaged using a Thermo Scientific* Cellomics* ArrayScan* HCS Reader.

Quantity	Cat. No.	Each
1 x 96	**8400501**	300.56
5 x 96	**8400502**	650.00

Phospho-p53 Activation HitKit*

Enables monitoring of Phospho-p53 activation

p53 is a tumor suppressor protein that regulates the expression of a wide variety of genes involved in apoptosis, growth arrest, inhibition of cell cycle progression, differentiation and accelerated DNA repair or senescence in response to genotoxic or cellular stress$^{1-3}$. p53 is maintained at low levels in normal cells. However, when the cell is confronted with stress like DNA damage, hypoxia, cytokines, metabolic changes, viral infection, or oncogenes, p53 accumulates in the nucleus, where it is activated. Once activated, p53 can function as a sequence-specific transcription factor that can act both directly and indirectly to turn on or off various genes that affect cell growth and survival. Additionally, p53 can directly interact with several proteins that influence growth and survival.

- Available in multiplex or singleplex configurations
- Optimized protocol requiring no cell lysis, purification or filtration steps
- Immunofluorescence-based assay provides sensitive results without radioactivity
- Cells prepared with the HitKit reagents may be analyzed directly via standard fluorescence microscopy; or HCS Imaging Systems including the Thermo Scientific* Cellomics* ArrayScan* HCS Reader
- Primary antibodies are specific for their targets and have minimal cross-reactivity with other targets

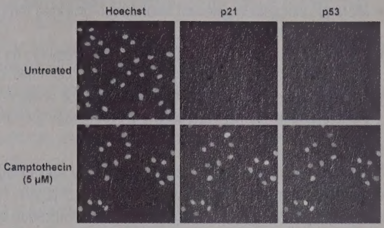
INCLUDES:

phospho-p53 primary antibody, Thermo Scientific* Pierce* DyLight* 549 conjugated goat anti-rabbit IgG, Hoechst dye, wash buffer (10X Dulbecco's PBS), permeabilization buffer (10X Dulbecco's PBS with 1% Triton* X-100), blocking buffer (10X), thin plate seals

Quantity	Cat. No.	Each
1 x 96	**8400701**	226.27
5 x 96	**8400702**	500.94

p53 and p21 Detection and Activation HitKit*

Provide simultaneous quantitation of p53 and p21 expression in the same cell



Staining of p21 and p53 in A549 cells treated with media only (Untreated) or with 5μM Camptothecin for 20 hrs. Proteins were labeled according to the kit protocol. The cells were imaged using a Thermo Scientific* Cellomics* ArrayScan* HCS Reader

- Kits allow direct measurements of p53 and p21 in the nucleus
- Employ a fixed end-point assay based on immunofluorescence detection in cells grown on standard high-density microplates
- Optimized protocol requiring no cell lysis, purification or filtration steps
- Primary antibodies are specific for their targets and have minimal cross-reactivity with other targets
- Achieve sensitive results without radioactivity

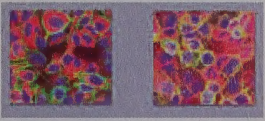
INCLUDES:

p53 primary antibody, p21 primary antibody, Thermo Scientific* Pierce* DyLight* 549 conjugated goat anti-rabbit IgG, DyLight 549 conjugated goat anti-mouse IgG, Alexa Fluor* 488 conjugated goat anti-mouse IgG, Hoechst dye, wash buffer (10X Dulbecco's PBS), permeabilization buffer (10X Dulbecco's PBS with 1% Triton* X-100), blocking buffer (10X), thin plate seal

Target	Quantity	Cat. No.	Each
p53 and p21	1 x 96	**8400501**	300.56
p53 and p21	5 x 96	**8400502**	650.00
p53	1 x 96	**8400801**	226.27
p53	5 x 96	**8400802**	500.94
p21	1 x 96	**8400901**	226.27
p21	5 x 96	**8400902**	500.94

PKC α Activation HitKit*

Designed for assays based on indirect immunofluorescence



HeLa cells unstimulated (left) or stimulated with 400nM PMA (right). PKC (red), Membrane Marker (green), Hoechst (blue); colocalization of PKC and Membrane Marker (yellow).

The Protein Kinase C (PKC) family is a group of related signal transduction proteins, and their activation is one of the earliest events leading to a variety of cellular responses including cytokine secretion,differentiation, proliferation, muscle contraction and modulation of membrane excitability. PKCα is believed to play an important role in the development and growth of cancer cells. Inhibition of PKCα production is the basis for therapeutic candidates currently in clinical trials for the treatment of non-small cell lung cancer. PKCα may also underlie the cellular mechanism leading to inflammatory lung vascular injury and adult respiratory distress syndrome.

Contd. on next page.

Thermo Scientific* Cellomics* PKC α Activation HitKit*, Contd.

- Time-saving and convenient kit provides HCS-qualified antibodies and fluorescent reagents that identify the cell membrane, nucleus, as well as PKCα in cells
- More physiologically relevant information provided through measurement of endogenous PKCα
- Convenient automation-compatible protocol requires no cell lysis, protein purification, generation of stable transfected cell lines, or radioactivity
- Cells prepared with the HitKit reagents may be analyzed directly via standard fluorescence microscopy; or HCS imaging systems

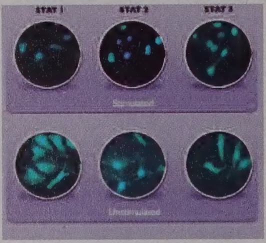
INCLUDES:
PKCα monoclonal antibody; secondary antibody Alexa Fluor* 555 conjugate; membrane marker-Alexa Fluor 488 conjugate; Hoechst dye; block (100X); wash buffer-M (10X); permeabilization buffer (10X); detailed protocol and assay data; plate seals

Target	Evaluation Size	Cat. No.	Each
PKCα Activation	5 x 96	**K09-0001-1**	403.00

STAT Activation HitKit*

Designed for assays based on indirect immunofluorescence

- Kits detect STAT1, STAT2, or STAT3 activation specifically, sensitively, and reliably in whole cells without radioactivity
- Cost-effective, streamlined kits include all fluorescent reagents and protocols for optimized screening results
- No cell lysis, purification, or filtration steps
- Measurements made on endogenous STATs
- An earlier and more biologically relevant measure of transcription factor activation than gene reporter and electophoretic mobility shift assays



STAT activation by nuclear translocation. Images of monitoredunstimulated (bottom row) and stimulated (top row) HeLa cells taken from a Thermo Scientific* Cellomics* ArrayScan* HCS Reader (1st column) STAT1, 5ng/mL INF-gamma, 45 mins. (2nd column) STAT2, 500U/mL INF-α, 20 min. (3rd column) STAT3, 25000U/mL INF-α, 20 min. Nuclei of stimulated cells appear blue-green due to co-localization of Hoechst and fluorescently labeled STAT.

INCLUDES:
Validated plate preparation protocol; STAT isoform-specific primary antibody; Alexa Fluor* 488 conjugated secondary antibody; Hoechst dye; wash buffer (10X); permeabilization buffer (10X); detergent buffer (10X); plate seals

Target	Evaluation Size	Cat. No.	Each
STAT1 Activation	5 x 96	**K01-0002-1**	403.00
STAT2 Activation	5 x 96	**K01-0005-1**	403.00
STAT3 Activation	5 x 96	**K01-0008-1**	403.00

Thermo Scientific* Pierce* ExcelArray*

Each slide can be used to analyze 10 samples when the six point standard curve is used. The protocol is a simple sandwich ELISA format that uses a Thermo Scientific Pierce DyLight 649 conjugate for detection and is compatible with conventional fluorescent slide readers.

- Quantitative and robust
- Low picogram sensitivity
- Validated with natural samples
- Simple sandwich ELISA procedure
- Calibrated against NIBSC standards
- Compatible with common slide scanners
- Complete and easy to use kits

INCLUDES:
Array slides; array sample diluent (1X); lyophilized standards; lyophilized detection antibodies; lyophilized Streptavidin Thermo Scientific* Pierce* DyLight 649 reagent; wash buffer (30X); final rinse buffer (5X); screw cap slide containers

Human Angiogenesis Fluorescent Array Kit

A multiplex sandwich fluorescent immunoassay for the simultaneous quantitative measurement of angiogenin, EGF, FGFβ, GROα, HB-EGF, HGF, IL-8, KGF, PIGF, TIMP-1, TNFα and VEGF

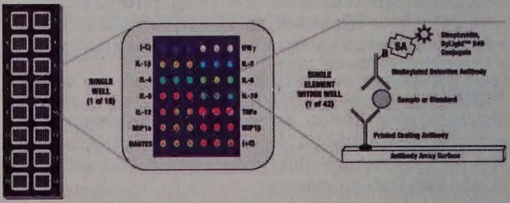
Size	Cat. No.	Each
1 Slide	**EN82009**	500.00
2 Slides	**EN82004**	1050.00

Human Chemotaxis Fluorescent Array Kit

A multiplex sandwich fluorescent immunoassay for the simultaneous quantitative measurement of eotaxin, I-309, IL-8, IP-10, MCP-1, MCP-3, MDC, MIP-1α, MIP-1β, NAP-2, RANTES and TARC

Size	Cat. No.	Each
1 Slide	**EN82011**	500.00
2 Slides	**EN82006**	1050.00

Human Inflammation I Fluorescent Array Kit



Schematic representation of the Thermo Scientific* Pierce* ExcelArray* Human Inflammation I Array Kit slide array layout. Center section depicts a false color image of the 1000pg/mL standard curve point.

A multiplex sandwich fluorescent immunoassay for the simultaneous quantitative measurement of IL-1β, IL-2, IL-4, IL-6, IL-8, IL-10, IL-12, IFNγ, TNFα, MIP-1α, MIP-1β and RANTES

Size	Cat. No.	Each
1 Slide	**EN82007**	500.00
2 Slides	**EN82002**	1050.00

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*Trademark. See Trademark Reference.

Prices subject to change.

Human Inflammation II Fluorescent Array Kit

Multiplex sandwich fluorescent immunoassay for the simultaneous quantitative measurement of IL-1α, IL-3, IL-5, IL-7, IL-13, IL-15, IL-17, FasL, G-CSF, GM-CSF, MCP-1 and TNFβ

Size	Cat. No.	Each
1 Slide	EN82008	500.00
2 Slides	EN82003	1050.00

Mouse Inflammation Fluorescent Array Kit

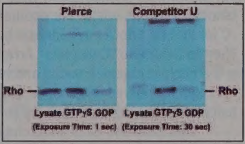
Multiplex sandwich fluorescent immunoassay for the simultaneous quantitative measurement of GM-CSF, IFNγ, IL-1α, IL-1β, IL-2, IL-4, IL-5, IL-6, IL-10, IL-12, IL-17 and TNFα

Size	Cat. No.	Each
1 Slide	EN82010	500.00
2 Slides	EN82005	1050.00

Thermo Scientific* Pierce* EZ-Detect* Rho Activation Kit

Utilizes a sensitive, convenient pull-down assay to measure the activity of Rho

Measures the activity of Rho, a small GTPase, by isolating it via its specific downstream effector. The binding domain of the downstream effector is expressed as a GST-fusion protein which, when immobilized on a resin, is used to pull down the active or GTP-bound Rho from cell lysate. The pulled-down GTP-bound Rho is then detected by Western blot.



Performance comparison of EZ-Detect Rho Activation Kit with competitor kit. Affinity precipitation of Rho from NIH3T3 cell lysates (500µg) treated with GTPγS or GDP was carried out using Pierce and competitor U kits. Half of eluted pulled-down samples (25µL) were analyzed by Western blot using anti-Rho antibody. Analyses were conducted according to the manufacturer's instructions.

- Eliminates the need to express and purify GST-RBD fusion proteins
- Utilizes Thermo Scientific* Pierce* SwellGel* discs to eliminate the inconsistencies associated with measuring small volumes of resin
- Provides optimized conditions for ease of use

INCLUDES:

GST-Rhotekin-RB; Thermo Scientific* Pierce* SwellGel* immobilized glutathione disc; Lysis/binding/wash buffer; primary antibody; GTPγS and GDP; 2X SDS sample buffer; spin columns and collection tubes

Size	Cat. No.	Each
30 assays	PI-89854	620.00

Promega* cAMP-Glo* Assay

Homogeneous, bioluminescent and high-throughput assay to measure cAMP levels in cells

Monitors cAMP production in cells in response to the effects of an agonist or test compound on G protein-coupled receptors (GPCR). GPCRs that couple with adenylate cyclase will increase or decrease intracellular cAMP. The assay is based on the principle that cyclic AMP (cAMP) stimulates protein kinase A (PKA) holoenzyme activity, decreasing available ATP and leading to decreased light production in a coupled luciferase reaction.

- Homogeneous assay can be completed in approximately 45 minutes
- Two steps following lysis of cells
- Excellent signal-to-noise ratios
- Easily scalable to 1536-well plate formats and beyond
- Powered by Ultra-Glo* Recombinant Luciferase
- No interference by fluorescent compounds
- Non-radioactive

APPLICATIONS:

High-throughput analysis of library compounds to identify modulators of GPCR activity.

STORAGE CONDITIONS:

Store the system at -20°C. Once prepared, the cAMP detection solution (cAMP-Glo Reaction Buffer with Protein Kinase A) should not be frozen. Once prepared, the Kinase-Glo Reagent should be dispensed into aliquots and stored at -20°C. See the product label for the expiration date.

Size	Cat. No.	Each
300 assays	PR-V1501	250.00
3000 assays	PR-V1502	1400.00
30,000 assays	PR-V1503	10495.00

Promega* Kinase-Glo* Plus Luminescent Kinase Assay System

Homogeneous, high-throughput screening (HTS) method of measuring kinase activity

Quantifies amount of ATP remaining in solution following a kinase reaction. Easily performed in a single well of a 96- or 384-well plate: simply add volume of Kinase-Glo Plus reagent equal to volume of completed kinase reaction, then measure luminescence.

- Ideal for high-throughput analysis of library compounds to identify kinase inhibitors
- Compatible with virtually any kinase/kinase substrate combination
- Can be performed at higher ATP concentrations than traditional Kinase-Glo assay
- Suitable for screening non-ATP binding site inhibitors using ATP concentrations as high as 100µM
- Can be used for a wide variety of kinases (lipid, sugar, and alcohol) and substrates (peptides, proteins, lipids, sugars, alcohols)
- Less susceptible to interference than traditional luciferase-based ATP detection reagents
- Non-radioactive

STORAGE CONDITIONS:

Kinase-Glo Plus Buffer and the lyophilized Kinase-Glo Plus Substrate should be stored at -20°C; avoid multiple freeze-thaw cycles.

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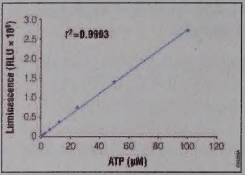
Promega* Kinase-Glo* Plus Luminescent Kinase Assay System, Contd.



Luminescence correlates with amount of ATP. Serial dilutions of ATP were made in 50μL kinase reaction buffer. An equal volume of Kinase-Glo* Plus Reagent was added to each well, incubated at room temperature, and luminescence was recorded. Values represent the mean of 2 replicates. There is a linear relationship between the luminescent signal and the amount of ATP in the kinase reaction buffer up to 100μM (r2 = 0.9993).

Size	Cat. No.	Each
30 assays	**PI-89854**	620.00

TOXICITY ASSAYS

Thermo Scientific* Cellomics* HitKit* HCS Reagent Kits

Assay-ready reagents produce cells optimized for fluorescent imaging

Rapidly incorporate high-content assays into your drug discovery efforts with proprietary and exclusively licensed fluorescent reagents designed to achieve the highest emission of light for each fluorophore. Background fluorescence and non-specific cross-talk minimized for increased sensitivity, specificity, and signal-to-noise ratios. Sample preparation protocols have been optimized to produce high-quality cell preparations and are automation compatible for maximum productivity and reproducibility.

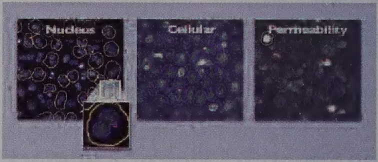
- Compatible with a wide range of cell types
- No cell lysis, purification, or filtration steps
- Fluorescence-based assays provide sensitive quantitative and qualitative results without radioactivity
- Prepared cells may be analyzed directly via standard fluorescence microscopy
- Kits include all imaging-tested reagents and detailed protocols needed for sample preparation
- Pre-validated on a Thermo Scientific Cellomics ArrayScan* HCS Reader

Micronucleus BioApplication HitKit*

Decreases the time required to quantitatively analyze populations of cells for micronucleus induction, reduces subjectivity, and provides an easy method for evaluating multiple exposed wells

Micronucleus (MN) formation is a hallmark of genetic toxicity; as such, micronuclei are used as indicators of genotoxicity caused by drug candidates or environmental toxins. The in vitro micronucleus assay is among a new set of genetic toxicology assays wherein cultured cells are treated and scored for micronucleus induction.

- BioApplication reports the number of nuclei, micronuclei, and percentage of cells that contain micronuclei
- HitKit HCS Reagent Kit provides optimized reagents and cell preparation protocol designed to work with the BioApplication
- Automatically distinguishes agents that can lead to micronuclei formation by use of reference wells
- Allows gating of subpopulations of interest using permeability as well as up to three additional channels
- Can simultaneously measure early and late indicators of cytotoxicity by measuring the ratio of multinucleated to mononucleated cells and membrane permeability, respectively
- Flexibility allows optimization of the assay for different cell types including, but not limited to, CHO-K1, BALB-3T3, and V79
- Significantly reduces time required to evaluate micronucleus formation
- Enables, for the first time, automated screening for genotoxicity
- Provides a more objective analysis of micronucleus formation
- Allows genotoxic compounds to be identified earlier in the drug discovery process, saving valuable time and money



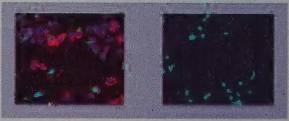
The Micronucleus BioApplication is a flexible HCS application that automatically identifies and quantifies micronuclei in a 96 well format. Images of CHO-K1 cells stained with the Micronucleus HitKit HCS Reagent Kit following 28 hr. incubation with cytochalasin B. Note the large number of binucleated cells within the population. Cells were exposed to a mitomycin C for 20 hrs. prior to cytokinesis blocking. Images were collected using a Thermo Scientific* Cellomics* ArrayScan* HCS Reader and a 20X objective. In the nuclear channel, nuclei and micronuclei are identified (see inset). The cellular channel determines the boundary of the cell for purposes of calculating the number of nuclei per cell. The permeability channel detects and excludes cells which have compromised cell membranes.

Evaluation Size	Cat. No.	Each
5 x 96	**K11-0001-1**	403.00

Multiparameter Cytotoxicity 1 HitKit*

An in vitro assay tool that analyzes nuclear morphology/size, cell membrane permeability, lysosomal mass-pH and cell density (number of cells per field)

Following a toxic insult, cells may respond with changes in nuclear size and/or morphology depending on the cell type and the compound. Loss of cell membrane integrity is another common phenotypic feature of cytotoxicity. Some toxins can interfere with the cell's functionality by affecting the pH of organelles such as lysosomes and endosomes, or by causing an increase in the number of lysosomes.



HepG2 cells treated with 100uM valinomycin for 24 hrs. (right), and untreated (left). Nuclei appear in blue, lysosomes in red, cell membrane impermeant dye in green. All cells in right panel are dead, as indicated by co-localized nuclear and cell impermeant dye. Images taken from a Thermo Scientific* Cellomics* ArrayScan* HCS Reader.

- Simultaneously quantify four hallmark indicators of cytotoxicity: nuclear size/morphology, cell membrane permeability, lysosomal mass-pH, and cell density (number of cells per field)—shortening the assay from days to hours
- Lysosomal marker makes it ideal for measuring phospholipidosis

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Thermo Scientific* Cellomics* Multiparameter Cytotoxicity 1 HitKit*, Contd.

- Multiplexed fluorescence-based assay provides sensitive quantitative and qualitative results without radioactivity
- No cell lysis, purification, or filtration steps—saving time and labor

INCLUDES:
MPCT1 Fluor Cocktail (100X); wash buffer (10X); detailed protocol and assay data; plate seals

Evaluation Size	Cat. No.	Each
5 x 96	**K02-0002-1**	504.00

Multiparameter Cytotoxicity 2 HitKit*

Optimized reagents provide simultaneous detection and quantitation of changes in nuclei, permeabilized cells, and lysosomal mass/pH

Fluorescence-based assays contain indicators to assess the toxic effects of compounds on nuclear morphology and size, cell membrane's permeability status, cell density (number of cells per field), and either the lysosome's mass or pH or the mitochondria's transmembrane potential.

- Faster, more cost-effective results than traditional, animal-based screening methods
- Supplied fluorescent reagents enable a fixed end-point assay
- Optimized and validated in the human hepatoma cell line HepG2
- Assay can be easily adapted for a variety of cell types or cell lines
- Once prepared, cells can be analyzed using standard fluorescence microscopy or using a Thermo Scientific* Cellomics* ArrayScan* HCS Reader with the Cell Health Profiling BioApplication

Available in three different versions

- One version contains fluorescent probes for nuclear morphology/size (blue fluorescence), cell membrane's permeability status (green fluorescence), lysosome mass or pH (orange fluorescence), and mitochondrial transmembrane potential (orange fluorescence)
- The other two versions have, in addition to the nuclear and cell probes, either the lysosomal or the mitochondrial fluorescent probe

INCLUDES:
Lysosomal mass/pH dye[†]; Mitochondrial membrane potential dye[†]; Hoechst dye permeability dye[†]; wash buffer (10X Dulbecco's PBS); thin plate seals

Probe Type(s)	Quantity	Cat. No.	Each
Lysosomal, Mitochondrial	1 x 96	**8400001**	300.56
	5 x 96	**8400002**	650.00
Lysosomal	1 x 96	**8400101**	226.27
	5 x 96	**8400102**	500.94
Mitochondrial	1 x 96	**8400201**	226.27
	5 x 96	**8400202**	500.94

[†] Kit components vary depending on multiplex or single-plex version of the kit.

Promega* CytoTox 96* Nonradioactive Cytotoxicity Assay

Colorimetric method for estimating the number of non-viable cells present in a sample

Quantitatively measures lactate dehydrogenase (LDH), a stable cytosolic enzyme that is released upon cell lysis, in much the same way as [^{51}Cr] is released in radioactive assays. Released LDH in culture supernatants is measured with a 30 min. coupled enzymatic assay that results in the conversion of a tetrazolium salt (INT) into a red formazan product. The amount of color formed is proportional to the number of lysed cells. Visible wavelength absorbance data are collected using a standard 96-well plate reader. The assay can be used to measure membrane integrity for cell-mediated cytotoxicity assays in which a target cell is lysed by an effector cell, or to measure lysis of target cells by bacteria, viruses, proteins, chemicals, etc.

- Provides a quantitative measurement of lactate hydrogenase to determine cell-mediated cytoxiticy, chemical-mediated cytotoxicity, and total cell number
- Reveals early, low-level damage to cell membranes
- Allows collection of absorbance (visible wavelength) data with a standard 96-well plate reader
- Eliminates need to pre-label target cells
- Requires no radioactive waste disposal

APPLICATIONS:
Cytotoxicity; Chemosensitivity; Total cell number determination

Size	Cat. No.	Each
1000 assays	**PR-G1780**	226.40

Promega* CytoTox-ONE* Homogeneous Membrane Integrity Assay

Fluorometric method for estimating the number of nonviable cells present in a mixed population

Cell viability is most often defined based on the integrity of the cell membrane. Measuring leakage of components from the cytoplasm into the surrounding culture medium is widely accepted as a valid method to estimate the number of nonviable cells.

- Rapidly measures the release of lactate dehydrogenase (LDH) from cells with a damaged membrane, while leaving cells intact
- Assay can be completed in a single 96- or 384-well plate without separating cells from supernatant
- Enables multiple homogeneous cell-based assays to be performed on a single sample
- Versatile protocol allows assays to be read over several hours or after 10-minute incubation
- HTP Assay offers convenient, alternate packaging for processing multiple plates; each bottle of reagent is sufficient to perform 500 assays in a 96-well format or 2000 assays in a 384-well format

STORAGE CONDITIONS:
Store components at -20°C, protected from light.

APPLICATIONS:
Cytotoxicity determination; total cell number determination

Description	Size	Cat. No.	Each
Homogeneous Membrane Integrity Assay	200–800 assays	**PR-G7890**	105.40
	1000–4000 assays	**PR-G7891**	322.75
Homogeneous Membrane Integrity Assay, HTP	1000–4000 assays	**PR-G7892**	322.75

Promega* CytoTox-Fluor* Cytotoxicity Assay

Homogeneous, fluorescent assay measures the relative number of dead cells in cell populations

Measures a distinct protease activity associated with cytotoxicity and uses a fluorogenic peptide substrate. Assay is designed to accommodate downstream multiplexing with several Promega luminescent assays or spectrally distinct fluorescent assay methods, such as assays to measure caspase activation, reporter gene expression or orthogonal measures of viability.

- Single reagent addition
- Data normalization for dead-cell number makes results more comparable well-to-well, plate-to-plate, day-to-day
- Add-mix-measure protocol avoids the cumulative error associated with multistep protocols
- Determine cytotoxicity, multiplex with Caspase-Glo Assays or orthogonal cell viability assays, multiplex with spectrally distinct assays

STORAGE CONDITIONS:
Store at -20°C.

Quantity	Cat. No.	Each
10mL	P7926	99.50
5 × 10mL	P7926A	390.49
2 × 50mL	P7926B	599.00

Promega* MultiTox-Fluor Multiplex Cytotoxicity Assay

Single-reagent-addition, homogeneous, fluorescent assay that measures the number of live and dead cells simultaneously in culture wells

- Simultaneously measures cell viability and cytotoxicity by detecting two distinct protease activities
- Normalizes data for cell number to make results more comparable well-to-well, plate-to-plate, day-to-day
- Complementary live- and dead-cell measures with independent chemistries reduces false positives and false negatives
- Allows you to multiplex the MultiTox-Fluor Assay† with most Promega bioluminescent cell-based apoptosis or genetic reporter assays
- Add-mix-measure protocol avoids the cumulative error associated with multistep procedures

ORDERING INFORMATION:
Each 10mL aliquot is sufficient for 100 assays at 100µL/assay in a 96-well format or 400 assays at 25µL/assay in a 384-well format

INCLUDES:
Assay buffer; bis-AAF-R110 Substrate; GF-AFC Substrate

STORAGE CONDITIONS:
Store at -20°C.

Size	Cat. No.	Each
10mL	P7920	179.67
5 × 10mL	P7920A	490.61
2 × 50mL	P7920B	890.00

† Patent pending.

VIABILITY ASSAYS

Thermo Scientific* Cellomics* HitKit* HCS Reagent Kits

Assay-ready reagents produce cells optimized for fluorescent imaging

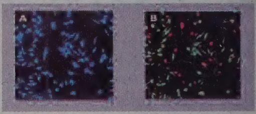
Rapidly incorporate high-content assays into your drug discovery efforts with proprietary and exclusively licensed fluorescent reagents designed to achieve the highest emission of light for each fluorophore. Background fluorescence and non-specific cross-talk minimized for increased sensitivity, specificity, and signal-to-noise ratios. Sample preparation protocols have been optimized to produce high-quality cell preparations and are automation compatible for maximum productivity and reproducibility.

- Compatible with a wide range of cell types
- No cell lysis, purification, or filtration steps
- Fluorescence-based assays provide sensitive quantitative and qualitative results without radioactivity
- Prepared cells may be analyzed directly via standard fluorescence microscopy
- Kits include all imaging-tested reagents and detailed protocols needed for sample preparation
- Pre-validated on a Thermo Scientific Cellomics ArrayScan HCS Reader

Cell Viability HitKit*

High Content Screening (HCS)-qualified fluorescence reagents and a validated, optimized protocol for cytotoxicity screening

- Assay is versatile and widely applicable to a variety of cell types
- Utilizes fluorescent reagents and requires no cell lysis, purification, or filtration steps; and no handling of radioactive isotopes
- Cells prepared with the HitKit HCS Reagent Kits may be analyzed directly via standard fluorescence microscopy; or HCS imaging systems.
- Proprietary DeadDye* and VitalDye* fluorescent probes offer sensitivite, quantitative and qualitative screening results without radioactivity



Live and dead cells distinguished by a Thermo Scientific* Cellomics* ArrayScan* HCS Reader and the Cell Viability HitKit reagents. HeLa cells were plated in a 96-well microplate and then treated with the Positive Control Compound (supplied with the kit). Hoechst staining identifies all cells in the imaged field (A). VitalDye (green) and DeadDye (red) show live and dead cells, respectively (B).

INCLUDES:
VitalDye Fluorescent probe; DeadDye Fluorescent probe; Wash buffer (10X); Hoechst dye; positive control compound; plate seals

Evaluation Size	Cat. No.	Each
5 x 96	K02-0001-1	403.00

[1] Patent pending.

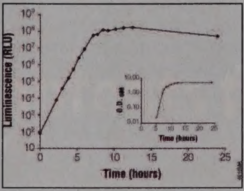
*Trademark. See Trademark Reference.

Prices subject to change.

Promega* BacTiter-Glo* Luminescent Cell Viability Assay Kit

Fast, homogeneous method for determining the number of viable microbial cells in culture based on quantitation of the ATP present

"Add-mix-measure" format utilizes a single reagent that causes cell lysis and generation of a luminescent signal after direct addition to bacterial cells cultured in medium. The luminescent signal is proportional to the amount of ATP present, which is directly proportional to the number of viable cells in culture.



Evaluate bacterial growth with the BacTiter-Glo Assay.

- Generates a stable, "glow-type" luminescent signal with a half-life generally over 30 minutes
- Detects ATP from as few as 10 bacterial cells
- Produces results quickly—data can be recorded in five minutes or less after reagent addition
- Requires fewer handling steps than other ATP assays, making the kit ideal for automation
- Compatible for use with 96- or 384-well plates

INCLUDES:

BacTiter-Glo Buffer; BacTiter-Glo Substrate (lyophilized)

STORAGE CONDITIONS:

Store at -20°C.

Evaluation Size	Cat. No.	Each
10mL (100 assays at 100µL/assay in 96-well plates)	**PR-G8230**	79.40
10 × 10mL (1000 assays at 100µL/assay in 96-well plates)	**PR-G8231**	369.75
100mL (1000 assays at 100µL/assay in 96-well plates)	**PR-G8232**	287.75
10 × 100mL (10,000 assays at 100µL/assay in 96-well plates)	**PR-G8233**	2450.00

U.S. Patent 6,602,677, Australian Patent 754312 and other patent pending.
The method of recombinant expression of Coleoptera luciferase *is covered by U.S. Patents 5,583,024; 5,674,713; and 5,700,673.*

Promega* CellTiter 96* AQueous Nonradioactive Cell Proliferation Assay Kit

Provides a colorimetric method for determining the number of viable cells in proliferation, cytotoxicity, or chemosensitivity assays

Contains a solution composed of a novel tetrazolium compound, MTS[1] [3-(4,5-dimethylthiazol-2-yl)-5-(3-carboxymethoxyphenyl)-2-(4-sulfophenyl)-2H-tetrazolium, inner salt] and an electron coupling reagent, PMS (phenazine methosulfate). The MTS and PMS solutions are combined and added to cells in culture.

- Designed to be performed quickly and easily in a 96-well plate with no washing or cell harvesting; detects as few as 1000 cells/well
- Flexible assay can follow either a 5 hour or overnight protocol
- Eliminates solubilization steps because the colored product is soluble in tissue culture medium
- Requires no scintillation cocktail, volatile organic solvents, or radioactive waste disposal, increasing user safety
- For long-term storage, MTS and PMS solutions should be kept at -20°C, protected from light
- CellTiter 96 AQueous MTS Reagent is also available separately in powdered form

APPLICATIONS:

Cell proliferation; Cytotoxicity; Cell viability; Chemosensitivity; Cell attachment determinations; Chemotaxis

STORAGE CONDITIONS:

For long-term storage, store MTS and PMS Solutions at –20°C, protected from light.

Description	Quantity	Cat. No.	Each
CellTiter 96 AQueous Nonradioactive Cell Proliferation Assay	1000 Assays	**PR-G5421**	188.40
	5000 Assays	**PR-G5430**	622.00
	50,000 Assays	**PR-G5440**	5126.00
CellTiter 96 AQueous MTS Reagent Powder	250mg	**PR-G1112**	232.40
	1g	**PR-G1111**	664.00

[1] The MTS tetrazolium compound is the subject of U.S. Patent No. 5,185,450 assigned to the University of South Florida and is licensed exclusively to Promega Corporation.

Promega* CellTiter 96* AQueous One Solution Cell Proliferation Assay (MTS)

Homogeneous colorimetric assay determines the number of viable cells in proliferation, cytotoxicity, or chemosensitivity assays

Convenient solution combines PES, a chemically stable electron coupling reagent, and MTS, a novel tetrazolium compound that is soluble in tissue culture medium[1]. Absorbance of the formazan product at 490nm can be measured from the assay plate and is directly proportional to the number of living cells in culture.

- Solution is supplied filter sterilized and ready to use
- Simple "add-incubate-measure" format enables design of homogeneous high-throughput screening assays
- Entire assay is performed in a multiwell plate with no washing or cell harvesting; no solubilization steps required
- Eliminates need for scintillation cocktail or volatile organic solvents; produces no radioactive waste
- Plates can be read and returned to incubator for further color development

APPLICATIONS:

Cell proliferation; Cell viability; Cytotoxicity; Chemosensitivity; Cell attachment determination; Chemotaxis

STORAGE CONDITIONS:

Store at –20°C, protected from light.

Quantity	Cat. No.	Each
200 assays	**PR-G3582**	63.20
1000 assays	**PR-G3580**	226.40
5000 assays	**PR-G3581**	755.00

[1] The MTS tetrazolium compound is the subject of U.S. Patent 5,185,450 assigned to the University of South Florida and is licensed exclusively to Promega Corporation.

Promega* CellTiter 96* Nonradioactive Cell Proliferation Assay (MTT)

Collection of reagents provide a convenient method of determining viable cell number in proliferation

- Modification of MTT Assay method reduces serum protein precipitation and interference by phenol red; increases solubilization of formazan crystals and stability of colored product
- Measures cell proliferation, cell attachment, cytotoxicity, chemotaxis, and results of apoptosis
- Detects as few as 1000 cells/well with a 96-plate reader; greater sensitivity than the neutral red assay procedure
- Time-saving procedure eliminates washing steps, cell harvesting, and scintillation counting; no need to weigh or mix dye components
- Flexible assay allows either a 4-hour or overnight protocol

APPLICATIONS:
Cell proliferation; Cell viability; Cytotoxicity; Cell attachment; Chemotaxis

STORAGE CONDITIONS:
Store Dye Solution at –20°C and Solubilization/Stop Solution at room temperature.

Quantity	Cat. No.	Each
1000 assays	**PR-G4000**	220.40
5000 assays	**PR-G4100**	622.00

Promega* CellTiter-Blue* Cell Viability Assay Kit

Homogeneous, fluorescent method for monitoring cell viability

- Ideal for measuring cell proliferation, cytotoxicity, or results of apoptosis
- Versatile system can be used with 96- or 384-well formats; data can be recorded using fluorescence (preferred) or absorbance
- Enables user to perform more than one assay on the same sample
- Excellent Z' factor; offers superior flexibility in assay incubation times
- Reagent is generally nontoxic to cells; requires no scintillation cocktail, radioactive waste disposal, or hazardous solvents
- PR-G8080 contains sufficient reagents for 1000 assays in 96 well plates or 4000 assays in 384 well plates
- PR-G8081 contains sufficient reagents for 5000 assays in 96 well plates or 20,000 assays in 384 well plates
- PR-G8082 contains sufficient reagetns for 50,000 assays in 96 well plates or 200,000 assays in 384 well plates

APPLICATIONS:
Cell proliferation; Cytotoxicity; Cell viability

STORAGE CONDITIONS:
Store frozen at –20°C, protected from light.

Quantity	Cat. No.	Each
20mL	**PR-G8080**	87.20
100mL	**PR-G8081**	246.40
10 × 100mL	**PR-G8082**	2130.00

Promega* CellTiter-Glo* Luminescent Cell Viability Assay Kit

Luminescent method for determining the number of viable cells in culture based on the amount of ATP present

"Add-mix-measure" format results in cell lysis and generation of a luminescent signal proportional to the amount of ATP present. Data can be recorded using a luminometer or CCD camera 10 minutes after adding reagent.

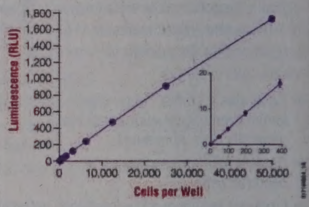


Figure 1. Excellent Sensitivity and Extended Linearity.

Dynamic range from less than 10 cells to over 50,000 cells.

- Designed for use with 96- or 384-well plates, making the kit ideal for automated high-throughput screening, cell proliferation assays, and cytotoxicity assays
- Does not require cell washing, media removal, or multiple pipetting steps
- Detects as few as 15 cells per well in a 384-well format or 50 cells per well in a 96-well format, reducing the number of cells required per assay
- Luminescent signal has a half-life generally greater than five hours, depending on cell type and medium used, eliminating the need to use reagent injectors and providing the flexibility for continuous or batch mode processing of multiple plates
- PR-G7570 contains sufficient reagents for 100 assays at 100µL/assay in 96-well plates or 400 assays at 25µL/well in 384-well plates
- PR-G7571 contains sufficient reagents for 10 × 100, 100µL assays or 10 × 400, 25µL assays (1000 to 4000 total assays)
- PR-G7572 contains sufficient reagents for 1000, 100µL assays or 4000, 25µL assays
- PR-G7573 contains sufficient reagents for 10 × 1000, 100µL assays or 10 × 4000, 25µL assays (10,000 to 40,000 total assays)

APPLICATIONS:
Cell proliferation; Cytotoxicity; Cell viability

INCLUDES:
CellTiter-Glo Buffer; CellTiter-Glo Substrate (lyophilized)

STORAGE CONDITIONS:
Store at -20°C.

Quantity	Cat. No.	Each
10mL	**PR-G7570**	79.20
10 × 10mL	**PR-G7571**	369.75
100mL	**PR-G7572**	287.75
10 × 100mL	**PR-G7573**	2450.00

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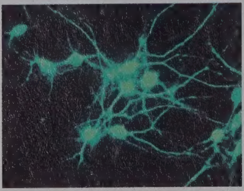
Genlantis* NeuroPure* Rat Neuronal Cells

Save time with fresh, ready-to-use cells

NEW


N200200 NeuroPure Rat Neuronal Cells

Cells are prepared fresh each week and shipped in a nutrient-rich medium that keeps the cells alive for up to 14 days under refrigeration.

- Freshly isolated healthy cells—never frozen
- Get your primary culture up and running within one hour
- Pure neuronal cells, 99.9% glial cell free
- Isolated from microsurgically dissected regions of Sprague/Dawley or Fischer 344 rats
- Available in seven popularly used cell types

Applications: Transfection, Pharmacology, Immunocytochemistry, Neuron Development studies

INCLUDES:

All cells include one 12mL vial of NeuroPure plating media per vial of cells

STORAGE CONDITIONS:

Stable at 4°C for up to two weeks

Description	Quantity	Cat. No.	Each
E18 Primary Rat Spinal Cord Neurons	1 vial × 2mL	**N600200**	320.60
E18 Primary Midbrain Neurons	1 vial × 2mL	**N700200**	320.60
Rat Cortical Neuronal Cells	4 vials × 2mL	**N200200**	320.60
Primary Rat P8 Cerebellar Cells	1 vial/1 pair hypothalami	**N300200**	320.60
E18 Primary Rat Hypothalamus Neurons	1 vial/1 pair of striata	**N400200**	320.60
E18 Primary Rat Striatal Neurons	1 vial/1 spinal cord	**N500200**	320.60
Rat Hippocampal Neuronal Cells	1 vial/1 midbrain	**N100200**	320.60

Genlantis* PrimaPure* Human Aortic Endothelial Cells (HAOEC) and Kits

Functionally characterized

NEW

HAOEC cells

Human Aortic Endothelial Cells (HAOEC) are primary endothelial cells isolated from normal human aorta. They are cryopreserved at second passage and can be cultured and propagated at least 16 population doublings. They respond to cytokine stimulation by expressing cell adhesion molecules. Aortic endothelial cells have been used as an *in vitro* model for the study of morphological and ultra-structural changes[1] in the development of atherosclerosis. HAOEC system has also been used for the study of endothelial cell-dependent lymphocyte activation[2] and chemoattractant activity for lymphocytes[3] in relation to the degree of atherosclerosis.

- Each lot functionally characterized
- Single donors to allow variability comparisons
- Each lot tested negative for HIV, Hepatitis B & C, mycoplasma, bacteria, yeast, and fungi
- Performance guaranteed with Genlantis media and reagents

STORAGE CONDITIONS:

Cells are cryopreserved immediately after purification and delivered on dry ice. Place cryovials immediately in liquid nitrogen upon arrival. Store the growth medium at 4°C in the dark. Store the subculture reagent at -20°C upon receipt and at 4°C upon thawing.

REFERENCES:

1. Antonor, A.S. et al, Atherosclerosis 59:1 (1986).
2. Ashida, E.R. et al, J. Clin. Invest. 67:1490 (1981).
3. Farber, H.W. et al, Amer. J. Physiol. 262 (4 parts): H1088 (1992).

Description	Quantity	Cat. No.	Each
Aortic (HAOEC), Adult	>500,000 cells	**PH30405A**	590.00
Aortic, Adult (HAOEC)	1 Kit†	**PH30405AK**	745.00

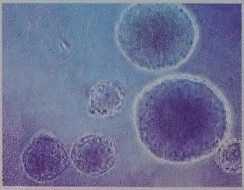
† Each kit contains an ampule of cryopreserved HAOEC (PH30405A), 500mL of Endothelial Cell Growth Medium (PM211500), and a Subculture Reagent Kit (PR090100K).

Genlantis* NeuroStem* Neuronal Progenitor Cells

NEW

Complete kits with fresh cells, optimized reagents

- High quality cells prepared by experienced scientists
- Complete kits with optimized reagents for easy handling and highest viable yield
- Clear and easy to follow protocol
- Multiple experimental uses for in vitro or in vivo experiments
- Can multiply for many generations under appropriate culture conditions, which include trophic growth factors and low adhesion


NeuroPure Rat Neuronal Cells

STORAGE CONDITIONS:

4°C for a few days, culture as soon as possible.

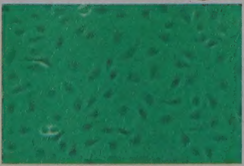
INCLUDES:

Each set of cells comes with 12mL NeuroPrep Media; 25mg Cell Culture grade Papain; 12mL NeuroStem Plating Media

Description	Quantity	Cat. No.	Each
Rat Cortical	1 million cells/2mL	**N200300**	360.68
Rat Hippocampal	1 million cells/2mL	**N100300**	360.68

Genlantis* PrimaPure* Human Coronary Artery Endothelial Cells (HCAEC) and Kits

Functionally characterized



HCEAC cells

Human Coronary Artery Endothelial Cells (HCAEC) are isolated from normal human coronary arteries. They are cryopreserved at second passage and can be cultured and propagated at least 15 population doublings. The endothelium are crucially involved in the regulation of coronary blood flow and cardiac functions, such as thrombosis[1,2], atherosclerosis[3], and hypertension[4]. Strategically located between the circulating blood and the vascular smooth muscle, endothelial cells release numerous vasoactive substances regulating the function of vascular smooth muscle and trafficking blood cells[5]. HCAEC is an ideal candidate for the studies of endothelial cell metabolism and functional vasodilators, such as pro-stacyclin, bradykinin, nitric oxide and independent of the former endo-thelium-derived hyperpolarizing factor[5]. Co-culturing HCAEC with human coronary artery smooth muscle cells (HCASMC) could generate an in vitro model for the cell-cell interaction system[3].

- Single donors to allow variability comparisons
- Each lot tested negative for HIV, Hepatitis B, C, mycoplasma, bacteria, yeast, and fungi
- Performance guaranteed with Genlantis media and reagents

STORAGE CONDITIONS:

Cells are cryopreserved immediately after purification and delivered on dry ice. Place cryovials immediately in liquid nitrogen upon arrival. Store the growth medium at 4°C in the dark. Store the subculture reagent at -20°C upon receipt and at 4°C upon thawing.

REFERENCES:

1. *Jaffe, E.A., New Engl. J. Med. 296:377 (1997).*
2. *Mason, R.G. et al, Arch. Pathol. Lab. Med. 101:61 (1997).*
3. *Ross, R.N., Nature 362:801 (1993).*
4. *Ryan, U.S., Handbook of Physiology; The Respiratory System. Am. Physiol. Soc. Chap. 10:351 (1985).*
5. *Ruschitzka, F.T. et al, Cardiology, 88 Suppl 3:3-19. (1997).*

Description	Quantity	Cat. No.	Each
Coronary Artery (HCAEC), Adult	>500,000 cells	**PH30005A**	630.00
Coronary Artery, Adult (HCAEC)	1 Kit†	**PH30005AK**	785.00

† Each kit contains an ampule of cryopreserved HCAEC (PH30005A), 500mL of HCAEC Growth Medium (PM212500), and a Subculture Reagent Kit (PR090100K).

LOOKING FOR GENLANTIS* MEDIA?

See the Specialty Media section.

Genlantis* PrimaPure* Human Dermal Microvascular Endothelial Cells (HMVEC) and Kits

Functionally characterized

HMVEC cells

HMVEC are isolated from normal human neonatal foreskin or adult skin capillaries. They are cryopreserved at second passage and can be cultured and propagated at least 16 population doublings. They are responsive to cytokine stimulation in the expression of cell adhesion molecules. HMVEC express CD36 constitutively, while large vessel endothelial cells do not. HMVEC is an organ-specific endothelial cell system for the study of angiogenesis[1], tumor metastasis[2,3], wound healing[4], inflammation[5,6], macromolecule transport[7], and drug metabolism[8]. There is growing evidence of differences in physiology and pharmacology between microvascular endothelial cells and macrovascular endothelial cells[9,10].

- Each lot functionally characterized
- Single donors to allow variability comparisons
- Each lot tested negative for HIV, Hepatitis B & C, mycoplasma, bacteria, yeast, and fungi
- Performance guaranteed with Genlantis media and reagents

STORAGE CONDITIONS:

Cells are cryopreserved immediately after purification and delivered on dry ice. Place cryovials immediately in liquid nitrogen upon arrival. Store the growth medium at 4°C in the dark. Store the subculture reagent at -20°C upon receipt and at 4°C upon thawing.

REFERENCES:

1. *Swerlick, R.A. et.al, J. Invest. Dermatol. 97(2):190 (1991).*
2. *Folkman, J. et al, Nature 288:551 (1980).*
3. *Lee, K.H. et al, J. Invest. Dermatol. 98(1):79 (1992).*
4. *Deryugina, E.I. et al, Hybridoma 15(4):279 (1996).*
5. *Sepp, N.T. et al, J. Invest. Dermatol. 104(2):277 (1995).*
6. *Swerlick, R.A. et al, J. Invest. Dermatol. 100(1):111S (1993).*
7. *Hanasaki, K. et al, J. Bio. Chem. 270(13):7533 (1995).*
8. *Pruckler, J.M. et al, Pathobiology 61:283 (1993).*
9. *Foster, C.A. et al, J. Dermatol. 21(11):847 (1994).*
10. *Schnitzer, J.E. et al, BBRC. 199(1):11 (1994).*

Description	Quantity	Cat. No.	Each
HMVEC, Adult	>500,000 cells	**PH10005A**	540.00
HMVEC, Adult	1 Kit†	**PH10005AK**	755.00
HMVEC, Neonatal	>500,000 cells	**PH10005N**	495.93
HMVEC, Neonatal	1 Kit†	**PH10005NK**	710.00

† Each kit contains an ampule of cryopreserved HMVEC (PH10005A or PH10005N), 500 mL of HMVEC Cell Growth Medium (PM112500), a Subculture Reagent Kit (PR090100K), two Extracellular Matrix Protein Coated T-25 flasks (PR121252), and Attachment Factor Solution (PR123100).

Genlantis* PrimaPure* Human Pulmonary Artery Endothelial Cells (HPAEC) and Kits

Functionally characterized

HPAEC cells

Human Pulmonary Artery Endothelial Cells (HPAEC) are isolated from normal human pulmonary arteries. They are cryopreserved at second passage and can be cultured and propagated at least 15 population doublings. HPAEC possess an array of enzymatic activities[1],[2]. They respond to a wide range of vasoactive substances[3], commensurate with their control of blood pressure and blood pH in vivo . HPAEC have been used for the study of vascular permeability[4] and inflammatory responses[5]. HPAEC in co-culture with HPASMC have been used as a model for pulmonary angiopathy[6].

- Each lot functionally characterized
- Single donors to allow variability comparisons
- Each lot tested negative for HIV, Hepatitis B & C, mycoplasma, bacteria, yeast, and fungi
- Performance guaranteed with Genlantis media and reagents

STORAGE CONDITIONS:

Cells are cryopreserved immediately after purification and delivered on dry ice. Place cryovials immediately in liquid nitrogen upon arrival. Store the growth medium at 4°C in the dark. Store the subculture reagent at -20°C upon receipt and at 4°C upon thawing.

REFERENCES:

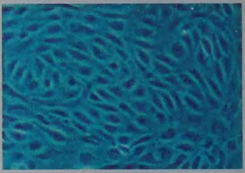
1. *Ryan, U.S. et al, Tissue Cell 8: 125-146 (1976).*
2. *Ryan, U.S. et al, Clin. in Lab. Med. V. 3: 577 (1983).*
3. *Ryan, U.S., Handbook of Physiology; The Respiratory System. Am. Physiol. Soc. Chap. 10.:351 (1985).*
4. *Downie, G.H. et al, Am. J. Respir. Cell. Mol. Biol. 7:58 (1992).*
5. *Farber, H.W. et al, Tissue & Cell 24 (3):355 (1992).*
6. *Vender, R.L. et al, In Vitro Cell Dev. Biol. 28A:403 (1992).*

Description	Quantity	Cat. No.	Each
Pulmonary Artery (HPAEC), Adult	>500,000 cells	**PH30205A**	580.00
Pulmonary Artery, Adult (HPAEC)	1 Kit†	**PH30205AK**	735.00

† Each kit contains an ampule of cryopreserved HPAEC (PH30205A), 500mL of Endothelial Cell Growth medium (PM211500), and a Subculture Reagent Kit (PR090100K).

Genlantis* PrimaPure* Human Umbilical Vein Endothelial Cells (HUVEC) and Kits

Functionally characterized


HUVEC cells

Human Umbilical Vein Endothelial Cells (HUVEC) are isolated from normal human umbilical vein. They are cryopreserved at the end of primary culture and can be cultured and propagated at least 16 population doublings. HUVEC are responsive to cytokine stimulation in the expression of cell adhesion molecules. These cell systems are commonly used for physiological and pharmacological investigations, such as macromolecule transport[1], blood coagulation[2], and fibrinolysis[3].

- Each lot functionally characterized
- Single donors to allow variability comparisons
- Each lot tested negative for HIV, Hepatitis B & C, mycoplasma, bacteria, yeast, and fungi
- Performance guaranteed with Genlantis media and reagents

STORAGE CONDITIONS:

Cells are cryopreserved immediately after purification and delivered on dry ice. Place cryovials immediately in liquid nitrogen upon arrival. Store the growth medium at 4°C in the dark. Store the subculture reagent at -20°C upon receipt and at 4°C upon thawing.

REFERENCES:

1. *Weiss, T.L. et al, In Vitro Cell. Biol. 26:759 (1990).*
2. *Furie, B. et al, Cell 53:505 (1988).*
3. *Wojta, J. et al, Blood 81(12):3285 (1993).*

Description	Quantity	Cat. No.	Each
Umbilical Vein (HUVEC), Neonatal	>500,000 cells	**PH20005N**	231.29
Umbilical Vein, Neonatal (HUVEC)	1 Kit†	**PH20005NK**	380.71

† Each kit contains an ampule of cryopreserved HUVEC (PH20005N), 500mL of Endothelial Cell Growth Medium (PM211500), and a Subculture Reagent Kit (PR090100K).

Genlantis* PrimaPure* Human Aortic Smooth Muscle Cells (HAOSMC) and Kits

Functionally characterized

HAOSMC cells

Human Aortic Smooth Muscle Cells (HAOSMC) are derived from tunica intima and tunica media of normal human, fibrous plaque-free aorta. They are cryopreserved at second passage and can be cultured and propagated at least 16 population doublings. Arterial smooth muscle cells are capable of synthesizing collagen, elastin, myosin and glycosaminoglycan[1],[2]. Increasedproduction of connective tissue components, hyperplasia and hypertrophy of intimal smooth muscle cells are found to gradually occlude the vessel lumen in atherosclerosis[1],[2]. HAOSMC respond to various factors by proliferating or differentiating[3],[4]. They are a well established cell system for the study of human vascular disorders such as atherosclerosis[5],[6] and stroke.

- Each lot functionally characterized
- Lots from single donors to allow variability comparisons
- Each lot tested negative for HIV, Hepatitis B & C, mycoplasma, bacteria, yeast, and fungi
- 16 population doublings guaranteed with Genlantis media and reagents

STORAGE CONDITIONS:

Cells are cryopreserved immediately after purification and delivered on dry ice. Place cryovials immediately in liquid nitrogen upon arrival. Store the growth medium at 4°C in the dark. Store the subculture reagent at -20°C upon receipt and at 4°C upon thawing.

REFERENCES:

1. *Abraham, P.A. et al, Biochem. Biophys. Res. Comm. 58:597 (1974).*
2. *Ross, R., New Engl. J. Med. 314(8):488 (1986).*
3. *Fager, G. et al, In Vitro Cell. Biol. 25(6):511 (1989).*
4. *Hoshi, H. et al, In Vitro Cell. Biol. 24(4):309 (1988).*
5. *Orekhov, A.N. et al, Lab. Invest. 48:749 (1983).*
6. *Jonasson, L. et al, Arteriosclerosis 6(2):131 (1986).*

Description	Quantity	Cat. No.	Each
Aortic (HAOSMC), Adult; Cells only	>500,000 cells	**PH35405A**	600.00
Artery, Adult (HAOSMC); Complete System	1 Kit†	**PH35405AK**	750.00

† Each kit contains an ampule of cryopreserved HAOSMC (PH35405A), 500mL of Smooth Muscle Cell Growth Medium (PM311500), and a Subculture Reagent Kit (PR090100K).

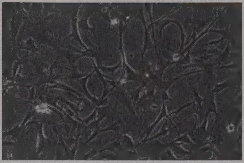
*Trademark. See Trademark Reference.

Prices subject to change.

Genlantis* PrimaPure* Human Pulmonary Artery Smooth Muscle Cells (HPASMC) and Kits

Functionally characterized

NEW


HPASMC Cells

Human Pulmonary Artery Smooth Muscle Cells (HPASMC) are derived from tunica intima and tunica media of normal human, fibrous plaquefree pulmonary arteries. They are cryopreserved at second passage and can be cultured and propagated at least 16 population doublings. HPASMC are well suited for the study of pulmonary vascular disorders[1], associated liver diseases[2], and connective tissue diseases[3]. Phenotypic changes of smooth muscle cells have been found to be related to smooth muscle cell migration and intimal proliferation. Switches in smooth muscle cell phenotype lead to pulmonary hypertension and eventually heart and lung disorders.[4]

- Each lot functionally characterized
- Lots from single donors to allow variability comparisons
- Each lot tested negative for HIV, Hepatitis B & C, mycoplasma, bacteria, yeast, and fungi
- 16 population doublings guaranteed with Genlantis media and reagents

STORAGE CONDITIONS:

Cells are cryopreserved immediately after purification and delivered on dry ice. Place cryovials immediately in liquid nitrogen upon arrival. Store the growth medium at 4°C in the dark. Store the subculture reagent at -20°C upon receipt and at 4°C upon thawing.

REFERENCES:

1. *Rabinovitch, M., Moss' Heart Disease in Children, Infants and Adolescents, Williams and Wilkins, Baltimore, p. 856 (1989).*
2. *Levine, O.R. et al, J. Pediatr. 83:964 (1973).*
3. *Nair, S.S. et al, Arch. Intern. Med. 140:109 (1980).*
4. *Rabinovitch, M., Toxicologic Pathology. Vol. 19, No. 4 (Pt.1) pp. 458-468 (1991).*

Description	Quantity	Cat. No.	Each
Pulmonary Artery, Adult (HPASMC); Complete System	1 Kit†	**PH35205AK**	735.00
Pulmonary Artery (HPASMC), Adult; Cells only	>500,000 cells	**PH35205A**	580.00

† Each kit contains an ampoule of cryopreserved HPASMC (PH35205A), 500mL of Smooth Muscle Cell Growth Medium (PM311500), and a Subculture Reagent Kit (PR090100K).

Genlantis* PrimaPure* Human Coronary Artery Smooth Muscle Cells (HCASMC) and Kits

Functionally characterized

NEW

HCASMC cells

Human Coronary Artery Smooth Muscle Cells (HCASMC) are derived from the tunica intima and tunica media of normal human, fibrous plaquefree coronary arteries. They are cryopreserved at second passage and can be cultured and propagated at least 16 population doublings. Smooth muscle cells are present in various amounts in early fatty streaks and they are the predominant type of cells in fibrous plaques[1,2,3]. Atherosclerosis of the coronary arteries can cause angina pectoris and heart attack. Intimal smooth muscle proliferation plays a key event in the development of atherosclerosis. HCASMC is an ideal cellular model for the investigations of coronary artery diseases, such as alteration of smooth muscle cell differentiation in atherosclerosis[4,5].

- Each lot functionally characterized
- Lots from single donors to allow variability comparisons
- Each lot tested negative for HIV, Hepatitis B & C, mycoplasma, bacteria, yeast, and fungi
- 16 population doublings guaranteed with Genlantis media and reagents

STORAGE CONDITIONS:

Cells are cryopreserved immediately after purification and delivered on dry ice. Place cryovials immediately in liquid nitrogen upon arrival. Store the growth medium at 4°C in the dark. Store the subculture reagent at -20°C upon receipt and at 4°C upon thawing.

REFERENCES:

1. *Ross, R.N., Nature 362:801 (1993).*
2. *McGill, H.C. Jr., Arteriosclerosis 4:443 (1984).*
3. *Jonasson, L. et al, Artherosclerosis 6(2):131 (1986).*
4. *Owens. G.K., Atherosclerosis and Coronary Artery Disease Chap3:401 (1996).*
5. *Fager, G. et al, In Vitro Cell. Biol. 25(6):511 (1989).*

Description	Quantity	Cat. No.	Each
Coronary Artery (HCASMC), Adult; Cells only	>500,000 cells	**PH35005A**	610.00
Coronary Artery, Adult (HCASMC); Complete System	1 Kit†	**PH35005AK**	760.00

† Each kit contains an ampule of cryopreserved HCASMC (PP35005), 500mL of Smooth Muscle Cell Growth Medium (PM311500), and a Subculture Reagent Kit (PR090100K).

LOOKING FOR CRYOGENIC STORAGE?

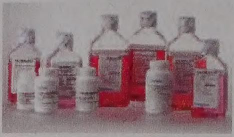
Fisher Scientific carries several microprocessor-controlled LN_2 storage systems. For more information, refer to the Cryogenics section.

MEDIA-CLASSICAL

Thermo Scientific* HyClone* Classical Liquid Media

High-quality classical media formulations in convenient packaging configurations

All cell culture media are manufactured with exacting protocols and procedres to ensure product efficacy and homogeneity.



SH3052502

Description	Quantity	Cat. No.	Each
Basal Medium Eagle w/Earle's Balalnced Salts (BME/EBSS)			
w/L-Glutamine and Phenol Red	500mL	**SH3015701**	11.33
	1L	**SH3015702**	17.00
w/L-Glutamine	50L	**SH3015904**	179.95
Dulbecco's Modified Eagle's Medium (DMEM/HIGH)			
w/4.5g Glucose per Liter, L-Glutamine, Phenol Red	500mL	**SH3002201**	10.98
	6 x 500mL HyQPAK*	**SH30022FS**	63.24
	1L	**SH3002202**	16.98
	6 x 1L HyQPAK	**SH30022LS**	97.75
w/4.5g Glucose per Liter, L-Glutamine, Phenol Red, ADCF	500mL	**SH3030801**	11.51
w/4.5g Glucose per Liter, Phenol Red, Sodium Pyruvate, L-Glutamine	500mL	**SH3024301**	10.98
	6 x 500mL HyQPAK	**SH30243FS**	63.86
	1L	**SH3024302**	16.98
	6 x 1L HyQPAK	**SH30243LS**	96.82
w/4.5g Glucose per Liter, Phenol Red, Sodium Pyruvate, ADCF L-Glutamine	500mL	**SH3031701**	11.51
	1L	**SH3031702**	17.24
w/4.5g Glucose per Liter, Phenol Red	500mL	**SH3008101**	10.98
	6 x 500mL HyQPAK	**SH30081FS**	63.86
	1L	**SH3008102**	16.98
	6 x 1L HyQPAK	**SH30081LS**	98.78
	20L	**SH3008105**	305.70
w/4.5g Glucose per Liter, Phenol Red, Sodium Pyruvate	500mL	**SH3028501**	10.98
	1L	**SH3028502**	16.98
w/4.5g Glucose per Liter, Phenol Red, Sodium Pyruvate, ADCF	500mL	**SH3032001**	12.88
	1L	**SH3032002**	18.11
Dulbecco's Modified Eagle's Medium (DMEM/Low)			
w/1.0g Glucose per Liter, L–Glutamine, Phenol Red, Sodium Pyruvate	500mL	**SH3002101**	10.98
	6 x 500mL HyQPAK	**SH30021FS**	63.24
	1L	**SH3002102**	16.98
w/1.0g Glucose per Liter, L-Glutamine, Phenol Red, Sodium Pyruvate, ADCF	500mL	**SH3030701**	11.51
DMEM:Ham's F-12, 1:1 Mixture			
w/3.15g Glucose per Liter, L-Glutamine, Phenol Red, HEPES, Sodium Pyruvate	500mL	**SH3002301**	11.59
	6 x 500mL HyQPAK	**SH30023FS**	67.47
	1L	**SH3002302**	17.82
w/3.15g Glucose per Liter, L-Glutamine, Phenol Red, HEPES, Sodium Pyruvate, ADCF	500mL	**SH3030901**	12.08
w/3.15g Glucose per Liter, L-Glutamine, Phenol Red, HEPES, Sodium Pyruvate, ADCF	1L	**SH3030902**	18.54

Description	Quantity	Cat. No.	Each
Ham's Nutrient Mixture F10 (Ham's F10)			
w/L-Glutamine, Phenol Red, Sodium Pyruvate	500mL	**SH3002501**	12.03
	1L	**SH3002502**	17.65
w/L-Glutamine, Phenol Red, Sodium Pyruvate, ADCF	500mL	**SH3031101**	12.50
Ham's Nutrient Mixture F12 (Ham's F12)			
w/L-Glutamine, Phenol Red, Sodium	500mL	**SH3002601**	12.03
	6 x 500mL HyQPAK	**SH30026FS**	69.27
	1L	**SH3002602**	17.65
w/L-Glutamine, Phenol Red, Sodium Pyruvate, ADCF	500mL	**SH3031201**	12.50
F-12K Medium			
Kaighn's Modification; w/L-Glutamine, Phenol Red, Sodium Pyruvate	500mL	**SH3052601**	12.88
Iscove's Modified Dulbecco's Medium (IMDM)			
w/L-Glutamine, Phenol Red, HEPES, Sodium Pyruvate	500mL	**SH3022801**	15.17
	6 x 500mL HyQPAK	**SH30228FS**	87.34
	1L	**SH3022802**	28.95
w/o L-Glutamine, w/Phenol Red, HEPES, Sodium Pyruvate	500mL	**SH3025901**	15.17
	1L	**SH3025902**	28.95
w/L-Glutamine, Phenol Red, HEPES, Sodium Pyruvate, ADCF	500mL	**SH3031601**	15.50
Leibovitz L-15			
w/L-Glutamine	500mL	**SH3052501**	21.63
	1L	**SH3052502**	18.75
McCoy's 5A			
w/L-Glutamine	500mL	**SH3020001**	12.50
	1L	**SH3020002**	17.00
w/L-Glutamine, w/o Phenol Red	500mL	**SH3027001**	12.50
	1L	**SH3027002**	18.90
w/L-Glutamine and HEPES	100mL	**SH3060203**	7.21
Medium 199 with Earle's Balanced Salt Solution (M199/EBSS)			
w/L-Glutamine, Phenol Red	500mL	**SH3025301**	13.74
	1L	**SH3025302**	16.81
in EBSS; w/L-Glutamine	500mL	**SH3023301**	12.10
in HBSS; w/L-Glutamine, L-Amino Acids	500mL	**SH3033001**	11.85
Minimum Essential Medium with Earle's Balanced Salts (MEM/EBSS)			
w/L-Glutamine	500mL	**SH3024401**	12.30
	6 x 1L HyQPAK	**SH30244LS**	101.56
w/o L-Glutamine, w/Phenol Red, ADCF	500mL	**SH3031801**	12.76
	1L	**SH3031802**	18.54
w/L-Glutamine, Phenol Red	500mL	**SH3002401**	12.30
	6 x 500mL HyQPAK	**SH30024FS**	71.59
	1L	**SH3024402**	17.82
	6 x 1L HyQPAK	**SH30024LS**	101.56
w/L-Glutamine	1L	**SH3024402**	17.82
w/L-Glutamine, Phenol Red, ADCF	500mL	**SH3031001**	12.76
	1L	**SH3031002**	18.54
Suspension Modification; w/L-Glutamine	1L	**SH3023502**	16.00

*Trademark. See Trademark Reference.

Thermo Scientific* HyClone* Classical Liquid Media, Contd.

Description	Quantity	Cat. No.	Each
MEM Alpha			
w/L-Glutamine, Ribo/Deoxyribonucleosides	6 x 500mL HyQPAK*	**SH30265FS**	100.84
w/o L-Glutamine or Ribo/Deoxyribonucleosides	500mL	**SH3056801**	18.51
RPMI 1640			
w/L-Glutamine, Phenol Red	500mL	**SH3002701**	10.98
	6 x 500mL HyQPAK	**SH30027FS**	63.24
	1L	**SH3002702**	16.98
	6 x 1L HyQPAK	**SH30027LS**	97.75
w/L-Glutamine, Phenol Red, ADCF	500mL	**SH3031301**	11.51
	1L	**SH3031302**	17.24
w/L-Glutamine, Phenol Red, HEPES	500mL	**SH3025501**	16.00
	6 x 500mL HyQPAK	**SH30255FS**	93.11
	1L	**SH3025502**	22.33
w/o L-Glutamine, w/Phenol Red	500mL	**SH3009601**	10.98
	6 x 500mL HyQPAK	**SH30096FS**	63.86
	1L	**SH3009602**	16.98
	6 x 1L HyQPAK	**SH30096LS**	98.78
w/o L-Glutamine, w/HEPES	500mL	**SH3020305**	14.70
	1L	**SH3020306**	31.15
w/o L-Glutamine or Phenol Red	500mL	**SH3060501**	16.22

LOOKING FOR INCUBATORS?

Fisher Scientific sells a variety of incubators for all of your cell culture needs. See the Incubator section of this catalog or for more information...

Visit www.fishersci.com and search for Incubators

Mediatech* cellgro* Cell Culture Media

Complete line of media and reagents for mammalian in vitro cell culture. Guaranteed low endotoxin levels ≤0.025EU/mL. Ready-to-use media is supplied in polyethylene teraphthalate (PET) plastic bottles. Sonically welded cap liners eliminate toxic resins or glues that could leach into media. Shipped at ambient temperature.

MT-10-013CV

Description	Quantity	Cat. No.	Each
Alpha Modification of Eagle's Medium 1X (AMEM)			
With Earle's Salts; Without L-Glutamine, Ribonucleotides, and Deoxyribosides	6 × 500mL	**MT-15-012-CV**	109.70
With Earle's Salts, Ribonucleosides, Deoxyribonucleosides and L-Glutamine	6 × 500mL	**MT-10-022-CV**	126.36
Minimum Essential Medium Eagle (Mod.) 1X (MEM)			
With Earle's Salts and L-Glutamine	6 × 500mL	**MT-10-010-CV**	73.15
	6 × 1L	**MT-10-010-CM**	108.92
With Earle's Salts; Without L-Glutamine	6 × 500mL	**MT-15-010-CV**	73.13
	6 × 1L	**MT-15-010-CM**	145.08
For Suspension Cultures; Without L-Glutamine, Calcium, and Magnesium	6 × 500mL	**MT-15-015-CV**	151.77
With Earle's Salts; Without L-Glutamine and Phenol Red	6 × 500mL	**MT-17-305-CV**	99.76
DMEM and Ham's F-12, 50/50 Mix (Mod.) 1X			
With L-Glutamine and 15mM HEPES	6 × 500mL	**MT-10-092-CV**	99.76
	6 × 1L	**MT-10-092-CM**	179.53
Without L-Glutamine	6 × 500mL	**MT-15-090-CV**	89.76
	6 × 1L	**MT-15-090-CM**	138.79
With L-Glutamine	6 × 500mL	**MT-10-090-CV**	93.01
With L-Glutamine and without Phenol Red	6 × 500mL	**MT-16-405-CV**	116.34
Dulbecco's Modification of Eagle's Medium (Mod.) 1X (DMEM)			
With L-Glutamine, 4.5g/L Glucose, and Sodium Pyruvate	6 × 500mL	**MT-10-013-CV**	76.48
	6 × 1L	**MT-10-013-CM**	123.55
With L-Glutamine, 1.0g/L Glucose, and Sodium Pyruvate	6 × 1L	**MT-10-014-CM**	148.06
With L-Glutamine and 4.5g/L Glucose; Without Sodium Pyruvate	6 × 500mL	**MT-10-017-CV**	73.13
	6 × 1L	**MT-10-017-CM**	113.68
Without L-Glutamine; With 4.5g/L Glucose and Sodium Pyruvate	6 × 500mL	**MT-15-013-CV**	79.77
	6 × 1L	**MT-15-013-CM**	119.69
Without L-Glutamine and Sodium Pyruvate; With 4.5g/L Glucose	6 × 1L	**MT-15-017-CM**	128.24
Without L-Glutamine; With 4.5g/L Glucose, Sodium Pyruvate, and 25mM HEPES	6 × 500mL	**MT-15-018-CV**	113.04
	6 × 1L	**MT-15-018-CM**	186.84
Without L-Glutamine, L-Methionine, and L-Cystine; With 4.5 g/L Glucose and Sodium Pyruvate	6 × 100mL	**MT-17-204-CI**	59.84
With 4.5g/L Glucose and Sodium Pyruvate; Without L-Glutamine and Phenol Red	6 × 500mL	**MT-17-205-CV**	99.76
With 4.5g/L Glucose and Sodium Pyruvate; Without L-Glutamine and Phosphate	6 × 100mL	**MT-17-206-CI**	59.84

Contd. on next page.

Mediatech* cellgro* Cell Culture Media, Contd.

Description	Quantity	Cat. No.	Each
F-12K Nutrient Mixture (Kaighn's Mod.)			
With L-Glutamine	6 × 500mL	**MT-10-025-CV**	79.77
Ham's F-10 Medium, 1X			
With L-Glutamine	6 × 500mL	**MT-10-070-CV**	86.47
Ham's F-12 Medium (Mod.) 1X			
With L-Glutamine	6 × 500mL	**MT-10-080-CV**	79.77
	6 × 1L	**MT-10-080-CM**	106.40
Improved MEM (Richter's Mod.) 1X			
With L-Glutamine	6 × 500mL	**MT-10-024-CV**	108.10
With L-Glutamine; without Phenol Red	6 × 500mL	**MT-10-026-CV**	102.02
Iscove's Modification of DMEM 1X²			
With L-Glutamine and 25mM HEPES, Without α-Thioglycerol and β-Mercaptoethanol	6 × 500mL 6 × 1L	**MT-10-016-CV** **MT-10-016-CM**	93.06 152.59
With 25mM HEPES; Without L-Glutamine, α-Thioglycerol, and β-Mercaptoethanol,	6 × 500mL	**MT-15-016-CV**	103.05
Leibovitz's L-15 1X			
With L-Glutamine	6 × 500mL	**MT-10-045-CV**	116.80
McCoy's's 5A (Iwakata & Grace Mod.) 1X			
With L-Glutamine	6 × 500mL	**MT-10-050-CV**	79.77
With L-Glutamine and 25mM HEPES	6 × 100mL	**MT-10-051-CI**	43.21
RPMI 1640 Medium (Mod.) 1X			
With L-Glutamine	6 × 500mL	**MT-10-040-CV**	67.52
	6 × 1L	**MT-10-040-CM**	113.04
With L-Glutamine and 25mM HEPES	6 × 1L	**MT-10-041-CM**	182.83
Without L-Glutamine	6 × 500mL	**MT-15-040-CV**	66.44
	6 × 1L	**MT-15-040-CM**	113.04
Without L-Glutamine, With 25mM HEPES	6 × 500mL	**MT-15-041-CV**	93.11
Without L-Glutamine and Phenol Red	6 × 500mL	**MT-17-105-CV**	99.76
With L-Glutamine and 25mM HEPES	6 × 500mL	**MT-10-041-CV**	106.39
Without L-Glutamine, L-Methionine, and L-Cystine	6 × 100mL	**MT-17-104-CI**	59.84
w/L-Glutamine; w/o Glucose	6 × 500mL	**MT-10-043-CV**	128.39

Mediatech* cellgro* Liquid Media in 10- and 20-Liter Bags

Flexible media containers supply volumes of cellgro media in compact packaging for more efficient shipping, storage and handling

- Production-scale size
- Strong, laminated plastic bags are nontoxic and provide a gas barrier equivalent to glass–ensuring both biological compatibility and media stability
- Hybridoma tested
- Bags are filled by a proprietary steam-in-place method
- Bags are shipped at ambient temperature.

ORDERING INFORMATION: Media tote and collection containers available separately.

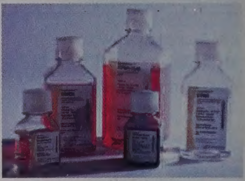
STORAGE CONDITIONS: Store media at 2° to 8°C (36° to 46°F); water at 15° to 30°C (59° to 86°F)

Description	Size	Description	Each
Dulbecco's Modification of Eagle's Medium (DMEM) 1X			
With L-Glutamine; 4.5g/L Glucose and Sodium Pyruvate	1 × 10L	**MT-10-013-LX**	159.08
With L-Glutamine; 4.5g/L Glucose and Sodium Pyruvate	1 × 20L	**MT-10-013-LB**	249.36
RPMI 1640 1X			
With L-Glutamine	1 × 10L	**MT-10-040-LX**	164.03
With L-Glutamine	1 × 20L	**MT-10-040-LB**	277.02
Without L-Glutamine	1 × 20L	**MT-15-040-LB**	468.60

Lonza BioWhittaker* Classic Cell Culture Media

Manufactured using formulations recommended by the Tissue Culture Association

- Manufactured using Water for Injection (WFI) quality water
- Sterile-filtered through two consecutive 0.2µm pharmaceutical-grade filters



BW12 Series

Description	Quantity	Cat. No.	Each
Alpha MEM Eagle			
w/o L-Glutamine, Deoxyribonucleosides or Ribonucleosides	500mL	**BW12-169F**	24.34
Dulbecco's Modified Eagle's Medium (DMEM)			
w/4.5g Glucose per Liter, w/ L-Glutamine	20L	**BW08-019F**	342.45
	500mL	**BW12-604F**	17.40
	1L	**BW12-604Q**	24.99
w/4.5g Glucose per Liter, w/o L-Glutamine	500mL	**BW12-614F**	14.80
	1L	**BW12-614Q**	23.00
w/1.0g Glucose per Liter, w/o L-Glutamine	500mL	**BW12-707F**	27.44
w/1.0g Glucose per Liter, 25mM HEPES Buffer, w/o L-Glutamine	500mL	**BW12-708F**	31.59
w/4.5g Glucose per Liter, w/o L-Glutamine, w/25mM HEPES Buffer	500mL	**BW12-709F**	29.38
w/4.5g Glucose per Liter, w/o L-Glutamine or Sodium Pyruvate	500mL	**BW12-733F**	14.80
	1L	**BW12-733Q**	23.00
w/4.5g Glucose per Liter, w/L-Glutamine, w/o Sodium Pyruvate	500mL	**BW12-741F**	15.75
w/4.5g Glucose per Liter, w/o L-Glutamine (Screened to Support Hybridoma Growth)	500mL	**BW12-914F**	30.20
w/4.5g Glucose per Liter, w/o L-Glutamine or Phenol Red	500mL	**BW12-917F**	37.22
Ham's F-12 Medium			
w/L-Glutamine	500mL	**BW12-615F**	20.24
Iscove's Modified Dulbecco's Medium			
w/ L-Glutamine and 25mM HEPES Buffer	500mL	**BW12-722F**	20.81
	1L	**BW12-722Q**	49.46
w/o L-Glutamine, w/25mM HEPES Buffer	500mL	**BW12-726F**	18.90
	1L	**BW12-726Q**	30.60
w/L-Glutamine and 25mM HEPES Buffer (Screened to Support Hybridoma Growth)	500mL	**BW12-915F**	24.79
L-15 (Leibovitz) Medium			
w/o L-Glutamine	500mL	**BW12-700F**	25.70
	1L	**BW12-700Q**	39.42
(2X) except L-Tyrosine (1X), w/o L-Glutamine or Phenol Red (Virus Plaquing Medium)	100mL	**BW12-669E**	21.03
McCoy's 5A Medium (Modified)			
w/L-Glutamine and 25mM HEPES Buffer	500mL	**BW12-168F**	21.90
w/L-Glutamine	500mL	**BW12-688F**	15.65

Contd. on next page.

LOOKING FOR ROLLER BOTTLES?

Fisher Scientific carries a wide range of rollers bottles and apparatus.

Visit www.fishersci.com and search for Roller Bottles

*Trademark. See Trademark Reference.

Lonza BioWhittaker* Classic Cell Culture Media, Contd.

Description	Quantity	Cat. No.	Each
Medium 199 with Earle's BSS			
w/L-Glutamine and 25mM HEPES Buffer	500mL	**BW12-117F**	22.95
	1L	**BW12-117Q**	27.89
w/L-Glutamine and 2.2g $NaHCO_3$ per Liter	500mL	**BW12-119F**	16.79
w/L-Glutamine and 1.4g $NaHCO_3$ per Liter	500mL	**BW12-109F**	19.58
w/L-Glutamine, 1.4g $NaHCO_3$ per Liter and 25mM HEPES Buffer	500mL	**BW12-118F**	28.14
MEM Eagle with Earle's BSS			
w/L-Glutamine and Nonessential Amino Acids, w/o Calcium	450mL	**BW06-174G**	52.85
w/o L-Glutamine	500mL	**BW12-125F**	18.08
	1L	**BW12-125Q**	28.58
w/o L-Glutamine, w/25mM HEPES Buffer	500mL	**BW12-136F**	31.20
	1L	**BW12-136Q**	39.85
w/L-Glutamine	500mL	**BW12-611F**	20.66
	1L	**BW12-611Q**	22.80
w/o L-Glutamine, w/ Nonessential Amino Acids and Sodium Pyruvate	500mL	**BW12-662F**	22.02
Cell Culture Maintenance Medium	100mL	**BW12-736E**	14.39
	500mL	**BW12-736F**	71.65
w/o L-Glutamine or Phenol Red (Virus Plaquing Medium)	100mL	**BW12-668E**	10.68
RPMI 1640			
w/25mM HEPES and L-Glutamine	500mL	**BW12-115F**	25.87
	1L	**BW12-115Q**	39.55
w/L-Glutamine, 25mM HEPES Buffer, 100 units Penicillin and 50µg Streptomycin per mL	100mL	**BW09-774E**	10.70
	500mL	**BW09-774F**	20.90
w/o L-Glutamine	10L	**BW08-012B**	155.58
w/o L-Glutamine, w/25mM HEPES Buffer	500mL	**BW04-558B**	24.25
w/o L-Glutamine or Phenol Red	500mL	**BW12-918F**	17.90
w/o L-Glutamine	500mL	**BW12-167F**	14.64
	1L	**BW12-167Q**	25.82
w/L-Glutamine	500mL	**BW12-702F**	16.38
	1L	**BW12-702Q**	23.64
w/L-Glutamine, 0.165M MOPS	500mL	**BW04-525F**	35.20

MEDIA-SPECIALTY

Thermo Scientific* HyClone* Serum-Free and Specialty Media

Wide selection of media optimize the expression of protein in CHO cells

Developed through Metabolic Pathway Design* to support superior performance and increased process yields of multiple cell culture platforms. Serum-free media (SFM) have been designed to provide a consistent nutrient supply without the need for serum prescreening.

- CCM5* for anchorage–dependent cells
- SFX–CHO* for suspension cells
- SFX–CHO produces high cell yields and recombinant protein production in a variety of culture vessels, including high–density perfusion bioreactors
- CDM4CHO chemically defined, animal-defined component-free (ADCF) media for therapeutic recombinant protein production without the reliance upon undefined hydrolysates and lipids

HyQ CDM4CHO
HyClone

SH3055702

ORDERING INFORMATION:

Some products available in convenient HyQPAK* six-packs

Description	Quantity	Cat. No.	Each
CDM4CHO			
w/o L-Glutamine	500mL	**SH3055701**	27.30
	1L	**SH3055702**	45.32
	6 x 1L HyQPAK	**SH30557LS**	244.73
w/L-Glutamine	500mL	**SH3055801**	27.30
	1L	**SH3055802**	45.32
	6 x 1L HyQPAK	**SH30558LS**	244.73
SFX–CHO			
w/o L-Glutamine, w/Phenol Red	500mL	**SH3018701**	22.88
w/o L-Glutamine, w/Phenol Red	1L	**SH3018702**	36.40
CDM4CHO (Powder, rehydrates to Quantity)			
w/o L-Glutamine	5L	**SH3055601**	123.60
	10L	**SH3055602**	240.00
	100L	**SH3055604**	2369.00

Thermo Scientific* HyClone* HyQ*–RS Reduced Serum Media

Nutritionally enhanced versions of classical media require a lower concentration of serum supplementation

Reduce FBS supplementation rate by 2 to 4% for most cell culture applications.[1]

- Suitable for a wide variety of cell types normally used with standard classical formulations
- Maintain cell performance while reducing serum supplementation by up to 80%

Description	Quantity	Cat. No.	Each
HyQ DMEM-RS	500mL	**SH3056501**	13.34
	1L	**SH3056502**	20.55
HyQ MEM-RS	500mL	**SH3056401**	15.40
HyQ RPMI-RS	500mL	**SH3060901**	13.34
	1L	**SH3060902**	20.55
HyQ DMEM/F12-RS	500mL	**SH3062201**	13.34
	1L	**SH3062202**	20.55
HyQ Ham's/F12-RS	500mL	**SH3062301**	13.34
	1L	**SH3062302**	16.43

[1] *The concentration of serum used may need to be adjusted for specific cell types of applications to achieve optimal performance.*

LOOKING FOR TISSUE CULTURE FLASKS?
See the Flasks-Specialty Surfaces subsection of this catalog.

Thermo Scientific* HyClone* Protein-Free CHO Media

For broad-spectrum applications with many CHO cell clones in suspension

SFM4CHO* and SFM4CHO–Utility

- Developed through Metabolic Pathway Design* to increase process yields for industrial manufacturing of recombinant proteins for therapeutic use in a variety of cell lines
- SFM4CHO is suitable for a variety of culture vessels, including bioreactors and supports the DHFR selection/amplification system; formulations without L-glutamine support the GS gene expression system
- SFM4CHO–Utility promotes growth of multiple CHO cell lines in a variety of culture environments with minimal adaptation and supports the DHFR expression system; all formulations contain Pluronic* F68

PF CHO Series

- Successfully tested in a variety of research and biopharmaceutical applications
- Recommended for suspension cultures

ORDERING INFORMATION:

Some products available in convenient HyQPAK* six-packs.

Description	Quantity	Cat. No.	Each
SFM4CHO, Liquid Media			
w/L-Glutamine	500mL	**SH3054901**	25.48
	1L	**SH3054902**	41.60
	6 x 1L HyQPAK	**SH30549LS**	224.64
SFM4CHO, Liquid			
w/o L-Glutamine	500mL	**SH3054801**	25.48
	1L	**SH3054802**	41.60
	6 x 1L HyQPAK	**SH30548LS**	224.64
	5L	**SH3051801**	97.85
SFM4CHO-Utility, Liquid Media			
w/L-Glutamine; w/o Phenol Red	500mL	**SH3051601**	22.88
	1L	**SH3051602**	36.40
	6 x 1L HyQPAK	**SH30516LS**	196.56
SFM4CHO-Utility, Dry Powdered Media			
w/o L-Glutamine or Phenol Red	5L	**SH3051701**	87.55
PF CHO LS, Liquid			
w/L-Glutamine	500mL	**SH3035901**	27.04
	1L	**SH3035902**	43.68
	6 X 1L HyQPAK	**SH30359LS**	235.87
PF CHO			
w/L-Glutamine, Phenol Red	1L	**SH3022001**	36.40
PF CHO MPS (Powder, rehydrates to quantity)[1]			
w/o L-Glutamine	5L	**SH3033301**	103.00
	50L	**SH3033303**	978.50
	100L	**SH3033304**	1957.00
	1000L	**SH3033305**	18,540.00

[1] *Supplied in Hanging Pillow BioProcess Container* w/two ports, in box.*

PREPARING YOUR OWN MEDIA?

See our Water Purification section for Millipore* Milli-Q* Ultrapure Water Systems.

Thermo Scientific* HyClone* HyQ* CDM4MAb* Media

Chemically defined media for therapeutic MAb manufacturing

Developed through Metabolic Pathway Design* to increase process yields for the manufacture of monoclonal antibodies for therapeutic use in a variety of engineered hybridoma and recombinant myeloma cell lines.

- Animal derived component-free
- Contains Pluronic* F68; without Phenol Red

ORDERING INFORMATION:

All liquids are 0.2µm sterile filtered. Available in HyQPAK* six-packs for convenient storage and use. Volumes above 1L are supplied in BioProcess Container* systems. Liquid formulations contain Pluronic* F68. Without Phenol Red; some formulations contain 6mM L-glutamine.

Description	Quantity	Cat. No.	Each
Liquid Media			
w/L-Glutamine	500mL bottle	**SH3080101**	27.30
	1L bottle	**SH3080102**	45.32
	6 × 1L HYQPAK	**SH30801LS**	244.73
w/o L-Glutamine	500mL bottle	**SH3080201**	27.30
	1L bottle	**SH3080202**	45.32
	6 × 1L HYQPAK	**SH30802LS**	244.73
Dry Powdered Media			
w/o L-Glutamine	1 × 5L bottle	**SH3080001**	123.60
	1 × 10L bottle	**SH3080002**	247.20
	1 × 50L pail	**SH3080003**	1184.50
	1 × 100L pail	**SH3080004**	2369.00

Thermo Scientific* HyClone* AdvanceSTEM* Culture Media

Optimized for robust growth of embryonic cell cultures

Embryonic stem cells grow quickly and require daily maintenance. When co-cultured in ES cell media with a mouse embryonic fibroblast (MEF) feeder layer, these stem cell cultures are suitable for electroporation, expansion, or further experimentation.

- ES cell-qualified with Thermo Scientific* HyClone* ES Screened FBS—no prescreening required
- Mycoplasma free and sterility tested
- HyQ DMEM4SC is formulated without L-glutamine or sodium pyruvate and is ideal for use with 129 ES cells
- HyQ IMDM4SC contains no L-glutamine and supports excellent growth of B6 ES cells

STORAGE CONDITIONS:

Storage requirements: 2° to 8°C (36° to 46°F)

Description	Quantity	Cat. No.	Each
HyQ IMDM4SC	500mL	**SH3082201**	18.00
HyQ DMEM4SC	500mL	**SH3082401**	16.95

Thermo Scientific* HyClone* Gene Therapy Cell Culture Media

Serum-free, protein-free media support the growth of human embryonic kidney cell line 293 (HEK 293) and Crucell NV's proprietary PER.C6* cell line

- HyQ SFM4HEK293* media supports cell growth and the production of adenoviral vectors and proteins in a variety of culture systems; contains no animal-derived components
- HyQ CDM4Retino* media increases process yields for the industrial manufacture of adenoviral vectors and proteins using PER.C6 and other retinoblast cells; free of animal-derived components, hydrolysates and other undefined components and can be used in a variety of culture systems including perfusion bioreactors

APPLICATIONS:

Designed to support the growth of human embryonic kidney cell line 293 (HEK 293)

ORDERING INFORMATION:

Some products available in convenient HyQPAK* six-packs.

Description	Quantity	Cat. No.	Each
HyQ SFM4HEK293, Liquid Media			
w/L-Glutamine, Pluronic* F-68; w/o phenol red	500mL	**SH3052101**	28.08
	1L	**SH3052102**	45.76
	6 X 1L HyQPAK	**SH30521LS**	247.10
HyQ SFM4HEK293, Powdered Media			
w/Pluronic* F-68; w/o L-Glutamine or phenol red	5L	**SH3052201**	128.75
	10L	**SH3052202**	257.50
HyQ CDM4Retino, Liquid Media			
w/L-Glutamine	500mL	**SH3052001**	27.81
	1L	**SH3052002**	46.35
HyQ PF 293			
w/L-Glutamine	500mL	**SH3035601**	25.75

Thermo Scientific* HyClone* Viral Vaccine Cell Culture Media

Serum-free/protein-free media

- Eliminates concerns regarding serum supply and exogenous contaminants

Media Include:

- HyQ* PF Vero* was designed specifically for Vero cells and produces excellent performance in multiple cell culture environments, including suspension microcarrier bioreactors
- HyQ SFM4MegaVir* contains no animal-derived components and was developed to increase process yields in the manufacture of viral vaccines in a variety of cell lines including Vero, COS-7, MDCK, and MDBK

ORDERING INFORMATION:

Some products available in convenient HyQPAK* six-packs.

Description	Quantity	Cat. No.	Each
PF Vero			
w/o L-Glutamine, w/Phenol Red	1L	**SH3035202**	41.20
SFM4MegaVir			
w/o L-Glutamine, w/Phenol Red	500mL	**SH3055201**	27.04
	6 x 1L HyQPAK	**SH30552LS**	235.87
	1L	**SH3055202**	43.68

Thermo Scientific* HyClone* Insect Cell Culture Media

Increase cell yields with multiple insect lines in a variety of culture environments

- HyQ* SFX-Insect* for multiple cell lines and high density bioreactor cultures; protein-free
- HyQ* TNM-FH, a modification of Grace's medium; requires serum supplementation
- HyQ CCM3* for Sf9 cells
- HyQ IPL-41, a basal medium frequently used for serum-free media development and optimization

Left to right: SH30350, SH30278, SH30610, SH30280

ORDERING INFORMATION:

Some products are supplied in convenient HyQPAK* six-packs. Products are also available as large volume liquids or cost-effective powders.

Description	Quantity	Cat. No.	Each
HyQ SFX-Insect			
Protein-free; w/L-Glutamine	500mL	**SH3027801**	26.00
	1L	**SH3027802**	41.60
	6 x 1L HyQPAK	**SH30278LS**	Pk. of 6/224.64
	10L	**SH3027806**	426.40
HyQ TNM-FH			
w/Yeast Extract and Lactalbumin Hydrolysate	500mL	**SH3028002**	20.80
	1L	**SH3028003**	31.20
HyQ CCM3			
Serum-free; w/L-Glutamine	500mL	**SH3006501**	24.96
	1L	**SH3006502**	39.52
HyQ CCM3, Powder			
Serum-free; w/L-Glutamine	10L	**SH3006104**	721.00
HyQ SFX-Insect MP, Powder			
Protein-free; w/L-Glutamine	5L	**SH3035002**	119.60
	10L	**SH3035003**	236.90
HyQ Grace's Medium			
Unsupplemented	500mL	**SH3061001**	27.30
Baculovirus plaque assay kit			
HyQ BEVS PlaKit	1 Kit	**SH30340**	200.00

Thermo Scientific* HyClone* Hybridoma and Myeloma Cell Culture Media

Serum-free media eliminate contamination concerns while maintaining excellent monoclonal antibody (MAb) production

Available in formulations with low or no protein as well as media free of animal derived components (ADCF) for MAb production in a variety of hybridoma and recombinant myeloma cell lines

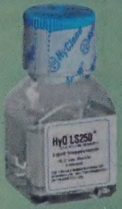
- HyQ* SFM4MAb*, an ultralow protein formulation developed for use with suspension cultures in high density bioreactors
- HyQ SFM4MAb–Utility* for high yields in multiple cell lines and culture environments
- HyQ CCM1* supports multiple hybridoma/myeloma cell lines and culture environments
- HyQ SFX-MAb is a serum-free medium for hybridoma and myeloma cell lines
- HyQ PF-MAb is a 100X concentrate designed for use with RPMI-1640 and other basal formulations to reduce or eliminate serum dependency
- HyQ CDM4NSO* ADCF media increases therapeutic monoclonal antibody production in NSO cell lines in a variety of culture environments without the need for supplementation

Description	Quantity	Cat. No.	Each
HyQ SFM4MAb			
w/L-Glutamine	500mL	**SH3051301**	23.92
	1L	**SH3051302**	38.48
	6 x 1L HyQPAK	**SH30513LS**	207.79
w/o L-Glutamine	500mL	**SH3039101**	23.92
	1L	**SH3039102**	38.48
	6 x 1L HyQPAK	**SH30391LS**	207.79
HyQ SFM4MAb, Powdered			
w/o L-Glutamine	5L	**SH3053502**	97.85
HyQ SFM4MAb–Utility			
w/L-Glutamine	500mL	**SH3038201**	21.84
	1L	**SH3038202**	34.32
	6 x 1L HyQPAK	**SH30382LS**	185.32
HyQ SFM4MAb–Utility, Powdered			
w/L-Glutamine	5L	**SH3055001**	92.70
HyQ ADCF-MAb, Liquid			
w/L-Glutamine, Protein-Free, ADCF	500mL	**SH3034901**	25.48
	1L	**SH3034902**	41.60
	6 x 1L HyQPAK	**SH30349LS**	224.64
w/o L-Glutamine, Protein-Free, ADCF	500mL	**SH3054701**	25.48
	1L	**SH3054702**	41.60
	6 x 1L HyQPAK	**SH30547LS**	224.64
HyQ ADCF-MAb, Powder			
w/o L-Glutamine, Protein-Free, ADCF	5L	**SH3063501**	103.00
	10L	**SH3063502**	206.00
	50L	**SH3063503**	978.50
	100L	**SH3063504**	1957.00
HyQ SFX-Mab			
w/o L-Glutamine, w/Phenol Red; for Suspension Cultures	1L	**SH3020601**	38.48
HyQ CCM1			
w/L-Glutamine and Phenol Red	1L	**SH3004303**	45.76
HyQ CCM1 Powder (rehydrates to Quantity)			
w/L-Glutamine and Phenol Red, w/o Sodium Bicarbonate	10L	**SH3005803**	240.00
HyQ PF MAb			
w/o L-Glutamine, Phenol Red, or Sodium Bicarbonate	100mL	**SH3013801**	130.00
CDM4NSO, Powder (rehydrates to quantity)			
without Pluronic* F-68, L-Glutamine or Phenol Red	5L	**SH3057801**	154.50
	10L	**SH3057802**	309.00
	100L	**SH3057804**	2987.00
CDM4NSO, Liquid			
w/ Pluronic F-68, without L-Glutamine or Phenol Red	500mL	**SH3057901**	32.96
	1L	**SH3057902**	56.65
	6 x 1L HyQPAK	**SH30579LS**	305.91

ACCESSORIES

Thermo Scientific* HyClone* Supplements for Hybridoma and Myeloma Cell Culture Media

- Animal-derived component-free
- HyQ LS250* lipid supplement stimulates cell growth and monoclonal antibody production in cholesterol auxotrophic NSO cell lines.



SH3055501

Description	Quantity	Cat. No.	Each
Lipid supplement	100mL	**SH3055501**	113.30

PREPARING YOUR OWN MEDIA?

See our Water Purification section for Millipore* Milli-Q* Ultrapure Water Systems.

LOOKING FOR CULTURE CHAMBERS?

Fisher Scientific carries a variety of coated culture chambers that are ideal for scale-up and production of biomaterials. For complete descriptions, see Culture Chambers.

Genlantis* NeuroPrep* Media

Keep cells alive up to 14 days under refrigeration

Description	Quantity	Cat. No.	Each
NeuroPrep Media	100mL	**NM100100**	55.41

Genlantis* Smooth Muscle Cell Growth Medium

Supports robust growth of smooth muscle cells

Description	Quantity	Cat. No.	Each
Smooth Muscle Cell Growth Medium	500mL	**PM311500**	110.62
Bovine Smooth Muscle Cell (SMC) Growth Medium	500mL	**PMB311500**	105.59

Genlantis* PrimaPure* Human Endothelial Cell Growth Media

Optimized for endothelial cells

Description	Quantity	Cat. No.	Each
Human Microvascular Endothelial Cells (HMVEC)	500mL	**PM112500**	110.62
Serum-Free; Growth Factor-Free	500mL	**PM114500**	110.62
Human Endothelial Cell Growth Medium	500mL	**PM211500**	105.59
Serum-Free; Defined	500mL	**PM113500**	110.62
Human Coronary Artery Endothelial Cells (HCAEC)	500mL	**PM212500**	105.59

Mediatech* cellgro* Serum-Free and Specialty Media

Viable alternative to FBS for many hybridomas

Serum-free media features low protein concentration without hormones, growth, or attachment factors.

- Formulation is based on a 50/50 mix of DMEM/F-12 and smaller percentages of RPMI 1640 and McCoy's 5A
- Works on a broad range of suspension and attachment cell lines
- Can be cell line dependent
- Offers a viable alternative to FBS for many hybridomas and works on a broad range of suspension and attachment cells; can be cell line dependent

Description	Quantity	Cat. No.	Each
w/ L-Glutamine and 1g/L BSA	6 × 500mL	**MT-40-101-CV**	128.70
w/ L-Glutamine and 1g/L BSA, w/o Phenol Red	6 × 500mL	**MT-40-102-CV**	170.52

Mediatech* cellgro FREE* Serum-Free and Protein-Free Culture Media

Optimized for the cultivation of Chinese Hamster Ovary (CHO) cells in addition to many derivatives of this parent line

CHO K-1 cells require minimal adaptation into cellgro FREE, saving valuable research time.

Description	Quantity	Cat. No.	Each
w/o L-Glutamine	6 × 500mL	**MT-40-200-CV**	186.84

Lonza BioWhittaker* Serum-Free and Specialty Media

Chemically defined media optimized for specific cell types

- PC-1 Serum-Free Media provides a complete media system, including PC-1 Supplement for the cultivation of primary cells
- UltraCULTURE general-purpose serum-free media is designed for the growth of adherent and nonadherent cells

BW Series

Description	Quantity	Cat. No.	Each†
PC-1* Serum-Free Media			
w/o L-Glutamine	2 × 500mL	**BW77232**	126.00
UltraCULTURE*			
w/o L-Glutamine. Protein Concentration 3mg/mL	500mL	**BW12-725F**	39.00

† Store as detailed on label.

Lonza BioWhittaker* Hematopoietic Serum-Free Culture Media

For adoptive immunotherapy and cellular therapy research

- Do not contain any lymphokines required for activation of human lymphocytes; intended for in vitro procedures
- Device Master Records (DMRs) for these products are held in an FDA Master File
- X-VIVO 10* is designed for the ex-vivo cultivation of lymphocytes
- X-VIVO 15* supports the proliferation of lymphocytes, including tumor infiltrating lymphocytes (TIL) and macrophages
- X-VIVO 20* encourages the proliferation of lymphocytes at high cell densities

STORAGE CONDITIONS:
Store at 2° to 8°C (36° to 46°F).

NOTE:
Limited by Federal (USA) law to investigational use

Description	Quantity	Cat. No.	Each†
X-VIVO 10*			
w/Gentamicin	1L	**BW04-380Q**	62.00
w/o Gentamicin or Phenol Red	1L	**BW04-743Q**	73.09
X-VIVO 15*			
w/ Gentamicin	1L	**BW04-418Q**	64.28
w/o Gentamicin or Phenol Red	1L	**BW04-744Q**	69.00
X-VIVO 20*			
w/Gentamicin	1L	**BW04-448Q**	64.48

Contd. on next page.

Lonza BioWhittaker* Serum-Free and Specialty Media, Contd.

Hybridoma Serum-Free and Protein-Free Culture Media

Prescreened in actual hybridoma systems to ensure minimal variation

- HL-1 supports the serum-free growth of hybridomas and differentiated cells of lymphoid origin
- UltraDOMA contains no human-derived proteins and supports hybridoma cell growth and monoclonal Ab production
- UltraDOMA-PF is a completely defined medium and does not contain peptides or tissue extracts

STORAGE CONDITIONS:
Store at 2° to 8°C (36° to 46°F). Store UltraDOMA in the dark.

Description	Quantity	Cat. No.	Each
HL-1 Complete Serum-Free Medium			
w/o L-Glutamine, Does not require HL-1 supplement	2 × 500mL	**BW77201**	78.49
HL-1 Supplement (100X)			
w/L-Glutamine; 100X Powder	10mL	**BW77227**	63.00
UltraDOMA* Serum-Free Medium			
w/o L-Glutamine. Protein Concentration 30µg/mL	500mL	**BW12-723B**	29.95
UltraDOMA-PF* Protein-Free Medium			
w/ L-Glutamine	500mL	**BW12-727F**	27.00
w/ L-Glutamine; Powder	10L[1]	**BW15-727D**	488.38

[1] *Rehydrates to quantity.*

UltraMEM* Reduced-Serum Media

For supporting the growth and maintenance of anchorage-dependent cells

- Use with 0 to 4% serum

Description	Quantity	Cat. No.	Each†
Protein-Free Basal Media			
w/o L-Glutamine	500mL	**BW12-745F**	28.07
Low-Protein Media			
w/ Insulin, Transferrin, Ethanolamine, Selenium and L-Glutamine	500mL	**BW12-743F**	29.61

† *Store as detailed on label.*

293 Cell Serum-Free Media

Completely balanced to support vaccine and viral vector production of high-density human embryonic kidney (HEK) 293 cell culture environments

- Very low levels of recombinant proteins facilitate downstream purification and provide regulatory compliance

Description	Quantity	Cat. No.	Each†
Pro293a-CDM Adherent Culture Media			
w/ 0.1% Pluronic F-68; w/o L-Glutamine or Phenol Red	1L	**BW12-764Q**	61.00
Pro293s-CDM Suspension Culture Media			
w/ 0.1% Pluronic F-68; w/o L-Glutamine or Phenol Red	1L	**BW12-765Q**	62.00

† *Store as detailed on label.*

Lonza BioWhittaker* Cryoprotective Medium

Use 1:1 with Growth Medium

STORAGE CONDITIONS:
Store at 15° to 30°C (59° and 86°F)

Description	Quantity	Cat. No.	Each
BME w/HBSS and 15% DMSO, w/o L-Glutamine, w/Phenol Red	100mL	**BW12-132A**	29.47

Lonza BioWhittaker* CHO (Chinese Hamster Ovary) Serum-Free Culture Media

For optimized expression of protein in CHO cells

- UltraCHO* is a modified DMEM/F-12 base which has been optimized to support the growth of transfected and non-transfected CHO cells
- ProCHO*-4 is designed for the concurrent transition of adherent CHO cells to serum-free and suspension culture; supports faster doubling times
- ProCHO-5 supports increased protein production of CHO cells already growing in suspension
- UltraCHO is a modified DMEM/F-12 base which has been optimized to support the growth of transfected and non-transfected CHO cells
- ProCHO4 is designed for the concurrent transition of adherent CHO cells to serum-free and suspension culture; supports faster doubling times
- ProCHO5 supports increased protein production of CHO cells already growing in suspension

Description	Qty.	Cat. No.	Each†
UltraCHO* Serum-Free Media			
w/L-Glutamine	1L	**BW12-724Q**	56.04
w/o Nucleosides	500mL	**BW12-751F**	60.00
UltraCHO Supplement, Nonsterile			
Frozen Liquid Suspension of Growth Factors for Optimized Expression of Proteins in CHO cells, for use w/15-724D	100mL	**BW17-811A**	179.00
ProCHO4			
w/Phenol Red and 0.1% Pluronic F-68; w/o Hypoxanthine, Thymidine, or L-Glutamine	1L	**BW12-029Q**	59.00
w/o Phenol Red and 0.1% Pluronic F-68; w/o Hypoxanthine, Thymidine, or L-Glutamine	1L	**BW04-919Q**	66.95
ProCHO5			
w/Phenol Red and 0.1% Pluronic F-68; w/o Hypoxanthine, Thymidine, or L-Glutamine	1L	**BW12-766Q**	54.00

† *Store as detailed on label.*

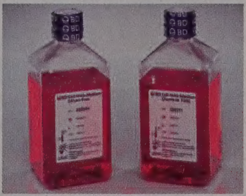
LOOKING FOR CRYOGENIC VIALS?

For a selection of vials designed for cryogenic storage, see the Cryogenics section.

*Trademark. See Trademark Reference.

BD Cell* Monoclonal Antibody (MAb) Medium

Produces yields higher than classical basal media with similar supplementation



CB220509 (left) and CB220511

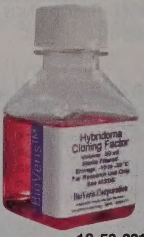
Promotes an acceleration in the monoclonal antibody secretion rates of cells in a batch mode for performance in hollow fiber and stir tank systems.

- Also suitable for use in perfusion systems
- Shown to increase purified monoclonal antibody yields by 5 to 25 times over classical basal media with similar supplementation.
- Reduces media consumption
- Shown to reduce media consumption and labor cost, reduce requirements for media storage and preparation time, decrease labor required to perform continuous feeding and decrease contamination because of decreased handling of the culture
- Concentration step is eliminated in most cases, and final bulk harvest is reduced, producing less material to run through the purification process
- Only minimal adaptation is needed
- Hybridomas grown in MAb Basal Medium can be supplemented in the same way as those grown in traditional basal media
- MAb Serum-Free and Animal-Free are complete media and do not require serum supplementation; Basal Medium does require serum supplementation

Description	Quantity	Cat. No.	Each
Serum-Free Medium	1L	**CB220509**	53.55
Basal Medium	1L	**CB220511**	36.05
Animal Component–Free Medium	1L	**CB220513**	51.40

BioVeris* Specialty Culture Media

Optimized for specific applications



1G-50-0615

- Giant Cell Tumor Conditioned Medium (GCT-CM*)is ideal for a variety of applications including growth of hematopoietic and leukemic cells, cytogenetic analysis of bone marrow cells, HIV isolation and recovery; and production and growth of human hybridomas
- DMSO Freeze Medium minimizes intracellular ice crystal formation for increased cell viability and recovery
- Hybridoma Cloning Factor (HCF) enhances growth at low cell densities during HAT selection and also eliminates the need for feeder cell layers

NOTE:
For research use only

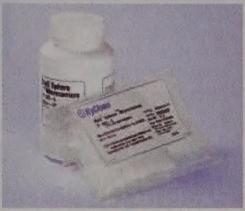
Description	Quantity	Mfr. No.	Cat. No.	Each†
Supplements				
Giant Cell Tumor Conditioned Medium (GCT-CM)	50mL	210004	**IG-50-0815**	193.42
Hybridoma Cloning Factor (HCF) Supplement	50mL	210001	**IG-50-0615**	177.74
Media				
DMSO Freeze Medium	50mL	210002	**IG-50-0715**	36.59

† *Store as detailed on label.*

MEDIA-MICROCARRIERS

Thermo Scientific* HyClone* HyQSphere* Microcarriers

Wide variety of coatings enhance the attachment and growth of many anchorage-dependent cell types


SV3005601

Incorporate various surface modifications for use with a wide array of cell lines and applications. Animal Derived Component-Free (ADCF*) coatings facilitate adaptation from other microcarriers that utilize animal-derived components and ease the transition into ADCF culture systems.

- Manufactured using cross-linked polystyrene
- Rigid substrate provides optimal durability (no fragmentation) and does not allow the extracellular material to grow into the bead
- Provide high surface to volume ratios, allowing large-scale culture inside a relatively small footprint
- Tightly controlled specific gravity maintains suspension with gentle stirring

Description	Nominal Specific Gravity	Bead Dia.	Quantity	Cat. No.	Each
P 102-L	1.02	125-212µ	10g	**SV3005601**	100.00
	1.02	125-212µ	100g	**SV3057803**	277.50
P Plus 102-L	1.02	125-212µ	10g	**SV3005201**	100.00
	1.02	125-212µ	100g	**SV3005203**	320.00
Pro-F 102-L	1.02	125-212µ	10g	**SV3004801**	130.00
	1.02	125-212µ	100g	**SV3004803**	495.00
FACT III 102-L	1.02	125-212µ	10g	**SV3004001**	105.00
	1.02	125-212µ	100g	**SV3004003**	405.00
CGEN 102-L	1.02	125-212µ	10g	**SV3004401**	100.00
	1.02	125-212µ	100g	**SV3004403**	372.50
HLXII170	1.12	90-212µ	10g	**SV3009001**	140.00
	1.12	90-212µ	100g	**SV3009003**	450.00

Cell Compatibility Chart

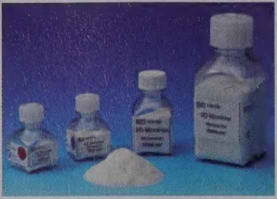
Cell Type	P 102-L	P Plus 102-L	Pro-F 102-L	FACT III 102-L	CGEN 102-L	HLXII170
Vero Monkey Kidney (VERO)		X	X	X	X	X
Chick Embryo Fibroblast (CEF)		X				X
Swine Testes (ST)					X	
Bovine Turbinate (BT)					X	
Rabbit Skin Fibroblast (P4RSF)					X	
Human Diploid Fibroblast (MRC-5)					X	
Human Epithelial Carcinoma (KB)					X	
Human Foreskin Fibroblast (HFF)	X	X		X	X	X
Human Squamous Carcinoma (UMSCC)	X	X		X	X	X
Madin-Darby Bovine Kidney (MDBK)		X	X	X	X	X
Chinese Hamster Ovary (CHO)					X	
Madin-Darby Canine Kidney (MDCK)		X	X	X	X	X

Nunc* 2D MicroHex* Microcarriers

Virtually two dimensional—only 25µm thick

Microscopic, polystyrene, hexagon-shaped microcarriers for adherent cell culture.

- Shape and low density (1.05g/cm³) of the particles allows them to be kept in suspension at low stirring speeds
- Uniform covering of the surface



12-565 Series

- Nunclon* Δ surface treatment enables fast cell attachment, easy trypsinisation, and high yields
- Particles are nonswelling, nonporous, and nonabsorbing
- Radiation sterilized and ready for use—no conditioning required

Quantity	Culture Area per Bottle	Mfr. No.	Cat. No.	Case of
2g	1500cm²	139102	**12-565-580**	10/328.66
10g	7500cm²	139104	**12-565-581**	5/532.50
20g	15,000cm²	139106	**12-565-582**	5/810.75
100g	75,000cm²	139108	**12-565-583**	2/1311.00

MEDIA-GROWTH ENVIRONMENTS

BD Matrigel* Basement Membrane Matrix

Solubilized basement membrane preparations polymerize at room temperature

Produces a biologically active matrix material resembling the mammalian cellular basement matrix. Provides a physiologically relevant environment for studies of cell morphology, biochemical function, migration, invasion, and gene expression.

Key Features

- Tested for the ability to promote neurite outgrowth of chick dorsal root ganglia cells
- Tested and found negative for bacteria, fungi, and mycoplasma
- Source: Engelbreth-Holm-Swarm (EHS) mouse tumor
- Base formulation: Dulbecco's Modified Eagle's Medium with 50µg/mL gentamycin, with or without Phenol Red
- Stable for at least three months at -20°C or twelve days at 37°C

Three Formulations

- Growth Factor Reduced (GFR) formulation is well suited for applications that require a more highly defined basement membrane preparation
- Phenol Red-free is available for assays that require color detection, including fluorescence assays
- High concentration (HC) formulation is ideal for applications in which a high protein concentration augments the growth of tumors; allows a Matrigel basement membrane matrix plug to maintain its integrity after subcutaneous injection into mice

Quantity	Mfr. No.	Cat. No.	Each
Matrigel Basement Membrane Matrix			
5mL	356234	**CB-40234A**	163.13
10mL	354234	**CB-40234**	255.00
50mL (5 × 10mL)	356235	**CB-40234B**	935.00
Matrigel Basement Membrane Matrix, Phenol Red-free			
10mL	356237	**CB-40234C**	307.49
Matrigel Basement Membrane Matrix GFR			
5mL	356230	**CB-40230A**	191.96
10mL	354230	**CB-40230**	259.00
Matrigel Basement Membrane Matrix GFR, Phenol Red-free			
10mL	356231	**CB-40230C**	325.00
Matrigel Basement Membrane Matrix HC			
10mL	354248	**CB-354248**	346.33

Note: *Avoid multiple freeze-thaws; do not store in a frost-free freezer*

BD BioCoat* Cell Growth Environment

Cells cultured in these systems can be subcultured according to routine procedures, seeded into fermentation systems, or used in a variety of bioassays

Interactions between components of the extracellular matrix and growth factors play a crucial role in determining the adaptation and responses of mammalian cells to their micro environments both in vivo and in vitro. These cell culture systems provides cells with conditions derived from their natural environment in vivo and integrate specially formulated low-serum or serum-free medium, culture supplements and growth factors, as well as BD BioCoat Cellware products with cell-specific extracellular matrix proteins.

- Other applications include construction of model systems to study angiogenesis, atherosclerosis, wound healing and in vitro toxicology
- Each environment lot is tested in a bioassay and all components are tested for bacteria and fungi (cell culturing media and supplements are also tested for Mycoplasma; K-STIM, E-STIM, Entero-STIM and Hepato-STIM media are also tested for endotoxins using LAL assay); all include protocol
- Stable for at least three months from date of shipment when stored at 2–8°C (36–46°F) (except BD Matrigel* matrix products that should be stored at -20°C [-4–F]); do not freeze

NOTE: These products are for research use only and are not intended for diagnostic purposes

Endothelial Cell Growth Environment

Increases endothelial cell yield from a variety of sources

Ideal for human umbilical vein (HUVEC), pulmonary artery (HPAEC), and aorta (HAEC), as well as fetal bovine heart (FBHEC) cells.

ORDERING INFORMATION:

Media and cellware are also available separately.

INCLUDES:

500mL BD Endothelial Cell Culture Medium (MCDB 131 medium containing hydrocortisone, heparin and 2% fetal bovine serum, 5µg lyophilized Mouse Epidermal Growth Factor (EGF), receptor grade, 100mg lyophilized Bovine Endothelial Cell Growth Supplement (ECGS), 50mg lyophilized Soybean Trypsin Inhibitor, Five BD BioCoat* Type I Collagen 75cm² Flasks

Description	Mfr. No.	Cat. No.	Each
Complete Environment	355053	**08-774-149**	253.14
Endothelial Cell Culture Medium	355054	**08-774-149AA**	149.46

Contd. on next page.

BD BioCoat* Cell Growth Environments, Contd.

Hepatocyte Differentiation Environment

Serum-free environment

Optimized to support cultures of differentiated hepatocytes in vitro for extended culture periods (at least three weeks).

ORDERING INFORMATION:

Media and cellware (08-774-200) available separately.

INCLUDES:

500mL Hepatocyte Differentiation Medium (Williams' E containing dexamethasone and BD ITS+* Universal Culture Supplement), 5µg lyophilized Mouse EGF (receptor grade), five BD Matrigel* Matrix 6-well plates.

Description	Mfr. No.	Cat. No.	Each
Complete Environment	355055	**08-774-176**	393.09
Hepato-STIM* Medium	355056	**CB-30055M**	115.13

Intestinal Epithelium

Used to create intestinal models that exhibit barrier function for use in transport and absorption studies of drugs, metabolites and infectious diseases of the intestine

INCLUDES:

400mL Entero-STIM* Enterocyte Differentiation Medium (DMEM containing sodium butyrate), Lyophilized BD* MITO+ Serum Extender Supplement, 100mL Seeding Basal Medium (DMEM), 24 BD BioCoat* Fibrillar Collagen Cell Culture Inserts (inserts contain 1µm pore size membranes packaged in one 24-well BD Falcon* Companion TC Plate with one additional plate

Description	Mfr. No.	Cat. No.	Each
Complete Environment	355057	**08-774-175**	285.16

Smooth Muscle Cell Differentiation Environment

Induce differentiation of human and rat aortic smooth muscle cells

- Smooth muscle cells cultured in this environment are characterized by a low proliferative index and multilayered nodular morphology
- Additional characteristics include expression of the cytoskeletal proteins α-smooth muscle actin, heavy-chain myosin and 150kD h-caldesmon
- Consists of MCDB 131 Medium with BD ITS+* Universal Culture Supplement with insulin, transferrin, selenous acid, linoleic acid and bovine serum albumin
- Stable for at least three months from date of shipment when stored at 4°C (39.3°F) under subdued lighting conditions

BIOCOAT
SMC D-STIM™

CB-30060M

STORAGE CONDITIONS

Store as detailed on label.

Description	Quantity	Mfr. No.	Cat. No.	Each
SMC D-STIM* Smooth Muscle Cell Differentiation Medium	500mL	355061	**CB-30060M**	88.04
GFR Matrigel Matrix, 24-well Plates	5 Plates	354635	**08-774-201**	263.43

Smooth Muscle Cell Proliferation Environment

In vitro system promotes rapid proliferation of smooth muscle cells (SMC) from human and rat aorta

- Up to 90% cell attachment within one to two hours
- Up to 90% attached cells spread within two to four hours
- Enables cell population to increase three to six times within five to six days
- Medium consists of 475mL MCDB 131 Medium; 5µg Epidermal Growth Factor (EGF); 1µg Basic Fibroblast Growth Factor (bFGF); and 2.5mg Human Recombinant Insulin

INCLUDES:

BD Smooth Muscle Cell (SMC) Proliferation Medium five BD BioCoat* Type I Collagen 75cm² Flasks (also sold separately)

Description	Mfr. No.	Cat. No.	Each
Smooth Muscle Cell (SMC) Proliferation Medium	355160	**CB-30160M**	137.81

SERA/SERUM REPLACEMENTS

Thermo Scientific* HyClone* Fetal Bovine Serum, U.S. Origin

Vertical integration of sera production from collection through processing

Collected and processed with strict adherence to Current Good Manufacturing Practices (cGMP) and using ISO 9001:2000 certified processes. Tightly controlled processing from blood collection to filtration to packaging, all to assure quality, uniformity, origin, complete traceability and purity. Meet Thermo Scientific HyClone's high standards required for quality cell culture. Production of USA-sourced sera, from collection through processing, is vertically integrated.

Defined Fetal Bovine Serum

- The highest quality FBS available
- Widely used by cell culturists who have a concern for viral contaminants and require an extensive biochemical profile
- Filtered through serial 40nm (0.04µm) pore-size rated filters, the most retentive filters used in commercial FBS production
- Meets specifications of ≤10EU/mL of endotoxin and ≤10mg/dL of hemoglobin
- Over 50 components are analyzed and the results are included on the biochemical assay

Characterized Fetal Bovine Serum

- Comparable to the highest quality FBS from other suppliers
- Meets specifications of ≤25EU/mL of endotoxin and ≤25mg/dL of hemoglobin
- Filtered through three sequential 100nm (0.1µm) pore-size rated filter

Standard Fetal Bovine Serum

- Used by price-conscious cell culturists
- Filtered through three sequential 100nm (0.1µm) pore-size rated filters
- Endotoxin and hemoglobin are tested and reported

ORDERING INFORMATION:

Orders requesting a specific lot of serum must reference the lot number; please place lot specific orders with a Fisher Scientific Customer Service Representative. Volume discounts are available for most Thermo Scientific HyClone serum products. Orders based on price quotations from Thermo Scientific HyClone must reference the quotation number. Please place price quotation orders with a Fisher Scientific Customer Service Representative.

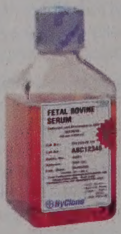
Contd. on next page.

Thermo Scientific* HyClone* Fetal Bovine Serum, U.S. Origin, Contd.

Description	Quantity	Cat. No.	Each	Case of
Defined	50mL	SH3007001	47.00	30/1410.00
	100mL	SH3007002	81.00	30/2430.00
	500mL	SH3007003	310.00	12/3720.00
Defined, Heat inactivated	50mL	SH3007001HI	54.00	----
	100mL	SH3007002HI	88.00	----
	500mL	SH3007003HI	317.00	12/3804.00
Defined, Gamma irradiated	500mL	SH3007003IR	330.00	----
Defined, Heat Inactivated, Gamma irradiated	500mL	SH3007003IH	337.00	----
Characterized	50mL	SH3007101	43.00	30/1290.00
	100mL	SH3007102	74.00	30/2220.00
	500mL	SH3007103	284.00	12/3408.00
Characterized, Heat inactivated	50mL	SH3007101HI	50.00	----
	100mL	SH3007102HI	81.00	----
	500mL	SH3007103HI	291.00	----
Characterized, Gamma irradiated	500mL	SH3007103IR	304.00	----
Characterized, Heat Inactivated, Gamma irradiated	500mL	SH3007103IH	311.00	----
Standard	100mL	SH3008802	63.00	30/1890.00
	500mL	SH3008803	243.00	12/2916.00
Standard, Heat inactivated	500mL	SH3008803HI	250.00	----
Standard, Gamma irradiated	500mL	SH3008803IR	263.00	----
Standard, Heat Inactivated, Gamma irradiated	500mL	SH3008803IH	270.00	----

Thermo Scientific* HyClone* Embryonic Stem (ES) Cell Screened Fetal Bovine Serum

Eliminates the need for prescreening serum prior to using it with embryonic stem cells



SH30070 Series

Collected and processed with strict adherence to Current Good Manufacturing Practices (cGMP) and using ISO 9001:2000 certified processes. Tightly controlled processing from blood collection to filtration to packaging, all to assure quality, uniformity, origin, complete traceability and purity. Meets the highest standards required for quality cell culture. Production, from collection through processing, is vertically integrated.

- Screening process, which is performed by experienced ES cell culturists, includes plating efficiency, colony morphology and toxicity tests
- Filtered through sequential 40nm (0.04µm) pore-size rated filters

ORDERING INFORMATION:

Orders requesting a specific lot of serum must reference the lot number; please place lot specific orders with a Fisher Scientific Customer Service Representative. Volume discounts are available for most serum products. Orders based on price quotations from Thermo Scientific HyClone must reference the quotation number; please place price quotation orders with a Fisher Scientific Customer Service Representative.

Description	Quantity	Cat. No.	Each
ES Screened	100mL	SH3007002E	94.00
	500mL	SH3007003E	360.00
ES Screened, Heat inactivated	500mL	SH3007003EH	367.00
ES Screened, Gamma Irradiated	500mL	SH3007003EI	380.00

Thermo Scientific* HyClone* Fetal Bovine Serum, Non-U.S. Origin

Collected and processed with strict adherence to Current Good Manufacturing Practices (cGMP) and using ISO 9001:2000-certified processes

Meet Thermo Scientific HyClone's high standards required for quality cell culture.

USDA Tested Fetal Bovine Serum

- Collected in USDA approved abattoirs in Central America. Filtered through three sequential 100nm (0.1µm) pore-size rated filters

New Zealand Fetal Bovine Serum

- Carefully collected, processed and filtered in Thermo Scientific Hyclone's New Zealand facility, following exacting standards to ensure highest quality and absolute traceability
- Meets specifications of ≤20 EU/mL of endotoxin and ≤25mg/dL of hemoglobin; filtered through three sequential 100nm (0.1µm) pore-size rated filters

Australian, Characterized Fetal Bovine Serum

- Sourced from only USDA approved abattoirs in Australia; meets specifications of ≤25EU/mL of endotoxin and ≤25mg/dL of hemoglobin
- Filtered through three sequential 100nm (0.1µm) pore-size rated filters

Australian, Standard Fetal Bovine Serum

- Sourced only from USDA approved abattoirs in Australia
- Filtered through triple 100nm pore-size rated filters; supplied with a biochemical assay

ORDERING INFORMATION:

Orders requesting a specific lot of serum must reference the lot number; please place lot specific orders with a Fisher Scientific Customer Service Representative. Volume discounts are available for most serum products. Orders based on price quotations from Thermo Scientific HyClone must reference the quotation number. Please place price quotation orders with a Fisher Scientific Customer Service Representative.

Description	Quantity	Cat. No.	Each	Case of
USDA Tested	100mL	SV3001402	45.00	30/1350.00
	500mL	SV3001403	195.00	12/2340.00
USDA Tested, Heat inactivated	500mL	SV3001403HI	202.00	----
USDA Tested, Gamma Irradiated	500mL	SV3001403IR	215.00	----
New Zealand	100mL	SH3040601	85.00	----
	500mL	SH3040602	375.00	----
	1L	SH3040603	725.00	----
Australian, Standard	100mL	SH3037002	63.00	----
	500mL	SH3037003	270.00	----

NEED ROLLER BOTTLES OR SPINNER FLASKS FOR YOUR MICROCARRIERS?

For roller bottles, look to the Bottles section for Specialty Bottles.
For spinner flasks, look to the Flasks section under Spinner.

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* HyClone* Fetal Bovine Serum Replacements

Can take the place of FBS in many cell culture applications

- Designed to deliver both cost-effectiveness and high performance
- All FBS replacements are triple 0.1µm filtered

FetalClone*

- Optimized for the growth of hybridomas, with IgG levels comparable to those found in FBS

FetalClone II*

- Optimized for the growth of CHO cells and derivatives
- Offers same basic formulation as FetalClone I, plus additional growth factors and supplements
- No adaptation is required and suggested concentrations are the same as those used with FBS

FetalClone III*

- The most widely applicable of the group and is designed to include fibroblasts in its applications

Alpha Calf* Fraction

- Low–cost supplement recommended for hybridoma production as well as general cell growth
- Produced from bovine calf serum using a process which reduces immunoglobulins and protein to levels very similar to those in FBS (typically contains less than 200µg/mL IgG)
- Non-iron Alpha Calf Fraction averages 40µg/dl iron

NOTE:

Catalog numbers ending in "HI" have been heat inactivated at 56°C for 30 minutes; those ending in "IR" have been gamma irradiated at 25-40kGy.

Quantity	Cat. No.	Each
FetalClone		
100mL	**SH3008002**	31.00
500mL	**SH3008003**	120.00
	SH3008003HI	127.00
	SH3008003IR	140.00
FetalClone II		
100mL	**SH3006602**	33.00
500mL	**SH3006603**	125.00
	SH3006603HI	132.00
FetalClone III		
100mL	**SH3010902**	34.00
500mL	**SH3010903**	130.00
	SH3010903HI	137.00
	SH3010903IR	150.00
Alpha Calf		
100mL	**SH3007602**	17.00
500mL	**SH3007603**	67.00

Thermo Scientific* HyClone* Specialty Fetal Bovine Serum

Collected and processed with strict adherence to Current Good Manufacturing Practices (cGMP) and using ISO 9001:2000-certified processes

Low IgG Fetal Bovine Serum

- Typically averages IgG levels of 20µg/mL
- Non-chemically treated, occurs naturally
- Naturally low IgG levels—may be directly substituted for other FBS without seeking regulatory approval that may be required for serum chemically depleted of IgG
- Filtered through three sequential 100nm (0.1µm) pore-size rated filters

Charcoal/Dextran Treated Fetal Bovine Serum

- Processed using a proprietary treatment shown to reduce the levels of many hormones and growth factors
- Assayed for a variety of components before and after treatment, thus assuring the efficacy of the treatment
- Established to be effective in reducing steroid levels for utilization in receptor studies or estrogen-related investigations
- May also be used to minimize lot-to-lot serum variability
- Filtered through three sequential 100nm (0.1µm) pore-size rated filters

Dialyzed Fetal Bovine Serum

- Used in applications requiring serum depleted of small molecules (less than 10,000 mw)
- Filtered through three sequential 100nm (0.1µm) pore-size rated filters
- Dialysis reduces concentrations of low molecular weight components such as nucleotides and amino acids that are necessary for alternative biochemical survival pathways

ORDERING INFORMATION:

Orders requesting a specific lot of serum must reference the lot number; please place lot specific orders with a Fisher Scientific Customer Service Representative. Volume discounts are available for most serum products. Orders based on price quotations from Thermo Scientific HyClone must reference the quotation number; please place price quotation orders with a Fisher Scientific Customer Service Representative.

NOTE:

All prescreened products are serially filtered using 0.04µm filters.

Description	Quantity	Cat. No.	Each	Case of
Dialyzed to remove small (<10,000mw) molecules	50mL	**SH3007901**	62.00	30/1860.00
	100mL	**SH3007902**	107.00	30/3210.00
	500mL	**SH3007903**	411.00	12/4932.00
Dialyzed, Gamma irradiated	500mL	**SH3007903IR**	431.00	----
Dialyzed, Heat Inactivated	500mL	**SH3007903HI**	418.00	----
Dialyzed, Heat Inactivated & Gamma Irradiated	500mL	**SH3007903IH**	438.00	----
Low IgG (typically <20g/mL	100mL	**SH3015102**	93.00	30/2790.00
	500mL	**SH3015103**	359.00	12/4308.00
Low IgG, Gamma irradiated	500mL	**SH3015103IR**	379.00	----
Low IgG, Heat Inactivated	500mL	**SH3015103HI**	366.00	----
Low IgG, Heat Inactivated & Gamma irradiated	500mL	**SH3015103IH**	386.00	----
Charcoal/Dextran Treated	50mL	**SH3006801**	67.00	30/2010.00
	100mL	**SH3006802**	117.00	30/3510.00
	500mL	**SH3006803**	449.00	12/5388.00
Charcoal Dextran Treated, Gamma Irradiated	500mL	**SH3006803IR**	469.00	----
Charcoal Dextran Treated, Heat Inactivated	500mL	**SH3006803HI**	456.00	----
Charcoal Dextran Treated, Heat Inactivated & Gamma Irradiated	500mL	**SH3006803IH**	476.00	----

Thermo Scientific* HyClone* Bovine Calf Serum

Sourced from U.S. veal calves, which results in consistency from lot to lot and uninterrupted supply

- Provide excellent and cost-effective alternatives to FBS
- All products are filtered through three sequential 100nm (0.1µm) pore size filters
- Defined bovine calf serum is available with and without iron supplementation
- Cosmic Calf Serum contains iron supplemented calf serum plus additional growth factors, vitamins, and amino acids
- HI products are Heat inactivated at 56°C for 30 minutes; IR products are Gamma Irradiated at 25-40 kGy

Quantity	Cat. No.	Type	Each
Defined, Iron–Supplemented			
100mL	**SH3007202**		12.00
500mL	**SH3007203**		47.00
500mL	**SH3007203HI**	Heat Inactivated	54.00
500mL	**SH3007203IR**	Gamma Irradiated	67.00
1L	**SH3007204**		74.00
1L	**SH3007204IR**	Gamma Irradiated	94.00
Defined, w/o Iron			
500mL	**SH3007303**		35.00
1L	**SH3007304**		56.00
Calf Serum, Newborn			
100mL	**SH3011802**		13.00
500mL	**SH3011803**		42.00
1L	**SH3011804**		84.00
Cosmic Calf			
100mL	**SH3008702**		15.00
500mL	**SH3008703**		52.00
500mL	**SH3008703HI**	Heat Inactivated	59.00
500mL	**SH3008703IR**	Gamma Irradiated	72.00
1L	**SH3008704**		80.00
1L	**SH3008704IR**	Gamma Irradiated	100.00
New Zealand Defined Iron-Supplemented			
1L	**SH3041403**		78.00
New Zealand Cosmic Calf Serum			
500mL	**SH3041302**		55.00
1L	**SH3041303**		84.00

Thermo Scientific* HyClone* New Zealand Defined Bovine Calf Serum

100nm (0.1µm) filtered

- Carefully collected, processed, and filtered in New Zealand
- Offer maximum safety against bovine diseases
- Highest quality and absolute traceability
- Calf products are sourced from animals that are less than 24 weeks old

Size	Cat. No.	Each
500mL	**SH3040302**	37.00
1L	**SH3040303**	59.00

Thermo Scientific* HyClone* Bovine Growth Serum* (BGS*)

Cost-effective replacement for Fetal Bovine Serum in most applications

BOVINE GROWTH SERUM
HyClone

SH3054103

- Consists of Thermo Scientific HyClone Iron-Supplemented Defined Bovine Calf Serum, supplemented with chemically defined components, including vitamins, amino acids, trace metals, and other small molecules to stimulate cell growth and proliferation
- Filtered through three sequential 100nm pore-size rated filters
- COS-1/COS-7, TT, DMS53, HUVCC, HeLa, BHK, HEK293, Jurkat, Hep G2, MRC5, 721, HCT116/RKO, MCF-7, McCoy, NT2, PC-3, WiDr, BXPC-3, U-87, CaSki, and T24 are among the cell lines that have been successfully cultured in Thermo Scientific HyClone BGS
- Post-filtration treatments include heat inactivation at 56°C for 30 minutes and gamma irradiation at 25-40kGy

Quantity	Cat. No.	Each
U.S. Origin		
100mL	**SH3054102**	28.00
500mL	**SH3054103**	89.00
1L	**SH3054104**	155.00
Heat Inactivated		
100mL	**SH3054102HI**	35.00
500mL	**SH3054103HI**	96.00
Gamma Irradiated		
500mL	**SH3054103IR**	109.00
New Zealand		
100mL	**SH3059101**	29.00
500mL	**SH3059102**	93.00
1L	**SH3059103**	163.00

Mediatech* Fetal Bovine Serum

Used as a supplement to cell culture media to help sustain growth and metabolism

- Sera is aseptically collected and processed in a facility that is compliant with FDA guidelines for Class I Medical Devices
- Each batch of raw serum is screened for endotoxin, residual hemoglobin concentration, pH and microbiological quality before being used in production
- Each lot is 0.1µm triple-filtered, low in endotoxin, and is final tested for the absence of mycoplasma and viruses
- Premium FBS is sourced from U.S. herds
- Heat-inactivated Fetal Bovine Serum (FBS) is heated at 56°C for 30 minutes

COMPLIANCE:

USDA Certified FBS is sourced from USDA-certified facilities (abbatoirs).

Description	Quantity	Cat. No.	Each
Regular	500mL	**MTT35010CV**	365.65
Regular, Heat-Inactivated	500mL	**MTT35011CV**	375.95
Premium	500mL	**MTT35015CV**	366.10
Premium, Heat-Inactivated	500mL	**MTT35016CV**	376.40

Mediatech* Human AB Serum

Used as a supplement to cell culture media to help sustain growth and metabolism

- Raw serum is screened for endotoxin, residual hemoglobin concentration, pH and microbiological quality before being used in Human AB Serum production
- Each lot is 0.1µm triple-filtered, low in endotoxin, and is final tested for the absence of mycoplasma and viruses

COMPLIANCE:

Sera is aseptically collected and processed in a facility that is compliant with FDA guidelines for Class I Medical Devices.

Description	Quantity	Cat. No.	Each
Human AB Serum	100mL	**MT-35-060-CI**	165.73

Lonza BioWhittaker* Cell Culture Serum

Low in endotoxin and hemoglobin; screened for mycoplasma and viruses

- Triple 0.1µm filtered Premium Fetal Bovine Serum (FBS) has full traceability to U.S. origin
- Used to supplement media preparations for cell growth

BW14 Series

Fetal Bovine Serum

Description	Quantity	Cat. No.	Each
FBS, Standard	100mL	**BW14-502E**	72.85
	500mL	**BW14-502F**	266.00
FBS, Premium	100mL	**BW14-501E**	98.82
	500mL	**BW14-501F**	343.21
FBS, Premium Chlamydia	100mL	**BW14-902E**	141.47
FBS, Premium Heat-Inactivated	100mL	**BW14-503E**	109.72
	500mL	**BW14-503F**	351.43
FBS, Premium Irradiated	100mL	**BW14-471E**	103.00
	500mL	**BW14-471F**	349.81
FBS, Premium Hybridoma Screened	100mL	**BW14-901E**	109.93
	500mL	**BW14-901F**	363.28

Normal Human Serum

Description	Quantity	Cat. No.	Each
Human Serum	100mL	**BW14-402E**	98.49
Human AB Serum	100mL	**BW14-490E**	188.71

Normal Bovine Serum

Description	Quantity	Cat. No.	Each
Calf Serum	100mL	**BW14-401E**	41.25
Calf Serum, Newborn	100mL	**BW14-416E**	31.19
	500mL	**BW14-416F**	42.45
Serum Supreme (Bovine serum-derived alternative to FBS)	100mL	**BW14-492E**	20.00
	500mL	**BW14-492F**	42.56

Serum Supreme

Bovine-serum derived alternative to Fetal Bovine Serum

- U.S. Origin
- Screened for viruses by Modified 9/CFR and the absence of mycoplasma

Quantity	Cat. No.	Each
100mL	**BW14-492E**	20.00
500mL	**BW14-492F**	42.56

Biomeda* Fetal Bovine Serum

Triple 0.1µm filtered and performance tested in accordance with 9CFR

Fully traceable to U.S. and USDA sources and are 0.2µm sterile filtered, unless otherwise specified. Pure serum, ideal for use in cell culture.

- Hemoglobin levels are <20mg/dl; endotoxin levels are <0.5ng/mL
- Sterile FBS, Charcoal-stripped has reduced levels of hormones for use in receptor or estrogen studies

STORAGE CONDITIONS:

Store at -20°C.

Description	Quantity	Cat. No.	Each
Premium Grade	100mL	**BMES1054**	131.39
	500mL	**BMES1055**	342.31
Charcoal-stripped	100mL	**BMES1052**	192.53
	500mL	**BMES1053**	731.11
Standard Grade	500mL	**BMES1066**	205.87

LOOKING FOR MORE SERUM?

Fisher Scientific carries Biomeda* sera from a variety of animal sources. For a complete listing...

Visit www.fishersci.com and search for Biomeda Serum

MEDIA ADDITIVES-ANTIBIOTICS

Fisher BioReagents* Antibiotics

Description	Quantity	Cat. No.	Each
Actinomycin D[1]	5mg	**BP606-5**	76.94
	10mg	**BP606-10**	133.59
Amphotericin B[1]	250mg	**BP928-250**	68.28
Ampicillin Sodium Salt	5g	**BP1760-5**	46.45
	25g	**BP1760-25**	61.31
Ampicillin Trihydrate	25g	**BP902-25**	70.18
Chloramphenicol	100g	**BP904-100**	117.17
G418 Sulfate[1]	1g	**BP673-1**	106.60
	5g	**BP673-5**	395.37
Gentamycin Sulfate[1]	1g	**BP918-1**	77.26
Kanamycin Sulfate[1]	5g	**BP906-5**	47.17
Penicillin G Potassium Salt	100g	**BP914-100**	63.90
Streptomycin Sulfate	50g	**BP910-50**	45.20
Tetracycline Hydrochloride	100g	**BP912-100**	80.97

[1] *Not on EPA-TSCA inventory; for Research and Development use only; not for manufacturing or commercial use.*

Thermo Scientific* HyClone* Antibiotics

Used to control/destroy destructive microorganisms, such as bacteria

SV300 Series

Description	Quantity	Cat. No.	Each
10,000 units Penicillin and 10,000 units Streptomycin	100mL	**SV30010**	12.00
Penicillin-Streptomycin 1X Solution	100mL	**SV3001001**	12.00
Penicillin G Potassium Salt, Powder	100mg	**SV3006401**	37.00
Gentamicin Sulfate Powder	1g	**SV3006602**	30.00
G-418 Sulfate Powder	1g	**SV3006801**	113.00
G-418 Sulfate Powder	5g	**SV3006802**	295.00
G-418 Sulfate Solution, 50mg/mL	20mL	**SV3006901**	103.00
G-418 Sulfate Solution, 50mg/mL	100mL	**SV3006902**	470.00
Hygromycin B Solution, 50mg/mL	20mL	**SV3007001**	150.00
Ampicillin, Sodium Salt, Powder, USP grade	100g	**SV3007102**	205.00
Neomycin Sulfate Powder, USP grade	5g	**SV3007301**	15.25
Puromycin Dihydrochloride Powder	100mg	**SV3007501**	210.00
Amphotericin B (Fungizone) 250 µg/mL Solution	50mL	**SV3007801**	14.10
Antibiotic/Antimycotic Solution (Pen/Strep/Fungizone) 10,000 U/mL Penicillin G; 10,000 µg/mL Streptomycin, 25 µg/mL Amphotericin B	100mL	**SV3007901**	23.00
Gentamicin Solution, 50mg/mL	10 × 10mL	**SV3008001**	299.00
Pen/Strep/Glutamine Solution	100mL	**SV3008201**	13.00

DON'T SEE THE RIGHT PRODUCT?

Fisher Scientific carries an extensive line of media from Thermo Scientific* HyClone*. To view these products, refer to the Media-Classical subsection or visit our Web site.

Visit www.fishersci.com and search for Media-Classical

LOOKING FOR REAGENTS AND SUPPLEMENTS?

Fisher BioReagents* offers many other supplements, antibiotics, and buffers for cell culture. For a complete listing, refer to the Chemicals section.

Mediatech* cellgro* Antibiotics and Antimycotics

Packaged in plastic bottles

Description	Size	Cat. No.	Each
Amphotericin B			
250µg/mL	6 × 50mL	**MT-30-003-CF**	90.59
Ampicillin, Sodium Salt			
Powder[1]	10g	**MT-61-238-RH**	60.15
Powder[1]	100g	**MT-61-238-RM**	218.00
Antibiotic–Antimycotic Solution			
10,000 IU Penicillin, 10,000µg/mL Streptomycin and 25µg/mL Amphotericin B[2]	6 × 100mL	**MT-30-004-CI**	137.76
Chloramphenicol			
Powder[3]	25g	**MT-61-239-RI**	62.32
Ciprofloxacin HCl			
Powder[3]	1g	**MT-61-277-RF**	106.04
Powder[3]	5g	**MT-61-277-RG**	374.87
G418 Sulfate			
Powder, >700mcg/mL[3]	1g	**MT-61-234-RF**	84.41
Powder[3]	5g	**MT-61-234-RG**	314.82
Powder[3]	50g	**MT-61-234-RK**	2493.37
50mg/mL Solution (active G418)[1]	20mL	**MT-30-234-CR**	104.55
	100mL	**MT-30-234-CI**	383.11
Gentamicin Sulfate			
50mg/mL Solution	10 × 10mL	**MT-30-005-CR**	316.21
Powder[1]	100mg	**MT-61-098-RA**	15.40
Powder[1]	1g	**MT-61-098-RF**	33.42
Kanamcycin Monosulfate Powder			
Powder[3]	5g	**MT-61-176-RG**	69.78
Kanamycin Sulfate			
5,000 µg/mL Solution[2]	6 × 500mL	**MT-30-006-CF**	95.22
5000µg/mL Solution[1]	6 × 50mL	**MT-30-006-CI**	94.71
Neomycin Sulfate			
Powder[3]	5g	**MT-61-241-RG**	16.12
Powder[3]	100g	**MT-61-241-RM**	86.47
Penicillin G, Sodium Salt			
Powder[3]	100MU	**MT-61-053-M**	52.68
Penicillin–Streptomycin Solution			
5000 IU Penicillin, 5000µg/mL Streptomycin[2]	6 × 100mL	**MT-30-001-CI**	67.31
10,000 IU Penicillin, 10,000µg/mL Streptomycin[2]	6 × 100mL	**MT-30-002-CI**	80.13
Penicillin-Streptomycin-Glutamine			
29.2mg/mL L-Glutamine[2]	6 × 100mL	**MT-30-009-CI**	125.15
Puromycin			
Powder[2]	100mg	**MT-61-385-RA**	144.15
Streptomycin Sulfate			
Powder[1]	100g	**MT-61-088-RM**	49.39
Tetracyline			
Powder[1]	5g	**MT-61-242-RG**	19.52
Hygromycin B			
50mg/mL Solution[1]	20mL	**MT-30-240-CR**	136.94

[1] *Shipped at ambient temperature; store at 2° to 8°C (36° to 46°F).*

[2] *Shipped frozen; store at -5° to -20°C (+23° to -4°F).*

[3] *Shipped at ambient temperature, store at 15° to 30°C (59° to 86°F).*

LOOKING FOR PURIFIED WATER?

High quality solutions begin with high quality water. For a listing of WFI and Specialty Water, look at the end of the Media additives products in this section.

Lonza BioWhittaker* Antibiotics

- 20mL vials have crimp-top closure
- 4.5, 100 and 500mL bottles have screw-cap closure

Description	Quantity	Cat. No.	Each†
Amphotericin B			
250µg/mL	20mL	**BW17-836R**	20.90
	100mL	**BW17-836E**	61.20
Gentamicin Sulfate			
Screw Cap Vial 10mg/mL	1 × 10mL	**BW17-519Z**	9.89
	10 × 10mL	**BW17-519L**	96.90
Screw Cap Vial 50mg/mL	1 × 10mL	**BW17-518Z**	37.77
	10 × 10mL	**BW17-518L**	311.49
Crimp Top Vial 50mg/mL	1 × 10mL	**BW17-528Z**	38.37
G418 Sulfate			
5g bottle	5g	**BW15-394N**	300.00
Penicillin-Streptomycin Mixtures			
5000 units Penicillin and 5000µg Streptomycin per mL	100mL	**BW17-603E**	15.63
10,000 units Penicillin and 10,000µg Streptomycin per mL	100mL	**BW17-602E**	16.35
	500mL	**BW17-602F**	83.73
20,000 units Penicillin and 20,000µg Streptomycin per mL	500mL	**BW09-757F**	40.80
25,000 units Penicillin and 25,000µg Streptomycin per mL	25 × 4.5mL	**BW17-719R**	183.60
Penicillin-Streptomycin-Fungizone Mixture			
10,000 units Penicillin, 10,000µg Streptomycin and 25µg Fungizone per mL	20mL	**BW17-745H**	27.07
	100mL	**BW17-745E**	28.51
Penicillin-Streptomycin-L-Glutamine Mixture			
25,000 units Penicillin, 25,000µg Streptomycin and 29.2mg L-Glutamine per mL	25 × 4.5mL	**BW17-718R**	156.10

† *Store as detailed on label.*

MEDIA ADDITIVES-BALANCED SALT SOLUTIONS

Thermo Scientific* HyClone* Balanced Salt Solutions

Available in powder† and liquid forms

- Manufactured under cGMP and using ISO 9001:2000-certified processes
- All formulations incorporate a rigorous specification and approval process

Description	Quantity	Cat. No.	Price
Earle's Balanced Salts (1X)			
w/Calcium, Magnesium and Phenol Red (Liquid)	100mL	SH3002901	4.75
	500mL	SH3002902	8.24
	1L	SH3002903	14.42
Earle's Balanced Salts (1X), Powder			
w/Calcium, Magnesium, and Phenol Red	10L	SH3001403	6.76
	2 × 5L	SH3001402	7.80
Hanks' Balanced Salts (1X)†			
w/Calcium, Magnesium and Phenol Red	100mL	SH3003001	4.75
	500mL	SH3003002	8.24
	1L	SH3003003	14.42
w/o Calcium or Magnesium; w/Phenol Red	100mL	SH3003101	4.89
	500mL	SH3003102	8.24
	6 x 500mL HyQPAK	SH30031FS	47.90
	1L	SH3003103	14.42
w/Calcium and Magnesium; w/o Phenol Red	500mL	SH3026801	8.24
	1L	SH3026802	14.42
	6 x 1L HyQPAK	SH30268LS	82.19
w/o Calcium, Magnesium, or Phenol Red	500mL	SH3058801	8.24
	1L	SH3058802	14.42
Hanks' Balanced Salts (10X) Liqiud†			
w/Calcium and Magnesium; w/o Phenol Red	500mL	SH3058202	10.73
	1L	SH3058203	26.78
Hanks' Balanced Salts, Powder			
w/Calcium, Magnesium and Phenol Red	2 × 5L	SH3001502	7.80
	10L	SH3001503	6.76
	50L	SH3001504	29.12
w/o Calcium or Magnesium; w/Phenol Red	2 × 5L	SH3001602	8.84
	10L	SH3001603	7.80

† *Powder rehydrates to quantity.*

Mediatech* cellgro* Balanced Salt Solutions

Salt solutions are shipped at ambient temperature unless otherwise indicated.

STORAGE CONDITIONS:
Shipped frozen; store at -5° to -20°C (+23° to -4°F).

NOTE:
pH of 10X solutions must be adjusted following dilution to 1X concentration.

Description	Quantity	Cat. No.	Price
Hank's Balanced Salt Solution 10X			
Without Bicarbonate, Calcium, and Magnesium	6 × 500mL	**MT-20-021-CV**	152.80
Hank's Balanced Salt Solution 1X			
Complete Solution	6 × 500mL	**MT-21-020-CV**	59.84
	6 × 1L	**MT-21-020-CM**	106.35
Without Calcium and Magnesium	6 × 500mL	**MT-21-021-CV**	59.84
	6 × 1L	**MT-21-021-CM**	190.19
Without Calcium, Magnesium, and Phenol Red	6 × 500mL	**MT-21-022-CV**	76.48
	6 × 1L	**MT-21-022-CM**	99.76
Without Phenol Red	6 × 500mL	**MT-21-023-CV**	76.48
	6 × 1L	**MT-21-023-CM**	136.78
Powder; without Calcium, Magnesium, Phenol Red, and Bicarbonate	1 × 10L	**MT-55-022-PB**	55.57
	1 × 50L	**MT-55-022-PC**	39.09
Powder; without Calcium, Magnesium, and Bicarbonate	1 × 10L	**MT-55-021-PB**	10.25

Lonza BioWhittaker* Hank's Balanced Salt Solutions (1X)

- Contain phenol red and $NaHCO_3$ unless otherwise indicated
- 10X concentrates contain no $NaHCO_3$; 100mL of 10X stock makes 1L of BSS

ORDERING INFORMATION:
4L solution is packaged in a polybag.

Description	Quantity	Cat. No.	Each[†]
w/Phenol Red	500mL	**BW10-508F**	19.97
	1L	**BW10-508Q**	30.04
w/o Phenol Red	500mL	**BW10-527F**	24.06
w/o Calcium or Magnesium, w/ Phenol Red	500mL	**BW10-543F**	20.99
	1L	**BW10-543Q**	29.26
w/o Calcium, Magnesium or Phenol Red	500mL	**BW10-547F**	13.54
	1L	**BW04-315Q**	28.31
	4L	**BW08-003A**	145.54

[†] *Store as detailed on label.*

MEDIA ADDITIVES-BUFFERS AND BUFFERED SALINES

Fisher BioReagents* Buffers and Buffered Salines

Available in liquid or powdered form

Description	Packaging	Quantity	Cat. No.	Each	Case of
PBS, 10X Solution					
pH at 25°C of 1X Solution: 7.3 to 7.5; DNase, RNase, Protease: Not Detected	Poly Bottle	500mL	**BP399-500**	23.51	6/137.76
	Poly Bottle	1L	**BP399-1**	44.43	6/255.83
	PolyPac*	4L	**BP399-4**	106.39	----
	PolyPac	20L	**BP399-20**	333.19	----
PBS, 10X Powder (rehydrates to quantity)					
pH at 25°C of 1.0% Soln. in H_2O: 7.3 to 7.5	Foil Pack	2 × 1L	**BP665-1**	35.85	----
PBS, 1X Solution					
	PolyPac	4L	**BP2438-4**	83.98	----
	PolyPac	20L	**BP2438-20**	225.06	----
PBS, 1X Powder (rehydrates to quantity)					
pH at 25°C of 1X Soln. in H_2O: 7.3 to 7.5; DNase, RNase, Protease: Not Detected	Poly Bottle	10L	**BP661-10**	34.73	6/191.49
	Poly Bottle	50L	**BP661-50**	103.47	6/543.67

Thermo Scientific* HyClone* Cell Culture Buffers and Buffered Salines

Fully QC-tested solutions

- Manufactured According to GMP guidelines and with ISO 9001:2000-certified processes
- Full traceability and documented origin of all formula ingredients
- Validated and consistent production processes
- Most products are available in both liquid and powdered forms
- Some products available in convenient HyQPAK* six-packs

Description	Quantity	Cat. No.	Each
Dulbecco's Phosphate Buffered Saline (DPBS), 1X			
w/o Calcium, Magnesium, or Phenol Red	100mL	**SH3002801**	4.89
	500mL	**SH3002802**	8.24
	6 x 500mL HyQPAK	**SH30028FS**	47.90
	1L	**SH3002803**	14.42
	6 x 1L HyQPAK	**SH30028LS**	82.92
w/Calcium and Magnesium, w/o Phenol Red	500mL	**SH3026401**	8.24
	6 x 500mL HyQPAK	**SH30264FS**	47.90
	1L	**SH3026402**	14.42
w/o Calcium, Magnesium or Phenol Red	1L	**SH3002808**	133.90
	5L	**SH3002809**	86.52
Dulbecco's Phosphate Buffered Saline (DPBS), 10X			
w/Calcium and Magnesium	100mL	**SH3059701**	8.24
w/o Calcium, Magnesium, or Phenol Red	100mL	**SH3037801**	11.40
	500mL	**SH3037802**	16.48
	1L	**SH3037803**	20.60
Dulbecco's Phosphate Buffered Saline (DPBS), Powder			
w/o Calcium, Magnesium, or Phenol Red	2 × 5L	**SH3001302**	8.32
	10L	**SH3001303**	8.32
	50L	**SH3001304**	30.16
HEPES Buffer, Solution			
1M, Free Acid	100mL	**SH3023701**	28.84
50mM, w/EDTA in 0.15M NaCl	100mL	**SH3029101**	18.54
HEPES Buffer, Powder			
	50g	**SH3033702**	53.04
	100g	**SH3033703**	51.00
	1kg	**SH3033705**	262.08
Phosphate Buffered Saline (PBS), 1X			
w/Calcium, Magnesium, or Phenol Red	500mL	**SH3025601**	8.24
	6 x 500mL HyQPAK	**SH30256FS**	47.90
	1L	**SH3025602**	14.42
	6 x 1L HyQPAK	**SH30256LS**	82.19
Phosphate Buffered Saline (PBS), 10X			
w/Calcium, Magnesium, or Phenol Red	500mL	**SH3025801**	16.48
	1L	**SH3025802**	28.84
Sodium Bicarbonate Solution (100mM)			
w/ 75g/L $NaHCO_3$	100mL	**SH3003301**	7.42
Sodium Bicarbonate, Powder			
	105g	**SH3017302**	29.12
	120g	**SH3017304**	33.28
	220g	**SH3017308**	60.32

Mediatech* cellgro* Cell Culture Buffers and Buffered Salines

Description	Quantity	Cat. No.	Pack of 6†
Dulbecco's Phosphate-Buffered Salt Solution 10X			
Complete Solution	500mL	**MT-20-030-CV**	116.34
Without Calcium and Magnesium	500mL	**MT-20-031-CV**	129.68
Dulbecco's Phosphate-Buffered Salt Solution 1X			
Complete Solution	500mL	**MT-21-030-CV**	59.84
	1L	**MT-21-030-CM**	99.76
w/o Calcium and Magnesium	500mL	**MT-21-031-CV**	59.84
	1L	**MT-21-031-CM**	109.70
	20L	**MT-21-031-LB**	277.02
	10L	**MT-21-031-LX**	138.54
Powder; without Calcium and Magnesium	10L	**MT-55-031-PB**	9.12
	50L	**MT-55-031-PC**	36.57
Phosphate Buffered Saline (1X)			
Without Calcium and Magnesium	500mL	**MT-21-040-CV**	59.84
	1L	**MT-21-040-CM**	99.76
10X PBS			
w/o Calcium and Magnesium	1L	**MT-46-013-CM**	160.58
Tris-buffered Saline, 10X			
w/o Calcium and Magnesium	1L	**MT-46-012-CM**	192.76

† Store as detailed on label.

Lonza BioWhittaker* Cell Culture Reagents and Supplements Buffers and Buffered Salines

Description	Quantity	Cat. No.	Each†
AKC Lysing Buffer	100mL	**BW10-548E**	15.11
Dextrose-Gelatin-Veronal (DGV)	500mL	**BW10-539B**	25.48
Dulbecco's Phosphate Buffered Saline (1X)			
0.0095M (PO_4) w/o Ca or Mg	500mL	**BW17-512F**	13.99
	1L	**BW17-512Q**	32.79
w/ Ca and Mg	500mL	**BW17-513F**	16.10
	1L	**BW17-513Q**	21.33
0.0095M (PO_4) w/Calcium, Magnesium, 1.0g Glucose per Liter and Sodium Pyruvate (Used in Animal Embryo Transfer Procedures)	1L	**BW04-479Q**	23.00
Dulbecco's Phosphate Buffered Saline (10X)			
0.095M (PO_4) w/o Calcium or Magnesium	500mL	**BW17-515F**	28.67
	1L	**BW17-515Q**	31.96
HEPES Buffer			
1M in Normal Saline	100mL	**BW17-737E**	50.03
	500mL	**BW17-737F**	345.50
Phosphate Buffered Saline (1X)			
0.0067M (PO_4) w/o Calcium or Magnesium	500mL	**BW17-516F**	17.54
	1L	**BW17-516Q**	18.67
0.0067M (PO_4) w/o Calcium or Magnesium, Carboy w/ Dispensing Rigging	15L	**BW04-409R**	140.80
Phosphate Buffered Saline (10X)			
0.067M (PO_4) w/o Calcium or Magnesium	1L	**BW17-517Q**	18.90
Sodium Bicarbonate			
7.5% Aqueous Solution	100mL	**BW17-613E**	7.05
Powder	500g	**BW15-613I**	12.00
UltraSaline A			
HEPES Buffered Saline w/o Phenol Red	500mL	**BW12-747F**	13.80
Veronal Buffer (5X)	100mL	**BW12-624E**	7.52

† Store as detailed on label.

MEDIA ADDITIVES-GROWTH FACTORS

BD* Biosciences Growth Factors and Lymphokines

A broad range of highly purified natural and recombinant lymphokine and growth factor biochemicals designed specifically for use in basic cell biology research

- Products are tested for biological activity in appropriate assays, such as the ability of growth factors to stimulate proliferation or DNA synthesis
- Lymphokines and growth factors are also sterile filtered using a 0.2µm membrane (except where another purification method is specified) and tested for the presence of bacteria, fungi and mycoplasma

Highly purified natural and recombinant lymphokine and growth factor biochemicals

- Tested for biological activity in appropriate assays, such as the ability of growth factor to stimulate proliferation or DNA synthesis
- Sterile filtered using a 0.2µm membrane
- Tested for the presence of bacteria, fungi and mycoplasma

INCLUDES:

Specification sheets with detailed information on quality control testing, product source, storage, stability and recommendations on proper experimental concentrations

STORAGE CONDITIONS:

Refrigerate as detailed on label.

Hepatocyte Growth Factor (HGF)

Fully functional protein with both mitogenic and scatter activities

- Recombinant HGF is isolated from Sf9 insect cells

ORDERING INFORMATION:

Supplied frozen in Tris/NaCl buffer

Description	Quantity	Mfr. No.	Cat. No.	Each
HGF/SF, human recombinant	5µg	354103	**CB-40103**	435.10

Granulocyte-Macrophage Colony Stimulating Factors (GM-CSF)

Produced in E. coli; supplied lyophilized

Description	Quantity	Mfr. No.	Cat. No.	Each
GM-CSF, human recombinant	1µg	354048	**CB-40048**	228.60

Nerve Growth Factors (NGF)

Isolated from mouse submaxillary glands

- 2.5S form consists of two β subunits
- 7S form consists of two α, one β and two γ subunits

ORDERING INFORMATION:

Both supplied in lyophilized form

Description	Quantity	Mfr. No.	Cat. No.	Each
2.5S NGF, mouse natural	10µg	354005	**CB-40005**	120.70
	100µg	356004	**CB-40005A**	171.70
	2 × 500µg	356005	**CB-40005B**	1219.30
7S NGF, mouse natural	100µg	354009	**CB-40009**	176.40

BD* Biosciences Growth Factors and Lymphokines, Contd.

Stem Cell Factor (SCF)

Plays a key role in the regulation of hematopoiesis, acting as a positive and negative regulator

- Also known as *c-kit* and steel factor
- Potentiates the stimulatory effects of other hemoproteins such as interleukins

Description	Quantity	Mfr. No.	Cat. No.	Each
SCF, human recombinant	10µg	354105	**CB-40105**	406.10

Vascular Endothelial Growth Factor (VEGF)

Stimulates proliferation of cultured endothelial cells, induces migration of endothelial cells and monocytes

- In vivo, VEGF increases permeability of vascular endothelium
- Supplied lyophilized

Description	Quantity	Mfr. No.	Cat. No.	Each
VEGF, human recombinant	10µg	354107	**CB-40104**	433.90

Transforming Growth Factors (TGF)

Can stimulate or inhibit proliferation, depending on the context of its action

- Isolated from human platelets and supplied in 36% acetonitrile/0.1% TFA

Quantity	Mfr. No.	Cat. No.	Each
1µg	354039	**CB-40039**	300.60
5 × 2µg	356040	**CB-40039B**	1070.10

Tumor Necrosis Factor (TNF)

Inhibits cell growth in a wide range of tumor cells

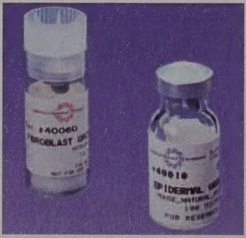
- Lyophilized

Description	Quantity	Mfr. No.	Cat. No.	Each
TNF-α, human recombinant	10µg	354066	**CB-40066**	278.50

Epidermal Growth Factors (EGF)

Enhance the proliferation of a wide variety of cell types

- Mouse EGF isolated from male mouse submaxillary glands and supplied in lyophilized form
- Receptor grade EGF has been further purified by DEAE chromatography to >98% purity
- Human EGF obtained as a recombinant from *E. coli* and supplied in lyophilized form



CB-40060, CB-40010

Description	Quantity	Mfr. No.	Cat. No.	Each
EGF, mouse natural				
Culture Grade	100µg	354001	**CB-40001**	116.10
	10 × 100µg	356001	**CB-40001B**	898.56
Receptor Grade	100µg	354010	**CB-40010**	163.70
EGF, human recombinant				
	100µg	354052	**CB-40052**	131.10
	10 × 100µg	356052	**CB-40052B**	904.52

LOOKING FOR MULTIWELL PLATES?
See Speciality Plates in the Microplates section.

Growth Factors (FGF)

Isolated from pituitary glands

- FGF is supplied lyophilized, bFGF in 3.6mM Tris, PBS pH 7 buffer
- bFGF (human) is lyophilized

Description	Quantity	Mfr. No.	Cat. No.	Each
bFGF, bovine natural	10µg	356037	**CB-40038A**	402.60
bFGF, human recombinant	10µg	354060	**CB-40060**	164.80
	5 × 10µg	356060	**CB-40060A**	466.02
	10 × 10µg	356061	**CB-40060B**	841.24

Interleukins (IL)

Elicit a range of responses from many cell types

- Choose from natural and recombinant
- Supplied frozen in buffer or lyophilized

Description	Quantity	Mfr. No.	Cat. No.	Each
IL-1β, human recombinant	2µg	354042	**CB-40042**	314.50
IL-2, human recombinant	10,000 units[1]	354043	**CB-40043**	146.30
	50,000 units	356043	**CB-40043B**	471.10
IL-2, mouse recombinant	10,000 units[1]	354058	**CB-40070A**	136.90
	25,000 units	354068	**CB-40070**	320.20
IL-2, rat natural	4000 units[1]	354078	**CB-40114**	263.40
IL-3, mouse recombinant	10µg	356078	**CB-40058**	342.30

[1] *Biological Response Modifiers Program Jurkat IL-2 reference reagent.*

MEDIA ADDITIVES-GROWTH SUPPLEMENTS

Fisher BioReagents* Cell Culture Supplements

Additives

Reagent	Quantity	Cat. No.	Each
L-Ascorbic Acid	500g	**BP351-500**	61.81
Calcium Ionophore A23187	1mg	**BP595-1**	40.14
Casamino Acids	500g	**BP1424-500**	92.38
Citric Acid Anhydrous	500g	**BP339-500**	27.93
Cyanocobalamin	1g	**BP862-1**	65.61
Dextrose Anhydrous (Molecular Biology)	1kg	**BP350-1**	40.79
D-Galactose	500g	**BP656-500**	80.27
HEPES Sodium Salt	500g	**BP410-500**	308.06
D-Mannitol	500g	**BP686-500**	29.92

† *Not on EPA-TSCA inventory; for Research and Development use only; not for manufacturing or commercial use.*

Contd. on next page.

Fisher BioReagents* Cell Culture Supplements, Contd.

Amino Acids

Reagent	Quantity	Cat. No.	Each
L-Alanine	100g	**BP369-100**	74.40
L-Arginine	100g	**BP370-100**	35.93
L-Arginine Hydrochloride	100g	**BP372-100**	33.62
L-Cysteine Hydrochloride Monohydrate	100g	**BP376-100**	54.97
L-Cystine	100g	**BP377-100**	50.44
L-Glutamic Acid	100g	**BP378-100**	24.42
L-Glutamine	100g	**BP379-100**	50.51
Glycine	500g	**BP381-500**	28.94
L-Histidine	100g	**BP382-100**	58.16
L-Histidine Hydrochloride Monohydrate	100g	**BP383-100**	51.31
L-Isoleucine	100g	**BP384-100**	121.48
L-Lysine Hydrochloride	100g	**BP386-100**	26.33
L-Methionine	100g	**BP388-100**	51.09
L-Phenylalanine	100g	**BP391-100**	66.03
L-Proline	100g	**BP392-100**	67.98
L-Serine	100g	**BP393-100**	85.69
L-Threonine	100g	**BP394-100**	110.87
L-Tryptophan	100g	**BP395-100**	107.56
L-Tyrosine	100g	**BP396-100**	41.96
L-Valine	100g	**BP397-100**	64.68

Thermo Scientific* HyClone* Nutrient Media Supplements

Growth enhancement components compatible with serum-free or serum-reduced media formulations

Description	Quantity	Cat. No.	Each
Calcium Chloride Solution, 1M Liquid	1000mL	**SH3028901**	17.41
HEPES; AdvancedSTEM, ES-Qualified	100mL	**SH3085101**	32.20
NEAA 100X Solution(Non-essential Amino Acids)	100mL	**SH3023801**	8.24
NEAA; AdvancedSTEM, ES-Cell Qualified	100mL	**SH3085301**	9.60
Sodium Pyruvate Solution (100mM)	100mL	**SH3023901**	7.42
L-Glutamine, 200mM in 0.85% NaCl	100mL	**SH3003401**	11.33
	500mL	**SH3003402**	19.06
L-Glutamine; AdvancedSTEM, ES-Cell Qualified	100mL	**SH3085201**	13.20
MEM Vitamin Solution, 100X	100mL	**SH3059901**	10.71
HyQ SG-200, stable dipeptide of L-alanyl-L-glutamine	100mL	**SH3059001**	24.21

LOOKING FOR MORE REAGENTS?

For more information on larger quantities or additional reagents, contact your Fisher Scientific Customer Service Representative or

Visit www.fishersci.com and search for Fisher BioReagents

Mediatech* cellgro* Cell Culture Supplements

Mediatech incorporates many principles developed by the pharmaceutical industry including the use of WFI quality water, raw material testing, in-process monitoring, and finished product testing.

- HAT = Hypoxanthine/Aminopterin/Thymidine
- HT = Hypoxanthine/Thymidine
- Trace Elements A includes Cupric Sulfate, Ferric Citrate, Sodium Selenite, and Zinc Sulfate
- Trace Elements B includes Ammonium Molybdate, Ammonium Vanadate, Manganese Sulfate, Nickel Sulfate, Sodium Silicate, Stannous Chloride and Hydrochloric Acid
- Trace Elements C includes Aluminum Chloride, Barium Acetate, Cadmium Chloride, Chromic Chloride, Cobalt Dichloride, Germanium Dioxide, Potassium Bromide, Potassium Iodide, Rubidium Chloride, Silver Nitrate, Sodium Fluoride, and Zirconyl Chloride

Description	Quantity	Cat. No.	Each
L-Glutamine			
200mM Solution (29.2mg/mL)[1]	6 × 100mL	**MT-25-005-CI**[2]	92.96
	6 × 500mL	**MT-25-005-CV**[2]	345.67
Powder; MW 146.15[3]	100g	**MT-61-030-RM**	58.66
	500g	**MT-61-030-RO**	139.05
L-Alanyl-L-Glutamine			
200mM Solution	100mL	**MT-25-015-CI**	25.08
HAT Solution 50X[2]	100mL	**MT-25-046-CI**[1]	14.47
HT Solution, 50X[3]	100mL	**MT-25-047-CI**	8.91
HEPES, Free Acid			
1M Solution (238.3mg/L)	6 × 100mL	**MT-25-060-CI**[2, 4]	233.91
Powder; MW 238.31	100g	**MT-61-034-RM**	54.28
	500g	**MT-61-034-RO**	216.82
	1kg	**MT-61-034-RR**	343.66
Insulin-Transferrin Sodium Selenite (ITS) 100X Solution	10mL	**MT-25-800-CR**[4]	32.96
MEM Amino Acids (50X)[1]			
Without L-Glutamine	6 × 100mL	**MT-25-030-CI**[2]	79.77
MEM Nonessential Amino Acid Solution (100X)	6 × 100mL	**MT-25-025-CI**[2]	69.83
MEM Vitamin Mixture (100X)	6 × 100mL	**MT-25-020-CI**[2]	64.07
Sodium Bicarbonate			
7.5% (w/v) Aqueous Solution[3]	6 × 100mL	**MT-25-035-CI**[2]	46.56
Powder; MW 84.01	500g	**MT-61-065-RO**[5]	20.55
	1kg	**MT-61-065-RR**[5]	27.96
Sodium Pyruvate 100mM Solution[3]	6 × 100mL	**MT-25-000-CI**[2]	37.60
Trace Elements, 1000x			
Trace Elements B	100mL	**MT-99-175-CI**[4]	37.62
Trace Elements C	100mL	**MT-99-176-CI**[4]	40.30
Trace Elements A	100mL	**MT-99-182-CI**[4]	37.62
Tris Base Powder			
Powder MW 121.14	100g	**MT-61-233-RM**	16.12
	500g	**MT-61-233-RO**	40.12
	1kg	**MT-61-233-RR**	78.23
	5kg	**MT-61-233-RT**	273.93
Trypan Blue Solution			
0.4% (w/v) in normal saline[6]	100mL	**MT-25-900-CI**	13.34
DMSO			
For cryopreservation	250mL	**MT-25-950-CQC**	63.35
EDTA			
pH 8.0	100mL	**MT-46-034-CI**[6]	21.42

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[1] *Shipped frozen; store at -5° to -20°C (+23° to -4°F).*

[2] *In plastic bottle.*

[3] *Shipped at ambient temperature; store at 2° to 8°C (36° to 46°F).*

[4] *Tested for Porcine Parvovirus.*

[5] *Shipped and stored at ambient temperature.*

[6] *Shipped at ambient temperature; store at 15° to 30°C (59° to 86°F).*

Lonza BioWhittaker* Cell Culture Supplements

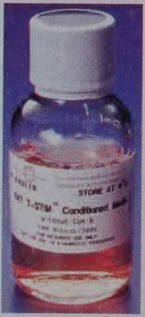
Description	Quantity	Cat. No.	Each
MEM Eagle Nonessential Amino Acid Sol. (100X)	100mL	**BW13-114E**	13.35
Sodium Pyruvate Solution (100mM)	100mL	**BW13-115E**	7.72
MEM Eagle Vitamin Mixture (100X)	50mL	**BW13-607C**	11.28
L-Glutamine (Powder)	25g	**BW15-605G**	50.3
	50mL	**BW17-605C**	11.26
L-Glutamine (200mM)	100mL	**BW17-605E**	19.85
	500mL	**BW17-605F**	52.26
L-Glutamine, 200mM, for hybridoma production	50mL	**BW17-905C**	15.89
ITS (500X)	5mL	**BW17-838Z**	89.14
ITES (500X)	5mL	**BW17-839Z**	89.14
Trypan Blue 0.4%	100mL	**BW17-942E**	12.27

† Store as detailed on label.

BD* Biosciences Rat T-STIM Culture Supplement

Promotes polyclonal activation and IL-2 proliferation of most antigenically sensitized rat or mouse lymphoid T-cells

- Conditioned medium (RPMI 1640) from ConA-stimulated rat splenocyte cultures containing 10% fetal bovine serum and 10mM HEPES
- Medium with ConA supports high-titer HIV production by leukocytes
- Medium without ConA (from washed rat splenocyte cultures) designed for applications that support proliferation of lectin-activated T-cells and single-cell cloning of antigen-specific T-cells from polyclonally activated primary cultures
- Both undergo an appropriate bioassay, are filtered through a 0.2µm membrane and are tested for the absence of bacteria, fungi and *Mycoplasma*—guaranteeing a high-quality product



CB-40115

ORDERING INFORMATION:

Supplied in 100mL bottles; refrigerate as detailed on label.

Description	Max. ConA Content	Mfr. No.	Cat. No.	Each
With ConA	10µg/mL	354115	**CB-40115**	382.36
Without ConA	≤0.5µg/mL	354116	**CB-40116**	625.52

BD* Biosciences Collagen

Used as either a thin layer on tissue-culture surfaces to enhance cell attachment and proliferation, or as a gel to promote expression of cell-specific morphology and function

Description	Quantity	Mfr. No.	Cat. No.	Each
Collagen I, Human Recombinant	0.25mg	354254	**CB-40254**	199.75
Collagen I, Human	0.25mg	354231	**CB-40231**	225.16
Collagen IV, Mouse	1mg	354233	**CB-40233**	104.87
Collagen I, Rat Tail	100mg	356233	**CB-40233B**	151.00
Collagen I, Rat Tail	10 × 100mg	354236	**CB-40236**	1177.64
Collagen II, Bovine	0.25mg	354257	**CB-40257**	217.11
Collagen III, Human	0.25mg	356236	**CB-40236B**	289.02
Collagen IV, Human	0.25mg	354243	**CB-40243**	372.24
Collagen IV, Mouse	1mg	354244	**CB-40244**	104.87
Collagen IV, Mouse	10 × 100mg	354245	**CB-40245**	911.55

BD* Biosciences Laminin

Promotes cell adhesion, migration, growth, and differentiation, including neurite outgrowth

- Source: Engelbreth-Holm-Swarm mouse tumor
- Purity 90% by SDS-PAGE (contains enactin)

Description	Quantity	Mfr. No.	Cat. No.	Each
Laminin	1mg	354232	**CB-40232**	106.00
Ultrapure Laminin	1mg	354239	**CB-40239**	152.21

BD* Biosciences Cell Growth Supplements

Ideal for endothelial cell culture

Quantity	Mfr. No.	Cat. No.	Each
15mg	354006	**CB-40006**	74.70
100mg	356006	**CB-40006B**	237.00

BD BioCoat* ITS* Universal Supplement

Stimulates proliferation of a variety of cells under serum-reduced conditions

- Universal culture supplement containing insulin, human transferrin, and selenous acid
- Containing insulin, human transferrin, and selenous acid
- Tested for ability to promote growth of HeLa cells in serum-free media
- Filtered (0.2µm); tested and found negative for the presence of bacteria, fungi, and mycoplasmas

Description	Quantity	Reconstituted Quantity	Mfr. No.	Cat. No.	Each
ITS Premix	5mL	5L	354351	**CB-40351**	92.89
	20mL	20L	354350	**CB-40350**	267.36
ITS+ Premix	20mL	2L	354352	**CB-40352**	70.77

BD* Fibronectin

Promotes cellular attachment, spreading, and proliferation on tissue-culture surfaces

- Can also be used as an additive to serum-free culture media
- Purity 90% by SDS-PAGE
- Filtered (0.2µm membrane) and tested; found negative for the presence of bacteria, fungi, and mycoplasma

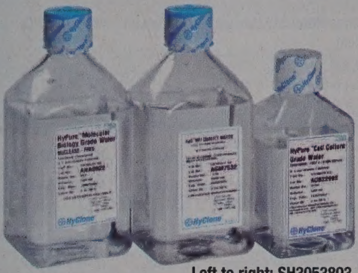
Quantity	Mfr. No.	Cat. No.	Each
1mg	354008	**CB-40008**	76.25
5mg	356008	**CB-40008A**	274.00
5 × 5mg	356009	**CB-40008B**	1028.57

*Trademark. See Trademark Reference.

MEDIA ADDITIVES-SPECIALTY WATER

Thermo Scientific* HyClone* HyPure* Specialty Water

Processed and tested for use in critical applications



Left to right: SH3053803, SH3022110, SH3052902

Cell Culture Grade Water

- Endotoxin-free; contains no detectable gram-negative bacteria
- Recommended for media and buffer preparation, LAL reagent testing
- Processed using continuous deionization, reverse osmosis, distillation, and 0.1µm filtration
- Meets <0.005 EU/mL endotoxin by turbidimetric assay

Molecular Biology Grade Water

- Nuclease-free water is certified to have no detectable contaminating activity in DNase, RNase, and Protease assays
- Suitable for DNA/RNA purification, DNA sequencing and libraries, Gene mapping, Recombinant DNA and cloning, Northern Blot, Southern Blot
- Maximum allowable limit of endotoxin is 0.05EU/mL
- Purification process includes continuous deionization, reverse osmosis, ultraviolet light treatment, distillation, and 0.1µm filtration

ORDERING INFORMATION:

Some products available in convenient HyQPAK* six-packs

COMPLIANCE:

Manufactured according to cGMP guidelines and in ISO 9001:2000-certified processes.

Description	Quantity	Cat. No.	Each
Cell Culture Grade			
<0.05 EU/mL)	100mL	**SH3052901**	4.38
	500mL	**SH3052902**	6.95
	6 x 500mL HyQPAK	**SH30529FS**	40.48
	1L	**SH3052903**	11.33
	6 x 1L HyQPAK	**SH30529LS**	65.92
Molecular Biology Grade			
<0.05 EU/mL); Deionized, distilled, 0.1µm sterile filtered	100mL	**SH3053801**	6.70
	500mL	**SH3053802**	10.30
	6 x 500mL HyQPAK	**SH30538FS**	59.95
	1L	**SH3053803**	16.48
	6 x 1L HyQPAK	**SH30538LS**	95.89

Thermo Scientific* HyClone* HyPure* WFI Quality Water

Manufactured according to cGMP guidelines and using ISO 9001:2000 certified processes

- Meet current USP monograph criteria for Water for Injection

ORDERING INFORMATION:

Volumes over 1L are packaged in Hanging Pillow BioProcess Container* Systems. SH30221LS is supplied in convenient HyQPAK* six-packs.

Quantity	Cat. No.	Each
100mL	**SH3022118**	5.15
500mL	**SH3022117**	7.73
1L	**SH3022110**	13.39
6 x 1L HyQPAK	**SH30221LS**	77.04
10L	**SH3022124**	151.41
20L	**SH3022125**	195.70
100L	**SH3022127**	849.75
200L	**SH3022128**	1272.05

Mediatech* cellgro* Water for Cell Culture

- Supplied in a plastic bottle except MT-25-055-LB and -LH, which come in flexible media bags.

Description	Quantity	Cat. No.	Pack of
Distilled, Deionized Water			
Meets WFI Quality Standards	6 × 500mL	MT-25-055-CV	56.55
	6 × 1L	MT-25-055-CM	83.33
	20L	MT-25-055-LB	204.97
	200L	MT-25-055-LH	1203.30
Molecular Biology Grade Water			
DNase, RNase, and Protease Tested; for research use only	6 × 1L	MT-46-000-CM	112.22

CELL DISSOCIATION REAGENTS

Fisher BioReagents* Lymphocyte Separation Medium (LSM)

One-step centrifugation permits separation of mononuclear lymphocytes from erythrocytes, polynuclear lymphocytes and most platelets

- Formulated for isolation of mononuclear cells from defribrinated or heparinized whole human blood
- Sterile-filtered solution of a sucrose polymer and diatrizoate salts at a specific gravity of 1.077-1.080g/mL at 20°C
- ChemAlert Storage Code: Gray

Quantity	Packaging	Cat. No.	Price
5 × 100mL	Poly Bottles	**BP2663-500**	150.67

Thermo Scientific* HyClone* Dissociation Reagents

HyQ® TRYPSIN
0.05% (1X)
HyQ® TRYPSIN
0.25% (1X)
HyQTase™

From left to right: SH3023601, SH3004201, SV3003001

Used to disaggregate adherent cells from the surface or substrate to which they are attached

Trypsin

- Derived from porcine pancreas
- Gamma irradiated prior to hydration and filling
- Formulated without calcium and magnesium

HyQTase*

- Ultra-filtered, non-mammalian alternative to trypsin that enables gentle, rapid cell detachment of a broad array of adherent cells and tissues for primary cell culture
- Naturally derived complex of proteolytic and collagenolytic enzymes
- Non-recombinant; gamma irradiated
- Ideal for use in both serum-free and serum-containing cell culture systems with a broad array of cell lines

STORAGE CONDITIONS:
Trypsin: store frozen (-5 to -20°C). HyQTase: store frozen; stable for up to 60 days at 4°C

Description	Quantity	Cat. No.	Each
Trypsin 1:250 (1X) in HBSS w/ 0.2g/L EDTA			
0.25%	100mL	SH3004201	9.79
	500mL	SH3004202	21.63
0.05%	100mL	SH3023601	9.27
	500mL	SH3023602	20.60
HyQTase			
—	100mL	SV3003001	22.66

Mediatech* cellgro* Cellstripper*

Non-enzymatic cell dissociation solution gently dislodges adherent cells in culture

Designed to be an alternative to trypsin when used in conjunction with serum-free or serum-containing media.

- Formulated with a proprietary mixture of chelators
- Reduces the risk of cell damage associated with protein digestive enzymes

Quantity	Cat. No.	Pack of 6
100mL	MT-25-056CI	68.19

Mediatech* Enzymatic Dissociation Reagents

All products are tested for porcine parvovirus

Description	Quantity	Cat. No.	Pack of 6
Trypsin, 1X			
0.25% Trypsin in HBSS w/o Calcium and Magnesium	100mL	MT-25-050-CI	44.86
Trypsin EDTA, 1X			
0.05% Trypsin/0.53mM EDTA in HBSS w/o Calcium and Magnesium	6 × 100mL	MT-25-051-CI	45.17
0.05% Trypsin/0.53mM EDTA in HBSS w/o Calcium, Magnesium, or Sodium Bicarbonate	100mL	MT-25-052-CI	44.91
	500mL	MT-25-052-CV	143.69
0.25% Trypsin, 0.1% EDTA in HBSS w/o Calcium, Magnesium, and Sodium Bicarbonate	100mL	MT-25-053-CI	44.86
Trypsin, 10X			
2.5% Trypsin in HBSS w/o Calcium, Magnesium, and Phenol Red	100mL	MT-25-054-CI	119.69

Mediatech* cellgro* Cell Separation Products

- Packaged in PET bottles.

STORAGE CONDITIONS:
Store at 15° to 30°C (59° to 86°F)

Description	Quantity	Cat. No.	Each
Lymphocyte Separation Medium			
Density = 1.077g/mL (±0.002g/mL)	100mL	MT-25-072-CI	18.85
	500mL	MT-25-072-CV	69.42
Polysucrose Powder			
Generic form of Ficoll* 400	100g	MT-61-196-RM	232.93
	500g	MT-61-196-RO	650.81

Lonza BioWhittaker* Cell Separation Reagents

Description	Quantity	Cat. No.	Each†
Lymphocyte Separation Medium			
Density 1.077g/L	100mL	BW17-829E	33.13
Trypsin 1:250 (10X)			
2.5% in Modified Hank's BSS w/o Calcium or Magnesium, Porcine Parvovirus Tested Trypsin, Mycoplasma Screened, Manufactured w/ Irradiated Trypsin	100mL	BW17-160E	21.21
	500mL	BW17-160F	42.05
Trypsin-Versene (EDTA) Mixture			
0.5g/L Trypsin 1:250, 0.2g/L Versene (EDTA), Porcine Parvovirus Tested Trypsin, Mycoplasma Screened, Manufactured w/ Irradiated Trypsin	100mL	BW17-161E	7.15
	500mL	BW17-161F	24.14

† *Store as detailed on label.*

CELL LIFTERS AND SCRAPERS

*Fisherbrand** Cell Lifter

08-773-1

Disposable lifters quickly remove cell layers undamaged

- Maintain even contact with growth area in culture dishes
- Made entirely of polyethylene
- Presterilized and individually wrapped

Handle Length	Blade Length	Cat. No.	Case of 100
18cm	2cm	**08-773-1**	146.03

*Fisherbrand** Cell Scrapers

08-773-3

Gently harvest cells from tissue culture flasks

- Polystyrene handles are compatible with a variety of culture flasks
- Polyethylene blades swivel for even contact with growth surface
- Presterilized and individually wrapped

Handle Length	Blade Length	Cat. No.	Case of 100
25cm	1.8cm	**08-773-2**	211.69
39cm	3.0cm	**08-773-3**	230.26

Corning* Cell Lifter

07-200-364

Wide beveled edge especially designed for cell culture dishes

- Sterile; certified nonpyrogenic
- Individually wrapped

Handle Length	Blade Length	Mfr. No.	Cat. No.	Case of 100
18cm	1.9cm	3008	**07-200-364**	131.71

Corning* Cell Scrapers

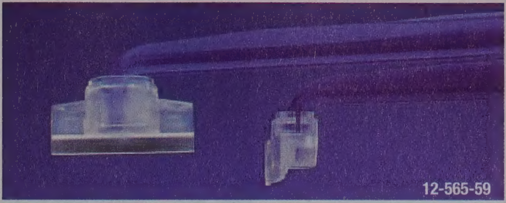
07-200-366

Angled swivel blade minimizes cell damage and ensures even contact with growth area

- Long handle permits easy access to cell culture flasks (Cat. No. 07-200-365) and roller bottles (07-200-366)
- Sterile; certified nonpyrogenic
- Individually wrapped

Handle Length	Blade Length	Mfr. No.	Cat. No.	Case of 100
25cm	1.8cm	3010	**07-200-365**	196.73
39cm	3.0cm	3011	**07-200-366**	222.31

Nunc* Cell Scrapers



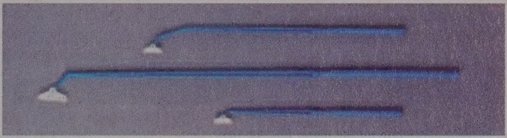
12-565-59

Pivoting polyethylene blade can be positioned either parallel or perpendicular to handle

- Feature flexible polystyrene handles
- Presterilized and individually wrapped

Handle Length	Blade Length	Mfr. No.	Cat. No.	Pack of 50	Case of 5 Pack
23cm	1.7cm	179693	**12-565-58**	116.79	499.12
32cm	1.7cm	179707	**12-565-59**	130.81	559.00

BD Falcon* Cell Scrapers



From top: 08-771-1B, 08-771-1C, 08-771-1A

Improved handle and blade design provides maximum accessibility to growth surfaces

- Suitable for use with a variety of culture vessels
- Highly compliant thermoplastic elastomer (TPE) blade pivots to provide multiple angles to remove cells from entire growth surface
- Cross-ribbed polystyrene handle provides greater rigidity for better control when scraping cells
- Flexible joint between blade and handle improves ease of access into neck of flask or roller bottle
- 02-683-197 features a larger blade for increased efficiency in culture dishes and 75cm² flasks

Available in four sizes

- 08-771-1A for use with 25cm² flasks
- 08-771-1B for 75cm² flasks
- 08-771-1C for use with large flasks
- 02-683-197 features a larger blade for increased efficiency in culture dishes and 75cm² flasks

ORDERING INFORMATION:

Presterilized and individually wrapped in peel-open, medical-style packaging

Handle Length	Blade Length	Mfr. No.	Cat. No.	Case of 100
18cm	1.8cm	353085	**08-771-1A**	127.60
25cm	1.8cm	353086	**08-771-1B**	189.90
25cm	3.0cm	353089	**02-683-197**	180.90
40cm	3.0cm	353087	**08-771-1C**	214.90

CELL AND TISSUE GRINDERS

*Fisherbrand** Disposable Pestle System

Low-cost alternative to mechanical or metal and glass tissue grinders

Lightweight, cordless mixer can be used with disposable pestles and microtubes.

03-392-106

- High-speed vortexing action completely homogenizes cells and tissue within seconds; resuspends protein and DNA pellets
- Battery-powered unit greatly reduces hand fatigue
- Grooved handle makes it easy to turn, even when wearing gloves
- Rugged polybutylene terephthalate (PBTP) plastic pestle yields superior homogenization
- Disposable pestles and tubes can be used by themselves or in conjunction with the grinder
- Pestles and tubes are individually wrapped to prevent cross-contamination of samples
- DNase-, RNase-, and pyrogen-free

INCLUDES:

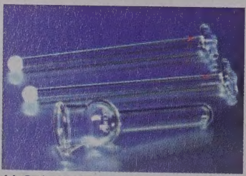
Pestle Grinder System (03-392-106) comes with pestle/mixer adapter and two "AA" batteries. System components also available separately.

Description	Cat. No.	Price
Pestle Grinder System	**03-392-106**	Ea./91.12
Replacement Motor Assembly	**03-392-107**	Ea./6.90
Pestle, 0.5mL	**03-392-101**	Cs. of 100/82.36
Pestle, 1.5mL	**03-392-100**	Cs. of 100/82.36
Microtube, 0.5mL	**03-392-103**	Cs. of 100/24.65
Microtube, 1.5mL	**03-392-102**	Cs. of 100/24.65
Pestle and Microtube, 0.5mL	**03-392-105**	Cs. of 100/101.14
Pestle and Microtube, 1.5mL	**03-392-104**	Cs. of 100/101.14

Pyrex* Dounce Tissue Grinders

Two pestles dissociate cells into fine particles with minimal damage to cell nuclei

- Ideal for enzyme studies where heat must be avoided
- Use large clearance pestle for initial reduction of soft tissue
- Use small clearance pestle to complete homogenization



11-850-51 (top) 11-850-50 (bottom)

O.D.× H	Working Capacity	Mfr. No.	Cat. No.	Each
15 × 117mm	7mL	7722-7	**11-850-51**	88.02
20 × 145mm	15mL	7722-15	**11-850-50**	99.19

Pyrex* Glass Pestle Tissue Grinders

Designed to handle both initial grinding and final homogenization

- Lower conical section is intended primarily for initial grinding
- Raise or lower the pestle to adjust the clearance between mortar and pestle
- Use upper cylindrical section for final homogenization

11-850-52

O.D. × H (Tube)	O.D. × H (Pestle)	Working Capacity	Mfr. No.	Cat. No.	Each
19 × 83mm	7 × 155mm	1mL	7724-1	**08-414-21A**	96.22
13 × 125mm	6 × 208mm	3mL	7724-3	**11-850-53**	96.22
25 × 150mm	11 × 225mm	5mL	7724-5	**08-414-21B**	96.22
20 × 175mm	10 × 267mm	15mL	7724-15	**11-850-52**	100.70
27 × 220mm	10 × 305mm	30mL	7724-30	**11-850-54**	105.49

Pyrex* Potter-Elvehjem Tissue Grinders

Ideal for homogenization of sample and buffer by hand

- Mortar is unground glass
- Pestle contact surface is PTFE, threaded onto a stainless-steel shaft
- Autoclavable

09-552 Series

Working Capacity	Tube O.D. × L	Mfr. No.	Cat. No.	Each
0.5mL	9 × 50mm	7725T-5X	**09-552-25**	110.99
1mL	9 × 65mm	7725T-1	**09-552-26**	96.54
3mL	16 × 70mm	7725T-3	**09-552-27**	99.69
5mL	16 × 95mm	7725T-5	**09-552-28**	85.91
8mL	16 × 110mm	7725T-8	**09-552-29**	96.54
17mL	21 × 150mm	7725T-17	**09-552-30**	110.19
45mL	27 × 180mm	7725T-45	**09-552-31**	131.07

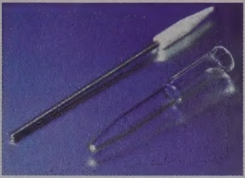
WARNING

Operator should wear protective gloves with sufficient thickness to prevent injury in the event of failure of the glass components.

*Trademark. See Trademark Reference.

Pyrex* Pestle Tissue Grinders with PTFE

Recommended for soft tissues found in the liver and brain

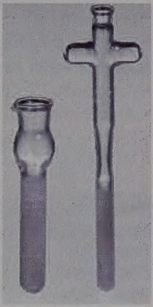

11-850-56

- Handle both initial grinding and final homogenization
- Mortar is not ground; pestle contact surface is PTFE, threaded onto a stainless-steel shaft

O.D. × H	Working Capacity	Mfr. No.	Cat. No.	Each
13 × 110mm	1mL	7724T-1	**11-850-56**	129.88
13 × 130mm	3mL	7724T-3	**11-850-58**	131.07
19 × 150mm	5mL	7724T-5	**11-850-59**	133.81
25 × 175mm	15mL	7724T-15	**11-850-57**	157.44
32 × 225mm	30mL	7724T-50	**11-850-60**	240.88

Pyrex* Tenbroeck Tissue Grinders

Designed for hand operation


08-414-10A

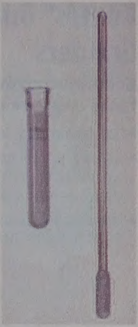
- Can be motor driven at low speed (provided that the attachment contains some form of friction release)
- Mortar tubes and pestles ground interchangeably
- Medium grind
- Clearance between two parts is approximately 0.15mm
- Made in accordance with Fed. Spec. NNN-T-360B
- Four sizes available with pour-out; 40mL size is without pour-out

Working Capacity	Tube O.D. × L	Pestle O.D. × L	Mfr. No.	Cat. No.	Each	Case of
2mL	16 × 100mm	10.5 × 165mm	7727 2	**08-414-10A**	165.30	4/455.89
7mL	18 × 130mm	12.6 × 195mm	7727 7	**08-414-10B**	173.33	4/478.07
15mL	21 × 150mm	15.8 × 235mm	7727 15	**08-414-10C**	195.35	4/538.78
40mL	27 × 210mm	22.1 × 335mm	7727 40	**08-414-10D**	244.44	2/337.11
40mL	26 × 210mm	20 × 335mm	7726 L	**08-414-5B**[1]	177.72	----

[1] *Without pour-out.*

Pyrex* Glass Pestle Tissue Grinders

Consist of glass tube and pestle with clearance of 0.15mm

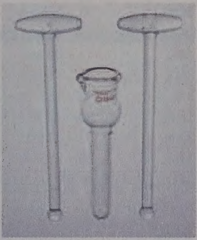

08-414B

- Parts ground to medium grind for abrasive action
- Designed to be motor driven at low speed (provided that the attachment contains some form of friction release)
- Rubber tubing can be placed on pestle for connection to chuck of drive motor

Working Capacity	Tube Reservoir O.D. × L	Mfr. No.	Cat. No.	Each	Case of 4
3mL	16 × 100mm	7725 13	**08-414A**	120.38	331.53
9mL	18 × 150mm	7725 16	**08-414B**	122.72	347.27
16mL	21 × 150mm	7725 19	**08-414C**	385.75	----
50mL	27 × 200mm	7725 25	**08-414D**	127.29	----

Kontes* Dounce Tissue Grinders

Designed for cellular work in which the nucleus remains intact after homogenization


K885300-0015

- All-glass construction

ORDERING INFORMATION:

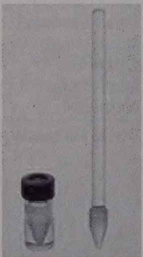
Supplied with two pestles: large (for initial sample reduction) and small (to form the final homogenate)

Working Capacity	Large Pestle Clearance	Small Pestle Clearance	Overall Length	Cat. No.	Each
2mL	0.12mm	0.06mm	60mm	**K885300-0002**	94.22
7mL	0.11mm	0.05mm	125mm	**K885300-0007**	83.33
15mL	0.16mm	0.07mm	157mm	**K885300-0015**	93.54
40mL	0.15mm	0.07mm	215mm	**K885300-0040**	108.01
100mL	0.25mm	0.14mm	232mm	**K885300-0100**	232.34

Kontes* Micro Duall* Tissue Grinder

Heavy-walled construction minimizes tube breakage

- Flat base permits tube to stand upright
- Pestle and tube clearance approximately 0.15mm


K885490-0020

INCLUDES:

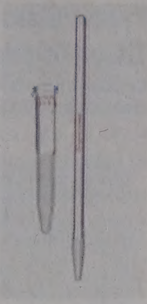
Pestle, tube, and phenolic cap with PTFE liner

Capacity	GPI Thread Size	Pestle Shaft O.D. × L	Cat. No.	Each
0.3mL	13mm-425	6 × 148mm	**K885490-0017**	67.89
1mL	13mm-425	6 × 148mm	**K885490-0019**	71.78
3mL	20mm-400	9 × 165mm	**K885490-0020**	82.98
5mL	20mm-400	9 × 165mm	**K885490-0021**	86.73

Kontes* Duall* Tissue Grinders

Combined conical and cylindrical surfaces improve grinding efficiency

- Can be motor driven
- Choose from all ground glass style or smooth glass tube with PTFE pestle threaded to stainless-steel shaft
- Interchangeable tubes and pestles have 0.004 to 0.006" (0.10 to 0.15mm) clearance



K885450

Working Capacity[1]	Tube Reservoir O.D. × L	Pestle Shaft O.D. × L	Cat. No.	Each
With Ground Glass Pestle and Tube				
1mL	13 × 80mm	6 × 155mm	**K885450-0020**	80.89
3mL	16 × 120mm	6 × 207mm	**K885450-0021**	80.89
5mL	18 × 150mm	8 × 220mm	**K885450-0022**	81.56
15mL	25 × 175mm	10 × 278mm	**K885450-0023**	93.07
30mL	32 × 215mm	10 × 310mm	**K885450-0024**	99.16
50mL	38 × 225mm	16 × 345mm	**K885450-0025**	125.89
With PTFE Pestle and Smooth Glass Tube				
1mL	13 × 80mm	4.5 × 155mm	**K885480-0020**	66.25
3mL	16 × 120mm	6 × 210mm	**K885480-0021**	65.92
5mL	18 × 150mm	6 × 228mm	**K885480-0022**	74.10
15mL	25 × 175mm	6 × 268mm	**K885480-0023**	84.26
30mL	32 × 215mm	10 × 305mm	**K885480-0024**	96.46
50mL	38 × 225mm	10 × 330mm	**K885480-0025**	138.07

[1] *Approximate volume with pestle inserted.*

WARNING

Operator should wear protective gloves with sufficient thickness to prevent injury in the event of failure of the glass components.

ACCESSORIES

Kontes* Pellet Pestle* Cordless Motor

Produces more complete disaggregation than manual mixing

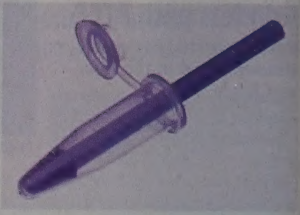
- Use with either the disposable or reusable Pellet Pestle Mixers
- Comes with two "AA" batteries

K749540-0000

Description	Cat. No.	Each
Cordless Motor	**K749540-0000**	96.94
Replacement Motor Adapter	**K749541-0000**	5.00

Kontes* Pellet Pestle*

Resuspend protein and DNA pellets or grind soft tissue in microcentrifuge tubes



K749520-0000

Two pestle styles: disposable or reusable—both of which can be used with Cordless Motor (available separately). Plain and RNase-, DNase-, and pyrogen-free polypropylene microtubes are available separately.

Disposable Pellet Pestle

- Choose autoclavable polypropylene or RNase-, DNase-, pyrogen-free material (manufactured under M5.5 [Class 10,000] cleanroom conditions)
- Available with or without 100 microtubes
- Microtubes have the same properties and come individually wrapped to ensure purity
- Length of pestle with tip, 2¾" (7cm)

Reusable Pellet Pestle

- Autoclavable CTFE polymeric head with a stainless-steel shaft
- Available in 0.5 or 1.5mL sizes
- Pestle length with tip, 2½" (6cm) for 0.5mL size; 5 19/32" (14cm) for 1.5mL size

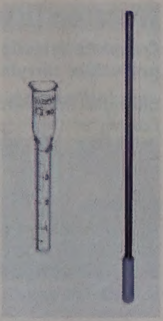
Material	Size	Cat. No.	Price
Disposable Pellet Pestle with 100 Microtubes			
Polypropylene	0.5mL	**K749520-0500**	Cs. of 100/83.33
Polypropylene	1.5mL	**K749520-0000**	Cs. of 100/82.92
RNase-, DNase-, pyrogen-free	0.5mL	**K749520-0590**	Cs. of 100/111.01
RNase-, DNase-, pyrogen-free	1.5mL	**K749520-0090**	Pk. of 100/111.01
Disposable Pellet Pestle without Microtubes			
Polypropylene	0.5mL	**K749521-0500**	Cs. of 100/68.69
Polypropylene	1.5mL	**K749521-1500**	Cs. of 100/68.35
RNase-, DNase-, pyrogen-free	0.5mL	**K749521-0590**	Pk. of 100/90.01
RNase-, DNase-, pyrogen-free	1.5mL	**K749521-1590**	Pk. of 100/90.01
Reusable Pellet Pestle without Microtubes			
CTFE/Stainless Steel	0.5mL	**K749516-0500**	Ea./58.73
CTFE/Stainless Steel	1.5mL	**K749515-0000**	Ea./56.72
Microtubes			
Polypropylene (natural)†	0.5mL	**K749560-0500**	Pk. of 1000/64.70
Polypropylene (blue)†	1.5mL	**K749510-1501**	Pk. of 500/47.63
RNase-, DNase-, pyrogen-free	0.5mL	**K749510-0590**	Pk. of 100/27.07
RNase-, DNase-, pyrogen-free	1.5mL	**K749510-1590**	Pk. of 100/27.07

† *For use with Reusable Pellet Pestle Mixers.*

Kontes* Potter-Elvehjem Tissue Grinders

With serrated PTFE pestle and graduated tube

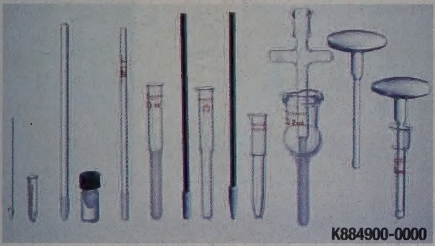
- Radial serrations on the lower portion of PTFE pestle deliver homogenate into cylindrical portion of tube
- Stainless-steel pestle shaft
- Graduations fused into the glass tube
- Tubes and pestles are interchangeable



K885510-0020

Working Capacity	Tube Reservoir O.D. × L	Pestle Shaft O.D. × L	Graduation Subdivisions (Range)	Cat. No.	Each
4mL	16 × 125mm	4 × 215mm	0.5mL (0.5–4mL)	**K885510-0020**	92.86
10mL	22 × 128mm	6 × 213mm	0.5mL (1–9mL)	**K885510-0021**	69.38
30mL	35 × 160mm	6 × 225mm	1mL (2–25mL)	**K885510-0022**	94.22
55mL	41 × 170mm	6 × 231mm	2mL (6–50mL)	**K885510-0023**	111.09

Kontes* Tissue Grinder Kit



Selection includes popular grinder styles with ground glass, smooth glass and PTFE pestles

Convenient high-density polyethylene case with foam inserts protects grinders during transport and storage.

ORDERING INFORMATION:
Grinders also available individually; see individual components list

INCLUDES:
Micro-scale tissue grinders; Duall*-style grinders; one each of the seven grinders listed under Individual Components

Description	Cat. No.	Each
Tissue Grinder Kit	**K884900-0000**	355.08

Kontes* Tenbroeck Tissue Grinder

Hand or motor operation

- All-glass construction
- Pestle is tooled for an appropriate sized single hole rubber stopper (sold separately)
- Can be motor driven at slow speeds by inserting the metal rod into the motor chuck
- Clearance between pestles and tubes is 0.1 to 0.15mm

K885000-0007

Capacity	Cat. No.	Each
2mL	**K885000-0002**	56.31
7mL	**K885000-0007**	63.39
15mL	**K885000-0015**	70.40
40mL	**06-421-40**	96.58

ACCESSORIES

Kontes* Tissue Grinder Kit Components

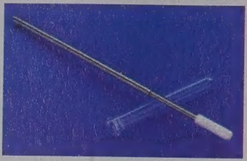
Type of Tissue Grinder	Pestle Material	Working Capacity[1]	Cat. No.	Price
Micro	Ground glass	0.2mL	**K885470-0000**	Pk. of 6/195.64
Duall (with cap)	Ground glass	0.3mL	**K885490-0017**	Ea./67.89
Duall[2]	PTFE	1mL	**K885480-0020**	Ea./66.25
Potter-Elvehjem[2]	Ground glass	1mL	**K885500-0019**	Ea./72.46
Potter-Elvehjem[2]	PTFE	1mL	**K886000-0019**	Ea./68.69
Tenbroeck[2]	Ground glass	2mL	**K885000-0002**	Ea./56.31
Dounce[3]	Smooth glass	2mL	**K885300-0002**	Ea./94.22

[1] Approximate volume with pestle inserted.
[2] Suitable for motor-driven homogenization.
[3] With one large clearance pestle and one small clearance pestle

WARNING
Because of variations in conditions glassware cannot be guaranteed against breakage under vacuum or pressure. Adequate precautions should be taken to protect personnel who are doing such work.

Wheaton Potter-Elvehjem Tissue Grinders

Choose grinders with or without plastic safety coating


08-414-1 Series

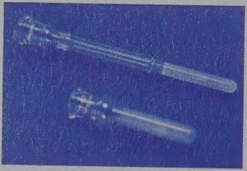
- Manufactured from Wheaton-33* low-extractable borosilicate glass
- Interchangeable parts
- Stainless-steel rod can be inserted in an electric overhead stirrer
- PTFE pestle bottom conforms exactly to tube bottom; clearance of approximately 0.1 to 0.15mm
- Transparent plastic coating on Safe-Grind* tissue grinders protects mortar from becoming scratched, improves grip, and contains homogenate in the case of tube breakage
- Autoclavable

ORDERING INFORMATION:
Rod dimensions, ¼" diameter (6mm)

Working Capacity	Grinding Chamber O.D. × L	Overall Length	Mfr. No.	Cat. No.	Case of 2
Safe-Grind Models					
2mL	11 × 45mm	203mm	358003	**08-414-16A**	138.42
5mL	13 × 66mm	219mm	358005	**08-414-16C**	140.09
10mL	16 × 74mm	219mm	358007	**08-414-19**	142.17
15mL	19 × 84mm	219mm	358009	**08-414-16G**	162.52
30mL	24 × 118mm	266mm	358011	**08-414-16J**	187.62
55mL	30 × 130mm	266mm	358013	**08-414-16M**	221.90
Models Without Plastic Coating					
2mL	11 × 45mm	203mm	358029	**22-290-066**	138.89
5mL	13 × 66mm	219mm	358034	**22-290-067**	140.60
10mL	16 × 74mm	219mm	358039	**08-414-14A**	142.72
15mL	19 × 84mm	219mm	358044	**08-414-14B**	162.84
30mL	24 × 118mm	266mm	358049	**08-414-14C**	189.64
55mL	30 × 130mm	266mm	358054	**08-414-14D**	225.45

Wheaton Tenbroeck Tissue Grinder

With expanded reservoir and pouring lip


08-414 series

- Precision manufactured from Wheaton-33* low extractable borosilicate glass
- Can be operated by hand or slow-speed motor
- Hollow handle permits packing with ice to reduce heat buildup
- Clearance between pestle and tube is approximately 0.12mm

Capacity	Tube O.D. × L	Overall Length	Mfr. No.	Cat. No.	Case of 2
1mL	11 × 48mm	140mm	357421	**08-414-18**	103.03
2mL	11 × 50mm	140mm	357422	**08-414-13A**	129.72
7mL	16 × 82mm	190mm	357424	**08-414-13B**	134.27
15mL	22 × 94mm	250mm	357426	**08-414-13C**	145.55
40mL	32 × 140mm	320mm	357428	**08-414-13D**	188.11

Wheaton Tissue Grinder Kit

Complete selection of micro tissue grinders packed in a protective carrying case

ORDERING INFORMATION:
Complete kit of micro tissue grinders contained in one protective carrying case

INCLUDES:
1mL Tenbroeck, 0.5mL grinder with 13mm-425 GPI cap, 1mL Dounce, 0.1 and 0.2mL standard, 2mL Potter-Elvehjem, 1mL tapered

08-414-17

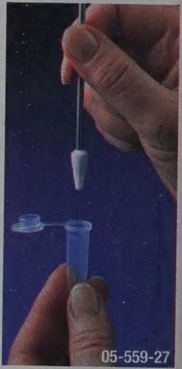
Mfr. No.	Cat. No.	Each
358204	**08-414-17**	353.97

Scienceware* Microcentrifuge Tube Sample Pestles

Can be hand operated or mounted in a motorized chuck

- PTFE and stainless-steel shaft
- Fit inside 1.5mL microcentrifuge tubes with standard or narrow cone (sold separately)

ORDERING INFORMATION:
Overall length, 5½" (143mm).


05-559-27

Description	Mfr. No.	Cat. No.	Each
For standard cone	19922 0000	**05-559-26**	38.83
For narrow cone	19922 0001	**05-559-27**	38.83

Radnoti Econo-Grind Micro Tissue Grinder

For applications that do not require the grinder to be capped

- Precision ground ball pestle provides rapid grinding action and fast tissue dispersion
- Borosilicate glass

08-416C

Working Capacity	Cat. No.	Pack of 3
100–1000µL	**08-416C**	66.37

*Trademark. See Trademark Reference.

Prices subject to change.

CELL STRAINERS

BD Falcon* Cell Strainers

No more fabricating filters from gauze, paper, steel, or nylon mesh

08-771-2

- Use with Falcon* 50mL centrifuge tubes (available separately) to obtain more uniform cell suspensions
- Sterile; Ready to use
- Nylon mesh is available in 40, 70, and 100µm sizes

ORDERING INFORMATION:

Individually wrapped in medical-grade packaging and gamma irradiated

Mesh Size	Color	Mfr. No.	Cat. No.	Case of 50
40µm	Blue	352340	**08-771-1**	105.90
70µm	White	352350	**08-771-2**	105.90
100µm	Yellow	352360	**08-771-19**	105.90

BD Falcon* Tube with Cell Strainer Cap

Designed for flow cytometry applications

08-771-23

- A 35µm nylon mesh is incorporated into the tube cap
- Sterile
- O.D. × L: 12 × 75mm

Mfr. No.	Cat. No.	Case of 500
352235	**08-771-23**	518.60

CULTURE CHAMBERS

Corning* HyperFlask* Cell Culture Flasks

Bar-coded and compatible with cell culture automation platforms

13-700-406

- CellBIND* surface treatment increases oxygen content of the polymer surface, resulting in improved hydrophilicity and wettability for optimal cell spreading and attachment
- Rectangular polystyrene
- Growth Area: 1720cm²
- Max. Working Volume: 560mL
- HDPE plug seal cap on a straight neck is designed for filling with growth medium
- Sterile

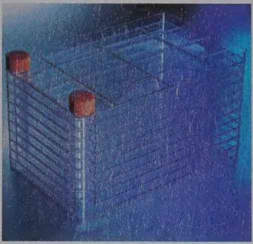
Cat. No.	Case of 4
13-700-406	300.00

WARNING

Because of variations in conditions, glassware cannot be guaranteed against breakage under vacuum or pressure. Adequate precautions should be taken to protect personnel who are doing such work.

Corning* CellSTACK* Culture Chambers

Ideal for scale-up from cell culture flasks



05-539-096

- Two generous 26mm filling ports provide direct access to chamber bottom and flexibility for sterile filling and emptying
- Standard 33mm threaded caps have 0.2µm pore nonwettable membranes sealed to caps—allowing gas exchange, preventing pressure buildup, and minimizing risk of contamination
- Choice of standard tissue culture or Corning CellBIND* surface treatment
- Sterilized by gamma irradiation
- Leak tested

ORDERING INFORMATION:

Individually packaged

COMPLIANCE:

Polystyrene material meets USP Class VI requirements; provides superior optical clarity and structural integrity.

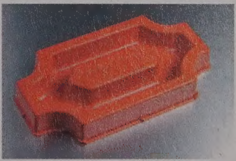
CERTIFICATIONS:

Certified nonpyrogenic

No. of Chambers	Total Culture Area	Mfr. No.	Cat. No.	Case of
Standard Cell Culture Surface				
1	636cm²	3268	**05-539-094**	8/346.15
2	1272cm²	3269	**05-539-095**	5/264.54
5	3180cm²	3319	**07-201-630**	2/249.60
5	3180cm²	3313	**05-539-098**	8/951.35
10	6360cm²	3270	**05-539-096**	2/375.19
10	6360cm²	3271	**05-539-097**	6/1103.51
40	25,440cm²	3272	**07-201-820**	2/1471.19
Corning CellBIND Surface				
1	636cm²	3330	**07-201-93**	8/423.68
2	1272cm²	3310	**07-201-90**	5/323.80
5	3180cm²	3311	**07-201-95**	2/437.18
10	6360cm²	3312	**08-757-213**	2/648.36
10	6360cm²	3320	**07-201-91**	6/1945.09
40	25,440cm²	3321	**07-201-92**	2/0.01

Corning* CellSTACK* Stacking Device

Optimizes incubator space when used to stack CellSTACK Culture Chambers



07-201-631

- Conforms to the top of the CellSTACK chamber
- Provides clearance for venting
- Manufactured from orange ABS plastic
- Not autoclavable

Mfr. No.	Cat. No.	Case of 5
3331	**07-201-631**	151.86

ACCESSORIES

Corning* CellSTACK* Caps

For filling, venting, and manipulation

- Choice of 33mm polyethylene, polypropylene solid, vented, or universal caps with overcaps
- Sterilized by gamma irradiation

COMPLIANCE:

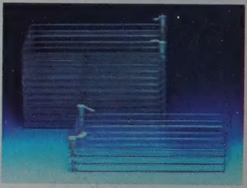
Filling caps with USP Class VI certified C-FLEX* tubing.

Description	Mfr. No.	Cat. No.	Case of
Vented Filling Caps with Tubing			
With ¼" (6.4mm) I.D. tubing and 37mm filter with glass fiber filter hydrophobic membrane	3284	**07-201-232**	4/204.54
Filling Caps with Tubing			
With ⅜" (9.5mm) I.D. tubing and a 5⁄16" (7.9mm) I.D. barbed fitting	3283	**07-201-734**	5/196.04
With ⅛" (3.2mm) I.D. tubing and a ⅛" (3.2mm) female Luer hose barb with a male Luer-lock plug	3282	**07-201-733**	5/177.30
With ¼" (6.4mm) I.D. × 27" (70cm) L tubing with a male MPC coupling and a female MPC end cap	3333	**07-201-230**	4/191.04
Filling Caps without Tubing			
With male MPC polycarbonate end cap with ¼" (6.4mm) I.D. female MPC polycarbonate coupling	3328	**07-202-519**	4/177.20
With male MPC polycarbonate end cap with ⅜" (9.5mm) I.D. female MPC polycarbonate coupling	3329	**07-202-520**	4/176.63
With female MPC polycarbonate end cap with ⅜" (9.5mm) I.D. male MPC polycarbonate coupling	3339	**07-202-522**	4/176.63
Vented Caps			
With 0.2µm pore hydrophobic membrane	3280	**07-201-732**	5/11.76
Solid Caps, Black Phenolic			
Use in closed systems or in applications where venting is not necessary	3279	**07-201-821**	5/10.48
Universal Caps			
Universal Cap with vented overcap with 1.0µm ePTFE membrane sealed into peelable foil cover	3332	**07-202-517**	4/32.17
Filter adapter caps (2) with peel-away covers for inserting barbed disc filters and solid overcap (1) for Universal Caps	3324	**07-201-231**	100/685.44

Nunclon* Δ Cell Factory

Used for large-scale cell culture and production of bio-materials such as vaccines, monoclonal antibodies and interferon

- Features stackable chambers welded together as a single unit sharing common vent and fill ports
- Growth surface of 632cm² available in each chamber
- Easy to fill and empty with virtually no risk of contamination
- Recommended minimum volume of medium is 200mL per chamber (632cm²)


Front, 12-565-38; back, 12-565-39

ORDERING INFORMATION:

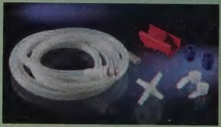
Start-up Kit and accessory parts sold separately

No. of Chambers	Total Culture Area	Mfr. No.	Cat. No.	Case of
Cell Factories				
1	632cm²	165250	**12-565-37**	8/367.25
2	1264cm²	167695	**12-565-38**	5/283.00
4	2528cm²	140004	**12-566-90**	10/923.25
10	6320cm²	164327	**12-565-39**	2/356.00
10	6320cm²	170009	**12-565-40**	6/1067.50
40	25,280cm²	139446	**12-565-289**	2/1435.50
Cell Factories for Active Gassing				
4	2528cm²	173239	**12-565-106**	10/1068.50
10	6320cm²	173238	**12-565-107**	6/1217.00

ACCESSORIES

Nunclon* Δ Cell Factory Start-Up Kit

Features several items routinely used in the setup of a cell factory, including HDPE connector, two Tyvek* cover caps, two blue sealing caps, Pall* Gelman* 4210 bacterial air vent filter, tubing and clamp.


12-565-42

Mfr. No.	Cat. No.	Each
170769	**12-565-42**	100.20

Nunclon* Δ Cell Factory Components and Replacement Parts

For Start-Up Kits

12-566 Series

Description	Sterile	Mfr. No.	Cat. No.	Case of
4210 Filter with Connector	Yes	173248	**12-565-109**	2/164.50
4210 Air Filter	Yes	179553	**12-566-132**	10/294.75
HDPE Connector	No	171840	**12-566-50**	10/241.25
PTFE Connector	No	171838	**12-565-43**	2/31.99
Blue Sealing Caps	Yes	167652	**12-565-45**	40/18.68
Funnel	Yes	140050	**12-566-60**	6/19.65

BD BioCoat* Matrigel Invasion Chambers

Provide rapid and reproducible quantification of cell invasion in vitro

Two human fibrosarcoma cells (HT-1080 cells) migrating through an 8-micron pore in a chamber membrane following their invasion of the Matrigel Matrix-treated membrane.

BD Matrigel* Matrix is a soluble basement membrane extracted from Engelbreth-Holm-Swarm mouse tumor which, when reconstituted at room temperature, forms a gel. Available preapplied as cell culture inserts, as invasion chambers, and as cellware. BD Matrigel Matrix is especially suited for culture of polarized cells, such as epithelial cells. It promotes differentiation of hepatocytes, mammary epithelial cells and smooth muscle cells. It also promotes capillary tubule formation of endothelial cells and neurite regeneration, and can be used for angiogenesis assays.

- Two matrix configurations—chambers with BD Matrigel Matrix and with Growth Factor Reduced (GFR) Matrigel Matrix
- Allow invasion of HT-1080 cells (invasive human fibrosarcoma cells) through 8μm pores and exclude invasion of 3T3 cells (noninvasive mouse fibroblast cells line)
- Chambers with GFR Matrigel Matrix designed for use in studies in which minimal interference by growth factors is desirable

STORAGE CONDITIONS:

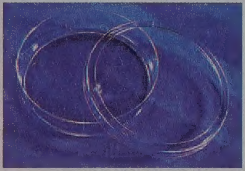
Stable for at least three months after shipment when stored at -20°C (-4°F).

Invasion Chambers	Chambers Per Plate	No. of Plates	Mfr. No.	Cat. No.	Price
With BD Matrigel Matrix					
In 6-well plates	6	4	354481	**08-774-121**	Cs. of 24/292.60
In 24-well plates	12	2	354480	**08-774-122**	Cs. of 24/262.00
With GFR Matrigel Matrix					
In 24-well plates	12	2	354483	**08-774-193**	Ea./265.20

DISHES-SPECIALTY SURFACES

Corning* CellBIND* Surface Culture Dishes

Surface treatment provides optimal cell attachment



07-202-514, -515, -516

- Corning CellBIND-treated surface helps cell adapt to reduced serum or serum-free media
- Manufactured from optically clear virgin polystyrene
- Stacking beads aid in handling
- With vents for consistent gas exchange
- Sterilized by gamma radiation; certified nonpyrogenic
- Requires no refrigeration or special handling, unlike standard coatings used to improve cell attachment

STORAGE CONDITIONS:

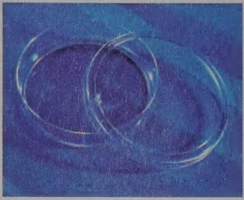
Stable at room temperature.

Size	Approx. Growth Area	Inside Dia.	Height	Mfr. No.	Cat. No.	Case of
35mm	8cm²	33.9mm	10mm	3294	**07-202-514**	210/121.94
60mm	21cm²	51.4mm	15mm	3295	**07-202-515**	126/84.30
100mm	55cm²	80.5mm	20mm	3296	**07-202-516**	40/57.18

Corning* Ultra-Low Attachment Dishes

Vents provide consistent gas exchange

- Optically-clear virgin polystyrene
- Height: 15mm
- Stacking beads aid in handling



07-539-100, -101

ORDERING INFORMATION:

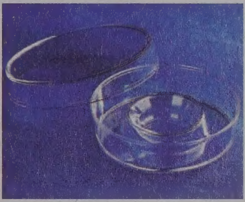
Sterile; packed in sleeves of 5

Size	Growth Area†	Mfr. No.	Cat. No.	Case of 20
60mm	21cm²	3261	**05-539-100**	165.69
100mm	55cm²	3262	**05-539-101**	202.67

† Actual growth surface diameter of 60mm dish is 51.4mm, 100mm dish is 80.5mm.

Corning* IVF Dish

Advanced center-well design promotes isolation, easy handling, and full visibility of oocyte/embryo



07-200-79

Polystyrene dish features a 1mL beveled edge mark for convenient media dispersal, a 45° slope to funnel oocyte/embryo into center well, and a beveled lead-in for additional room to maneuver pipet.

- Treated for optimal cell attachment
- Outer moat provides humidification to specimen and can be easily washed between applications
- Outer well bottom raises dish off benchtop surface to prevent scratches on optical surface
- Beads on lid provide vents for uniform gas flow
- Sterilized by gamma radiation
- Capacity: center well, 3mL; outer moat, 10mL

CERTIFICATIONS:

Certified nonpyrogenic

ORDERING INFORMATION:

Diameter: Center well, 0.77" (19.6mm); dish, 2.33" (60mm).
Height: 0.62" (15.7mm).

NOTE:

These products are for research use only and are not intended for diagnostic purposes.

Mfr. No.	Cat. No.	Case of 500
3260	**07-200-79**	984.18

LOOKING FOR ROLLER BOTTLES?

Fisher Scientific offers a variety of treated and untreated bottles in several sizes and materials. To find these products, see the Bottles section.

BD BioCoat* Culture Coated Dishes

Ideal for applications involving adhesion, growth and differentiation of neuronal and transfected cell lines

- Tested for the ability to promote firm attachment of rat cerebellar granule cells
- All lots tested and found negative for bacteria and fungi
- Bulk quantities are also available; please contact your Fisher Customer Service Representative
- All lots tested and found negative for bacteria and fungi
- Cellware is tested for the ability to promote firm attachment of rat cerebellar granule cells

ORDERING INFORMATION:
Bulk quantities available unless stated otherwise; please contact your Fisher Scientific Customer Service Representative.

Collagen I, Rat Tail Culture Dish

Ideal for applications involving adhesion, growth and differentiation of neuronal and transfected cell lines

- All lots tested and found negative for bacteria and fungi
- Cellware is tested for the ability to promote firm attachment of rat cerebellar granule cells

ORDERING INFORMATION:
Bulk quantities available; please contact your Fisher Scientific Customer Service Representative.

STORAGE CONDITIONS:
Stable for ≥6 months at 4° to 30°C (39.2° to 86°F) under dry conditions. Do not freeze.

Diameter	Mfr. No.	Cat. No.	Case of
35mm	354456	**08-774-6**	20/53.90
35mm	356456	**08-772-73**	100/163.78
60mm	354401	**08-774-7**	20/56.70
60mm	356401	**08-772-74**	100/180.59
100mm	354450	**08-774-8**	10/62.60
100mm	356450	**08-772-75**	40/153.00
150mm	354551	**08-774-9**	5/79.63

Collagen IV, Mouse Culture Dishes

Designed to closely mimic in vivo environments and enhance expression of cell-specific morphology

Microporous membranes permit diffusion of ions, low-molecular-weight proteins and other substances to both apical and basolateral cell surfaces, simulating the natural environment of cells in vivo.

- Supplied with preapplied extracellular matrices, facilitating cell adaption to in vitro cultivation

ORDERING INFORMATION:
Supplied in ready-to-use BD Falcon* Companion Tissue Culture Plates.

STORAGE CONDITIONS:
Stable for at least three months from date of shipment when stored at 2° to 8°C (36° to 46°F).

Diameter	Mfr. No.	Cat. No.	Case of
35mm	354459	**08-774-31**	20/116.03
60mm	354416	**08-774-32**	20/119.35
100mm	354453	**08-774-33**	10/126.87
150mm	354554	**08-774-34**	5/168.83

Fibronectin, Human, Culture Dishes

Matrix components are applied as an even, optically clear coating

- Designed to closely mimic in vivo environments and enhance expression of cell-specific morphology
- Tested for their ability to promote attachment and spreading of BHK-21 hamster kidney cells

STORAGE CONDITIONS:
Stable for at least three months after shipment when stored at 2° to 8 C (36° to 46°F).

NOTE:
The human plasma used in preparing this product was tested and found negative for HBsAg and HIV antibody.

Diameter	Mfr. No.	Cat. No.	Case of
35mm	354457	**08-774-61**	20/104.19
60mm	354403	**08-774-62**	20/107.50
100mm	354451	**08-774-63**	10/117.24
150mm	354552	**08-774-64**	5/156.28

Gelatin Culture Dishes

Pre-coating with gelatin (obtained from porcine gelatin) eliminates time-consuming preparation

Commonly used in the culture of normal and transfected cell types, including vascular endothelial (i.e., BME, BAEC), muscle, embryonic stem, HUVEC for E-Selectin expression and VEGF induction, and F9 teratocarcinoma cells for gene expression studies.

- Provide attachment and growth-promoting substrate for the culture of a variety of cells
- Lot-to-lot consistency results in reproducible experiments
- Matrix components are applied as an even, optically clear coating

STORAGE CONDITIONS:
Stable for ≥6 months at 4° to 30°C (39.2° to 86°F) under dry conditions

Diameter	Mfr. No.	Cat. No.	Case of
100mm	354653	**08-774-301**	10/59.50
	356653	**08-774-304**	40/144.48

Laminin, Mouse Culture Dishes

Tested for ability to initiate differentiation (neurite outgrowth) of NG-108 rat glioma/mouse and human neuroblastoma cells

- Designed to closely mimic in vivo environments and enhance expression of cell-specific morphology
- Matrix components are applied as an even, optically clear coating

STORAGE CONDITIONS:
Stable for at least three months from date of shipment when stored at 2° to 8°C (36° to 46°F).

Diameter	Mfr. No.	Cat. No.	Case of
35mm	354458	**08-774-87**	20/118.35
60mm	354405	**08-774-88**	20/121.66
100mm	354452	**08-774-89**	10/129.29
150mm	354553	**08-774-90**	5/172.05

Contd. on next page.

BD BioCoat* Culture Coated Dishes, Contd.

Poly-D-Lysine Culture Dishes

Stable for at least three months from date of shipment when stored at 2° to 8°C (36° to 46°F).

Diameter	Mfr. No.	Cat. No.	Case of
35mm.	356467	**08-774-258**	100/170.07
	354467	**08-774-257**	20/55.99
35mm, coverslip bottom	354077	**08-774-382**	20/131.74
60mm	354468	**08-774-259**	20/59.50
	356468	**08-774-260**	100/180.59
100mm	354469	**08-774-261**	10/67.63
	356469	**08-774-262**	40/159.63
150mm	354550	**08-774-281**	5/79.63

Poly-D-Lysine/Laminin Culture Dishes

Closely mimic in vivo environments and enhance expression of cell-specific morphology

- Each lot is tested for the ability to promote neurite outgrowth with NG108 rat glioma/mouse neuroblastoma cells
- Matrix components are applied as an even, optically clear coating

STORAGE CONDITIONS:

Stable for at least three months after shipment when stored at 2° to 8°C (36° to 46°F).

Diameter	Mfr. No.	Cat. No.	Case of 10
100mm	354455	**08-774-171**	143.90

Matrigel Matrix Culture Dishes

Tested for the ability to promote neurite outgrowth from chick dorsal root ganglia (in the absence of NGF)

Two human fibrosarcoma cells (HT-1080 cells) migrating through an 8-micron pore in a chamber membrane following their invasion of the Matrigel Matrix-treated membrane.

- Soluble basement membrane extracted from Engelbreth-Holm-Swarm mouse tumor
- When reconstituted at room temperature, forms a gel
- Especially suited for culture of polarized cells, such as epithelial cells, and promotes differentiation of hepatocytes, mammary epithelial cells and smooth muscle cells
- Also promotes capillary tubule formation of endothelial cells and neurite regeneration, and can be used for angiogenesis assays
- Standard cellware is stable for at least three months from date of shipment when stored at -20°C (-4°F)
- Thin-Layer Cellware is stable for at least three months from date of shipment when stored at 2° to 8°C (36° to 46° F)

Diameter	Mfr. No.	Cat. No.	Price
Standard Culture Dishes			
35mm	354460	**08-774-111**	Cs. of 8/269.14
100mm (for hepatocytes)	354634	**08-774-200**	Ea./303.18
Culture Dishes (Thin-layer)			
35mm	354602	**08-774-180**	Pk. of 20/124.87
60mm	354601	**08-774-181**	Pk. of 20/129.18
100mm	354600	**08-774-182**	Pk. of 10/141.13

For research use only

Poly-L-Lysine Culture Dishes

Provide excellent substrate for cell attachment and differentiation of primary neurons, glial, neuroblastoma and glioma cells

Suitable for promoting adhesion of transfected cell lines and other fastidious cell types. Designed to closely mimic in vivo environments and enhance expression of cell-specific morphology.

- Minimize assay failure due to cell detachment
- Matrix components are applied as an even, optically clear coating
- Precoated with Poly-L-Lysine to eliminate time-consuming preparation
- Lot-to-lot consistency provides reproducible experiments

STORAGE CONDITIONS

Stable for at least six months after shipment when stored at 4° to 30°C (39° to 86°F).

Diameter	Mfr. No.	Cat. No.	Case of
35mm	354518	**08-772-94**	20/55.99
	356518	**08-772-95**	100/170.07
60mm	354517	**08-772-96**	20/59.50
	356517	**08-772-97**	100/180.59

BD Primaria* Tissue Culture Dishes

Features a surface treatment that is a permanent, stable modification of the polystyrene surface incorporating a mixture of anionic and cationic functional groups

- Samples of each lot are analyzed using Electron Scanning Chemical Analysis (ESCA) to ensure a consistent ratio of nitrogen-containing functional groups
- Suitable for growing a variety of primary cells and cell lines that grow poorly on conventional, negatively charged, standard tissue culture surfaces—including tumor cells, endothelial cells and hepatocytes. Sterile, nonpyrogenic
- Sterile
- Nonpyrogenic
- With lids

ORDERING INFORMATION:

Packaged in red color-coded peel-open, medical-style packages; supplied 20 per sleeve in cases of 200

Approximate Dimensions	Mfr. No.	Cat. No.	Case of 200
35 dia. × 10mmH	353801	**08-772-4A**	120.40
60 dia. × 15mmH	353802	**08-772-4C**	138.56
100 dia. × 20mmH	353803	**08-772-4F**	301.40

LOOKING FOR DISHES?

For additional dishes recommended for Tissue Culture use, refer to the Dishes section.

BD Falcon* In Vitro Fertilization Plasticware

FDA-approved 510(k) medical devices

08-772 Series

Tested for embryotoxicity by culturing mouse embryos in both the labware itself and in media that has been in contact with the labware for 24 hours at 37°C (98.6°F).

- Sterile, nonpyrogenic, tissue culture-treated polystyrene plates and dishes
- Labware is "nontoxic" if it supports growth of ≥75% of the embryos to the expanded and/or hatched blastocyst stage
- Optically clear for optimum viewing during routine observation and manipulation

Standard 60mm dishes

- Available with or without 2.45cm² center well
- Numbered wells and condensation rings on the lid help prevent any cross-contamination between wells
- Large writing area allows for easy marking and plate identification

4-well plate

- Unique patented design improves manipulation of ova or embryos
- Includes lid which provides access to two wells while the other two remain covered

ORDERING INFORMATION:

Supplied in peel-open packaging to ensure sterility. Dishes packed 20 per sleeve; plates individually wrapped.

Description	Well Area	Mfr. No.	Cat. No.	Case of
60mm Dish	24.07cm²	353652	**08-772-42**	500/450.65
Center-well Dish	2.45cm²	353653	**08-772-43**	500/1441.90
4-well Plate	1.39cm²	353654	**08-772-44**	100/563.70

LOOKING FOR PIPET TIPS?

Fisher Scientific carries pipet tips which are compatible with many brands and sizes of pipetters. See the Pipetter Tips section.

FLASKS-SPECIALTY SURFACES

Corning* CellBIND* Surface Rectangular Cell Culture Flasks

Corning CellBIND surface treatment enhances cell attachment to provide higher cell growth and yields

08-757-212

- Manufactured from optically clear, virgin polystyrene
- Treated surface helps cells adapt to reduced serum or serum-free media; stable at room temperature
- Ideal for short- and long-term cell culture
- Available with vented caps containing a 0.2μm nonwettable membrane sealed to the cap, providing consistent, sterile gas exchange while minimizing risk of contamination; or phenolic-style caps for use in open systems requiring gas exchange
- 05-539-104 flask features redesigned neck for easier media pouring, lower height (1.4") for reduced stacking height, and vented cap with Costar*-style concentric circle support grid geometry
- Choice of canted or angled neck
- Canted neck flasks allow easier pouring and improved access to the flask for pipetting or scraping
- Angled neck improves pipetting access and reduces medium sloshing into the neck
- Printed lot numbers provide easy traceability
- Flasks 08-575-211 and 07-203-10 are prelabeled with bar code for use with SelecT* Robotic System
- Sterilized by gamma irradiation
- Certified nonpyrogenic
- 100% integrity tested

Culture Area	Cap Type	Bar Code	Mfr. No.	Cat. No.	Case of
Canted Neck					
25cm²	Vent	No	3289	**07-201-222**	200/371.37
75cm²	Vent	No	3290	**05-539-104**	100/348.76
150cm²	Vent	No	3291	**05-539-103**	50/286.86
Angled Neck					
175cm²	Vent	Yes	431328	**08-757-211**	84/576.82
175cm²	Phenolic-style	No	3298	**08-757-212**	50/286.85
175cm²	Vent	No	3292	**07-201-225**	50/298.57
225cm²	Vent	No	3293	**07-201-226**	25/195.16
175cm²†	Vent	Yes	431346	**07-203-10**	42/376.19

† Flask has a 175cm² footprint with an expanded surface equal to 235cm².

LOOKING FOR COATED PLATES?

Fisher Scientific has a wide assortment of cell culture-treated and specialty plates. In addition to those in the Plates-Specialty Surfaces in this section, check out the Microplates section.

Corning* Cell Culture Flasks

10-126-37

Wide necks reduce sloshing effect

- Stackable, polystyrene flasks have wide necks that reduce sloshing effect
- Cell culture surface treatment promotes cell attachment and growth
- Tested for sterility, toxicity, cell attachment, and growth promotion
- Optically clear surfaces provide distortion-free microscope viewing
- Printed lot number for product traceability
- Sterile and nonpyrogenic

Cap Types

- Phenolic-style screw caps for cultures requiring gas exchange
- Plug seal caps for airtight cultures
- Vent caps to minimize cell culture contamination with gas exchange

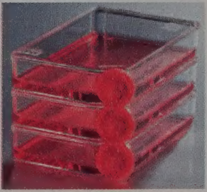
Canted-neck flasks feature:

- Antitip skirt
- Molded graduations
- Frosted marking areas on both sides
- Support bar across the top
- Redesigned neck on 75cm^2 flask features redesigned neck to aid media pouring, 1.4" (3.6cm) height for lower stacking height; vent cap has Costar*-style concentric circle

Culture Area	Cap Type	Volume	Mfr. No.	Cat. No.	Case of
Canted Necks (with antitip skirt)					
25cm^2	Plug Seal	70mL	430168	**10-126-30**	500/662.54
25cm^2	Phenolic	70mL	430372	**10-126-39**	500/662.54
25cm^2	Vent	70mL	430639	**10-126-28**	200/309.91
75cm^2	Plug Seal	275mL	430720	**10-126-31**	100/273.80
75cm^2	Phenolic	275mL	430725	**10-126-41**	100/273.80
75cm^2	Vent	275mL	430641	**10-126-37**	100/291.42
150cm^2	Plug Seal	600mL	430823	**10-126-32**	50/230.66
150cm^2	Phenolic	600mL	430824	**10-126-33**	50/230.66
150cm^2	Vent	600mL	430825	**10-126-34**	50/240.24
Angled Necks					
175cm^2	Plug Seal	750mL	431079	**10-126-60**	50/240.24
175cm^2	Phenolic	750mL	431085	**10-126-64**	50/239.87
175cm^2	Vent	750mL	431080	**10-126-61**	50/249.48
225cm^2	Plug Seal	1000mL	431081	**10-126-62**	25/159.50
225cm^2	Vent	1000mL	431082	**10-126-63**	5 Pk./163.93

Corning* Low Profile Cell Culture Flask

Unique design reduces stacking height


13-700-433

- 100cm^2 available growth area
- Rectangular with canted neck, corner cap for easy pouring and improved access to flask for pipetting or scraping
- Manufactured from optically clear virgin polystyrene
- Treated with patented Corning CellBIND* surface treatment for enhanced cell attachment
- Vented cap contains a 0.2µm nonwettable membrane sealed to the cap, providing consistent, sterile gas exchange while minimizing risk of contamination
- Graduated
- 100% integrity tested
- Sterilized by gamma radiation and certified nonpyrogenic

Surface Treatment	Mfr. No.	Cat. No.	Case of 60
CellBIND	3073	**13-700-433**	270.88

Corning* Costar* Cell Culture Flasks

Culture areas cover applications ranging from research to scale-up and production

07-200 Series with canted neck

- Optically clear, medical-grade polystyrene
- Tissue culture treated to promote optimal cell attachment and growth
- Graduations
- Frosted labeling surfaces
- Sterile and nonpyrogenic
- Extra-wide neck openings for easier pipetting
- Patented canted-neck design improves accessibility for cell monolayer and overall improved handling
- Hydrophobic 0.2µm pore size membrane ensures consistent gas exchange without requiring the cap to be loosened
- Phenolic-style screw caps for cultures requiring gas exchange
- Vented filter caps maximize gas exchange while minimizing the possibilty of contamination

Culture Area	Cap Type	Volume	Mfr. No.	Cat. No.	Case of
Canted Necks					
225cm^2	Phenolic	900mL	3000	**07-200-69**	24/152.28
225cm^2	Vent	900mL	3001	**07-200-62**	24/158.19
Straight Necks					
162cm^2	Phenolic	720mL	3150	**07-200-74**	25/116.31
162cm^2	Vent	720mL	3151	**07-200-64**	25/122.30

Corning* Costar* Triangular Cell Culture Flasks

Triangular shape provides excellent accessibility to cell surface

07-200-72

- Optically clear, medical-grade polystyrene
- Tissue culture-treated to promote optimal cell attachment and growth
- Graduations
- Frosted labeling surfaces
- Sterile and nonpyrogenic
- Extra-wide neck openings for easier pipetting
- Printed lot number and catalog number on each flask
- Patented canted-neck design improves accessibility for cell monolayer and overall improved handling

Vented filter caps

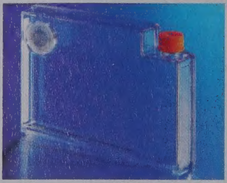
- Maximize gas exchange while minimizing the possibility of contamination
- Hydrophobic 0.2m pore size membrane ensures consistent gas exchange without requiring the cap to be loosened

Culture Area	Cap Type	Volume	Mfr. No.	Cat. No.	Case of
Angled Necks					
25cm^2	Phenolic	50mL	3055	**07-200-72**	500/649.66
25cm^2	Vent	50mL	3056	**07-200-63**	200/340.42
Straight Necks					
75cm^2	Phenolic	300mL	3275	**07-200-75**	100/272.82
75cm^2	Vent	300mL	3276	**07-200-66**	100/310.00

Corning* RoboFlask* Cell Culture Vessels

Stackable to save valuable incubator space

- Manual or automation-compatible
- Manufactured from optically clear, virgin polystyrene
- 92.6cm^2 available cell growth area
- Available tissue culture-treated for optimal cell attachment or with patented CellBIND* surface for improved attachment of stressed cells
- Built-in 2.2cm^2 venting membrane for efficient gas and liquid exchange
- Removal of cap allows up to 5mL pipet access or assist in harvesting of cells
- SBS standard microplate footprint and stackable
- Bar coding for efficient automated tracking
- With straight neck, except 07-200-175 which has short neck
- 100% integrity tested
- Sterilized by gamma irradiation
- Certified nonpyrogenic



07-200-11 Series

INCLUDES:

Cell culture vessel with flat or septum cap

Closure Type	Automation Compatible	Mfr. No.	Cat. No.	Case of
Tissue Culture-treated				
Flat Cap	No	3059	**07-200-116**	50/183.55
Flat Cap	No	3071	**07-200-117**	100/361.53
Septum Cap	Yes	3069	**07-200-115**	50/183.55
Septum Cap	Yes	3070	**07-200-179**	100/355.97
CellBIND Treated				
Septum Cap	Yes	3068	**07-200-176**	50/245.65
Septum Cap	Yes	3067	**07-200-175**	100/470.58

Nunc* Biologically Coated EasYFlask*

Treated surface promotes optimal cell attachment, growth, and differentiation in serum-free and serum-containing media

- Polystryrene flat-sided cell culture flasks with choice of coating
- Ergonomic ⅓ turn open and close HDPE cap
- Angled neck allows full access to growth surface
- Volume graduations on both sides

STORAGE CONDITIONS:

Stable at room temperature

01-814-50 Series

Culture Area	Working Volume	Mfr. No.	Cat. No.	Case of
Poly-D-Lysine Coating				
25cm^2	7mL	132703	**01-814-54**	60/312.59
75cm^2	25mL	132704	**01-814-55**	30/221.74
175cm^2	55mL	132705	**01-814-56**	30/465.87
Collagen I Coating				
25cm^2	7mL	132706	**01-814-57**	60/312.59
75cm^2	25mL	132707	**01-814-58**	30/221.74
175cm^2	55mL	132708	**01-814-59**	30/465.87

Nunc* Sterile EasYFlask*

Nunclon* Δ treated surface ensures optimal cell attachment and growth

- Polystyrene flat-sided cell culture flasks
- Choice of filter or vent/close caps
- Filter caps for continuous venting are fitted with a hydrophobic filter to ensure consistent gas exchange
- Vent/close caps feature a "Y" mark that allows visual verification of vent position
- Large opening and angled neck allow for easy access to growth surface with pipets and cell scrapers
- Low profile maximizes incubator space and allows viewing of entire growth surface with standard microscope
- Volume graduations printed and molded on both sides
- Frosted writing surfaces on neck
- Certified nonpyrogenic
- Extra caps in every case

12-565 and 12-562 Series Flasks

Culture Area	Working Volume	Mfr. No.	Cat. No.	Case of
With Vent/Close Caps				
25cm^2	7mL	156340	**12-565-348**	200/259.25
75cm^2	25mL	156472	**12-565-350**	100/243.25
175cm^2	55mL	159920	**12-562-001**	30/145.71
225cm^2	70mL	159933	**12-565-220**	30/172.00
With Filter Caps				
25cm^2	7mL	156367	**12-565-351**	200/300.75
75cm^2	25mL	156499	**12-565-349**	100/263.74
175cm^2	55mL	159910	**12-562-000**	30/162.44
225cm^2	70mL	159934	**12-565-221**	30/178.25

Nunclon* Δ TripleFlask* Flasks

Provide 500cm^2 growth surface within the same external dimensions as a standard 175cm^2 flask

- Straight-neck flask
- Three parallel growth surfaces
- Recommended working volume is 100 to 200mL
- Promote conventional, flat, monolayer culturing
- Cell lines do not require recharacterization when scaling up
- Radiation sterilized

12-565-20 Series

INCLUDES:

Certificate of quality provided with each case

Cap Style	Mfr. No.	Cat. No.	Case of 32
Vent/Close	132867	**12-565-24**	341.25
Filter	132913	**12-565-25**	371.50

*Trademark. See Trademark Reference.

Prices subject to change.

Nunclon* Δ Flasks

Treated polystyrene culture flasks provide excellent cell attachment and growth

- High optical quality allows easy microscopic viewing
- Certificate of quality provided with each case
- Radiation sterilized
- Two-position plug-seal screw caps allow venting or closed incubation
- Caps of high-impact polystyrene (HIPS) or high-density polyethylene (HDPE)

12-565 Series

Culture Area	Cap Material	Working Volume	Mfr. No.	Cat. No.	Case of
Angled Necks					
24cm²	HDPE	50mL	163371	**12-565-49**	160/207.50
83cm²	HDPE	260mL	147589	**12-565-52**	50/125.72
Straight Necks					
24cm²	HDPE	40mL	152094	**12-565-48**	200/259.25
83cm²	HIPS	260mL	153732	**12-565-50**	50/122.18
175cm²	HDPE	800mL	156502	**12-565-54**	32/160.93

With Polyethylene Filter Caps

Provide maximum protection against contamination

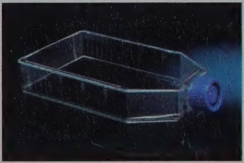
- Polystyrene flasks with polyethylene filter cap
- Unique hydrophobic filter utilizes a three-dimensional matrix of nonwettable polyethylene fibers—bacterial and fungal spores will not penetrate matrix
- Gas exchange is conducted through 0.22µm filter surface area

Culture Area	Working Volume	Mfr. No.	Cat. No.	Case of
Angled Necks				
24cm²	50mL	136196	**12-565-57**	160/240.25
83cm²	260mL	178891	**12-565-31**	50/133.00
Straight Necks				
83cm²	260mL	178905	**12-565-32**	50/132.99
175cm²	800mL	178883	**12-565-30**	32/174.26
Straight Necks; Barcode				
175cm²	800mL	178983	**12-565-540**	32/191.00

Nunclon* Δ SoLo* Flasks

Designed to maximize incubator and storage space

- Low-profile, 185cm² flasks
- Large-bore, angled neck allows better pipet and cell scraper access
- Flat bottom and tapered shoulder area provide stability and prevent media sloshing—minimizing contamination risk
- Increased wall thickness restrains bulging from pressure buildup during closed incubation
- Hydrophilic surface provides optimum cell attachment and growth
- Certified to ensure consistent biological performance



12-565-293 Series

Cap Style	Mfr. No.	Cat. No.	Case of 50
Vent/Close	144881	**12-565-293A**	238.75
Filter	144903	**12-565-293B**	246.00

BD Falcon* Tissue Culture Nontreated Flasks

Similar to the surface of a bacteriological Petri dish

- Nonpyrogenic
- Sterile
- Constructed from optically clear virgin polystyrene
- Manufactured using ISO 9002:2001-certified processes
- 100% leak testing of injection-molded flasks
- Volumetric graduation accuracy (±5% of volume)
- Stringent requirements for flatness of optical growth surface

08-772 Series (top),
10-126 Series (bottom)

Cap Types

- Two-position plug-seal caps for use in open or closed incubation
- Vented caps incorporate a 0.2µm membrane for consistent gas exchange and reduced contamination
- Rigid phenolic (lined) caps twist on and provide the most reliable liquid/gas-tight sealing
- Canted necks
- Plug seal caps
- Growth surface is more hydrophobic than a treated surface

Culture Area	Volume	Mfr. No.	Cat. No.	Case of
25cm²	70mL	353009	**08-772-1J**	200/265.37
75cm²	250mL	353133	**13-680-57**	60/144.93

BD Falcon* Tissue Culture-Treated Flasks

Vacuum-gas plasma tissue culture treatment ensures consistent growth surface

- Patented locking incubation position, found on the 150cm² and 225cm² flasks, prevents caps from falling off or closing while in the open position
- Canted-neck 150cm² flasks are low-profile for stacking and efficient use in incubator; include locking caps and graduations
- Straight-neck 175cm² flasks have frosted writing area
- 225cm² flasks with locking caps, frosted writing area, vertical graduations, 100mL maximum horizontal working volume line and a skirted, canted neck for extra stability
- 300cm² flasks, manufactured in an ISO Class 8 cleanroom with blow-molded design, printed graduations, straight neck, and white marking area

Contd. on next page.

LOOKING FOR CULTURE FLASKS?

For baffled, disposable, shaker flasks and more, see the Culture subsection in Flasks.

BD Falcon* Tissue Culture-Treated Flasks, Contd.

Culture Area	Cap Type	Volume	Mfr. No.	Cat. No.	Case of
Canted Necks					
12.5cm^2	Plug Seal	25mL	353018	**08-772-1E**	100/144.80
12.5cm^2	Vent	25mL	353107	**08-772-1F**	100/165.90
25cm^2	Plug Seal	50mL	353014	**10-126-1C**	200/256.90
25cm^2	Vent	50mL	353108	**10-126-9**	100/146.87
25cm^2	Phenolic	70mL	353081	**08-772-18**	200/296.20
25cm^2	Plug Seal	70mL	353082	**08-772-19**	200/255.24
25cm^2	Vent	70mL	353109	**10-126-10**	100/152.70
75cm^2	Phenolic	250mL	353134	**13-680-58**	60/181.50
75cm^2	Plug Seal	250mL	353135	**13-680-59**	60/152.08
75cm^2	Vent	250mL	353136	**13-680-65**	60/174.68
150cm^2	Plug Seal	600mL	355000	**08-772-47**	40/174.93
150cm^2	Vent	600mL	355001	**08-772-48**	40/195.30
225cm^2	Plug Seal	800mL	353139	**14-826-81**	30/173.00
225cm^2	Vent	800mL	353138	**14-826-80**	30/184.53
Straight Necks					
75cm^2	Plug Seal	250mL	353024	**10-126-5**	100/263.00
75cm^2	Phenolic	250mL	353023	**10-126-7**	100/282.60
75cm^2	Vent	250mL	353110	**10-126-11**	100/279.74
175cm^2	Plug Seal	750mL	353028	**10-126-8**	40/185.33
175cm^2	Phenolic	750mL	353045	**08-772-1A**	40/213.30
175cm^2	Vent	750mL	353112	**10-126-13**	40/197.40
300cm^2	Plug Seal	1900mL	353099	**08-771-5**	12/94.21
300cm^2	Vent	1900mL	353113	**08-772J**	12/100.71

BD BioCoat* Coated Flasks

Ideal for applications involving adhesion, growth and differentiation of neuronal and transfected cell lines

- Designed to closely mimic in vivo environments and enhance expression of cell-specific morphology
- Matrix components are applied as an even, optically clear coating
- All lots tested and found negative for bacteria and fungi; cellware is tested for the ability to promote firm attachment of rat cerebellar granule cells

STORAGE CONDITIONS

Stable for ≥6 months at 4° to 30°C (39.2° to 86°F) under dry conditions unless otherwise stated; do not freeze.

NOTE:

These products are for research use only and are not intended for diagnostic purposes.

Collagen I, Rat Tail Plug-Seal Cap Flasks

Size	Mfr. No.	Cat. No.	Case of
T-25cm^2	354531	**08-774-13**	10/87.55
T-25cm^2	356531	**08-772-76**	50/260.35
T-75cm^2	354462	**08-774-10**	5/61.80
T-75cm^2	356462	**08-772-77**	50/364.63
T-150cm^2	354645	**08-774-216**	5/112.20
T-150cm^2	356645	**08-774-267**	40/532.81
T-175cm^2	354478	**08-774-11**	5/129.02
T-175cm^2	356478	**08-772-78**	40/622.57

Collagen I, Rat Tail Vented Cap Flasks

Size	Mfr. No.	Cat. No.	Case of
T-25cm^2	354484	**08-774-327**	10/92.05
T-25cm^2	356484	**08-774-336**	50/272.57
T-25cm^2	354485	**08-774-328**	5/65.11
T-25cm^2	356485	**08-774-337**	50/388.00
T-25cm^2	354486	**08-774-329**	5/117.80
T-25cm^2	356486	**08-774-338**	40/559.77
T-25cm^2	354487	**08-774-330**	5/135.84
T-25cm^2	356487	**08-774-339**	40/652.82

Collagen IV, Mouse Flasks

STORAGE CONDITIONS:

Stable for at least three months after shipment when stored at 2° to 8°C (36° to 46°F).

Size	Mfr. No.	Cat. No.	Case of
T-25cm^2	354534	**08-774-37**	163.51
T-75cm^2	354523	**08-774-35**	231.26
T-175cm^2	354528	**08-774-36**	245.12

Human Fibronectin Culture Flasks

Tested for their ability to promote attachment and spreading of BHK-21 hamster kidney cells

STORAGE CONDITIONS:

Stable for at least three months after shipment when stored at 2° to 8°C (36° to 46°F).

NOTE:

Human plasma used in preparing this product was tested and found negative for HBsAg and HIV antibody.

Size	Mfr. No.	Cat. No.	Case of
T-25cm^2	354532	**08-774-68**	10/146.65
T-75cm^2	354521	**08-774-65**	10/221.43
T-150cm^2	354646	**08-774-217**	1/216.11
T-175cm^2	354526	**08-774-66**	5/233.47

Gelatin Culture Flasks

Pre-coating with gelatin (obtained from porcine gelatin) eliminates time-consuming preparation

Commonly used in the culture of normal and transfected cell types, including vascular endothelial (i.e., BME, BAEC), muscle, embryonic stem (ES), HUVEC for E-Selectin expression and VEGF induction, and F9 teratocarcinoma cells for gene expression studies.

Size	Mfr. No.	Cat. No.	Case of
Plug-seal cap			
T-75cm^2	354654	**08-774-302**	5/51.69
	356654	**08-774-305**	50/310.73
Vented cap			
T-75cm^2	354488	**08-774-331**	5/53.90
	356488	**08-774-340**	50/326.46

ACCESSORIES

Vented Caps

Designed for use with BD BioCoat* T-25, T-75 and T-175 flasks

- Polyethylene
- Contain a 0.2μm membrane vent that permits consistent gas exchange while preventing passage of bacteria and fungi, reduce the risk of contamination normally associated with standard cell culturing during open incubation

For Flask	Mfr. No.	Cat. No.	Case of
T-25	354637	**08-774-203**	100/43.56
T-75	354638	**08-774-204**	100/52.22
T-175	354639	**08-774-205**	50/39.23

LOOKING FOR MORE MICROPLATES?

Fisher Scientific carries a variety of microplates in many sizes. For more options, see the Microplates section.

*Trademark. See Trademark Reference.

Prices subject to change.

Mouse Laminin Culture Flasks

- Tested for their ability to initiate differentiation (neurite outgrowth) of NG-108 rat glioma/mouse and human neuroblastoma cells
- Matrix components are applied as an even, optically clear coating

STORAGE CONDITIONS: Stable for at least three months from date of shipment when stored at 2°–8°C (36°–46°F).

NOTE:
These products are for research use only and are not intended for diagnostic purposes.

Size	Mfr. No.	Cat. No.	Case of
T-25cm²	354533	**08-774-93**	10/166.63
T-75cm²	354522	**08-774-91**	10/235.68

Poly-D-Lysine Plug-Seal Cap Flasks

Size	Mfr. No.	Cat. No.	Case of
T-25cm²	354479	**08-774-129**	10/87.55
T-25cm²	356479	**08-774-263**	50/260.35
T-75cm²	354524	**08-774-125**	5/61.80
T-75cm²	356524	**08-774-252**	50/364.63
T-150cm²	354495	**08-774-218**	5/112.20
T-150cm²	356495	**08-774-264**	40/532.81
T-175cm²	354529	**08-774-126**	5/129.02

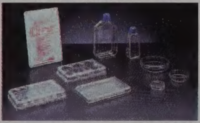
Poly-D-Lysine Vented Cap Flasks

Size	Mfr. No.	Cat. No.	Case of
T-25cm²	354536	**08-774-332**	10/92.05
T-25cm²	356536	**08-774-341**	50/272.57
T-25cm²	354537	**08-774-333**	5/65.11
T-75cm²	356537	**08-772-60**	50/384.76
T-25cm²	354538	**08-774-334**	5/117.80
T-25cm²	356538	**08-774-343**	40/559.77
T-25cm²	354539	**08-774-335**	5/135.84
T-25cm²	356539	**08-774-344**	40/652.82

BD Falcon* Primaria* Tissue Culture Flasks

Features a surface treatment that is a permanent, stable modification of the polystyrene surface, incorporating a mixture of anionic and cationic functional groups

- Samples of each lot are analyzed using Electron Scanning Chemical Analysis (ESCA) to ensure a consistent ratio of nitrogen-containing functional groups
- Suitable for growing a variety of primary cells and cell lines that grow poorly on conventional, negatively charged, standard tissue culture surfaces—including tumor cells, endothelial cells and hepatocytes. Sterile, nonpyrogenic


08-772-4 Series (Bottles and dishes not included.)

Choice of neck and cap styles

- With plug-seal screw or vented caps
- Both styles available in two sizes
- 50mL flasks have canted neck
- 250mL flasks have straight neck

ORDERING INFORMATION:
Smaller flasks packed 20 per sleeve in cases of 200 (08-772-45 in cases of 100); larger flasks packed five per sleeve in cases of 100

Growth Surface	Capacity	Mfr. No.	Cat. No.	Case of
Plug-seal Caps				
25cm² (canted)	50mL	353813	**08-772-4E**	200/326.60
75cm² (straight)	250mL	353824	**08-772**	100/304.43
Vented Caps				
25cm² (canted)	50mL	353808	**08-772-45**	100/189.26
75cm² (straight)	250mL	353810	**08-772-46**	100/374.91

Nunc* OptiCell* Cell Culture System

Unique format for growing, monitoring, and transporting cells

- Sterile system is created from two parallel, gas-permeable, cell culture-treated polystyrene membranes
- Each membrane has a growth area of 50cm², total area: 100cm²
- Recommended media/cell fill volume of only 10mL for OptiCell and 30mL for OptiCell MAX
- Two resealing access ports provide a closed growth environment with sterile fluid path, reducing the risk of contamination
- Unique freezing capabilities allow for prolonged live cell storage
- Designed with approved shipping system to transfer cell lines
- Production of monoclonal antibodies, cytokines, and other secreted molecules

OptiCell System

INCLUDES:
OptiCell 1100 Starter Kit: 20 ea. of OptiCell 1100, rack, knife, 50 tips, optical shield, manual, mini-CD; OptiCell MAX 2100 Starter Kit: 5 ea. of OptiCell MAX, rack, 50 tips, Hybridoma production protocol, manual; OptiCell Mailer: 5 ea. OptiCell 1100, five mailers, 50 tips, manual, shipping protocol

Description	Cat. No.	Case of
OptiCell 1100		
Starter Kit	**12-566-602**	1/150.84
Cartridges only	**12-566-500**	20/115.65
	12-566-501	100/575.00
	12-566-502	500/2875.00
OptiCell MAX 2100		
Starter Kit	**12-566-603**	1/75.56
Cartridges only	**12-566-503**	20/150.84
	12-566-504	100/750.00
OptiCell Mailer		
Starter Kit	**12-566-604**	1/80.60
Mailers only	**12-566-600**	10/63.47

ACCESSORIES

Nunc* OptiCell* Accessories and Replacement Parts

- **OptiCell Rack** holds 20 OptiCell or 10 OptiCell MAX chambers; multiple racks can be connected
- **OptiCell Syringe Tips** are stainless-steel 18-gauge blunt tip, sterile and nonpyrogenic; fit standard syringes, for one use only
- **OptiCell Knife** can be used to remove growth membranes from the frame for sectioning and are supplied individually wrapped, sterile; may be autoclaved up to three times

Description	Cat. No.	Price
OptiCell Mailer	**12-566-505**	Ea./10.11
OptiCell Syringe Tips	**12-565-510**	Cs. of 100/32.29
OptiCell Knife	**12-565-545**	Pk. of 3/25.23

PLATES—SPECIALTY SURFACES

Millipore* Millicell* 24-Well Cell Culture Microplate Assembly

Provides twice the membrane area of standard 24-well plates

PSHT010R5

Patented assembly is designed to support cell attachment, growth, and differentiation for a variety of applications and is compatible with manual use or with automated cell seeding, feeding, and washing systems.

Filter Plate Features

- Basolateral access ports at each well allow for media addition without disassembling the cell culture plate and receiver tray
- Apical assist protects the cell monolayer during manual feeding
- Feet on the filter plate raise and protect the cell monolayer if the feeder tray is removed
- Tissue culture-treated membrane promotes cell attachment
- Raised well edges improve tape sealing
- Large-font labeling for user convenience

Feeder Tray Features

- 24-well feeder tray incorporates a tear-drop well design to reduce the incidence of air bubbles that can form under the membrane during plate assembly, ensuring that cell monolayers are getting the proper nutrients
- Single-well feeder tray utilizes baffles to reduce media leakage and contamination

INCLUDES:

24-well filter plate; single-well receiver tray; lids

Pore Size	Lid	No. of Wells	Pack Size	Cat. No.	Each
0.4µm	No	24	1	**PSHT010R1**	92.00
0.4µm	No	24	5	**PSHT010R5**	390.00
1.0µm	No	24	1	**PSRP010R1**	92.46
1.0µm	Yes	24	5	**PSRP 010 R5**	390.00
3.0µm	Yes	24	1	**PSST010R1**	88.00
3.0µm	Yes	24	5	**PSST010R5**	375.00
5.0µm	Yes	24	1	**PSMT010R1**	88.00
5.0µm	Yes	24	5	**PSMT010R5**	375.00
8.0µm	Yes	24	1	**PSET010R1**	88.00
8.0µm	Yes	24	5	**PSET010R5**	375.00
no filter	Yes	24	5	**PSMW 010 R5**	62.00
no filter	Yes	1	5	**PSSW 010 R5**	63.00

NEED TO SCALE UP YOUR CELL CULTURE?

To browse through many other types and brands to meet your needs, see the Culture Chamber subsection.

Millipore* MultiScreen* Cell Culture Trays

For feeding cells during membrane-based cell culture

MAMC S Series

- For basolateral feeding and/or co-culture in a single well or 96-well format
- Use with sterilized MultiScreen filter plates
- Polystyrene with cut-off corners
- Sterilized and individually wrapped
- Untreated surfaces

Single-Well Tray

- Holds medium and commonly feeds all 96 wells

96-Well Tray

- Independent wells fit the 96 wells of the membrane plate
- Patented "tear drop" shaped wells prevent air entrapment under membrane

Description	Cat. No.	Pack of 10
Single Well	**MAMC S01 10**	75.00
96 Well	**MAMC S96 10**	131.00

Millipore* MultiScreen* 96-Well Assay Systems

Perform cell growth, feeding, and analysis in one plate

MACA and PSRP Series

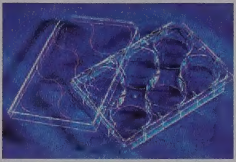
- Patented 96-well device supports epithelial cell growth and differentiation of the Caco-2 and other cell lines
- After the formation of a differentiated Caco-2 monolayer, the assembly can be used to measure the rate of drug transport across the Caco-2 cell barrier
- All procedures are designed to be carried out in a single device
- Apical and basolateral access ports allow contamination-free access to cells, easy feeding and media changes, and effective sample analysis
- Increased sample throughput when compared to 24-well systems
- Use manually or with automated systems
- Versatile format with 96- or single-well feeder trays

Pore Size	Membrane	Pack Size	Cat. No.	Each
Assay Systems				
0.4µm	Polycarbonate	2	**MACA C02 S2**	583.00
0.4µm	Polycarbonate	5	**MACA C02 S5**	1456.00
0.4µm	Polycarbonate	5	**MACA C02 B5**	1193.00
1µm	Polyester	1	**PSRP 004R1**	192.50
1µm	Polyester	5	**PSRP 004R5**	879.20
Feeder/Transport Tray with Lids				
NA	NA	5	**MACA COR S5**	98.00

Corning* CellBIND* Surface Microplates

Clear polystyrene plates in multiple well formats

- Corning CellBIND*-treated surface helps cells adapt to reduced serum or serum-free media and improves cell attachment for increased cell growth and yield
- Requires no refrigeration or special handling, unlike standard coatings used to improve cell attachment
- Nonreversible lids with condensation rings to reduce contamination†
- Individual alphanumeric codes for well identification
- Uniform footprint for ease in stacking
- Flat well bottoms
- Sterilized by gamma irradiation



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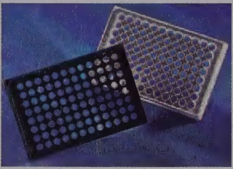


07-201-96

CERTIFICATIONS:
Certified nonpyrogenic

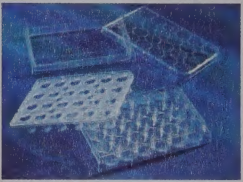
No. of Wells	Color	Growth Area‡	Mfr. No.	Cat. No.	Case of 50
6	Clear	9.5cm²	3335	**08-757-214**	126.79
12	Clear	3.8cm²	3336	**08-757-215**	146.54
24	Clear	1.9cm²	3337	**08-757-216**	160.57
48	Clear	9.5cm²	3338	**13-700-435**	183.05
96	Clear	0.32cm²	3300	**07-201-94**	211.72
96	Black/clear bottom	0.32cm²	3340	**07-201-96**	347.61
384	Black/clear bottom	0.056cm²	3683	**05-538-90**	500.76

† Lids for 384-well plates do not have condensation rings.
‡ Per well.

Corning* HTS Transwell*-24 Systems

Run 24 automated, high-throughput drug transport studies at once

- System consists of an array of 24 wells with permeable inserts connected by a rigid, robotics-friendly tray—enabling all 24 Transwell supports to be handled as a single unit
- Sterile and tissue culture-treated for anchorage-dependent cell growth, attachment, and differentiation
- Cell growth area 0.33cm²/well



07-200-685 with 07-200-68 series

Individual package includes two HTS Transwell-24 plates loaded into two 24-well plates and supplied with two open reservoirs

Bulk package consists of 12 HTS Transwell-24 plates loaded into twelve 24-well plates

- Use open reservoir plate for cell feeding without extra pipetting (sold separately)

Pore Size	Packaging	Mfr. No.	Cat. No.	Case of
HTS Transwell-24 Plate with Polycarbonate Membrane				
0.4µm	Individual	3396	**07-200-686**	2/180.00
0.4µm	Bulk	3397	**07-200-687**	12/996.00
3.0µm	Individual	3398	**07-200-688**	2/180.00
3.0µm	Bulk	3399	**07-200-689**	12/996.00
HTS Transwell-24 Plate with Polyester Membrane				
0.4µm	Individual	3379	**07-200-537**	2/182.70
0.4µm	Bulk	3378	**07-200-539**	12/996.00
HTS Transwell Open Reservoir				
----	----	3395	**07-200-685**	48/140.00

Costar* Cell Culture Plates

Tissue culture-treated plates for cell attachment

- Designed for a wide range of applications, including general cell growth experiments, cloning studies, virus isolation and susceptibility testing, and in vitro testing
- Plate bottoms feature uniform thickness—allowing for distortion-free observation and microscopic examination
- Alphanumeric coordinates placed on the same focal plane as cell growth—for convenient referencing of well position
- Gripping edges make handling easier
- All plates have nonreversible lids with condensation rings to minimize evaporation and risk of contamination
- Made of optically clear, medical-grade polystyrene (except 07-200-94, which is made of polypropylene with a polystyrene lid)
- Sterile

CERTIFICATIONS:
Certified nonpyrogenic

Clockwise from top left:
07-200-740, -80, -81, -96, -84

No. of Wells	Well Shape	Well Diameter	Well Growth Area	Total Well Volume	Working Volume	Packaging	Mfr. No.	Cat. No.	Case of
6	Flat	35mm	9.5cm²	17mL	2–3mL	1/bag	3516	**07-200-83**	50/106.15
	Flat	35mm	9.5cm²	17mL	2–3mL	5/bag	3506	**07-200-80**	100/207.97
12	Flat	22.6mm	4cm²	7mL	1mL	1/bag	3513	**07-200-82**	50/123.12
	Flat	22.6mm	4cm²	7mL	1mL	5/bag	3512	**07-200-81**	100/240.61
24	Flat	16mm	1.9cm²	3.4mL	0.5mL	1/tray	3526	**09-761-146**	50/134.45
	Flat	16mm	1.9cm²	3.5mL	0.5mL	1/tray	3524	**07-200-84**	100/268.78
	Flat	16mm	1.9cm²	3.4mL	0.5mL	5/bag	3527	**07-200-740**	100/263.53
48	Flat	11.3mm	1cm²	1.6mL	0.25mL	1/tray	3548	**07-200-86**	100/316.88
96	V	6.4mm	0.38cm²	0.290mL	0.1–0.2mL	1/tray	3894	**07-200-96**	50/220.34
	Round	6.4mm	0.60cm²	0.33mL	0.1–0.2mL	1/tray	3799	**07-200-95**	50/196.88
	Flat, low lid	6.4mm	0.32cm²	0.365mL	0.1–0.2mL	1/tray	3595	**07-200-89**	50/177.42
	Flat, low lid	6.4mm	0.32cm²	0.365mL	0.1–0.2mL	5/bag	3585	**07-200-87**	50/177.61
	Flat	6.4mm	0.32cm²	0.365mL	0.1–0.2mL	1/tray	3596	**07-200-90**	50/168.77
	Flat	6.4mm	0.32cm²	0.365mL	0.1–0.2mL	10/bag	3997	**09-761-145**	50/156.78
	Flat	6.4mm	0.32cm²	0.365mL	0.1–0.2mL	5/bag	3598	**07-200-91**	100/303.90
	Flat	6.4mm	0.32cm²	0.365mL	0.1–0.2mL	1/bag	3599	**07-200-92**	100/333.02
	Round	6.4mm	----	0.33mL	0.1–0.2mL	1/tray	3790	**07-200-94†**	50/201.59

† Polypropylene, with polystyrene lid. Not tissue culture treated.

Corning* Microplates with Poly-D-Lysine Surface

Promote cell attachment

- Enhance cell attachment, growth, and differentiation; increase survival in serum-free and low-serum conditions
- Polystyrene flat bottom plates with lids
- High coating homogeneity
- Clear surface allows for easy visual inspection; opaque walls provide minimal well-to-well crosstalk
- Low background fluorescence and luminescence
- Two-year shelf life

07-201-135 (back), -136

Color	Mfr. No.	Cat. No.	Case of 100
96-Well Plates			
Clear	3665	**07-201-136**	785.17
Black/clear bottom	3667	**07-201-138**	1441.96
384-Well Plate			
Black/clear bottom	3664	**07-201-135**	2150.33

Corning* Ultra-Low Attachment Plates

Nonreversible lids with condensation rings reduce contamination

- Made from optically clear polystyrene
- Individual alphanumeric codes provide well identification
- Uniform footprint aids stacking
- Flat well shape
- Unique covalently bonded hydrogel surface is hydrophilic and neutrally charged
  - Surface is designed to maintain cells in a suspended, unattached state. Greatly reduces binding of attachment and serum proteins, minimizing cell attachment and spreading.
  - Prevents stem cells from attachment-mediated differentiation
  - Prevents anchorage-dependent cells from dividing
  - Minimizes protein absorption, enzyme activation, and cellular activation
  - Biologically inert, noncytotoxic and nondegradable

07-200-602, -603, -601

No. of Wells	Well Diameter	Well Growth Area	Mfr. No.	Cat. No.	Case of 24
6	34.8mm	9.5cm^2	3471	**07-200-601**	228.82
24	15.6mm	1.9cm^2	3473	**07-200-602**	237.50
96	6.4mm	0.32cm^2	3474	**07-200-603**	280.03

Nunc* MicroWell* F96 Plates for Automation

12-565-292

Clear polystyrene plates available treated or untreated

- **Nunclon*Δ**, **Collagen I**, and **Poly-D-Lysine** plates optimized for cell based assays
- **PolySorp**, **MaxiSorp**, **MediSorp**, and **MultiSorp** for solid phase immunoassays
- **Untreated plates** for enzymatic determinations, storage, dilutions, and general applications
- Skirt design facilitates manipulation by robotic arm; high plate flange and identical lid height allow automated handling without changing the settings
- Lids feature condensation rings to reduce evaporation and prevent well-to-well crosstalk (not available with all plates)
- 96 flat-bottom wells
- Bar coding available
- Working range: 50–250µL/well

ORDERING INFORMATION:

Dimensions (W × L): 86 × 128mm

CERTIFICATIONS:

Cat. Nos. specified in chart are certified for adsorption of IgG; CV of <5% between wells; all results ±10% from mean; and background of all wells ±0.005 absorbance units from mean.

Lid	Sterile	Bar Code	Mfr. No.	Cat. No.	Case of
Untreated					
Yes	Yes	Yes	260887	**12-565-364**	160/499.25
Yes	Yes	No	260860	**12-565-363**	160/439.50
Yes	No	No	260895	**12-565-365**	160/329.00
No	No	Yes	260844	**12-565-362**	180/418.00
No	No	No	260836	**12-565-361**	180/292.00
Collagen I					
Yes	No	No	152038	**12-565-908**	20/146.20
Nunclon Δ					
Yes	Yes	No	167008	**12-565-66†**	50/179.25
Yes	Yes	No	161093	**12-565-383†**	160/498.00
Yes	Yes	No	168136	**12-565-720‡**	160/498.00
No	Yes	No	168055	**12-565-64†**	50/145.50
Poly-D-Lysine					
Yes	No	No	152039	**12-565-901**	20/146.20
MaxiSorp					
No	No	No	456537	**12-565-377†**	180/620.25
MediSorp					
No	No	No	467320	**12-565-730†**	60/207.25
MultiSorp					
No	No	No	467340	**14-962-23†**	60/207.75
PolySorp					
No	No	No	456529	**12-565-376**	180/537.25

† *With certificate.*

‡ *Round-bottom wells.*

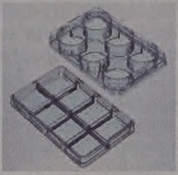
*Trademark. See Trademark Reference.

Prices subject to change.

Nunclon* Δ Multidishes

Select either round or rectangular well

- Polystyrene plates feature Nunclon Δ treated surface for cell attachment and growth
- Radiation sterilized



12-565-73 (back), -78

Round Well Styles

- Feature vented lids for gas exchange
- Recessed areas around wells act as a water reservoir to reduce evaporation from wells
- 24-well plates are 17mm deep; 4-well plate is 10mm deep
- Lids are keyed for a one-way fit

Rectangular Well Styles

- Large culture area
- Accept standard glass cover slips: 24 × 60mm for 4-well plate; and 22 × 22mm for 8-well plate

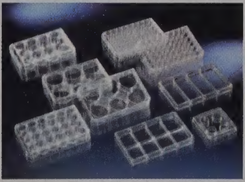
CERTIFICATIONS:

With certificate of traceability and quality (one certificate per case).

No. of Wells	Well Size	Well Volume	Culture Area	Mfr. No.	Cat. No.	Case of
Round Well						
4	15mm	1.0mL	1.9cm^2	176740	**12-565-72**	120/218.00
6	35mm	3mL	9.6cm^2	140675	**14-832-11**	75/159.25
6	35mm	3mL	9.6cm^2	140685	**14-832-10**	85/177.00
12	21mm	2.0mL	3.5cm^2	150628	**12-565-321**	75/178.75
24	15mm	0.4–1.0mL	1.9cm^2	142475	**12-565-163**	75/199.00
24	15mm	0.4–1.0mL	1.9cm^2	142485	**12-565-164**	85/221.00
48	12mm	0.5mL	1.1cm^2	150687	**12-565-322**	75/237.00
48	12mm	0.5mL	1.1cm^2	152640	**12-565-165**	85/265.00
Rectangular Well						
4	24 × 67mm	16.0mL	16cm^2	176597	**12-565-77**	100/345.25
8	26 × 33mm	8.6mL	8.6cm^2	176600	**12-565-78**	100/361.75

Nunclon* Δ Multidishes with Coated Surfaces

Useful in all areas of cell culture including scale-up and cloning



12-565-Series

- Polystyrene plates with six flat-bottom wells
- With raised well rims to lower risk of cross-contamination
- Excellent optical quality
- Available with Poly-D-Lysine or Collagen coated surface
- Produced in clean environment
- Nonsterile
- With lids
- Working volume, 3mL/well
- Culture area, 9.6cm^2/well

CERTIFICATIONS:

Nunclon Δ certified

Surface Coating	No. of Wells	Mfr. No.	Cat. No.	Case of 20
Poly-D-Lysine	6	152035	**12-565-900**	135.76
Collagen I, rat tail	6	152034	**12-565-907**	135.76

Nunc* MicroWell* MiniTrays

Used in serotyping, microcytotoxicity and cell cloning studies

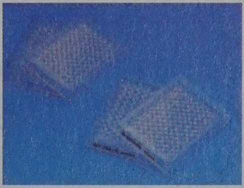
- Limited adsorption of proteins
- Optical clarity allows use with inverted microscopes
- Occupy minimal freezer and incubator space
- Lids have keyed tabs for proper orientation
- Large raised alphanumeric coordinates
- Unique surface treatment to maximize sample and reagent mixing
- MiniTrays for serological applications have slightly smaller well dimensions
- Nonsterile

No. of Wells	Mfr. No.	Cat. No.	Case of
60	452256	**12-565-158**	480/661.50
72	470378	**12-565-157**	480/661.50
60	472400	**12-565-159**[†]	400/487.25
For Serological Applications			
60	439225	**12-565-155**	100/138.25
72	438733	**12-565-154**	100/138.25

[†] *With S-plate. Supplied with 16 lids total per case. Additional lids available separately (12-565-160).*

Nunclon* Δ MicroWell* Plates

Exclusive Nunclon surface for excellent cell attachment and growth



12-565-65

- Nunclon-treated polystyrene plates are available in 60-, 72-, or 96-well formats for use in a wide variety of applications, including cloning experiments and tissue culture-based analytical systems.
- Tight-fitting lids reduce evaporation
- Stackable
- Radiation sterilized

60- and 72-well Plates

- Feature conical wells with a working volume of 10µL

96-well Plates

- Available with flat- or round-bottomed wells and with or without vented lid for gas exchange
- Condensation rings control evaporation and retain condensate
- Keyed lids prevent accidental reversals

ORDERING INFORMATION:

Dimensions: 60- and 72-well plates, 56 × 82mm; 96-well plates, 86 × 128mm. Flat- and round-bottomed plates are individually wrapped (except 12-565-292A, which comes six per sleeve); conical plates are packed 10 per sleeve.

CERTIFICATIONS:

Each case of plates contains a certificate that guarantees biological performance and traceability.

Well Shape	No. of Wells	Well Volume	Culture Area	Mfr. No.	Cat. No.	Case of
With Lids						
Round	96	300µL	0.36cm^2	163320	**12-565-65**	50/210.25
Round	96	300µL	0.36cm^2	172133	**12-565-292A**[†]	108/315.51
Conical	60	10µL	0.013cm^2	163118	**12-565-67**	150/175.00
Conical	72	10µL	0.013cm^2	136528	**12-565-68**	150/175.00
Without Lids						
Round	96	300µL	0.36cm^2	143761	**12-565-63**	50/141.00

[†] *With pinch bar design. Packaged six per sleeve.*

Nunc* 96-Well Coated Microplates

Optimum clarity for viewing well contents

12-565-9 Series

- Flat-bottom well geometry for plate reader access
- Available in black for fluorescence assays or white for luminescence and fluorescence assays; both with clear bottoms
- Footprint compatible with standard equipment and automated systems
- Choice of Poly-D-Lysine and Collagen I coated surfaces for use in cell culture
- Produced in clean environment
- Polystyrene construction with polymer base
- Nonsterile
- With lid
- Working range, 50-200µL/well

Color	Mfr. No.	Cat. No.	Case of 20
Collagen I Coated			
Black	152036	**12-565-909**	271.34
White	152040	**12-565-910**	271.34
Poly-D-Lysine Coated			
Black	152037	**12-565-902**	263.60
White	152028	**12-565-903**	263.60

Nunc* 384-Well Coated Microplates

12-565-9 Series

Pinchbar design

Choose clear polystyrene plates for colorimetric assays and sample storage, white polystyrene/polymer plates for luminescence and fluorescence assays, or black polystyrene/polymer plates for fluorescence assays.

- Optimized for scintillation counting
- Can be read from bottom and top or both
- Rounded square wells eliminate wicking
- White and black plates minimize crosstalk
- Produced in clean environment
- Nonsterile
- With lids
- Working range, 10-100µL/well

Color	Mfr. No.	Cat. No.	Case of 20
Collagen I Coated			
Black/clear bottom	152041	**12-565-912**	407.25
Poly-D-Lysine Coated			
Clear	152031	**12-565-904**	244.40
White/clear bottom	152033	**12-565-906**	404.63
Black/clear bottom	152029	**12-565-905**	407.25

Thermo Scientific* Pierce* CellScreen* Poly-D-Lysine Coated Plates

Enable firm attachment and efficient cell growth for applications such as reporter, receptor-binding, cytotoxicity, apoptosis, and cell-proliferation assays

- Polypropylene plates with Poly-D-Lysine coating
- Treated with a predetermined irradiation process after coating for high lot-to-lot consistency and quality assurance
- Automation-compatible for high-throughput applications and robotics
- With lids

STORAGE CONDITIONS:

Store at 4°C (39°F).

No. of Wells	Color	Well Shape	Well Capacity	Well Growth Area	Cat. No.	Pack of 5
96	Clear	Flat-bottom	300µL	78mm^2	**PI-15600**	51.26
384	Black/clear bottom	Flat-bottom	100µL	49mm^2	**PI-15608**	122.46

BD BioCoat* Coated Plates

Ideal for applications involving adhesion, growth and differentiation of neuronal and transfected cell lines

- Designed to closely mimic in vivo environments and enhance expression of cell-specific morphology
- Matrix components are applied as an even, optically clear coating
- All lots tested and found negative for bacteria and fungi; cellware is tested for the ability to promote firm attachment of rat cerebellar granule cells

STORAGE CONDITIONS:

Stable for at least three months from date of shipment when stored at 2° to 8°C (36°-46°F), unless otherwise specified

NOTE:

These products are research use only and are not intended for diagnostic purposes.

Multiwell Plates Collagen IV

Tissue culture vessels have a uniform application of mouse collagen type IV

Treated with Collagen IV, which plays a role in the regulation of cell growth, differentiation, and adhesion, as well as tissue formation.

- Tested for the ability to promote differentiation (neurite outgrowth) of NG-108 rat glioma/mouse neuroblastoma cells
- Manufactured in a highly controlled environment and rigorously tested to assure product consistency and performance

Cellware	Mfr. No.	Cat. No.	Case of 5
6-well	354428	**08-774-28**	121.10
24-well	354430	**08-774-29**	123.20
96-well	354429	**08-774-30**	126.40

Contd. on next page.

LOOKING FOR CLASSICAL MEDIA?
See the Media section of this book.

*Trademark. See Trademark Reference.

BD BioCoat* Coated Plates, Contd.

Collagen I, Rat Tail Multiwell* Plates

Color	Mfr. No.	Cat. No.	Case of
6-well Plates			
Clear	354400	**08-774-1**	5/54.11
	356400	**08-772-69**	50/338.95
12-well Plates			
Clear	354500	**08-774-2**	5/58.88
	356500	**08-772-70**	50/344.45
24-well Plates			
Clear	354408	**08-774-3**	5/58.88
	356408	**08-772-71**	50/344.45
48-well Plates			
Clear	354505	**08-774-4**	5/78.90
	356505	**08-774-266**	50/477.72
96-well Plates			
Clear	354407	**08-774-5**	5/61.50
	356407	**08-772-72**	50/369.62
	356690	**10-129-9**	80/589.64
Black/clear bottom	354649	**08-774-296**	5/116.71
	356649	**08-774-299**	50/678.77
	356700	**10-130-1**	80/1088.06
White/clear bottom	354650	**08-774-307**	5/116.71
	356701	**10-130-2**	80/1088.06
White	354519	**08-774-294**	5/73.66
	356519	**08-774-297**	50/421.10
White/opaque bottom	356699	**10-130-0**	80/662.38
384-well Plates			
Black/clear bottom	354667	**08-774-316**	5/147.32
	356705	**10-130-6**	80/1620.52
White/clear bottom	354664	**08-774-313**	5/147.32
Clear/clear bottom	356666	**08-774-325**	50/565.43
Clear	356704	**10-130-5**	80/895.58
White	356703	**10-130-4**	80/1008.74

Fibronectin, Human, Multiwell Plates

Tested for their ability to promote attachment and spreading of BHK-21 hamster kidney cells

NOTE:

The human plasma used in preparing this product was tested and found negative for HBsAg and HIV antibody.

Cellware	Mfr. No.	Cat. No.	Case of 5
6-well	354402	**08-774-56**	110.40
12-well	354501	**08-774-57**	112.50
24-well	354411	**08-774-58**	113.60
48-well	354506	**08-774-59**	115.70
96-well	354409	**08-774-60**	116.80

Gelatin Multiwell Plates

Pre-coating with gelatin (obtained from porcine gelatin) eliminates time-consuming preparation

Commonly used in the culture of normal and transfected cell types, including vascular endothelial (i.e., BME, BAEC), muscle, embryonic stem (ES), HUVEC for E-Selectin expression and VEGF induction, and F9 teratocarcinoma cells for gene expression studies

- Provides attachment and growth-promoting substrate for the culture of a variety of cells
- Lot-to-lot consistency results in reproducible experiments

Cellware	Mfr. No.	Cat. No.	Case of
6-well	354652	**08-774-300**	5/48.70
	356652	**08-774-303**	50/284.95
96-well	354689	**CB-354689**	5/55.51
	356689	**CB-356689**	50/323.49

Laminin Multiwell Plates

Tested for their ability to initiate differentiation (neurite outgrowth) of NG-108 rat glioma/mouse and human neuroblastoma cells

- Designed to closely mimic in vivo environments
- Matrix components are applied as an even, optically clear coating

Cellware	Mfr. No.	Cat. No.	Case of 5
6-well	354404	**08-774-82**	123.87
12-well	354502	**08-774-83**	124.87
24-well	354412	**08-774-84**	126.07
48-well	354507	**08-774-85**	128.18
96-well	354410	**08-774-86**	129.28

Laminin/Fibronectin Multiwell Plates

An in vitro environment for neural cell attachment and extensive process formation

Useful for construction of neural cell model systems to study central nervous system (CNS) function, development and diseases—as well as for the discovery of new therapeutic agents.

- Both laminin (LM) and human fibronectin (HFN) have been shown to be involved in neuronal cell adhesion, neural crest cell migration, neurite outgrowth, growth and regeneration of axons
- Human fibronectin is derived from human plasma; laminin from EHS mouse tumor
- Primary rat cortical neuron enriched cultures are tested for receptor agonist induced changes in intracellular calcium using Fluo-3A (long-wavelength fluorescent calcium indicator)

NOTE:

Human plasma used in preparing this product was tested and found negative for HBsAg and HIV antibody.

Cellware	Mfr. No.	Cat. No.	Case of 5
96-well	354670	**08-772-65**	135.70

Contd. on next page.

BD BioCoat* Coated Plates, Contd.

Matrigel* Matrix Multiwell Plates

Soluble basement membrane extracted from Engelbreth-Holm-Swarm mouse tumor forms a gel when reconstituted at room temperature

BD Matrigel Matrix is a soluble basement membrane extracted from Engelbreth-Holm-Swarm mouse tumor which, when reconstituted at room temperature, forms a gel. It is especially suited for culture of polarized cells, such as epithelial cells, and promotes differentiation of hepatocytes, mammary epithelial cells and smooth muscle cells. It also promotes capillary tubule formation of endothelial cells and neurite regeneration, and can be used for angiogenesis assays.

- Especially suited for culture of polarized cells, such as epithelial cells, and promotes differentiation of hepatocytes, mammary epithelial cells and smooth muscle cells
- Promotes capillary tubule formation of endothelial cells and neurite regeneration
- Can be used for angiogenesis assays
- Tested for the ability to promote neurite outgrowth from chick dorsal root ganglia (in the absence of NGF)

STORAGE CONDITIONS:
Cellware is stable for at least three months from date of shipment when stored at -20°C (-4°F); thin-layer cellware is stable for at least three months from date of shipment when stored at 2°–8°C (36°–46°F).

Cellware	Mfr. No.	Cat. No.	Case of
Multiwell Plates			
6-well	354432	**08-774-107**	2/276.65
6-well (for hepatocytes)	354510	**08-774-194**	1/315.09
12-well	354503	**08-774-108**	2/285.36
24-well	354433	**08-774-109**	2/294.97
48-well	354508	**08-774-110**	2/301.38
Multiwell Plates (Thin-layer)			
6-well	354603	**08-774-164**	5/132.50
24-well	354605	**08-774-165**	5/135.71
96-well	354607	**08-774-166**	5/141.13

Poly-D-Lysine/Laminin Multiwell Plates

Designed to closely mimic in vivo environments and enhance expression of cell-specific morphology

- Matrix components are applied as an even, optically clear coating

STORAGE CONDITIONS:
Stable for at least three months after shipment when stored at 2°–8°C (36°–46°F); do not freeze

NOTE:
These products are for research use only and are not intended for diagnostic purposes

Cellware	Mfr. No.	Cat. No.	Case of 5
6-well	354595	**08-774-168**	122.20
24-well	354619	**08-774-169**	124.40
96-well	354596	**08-774-170**	127.60

Poly-D-Lysine Multiwell* Plates

Ideal for applications involving adhesion, growth and differentiation of neuronal and transfected cell lines

NOTE:
These products are for research only and not intended for diagnostic purposes.

Color	Mfr. No.	Cat. No.	Case of
6-well Plates			
Clear	354413	**08-774-123**	5/54.10
	356413	**08-774-268**	50/335.60
12-well Plates			
Clear	354470	**08-774-269**	5/60.03
	356470	**08-774-270**	50/341.10
24-well Plates			
Clear	354414	**08-774-124**	5/60.03
	356414	**08-774-271**	50/341.10
48-well Plates			
Clear	354509	**08-774-280**	5/80.47
	356509	**08-774-288**	50/473.11
96-well Plates			
Clear	354461	**08-774-127**	5/64.63
	356461	**08-774-272**	50/373.00
	356698	**10-129-1**	80/601.18
Black/clear bottom	354640	**08-774-255**	5/116.71
	356640	**08-774-256**	50/686.00
	356692	**10-129-3**	80/1088.06
White/clear bottom	354651	**08-774-308**	5/116.71
	356651	**08-774-318**	50/685.45
	356693	**10-129-4**	80/1088.06
White	354620	**08-774-295**	5/73.66
	356620	**08-774-298**	50/429.29
	356691	**10-129-2**	80/688.59
384-well Plates			
Black/clear Bottom	354663	**08-774-312**	5/147.32
	356663	**08-774-322**	50/1022.07
	356667	**10-129-8**	80/1502.50
White/clear Bottom	354660	**08-774-309**	5/147.32
	356660	**08-774-319**	50/1022.07
	356694	**10-129-5**	80/1620.52
White	356661	**08-774-320**	50/637.65
	356695	**10-129-6**	80/1008.74
Clear	354662	**08-774-311**	5/81.59

Poly-L-Lysine Multiwell Plates

Provide excellent substrate for cell attachment and differentiation of primary neurons, glial, neuroblastoma and glioma cells

Suitable for promoting adhesion of transfected cell lines and other fastidious cell types. Designed to closely mimic *in vivo* environments and enhance expression of cell-specific morphology.

- Minimize assay failure due to cell detachment
- Precoated with Poly-L-Lysine to eliminate time-consuming preparation
- Lot-to-lot consistency provides reproducible experiments

Cellware	Mfr. No.	Cat. No.	Case of
6-well	354515	**08-772-90**	5/56.72
	356515	**08-772-91**	50/335.60
96-well	354516	**08-772-92**	5/65.74
	356516	**08-772-93**	50/377.43

Contd. on next page.

BD BioCoat* Coated Plates, Contd.

Poly-L-Ornithine/Laminin Multiwell Plate

Substrate combination enhances adhesion of neurons to glass and plastic surfaces

- Each lot is tested for the ability to promote neurite outgrowth with rat glioma/mouse neuroblastoma cells
- Tested and found negative for the presence of bacteria and fungi

STORAGE CONDITIONS:

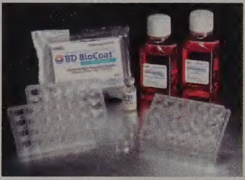
Stable for at least three months from date of shipment when stored at 2°–8°C (36°–46°F); do not freeze

Cellware	Mfr. No.	Cat. No.	Case of 5
6-well	354658	**08-772-66**	122.66
24-well	354659	**08-772-67**	124.86
96-well	354657	**08-772-68**	128.08

BD BioCoat* HTS Caco-2 Assay System

Automation-friendly design

- Produces a differentiated mono-layer of Caco-2 cells in vitro in just three days
- Fibrillar collagen-coated inserts with specialized BD BioCoat media speed cell differentiation
- Large-volume feeder tray reduces the need for frequent media changes
- Lot-to-lot testing ensures consistency



08-785

INCLUDES:

24-Multiwell* insert plate, specialized media to perform 24 assays, feeder tray, and lid.

Description	Mfr. No.	Cat. No.	Pack of
HTS Caco-2 Assay System	354801	**08-785**	1/291.08
	354802	**08-786**	5/1247.40
Fibrillar Collagen 24-Multiwell Insert Plate only	354803	**08-787**	1/249.10
	354804	**08-788**	5/1120.20

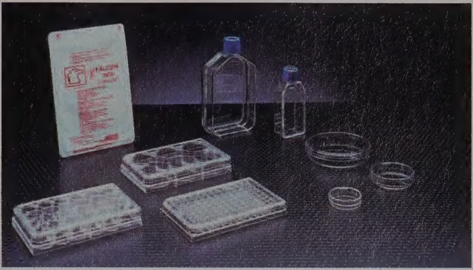
BD BioCoat* Deep-Well Plates

Accommodate the large media volumes required when culturing cells on microporous membranes

- Designed for use with BD BioCoat or BD Falcon* 6-well Cell Culture Inserts
- Basolateral compartment of one plate holds up to seven times as much media as its regular 6-well plate counterpart (17mL versus 2.5mL)
- Larger media volume reduces the frequency of cell feeding during extended cell culture periods or when culturing cells at the air-liquid interface
- Recommended for applications involving culturing of Caco-2 cells, airway epithelial cells or keratinocytes

Mfr. No.	Cat. No.	Case of 4
355467	**08-774-183**	34.91

BD Falcon* Primaria* Tissue Culture Multiwell* Plates



08-772-4 Series (Bottles and dishes not included.)

Features a surface treatment that is a permanent, stable modification of the polystyrene surface incorporating a mixture of anionic and cationic functional groups

Flat-bottomed wells

- With lids
- Samples of each lot are analyzed using Electron Scanning Chemical Analysis (ESCA) to ensure a consistent ratio of nitrogen-containing functional groups
- Surface treatment is a permanent, stable modification of the polystyrene surface incorporating a mixture of anionic and cationic functional groups.
- Samples of each lot are analyzed using Electron Scanning Chemical Analysis (ESCA) to ensure a consistent ratio of nitrogen-containing functional groups
- Suitable for growing a variety of primary cells and cell lines that grow poorly on conventional, negatively charged, standard tissue culture surfaces—including tumor cells, endothelial cells and hepatocytes
- Sterile, nonpyrogenic

ORDERING INFORMATION:

Individually wrapped; 50 plates per case

No. of Wells	Mfr. No.	Cat. No.	Case of 50
6	353846	**08-772-4J**	138.40
24	353847	**08-772-4G**	177.20
96	353872	**08-772-4K**	233.87

BD Falcon* Tissue Culture Plates

Available with tissue culture-treated and nontreated surfaces

- Nontreated growth surface is more hydrophobic than tissue culture surface and is similiar to the surface of a bacteriological Petri dish
- Sterilized by gamma irradiation
- Lid design permits stable stacking on benchtop or in incubator
- All plates (except 08-772-2A and 08-772-16) have patented "labyrinth" lid that reduces evaporation of media from wells, minimizes the risk of contamination
- Deep skirt and serrated edge permit a firmer grip for plate manipulation
- Exceptional optical clarity allows for visualization of all cell monolayers
- Frosted writing ends provide clear writing area for quick identification
- All plates and lids are suitable for both manual and automated handling

08-772-1B, 08-772-29, 08-772-1

ORDERING INFORMATION: Peel-open, medical-style packaging. Individually packaged in recyclable PET tray in cases of 50; or bulk packaged with lids either in sleeves of six, 36 per case, or sleeves of five (96-well plates), 50 per case.

					Tissue Culture-Treated Plates						Nontreated Plates		
					Individually Wrapped			Bulk Pack			Individually Wrapped		
No. of Wells	Well Shape	Volume/ Well	Surface Area/Well	Lid	Mfr. No.	Cat. No.	Case of 50	Mfr. No.	Cat. No.	Case of	Mfr. No.	Cat. No.	Case of 50
6	Flat	15.5mL	9.6cm²	Yes	353046	**08-772-1B**	101.20	353224	**08-772-1G**	36/75.60	351146	**08-772-49**	50/98.50
6	Flat	15.5mL	9.6cm²	Yes	----	----	----	353934	**08-772-33**†	117.98	----	----	----
12	Flat	6.0mL	3.8cm²	Yes	353043	**08-772-29**	119.33	353225	**08-772-3A**	36/87.30	351143	**08-772-50**	50/117.00
24	Flat	3.5mL	2.0cm²	Yes	353047	**08-772-1**	129.13	353226	**08-772-1H**	36/96.86	----	----	----
24	Flat	3.5mL	2.0cm²	Yes	----	----	----	----	----	----	----	----	----
48	Flat	1.4mL	0.75cm²	Yes	353078	**08-772-1C**	153.90	353230	**08-772-3D**	36/110.70	351178	**08-772-52**	157.0
96	Flat	0.3mL	0.26cm²	Yes				353916	**08-773-10**	100/285.19			
96	Flat	0.37mL	0.32cm²	No	353070	**08-772-2A**	119.90	----	----	----	----	----	----
96	Flat	0.37mL	0.32cm²	Yes	353072	**08-772-2C**	165.03	353075	**08-772-3**	50/167.69	----	----	----
96	Round	0.32mL	0.36cm²	No	353076	**08-772-16**	119.33	----	----	----	----	----	----
96	Round	0.32mL	0.36cm²	Yes	353917	**08-377-11**	300.38	----	----	----	351172	**08-772-53**	132.30
96	Flat	0.37mL	0.36cm²	Yes	----	----	----	----	----	----	----	----	----
96	Round	0.32mL	0.36cm²	Yes	353077	**08-772-17**	164.50	353227	**08-772-3B**	50/159.36	351177	**08-772-54**	50/140.00

† In Ready-Stack tray, 10 plates per tray.
‡ In Ready-Stack tray, 14 plates per tray.

BD Falcon* Plates in Ready-Stack Packaging

Trays are recyclable, stackable, and reusable for transporting, storing, or incubating plates

- Bulk packaged in medical-style peel-open trays for convenient, aseptic handling
- Plates positioned on their sides, permitting labeling before removal
- Tissue culture-treated

08-772-36

ORDERING INFORMATION: Packaged sterile, 14 plates per tray

INCLUDES: Lids

No. of Wells	Total Well Volume	Mfr. No.	Cat. No.	Case of
24	3.5mL	353935	**08-772-35**	60/150.90
96	0.37mL	353936	**08-772-36**	84/255.50

LOOKING FOR MICROPLATE READERS?
To see Fisher Scientific's selection of microplate readers, turn to the Microplate Instrumentation section.

CHAMBER SLIDES & COVERSLIPS

*Fisherbrand** Coverglass for Growth* Cover Glasses

Made from preferred glass to promote cell growth and to provide an anchor for cells

- Cells grow directly on cover glass—eliminates trauma associated with transferring cells from flask to slide
- Thickness, 0.13 to 0.17mm (Number 1)

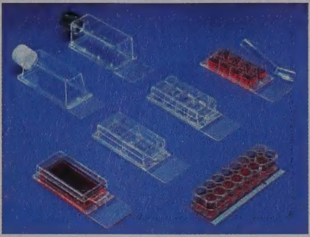
12-545-8 Series

ORDERING INFORMATION: Supplied in pack of 1 oz.

Circle Diameter	Cat. No.	Pack of 1 oz.	Case of 10 Pack
12mm	**12-545-82**	176.73	1510.54
15mm	**12-545-83**	119.71	1023.13
18mm	**12-545-84**	105.15	898.74
22mm	**12-545-85**	87.95	778.35
25mm	**12-545-86**	87.20	771.53

*Trademark. See Trademark Reference.

Nunc* Lab-Tek* Chamber Slide* System



From left to right: (top) 12-565-23 and 12-565-112; (middle) 12-565-15, 12-565-20, 12-565-22 and 12-565-18; (bottom) 12-565-110N

Convenient cell culture on microscope slides

Unique removable chamber lets you grow anchorage-dependent cells right on the microscope slide which can be used later for staining and microscopic examination. Select from three styles; all are sterile.

Chamber Slide Systems

- 1-, 2-, 4-, and 8-well configurations; all measure 25 × 75mm
- Available with a Permanox* solvent-resistant plastic tissue culture-treated slide or a glass slide (16-well format available with glass slide only) suitable for adherent cell culture
- Both styles feature a writing surface for easy identification, detachable upper structure and cover
- Medical-grade silicone sealing gasket can be removed for cover slipping

SlideFlask Chamber (shown with black cap in photo)

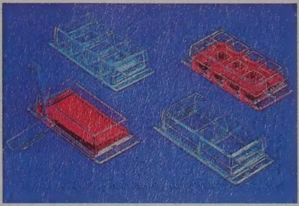
- Employs tissue culture-treated polystyrene slide attached to 18 × 50mm flask structure via ultrasonic weld—allowing for long-term, leak-free incubation
- Upper flask structure snaps away easily after culture—freeing slide for microscopic examination

The Flaskette* Chamber (shown with white cap)

- Glass slide with a silicone gasket and a 20 × 50mm upper flask structure
- Can be sealed to exclude air—useful when embedding cells in resin for electron microscopy

No. of Wells	Working Volume	Growth Area	Mfr. No.	Cat. No.	Pack of 16	Case of
Permanox Plastic Chamber Slide System						
1	4.5mL	9.4cm²	177410	**12-565-19**	113.30	6 Pk./581.00
2	2.3mL	4.2cm²	177429	**12-565-20**	115.88	6 Pk./594.25
4	0.8mL	1.8cm²	177437	**12-565-21**	119.63	6 Pk./613.50
8	0.4mL	0.8cm²	177445	**12-565-22**	122.05	6 Pk./625.75
Glass Chamber Slide System						
1	4.5mL	9.4cm²	177372	**12-565-15**	94.47	6 Pk./492.50
2	2.3mL	4.2cm²	177380	**12-565-16**	97.19	6 Pk./506.75
4	0.8mL	1.8cm²	177399	**12-565-17**	104.96	6 Pk./538.25
8	0.4mL	0.8cm²	177402	**12-565-18**	105.54	6 Pk./541.25
16	0.3mL	0.4cm²	178599	**12-565-110N**	115.88	6 Pk./594.25
SlideFlask Chamber						
1	4.5mL	9.0cm²	170920	**12-565-112**	----	50/325.50
Flaskette Chamber						
1	4.5mL	10.0cm²	177453	**12-565-23**	110.98	6 Pk./579.00
Cover Glass (fits 16-well slide)						
----	----	----	171080	**12-565-105**	----	96/29.75

Nunc* Lab-Tek* Chambered Cover Glasses



From left to right: 12-565-472, -471; (bottom) 12-565-401; (top) 12-565-470

Enhanced for culturing and viewing living cells

- Nonremovable polystyrene media chambers secured to a No. 1 borosilicate cover glass
- Thin cover glass provides optimum optical characteristics required for high-magnification microscopy
- Sterile

No. of Wells	Working Volume	Growth Area	Mfr. No.	Cat. No.	Pack of 16	Case of 6 Pack
1	4.5mL	9.4cm²	155361	**12-565-472**	104.96	538.25
2	2.3mL	4.2cm²	155380	**12-565-471**	106.40	552.50
4	0.8mL	1.8cm²	155383	**12-565-401**	113.01	587.00
8	0.4mL	0.8cm²	155411	**12-565-470**	116.85	599.25

Nunc* Lab-Tek* II CC2* Chamber Slide* System

12-565-1, -2, -3, -4

Designed for growing and viewing primary neurons or poorly adherent cell lines

- Enhanced version of the Nunc Lab-Tek II Chamber Slide System enables cell growth directly on a glass microscope slide
- Chemically modified CC2 growth surface mimics biological coatings like polylysine; remains stable and consistent for over one year without refrigeration
- Tabbed cover allows gas exchange while minimizing evaporation
- Completely sterile
- Removal tool separates chamber from glass; adhesive remains with wells so slide is ready for a cover slip

INCLUDES:

Removal tool

No. of Wells	Working Volume	Growth Area	Mfr. No.	Cat. No.	Pack of 16	Case of 6 Pack
1	2.0 to 4.5mL	8.6cm²	154739	**12-565-4**	140.52	730.50
2	1.0 to 2.0mL	4.0cm²	154852	**12-565-3**	145.21	755.00
4	0.5 to 1.0mL	1.7cm²	154917	**12-565-2**	149.85	779.25
8	0.2 to 0.5mL	0.7cm²	154941	**12-565-1**	154.25	804.75

Nunc* Lab-Tek* II Chamber Slide* System

Miniature cell culture vessels with growth-enhancing RS wash

12-565-5, -6, -7, -8

Consist of a removable media chamber attached to a standard glass microscope slide (25 × 75mm)—grow cells directly on slides. Slides are specially treated with a unique RS wash to ensure a consistent growth surface.

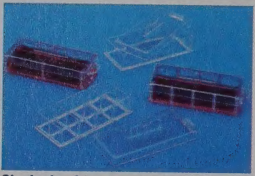
- Completely sterile and available in 1-, 2-, 4-, or 8-well configurations
- Tabbed cover fits on top of the chamber to allow gas exchange while minimizing evaporation
- Removal tool (included) makes it easy to separate the chamber from slide
- Superfrost* marking area facilitates labeling

INCLUDES:
Removal tool

No. of Wells	Working Volume	Growth Area	Mfr. No.	Cat. No.	Pack of 16	Case of 6 Pack
1	2.0 to 4.5mL	8.6cm²	154453	**12-565-5**	95.23	496.50
2	1.0 to 2.0mL	4.0cm²	154461	**12-565-6**	99.98	524.00
4	0.5 to 1.0mL	1.7cm²	154526	**12-565-7**	104.96	538.25
8	0.2 to 0.5mL	0.7cm²	154534	**12-565-8**	106.29	554.50

Nunc* Lab-Tek* II Chambered Cover Glasses

Enhanced for culturing and viewing living cells


Clockwise from top: 12-565-335, -337, -338, -336

- Nonremovable polystyrene media chamber securely mounted to extra-thin (No. 1.5) borosilicate cover glass for optimum high-power inverted microscopic viewing
- Gas exchange achieved with minimal evaporation through tabbed polystyrene cover

ORDERING INFORMATION:
Shipped sterile in convenient stackable incubation trays.

No. of Wells	Working Volume	Growth Area	Mfr. No.	Cat. No.	Pack of 16	Case of 6 Pack
1	2.0–4.5mL	8.6cm²	155360	**12-565-335**	125.58	644.00
2	1.0–2.0mL	4.0cm²	155379	**12-565-336**	130.35	677.50
4	0.5–1.0mL	1.7cm²	155382	**12-565-337**	137.09	703.00
8	0.2–0.5mL	0.7cm²	155409	**12-565-338**	141.28	734.50

BD BioCoat* Precoated Glass Coverslips

Optically clear, thin glass coverslips coated with a variety of extracellular matrix substrates

- Exhibit low background fluorescence—ideal for immunofluorescence microscopy
- Constructed of No. 1 German glass; nontoxic to neurons
- Each lot of cellware has been tested and found negative for bacteria and fungi

APPLICATIONS:
Fluorescence imaging of live cells, confocal microscopy, high resolution and inverted microscopy, phase contrast microscopy

Description	Mfr. No.	Cat. No.	Pack of 80
12mm round	354085	**08-774-383**	135.00
12mm round	354086	**08-774-384**	135.00
12mm round	354087	**08-774-385**	142.10
22mm round	354088	**08-774-386**	119.95
22mm round	354089	**08-774-387**	97.90

BD Falcon* Culture Slides

For in situ DNA amplification/hybridization, tissue and tumor typing/pathology, or any study requiring a small, accessible culture area

- Polystyrene chamber affixed to a specially cleaned and triple-rinsed glass microscope slide (25 × 75mm)
- Safety Removal Tool separates wells from slide; gasket remains with plastic vessel and doesn't interfere with further processing
- Sterile

08-774-24 and 08-774-25 with Safety Removal Tool (included)

ORDERING INFORMATION:
Available with 1, 2, 4, or 8 wells, numbered for easy identification. Supplied with handled polystyrene lid. Packaged in disposable incubation trays. Each tray holds 12 slides.

INCLUDES:
Handled polystyrene lid, safety removal tool

No. of Wells	Working Volume	Growth Area	Mfr. No.	Cat. No.	Case of
1	5.0 to 6.5mL	8.6cm²	354111	**08-774-23**	24/147.89
			354101	**08-774-206**	96/495.60
2	2.0 to 2.5mL	4.0cm²	354112	**08-774-24**	24/156.30
			354102	**08-774-207**	96/517.56
4	1.0 to 1.5mL	1.7cm²	354114	**08-774-25**	24/160.30
			354104	**08-774-209**	96/530.78
8	0.7 to 0.8mL	0.7cm²	354118	**08-774-26**	24/164.91
			354108	**08-774-208**	96/546.36

Nunc* SonicSeal * System

Ideal for small-scale cell cultures

12-565-9

- Made from durable Permanox* plastic
- Features a 4-well media chamber sonically welded to a treated microscope slide
- Seal is 100% leak-tested; can be released using the supplied opener
- Specially treated slides ensure cell attachment and proliferation
- Provide better chemical resistance to fixatives and staining solvents than regular polystyrene slides; require an aqueous-based mounting medium when cover slipping
- Slides are nonautofluorescent and will accept most fluorescent labels
- One-way lid orientation with anti-evaporation rings prevents sample mix-up and cross-contamination
- Sterile

Working Volume	Growth Area	Mfr. No.	Cat. No.	Pack of 16	Case of 6 Pack
1.0 to 2.0mL	1.54cm²	138121	**12-565-9**	79.35	416.58

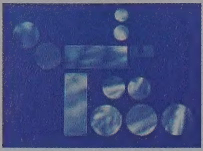
*Trademark. See Trademark Reference.

Prices subject to change.

Nunc* Thermanox* Cover Slips

Tissue culture-treated on one side to provide an excellent culturing environment

- Highly resistant to solvents including those commonly used for electron microscopy
- Cover slips will not shatter when cut with scalpel or microtome
- Radiation sterilized



12-565-2 Series, 12-565-87, 12-565-281A

Dimensions	Mfr. No.	Cat. No.	Case of 500
10.5 × 22mm	174934	**12-565-26**	206.52
13mm dia.	174950	**12-565-88**	206.52
15mm dia.	174969	**12-565-27**	206.52
22mm dia.	174977	**12-565-28**	206.52
25mm dia.	174985	**12-565-89**	206.52
22 × 60mm	174942	**12-565-87**	206.52
24 × 30mm	150067	**12-565-281A**	206.52

BD BioCoat* Treated Culture Slides

Designed to closely mimic in vivo environments and enhance expression of cell-specific morphology

- Supplied with preapplied extracellular matrices, facilitating cell adaption to in vitro cultivation
- Microporous membranes permit diffusion of ions, low-molecular-weight proteins and other substances to both apical and basolateral cell surfaces, simulating the natural environment of cells in vivo
- Low pore-density, track-etched polyethylene teraphthalate (PET) membranes offer convenient viewing of living cells with a phase-contrast microscope and have low-binding properties that minimize small molecule loss

ORDERING INFORMATION:

Supplied in ready-to-use BD Falcon* Companion Tissue Culture Plates

STORAGE CONDITIONS:

Stable for at least three months from date of shipment when stored at 2°–8°C (36°–46°F) unless otherwise specified.

NOTE:

These products are for research use only and are not intended for diagnostic purposes.

Collagen I, Rat Tail Culture Slides

Cellware	Mfr. No.	Cat. No.	Case of 12
1-chamber	354556	**08-774-282**	173.60
2-chamber	354627	**08-774-210**	175.70
4-chamber	354557	**08-774-283**	179.90
8-chamber	354630	**08-774-213**	182.10

Poly-D-Lysine Culture Slides

Cellware	Mfr. No.	Cat. No.	Case of 12
1-chamber	354566	**08-774-286**	175.86
2-chamber	354629	**08-774-212**	177.30
4-chamber	354577	**08-774-287**	181.70
8-chamber	354632	**08-774-215**	182.10

Poly-D-Lysine/Laminin Culture Slides

Tested for the ability to promote neurite outgrowth with NG108 rat glioma/mouse neuroblastoma cells

Cellware	Mfr. No.	Cat. No.	Case of 12
2-chamber	354687	**CB-54687**	216.30
8-chamber	354688	**CB-354688**	222.80

Fibronectin, Human, Culture Slides

Tested for their ability to promote attachment and spreading of BHK-21 hamster kidney cells

NOTE:

Human plasma used in preparing this product was tested and found negative for HBsAg and HIV antibody.

Cellware	Mfr. No.	Cat. No.	Case of 12
1-chamber	354558	**08-774-284**	197.64
2-chamber	354628	**08-774-211**	199.75
4-chamber	354559	**08-774-285**	202.96
8-chamber	354631	**08-774-214**	207.27

INSERTS

Millipore* Millicell* Culture Inserts with Hanging Geometry

Uniquely designed flanges suspend the insert within culture plate well for superior growth, ease of pipetting

- General-purpose for growth and differentiation of various cell types
- Polystyrene holder with polyethylene terephthalate (PET) membrane
- Allow cells to access media from the apical and basolateral sides in culture plates to closely mimic growth, structure, and function in vivo
- Ready-to-use: no extra cellular matrix (ECM) coating necessary
- Tissue culture-treated
- Gamma irradiated

PIRP Series

NOTE:

Incompatible with strong acids, strong bases, and certain organic solvents.

Insert Pore Size	Description	Cat. No.	Pack of 48
6-well Plate			
0.4µm	Translucent	**PIHT-30R-48**	165.76
1.0µm	Transparent	**PIRP-30R-48**	165.76
3.0µm	Translucent	**PISP-30R-48**	165.76
5.0µm	Translucent	**PIMP-30R-48**	165.76
8.0µm	Translucent	**PIEP-30R-48**	165.76
12-well Plate			
0.4µm	Translucent	**PIHT-15R-48**	177.14
1.0µm	Transparent	**PIRP-15R-48**	177.14
3.0µm	Translucent	**PISP-15R-48**	177.14
5.0µm	Translucent	**PIMP-15R-48**	177.14
8.0µm	Translucent	**PIEP-15R-48**	177.14
24-well Plate			
0.4µm	Translucent	**PIHT-12R-48**	187.20
1.0µm	Transparent	**PIRP-12R-48**	187.20
3.0µm	Translucent	**PISP-12R-48**	187.20
5.0µm	Translucent	**PIMP-12R-48**	187.20
8.0µm	Translucent	**PIEP-12R-48**	187.20

SPECIFICATIONS

	24-well	12-well	6-well
O.D. × H	9 × 16mm	15 ×16mm	27 × 16mm
Inner Diameter	6.5mm	12mm	24mm
Effective Membrane Area	33mm^2	113mm^2	452mm^2

Millipore* Millicell* Culture Plate Inserts

Designed for improved cell differentiation and expanded applications involving analytical cell biology

PIHA 012 50

- Microporous membranes allow access to cell monolayer from both apical and basolateral domains; promote enhanced cell attachment, growth, and differentiation of attachment-dependent and suspension cultures
- Ready-to-use Millicell inserts fit most 6- or 24-well plates and are easily prepared for SEM and TEM techniques; compatible with standard and fluorescent stains
- Effective growth area for 12mm diameter inserts, 0.6cm^2; and 4.2cm^2 for 30mm diameter inserts

Millicell-HATF and Millicell-PCF Inserts

- Don't require an extracellular matrix for attachment-dependent cells
- Polystyrene housing; supplied sterile and individually blister packed
- Millicell-HATF Inserts utilize a mixed cellulose esters membrane; Triton*-free
- Millicell-PCF Inserts utilize tissue culture-treated polycarbonate membranes for use in co-culturing applications as well as tumor cell invasion and metastasis studies

Millicell-CM Inserts

- Incorporate transparent hydrophilic PTFE Biopore* membranes for neural growth and embryo development work
- Inert and allow repeated viewing of living cells through the membrane

Millicell-PC Inserts

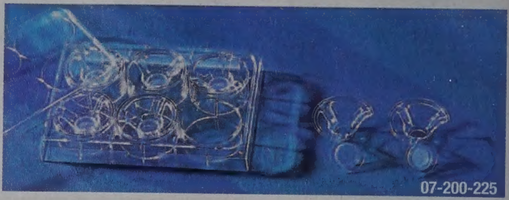
- Feature polycarbonate membranes (in 0.4 and 3.0µm pore size) for suspension cell culture

APPLICATIONS:

Transport and permeability studies, co-culture for cell-cell interaction studies, in vitro toxicity testing, tumor cell metastasis studies, and organotypic cultures

Pore Size	Diameter	Cat. No.	Pack of 50
Millicell-HATF Inserts			
0.45µm	13mm	**PIHA 012 50**	189.00
0.45µm	31.5mm	**PIHA 030 50**	237.00
Millicell-CM Inserts			
0.4µm	13mm	**PICM 012 50**	189.00
0.4µm	31.5mm	**PICM 030 50**	244.00
Millicell-PCF Inserts			
0.4µm	13mm	**PIHP 012 50**	178.00
0.4µm	31.5mm	**PIHP 030 50**	201.00
3.0µm	12mm	**PITP 012 50**	178.00
8.0µm	12mm	**PI8P 012 50**	182.00
12.0µm	12mm	**PIXP 012 50**	178.00

Corning* Snapwell* Culture Inserts



07-200-225

Two-piece polystyrene inserts with removable membranes

- 12mm culture-treated membrane available in polycarbonate or clear polyester
- Each modified Transwell* permeable support insert contains a removable membrane section that easily separates from its support
- Once cells are grown to confluence, the membrane section or ring is placed into a horizontal diffusion chamber

ORDERING INFORMATION:

Sterile culture inserts are packaged in 6-well cluster plates.

Membrane Material	Pore Size	Growth Area	Mfr. No.	Cat. No.	Case of 24
Polycarbonate	0.4µm	1cm^2	3407	**07-200-225**	149.82
Polycarbonate	3.0µm	1cm^2	3802	**07-200-709**	174.96
Clear Polyester	0.4µm	1cm^2	3801	**07-200-708**	149.82

Corning* Transwell-Clear* Permeable Supports

Clear polyester membrane allows excellent visibility for culture using phase-contrast microscopy

07-200-170

- Ideal for transport studies, chemotaxis, co-culture, and microbial pathogenesis studies
- Thin membrane (10µm) and straight pore structure provide consistent transport and cell migration
- Self-centering insert prevents media from wicking between the insert and the outer well
- Hangs from well to leave monolayers in the outer well undisturbed

Pore Size	Diameter	Mfr. No.	Cat. No.	Case of
For 6-well Plates				
0.4µm	24mm	3450	**07-200-170**	24/104.00
3.0µm	24mm	3452	**07-200-171**	24/104.00
For 12-well Plates				
0.4µm	12mm	3460	**07-200-161**	48/189.03
3.0µm	12mm	3462	**07-200-162**	48/189.03
For 24-well Plates				
0.4µm	6.5mm	3470	**07-200-154**	48/177.76
3.0µm	6.5mm	3472	**07-200-155**	48/177.76

LOOKING FOR PIPET TIPS?

Fisher Scientific carries pipet tips which are compatible with many brands and sizes of pipets. See the Pipetter Tips section.

*Trademark. See Trademark Reference.

Corning* Transwell*-COL Collagen-Treated Coated Membrane Insert

Transparent, collagen-treated microporous membranes promote cell attachment and spreading

- Designed for transport studies, co-culture, and other experimental procedures; improves visibility of cells during culture
- Membrane has an equimolar mixture of Types I and III collagen derived from bovine placenta—a biologically stabilized collagen which covers every fibril of the filter membrane matrix, maintaining porosity of the membrane

07-200-559

- Inside wall of the insert has also been treated to allow formation of a complete and integral monolayer; can be viewed by phase-contrast microscopy
- Tissue culture-treated

ORDERING INFORMATION:

Individually packed and supplied in package with tissue culture plates with lids; sterile

Pore Size	Diameter	Growth Area	Mfr. No.	Cat. No.	Case of 24
For 6-well Plates					
3.0µm	24mm	4.7cm^2	3492	**07-200-559**	251.38
0.4µm	24mm	4.7cm^2	3491	**07-200-558**	251.38
For 12-well Plates					
3.0µm	12mm	1.0cm^2	3494	**07-200-561**	236.29
0.4µm	12mm	1.0cm^2	3493	**07-200-560**	236.29
For 24-well Plates					
3.0µm	6.5mm	0.33cm^2	3496	**07-200-563**	226.24
0.4µm	6.5mm	0.33cm^2	3495	**07-200-153**	226.24

Corning* Transwell* Inserts and Dishes

Tissue culture-treated inserts supplied with 100mm diameter dishes

- Polycarbonate membrane is compatible with most organic fixatives and stains
- Insert diameter, 75mm; insert growth area, 44cm^2
- Sterile

07-200-173

APPLICATIONS:

Co-culture, drug transport, in vitro fertilization, and microbial pathogenesis studies

ORDERING INFORMATION:

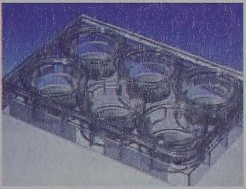
Individually wrapped. Twelve inserts (with dishes) per case.

Pore Size	Mfr. No.	Cat. No.	Case of 12
0.4µm	3419	**07-200-172**	321.76
3.0µm	3420	**07-200-173**	321.76

Corning* Transwell* Permeable Supports

For studying anchorage-dependent and -independent cells

- Microporous inserts come preloaded in Tissue Culture Plates
- Available tissue culture-treated in 6-, 12-, or 24-well formats
- Openings for pipet tips for convenient addition and removal of media and samples from both compartments
- Patented self-centering design provides independent access to both apical and basolateral membranes of the cell monolayer
- Polycarbonate membranes are compatible with most organic fixatives and stains



07-200-165

APPLICATIONS:

Epithelial and endothelial cell culture; transport, migration/invasion, co-culture, and microbial pathogenesis studies

Pore Size	Diameter	Growth Area	Mfr. No.	Cat. No.	Case of
For 6-well Plates					
0.4µm	24.5mm	4.7cm^2	3412	**07-200-165**	24/102.00
3.0µm	24.5mm	4.7cm^2	3414	**07-200-166**	24/104.00
8.0µm	24.5mm	4.7cm^2	3428	**07-200-169**	24/104.00
For 12-well Plates					
0.4µm	12mm	1.0cm^2	3401	**07-200-156**	48/191.05
3.0µm	12mm	1.0cm^2	3402	**07-200-157**	48/191.05
12.0µm	12mm	1.0cm^2	3403	**07-200-158**	48/191.05
For 24-well Plates					
0.4µm	6.5mm	0.33cm^2	3413	**07-200-147**	48/177.76
3.0µm	6.5mm	0.33cm^2	3415	**07-200-148**	48/177.76
5.0µm	6.5mm	0.33cm^2	3421	**07-200-149**	48/177.76
8.0µm	6.5mm	0.33cm^2	3422	**07-200-150**	48/177.76

Nunc* Tissue Culture Inserts

Membrane-based cylindrical inserts designed for use with standard tissue culture plates and dishes

Media bathes both top and bottom cell layers, simulating cell growth structure and function as found in the in vivo environment. Inserts allow cultures to be readily moved from one vessel to another, making it easier to establish and control co-culture of different cell types. All membranes are treated and biologically tested for adherent cell culture, radiation sterilized, and individually wrapped.

12-565-80

Anopore* Membrane Inserts

- Utilize a rigid, hydrophilic 0.02 or 0.2µm filter that offers excellent transparency when wet—ideal for microscopy and photography
- Maximum surface porosity, 40 to 50%
- 0.02µm inorganic filter ensures free diffusion of macromolecules with a molecular weight of ≤0.5kDa with good transparency characteristics
- Membranes can be easily removed from polystyrene housing for autoradiography or scintillation counting using Nunc Membrane Removal Tool (Cat. No. 12-565-288A)
- Membranes are chemically resistant to many organic solvents and won't interfere with fluorescent assays
- 8-well Strip insert conveniently fits in MicroWell* 96-well Plates, allowing miniaturization of assays, thus reducing costs and reagents, while permitting automated assays with pipetters and plate readers

Polycarbonate Membrane Inserts

- Suitable for use in many cell culture applications, especially chemotaxis studies where a large pore size is required
- Transparency varies with pore size

Pore Size	Diameter	Mfr. No.	Cat. No.	Case of
Anopore Membrane Inserts				
0.02µm	10mm	162243	**12-565-80**	48/180.75
0.02µm	25mm	162138	**12-565-81**	12/61.79
0.02µm	25mm	161395	**12-565-82**	48/220.00
0.2µm	10mm	136935	**12-565-285B**	48/180.75
0.2µm	8-well strip	136730	**12-565-286**	15/159.00
0.2µm	25mm	137044	**12-565-285D**	48/220.00
Polycarbonate Membrane Inserts				
0.4µm	10mm	137052	**12-565-287B**	48/180.75
0.4µm	25mm	137060	**12-565-287D**	48/220.00
3.0µm	10mm	137370	**12-565-287F**	48/180.75
3.0µm	25mm	137435	**12-565-287H**	48/220.00
8.0µm	10mm	136862	**12-565-287J**	12/47.09
8.0µm	10mm	137443	**12-565-287K**	48/180.75
8.0µm	25mm	137508	**12-565-230**	48/220.00

BD BioCoat* Cell Culture Inserts

Supplied with preapplied extracellular matrices, facilitating cell adaption to in vitro cultivation

- Designed to closely mimic in vivo environments and enhance expression of cell-specific morphology
- Microporous membranes permit diffusion of ions, low-molecular-weight proteins and other substances to both apical and basolateral cell surfaces, simulating the natural environment of cells in vivo
- Low pore-density, track-etched polyethylene teraphthalate (PET) membranes offer convenient viewing of living cells with a phase-contrast microscope and have low-binding properties that minimize small molecule loss

ORDERING INFORMATION:

Supplied in ready-to-use BD Falcon* Companion Tissue Culture Plates.

STORAGE CONDITIONS:

Stable for at least three months from date of shipment when stored at 2° to 8°C (36°–46°F) unless otherwise specified. Do not freeze.

NOTE:

These products are for research use only and are not intended for diagnostic purposes.

Collagen I, Rat Tail Cell Culture Inserts

Ideal for applications involving adhesion, growth and differentiation of neuronal and transfected cell lines

- Each lot is tested for the ability to promote attachment and spreading of HT-1080 human fibrosarcoma cells
- Tested and found negative for bacteria and fungi
- Cellware is also tested for ability to promote firm attachment of rat cerebellar granule cells

ORDERING INFORMATION:

Bulk quantities are also available; contact your Fisher Scientific Customer Service Representative.

Culture Cell Insert	Inserts Per Plate	No. of Plates	Mfr. No.	Cat. No.	Case of 24
PET Membranes with 0.45µm Pore Size					
6-well plate	6	4	354442	**08-774-18**	226.70
12-well plate	6	4	354490	**08-774-17**	209.48
24-well plate	12	2	354444	**08-774-19**	200.87
PET Membranes with 1.0µm Pore Size					
12-well plate	6	4	354581	**08-774-15**	215.44
24-well plate	12	2	354482	**08-774-16**	206.62
PET Membranes with 3.0µm Pore Size					
6-well plate	6	4	354540	**08-774-20**	226.70
12-well plate	6	4	354565	**08-774-22**	209.48
24-well plate	12	2	354541	**08-774-21**	200.87
Collagen I Coated Membranes with 3.0µm Pore Size					
24-well plate insert system	24	1	354598	**CB-354598**	211.05

Collagen IV, Mouse Cell Culture Insert

PET membranes with 3.0µm pore size

Cell Culture Insert	Inserts Per Plate	No. of Plates	Mfr. No.	Cat. No.	Case of 24
PET Membranes with 3.0µm Pore Size					
6-well plate	6	4	354544	**08-774-42**	255.94
24-well plate	12	2	354545	**08-774-43**	227.90

*Trademark. See Trademark Reference.

Prices subject to change.

Control Inserts

Each lot tested and found negative for bacteria and fungi

STORAGE CONDITIONS:

Stable for at least 18 months after shipment when stored at room temperature.

Cell Culture Inserts	Inserts Per Plate	No. of Plates	Mfr. No.	Cat. No.	Case of 24
With 0.4µm Pore Size					
6-well plate	6	4	354570	**08-774-152**	127.14
12-well plate	6	4	354571	**08-774-153**	113.96
24-well plate	12	2	354572	**08-774-154**	103.63
With 1.0µm Pore Size					
6-well plate	6	4	354567	**08-774-155**	127.14
12-well plate	6	4	354568	**08-774-156**	112.75
24-well plate	12	2	354569	**08-774-157**	105.64
With 3.0µm Pore Size					
6-well plate	6	4	354573	**08-774-158**	127.14
24-well plate	12	2	354575	**08-774-160**	103.63
With 8.0µm Pore Size					
6-well plate	6	4	354576	**08-774-161**	127.14
24-well plate	12	2	354578	**08-774-162**	105.00

Fibrillar Collagen Cell Culture Inserts

PET membranes with 1.0µm pore size

- Collagen I polymerized under conditions that allow formation of large fibrils with a normal cross-striation pattern
- Membrane configuration offers convenient viewing of living cells with a phase-contrast microscope

Description	Inserts Per Plate	No. of Plates	Mfr. No.	Cat. No.	Case of 24
Inserts only					
6-well plate	6	4	354472	**08-774-173**	253.47
12-well plate	6	4	354473	**08-774-174**	242.37
24-well plate	12	2	354474	**08-774-55**	230.06

FluoroBlok* Fibronectin Cell Culture Inserts

Detect migrated cells below membrane using a fluoresence plate reader

Inserts and Cellware are tested for their ability to promote attachment and spreading of BHK-21 hamster kidney cells.

NOTE:

The human plasma used in preparing this product was tested and found negative for HBsAg and HIV antibody.

Cell Culture Insert	Inserts Per Plate	No. of Plates	Mfr. No.	Cat. No.	Case of 24
PET Membrane with 3µm pore size					
24–well plate	12	2	354597	**CB-354597**	271.09

Fibronectin, Human Cell Culture Inserts

Tested for their ability to promote attachment and spreading of BHK-21 hamster kidney cells

NOTE:

The human plasma used in preparing this product was tested and found negative for HBsAg and HIV antibody.

Cell Culture Insert	Inserts Per Plate	No. of Plates	Mfr. No.	Cat. No.	Case of 24
PET Membranes with 0.4µm Pore Size					
6-well plate	6	4	354440	**08-774-73**	263.24
24-well plate	12	2	354445	**08-774-74**	227.90
PET Membranes with 1.0µm Pore Size					
24-well plate	12	2	354585	**08-774-71**	230.06
PET Membranes with 3.0µm Pore Size					
12-well plate	6	4	354492	**08-774-77**	239.77
24-well plate	12	2	354543	**08-774-76**	227.90

Laminin, Mouse Cell Culture Inserts

Low (0.45Rm) pore-density PET membranes for convenient viewing with a phase-contrast microscope

- Tested with HT-1080 human fibrosarcoma cells

Cell Culture Insert	Inserts Per Plate	No. of Plates	Mfr. No.	Cat. No.	Case of 24
24-well plate	12	2	354446	**08-774-99**	230.06

Cellware Variety Packs

Useful in determining optimal substrates for growth or differentiation of specific cell types or to study interactions between cells and various ECM components

Multiwell Plate Variety Packs

- Variety Pack I contains four 6-well Multiwell plates—each coated with one of the following: Collagen I, Fibronectin, Laminin, and Poly-D-Lysine—plus one BD Falcon* tissue culture-treated 6-well plate
- Variety Pack II contains five treated 6-well plates, each coated with one of the following: Collagen I, Collagen IV, Fibronectin, Laminin, and Poly-D-Lysine

Cultureslide Variety Packs

- Contain twelve BD Falcon* slides coated with Collagen I, Fibronectin and Poly-D-Lysine
- All are stable for at least three months after date of shipment when stored at 2° to 8°C (36° to 46°F)

Description	Mfr. No.	Cat. No.	Price
Multiwell Plate Variety Packs			
Variety Pack I	354417	**08-774-132**	Cs. of 5/81.61
Variety Pack II	354431	**08-774-133**	Cs. of 5/107.50
Cultureslide Variety Packs			
2-well slides	354655	**08-774-219**	Ea./192.12
8-well slides	354656	**08-774-220**	Ea./198.65

Contd. on next page.

BD BioCoat* Cell Culture Inserts, Contd.

Cell Culture Inserts Variety Pack

Supplied in ready-to-use BD Falcon* Companion Tissue Culture Plates

Supplied with preapplied extracellular matrices, facilitating cell adaption to in vitro cultivation.

- With in 0.45 and 3.0µm pore sizes with 24-well companion plates
- Variety Pack 1 contains Collagen I, Fibronectin, Laminin, and control inserts
- Variety Pack II contains Collagen I, Collagen IV, Fibronectin, Laminin, and control inserts

INCLUDES:

24-well companion plates

NOTE:

Do not freeze. These products are for research use only and are not intended for diagnostic purposes.

Cell Culture Inserts	Inserts Per Plate	No. of Plates	Mfr. No.	Cat. No.	Case of
Variety Pack I					
24-well	12	4	354437	**08-774-142**	48/288.46
Variety Pack II					
24-well	12	5	354436	**08-774-141**	60/304.08

Matrigel* Cell Culture Inserts

Each lot is tested for the ability to promote tube formation of Fetal Bovine Heart Endothelial cells (FBHEC)

BD Matrigel* Matrix is a soluble basement membrane extracted from Engelbreth-Holm-Swarm mouse tumor which, when reconstituted at room temperature, forms a gel.

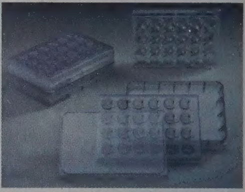
- Especially suited for culture of polarized cells, such as epithelial cells
- Coating promotes differentiation of hepatocytes, mammary epithelial cells and smooth muscle cells; also promotes capillary tubule formation of endothelial cells and neurite regeneration
- Can be used for angiogenesis assays

Cell Culture Inserts	Inserts Per Plate	No. of Plates	Mfr. No.	Cat. No.	Case of 24
6-well plate	6	4	354443	**08-774-117**	307.56
24-well plate	12	2	354447	**08-774-118**	258.84

LOOKING FOR FLUOROMETERS?
See Fluorometers section of this catalog.

BD Falcon* HTS Multiwell Insert Systems

Save time and labor in HTS protocols—grow, handle, and analyze 24 samples simultaneously



- Available in 1, 3, and 8µm pore sizes
- Feature a generous, automation-compatible sampling port which allows sampling above and below membranes
- Insert tray is removable from the feeder tray by most robotic arms—reducing the risk of contamination
- 24-well insert tray distributes media uniformly to each well

INCLUDES:

24-well insert plate, 24-well plate or single-well feeder tray, and lid

NOTE:

Additional feeder trays available (can be used with 08-781, 08-772-1, or 08-772-51, see next page).

Pore Size	Mfr. No.	Cat. No.	Pack of
Insert Plate with Feeder Tray and Lid			
1µm	351180	**08-775**	1/92.36
1µm	351181	**08-776**	5/397.54
Insert Plate with 24-Well Plate and Lid			
3µm	351182	**08-777**	1/84.10
3µm	351183	**08-778**	5/397.54
8µm	351184	**08-779**	1/88.33
8µm	351185	**08-780**	5/397.54

BD Falcon* 24- and 96-Multiwell FluoroBlok* Cell Culture Inserts and Insert Systems

Collect data without plate washing, cell scraping, and counting; chart cell migration or bioavailability in real time without dismantling or destroying the insert

FluoroBlock Inserts

- Homogeneous fluorescence assay system
- Chart cell migration or bioavailability in real time without dismantling or destroying the insert
- Each insert is fitted with a fluorescence blocking BD FluoroBlok* membrane
- Migrated cells below the membrane are easily detected by a fluorescence plate reader while those remaining above the membrane are made "invisible"

ORDERING INFORMATION:

Available in 1, 3, and 8µm pore sizes. One-piece 24- or 96-Multiwell insert system (insert plate, 24-well plate or single-well feeder tray, and lid) or 24-well individual cell culture inserts.

Contd. on next page.

BD Falcon* Multiwell FluoroBlok* Cell Culture Inserts, Contd.

Pore Size	Mfr. No.	Cat. No.	Price
Individual Cell Culture Inserts			
1µm	351150	**08-772-140**	Cs. of 48/288.17
3µm	351151	**08-772-141**	Cs. of 48/290.26
8µm	351152	**08-772-142**	Cs. of 48/290.26
Cell Culture Insert Companion Plate (for 24-well plates)			
----	353504	**08-771-25**	Ea./141.61
24-Multiwell Insert Plate with Feeder Tray and Lid			
1µm	351153	**08-772-143**	Ea./140.53
1µm	351154	**08-772-144**	Pk. of 5/628.23
24-Multiwell Insert Plate with 24-well Plate and Lid			
3µm	351155	**08-772-145**	Ea./141.07
3µm	351156	**08-772-146**	Cs. of 5/632.90
8µm	351157	**08-772-147**	Cs. of 1/141.07
8µm	351158	**08-772-148**	Cs. of 5/642.00
24-Multiwell Insert Plate with 96-well Plate and Lid			
3µm	351161	**08-771-004**	Cs. of 1/299.12
3µm	351162	**08-771-005**	Cs. of 5/1345.53
8µm	351163	**08-771-006**	Cs. of 1/299.12
8µm	351164	**08-771-007**	Cs. of 5/1345.53
Feeder Tray for 24-Multiwell Plate			
----	351186	**08-781**	Cs. of 5/54.30
24-well Plate			
----	351147	**08-772-51**	Cs. of 50/131.78
96-Square-well Flat-bottom Plate			
----	353928	**08-771-008**	Cs. of 5/92.67

ACCESSORIES

Companion Plates for BD Falcon* Cell Culture Inserts

Patented companion plates feature a one-way, "labyrinth" lid design and condensation rings to minimize evaporation and contamination

- For use with BD Falcon Cell Culture Inserts and BioCoat* Inserts
- Companion plate wells have notches that hold the insert in place, permit pipet dispensing into the plate well, and ensure proper lid fit
- Sterile, tissue culture-treated, nonpyrogenic
- May be used with or without cell culture inserts

No. of Wells	Growth Area	Mfr. No.	Cat. No.	Case of 50
6	4.65cm²	353502	**08-771-24**	113.62
12	1.07cm²	353503	**08-771-22**	132.50

BD Falcon* Cell Culture Inserts

Cell culture on permeable supports results in greater morphological and/or physiological differentiation of many cell types

Clockwise from top: 08-771, 08-770, 08-771-10

Provide independent access to the basolateral and apical domains of polar cells. Track-etched polyethylene terephthalate (PET) membranes have individual, cylindrical pores and are tissue culture-treated on both sides for cell growth. PET housing is not tissue culture-treated in order to limit cell growth on the side walls of the insert.

- Translucent membranes for 0.4 and 3.0µm pore sizes have high pore density (HD) and are recommended for transport studies
- Transparent membranes are recommended for visualization of live cells by light microscopy
- Flanges on insert rim facilitate handling
- Gamma-irradiation sterilized
- Transport studies, immunocytochemistry, electron microscopy, migration and invasion, and co-culture

ORDERING INFORMATION:

Individually packaged in color-coded, peel-open medical-style packaging

NOTE:

For best results, use with tissue culture-treated BD Falcon Companion Plates.

Pore Size	Pore Density	
	Transparent	Translucent
0.4µm	1.6 × 10⁶	1.0 × 10⁸ (HD)
1.0µm	1.6 × 10⁶	----
3.0µm	8.0 × 10⁵	2.0 × 10⁶ (HD)
8.0µm	----	1.0 × 10⁵

	Transparent Membranes			Translucent Membranes		
Insert Pore Size	Mfr. No.	Cat. No.	Case of 48	Mfr. No.	Cat. No.	Case of 48
For 6-well Plates						
0.4µm	353090	**08-771**	208.20	353493	**08-771-15†**	208.20
1.0µm	353102	**08-771-7**	208.20	----	----	----
3.0µm	353091	**08-771-3**	208.20	353092	**08-771-6†**	208.20
8.0µm	----	----	----	353093	**08-771-20**	208.20
For 12-well Plates						
0.4µm	353180	**08-771-10**	198.00	353494	**08-771-16†**	198.00
1.0µm	353103	**08-771-8**	198.00	----	----	----
3.0µm	353181	**08-771-11**	198.00	353292	**08-771-13†**	198.00
8.0µm	----	----	----	353182	**08-771-12**	198.00
For 24-well Plates						
0.4µm	353095	**08-770**	187.80	353495	**08-771-17†**	187.80
1.0µm	353104	**08-771-9**	187.80	----	----	----
3.0µm	353096	**08-771-4**	187.80	353492	**08-771-14†**	187.80
8.0µm	----	----	----	353097	**08-771-21**	187.80

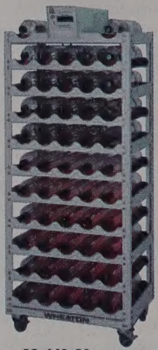
† *High pore density.*

CELL CULTURE EQUIPMENT

Wheaton Cost Buster High Volume Production Roller Apparatus

Provides maximum cell culture production capacity in a minimum amount of space

- Accommodates roller bottles from 112 to 121mm in diameter and up to 550mm in length
- Each roller is driven by nonslip belts and pulleys for positive traction; ideal for use with lightweight plastic bottles
- Soft start feature minimizes cell disruption
- Bottle speed: 0.25 to 5.3rpm (other speeds available by special order; contact your Fisher Scientific Customer Service Representative)
- Controls and drive units are located on top of the apparatus for easy access
- Open frame design allows better airflow, minimizing top-to-bottom temperature gradients
- Maximum temperature for use is 40°C (104°F)



06-440-22

ORDERING INFORMATION:

Dimensions: (L × W × H): 30⅞ × 24¼ × 74⁹⁄₁₆" (78 × 61.5 × 189cm). Weight: 250 lb. (113.4kg). Electrical requirements: 100–120VAC 50/60H.

CERTIFICATIONS:

UL listed; conforms to UL, CSA, and CE standards; CE marked

Mfr. No.	Cat. No.	Each
349000-A	**06-440-22**	7784.82

Wheaton Compact Roller System for Mini Bottles

Designed for small-scale mixing and agitation, this space-saving roller is ideal for use in standard incubators and in coldrooms

22-288-524

Transistorized solid-state circuitry allows exact speed control of bottles and compensates against sudden or prolonged line-voltage changes. Roller shafts are mounted in self-lubricating nylon bearings for extended life.

Features

- Single-deck unit accommodates up to four 38 to 60mm dia. × 240mm long bottles
- Accommodates 38 × 200mm culture tubes for the growth and observation of single chicken or rat embryos
- Variable speed control from 3 to 45rpm (for 38mm dia. bottle), and 2 to 30rpm (for 60mm dia. bottle)
- Maximum temperature for use: 40°C (104°F)

ORDERING INFORMATION:

Dimensions (L × W × H): 12¼ × 12¾ × 7⅛" (32 × 32.5 × 18cm). For 100/120V 50/60Hz, 14w. Accepts up to two Mini Bottle Deck Kits (06-440-27, sold separately).

CERTIFICATIONS:

UL listed, CSA approved

Mfr. No.	Cat. No.	Each
W348923-A	**22-288-524**	1069.76

WARNING

Using this equipment in a CO_2 environment may necessitate more frequent replacement of motor brushes.

Wheaton Modular Cell Production Roller Apparatus

Flexible systems let you keep pace with scale-up and production of monolayer cell cultures

Standard models

- Consist of a base drive unit and five-position roller deck to which up to eight additional roller decks can be added
- Hold up to 90 roller bottles from 108 to 121mm in diameter and up to 550mm in length
- Powerful DC motor with soft start speed control drives the bottles through a series of durable nonslip belts
- Locking speed control knob prevents accidental change in rotation rates

All-position drive models

- Feature a positive traction drive system—each roller is individually driven
- Option may be field retrofitted in standard models (see accessory kit 02-911-570)

ORDERING INFORMATION:

For 120V, 50/60Hz, 35w. Weight of base unit with one deck: 70 lb. (32kg); each additional deck is 21 lb. (10kg). Dimensions of base unit with one deck: 24⅜L × 29¾W × 13½"H (62 × 76 × 34cm); each additional deck is 7⅛" (18.1cm) high.

NOTE: Best all-position drive performance is achieved with plastic bottles.

Model	Mfr. No.	Cat. No.	Each
Standard			
With one deck	348940A	**06-440-10**	2407.12
With three decks	348942A	**02-911-564**	3333.45
With six decks	348945A	**02-911-711**	4980.85
With seven decks	348946A	**02-911-567**	5485.86
With nine decks	348948A	**02-911-569**	6562.08
All-Position Drive			
With three decks	348962A	**02-911-557**	3464.07
With six decks	348965A	**06-440-6**	5089.17

ACCESSORIES

Wheaton Modular Cell Production Roller Apparatus Accessories

Compatible with modular systems.

Description	Mfr. No.	Cat. No.	Each
Additional 5-Position Deck (without all-position drive)	348949	**06-440-21**	775.42

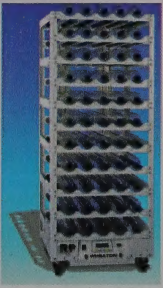
*Trademark. See Trademark Reference.

Prices subject to change.

Wheaton R$_2$P* Roller Culture Apparatus

Go from research to production without having to change protocols and revalidate

Ideal for pharmaceutical or vaccine production. Simply add decks and optional features as needed.


02-911-549

- Large digital display and keypad enable easy input and monitoring of settings
- Units continually display the bottle rpm setting and actual bottle rpm
- Programmable soft start and stop feature avoids premature cell detachment; settings can be saved in one of ten memory locations or easy recall
- Rotational speed and drivetrain are continuously monitored; built-in rotation alarm can be tied to an existing monitoring system and provides both visual and audible warning of out-of-tolerance conditions
- All-position drive accepts glass or plastic bottles 110 to 121mm in diameter and up to 550mm long
- Optional CART$_2$* computer software monitors, controls, and records data on up to 2047 units
- With only 6" (15.2cm) between decks, it can accommodate up to 110 850 cm^2 bottles on eleven decks and still fit into most standard incubators, including The Breeder* (22-288-530), and Wheaton Roll-In Incubator (11-690-1A)

ORDERING INFORMATION:
Weight of drive unit with one deck: 53 lb. (24kg); each additional deck is 16½ lb. (7.5kg). Dimensions of drive unit with one deck is 24½L × 31W × 13½"H (62 × 79 × 34.5cm); each additional deck is 6"H (15.2cm). Electrical requirements: 110/120VAC, 50/60Hz, 35w.

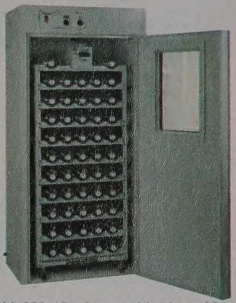
CERTIFICATIONS:
UL listed. Conform to UL, CSA, and CE Standards.

NOTE:
Additional configurations are available; contact your Fisher Scientific Customer Service Representative for more information.

Configuration	Mfr. No.	Cat. No.	Each
Production Apparatus			
With one deck	W348880-A	**03085100**	4101.33
With three decks	W348881-A	**02-911-548**	5083.91
With 11 decks	W338882-A	**02-911-549**	8812.11
Additional decks			
Additional deck, factory installed	W348888	**02-911-550**	708.68
Additional deck, customer installed	W348889	**02-911-551**	759.09
Additional five position deck, customer installed	348969	**06-440-11**	835.16

Wheaton Roll-In Incubator

Convenient, space-saving design for small production runs


11-690-1B, shown with 52-position roller apparatus (06-440-22), not included.

- Forced air circulation with digital temperature control provides temperature uniformity to ±0.5°C (empty incubator, no shelves)
- Independent overtemperature safety protection prevents culture loss
- Also features double-walled construction and built-in window
- Holds up to six shelves (order separately)

ORDERING INFORMATION:
Electrical requirements: 115V 60Hz

L × W × H	Mfr. No.	Cat. No.	Each
33½ × 41 × 87" (85 × 104 × 221cm)	753680	**11-690-1A**	7717.84

Wheaton Compact Roller System for Small Bottles

Extremely compact unit with adjustable rollers needs little benchtop space

22-288-525

- Well suited for research work; may be used in a CO$_2$ incubator.
- Handles two vessels 108-121mm in diameter and up to 290mm long
- Outside rollers can be moved inward to roll vessels as small as 75mm in diameter
- Bottle speed: 0.1 to 3.8rpm (based on a 110mm bottle)
- Maximum temperature for use: 40°C (104°F)

ORDERING INFORMATION:
Dimensions: L × W × H: 12¼ × 12¾ × 7⅛" (32 × 32.5 × 18cm). Electrical requirements: 120VAC 50/60Hz, 14w. Net Weight: 18 lb. (8kg).

CERTIFICATIONS:
UL listed; CSA approved

Mfr. No.	Cat. No.	Each
W348923	**22-288-525**	906.98

WARNING
Using this equipment in a CO$_2$ environment may necessitate more frequent replacement of motor brushes.

ACCESSORIES

Wheaton Deck Kit for Compact Roller System for Mini Bottles

- Can be added to 22-288-524 to accommodate an additional two bottles per kit, up to two kits per apparatus
- Net weight: 5 lb. (2.3kg)

Mfr. No.	Cat. No.	Each
W348920-CH	**22-288-532**	368.52

Shelves

- For use with the Roll-In incubator, 11-690-1A

L × W	Mfr. No.	Cat. No.	Each
24 × 35" (61 × 89cm)	753685	**11-690-1B**	245.25

Wheaton Deck Kit for Compact Roller System for Small Bottles

Each deck holds two roller bottles

- Attaches quickly and easily to Wheaton Compact Roller System for Small Bottles (left), which will accept two additional decks
- Kit includes assembled roller deck, four support posts, drive belt, necessary hardware and assembly instructions

ORDERING INFORMATION:
Weight: 5 lb. (2.3kg)

Mfr. No.	Cat. No.	Each
W348930-CA	**06-440-29**	309.92

Centrifuges Selection Guide

Thermo Scientific* Sorvall* Legend T Plus

Thermo Scientific HT6

Eppendorf* 5810

- Models are arranged under the subsection in which they appear in the catalog
- For complete model details, see the product description on the page as noted
- Rotors and accessory page references are included for your convenience

General-Purpose Centrifuges. Benchtop or floor models arranged by capacity.

Brand	Model	Capacity	Max. Speed (rpm)	Max. RCF (xG)	Timer (0–--)	Refrigeration Available?	Auto Rotor Recognition	Load Imbalance Detection	Rotor Included	Notes	See Page	Rotors and accessories on page(s)
Benchtop Centrifuges												
Thermo Scientific* Sorvall*	Legend* T/RT Plus	3L (4 x 750mL)	15,000	24,400	~10 hr.	Y	Y	Y	N	New model	351	351-353
Fisher Scientific	accuSpin* 3	3L (4 x 750mL)	4150	3700	~10 hr.	N	Y	Y	N	4-program memory	365	366
Fisher Scientific	accuSpin 3/R	3L (4 x 750mL)	15,000	21,890	~10 hr.	Y	Y	Y	N	4-program memory	365	366
Thermo Scientific Sorvall	Legend T3	3L (4 x 750mL)	7800	9115	99 min.	N	Y	Y	N	New model	354	354-355
Thermo Scientific Sorvall	Legend RT3	3L (4 x 750mL)	8000	9588	99 min.	Y	Y	Y	N	New model	354	354-355
Thermo Scientific IEC*	CL40	3L (4 x 750mL)	7800	9863	99 min.	N	Y	Y	N	New model	370	online
Thermo Scientific IEC	CL40R	3L (4 x 750mL)	8000	10,375	99 min.	Y	Y	Y	N	New model	370	online
Thermo Scientific Sorvall	Mach 1.6/1.6R	1.6L (4 x 400mL)	15,000	24,652	~10 hr.	Y	Y	Y	N	4-program memory	356	357
Eppendorf*	5810/5810R	1.6L (4 x 400mL)	14,000	20,800	99 min.	Y	Y	Y	N	34-program memory	374	374-376
Thermo Scientific Sorvall	Legend T1/RT1	1.1L (4 x 280mL)	14,600	23,113	99 min.	Y	Y	Y	N	New models	358	359-360
Thermo Scientific Sorvall IEC	CL31/CL31R	1.1L (4 x 280mL)	14,600	23,113	99 min.	Y	Y	Y	N	New models	369	online
Thermo Scientific Sorvall IEC	Multi/MultiRF	1L (4 x 250mL)	16,800	30,300	100 hr.	Y	Y	Y	N	98-set parameter memory	371	372-373
Thermo Scientific IEC	Stratos*	720mL (4 x 180mL)	23,300	44,410	~10 hr.	Y	Y	Y	N	9 acceleration/ 9 brake profiles	361	361-362
Eppendorf	5804/5804R	400mL (4 x 100mL)	14,000	20,800	99 min.	Y	Y	Y	N	34-program memory	374	374-376
Thermo Scientific IEC	Primo*/Primo R	400mL (4 x 100mL)	15,000	21,890	~10 hr.	Y	Y	Y	N	2 accel./9 brake profiles	362	363
Fisher Scientific	accuSpin 400	400mL (4 x 100mL)	13,000	16,060	~10 hr.	N	Y	Y	N	2 accel./9 brake profiles	367	368
Floor Model Centrifuges												
Thermo Scientific Sorvall	HT6	6L (6 x 1000mL)	4250	5735	~100 hr.	Y	Y	Y	N	CQCS QC system	363	364
Thermo Scientific	FL40	3L (4 x 750mL)	7800	9863	99 min.	N	Y	Y	N	Locking wheels	370	online
Thermo Scientific	FL40R	3L (4 x 750mL)	8000	10,375	99 min.	Y	Y	Y	N	Locking wheels	370	online

CENTRIFUGATION GLOSSARY, see page 356

*Trademark. See Trademark Reference.

Eppendorf* 5424

Thermo Scientific* Legend* 23R

Fisher Scientific accuSpin*
Micro 17R (L), Micro 17

Microcentrifuges. Arranged by maximum RCF.

Brand	Model	Capacity	Max. Speed (rpm)	Max. RCF (xG)	Timer (0--–)	Refrigeration Available?	Auto Rotor Recognition	Load Imbalance Detection	Rotor Included	Notes	See Page	Rotors on page(s)
Thermo Scientific* Sorvall*	Legend* 23R	800mL (4 x 200mL)	23,000	36,668	----	Y	Y	Y	N	Auto Lock rotor change	378	379-380
Eppendorf*	5430	60mL (30 x 2.0mL)	17,500	30,130	9 hr. 59 min.	N	N	N	Y	Choice of 3 rotors	382	383
Eppendorf	5417R	60mL (30 x 2.0mL)	16,400	25,000	100 min.	Y	Y	Y	N	6 optional rotors	386	387
Eppendorf	5424	48mL (24 x 2.0mL)	15,000	21,130	9 hr. 59 min.	N	N	N	Y	With 24-place rotor	383	384
Thermo Scientific Sorvall	Legend 21/21R	48mL (24 x 2.0mL)	14,800	21,100	99 min.	Y	N	N	Y	Choice of equipped rotor	380	380
Thermo Scientific Sorvall	Legend 17/17R	48mL (24 x 2.0mL)	13,300	17,000	99 min.	Y	N	N	Y	Choice of equipped rotor	380	380
Fisher Scientific	accuSpin* Micro 17 Micro 17R	48mL (24 x 2.0mL)	13,300	17,000	99 min.	Y	N	N	Y	With 24-place rotor	381	381
Eppendorf	5418	36mL (18 x 2.0mL)	14,000	16,813	9 hr. 59 min.	N	N	N	Y	With 18-place rotor	385	386
Eppendorf	5415D/5415R	48mL (24 x 2.0mL)	13,200	16,110	100 min.	Y	N	N	Y	With 24-place rotor	384	385
Thermo Scientific Sorvall	Legend Micro 14	24mL (12 x 2.0mL)	14,800	14,500	99 min.	N	N	N	Y	With 24-place rotor	381	381
Eppendorf	MiniSpin* Plus	24mL (12 x 2.0mL)	14,500	14,000	99 min.	N	N	N	Y	With 12-place rotor	386	----
Eppendorf	MiniSpin	24mL (12 x 2.0mL)	13,400	12,100	30 min.	N	N	N	Y	With 12-place rotor	386	----
Fisher Scientific	Mini	12mL (6 x 2.0mL)	6600	2200	None	N	N	N	Y	PCR strip and 6-pl. rotors	382	382

Eppendorf* 5702

Thermo Scientific* IEC* CL10

Fisher Scientific Centrific* 228

Clinical Centrifuges. Arranged by maximum RCF.

Brand	Model	Capacity	Max. Speed (rpm)	Max. RCF (xG)	Timer (0--–)	Refrigeration Available?	Auto Rotor Recognition	Load Imbalance Detection	Rotor Included	Notes	See Page	Rotors on page(s)
Thermo Scientific* IEC*	CL30/CL30R	1.1L (4 x 280mL)	6500	5300	99 min.	Y	N	N	N	New models	388	389-390
Thermo Scientific IEC	CL10	540mL (4 x 135mL)	6500	3684	99 min.	N	Y	Y	N	New model	391	391-392
Thermo Scientific IEC	CL2	300mL (6 x 50mL)	8500	4680	30 min.	N	N	N	N	With 12- or 24-pl. rotor	393	393-394
Eppendorf*	5702/5702R	340mL (4 x 85mL)	4400	3000	99 min.	Y	N	N	N	Lockable settings	395	395-396
Fisher Scientific	Centrific* 228	90mL (6 x 15mL)	3300	1380	15 min.	N	N	N	Y	Fixed-speed	388	388

FOR MICROHEMATOCRIT CENTRIFUGES, see pages 397-399
FOR CELL WASHERS, see page 399

BEFORE YOU BUY BENCHTOP CENTRIFUGES

IMPORTANT TERMS TO KNOW

Sample Format – Make sure that the centrifuge supports the type of container the sam is in (i.e., blood tube, centrifuge tube, microplate, or PCR strip).

Capacity – The centrifuge should also support the total sample volume to be processed. The more samples processed per run, the greater your processing efficiency.

Rotor – With multiple rotor types available – fixed-angle, swinging-bucket, and micropl – it is important to determine the type of rotor needed to support your sample format an separation requirements.

RCF/G-force – Relative centrifugal force, or G-force, is the measurement of the force app to a sample within a centrifuge. Different protocols call for different G-force settings, so check the range supported by the centrifuge to make sure it meets your requirements.

Applications Versatility – Consider all of the applications the centrifuge may be used for, including the types of rotors, accessories and consumables. The more tasks a centrifuge can perform, the better your return on investment.

SAFETY FEATURES

Biocontainment – Understand your facilities' regulations with respect to biocontainment and ensure that all relevant accessories are tested and certified by internationally recognized safety organizations such as CAMR in Porton Down, UK.

Anti-Corrosive Material – Carbon fiber is a durable, lightweig alternative to conventional metallic rotors which, over time, can corrode and become a safety hazard. Carbon fiber is noncorrosive, offering significantly greater safety and durability.

Ease of Cleaning – For maximum safety, a centrifuge rotors, and accessories should be cleaned regularly. Choose a model with a watertight keypa and smooth surfaces that can be wiped down easily.

	SORVALL T1 SERIES	SORVALL MACH 1.6 SERIES	SORVALL T3 SERIES	SORVALL LEGEND T/RT PLUS SERIES
Max RPM/RCF-Fixed Angle Rotor	14,600 / 23,113	15,000 / 24,652	8,000 / 10,375	15,000 / 24,400
Tube/Rotor Style	MAXIMUM CAPACITY			
50mL Conical Tubes* - Fixed Angle Rotor	6 x 50mL	6 x 50mL	10 x 50mL	14 x 50mL
50mL Conical Tubes* - Swinging-Bucket Rotor	12 x 50mL (unsealed)	20 x 50mL (unsealed)	28 x 50mL (unsealed)	28 x 50mL (sealed)
Microtube Rotor	24 x 1.5/2.0mL or 48 x 1.5/2.0mL	24 x 1.5/2.0mL		24 x 1.5/2.0mL or 1.5/2.0mL
Microplate Rotor	6 (sealed)	6 (unsealed)	12 (sealed) 16 (unsealed)	16 (unsealed)

*Most centrifuges support multiple tube styles. 50mL conical tube used to illustrate representative capacity only.

Optional Carbon Fiber Rotors

FEATURES TO LOOK FOR

Compact footprint – Purchasing a compact centrifuge – or even a floor-standing unit – is a good way to conserve precious bench space.

Throughput – For optimum efficiency, look for rotors and adapters that accommodate the maximum number of samples per run.

Rotor Versatility – Choosing a centrifuge that accommodates a variety of rotors allows you to perform multiple tasks with a single unit. If you change rotors frequently, look for a model that allows you to change rotors quickly, without the use of tools.

User-friendly Controls and Bright Displays – Intuitive keypads and large displays make it easy to set parameters and monitor run conditions from across the lab.

120V Operation – Make sure the unit you select meets typical 120V US power receptacles if required.

For a full selection of Thermo Scientific® Centrifuges, see pp. 351, 354, 356, 358, 361-363, 369-371, 378, 380-381, 388-389, 391, 393, 399.

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CENTRIFUGES

GENERAL PURPOSE

Thermo Scientific* Sorvall* Legend* T Plus/RT Plus Centrifuges

75-004-377

Versatile, 3L-capacity centrifuges deliver high rcf for tissue culture, virological tests, DNA/protein precipitations and other applications

Available in refrigerated or ventilated models, with the widest range of accessory rotors and adapters available for unmatched versatility.

- Capacity: 3L (4 × 750mL) with optional swinging bucket rotor 75-006-445 and round buckets 75-006-441 (order separately)
- Maximum speed/RCF: 15,000rpm/24,400×G
- Microprocessor soft-touch keypad control with large digital LED display for speed, rcf and run time
- Variable speed control from 300 to 15,000rpm in 10rpm increments
- Run time: 0 to 9 hrs., 59 min., continuous operation
- 4-program memory plus pretemp program
- Refrigerated model provides uniform temperature control from -9° to +40°C (15.8° to 104°F) for temperature-sensitive samples with CFC-free refrigerant

Safety Features

- Low profile working height for easy loading and unloading
- Automatic rotor recognition and electronic imbalance detection
- Dual lid-locking mechanism (soft-touch closure with lid interlock)
- Galvanized steel chassis with armored interior chamber
- Maintenance-free brushless drive motor runs quietly

ORDERING INFORMATION:

All units for 120V 50/60Hz; accessory fixed-angle, swinging bucket, microliter and microplate rotors and adapters are available separately online. All rotors are biocontainment approved.

REQUIRED ACCESSORIES:

Rotor (sold separately at right and on following pages)

CERTIFICATIONS:

CE, CSA, EN 61 010-1, EN 61 010-2-020

Description	W × D × H	Net Weight	Electrical Reqts.	Cat. No.	Each
Legend T Plus (Ventilated)	26¼ × 21¾ × 14¼" (67 × 55 × 36cm)	196 lb. (89kg)	120V 60Hz	**75-004-367**	6083.00
Legend RT Plus (Refrigerated)	26¼ × 28¾ × 14¼" (67 × 73 × 36cm)	288 lb. (131kg)	120V 60Hz	**75-004-377**	8938.00

ACCESSORIES

24-Place Fixed-Angle Aluminum Rotor with Cover

24 × 1.5 to 2.0mL capacity

75-003-332

For use with Thermo Scientific* Sorvall* Legend* RT Plus and Stratos Centrifuges.

- Max speed/RCF in Legend RT Plus: 15,000rpm/21,890×G; in Stratos: 17,000rpm/28,110×G
- Angle: 45°
- Using accessory adapters (see microtube adapters below), accommodates 0.2 to 0.6mL microliter tubes
- Autoclavable

INCLUDES:

Rotor and screw-tight biocontainment lid

Capacity	Cat. No.	Each
24 x 1.5/2.0mL	**75-003-332**	1379.22

Microtube Adapters

For use with Thermo Scientific* Sorvall* Micro 17/Micro21*, Legend* T/RT Plus, Stratos and Primo/Primo R centrifuges in the rotors listed below. Accommodate tube sizes from 0.2 to 0.6mL.

- **Micro 17/17R and Micro 21/21R:** All rotors
- **Legend T/RT Plus and Stratos:** 75-003-332
- **Primo/Primo R:** 75-007-592, 75-007-593, and 75-007-599

For Tubes	Color	Cat. No.	Pack of 24
0.2mL	Gray	**76-003-750**	95.78
0.25/0.4mL	Red	**76-003-759**	95.78
0.5/0.6mL	Turquoise	**76-003-758**	95.78

Two-Place Sealed Highplate Rotor

Capacity: 2 × 1 filter plates or 2 × 5 microplates

75-006-444

For use with Thermo Scientific* Sorvall* Legend* T/RT Plus Centrifuges.

- Max. speed/RCF: 5250rpm/5084×G

INCLUDES:

Rotor and two screw-tight biocontainment covers

Capacity	Cat. No.	Each
2 × 1 filter plates or 2 × 5 microplates	**75-006-444**	2437.31

Four-Place Swinging Bucket Bioshield Rotor with Cover

4 × 250mL capacity (rectangular buckets)

75-006-435

For use with Thermo Scientific* Sorvall* Legend* T/RT Centrifuges.

- Max speed/RCF: 5350rpm/5820×G
- Autoclavable aluminum body with stainless-steel outer casing
- Accessory adapters allow rotor to accept volumes from 1.5 to 250mL

INCLUDES:

Rotor, pair of screw-tight biocontainment lids, lubricant

Capacity	Cat. No.	Each
4 × 250mL	**75-006-435**	3686.47

ACCESSORIES

Six-Place Fixed-Angle Highconic* Rotor with Cover

6 × 50mL capacity

75-003-057

For use with Thermo Scientific* Sorvall* Legend* T Plus/RT Plus and Stratos Centrifuges. 45° angle design enhances pelletization and reduces processing time. Separates sample at bottom of tube, rather than on walls, to produce a compact pellet and well-clarified supernatant.

- Maximum speed/RCF: 8500rpm/10,020×G
- Biocontainment approved
- When equipped with accessory adapters, accepts tubes from 1.5 to 50mL, including 15 and 50mL Falcon tubes
- Autoclavable

INCLUDES:
Rotor, lid and grease

Capacity	Cat. No.	Each
6 × 50mL	**75-003-057**	2698.55

Six-Place Fixed-Angle Rotor with Cover

6 × 94mL capacity

75-003-334

For use with Thermo Scientific* Sorvall* Legend* T Plus/RT Plus and Stratos Centrifuges.

- Max. speed/RCF, Model T Plus: 10,500rpm/12,450; Model RT Plus: 12,000rpm/16,260×G; Stratos: 15,000rpm/25,410×G
- Angle: 26°
- Autoclavable aluminum body
- Accessory adapters accommodate tubes from 1.5 to 50mL

INCLUDES:
Rotor, screw-tight biocontainment lid, trunnion grease

Capacity	Cat. No.	Each
6 × 94mL	**75-003-334**	2568.46

LOOKING FOR TUBES?

Plastic? Glass? Microvolume? Fisher Scientific offers a wide selection of centrifuge tubes in a variety of sizes, materials and styles. You'll find them in the Tubes section.

Four-Place Swinging Bucket Rotor

Stainless-steel rotor body only

75-006-434

For use with Thermo Scientific* Sorvall* Legend* T Plus/RT Plus. Accepts either 250mL rectangular buckets (75-006-446), 750mL round buckets (75-006-441), microplate carriers (75-006-449), conical tissue culture buckets (75-006-497) or multiple buckets (75-006-470 and 75-006-471); order separately. Autoclavable.

- **With rectangular buckets.** Capacity: 4 × 250mL. Max. speed/RCF; 3750rpm/2990×G. Max. tube O.D. × L: 62 × 125mm
- **With round buckets.** Capacity: 4 × 750mL. Max. speed/RCF; 4150rpm/3700×G. Max. tube O.D. × L: 100 × 146mm
- **With microplate carriers.** Capacity: Four plates. Max. speed/RCF; 4150rpm/3061×G
- **With tissue culture buckets.** Capacity: 4 × 250mL conical.; Max. speed/RCF: 3750rpm/3350×G
- **With 20-place multiple buckets.** Capacity: 20 × 10 to 15mL; Max. speed/RC: 3750rpm/3020×G
- **With 25-place multiple buckets.** Capacity: 25 × 5 to 7mL; Max. speed/RCF: 3750rpm/2810×G

ORDERING INFORMATION:
Available in two styles: with tool (supplied; secures rotor to centrifuge) or without tool (has screw-tight knob to secure rotor). Optional tube adapters handle wide variety of tubes with volumes as low as 1.5mL.

Style	Cat. No.	Each
Without tool	**75-006-434**	1725.30
With tool	**75-006-445**	1725.30

Buckets

Round or rectangular buckets for use with Four-Place Swinging Bucket Rotors 75-006-445 and 75-006-434.

ORDERING INFORMATION:
Sold individually; order correct quantity to equip rotor. Sealing lids sold separately. Accessory adapters accept assorted tube styles and volumes from 1.5 to 250mL.

Shape	Capacity	Max. O.D. × L	Cat. No.	Each
Round	750mL	100 × 146mm	**75-006-441**	423.59
Rectangular	250mL	62 × 125mm	**75-006-446**	489.72

Sealing Caps

For use with rectangular bucket 75-006-446 or round bucket 75-006-441 in Four-Place Swinging Bucket Rotors 75-006-445 or 75-006-434.

- Provide aerosol-tight biocontainment for buckets
- Polyetherimide

Shape	For Use with	Cat. No.	Each
Round	75-006-441	**75-006-421**	395.03
Rectangular	75-006-446	**75-006-448**	389.00

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES, cont'd.

Microplate Carrier

Capacity: 4 × 4 standard microplates (or one deepwell plate)

For use with Four-Place Swinging Bucket Rotors 75-006-441 and 75-006-446.

- Maximum speed/RCF: 4150rpm/3060×G
- Maximum carrier height: 60mm

Cat. No.	Each
75-006-449	668.71

Multiple Buckets

For high-capacity blood collection tubes; use with Four-Place Swinging Bucket Rotors 75-006-445 and 75-006-434.

- Two sizes available: 20 × 10 to 15mL or 25 × 5 to 7mL
- Maximum speed/RCF: 3750rpm/2810×G (25-place bucket) or 3020×G (20-place bucket)

ORDERING INFORMATION:
Buckets sold individually; order correct quantity to equip rotor.

Capacity	Max. Speed	Max. Force	Max. Tube O.D. × L	Cat. No.	Each
25 × 5/7mL	3750rpm	2810×G	14 × 120mm	**75-006-470**	636.50
20 × 10/15mL	3750rpm	3020×G	17 × 140mm	**75-006-471**	636.50

Tissue Culture Bucket

For use with Four-Place Swinging Bucket Rotors 75-006-445 and 75-006-434

- Maximum speed/RCF: 3750rpm/3350×G
- Accepts 250mL conical tissue culture tubes
- Max. tube O.D. × L: 61 × 70mm

ORDERING INFORMATION:
Buckets sold individually; order correct quantity to equip rotor.

Capacity	Cat. No.	Each
250mL	**75-006-497**	293.85

Tube Adapter for Rectangular Buckets

For use with four-place Bioshield rotor 75-006-435 and with four-place rotor 75-006-445 when equipped with rectangular bucket 75-006-446.

NOTE:
Adapters sold individually; order correct quantity to equip rotor.

For Tubes	Tube Type	Max. O.D. × L	No. of Slots	Cat. No.	Each
1.5/2.0mL	Microliter	13 × 50mm	56	**75-006-452**	120.66
5/7mL	Blood	17.5 × 117mm	20	**75-006-454**	120.66
7mL	DIN	14 × 117mm	28	**75-006-453**	124.48
10/15mL	DIN/Blood	19 × 117mm	16	**75-006-455**	87.17
14/15mL	Flanged	25 × 117mm	9	**75-006-492**	132.73
15mL	Conical	24 × 120mm	9	**75-006-456**	87.17
45/50mL	Pyrex* round-bottom	35 × 117mm	4	**75-006-491**	133.39
50mL	Conical	35.5 × 117mm	4	**75-006-461**	87.17
100mL	DIN	66 × 120mm	1	**75-006-462**	117.72

Tube Adapters for Round Buckets

For use with four-place rotors 75-006-445 and 75-006-434 when equipped with round bucket 75-006-441.

- Maximum tube length (in chart) is with biocontainment lid 75-006-421 in use

NOTE:
Adapters sold individually; order correct quantity to equip your rotor.

Capacity	Tube Type	Max. O.D. × L	No. of Slots	Color	Cat. No.	Each
1.5/2mL	Microliter	13 × 42mm	48	Black	**75-008-132**	114.37
5/7mL	Blood	18.5 × 122mm	19	Lt. gray	**75-008-134**	135.14
7mL	DIN	14 × 122mm	35	Yellow	**75-008-133**	135.14
10/15mL	Blood	20 × 122mm	17	White	**75-008-136**	135.14
14/15mL	Flanged	21.5 × 125mm	12	Brown	**75-006-494**	114.37
15mL	DIN	18.5 × 122mm	19	Red	**75-008-135**	135.14
15mL	Conical	23.5 × 120mm	12	Olive	**75-008-137**	135.14
25mL	DIN	31 × 125mm	7	Orange	**75-008-138**	143.64
45/50mL	Pyrex* round-bottom	31 × 123mm	7	Ultra-marine	**75-006-493**	135.14
50mL	Conical	35.5 × 120mm	5	Lt. green	**75-006-495**	92.00
50mL	DIN	39 × 125mm	4	Green	**75-008-140**	49.32
150/180mL	DIN	47.5 × 125mm	2	Blue	**75-008-142**	124.94
100mL	DIN/Misc.	56.5 × 132mm	1	Gray	**75-006-498**	219.62
175/250mL	Conical†	75 × 140mm	1	White	**75-008-144**	133.93

† Conical tubes require additional conical adapter pad, not included.

New High-Throughput Tube Adapters for Round Buckets

High-capacity adapters fit 750mL Round Bucket (75-006-441) to spin 5, 7 and 10mL blood collection tubes and 50mL conical tubes.

Visit www.fishersci.com and search for 11-210-821

Carbon Fiber Rotors

Ultralight rotors allow easier handling and faster rotor changes for higher throughput

For use with Thermo Scientific* Sorvall* Legend* R/RT Plus Centrifuges.

- Resist corrosion and withstand repeated autoclaving
- Tube adapters sold separately

Description	Max. Speed	Max. Force	Cat. No.	Each
6 x 250mL Fixed-Angle Carbon Rotor	10,000rpm	15,316×G	**75-006-517**	3600.00
14 x 50mL Fixed-Angle Conical Tube Carbon Rotor	9000rpm	13,855×G	**75-006-526**	4800.00
8 x 50mL Fixed-Angle Conical Tube Carbon Rotor	12,000rpm	16,743×G	**75-006-516**	2800.00
48 x 1.5/2.0mL Microtube Carbon Rotor	15,000rpm	24,400×G	**75-006-527**	1920.00

Thermo Scientific* Sorvall* Legend* T3/RT3 Centrifuges

Benchtop models deliver safe, efficient high throughput for industrial, research and clinical labs

Optional accessories meet stringent biocontainment requirements.

Operating Features

- Capacity: 3L (4 × 750mL)
- Max. Speed/RCF, T3: 7800rpm/9115×G; RT3: 8000rpm/9588×G
- Microprocessor control system ensures continuous speed regulation for high-quality separations
- Intuitive, watertight control panel with digital display
- 99 min. timer with HOLD feature for continuous runs
- Brushless induction motor delivers quiet operation with minimal maintenance
- Space-saving design

Safety Features

- Audible/visual alarms alert user to operating anomalies
- Rotor imbalance detector with automatic shutoff
- Automatic rotor recognition controls maximum allowable speed
- Double-lid locking system and armored chamber ensure operator safety

Refrigerated Model RT3

- Provide excellent cooling performance, even at maximum speed
- Pre-cool function
- Temperature Range: -9°C to +40°C
- Ozone-free, CFC-free refrigerant

ORDERING INFORMATION:
Optional rotors and adapters are sold separately (see below and following pages)

REQUIRED ACCESSORIES:
Rotor (sold separately)

COMPLIANCE:
IEC 1010-1, IEC 1010-2-020

CERTIFICATIONS:
UL (CL40/CL40R), CE marked

75-002-386

Description	Electrical Requirements	Cat. No.	Each
Ventilated Models			
Model T3	120V 60Hz	**75-002-386**	5395.00
Model T3	230V 50/60Hz	**75-002-385**	5395.00
Refrigerated Models			
Model RT3	120V 60Hz	**75-002-388**	7899.00
Model RT3	230V 50/60Hz	**75-002-387**	7899.00

Specifications	Model T3	Model RT3
Capacity	4 × 750mL	4 × 750mL
Type	Ventilated	Refrigerated
Max. Speed/RCF	7800rpm/9115×G	8000rpm/9588×G
Control	Microprocessor	Microprocessor
Programs	4 with direct recall	4 + pre-cooling with direct recall
Speed Set/Display	500-7800rpm/Digital	500-8000rpm/Digital
Timer	30 sec. to 99 min. plus Continuous	30 sec. to 99 min. plus Continuous
Temperature Range	N/A	-9°C to +40°C
Acceleration/Braking Rates	5/5	5/5
Dimensions (L × W × H)	26 × 23¾ × 16½" (66 × 58 × 42cm)	26 × 33½ × 16½" (66 × 85 × 42cm)
Net Weight	176 lb. (80kg)	233 lb. (106kg)

ACCESSORIES

4-Place Swinging Bucket Rotor

Versatile high-throughput rotor

For use with the Thermo Scientific* Sorvall* Legend* T3 and RT3. Accepts buckets or carriers to spin tubes, bottles, microplates and special containers.

- Capacity: 4 × 750mL
- Designed to be loaded into centrifuge with buckets/carriers already in place
- Sealed buckets 05-376-262 offer biohazard protection
- Transparent sealing caps allow visual detection of biological risks

ORDERING INFORMATION:
Tube adapters sold separately

INCLUDES:
Rotor body only

05-376-260

05-376-300

REQUIRED ACCESSORIES:
Buckets or carriers (order separately)

COMPLIANCE:
Sealed bucket 05-376-262 conforms to CAMR, Porton Down (UK) standards for biological containment.

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

4-Place Swinging Bucker Rotor, Contd.

Description	Max. Capacity	Max Tube O.D.	Model T3 Max. Speed/ RCF	Model RT3 Max. Speed/ RCF	Cat. No.	Price
4-Place Swinging Bucket Rotor Body	4 × 750mL	95mm	4000rpm	4500rpm	**05-376-260**	1082.00
Buckets and Lids						
750mL Standard Bucket	4	95mm	4000rpm	4500rpm	**05-376-261**	Pk. of 4/1082.00
750mL Sealed Bucket	4	95mm	4000rpm	4500rpm	**05-376-262**	Pk. of 4/1461.00
Sealing Lid for 05-376-262	4	----	----	----	**05-376-263**	34.31
500mL Bucket for Nalgene* Bottle	4	----	4000rpm	4500rpm	**05-376-295**	Pk. of 4/1040.00
250mL Bucket for Corning* Bottle	4	----	4000rpm	4500rpm	**05-376-299**	Pk. of 4/751.00
250mL Sealed Bucket for Corning Bottle	4	----	4000rpm	4500rpm	**05-376-300**	Pk. of 4/1040.00
Carriers						
Sealed Plate Carrier (for 3 Std. Plates per Bucket)	12	----	4000rpm	4500rpm	**05-376-292**	Pk. of 4/1847.00
Unsealed Plate Carrier (for 4 Std. Plates per Bucket)	16	----	4000rpm	4500rpm	**05-376-293**	Pk. of 4/1407.00
Cytology Carrier	2	----	4000rpm	4500rpm	**05-376-277**	Pk. of 2/645.00
Cushions and Inserts						
Cushion for Microplates	----	----	----	----	**05-376-294**	62.31
Inserts for 250mL Bottle	4	----	4000rpm	4500rpm	**05-376-296**	Pk. of 4/298.37
Inserts for Cytology Carrier	----	----	----	----	**05-376-280**	Pk. of 2/142.81

Tube Adapters

For use with Thermo Scientific* Sorvall* Legend* T3 and RT3 Centrifuges in rotor 05-376-260 (above).

No. of Slots × Tube Capacity†	No. of Tubes per Rotor	Max. Tube O.D.	Cat. No.	Set of 4
30 × 1.5/2mL	120	11.5mm	**05-376-279**	326.41
9 × 4mL chlamydia vials	36	18mm	**05-376-282**	326.41
12 × 4mL chlamydia vials	48	16.5mm	**05-376-283**	347.43
37 × 5mL	148	12.5mm	**05-376-264**	326.41
37 × 5mL decanting	148	12.5mm	**05-376-276**	326.41
27 × 5/7mL Vacutainer	108	13.5mm	**05-376-289**	508.95
30 × 5/7mL (unsealed)	120	13.5mm	**05-376-265**	326.41
12 × 10mL flat-bottom	48	16.5mm	**05-376-284**	326.41
12 × 10mL flat-bottom	48	18mm	**05-376-273**	326.41
21 × 10mL Vacutainer	84	16.5mm	**05-376-290**	508.95
12 × 15mL	48	16.5mm	**05-376-274**	326.41
10 × 15mL conical	40	18mm	**05-376-286**	637.00
12 × 15mL conical (unsealed)	48	18mm	**05-376-288**	638.19
7 × 15mL Vacutainer	28	17.7mm	**05-376-266**	326.41
12 × 20mL	48	22.2mm	**05-376-267**	326.41
7 × 30mL universal	28	28mm	**05-376-291**	308.39
4 × 50mL flat-bottom	16	30mm	**05-376-278**	326.41
4 × 50mL round-bottom	16	35mm	**05-376-269**	326.41
2 × 100mL	8	45mm	**05-376-270**	326.41
7 × 50mL round-bottom	28	30mm	**05-376-268**	326.41
1 × 250mL flat-bottom	4	63mm	**05-376-271**	326.41
7 × 50mL flat-bottom	28	30mm	**05-376-272**	326.41
1 × 450mL	4	95mm	**05-376-275**	326.41
7 × 50mL conical (unsealed)	28	30mm	**05-376-285**	650.00
5 × 50mL conical	20	30mm	**05-376-287**	1001.00
7 × (18 × 155mm)	28	18mm	**05-376-297**	737.52
7 × (16 × 155mm)	28	16mm	**05-376-298**	737.52
30 × Microtainer	120	8.5mm	**05-376-281**	326.41

† Arranged by tube size, small to large.

Fixed-Angle Rotors

For use with Thermo Scientific* Sorvall* Legend* T3 and RT3 Centrifuges.

Angle: 35°.

05-376-302

ORDERING INFORMATION:
Tube adapters sold separately.

		T3	RT3		
Capacity	Max Tube Dia.	Max. Speed/RCF	Max. Speed/RCF	Cat. No.	Each
10 × 50mL	34mm	7800rpm/ 8842×G	8000rpm/ 9302×G	**05-376-304**	2381.00
8 × 100mL	18.5mm	7800rpm/ 9115×G	8000rpm/ 9588×G	**05-376-302**	2343.00

LOOKING FOR TUBES?

Plastic? Glass? Microvolume? Fisher Scientific offers a wide selection of centrifuge tubes in a variety of sizes, materials and styles. You'll find them in the Tubes section.

LOOKING FOR LIQUID HANDLING PRODUCTS?

Fisher Scientific offers unsurpassed selection for all of your liquid handling and dispensing needs. From simple dispensers to state-of-the-art ergonomic pipetters, you'll find all these products in the following sections: Pipet Fillers, Pipets, Pipetters, and Pipetter Tips.

Thermo Scientific* Sorvall* Legend* Mach 1.6* Benchtop Centrifuges

Mid-sized (1.6L) general-purpose centrifuges are ideal for clinical, microbiological, biotechnological, pharmaceutical and general lab environments

Choose from ventilated model Mach 1.6 or refrigerated model 1.6R. A selection of five optional rotors allows maximum versatility.

Operating Features

- 1.6L capacity (4 × 400mL)
- Max. speed/RCF: 15,000rpm/24,652×G
- Soft-touch keypad controls (EASYset*)

Safety Features

- Ergonomic low-profile and space-saving design
- Automatic rotor recognition and electronic load imbalance detection
- Soft-Touch lid closure mechanism
- Quiet, maintenance-free brushless drive

75-004-317, 75-004-337

ORDERING INFORMATION:
All models are available with a choice of control system and refrigeration. Accessory rotors and adapters available separately, see next page.

INCLUDES:
Centrifuge only

REQUIRED ACCESSORIES:
Rotor (sold separately)

COMPLIANCE:
IEC 61010-compliant

CERTIFICATIONS:
CE marked; cCSAus

Model	Style	Cat. No.	Each
Mach 1.6	Ventilated	**75-004-317**	5831.78
Mach 1.6R	Refrigerated	**75-004-337**	8855.00

SPECIFICATIONS

Model	Mach 1.6	Mach 1.6R
Max. Speed	15,000rpm	15,000rpm
Max. RCF	24,652×G	24,652×G
Max. Capacity	4 × 400mL	4 × 400mL
Control	EASYset (soft-touch keypad)	EASYset (soft-touch keypad)
Run Time	0 to 9 hrs., 59 min., or continuous	0 to 9 hrs., 59 min., or continuous
Memory	4 user programs and 1 pre-temp	4 user programs and 1 pre-temp
Acceleration/ Deceleration Profiles	9/9	9/9
Max. Noise Level (dBA)	<64	<54
Temperature Range	----	-9 to +40°C
Dimensions (L × W × H)	19⅝ × 24¼ × 14¼" (62 × 50 × 37cm)	27 × 26¼ × 14¼" (69 × 67 × 37cm)
Electrical Reqts.	120V 60Hz	120V 60Hz
Net Weight	203 lb. (92kg)	259 lb. (118kg)

Centrifugation Glossary

Capacity—Maximum volume of liquid that a rotor can hold with all chambers filled

Centrifugal Force (symbol G)—a unit of measurement for samples undergoing the stress of acceleration in a centrifuge; it is the force exerted on a rotating body or particle, tending to pull it away from the center of rotation.

RCF (Relative Centrifugal Force)—the force that the sample undergoes. It is dependent on the speed of rotation (Q) in rpm and the rotating radius (r).

Calculating RCF

RCF can be determined from the speed (rpm) and the rotational radius using the following formula:
$G = RCF = (1.12 \times 10^{-5})rN^2$.
where G = relative centrifugal force, r = rotational radius (cm), N = rotating speed (rpm)

Rotor Types

- **Swinging Bucket**—suitable for cell culturing applications because sediment forms on the bottom of the tube. Versatile rotors that typically can be fitted with round or rectangular buckets and a wide range of tube adapters.
- **Fixed-Angle**—ideal for pelleting; collects sediment diagonally in the tube. Achieve higher rpm/rcf than other rotor types. Often supplied with biocontainment lid for working with hazardous samples.
- **Microplate**—used for nucleic acid separations, oligos concentrations and protein or peptide recovery; accepts pairs of standard or deepwell microplates.
- **Drum**—holds tube racks and spins samples in horizontal position
- **Trunnion**—similar to swing-bucket rotors; equipped with sleeves to hold centrifuge tubes. Sleeves fit into trunnion rings mounted to rotor body and swing out during centrifugation.

Commonly Used Centrifuge Tubes

- **Conical-bottom**—ideal for cell culturing and ammonium sulfate precipitations.
- **Oak Ridge**— best suited for high-speed centrifugation and lipid extraction.
- **Round-bottom**— have a uniform wall thickness for a more secure fit than conical tubes; withstand higher G-forces.

ACCESSORIES

4-Place Swinging Bucket Rotor

For use with Thermo Scientific* Sorvall* Legend* Mach 1.6* Centrifuges.

- Rotor body only; buckets and biocontainment lids sold separately
- Choose rectangular or round buckets
- Adapters sold separately

75-002-000 rotor body with round buckets 75-002-002

75-002-000 with rectangular buckets 75-002-001

Description	Cat. No.	Each
Swinging bucket rotor body	**75-002-000**	1434.15

Buckets and Lids

For use with 4-Place Swinging Bucket Rotor 75-002-000, above.

- Choose rectangular or round buckets
- Rectangular Bucket (75-002-001) capacity: 150mL
- Round Bucket (75-002-002) capacity: 400mL
- Aerosol-tight lids are suitable for biocontainment use

REQUIRED ACCESSORIES:

Buckets and lids are sold separately. Buckets are sold individually; order correct quantity for your rotor. Lids are sold in pairs.

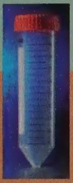
Description	Fits Cat. No.	Cat. No.	Price
400mL Round Bucket	75-002-000	**75-002-002**	328.24
150mL Rectangular Bucket	75-002-000	**75-002-001**	489.40
Round Lid (pair)	75-002-002	**75-002-004**	111.10
Rectangular Lid (pair)	75-002-001	**75-002-003**	174.19

SPECIFICATIONS

	Rectangular Bucket	Round Bucket
Cat. No.	**75-002-001**	**75-002-002**
Bucket Capacity	150mL	400mL
Max. Speed/RCF	4500rpm/4234×G	4700rpm/4618×G
Accepts lid	75-002-003	75-002-004

LOOKING FOR TUBES?

Plastic? Glass? Microvolume? Fisher Scientific offers a wide selection of centrifuge tubes in a variety of sizes, materials and styles. You'll find them in the Tubes section.



Tube Adapters for Round Buckets

For use with four-place swinging bucket rotor 75-002-000 (left) when equipped with round bucket 75-002-002.

NOTE:

Adapters sold individually; order correct quantity to equip your rotor.

For Tubes	Tube Type	Max. Tube Size	No. of Slots	Cat. No.	Each
1.5/2.0mL	Micro	10.5 × 46mm	34	**75-007-578**	82.51
7mL	DIN	13 × 123mm	18	**75-007-571**	82.51
7mL	Blood	13 × 123mm	10	**75-007-579**	75.49
15mL	DIN	17.2 × 122mm	10	**75-007-572**	82.51
15mL	Conical	17 × 127mm	8	**75-007-621**	78.47
25mL	Urine	16.5 × 123mm	5	**75-007-581**	77.50
25mL	DIN	25.5 × 121mm	5	**75-007-573**	82.51
50mL	Universal	25 × 120mm	3	**75-007-580**	76.46
50mL	Conical	29 × 119mm	3	**75-007-577**	82.51
50mL	DIN	34.5 × 120mm	3	**75-007-574**	82.51
100mL	DIN	45 × 134mm	1	**75-007-575**	77.50
250mL	Bottle	62 × 135mm	1	**75-007-622**	90.49

Tube Adapters for Rectangular Buckets

For use with four-place swinging bucket rotor 75-002-000 (left) when equipped with rectangular bucket 75-002-001.

NOTE:

Adapters sold individually; order correct quantity to equip rotor.

For Tubes	Tube Type	Max. Tube Size	No. of Slots	Cat. No.	Each
1.5mL	Micro	11 × 45mm	40	**75005335**	88.54
7mL	Blood	13 × 117mm	14	**75002022**	80.51
7mL	DIN	13 × 115mm	20	**75005321**	38.43
15mL	Blood	17 × 117mm	12	**75002021**	80.51
15mL	Conical	17 × 120mm	8	**75002020**	80.51
15mL	DIN	17 × 115mm	12	**75005322**	38.43
25mL	Universal	22.5 × 100mm	4	**75005391**	78.50
50mL	Conical	29.5 × 120mm	2	**75005386**	78.50
50mL	Oil test	----	1	**75005339**	145.75
50mL	DIN	50 × 110mm	1	**75005326**	212.11
100mL	DIN	44 × 120mm	1	**75005325**	100.59

6-Place Highconic* Rotor

For use with Thermo Scientific* Sorvall* Legend* Mach 1.6* Centrifuges.

- Capacity: 6 × 94mL
- Max. Speed/RCF: 10,150rpm/14,513×G
- Biocontainment approved
- Adapters sold separately

75-002-006

INCLUDES:

Rotor and lid

Max. Capacity	Cat. No.	Each
6 × 94mL	**75-002-006**	2410.88

Thermo Scientific* Sorvall* Legend* T1/RT1 Centrifuges

Compact 1.2L models for routine, high-capacity, high-throughput processing

Chose from ventilated model T1 or refrigerated model RT1, both with patented Auto-Lock* quick rotor exchange.

Operating Features

- Capacity: 4 × 280mL
- Max. Speed/RCF: 14,600rpm/23,113×G
- Microprocessor control system ensures continuous speed regulation for high-quality separations
- Intuitive user-friendly control panel and digital display
- Quick-recall keys provide single-keystroke access to frequently used programs
- Pre-cool function
- Brushless induction motor delivers whisper-quiet operation with minimal maintenance
- Space-saving design

Safety Features

- Automatic rotor recognition
- Load imbalance dectection
- Full-coast (no brake) capability for smooth sotps

Auto-Lock Rotor Exchange

- Rotor can be changed in as little as five seconds
- Secures rotor in place with minimal effort
- No tools required—rotor snaps and locks into place; unfastens instantly
- Allows easy, efficient cleaning of rotor and bowl

Refrigerated Model RT1

- Temperature Range: -9°C to +40°C
- Ozone-free, CFC-free refrigerant

NEW
75-002-384
75-002-382

ORDERING INFORMATION:

Optional rotors, adapters and other accessories are available separately (see following pages).

Description	Electrical Requirements	Cat. No.	Each
Model T1 (ventilated)	120V 60Hz	**75-002-382**	4300.00
Model T1 (ventilated)	230V 50/60Hz	**75-002-381**	4300.00
Model RT1 (refrigerated)	120V 60Hz	**75-002-384**	6450.00
Model RT1 (refrigerated)	230V 50/60Hz	**75-002-383**	6450.00

REQUIRED ACCESSORIES:

Rotor (sold separately)

COMPLIANCE:

IEC 1010, IEC 1010-2-020

CERTIFICATIONS:

CE marked

SPECIFICATIONS

	Model T1	Model RT1
Type	Ventilated	Refrigerated
Capacity	4 × 280mL	4 × 280mL
Max. Speed/RCF	14,600rpm/23,113×G	14,600rpm/23,113×G
Control	Microprocessor	Microprocessor
Programs	4 + pre-cooling with direct recall	4 + pre-cooling with direct recall
Speed Set/Display	500-14,600rpm/Digital	500-14,600rpm/Digital
Timer	30 sec. to 99 min. plus Continuous Run	30 sec. to 99 min. plus Continuous Run
Temperature Range	N/A	-9°C to +40°C
Acceleration/Braking Rates	5/5 + no brake	5/5 + no brake
Dimensions (L × W × H)	19¾ × 15¾ × 14⅝" (50 × 40 × 37cm)	23⅝ × 22⅜ × 14⅝" (60 × 57 × 37cm)
Net Weight	88 lb. (40kg)	159 lb. (85kg)

LOOKING FOR TUBES?

Plastic? Glass? Microvolume? Fisher Scientific offers a wide selection of centrifuge tubes in a variety of sizes, materials and styles. You'll find them in the Tubes section.

LOOKING FOR LIQUID HANDLING PRODUCTS?

Fisher Scientific offers unsurpassed selection for all of your liquid handling and dispensing needs. From simple dispensers to state-of-the-art ergonomic pipetters, you'll find all these products in the following sections: Pipet Fillers, Pipets, Pipetters, and Pipetter Tips.

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

Swinging Bucket Rotors

For use with Thermo Scientific* Sorvall* Legend* T1/RT1. Accept buckets to spin a wide range of tube styles, including standard, conical, skirted and Vacutainers*.

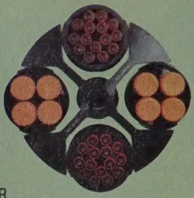
- Two capacities: 4 × 200mL and 4 × 280mL
- Sealing lids 05-376-106 and 05-376-126 provide biocontainment protection

ORDERING INFORMATION:
Tube adapters sold separately.

INCLUDES:
Rotor body only

REQUIRED ACCESSORIES:
Buckets (order separately)

COMPLIANCE:
Sealed bucket 05-376-262 conforms to CAMR, Porton Down (UK) standards for biological containment.



05-376-124

Description	Capacity	Max. Tube O.D.	Max. Speed/RCF	Cat. No.	Price
4 × 200mL Rotor 05-376-104 and Accessories					
Rotor Body	4 × 200mL	57mm	4100rpm/3026×G	**05-376-104**	Ea./595.00
Standard Buckets	200mL (per bucket)	57mm	4100rpm/3026×G	**05-376-105**	Pk. of 4/584.00
Sealing Lids for 05-376-105	----	----	----	**05-376-106**	Pk. of 4/166.94
4 × 280mL Rotor 05-376-124 and Accessories					
Rotor Body	4 × 280mL	77mm	4100rpm/3176×G	**05-376-124**	Ea./1009.1009
Standard Buckets	280mL (per bucket)	77mm	4100rpm/3082×G	**05-376-125**	Pk. of 4/1226.00
Buckets	4 × 50mL conical (per bucket)	33mm	4100rpm/3176×G	**05-376-127**	Pk. of 4/650.00
Buckets	3 × 50mL conical skirted (per bucket)	33mm	4100rpm/3176×G	**05-376-128**	Pk. of 4/650.00
Buckets	15 × 5/7mL (per bucket)	13.5mm	4100rpm/3101×G	**05-376-129**	Pk. of 4/637.00
Sealing Lids for 05-376-125	----	----	----	**05-376-126**	Pk. of 4/174.97

Tube Adapters for 05-376-104 Rotor

Capacity†	Max. Tube O.D.	No. of Tubes per Rotor	Cat. No.	Set of 4
6 × 2mL	11mm	24	**05-376-123**	131.73
1 × 25mL universal	25mm	4	**05-376-111**	542.00
5 × 5mL flat-bottom	17mm	20	**05-376-118**	434.54
5 × 5/7mL	13mm	20	**05-376-119**	131.73
3 × 12mL flat-bottom	17.5mm	12	**05-376-115**	487.61
3 × 15mL conical	17.5mm	12	**05-376-113**	141.80
1 × 50mL round	35mm	4	**05-376-108**	131.73
1 × 50mL conical skirted	30.5mm	4	**05-376-109**	290.36
1 × 50mL conical	29mm	4	**05-376-110**	284.36
5 × 10mL	16mm	20	**05-376-116**	131.73
5 × 5/10mL flat-bottom	17mm	20	**05-376-117**	633.00
9 × 5/6mL	13.5mm	36	**05-376-120**	131.73
12 × 5mL open	12.5mm	48	**05-376-121**	434.54
12 × 3/5mL	12mm	48	**05-376-122**	131.73
3 × 20mL	22mm	12	**05-376-112**	131.73
1 × 100mL	45mm	4	**05-376-107**	131.73
7 × 15mL	17mm	28	**05-376-114**	131.73

† Total capacity, least to greatest.

*Fisherbrand** 50mL HIGHER-SPEED TUBES

Graduated, conical-bottom polypropylene tubes withstand higher g-forces–up to 9400 ×G. You can find them in the Tubes section.

06-443-20

ACCESSORIES

Tube Adapters for 05-376-124 Rotor

Capacity (No. of Slots × Tube Size)†	Max. Tube O.D.	No. of Tubes per Rotor	Cat. No.	Set of 4
1 × Centriprep	28mm	4	**05-376-159**	282.35
13 × 2mL	10mm	52	**05-376-155**	282.35
1 × 50mL conical skirted	29mm	4	**05-376-139**	772.00
4 × 14mL	15.5mm	16	**05-376-160**	282.35
19 × 3mL	11mm	76	**05-376-154**	282.35
4 × 15mL conical	17mm	16	**05-376-149**	282.35
4 × 15mL Corning	17mm	16	**05-376-156**	287.36
4 × 15mL Vacutainer	16mm	16	**05-376-157**	282.35
5 × 15mL conical	17mm	20	**05-376-150**	282.35
12 × 5/7mL	12.5mm	48	**05-376-158**	282.35
9 × 10mL	16mm	36	**05-376-147**	282.35
19 × 5mL	13mm	76	**05-376-153**	282.35
1 × 100mL	38mm	4	**05-376-136**	282.35
2 × 50mL conical	29mm	8	**05-376-140**	282.35
4 × 25mL conical	24mm	16	**05-376-144**	282.35
7 × 15mL urine	17mm	28	**05-376-148**	282.35
1 × 110mL	40mm	4	**05-376-135**	282.35
5 × 25mL	24mm	20	**05-376-143**	282.35
2 × 65mL	34mm	8	**05-376-137**	282.35
1 × 135mL	43mm	4	**05-376-134**	282.35
9 × 16mL	18mm	36	**05-376-145**	282.35
5 × 30mL	25.5mm	20	**05-376-142**	282.35
3 × 50mL conical, unsealed	29mm	12	**05-376-141**	346.43
19 × 8mL	12mm	76	**05-376-152**	282.35
12 × 13mL	16mm	48	**05-376-151**	282.35
1 × 175mL conical	60mm	4	**05-376-133**	282.35
12 × 10/15mL	17mm	48	**05-376-146**	282.35
1 × 190mL	55mm	4	**05-376-161**	287.36
1 × 200mL flat-bottom	55mm	4	**05-376-132**	282.35
4 × 50mL	28.5mm	16	**05-376-138**	282.35
1 × 250mL	61.7mm	4	**05-376-162**	287.36
1 × 250mL flat-bottom	61mm	4	**05-376-131**	282.35
1 × 280mL	64mm	4	**05-376-130**	282.35

† *Total capacity, least to greatest.*

Fixed-Angle Rotors

For use with the Thermo Scientific* Sorvall* Legend* T1/RT1 Centrifuges.

- Carbon fiber rotor 05-376-789 is lightweight for easier handling and has two rows for higher-volume microliter sample throughput
- Sealed microtube rotor 05-376-187 provides biocontainment protection per CAMR (HPA) Porton Down, UK

05-376-189

ORDERING INFORMATION:
Tube adapters sold separately.

Capacity†	Max. Speed	Max. Force	Angle	Cat. No.	Each
11mm	14,600rpm	20,016×G	45°	**05-376-187**	650.00
11mm	14,600rpm	23,113×G	45°	**05-376-189**	1591.00
17.5mm	4100rpm	2537×G	37°	**05-376-169**	693.00
29.5mm	10,000rpm	12,500×G	40°	**05-376-182**	810.00
38mm	10,000rpm	11,066×G	25°	**05-376-176**	1586.00
Spare Lid for 05-376-187	----	----	----	**05-376-188**	131.73

† *Total capacity, least to greatest.*

Tube Adapters for 05-376-169 Rotor

Capacity	Max. Tube O.D. × L	Cat. No.	Each
1 × 1.5/2mL	10 × 41mm	**05-376-172**	26.76
1 × 3mL	11 × 70mm	**05-376-246**	26.76
1 × 5mL	13 × 75mm	**05-376-245**	27.25
1 × 5mL (BD-Hemogard*)	13 × 75mm	**05-376-173**	26.76
1 × 7/8mL†	13 × 100mm	**05-376-249**	26.76
1 × 13.5mL	16 × 82mm	**05-376-175**	21.41

† *Also accepts BD-Hemogard and Vacutainer* tubes.*

Tube Adapters for 05-376-187 and -189 Rotors

Accepts	Max. O.D.	Cat. No.	Pack of 20
1× 0.2mL PCR	6mm	**05-376-254**	117.65
1× 0.5mL	6mm	**05-376-191**	562.00
1 × 0.5/0.8mL	8mm	**05-376-252**	277.35

Microplate Rotor

For use with the Thermo Scientific* Sorvall* Legend* T1/RT1 Centrifuges.

- Capacity: 2 × 3 microplates or 2 × 1 filter blocks
- Max. Speed/RCF: 4100rpm/2160×G
- Optional sealed plate carrier 05-376-164 offers biocontainment protection per CAMR (HPA) Porton Down, UK

05-376-163

ORDERING INFORMATION:
Rubber cushion for microplates (05-376-294) is available online.

Description	Capacity	Cat. No.	Each
Microplate Rotor	2 × 3 microplates/ 2 × 1 block	**05-376-163**	757.00
Sealed Plate Carriers	----	**05-376-164**	542.00
Microplate Adapters (Set of 2)	----	**05-376-166**	71.54
Flask Adapters (Set of 2)	2 × 1 flask	**05-376-167**	319.40
Spare Cap for plate carrier	----	**05-376-168**	147.62

Drum Rotor

For use with the Thermo Scientific* Sorvall* Legend* T1/RT1 Centrifuges.

- Capacity: 6 racks
- Max. Speed/RCF: 14,600rpm/17,158×G
- Angle: 90°

05-376-193

ORDERING INFORMATION:
Rack adapters sold separately

REQUIRED ACCESSORIES:
Racks

Description	Capacity	No. of Tubes per Rotor	Max. Tube O.D.	Cat. No.	Each
Drum Rotor	6 racks	----	----	**05-376-193**	924.00
Rack Adapter, Standard†	10 × 1.5/2mL	60	11mm	**05-376-194**	48.92
Rack Adapter, Microt†	20 × 0.5/0.8mL	120	8mm	**05-376-197**	70.53
Rack Adapter, Rhesus†	20 × 0.7mL	120	6mm	**05-376-198**	131.98
Rack Adapter, Viatron†	21 × 0.6mL	126	6mm	**05-376-196**	58.29
Rack Adapter, Beckman†	32 × 0.25/0.4mL	192	6mm	**05-376-195**	70.53

† *Indicates number of tubes per rack.*

Thermo Scientific* Sorvall* Stratos Benchtop Centrifuges

High-speed refrigerated centrifuges

Wide selection of accessory biocontainment rotors for exceptional versatility.

Operating Features

- Capacity: 720mL (4 × 180mL)
- Max. speed/RCF: 23,300rpm/50,377×G
- Touch keypad control panel and digital display for time, speed and force
- Temperature control from -9° to +40°C
- Variable speed control from 300 to 23,300rpm (10rpm increments)
- Timed runs to 9 hr., 59 min.
- Quick-run key for short spins
- Acceleration and braking curves: 9/9
- Memory stores up to nine programs plus precool program
- Accept loads up to 4 × 180mL (or four microplates) when equipped with four-place swinging bucket rotor 75-003-047 (order separately)
- With optional microliter rotors, accept a maximum of 24 × 1.5/2.0mL tubes

Safety Features

- Dual lid locking mechanism
- Automatic rotor recognition and electronic load imbalance detection
- Active drive damping ensures sample integrity in the event of tube breakage
- CFC-free refrigerant
- Low-noise, brushless induction motor is maintenance-free

Thermo
SORVALL Biofuge stratos

75-005-293

ORDERING INFORMATION:

Dimensions (D × W × H): 23⅜ × 25¼ × 15⅝" (60 × 64 × 40cm).
Net weight: 295 lb. (134kg): Accessories, including fixed-angle, bucket and microplate rotors and adapters, are sold separately; below and on following page all rotors are designed to provide biocontainment protection.

INCLUDES:

Centrifuge only

REQUIRED ACCESSORIES:

Rotor (sold separately)

Electrical Requirements	Max. Speed	Max. Force	Cat. No.	Each
120V 50/60Hz	22,000rpm	44,910×G	**75-005-293**	12,781.00
208V 50/60Hz	23,300rpm	50,377×G	**75-005-294**	12,781.00

ACCESSORIES

24-Place Fixed-Angle Aluminum Rotor with Cover

24 × 1.5 to 2.0mL capacity

For use with Thermo Scientific* Sorvall* Legend* RT and Stratos Centrifuges.

- Max. speed/RCF in Legend RT: 15,000rpm/21,890×G; in Stratos: 17,000rpm/28,110×G
- Angle: 45°
- Using accessory adapters (see Thermo Scientific* Sorvall* Microtube Adapters), accommodates 0.2 to 0.6mL microliter tubes
- Autoclavable

INCLUDES:

Rotor and screw-tight biocontainment lid

Capacity	Cat. No.	Each
24 x 1.5/2.0mL	**75-003-332**	1379.22

24-Place Fixed-Angle Rotor

24 × 1.5mL capacity

For use with Thermo Scientific* Sorvall* Stratos Centrifuges.

- Max. speed/RCF: 23,300rpm/50,377×G
- Angle: 45°

Capacity	Cat. No.	Each
24 × 1.5mL	**75-003-331**	1379.22

Round Bucket

For use with Four-Place Swinging Bucket Rotor 75-003-047. Capacity per bucket: 180mL.

ORDERING INFORMATION:

Sold in pairs; order correct quantity to equip rotor. Aerosol-tight lids (75-008-173) sold separately. Optional adapters accept assorted tube styles and volumes from 1.5mL to 100mL.

Capacity	Cat. No.	Each
180mL	**75-008-172**	321.86

Contd. on next page.

ACCESSORIES

Four-Place Swinging Bucket Rotor

4 × 180mL capacity (round buckets)

For use with Thermo Scientific* Sorvall* Stratos Centrifuges.

- Swinging bucket rotor body
- Max. speed/RCF: 5000rpm/4863×G
- Accessory adapters allow rotor to accept volumes from 1.5 to 100mL

Capacity	Cat. No.	Each
4 × 180mL	**75-003-047**	1054.00

Tube Adapters

For use with in Four-Place Swinging Bucket Rotor 75-003-047 with Round Bucket 75-008-172. Accommodate tube sizes from 1.5 to 100mL, plus US urine tubes.

ORDERING INFORMATION:
Adapters are sold individually; order correct quantity to equip rotor.

Capacity	Max. O.D. × L	No. of Slots	Color	Cat. No.	Each
12 × 1.5/2mL	11 × 42mm	48	Black	**75-008-190**	60.96
9 × 7mL	13 × 125mm	36	Yellow	**75-008-189**	60.96
7 × 7mL blood	13 × 126mm	28	Gray	**75-008-188**	62.79
3 × 15mL Falcon	17 × 133mm	12	Brown	**75-008-187**	62.79
4 × 15mL blood	18 × 129mm	16	White	**75-008-185**	62.79
7 × 15mL	18 × 126mm	28	Red	**75-008-186**	62.79
2 × 25mL	25 × 126mm	8	Orange	**75-008-184**	60.96
1 × 25mL universal	26 × 121mm	4	Green	**75-008-196**	60.96
1 × 50mL Falcon	30 × 133mm	4	Green/Yellow	**75-008-183**	62.79
1 × 50mL	36 × 132mm	4	Green	**75-008-182**	60.96
1 × 100mL	45 × 128mm	4	Blue	**75-008-181**	60.96
2 × US urine	17mm	8	Brown/Red	**75-008-195**	60.96

8-Place Fixed-Angle Rotor

8 × 50mL capacity

For use with Thermo Scientific* Sorvall* Stratos Centrifuges.

- Max. speed/RCF: 15,000rpm/26,920×G
- Angle: 34°

75-003-335

- Accessory adapters accommodate tubes from 1.5 to 38mL (sold separately)

INCLUDES:
Rotor and screw-tight aerosol cover

Capacity	Cat. No.	Each
8 × 50mL	**75-003-335**	2568.46

Thermo Scientific* Sorvall* Primo*/Primo R Benchtop Centrifuges

Compact multipurpose centrifuges for microliter, high-speed and general-purpose applications

Available with or without refrigeration.

Operating Features

- Capacity: 400mL (4 × 100mL)
- Max. speed/RCF: 15,000rpm/21,890×G
- Touch keypad control with digital display
- Variable speed control from 300 to 15,000rpm (by 10rpm); can also set rcf
- Timed runs up to 9 hrs., 59 min.
- Quick run feature for short spins
- Memory retains current settings
- Acceleration/braking curves: 2/9
- With optional rotor/adapter combinations, accept tubes from 0.2 to 100mL

Safety Features

- Dual lid-locking mechanism (soft-touch closure with lid interlock)
- Automatic rotor recognition and electronic imbalance detection system
- Maintenance-free brushless drive motor runs quietly (less than 60dBA)

Primo (nonrefrigerated)

- Dimensions (L × W × H): 18¾ × 15 × 12⅝" (48 × 38 × 32cm); weight: 88 lb. (40kg); for 120V 50/60Hz

Refrigerated Primo R

- Delivers uniform temperature control from -9° to +40°C for temperature-sensitive samples
- CFC-free refrigerant
- Dimensions (L × W × H): 19⅜ × 22¾ × 12¼" (49 × 58 × 31cm); weight: 153 lb. (70kg); for 120V 50/60Hz

75-005-448

ORDERING INFORMATION:
Primo centrifuges are compatible with a selection of biocontainment-approved fixed-angle, swinging bucket, microliter and microplate rotors and adapters (order separately, see next page).

INCLUDES:
Centrifuge only

REQUIRED ACCESSORIES:
Rotor (sold separately)

Model	Cat. No.	Each
Primo	**75-005-184**	3364.75
Primo R	**75-005-448**	8678.91

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

4-Place Swinging Bucket Rotor

Autoclavable rotor body only

75-007-591

For use with Thermo Scientific* Sorvall* Primo*/Primo R Benchtop Centrifuges.

- Capacity: 4 × 100mL round buckets (75-007-555); order separately
- Maximum speed/RCF: 4000rpm/2590×G

ORDERING INFORMATION:

Optional tube adapters handle wide variety of tubes with volumes from 1.5mL to 50mL.

Capacity	Cat. No.	Each
4 × 100mL	**75-007-591**	855.00

Round Buckets

For use with Four-Place Swinging Bucket Rotor 75-007-591

Capacity: 100mL.

ORDERING INFORMATION:

Sold individually; order correct quantity to equip rotor. Biocontainment lids (75-007-598) sold separately. Optional adapters accept assorted tube styles and volumes from 1.5mL to 50mL. No adapter is required to hold 100mL bottle.

Capacity	Cat. No.	Each
100mL	**75-007-555**	236.40

6-Place Fixed-Angle Highconic* Rotor with Cover

6 × 50mL capacity

For use with Thermo Scientific* Sorvall* Primo*/Primo R Benchtop Centrifuges.

Unique 45° angle design enhances pelletization and reduces processing time. Separates sample at bottom of tube, rather than on walls, to produce a compact pellet and well-clarified supernatant.

- Maximum speed/RCF: 8500rpm/10,015×G
- Autoclavable and biocontainment approved

ORDERING INFORMATION:

When equipped with accessory adapters (sold separately), accepts tubes from 1.5 to 50mL, including 15- and 50mL BD Falcon* tubes.

INCLUDES:

Rotor and lid

Capacity	Cat. No.	Each
6 × 50mL	**75-007-588**	2431.00

Thermo Scientific* Sorvall* HT6 Centrifuge

High-capacity, low-speed refrigerated floor centrifuge

Delivers traceable sample processing for clinical, genomics/proteomics, biochemistry, research, pathology, and RIA. High Reproducibility Factor (HRF) guarantees run-to-run reproducibility with absolute sample temperature control.

- Capacity: 6L (6 × 100mL)
- Max. Speed/RCF: 4250rpm/5735×G
- Intuitive VIDEOset interface with easy-to-read screen, online help and programmability
- 24-program memory accommodates multiple user protocols
- Advanced thin film technology offers superior temperature control for sample integrity
- Powerful refrigeration assures dependable results at full load, regardless of rotor or speed
- CQCS Network Quality Control System provides sample and unit traceability to GLP, GMP and ISO9000 via PC

ORDERING INFORMATION:

For information on delivery and installation, contact your Fisher Scientific Customer Service Representative. Optional rotors (sold separately, see following page): RP6 windshielded swinging bucket rotor with round or rectangular buckets in sealed or unsealed styles (Cat. Nos. 11-178-135, -136, -138, -140), and RHK4B swinging bucket rotor for RIA tubes (11-178-255).

REQUIRED ACCESSORIES:

Rotor (sold separately)

Description	Cat. No.	Each
HT6 Centrifuge	**11-178-191**	23,896.00

11-178-191

SPECIFICATIONS

Capacity	6L (6 × 1000mL)
Max. Speed	4250rpm
Max. RCF	5735×G
Control Type	Microprocessor with self-diagnostics
Display	VIDEOset graphics with info/error messages in two languages
Memory	24, individual password
Profiles	10 acceleration/10 braking
Refrigerated	Yes
Temperature Range	-20° to +40°C in 1°C increments
Timer	1 sec. to 99 min. 59 sec.; 1 min. to 99 hr. 59 min., plus HOLD
Dimensions (D × W × H)	35 × 31 × 37" (90 × 78 × 94.5cm)
Electrical Requirements	208V 60Hz

ACCESSORIES

6-Place Windshielded Swinging Bucket Rotor

For use with the Thermo Scientific* Sorvall* HT6 Centrifuges. Choice of rectangular or round buckets. Rectangular buckets include stainless-steel tray for microtubes, flat-bottom tubes and microplates.

- Capacity: 6 × 1000mL (with round buckets); 54 × 96-well microplates (with sealed rectangular buckets)
- Max. speed/RCF: 4250rpm/5735×G

ORDERING INFORMATION:
Tube adapters available separately.

INCLUDES:
Rotor body only

REQUIRED ACCESSORIES:
Buckets and lid (sold separately)

Description	Cat. No.	Price
Rotor Body only	**11-178-252**	Ea./5846.00
Rotor Lid (required)	**11-178-119**	Ea./543.00
Buckets		
Rectangular Buckets, sealed	**11-178-140**	Pk. of 6/3614.00
Rectangular Buckets, unsealed	**11-178-138**	Pk. of 6/2826.00
Round Buckets, sealed	**11-178-135**	Pk. of 6/3374.00
Round Buckets, unsealed	**11-178-136**	Pk. of 6/3132.00
Sealing Caps		
For Rectangular Bucket	**11-178-216**	Ea./146.82
For Round Bucket	**25-144-058**	Ea./28.25

Tube Adapters for Round Buckets

For use with Thermo Scientific* Sorvall* HT6 centrifuge.

Fits in rotor 11-178-252 (above) when equipped with round buckets 11-178-135 (sealed) or 11-178-136 (unsealed).

ORDERING INFORMATION:
Sold in packs of 6. One pack will fill the rotor.

No. Tubes per Adapter x Tube Size	Max. O.D. x L	Color	No. of Tubes per Rotor	Cat. No.	Pack of 6
37 × 3/5mL	12.7 × 107mm	Gray	222	**11-178-208**	498.94
37 × 3/5mL	Decanting	Gray	222	**11-178-209**	498.62
30 × 6mL	13.5 × 107mm	Light Blue	180	**11-178-210**	498.62
20 × 5/7mL Vacutainer*	13.5 × 150mm	Yellow	120	**11-178-211**	498.62
19 × 10/15mL Vacutainer	17 × 150mm	Red	114	**11-178-212**	498.62
12 × 15mL conical	17 × 122mm	White	72	**11-178-304**	498.94
12 × 15mL	16 × 125mm	White	72	**11-178-305**	489.61
12 × 20mL	22.2 × 148mm	Coral	72	**11-178-306**	489.61
7 × 50mL	30 × 150mm	Dark Red	42	**11-178-307**	498.62
5 × 50mL conical	30 × 115mm	Blue	30	**11-178-308**	498.94
4 × 50mL	35 × 153mm	Blue	24	**11-178-309**	498.62
2 × 100mL	45 × 150mm	Dark Green	12	**11-178-310**	498.62
1 × 250mL flat-bottom	63 × 160mm	Turquoise	6	**11-178-311**	498.62
1 × 250mL conical	61 × 127mm	Black	6	**11-178-313**	532.00
1 × 375mL	77 × 146mm	Black	6	**85-240-076**	807.00
1 × 500mL flat-bottom	70 × 171mm	Black	6	**11-178-312**	498.94
1 × 500mL blood bottle	76 × 177mm	Black	6	**11-178-063**	1161.00
1 × 500mL blood bottle	83 × 177mm	Black	6	**11-178-064**	1357.00
1 × 900mL	94 × 177mm	Black	6	**85-240-075**	993.00
1 × 1000mL	----	White	6	**11-178-203**	51.91
1 × 1000 Nalgene*	----	White	6	**11-178-102**	905.00
1 × 1000mL Sanyo*/MSE	----	White	6	**11-178-101**	887.00

2-Place Swinging Bucket RIA Rotor

Capacity 3300mL (66 × 50mL)

- Max. speed/RCF: 3300rpm/2301×G
- Spins RIA tubes, clinical rack holders, microtiter plates, microtubes and other tubes in rectangular buckets

ORDERING INFORMATION:
Spare buckets (11-174-023) and trays are available separately.

INCLUDES:
Buckets (2)

Description	Cat. No.	Each
2-Place Swinging Bucket Rotor with Buckets	**11-178-255**	2852.00
Rectangular Buckets (set of 2)	**11-174-023**	4818.00

Trays for RIA Rotor

For use with rotor 11-178-255 in rectangular buckets 11-174-023.

Description	Rotor Capacity (No. of Places × No. of Racks)	Tubes per Rotor	Total Volume	Cat. No.	Each
Nuclear	2 × 3	432	1296mL	**11-178-804**	1705.00
Packard	2 × 4	300	1800mL	**11-178-805**	713.00
Beckman	2 × 3	270	1350mL	**11-178-806**	609.00
Smac-Technicon	2 × 5	228	2280mL	**11-178-807**	787.00
Micromedics	2 × 7	180	2700mL	**11-178-814**	362.45
Microtitration	2 × 6	66	3300mL	**11-178-808**	573.00

*Trademark. See Trademark Reference.

Prices subject to change.

Fisher Scientific* accuSpin* Models 3/3R Benchtop Centrifuges

Large capacity centrifuges (3L) for everyday use

Provide versatility for a lab's changing needs. Available with or without refrigeration.

Operating Features

- Capacity: 3L (4 × 750mL)
- Maximum speed/RCF: 15,000rpm/21,890×G (Model 3R)
- Touch keypad with intuitive microprocessor controls
- LED digital display for start/stop curves, speed/force, time, and temperature (3R only)
- Timed and continuous-run modes, plus quick-spin feature
- 4-program memory plus a pre-temp program
- Nine preset start/stop curves
- Manufactured with ISO 9001:2000-certified process

Safety features

- Automatic rotor recognition and electronic load imbalance detection
- Steel housing and armored interior for superior protection
- Low profile (12½" [32cm]) working height for easy rotor access
- Electronic lid-locking system secures lid during operation
- Maintenance-free brushless motor runs quietly

Refrigerated accuSpin 3R

- Variable temperature control from -9° to +40°C
- CFC-free refrigerant
- When equipped with optional Microliter Rotor 13-100-524, reaches maximum speed of 15,000rpm (21,890×G)

ORDERING INFORMATION:

Optional accessories (order separately, see following page) include:

24 × 1.5/2mL Microliter Rotor (13-100-524, for Fisher Scientific accuSpin3R only)

Four-Place Swinging Bucket Rotor 13-100-518 (equip with either 750mL round buckets 13-100-520, rectangular buckets 13-100-522, or microplate carrier 13-100-523)

Tube adapters available for all rotors; based on rotor/adapter combination, centrifuges can handle vessel volumes from 0.5 to 250mL

Model	Cat. No.	Each
accuSpin 3	**13-100-517**	5554.87
accuSpin 3R (refrigerated)	**13-100-516**	8160.77

LOOKING FOR LIQUID HANDLING PRODUCTS?

Fisher Scientific offers unsurpassed selection for all of your liquid handling and dispensing needs. From simple dispensers to state-of-the-art ergonomic pipetters, you'll find all these products in the following sections: Pipet Fillers, Pipets, Pipetters, and Pipetter Tips.

13-100-516

REQUIRED ACCESSORIES:
Rotor (sold separately)

WARRANTY:
12 months parts and labor

COMPLIANCE:
IEC 1010

CERTIFICATIONS:
CE marked, CSA

SPECIFICATIONS

Maximum Speed/RCF	
Model 3	4150rpm/3700×G
Model 3R	15,000rpm/21,890×G
Capacity	4 × 750mL
Run Time	0 to 9 hrs., 59 min. continuous operation; quick run
Memory	Four, plus one pre-temp program
Acceleration/Deceleration Profiles	9/9
Temperature Range (Model 3R)	-9° to +40°C
Dimensions (L × W × H)	
Model 3	26¼ × 21¾ × 14¼" (67 × 55 × 36cm)
Model 3R	26¼ × 28¾ × 14¼" (67 × 73 × 36cm)
Net Weight	
Model 3	196 lb. (89kg)
Model 3R	288 lb. (131kg)
Electrical Requirements	120V 60Hz

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

LOOKING FOR TUBES?

Plastic? Glass? Microvolume? Fisher Scientific offers a wide selection of centrifuge tubes in a variety of sizes, materials and styles. You'll find them in the Tubes section.

ACCESSORIES

24-Place Microliter Rotor

24 × 1.5/2.0mL capacity

For use with Fisher Scientific* accuSpin* Model 3R Centrifuge only.

- Maximum speed/RCF: 15,000rpm/21,890×G
- Angle: 45° Biocontainment approved and autoclavable

Capacity	Cat. No.	Each
24 × 1.5/2.0mL	**13-100-524**	1384.90

Four-Place Swinging Bucket Rotor

For use with Fisher Scientific* accuSpin* Model 3/3R Centrifuges. Accepts round or rectangular buckets, or microplate carrier (order separately).

- **With round bucket (13-100-520):** 4 × 750mL capacity; speeds to 4150rpm/3700×G
- **With rectangular bucket (13-100-522):** 4 × 250mL capacity; speeds to 3750rpm/2990×G
- **With microplate carrier (13-100-523):** accepts 4 × 4 plates; speeds to 4150rpm/3060×G

INCLUDES:
Rotor body only

REQUIRED ACCESSORIES:
Buckets or microplate carrier (sold separately)

Capacity	Cat. No.	Each
4 × 250 to 750mL	**13-100-518**	1778.85

Buckets, Microplate Carriers and Lids

For use with swinging bucket rotor 13-100-518.

ORDERING INFORMATION:
Bucket lids sold separately.

Description	Capacity	Max. Speed/RCF	Cat. No.	Each
Round Bucket	750mL	4150rpm/3700×G	**13-100-519**	412.71
Rectangular Bucket	250mL	3750rpm/2990×G	**13-100-521**	472.80
Microplate Carrier	4 plates	4150rpm/3060×G	**13-100-523**	653.64
Lid for round bucket	N/A	N/A	**13-100-520**	385.03
Lid for rectangular bucket	N/A	N/A	**13-100-522**	418.49

Tube Adapters for Rectangular Buckets

Fit in rectangular bucket 13-100-521 for swinging bucket rotor 13-100-518.

NOTE:
Adapters are sold individually. Order correct quantity to outfit rotor.

For Tubes	No. of Slots per Adapter	Cat. No.	Each
1.5/2.0mL microliter	56	**13-100-556**	121.84
7mL standard	28	**13-100-555**	125.69
5/7mL blood	20	**13-100-554**	121.84
14/15mL flanged	9	**13-100-553**	132.69
15mL conical	9	**13-100-552**	117.82
10/15mL standard/blood	16	**13-100-551**	88.37
25/50mL standard	4	**13-100-549**	119.76
50mL conical	4	**13-100-547**	88.40
50mL standard	3	**13-100-546**	88.40
100mL standard	1	**13-100-545**	119.76
250mL bottle	1	**13-100-543**	110.01

Tube Adapters for Round Buckets

For use in round bucket 13-100-519 with swinging bucket rotor 13-100-518.

NOTE:
Adapters are sold individually. Order correct quantity to outfit rotor.

For Tubes	No. of Slots per Adapter	Cat. No.	Each
1.5/2.0mL microliter	48	**13-100-542**	116.35
7mL standard	35	**13-100-541**	135.38
5/7mL blood	19	**13-100-540**	135.38
14/15mL flanged	12	**13-100-539**	116.35
15mL conical	12	**13-100-538**	134.70
10/15mL blood	17	**13-100-537**	135.37
15mL standard	19	**13-100-536**	135.37
25mL standard	7	**13-100-535**	141.71
45/50mL Pyrex*	7	**13-100-534**	135.38
50mL conical	5	**13-100-533**	122.01
50mL standard	4	**13-100-532**	50.11
100mL standard	2	**13-100-531**	130.01
175/200/225mL bottle	1	**13-100-529**	134.17

*Trademark. See Trademark Reference.

Fisher Scientific* accuSpin* Model 400 Benchtop Centrifuge

Versatile, economical centrifuge handles microvolumes or general purpose small-volume separations

Three optional rotors make unit suitable for labs with shared-use environments or changing needs.

Operating Features

- Capacity: 400mL (4 × 100mL)
- Maximum speed/RCF: 13,000rpm/16,060×G
- Variable microprocessor-based speed control
- Touch keypad with intuitive controls and digital display for speed, time and braking
- Adjustable timer and quick-spin feature
- Manufactured with ISO 9001:2000-certified processes

Safety Features

- Automatic rotor recognition and electronic imbalance detection
- Steel housing and armored interior chamber
- Electronic lid-locking system secures lid during operation
- Maintenance-free brushless motor runs quietly (0dbA)

13-100-557

ORDERING INFORMATION:

Accessories (sold separately, see following page) include:

6 × 50mL Six-Place Fixed-Angle Rotor (13-100-559)
4 × 100mL Swinging Bucket Rotor (13-100-569 with buckets 13-100-570)
24 × 1.5mL Microliter Rotor (13-100-558)

Tube adapters available for all rotors; based on rotor/adapter combination, centrifuge can handle tube volumes from 0.2 to 50mL.

REQUIRED ACCESSORIES:

Rotor (sold separately)

WARRANTY:

12 months parts and labor

COMPLIANCE:

IEC 1010

CERTIFICATIONS:

CE marked, CSA

Model	Cat. No.	Each
Fisher Scientific accuSpin 400	**13-100-557**	2948.36

SPECIFICATIONS

Speed Range/Control	30 to 13,000rpm, adjustable in 10rpm increments
Maximum RCF	16,060×G
Capacity	4 × 100mL
Run Time	0 to 9 hr., 69 min.; continuous operation; quick run
Memory	Retains most recent settings
Acceleration/deceleration profiles	2/9
Dimensions (L × W × H)	18¾ × 15 × 12⅜" (48 × 38 × 31.4cm)
Electrical Requirements	120V 60Hz
Net Weight	88 lb. (40kg)

LOOKING FOR TUBES?

Plastic? Glass? Microvolume? Fisher Scientific offers a wide selection of centrifuge tubes in a variety of sizes, materials and styles. You'll find them in the Tubes section.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

ACCESSORIES

6-Place Fixed-Angle Rotor

6 × 50mL capacity

For use with Fisher Scientific* accuSpin* Model 400 Centrifuge.

- Maximum speed/RCF: 8500rpm/10,015×G
- Angle: 45°

13-100-559

INCLUDES:
Rotor and aerosol-tight lid

Capacity	Cat. No.	Each
6 × 50mL	**13-100-559**	2533.06

Tube Adapters

For use with Fisher Scientific* fixed-angle rotor 13-100-559.

NOTE:
Adapters are sold individually. Order the correct quantity to outfit rotor.

For Tubes	No. of Slots per Adapter	Cat. No.	Each
1.5mL microtubes	4	**13-100-560**	70.12
3.5mL	4	**13-100-561**	68.95
6.5mL	2	**13-100-562**	70.12
12mL	2	**13-100-563**	68.93
16mL	1	**13-100-564**	68.93
38mL	1	**13-100-565**	68.93
50mL	1	**13-100-566**	33.56
15mL conical	1	**13-100-567**	70.12

24-Place Microliter Rotor

24 × 1.5mL capacity

For use with Fisher Scientific* accuSpin* Model 400 centrifuge.

- Maximum speed/RCF: 13,000rpm/16,060×G
- Angle: 40°
- Autoclavable
- Accepts tube adapters (sold separately) to accommodate 0.2 to 0.6mL microtubes

13-100-558

INCLUDES:
Rotor and biocontainment-certified lid

Capacity	Cat. No.	Each
24 × 1.5mL	**13-100-558**	757.20

4-Place Swinging Bucket Rotor

4 × 100mL capacity

For use with Fisher Scientific* accuSpin* Model 400 centrifuge.

- Maximum speed/RCF: 4000rpm/2590×G

REQUIRED ACCESSORIES:
Round buckets (13-100-570) and biocontainment lids (13-100-571), sold separately.

13-100-569, shown with 13-100-570 and -571 (not included)

Description	Cat. No.	Each
4 × 100mL Swinging Bucket Rotor Body	**13-100-569**	888.26
Accessories		
Round Bucket	**13-100-570**	228.29
Biocontainment Lid	**13-100-571**	57.97

Tube Adapters

For use with swinging bucket rotor 13-100-569 when equipped with round buckets 13-100-570.

NOTE:
Adapters are sold individually. Order correct quantity to outfit rotor.

For Tubes	No. of Slots per Adapter	Cat. No.	Each
1.5/2.0mL microtubes	10	**13-100-572**	43.12
7mL standard	5	**13-100-573**	44.06
7mL blood sample	3	**13-100-574**	44.06
7mL	Adapter Pad	**13-100-575**	29.12
15mL standard/blood sample	3	**13-100-576**	44.06
25mL standard	1	**13-100-577**	43.10
50mL standard	1	**13-100-578**	44.06
15mL conical	1	**13-100-579**	44.06
50mL conical	1	**13-100-580**	44.06

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* IEC* CL31/CL31R Multispeed Centrifuges

Offer exceptional performance and versatility in a quiet, compact 1.2L size

NEW

Features Auto-Lock* quick rotor exchange. Choose from ventilated model CL31 or refrigerated model CL31R.

Operating Features

- Capacity: 4 × 280mL
- Max. Speed/RCF: 14,600rpm/23,113×G
- Microprocessor control system ensures continuous speed regulation for high-quality separations
- Intuitive user interface with digital display
- Quick-recall keys provide single-keystroke access to five frequently used programs
- G-force run control ensures transferability of protocols from other centrifuges without cross-referencing to rpm
- 99 min. timer
- HOLD mode for continuous runs and PULSE mode for quick spins
- Superior ventilation system protects samples from heat buildup
- Brushless induction drive delivers quiet operation with minimal maintenance
- Space-saving design

Auto-Lock Rotor Exchange

- Makes changing protocols and cleaning quick and efficient
- No tools required—rotor snaps and locks into place; unfastens instantly
- Rotor can be changed in as little as five seconds

Refrigerated Model CL31R

- Temperature Range: -9°C to +40°C
- Ozone-free, CFC-free refrigerant

APPLICATIONS:

Classrooms, cleanrooms, toxicology, biotech, water quality analysis, food quality testing and control, drug screening, clinical chemistry/hematology

ORDERING INFORMATION:

Optional rotors and accessory adapters are available online. All accessories are sold separately.

REQUIRED ACCESSORIES:

Rotor (sold separately)

COMPLIANCE:

IEC 1010, IEC 1010-2-020

CERTIFICATIONS:

CE marked

Thermo
IEC CL31 Multispeed
14600
99
4

05-376-102

Description	Electrical Requirements	Cat. No.	Each
Model CL31 (ventilated)	120V 60Hz	**05-376-102**	3927.00
Model CL31 (ventilated)	230V 50/60Hz	**05-376-321**	3927.00
Model CL31R (refrigerated)	120V 60Hz	**05-376-103**	5865.00
Model CL31R (refrigerated)	230V 50/60Hz	**05-376-322**	5865.00

Specifications	Model CL31	Model CL31R
Type	Ventilated	Refrigerated
Capacity	4 × 280mL	4 × 280mL
Max. Speed/RCF	14,600rpm/23,113×G	14,600rpm/23,113×G
Control	Microprocessor	Microprocessor
Programs	5 (direct recall)	5 (direct recall)
Speed Set/Display	500-14,600rpm/Digital	500-14,600rpm/Digital
Timer	30 sec. to 99 min. plus HOLD	30 sec. to 99 min. plus HOLD
Temperature Range	N/A	-9°C to +40°C
Acceleration/Braking Rates	5/5	5/5
Dimensions (L × W × H)	21 × 24 × 23⅝" (54 × 61 × 60cm)	29 × 30 × 24" (74 × 76 × 61cm)
Net Weight	115 lb. (52kg)	187 lb. (85kg)

LOOKING FOR THERMO SCIENTIFIC* IEC* CL31/CL31R ACCESSORIES?

Rotors and tube adapters are available online.

Visit www.fishersci.com and search for CL31

LOOKING FOR TUBES?

Plastic? Glass? Microvolume? Fisher Scientific offers a wide selection of centrifuge tubes in a variety of sizes, materials and styles. You'll find them in the Tubes section.

Thermo Scientific* IEC* CL40/40R and FL40/40R Centrifuges

NEW

Benchtop and floor models deliver safe, efficient high throughput for industrial, research and clinical labs

Available with a broad array of rotors and accessories for high-volume tube and microplate applications.

Operating Features

- Capacity: 3L (4 × 750mL)
- Max. Speed/RCF, CL40/FL40: 7800rpm/9863×G; CL40R/FL40R: 8000rpm/10,375×G
- Microprocessor control system ensures continuous speed regulation for high-quality separations
- User-friendly, watertight interface with digital display
- 99 min. timer with HOLD feature for continuous runs
- Superior ventilation system protects samples from heat buildup
- Brushless induction drive delivers quiet operation with minimal maintenance
- Space-saving design

Safety Features

- Audible/visual alarms
- Rotor imbalance detector with automatic shutoff
- Automatic rotor recognition controls maximum allowable speed
- Double-lid locking system and armored chamber ensure operator safety

Floor Models FL40 and FL40R

- Benchtop capabilities in a free-standing design
- Locking wheels for portability and secure placement
- Small footprint saves floor space
- Gas spring-assisted lid opens and closes easily at convenient 34" (86cm) working height

Refrigerated Models CL40R and FL40R

- Provide excellent cooling performance, even at maximum speed
- Temperature Range: -9°C to +40°C
- Ozone-free, CFC-free refrigerant

APPLICATIONS:

Cleanrooms, pharmaceutical labs, genomic research, tissue/cell culture, biotechnology, toxicology, water quality analysis, food quality testing, drug screening, clinical chemistry

ORDERING INFORMATION:

Optional rotors and accessory adapters, sold separately, are available online.

REQUIRED ACCESSORIES:

Rotor (sold separately)

COMPLIANCE:

IEC 1010-1, IEC 1010-2-020

CERTIFICATIONS:

UL (CL40/CL40R), CE

LOOKING FOR CL40/40R FL40/40R ACCESSORIES?

Rotors and tube adapters are available online.

Visit www.fishersci.com and search for CL40 or FL40

05-376-256

05-376-258

Description	Electrical Requirements	Cat. No.	Each
Benchtop Models			
Model CL40 (ventilated)	120V 60Hz	**05-376-256**	5304.00
Model CL40 (ventilated)	230V 50/60Hz	**05-376-323**	5304.00
Model CL40R (refrigerated)	120V 60Hz	**05-376-257**	7599.00
Model CL40R (refrigerated)	230V 50/60Hz	**05-376-324**	7599.00
Floor Models			
Model FL40 (ventilated)	120V 60Hz	**05-376-258**	7293.00
Model FL40 (ventilated)	230V 50/60Hz	**05-376-325**	7365.00
Model FL40R (refrigerated)	120V 60Hz	**05-376-259**	9078.00
Model FL40R (refrigerated)	230V 50/60Hz	**05-376-326**	9078.00

Specifications	Models CL40/FL40	Models CL40R/FL40R
Capacity	4 × 750mL	4 × 750mL
Type	Ventilated	Refrigerated
Max. Speed/RCF	7800rpm/9863×G	8000rpm/10,375×G
Control	Microprocessor	Microprocessor
Programs	5 (direct recall)	5 (direct recall)
Speed Set/Display	500-7800rpm/Digital	500-8000rpm/Digital
Timer	30 sec. to 99 min. plus HOLD	30 sec. to 99 min. plus HOLD
Temperature Range	N/A	-9°C to +40°C
Acceleration/Braking Rates	5/5	5/5
Dimensions (L × W × H)	CL40: 26 × 28 × 20" (67 × 70 × 50cm); FL40: 21 × 24 × 23⅝" (54 × 61 × 60cm)	CL40R: 26 × 38 × 20" (67 × 97 × 50cm); FL40R: 31 × 28 × 39" (78 × 68 × 99cm)
Net Weight	CL40: 201 lb. (91kg); FL40: 264 lb. (120kg)	CL40R: 256 lb. (116kg); FL40R: 319 lb. (145kg)

*Trademark. See Trademark Reference.

Thermo Scientific* IEC* Multi and Multi RF* High-Performance Centrifuges

High-performance, high-speed benchtop centrifuges

A wide range of accessory rotor options makes these units ideal for protein chemistry, molecular biology, and general research applications. Advanced features, including g-force control and At-Speed timer, deliver consistent repeatable results. Choose from refrigerated or ventilated models.

Operating Features

- Capacity: 1L (4 × 250mL)
- Max. speed/RCF: 16,800rpm/30,300×G
- Keypad control with digital display
- Max. tubes: 48 × 1.5/2.0mL
- Speed control: 500 to 16,800rpm by 50rpm
- G-force control: 50 to 30,300×G by 50×G
- Timer: 1 sec. to 99 hrs., 59 min. 59 sec. plus Auto-Reset
- SHORT-SPIN feature for quick separations
- Acceleration/Deceleration: Fast, slow, user-defined
- RS-232 port
- Manufactured with ISO 9001:2000-certified processes

Advanced Features

- Re-Run calculates the total integrated centrifugal effect experienced by a sample both during acceleration and while at speed, and then replicates the effect for additional samples
- At-Start* timer permits timing at the start of a run; At-Speed timer starts timing when the sample reaches operating speed
- Program control: 98 user inputs with SAVE/LOCK
- Quick braking from operating speed to open cover in 30–60 seconds

Safety Features

- Diagnostics: automatic rotor recognition, load imbalance, lid open, refrigeration/power failure
- Maintenance-free, low-noise (less than 62dBA) brushless motor
- Gasketed guard bowl for spill protection
- Cover interlock secures lid during operation
- Suction feet aid stability

Compact Multi Centrifuges (Ventilated)

- Dimensions: 25¾L × 20½W × 15"H (65 × 52 × 40cm)

05-375-74, 05-375-71

MultiRF Centrifuges (Refrigerated)

- Automatic quick cool/warm program
- Variable temperature control from -9° to +40°C by 1°C
- Cool samples to +4°C in less than 7 minutes
- Dimensions: 25¾L × 30¾W × 15"H (65 × 78 × 40cm)

INCLUDES:

Centrifuge only

REQUIRED ACCESSORIES:

Rotor (sold separately, see following page.)

CERTIFICATIONS:

CE marked, CSA

Electrical Requirements	Net Weight	Mfr. No.	Cat. No.	Each
Multi				
120V 60Hz	175 lb. (79kg)	8464	**05-375-74**	5828.00
220/240V 50/60Hz	175 lb. (79kg)	8465	**05-375-75**	6003.00
Multi RF				
120V 60Hz	247 lb. (112kg)	8466	**05-375-71**	9399.00
220/240V 60Hz	247 lb. (112kg)	8468	**05-375-73**	9399.00

LOOKING FOR TUBES?

Plastic? Glass? Microvolume? Fisher Scientific offers a wide selection of centrifuge tubes in a variety of sizes, materials and styles. You'll find them in the Tubes section.

LOOKING FOR LIQUID HANDLING PRODUCTS?

Fisher Scientific offers unsurpassed selection for all of your liquid handling and dispensing needs. From simple dispensers to state-of-the-art ergonomic pipetters, you'll find all these products in the following sections: Pipet Fillers, Pipets, Pipetters, and Pipetter Tips.

ACCESSORIES

48-Place Sealed Fixed-Angle Rotor

48 × 1.5 to 2.0mL capacity

For use with Thermo Scientific* IEC* Multi and Multi RF* Centrifuges. Use for gel recovery, lipid removal, nucleic acid precipitates, oligos concentration, protein and peptide recovery.

05-375-78
(microtubes sold separately)

- Maximum speed/RCF: 16,800rpm/30,300×G
- Accepts up to 48 × 1.5 and 2.0mL microtubes directly
- Angle: 45°; radius: 9.6cm

ORDERING INFORMATION:
Also accepts 0.25 and 4.0mL microtubes when equipped with adapter 05-152-4. To accommodate 0.5mL PCR tubes and BD* Microtainers*, use adapter 05-152-03. Adapters available separately online.

INCLUDES:
Rotor and aerosol-tight lid

Capacity	Max. Speed	Max. Force	Mfr. No.	Cat. No.	Each
48 ×1.5/2mL	16,800rpm	30,300×G	8848	**05-375-78**	1249.00

Eight-Place Sealed Fixed-Angle Rotor

8 × 50mL capacity

For use with Thermo Scientific* IEC* Multi and Multi RF* Centrifuges. Ideal for removing insoluble material, protein and peptide recovery, cell lysates and oligos concentration.

05-375-79
(Adapter and tubes sold separately)

- Maximum speed/RCF: 15,100rpm/25,200×G
- Directly accepts up to 8 × 50mL tubes, conical-bottom Falcon* or Corning* tubes
- Angle: 25°; radius 9.9cm

ORDERING INFORMATION:
Adapters (05-375-20, available online) reduce capacity to accept up to 8 × 15mL Falcon or Corning conical tubes.

INCLUDES:
Rotor and aerosol-tight lid

Capacity	Max. Speed	Max. Force	Mfr. No.	Cat. No.	Each
8 × 50mL	15,100rpm	25,200×G	8850	**05-375-79**	2313.00

Four-Place Swinging Bucket Rotor

4 × 250mL capacity

For use with Thermo Scientific* IEC* Multi and Multi RF* Centrifuges. Ideal for separating cellular components, removing insoluble material, bacterial and mammalian harvesting, lysates, tissue and cell homogenates.

- Maximum speed/RCF: 5300rpm/5150×G
- Radius: 17.5cm
- Includes four buckets to accommodate Aerocarrier* sealed tube carriers to accommodate tubes from 1.5 to 250mL

05-375-76

INCLUDES:
Rotor body and four buckets

Capacity	Max. Speed	Max. Force	Mfr. No.	Cat. No.	Each
4 × 250mL	5300rpm	5150×G	8947	**05-375-76**	2213.00

Oil Test Rotor Systems

Fisher Scientific offers two different rotors for oil testing with the older model Thermo Scientific* IEC* HN-SII centrifuge. Choose a system for conical (05-152-2) or pear-shaped (05-152-1) tubes. Systems include rotor, attached trunnion rings and four oil tubes and meet ASTM* standards. **NOTE:** This centrifuge is no longer available.

Visit www.fishersci.com and search for Oil test rotors

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

Aerocarrier* Adapters

For use in 05-375-76 (with Thermo Scientific* IEC* Multi/Multi RF*) and 05-375-45 (with Fisher Scientific Centra*-CL3/-CL3R) swinging-bucket rotors.

- With threaded transparent sealing cover with O-ring to provide aerosol containment when running toxic, infectious, or sterile samples
- Polypropylene, can be cleaned with bleach or decontamination washes

ORDERING INFORMATION:

Carriers are sold in packs of two; purchase the proper number to fully equip rotor.

No. of Slots × Tube Size†	Max. O.D. × L	Mfr. No.	Cat. No.	Pk. of 2
1 × 250mL Thermo Scientific IEC 25021 × 250mL Corning* 1260-250	62 × 142	6558E	**04-976-017**	208.00
1 × 175/225mL Falcon* conical	60 × 137	6559E	**04-976-018**	208.00
1 × 100mL	43 × 139	6557E	**04-976-016**	224.51
2 × 50mL Falcon/Corning conical	29 × 115	6560E	**05-375-51**	224.51
2 × 20mL Millipore* Centricon* Plus 20	29 × 123	6556E	**04-976-015**	224.51
3 × 25mL round/flat bottom	25 × 94	6568E	**05-375-59**	224.51
5 × 15mL Falcon/Corning conical	17 × 120	6561E	**05-375-52**	208.00
8 × 15mL Corning 99447-16 screw-cap	16 × 125	6567E	**05-375-58**	224.51
5 × 14mL Falcon 322059 round	17 × 100	6563E	**05-375-54**	224.51
9 × 10/15mL Vacutainer* tubes	16 × 125	6562E	**05-375-53**	224.51
12 × 5/7mL Hemogard* Vacutainer*	13 × 100	6566E	**05-375-57**	224.51
12 × 5mL Falcon 322063 round	12 × 75	6566E	**05-375-57**	224.51
12 × 3/5mL	10/12 × 75	6566E	**05-375-57**	224.51
12 × 1.5/2.0mL	Microtubes	6565E	**05-375-56**	224.51
12 × 1.5mL Microgard* Microtainer	Microtubes	6565E	**05-375-56**	224.51
12 × 0.5mL Microcon* YM-100	Microtubes	6565E	**05-375-56**	224.51

† *In descending order of size*

Two-Place Doubledeep* Microplate Rotor

For use with Thermo Scientific* IEC* Multi and Multi RF* Centrifuges. Capacity: 2 × 5 shallow microplates, 2 × 2 stacked deepwell microplates (43mm maximum H), and one filter plate assembly with standard footprint of 86 × 128mm

- Maximum speed/RCF: 4400rpm/3050×G
- Radius: 14.2cm
- Total stacked assembly must be less than 90mm high

INCLUDES:

Rotor and two Doubledeep microplate carriers to use for nucleic acid precipitate, oligos concentration, protein and peptide recovery.

05-375-77
(microplates sold separately)

Capacity	Max. Speed	Max. Force	Mfr. No.	Cat. No.	Each
10 × microplates, 2–4 deepwell plates, 2 filtration assemblies	4000rpm	3050×G	8244	**05-375-77**	1481.00

LOOKING FOR TUBES?

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LOOKING FOR LIQUID HANDLING PRODUCTS?

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Eppendorf* 5804/5810 Series Multipurpose Centrifuges

Benchtop centrifuges accommodate a variety of rotors for impressive application versatility

Virtually three centrifuges in one, with high-capacity volume for cell harvesting, high-speed centrifugation for separating cell lysates, and microvolume capability for DNA precipitations. Featuring powerful maintenance-free motors, compact Model 5804 and large-capacity Model 5810 are available with or without refrigeration.

05-400-61

Operating Features

- Capacity: 1.6L (4 × 400mL) for Models 5810/5810R
- Maximum speed/RCF: 14,000rpm/20,800×G
- Spin up to 48 × 15mL conical tubes (Model 5810 only) or up to 30 microtubes per run
- Touch-keypad control and digital display for speed/RCF, run time, program number and temperature (refrigerated Models 5804R/5810R only)
- With 34-program memory
- Run modes: Timed (up to 99 minutes in 1-minute increments) or continuous run
- Choice of 10 acceleration/braking profiles

Safety Features

- Low-profile design for convenient access to rotor chamber
- Motorized lid-lock
- Automatic rotor recognition and unbalanced load sensor with alert
- Low-noise (<60dB), maintenance-free motor

Refrigerated Models 5804R and 5810R

- CFC-free refrigeration system
- Variable temperature control from -9° to +40°C (16° to 104°F)
- Fast Cool function cools the rotor chamber from ambient down to 4°C within 15 minutes
- Standby refrigeration keeps the rotor chamber at set temperature
- Maintain temperatures as low as +4°C (39°F) at max. speed under heavy load
- Choose 15A or faster-cooling 20A versions

Compact Models 5804/5804R

- Accept tubes from 0.2 to 100mL
- Dimensions: 22L × 19W × 13"H (56 × 48 × 33cm); Model 5804R measures 25"W (63.5cm)

Large Capacity Models 5810/5810R

- Accept tubes and bottles from 0.2 to 400mL (with accessory adapters, sold separately)
- Can handle loads of up to 48 × 15mL conical tubes
- Dimensions: 24L × 21W × 13"H (61 × 53 × 33cm); Model 5810R refrigerated model measures 28"W (71cm)

REQUIRED ACCESSORIES:

Rotor (sold separately, below and on the following page)

Electrical Requirements	Net Weight	Mfr. No.	Cat. No.	Each
Model 5804 (Nonrefrigerated)				
115V 60Hz, 15A	121 lb. (56kg)	022622501	**05-400-90**	4400.00
220V 50Hz, 15A†	121 lb. (56kg)	022622552	**05-400-91**	4400.00
Model 5804R (Refrigerated)				
115V 60Hz, 15A	176 lb. (82kg)	022623508	**05-400-93**	7500.00
115V 60Hz, 20A	176 lb. (82kg)	022625080	**04-987-372**	7500.00
220V 50Hz, 15A†	176 lb. (82kg)	022623559	**05-400-92**	7500.00
Model 5810 (Nonrefrigerated)				
115V 60Hz, 15A	150 lb. (68kg)	022625004	**05-400-60**	5675.00
Model 5810R (Refrigerated)				
115V 60Hz, 15A	218 lb. (99kg)	022625501	**05-400-61**	8775.00
115V 60Hz, 20A	218 lb. (99kg)	022625101	**04-987-373**	8775.00
220V 50Hz, 15A†	218 lb. (99kg)	022625551	**05-400-63**	8775.00

† International model

ACCESSORIES

Four-Place Swinging Bucket Rotor

4 × 100mL capacity

For use with 5804 and 5810 Series Centrifuges.

- Maximum speed/RCF: 5000rpm/4500×G

ORDERING INFORMATION:

Tube adapters and bucket covers (05-400-109) available separately.

INCLUDES:

Four tube buckets to accommodate tubes from 1.5 to 100mL when equipped with accessory adapters

Capacity	Mfr. No.	Cat. No.	Each
4 × 100mL	022637401	**05-400-94**	1365.00

Contd. on next page.

*Trademark. See Trademark Reference.

ACCESSORIES

Aerosol-tight Bucket Covers

For use with 100mL buckets supplied with 05-400-94 swinging bucket rotor. Covers fit over each bucket individually to provide an aerosol-tight seal.

Mfr. No.	Cat. No.	Pack of 2
022637428	**05-400-109**	114.43

Tube Adapters

Fit in buckets supplied with 05-400-94 swinging bucket rotor to accept tubes from 1.5 to 100mL.

NOTE:
Adapters are sold in packs of two. Order the proper number of adapters to fully equip your rotor.

For Tubes	Max. O.D. × L	No. of Slots	Mfr. No.	Cat.	Pack of 2
1.5 to 2mL	11 × 111mm†	12	022637525	**05-400-96**	197.00
7mL	13 × 108mm†	9	022637541	**05-400-97**	197.00
15mL	16 × 108mm†	7	022637568	**05-400-98**	197.00
15mL (conical)	17.5 × 121mm†	4	022637606	**05-400-100**	202.00
50mL (conical)	31 × 122mm†	1	022637665	**05-400-103**	202.00
80 to 100mL	45 × 114mm†	1	022637720	**05-400-106**	197.00

† Maximum dimensions when used in buckets without aerosol-tight covers. When covers are used, the maximum tube length accepted is reduced slightly.

Six-Place Fixed-Angle Rotor

6 × 85mL capacity

For use with 5804 and 5810 Series Centrifuges.

- Maximum speed/RCF: 11,000rpm/15,500×G (12,000rpm/18,500×G in Model 5810R)
- Directly accepts 85mL Oak Ridge tubes measuring 38 dia. × 120mm long

ORDERING INFORMATION:
Adapters are also available to accept tubes from 1.5 to 50mL (order at **www.fishersci.com**).

Capacity	Mfr. No.	Cat. No.	Each
6 × 85mL	022637207	**05-400-81**	1955.00

30-Place Fixed-Angle Rotor

30 × 1.5 to 2.0mL capacity

For use with 5804 and 5810 Series centrifuges.

- Maximum speed/RCF: 14,000rpm/20,800×G
- Directly accept 1.5 to 2.0mL microcentrifuge tubes measuring 11.5 dia. × 50mm long
- With quick-release lid or aerosol-tight cover

ORDERING INFORMATION:
Will also accept 0.5 and 0.4/0.25mL tubes when equipped with accessory adapters (05-406-10 and 05-406-25, respectively; order at **www.fishersci.com**).

Lid Type	Capacity	Mfr. No.	Cat. No.	Each
Quick-release	30 × 1.5–2.0mL	022637002	**05-400-88**	960.00
Aerosol-tight	30 × 1.5–2.0mL	022637100	**05-400-89**	1300.00

Deep-Well Swinging Bucket Rotor

Capacity: two deep-well assemblies or 10 microplates (filter and catch-plate stacks)

For use with 5804 and 5810 Series Centrifuges.

- Maximum speed/RCF: 3600rpm/1900×G
- Can be used with Eppendorf Perfectprep* Plasmid 96 Spin Kits (E003200 5900 and E003200 5950), "sandwiching" the membrane plate and deep-well block for a perfect fit in the rotor

05-401-04

INCLUDES:
Two buckets that hold up to 85mm high plates—perfect for tall deep-well blocks or multiwell assemblies such as 96-well nucleic acid isolation kits and filtration.

Capacity	Mfr. No.	Cat. No.	Each
Two deep-well assemblies	022638564	**05-401-04**	1690.00

Four-Place Swinging Bucket Microplate Rotor

Capacity: 16 microplates

For use in Model 5810 Series Centrifuges only.

- Maximum speed/RCF: 4000rpm/2750×G
- Maximum total plate height: 45mm

INCLUDES:
Four microtiter plate buckets, each accomodating up to four standard microplates for a maximum of 16 microplates per run

Capacity	Mfr. No.	Cat. No.	Each
16 plates	022638041	**05-400-80**	2280.00

Super High-Capacity Four-Place Swinging Bucket Rotor

Capacity 4 × 400mL

For use in 5810 Series Centrifuges only.

- Maximum speed/RCF: 4000rpm/3250×G
- Accepts up to 48 × 15mL conical tubes or 100 × 7mL tubes

04-987-252

ORDERING INFORMATION:
Tube adapters and aerosol-tight covers are available separately.

INCLUDES:
Four buckets that accept accessory adapters for tube sizes from 2.6 to 400mL.

Capacity	Mfr. No.	Cat. No.	Each
4 × 400mL	022638602	**04-987-252**	2640.00

Contd. on next page.

Eppendorf* 5810 Series Centrifuges, Contd.

ACCESSORIES

Tube Adapters

Fit 400mL buckets supplied with 04-987-252 rotor.

NOTE:
Adapters are supplied in packs of two. Order correct quantity to equip rotor.

For Tubes	Max. O.D. × L	No. of Slots	Mfr. No.	Cat. No.	Pack of 2
2.6–7mL tubes	13 × 108mm	25	022638700	**04-987-253**	249.00
7–17mL tubes	17.5 × 118mm	16	202638726	**04-987-254**	249.00
15mL conical	17.5 × 121mm	16	022638742	**04-987-255**	249.00
50mL conical	31 × 122mm	5	022638769	**04-987-256**	249.00
400mL bottles	81 × 133mm	1	022638785	**04-987-257**	202.00

Four-Place Swinging Bucket Rotor

4 × 250mL capacity

For use with Eppendorf* 5810 Series Centrifuges only.

- Maximum speed/RCF: 4000rpm/3200×G

ORDERING INFORMATION:
Aerosol-tight covers (05-400-65) are available separately to provide individual containment of each bucket. Microplate buckets (05-400-79) also available to spin microplates.

INCLUDES:
Four buckets which directly accept accessory adapters for 1.5 to 250mL tubes

Capacity	Mfr. No.	Cat. No.	Each
4 × 250mL	022638009	**05-400-64**	1860.00

Aerosol-tight Bucket Covers

For use with buckets supplied with 05-400-64 swinging bucket rotor. Covers fit over buckets individually to provide an aerosol-tight seal.

Mfr. No.	Cat. No.	Pack of 2
022638033	**05-400-65**	112.42

Tube Adapters

Fit in buckets supplied with 05-400-64 swinging bucket rotor to accept tubes from 1.5 to 250mL.

NOTE:
Adapters are sold in packs of two. Be sure to order the proper number of adapters to fully equip your rotor.

For Tubes	Max. O.D. × L†	No. of Slots	Mfr. No.	Cat. No.	Pack of 2
175–250mL	62 × 136mm	1	022638441	**05-400-78**	265.00
50mL (conical)	31 × 122mm	3	022638343	**05-400-73**	254.00
15mL (conical)	17.5 × 127mm	9	022638289	**05-400-70**	254.00
3–15mL	16 × 121mm	12	022638262	**05-400-69**	242.00
4–7mL	13 × 121mm	15	022638246	**05-400-68**	242.00
1.5–2.0mL	11 × 122mm	16	022638220	**05-400-67**	225.00

† Maximum dimensions when used in buckets without aerosol-tight covers. When covers are used, the maximum tube length accepted is reduced slightly.

Microplate Buckets

For use with 05-400-64 rotor to spin microplates.

- Each bucket accepts up to four standard microplates for a maximum of 16 microplates per run
- Maximum rotor speed/force: 4000rpm/2750×G
- Buckets can also be used in 05-400-80 rotor

Mfr. No.	Cat. No.	Pack of 4
022638068	**05-400-79**	1150.00

*Fisherbrand** 50mL HIGHER-SPEED TUBES

Graduated, conical-bottom polypropylene tubes withstand higher g-forces–up to 9400 ×G. You can find them in the Tubes section.

06-443-20

MORE TUBE ADAPTERS ONLINE

Additional tube adapters for Eppendorf* 5804/5810 centrifuges can be found online.

Visit www.fishersci.com and search for Eppendorf 5810

BEFORE YOU BUY MICROCENTRIFUGES

Rely on Eppendorf—a pioneer and industry leader in centrifugation—to provide you with the latest in microcentrifuge technology, safety features and application flexibility.

IMPORTANT TERMS TO KNOW

RCF (Relative Centrifugal Force)—The "true" value of a centrifuge's speed, RCF is determined by factoring both the RPM of the motor and radius of the sample. RCF values can be transferred from one centrifuge to another in order to achieve the same pelleting result.

SAFETY FEATURES

"Class A" GFCI Suitable—New building and electrical codes call for the use of the lower amperage "Class A" GFCIs, which are designed to protect users in the event of an electrical short. Centrifuges should be designed not to accidentally trip this low amperage breaker during operation.

Conforms to IEC1010-020—This safety regulation provides assurance that the centrifuge has been designed—and tested—to protect users in the event of a rotor failure. Typical features include lid locks and armor plating around the chamber bowl and lid.

Rotor Recognition—Centrifuges with multiple rotor options should be equipped with rotor recognition, so that the centrifuge properly identifies the rotor and sets the maximum allowable speed. This feature eliminates the possibility of "oversetting" the speed for a particular rotor.

Certified Aerosol-tight Containment—A centrifuge's rotor and bucket design should be independently tested and certified with regard to their containment of potentially dangerous substances, such as blood, viruses, bacteria, etc.

APPLICATION	MINISPIN/ MINISPIN PLUS	5418	5424	5430	5415 R	5417 R
Refrigerated	No	No	No	No	Yes	Yes
Fixed-Angle Rotor						
rcf max. (x g)	12,100/14,100	16,873	21,130	30,130	16,100	25,000
rpm max.	13,400/14,500	14,000	15,000	17,500	13,200	16,400
Tubes/vessels/plates						
1.5-2.0mL Eppendorf Tubes	12	18	24	30	24	30 (F)/8 (A)
8-place PCR Strips	2		4	8		6
15mL Falcon®				6		
50mL Falcon®				6		
MTP / PCR-plates				2*		

F = Fixed Angle
A = Swing Bucket

Note: The proper adapters are required to obtain maximum capacity. Please check the appropriate rotor and/or adapter combination for proper capacity and sizing.

*Max. Loading Height: 29mm.

05-400-005
05-403-90

FEATURES TO LOOK FOR

LED Digital Display—Generously sized RCF/RPM and Time values provide easy-to-read, accurate, and unambiguous parameter settings.

Quiet Operation—Running with the rotor lid on or off, you want your centrifuge to perform your daily routine work as quietly as possible.

"At Set" Function—Start the timer when the preset speed is reached—independent of ramp rate settings and rotor load—for reproducible runs.

Refrigeration—Your centrifuge should be able to run at maximum speed and still maintain 4 °C.

Optional rotors—Alternative rotors—e.g., for proper support of spin columns and/or PCR strips/tubes—increase the flexibility and usability of your centrifuge.

Warranty—Your centrifuge is probably the most commonly used, "day-to-day" piece of laboratory equipment—it should, therefore, be completely reliable and dependable. A good warranty is often a good indicator of quality.

For a full selection of Eppendorf® Microcentrifuges, see pp. 382-386.

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eppendorf
North America

MICRO

Thermo Scientific* Sorvall* Legend* 23R Microcentrifuge

High-capacity, high-performance refrigerated microcentrifuge

Ideal for high-RCF sample volume processing in microbiology, molecular biology, genetics and biochemistry.

- Capacity: 4 × 200mL
- Max. Speed/RCF: 23,000rpm/36,668×G
- Menu-driven controls with digital display
- Temperature range: -8° to +40°C
- Precise temperature control ensures no sample degradation and improved separations
- Refrigeration system maintains samples at 4°C even at maximum speed
- AutoLock 5-second rotor change
- Quiet-running motor

NEW

00554

ORDERING INFORMATION:

Optional rotors include fixed-angle, microliter, swinging bucket and drum styles. All rotors and tube adapters sold separately, below.

REQUIRED ACCESSORIES:

Rotor (sold separately, below)

Description	Cat. No.	Each
Legend 23R Microcentrifuge	00554	6630.00

SPECIFICATIONS

Capacity	800mL (4 × 200mL)
Display	Digital
Max. Speed	23,000rpm
Max. RCF	36,668×G
Refrigerated	Yes
Temperature Range	-8° to +40°C
Dimensions	25L × 23W × 14¾"H (63.5 × 58.4 × 37.3cm)
Net Weight	187 lb. (85kg)
Electrical Requirements	120V 60Hz

ACCESSORIES

Fixed-Angle Microliter Rotors

For use with Thermo Scientific* Sorvall* Legend* 23R Micro Centrifuge.

- With capacities from 24 to 100mL
- Sealed rotors supplied with lid (00556)
- Sealable rotors sold without covers; optional lid (00533), sold separately
- Cat. No. 00558 is a lightweight, high-capacity, carbon-fiber rotor

00558

00468

ORDERING INFORMATION:

Tube adapters sold separately

Capacity	Style	Max. Speed	Max. RCF	Angle	Max. Tube Dia.	Cat. No.	Each
12 × 1.5/2mL	Open (no lid)	23,000rpm	36,668×G	45°	11mm	**00334**	440.55
12 × 1.5/2mL	Sealed	21,500rpm	32,041×G	45°	11mm	**00466**	495.62
24 × 1.5/2mL	Sealed	18,750rpm	33,015×G	45°	11mm	**00553**	619.00
28 × 1.5/2mL	Sealable	19,200rpm	30,086×G	45°	11mm	**00467**	605.00
48 × 1.5mL	Sealed, carbon-fiber	15,000rpm	24,400×G	45°	11mm	**00558**	1602.00
10 × 10mL	Sealable	16,600rpm	26,186×G	40°	16.3mm	**00468**	605.00

Fixed-Angle Rotors

Capacities from 300 to 600mL for high-volume processing

For use with Thermo Scientific* Sorvall* Legend* 23R Micro Centrifuge.

- Sealable rotor 00469 can be covered with optional lid (00533), sold separately
- Other rotors are open-style

00471

00470

00469

ORDERING INFORMATION:

Tube adapters sold separately

Capacity	Style	Max. Speed	Max. RCF	Angle	Max. Tube Dia.	Cat. No.	Each
6 × 50mL conical tubes	Open	13,000rpm	21,160×G	40°	29.8mm	**00555**	770.00
8 × 38mL	Sealable	15,300rpm	23,292×G	30°	25.5mm	**00469**	785.00
8 × 50mL	Open	14,000rpm	21,255×G	28°	29.5mm	**00470**	803.00
6 × 100mL	Open	13,000rpm	18,516×G	28°	38.5mm	**00471**	770.00

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

4-Place Swinging Bucket Rotor

For use with Thermo Scientific* Sovall* Legend* 23R Microcentrifuges.

- Capacity: 4 × 200mL
- Max. Speed/ RCF: 4400rpm/3073×G
- Max. tube dia.: 57mm

REQUIRED ACCESSORIES:
Buckets and lids (sold separately)

Description	Capacity	Cat. No.	Each
Rotor body only	4 × 200mL	**00472**	550.00

Tube Adapters

For use with rotors as shown in the table above. Sold in various quantities; order the correct amount to equip your rotor.

Capacity	Max. Tube Dia.	Cat. No.	Price
For Fixed-Angle Microliter Rotors 00334, 00466, 00553 and 00467			
0.2mL PCR	6.5mm	**00332**	Pk. of 20/117.66
0.25/0.5mL	6mm	**00560**	Pk. of 20/562.00
0.5/0.8mL	8mm	**00559**	Pk. of 20/277.35
For Fixed-Angle Microliter Rotor 00558			
13mL	17mm	**00489**	Pk. of 6/454.57
15mL Corex*	18mm	**00484**	Pk. of 6/434.54
30mL Corex	24mm	**00552**	Pk. of 6/413.52
For Fixed-Angle Microliter Rotor 00468			
1.5/2mL	11mm	**00198**	Pk. of 10/234.31
6mL	13mm	**00201**	Pk. of 10/279.35
For Fixed-Angle Rotor 00555			
10mL	16mm	**00557**	Pk. of 4/221.23
15mL conical	17mm	**00200**	Pk. of 4/141.79
For Fixed-Angle Rotor 00469			
5mL	12.5mm	**00202**	Pk. of 8/488.61
10mL	16mm	**00197**	Pk. of 8/463.58
13mL	17mm	**00196**	Pk. of 8/488.61
16mL	18mm	**00203**	Pk. of 8/463.58
For Fixed-Angle Rotor 00470			
10mL	16mm	**00195**	Pk. of 8/479.60
12mL	17mm	**00331**	Pk. of 8/465.58
13mL	17mm	**00584**	Pk. of 8/494.62
15mL conical	17mm	**00199**	Pk. of 8/454.57
30/38mL	25mm	**00194**	Pk. of 8/474.59
15mL Corex	18mm	**00562**	Ea./55.00
30mL Corex	24mm	**00583**	Ea./28.25
For Fixed-Angle Rotor 00471			
4 × 1.5/2.0mL	11mm	**00489**	Pk. of 6/454.57
2 × 10mL	16mm	**00488**	Pk. of 6/434.54
15mL conical	17mm	**00487**	Pk. of 6/434.54
30/38mL	25.5mm	**00486**	Pk. of 6/434.54
15mL Corex/Oakridge	18mm	**00552**	Pk. of 6/413.52
25mL Corex	24mm	**00536**	Pk. of 6/413.52
30mL Corex	24mm	**00535**	Pk. of 6/413.52
50mL	29mm	**00484**	Pk. of 6/434.54
50mL conical	30mm	**00485**	Pk. of 6/454.57
For Swinging Bucket Rotor 00472			
10mL	16mm	**00557**	Pk. of 4/221.23
15mL conical	17mm	**00200**	Pk. of 4/141.79

Buckets

For use with swinging bucket rotor 00472. Tube adapters and lids sold separately. Lids available through your Fisher Scientific Customer Service Representative.

Description	Cat. No.	Set of 4
Standard Buckets	**00531**	516.00
Sealed Buckets	**00532**	773.00

Bottles and Carriers

For use in swinging bucket rotor 00472.

- 200mL polypropylene bottles with caps
- Sealed carriers accept conical tubes

Description	Cat. No.	Set of
Centrifuge Bottle	**00561**	6/279.35
Sealed Carrier, 15mL conical	**00135**	4/611.00
Sealed Carrier, 50mL conical	**00136**	4/611.00

Microplate Rotor

- Capacity: six microplates or two deepwell blocks
- Max. Speed/ Force: 4500rpm/2604×G
- Angle: 90°
- Rubber cushion (00134) for flexible microplate sold separately

Capacity	Cat. No.	Each
6 microplates/2deepwell blocks	**00483**	495.62

Rubber Cushion

For use with microplate rotor (00483).

Cat. No.	Each
00134	65.49

Drum Rotor

- Capacity: six racks
- Max. Speed/Force: 14,300rpm/16,461×G
- Angle: 90°
- Racks sold separately

00333

Capacity	Cat. No.	Each
6 racks	**00333**	879.00

Racks for Drum Rotor

For use with Drum Rotor 00333. Sold individually; order correct quantity to equip rotor.

Capacity	Cat. No.	Each
10 × 1.5/2mL	**00150**	48.92
20 × 0.5/0.8mL	**00154**	70.53
20 × 0.7mL	**00155**	68.51
21 × 0.6mL	**00153**	56.42

Thermo Scientific* Sorvall* Legend* Micro 17/17R and Micro 21/21R Microcentrifuges

Powerful units deliver exceptional capacity, performance and safety in a compact, user-friendly design

Support fast, efficient microvolume processes such as nucleic acid preps, protein isolation and reaction setup. Wide selection of high-capacity rotors and two speed options make these centrifuges ideal for complex as well as simple protocols.

- Capacity 24 × 1.5/2.0mL
- Choice of two RCF options (17,000×G/21,100×G) in ventilated or refrigerated styles
- Intuitive controls with bright digital display
- Fast acceleration and braking reduces run times (approx. 12 seconds); allows faster throughput
- Sleek, space-saving design
- Rugged construction withstands vigorous cleaning and autoclaving for years of dependable service
- Refrigerated models (17R, 21R) offer temperature control from -9° to +40°C
- Rotor and ClickSeal* biocontainment lid included; rotor lid clicks shut to ensure secure sample containment

ORDERING INFORMATION:
Other available rotors: 36 × 0.5mL with lid (75-003-436), 8 × 8 PCR with lid (75-003-489), 4 × 8 PCR with biocontainment lid (75-003-440), dual row 18 × 2.0/0.5mL (75-003-418). To order see below.

INCLUDES:
Rotor (see table for selection)

NEW
75-002-436
75-002-431

Model	Includes	Electrical Requirements	Cat. No.	Each
Ventilated Models				
Micro 17	24 × 1.5/2.0mL rotor with biocontainment lid	120V 60Hz	**75-002-431**	1875.00
Micro 17	Hematocrit rotor	120V 60Hz	**75-002-494**	1875.00
Micro 21	24 × 1.5/2.0mL rotor with biocontainment lid	120V 60Hz	**75-002-436**	2300.00
Micro 21	24 × 1.5/2.0mL rotor with biocontainment lid and 18 × 0.5mL/18 × 2.0mL dual rotor with screw-on lid	120V 60Hz	**75-002-488**	2700.00
Refrigerated Models				
Micro 17R	24 × 1.5/2.0mL rotor with biocontainment lid	120V 60Hz	**75-002-441**	5200.00
Micro 21R	24 × 1.5/2.0mL rotor with biocontainment lid	120V 60Hz	**75-002-446**	5600.00
Micro 21R	24 × 1.5/2.0mL rotor with biocontainment lid and 18 × 0.5mL/18 × 2.0mL dual rotor with screw-on lid	120V 60Hz	**75-002-490**	6000.00

SPECIFICATIONS

Model	Legend Micro 17 and 17R	Legend Micro 21 and 21R
Max. Speed	13,300rpm	14,800rpm
Max. RCF	17,000×G	21,100×G
Noise Level	<55dbA	<56dbA
Timer Range	1 to 99 min.	1 to 99 min.
Timer Resolution	1 min. increments	1 min. increments
Temperature Range (17R and 21R only)	-9°C to +40°C, 1°C incr.	-9°C to +40°C, 1°C incr.
Micro 17/Micro 21 L × W × H)	13¾ × 9⅝ × 8⅞" (25.2 × 24.3 × 22.5cm)	13¾ × 9⅝ × 8⅞" (25.2 × 24.3 × 22.5cm)
Micro 17R/Micro 21R L × W × H)	17½ × 11⅝ × 12⅞" (44.5 × 29.5 × 33cm)	17½ × 11⅝ × 12⅞" (44.5 × 29.5 × 33cm)

ACCESSORIES

Rotors

For use with Thermo Scientific* Sorvall* Legend* Micro 17/17R and Micro 21/21R Series Centrifuges.

- 24-place rotor accepts 1.5/2.0mL tubes, including minipreps
- Convenient 18-place dual row rotor accepts 0.5 and 2.0mL tubes, eliminating adapters
- Special high-capacity rotors support PCR, micro and hematocrit capillary tubes
- Select rotors supplied with ClickSeal* biocontainment lid
- Replacement lids available separately

ORDERING INFORMATION:
Tube adapters available separately.

Description	Cat. No.	Each
Rotors		
24 × 1.5/2.0 mL Rotor with Biocontainment Lid	**05-375-102**	650.00
37 × 0.5 mL Rotor with Screw-on Lid	**05-375-155**	650.00
8 × 8 PCR Rotor with Screw-on Lid	**05-375-156**	703.00
4 × 8 PCR Rotor with Biocontainment Lid	**05-375-157**	650.00
18 × 2.0mL/0.5mL Dual Row Rotor	**05-375-154**	650.00
Hematocrit Rotor (for Micro 17 only)	**05-375-105**	650.00
Replacement Lids		
ClickSeal* Biocontainment Lid†	**05-375-107**	221.24
Screw-on Lid‡	**05-375-108**	221.24

For rotors 05-375-155, 05-375-156, and 05-375-154

Microtube Adapters

For use with Thermo Scientific* Sorvall* Legend* Micro 17/17R and Micro 21/21R, Legend T/RT Plus, Stratos and Primo*/Primo R Centrifuges in the rotors listed below accommodate tube sizes from 0.2 to 0.6mL.

- **Micro 17/17R and Micro 21/21R:** All rotors
- **Legend T/RT Plus and Stratos:** 75-003-332 rotors
- **Primo/Primo R:** 75-007-592, 75-007-593, and 75-007-599 rotors

For Tubes	Color	Cat. No.	Pack of 24
0.2mL	Gray	**76-003-750**	95.78
0.25/0.4mL	Red	**76-003-759**	95.78
0.5/0.6mL	Turquoise	**76-003-758**	95.78

Thermo Scientific* Sorvall* Legend* 14 Microcentrifuge

NEW

Compact personal centrifuge, an affordable solution for pharmaceutical, biotechnology and academic research applications

Excels in wide range of applications including nucleic acid purification, PCR cleanup, plasmid mini-prep, protein processing and forensics. Fast spin-up/spin-down saves time and increases process efficiency.

11-210-807

- Capacity: 12 × 0.5/2.0mL tubes
- Maximum speed/RCF: 14,600rpm/14,500×G
- Compact, stylish design
- Single knob control for fast, accurate settings
- Large LED display provides easy viewing of all parameters
- Rotors and tubes can be inserted and removed with minimal effort
- Brushless motor delivers years of quiet, maintenance-free operation

INCLUDES:

Autoclavable, corrosion-resistant plastic rotor

Description	Cat. No.	Each
Microcentrifuge	**11-210-807**	1200.00

SPECIFICATIONS

Capacity	24mL (12 × 2mL)
Speed Control	Variable, 5000 to 14,600rpm
Max. Speed	14,600rpm
Max. RCF	14,500×G
Display	LED
Timer Range	15 sec. to 99 min. with HOLD (continuous run)
Timer Resolution	15 sec. increments up to 1 min.; 1 min. increments from 1 to 99 min.
Noise Level	56 dBA
Dimensions	5⅞L× 9⅞W × 7⅞"H (15 × 25 × 20cm)
Net Weight	9⅜ lb. (4.2kg)
Electrical Requirements	120V 60Hz

ACCESSORIES

Tube Adapters

For use with Thermo Scientific* Sorvall* Legend* 14 Microcentrifuge.

Description	Cat. No.	Pack of 12
0.2mL Tube Adapters	**11-178-120**	80.59
0.5mL Tube Adapters	**11-178-121**	80.59

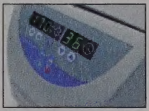
Fisher Scientific* accuSpin* Micro 17/Micro 17R Microcentrifuges

NEW

Compact, economical high-speed microcentrifuges; ideal for nucleic acid research and other microliter volume separations

- Capacity: 48mL (24 × 1.5/2.0mL tubes)
- Maximum speed/RCF: 13,300rpm/17,000×G
- Ventilated or refrigerated models
- Easy-to-use controls with digital display
- Adjustable 99-min. timer and quick-spin feature for short runs
- Memory retains last setting for repeatable runs
- Supplied with rotor and biocontainment lid
- Micro 17: ventilated
- Micro 17R: refrigerated; temperature range -9° to +40°C

13-100-676, 13-100-675



ORDERING INFORMATION:

Replacement microliter rotor (13-100-679), lid (13-100-681), and optional 4 × 8 PCR rotor (13-100-680) available separately, below.

INCLUDES:

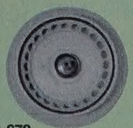
Rotor and biocontainment lid

SPECIFICATIONS

Description	Micro 17 with 24-Place Rotor	Micro 17R with 24-Place Rotor
Model	Ventilated	Refrigerated
Capacity	24 × 1.5/2.0mL	24 × 1.5/2.0mL
Display	LED	LED
Max. Speed	13,300rpm	13,300rpm
Max. RCF	17,000×G	17,000×G
Timer	1 min. to 99 min.	1 min. to 99 min.
Temperature Range	N/A	-9°C to +40°C
Noise Level	<56 dBA	<56 dBA
Dimensions	9⅝L × 8⅞W × 13¾"H (24.3 × 22.5 × 35.2cm)	11⅝L × 12⅞W × 17½"H (29.5 × 33 × 44.5cm)
Electrical Requirements	120V 60Hz	120V 60Hz
Cat. No.	**13-100-675**	**13-100-676**
Each	1850.00	5150.00

ACCESSORIES

Rotors



13-100-679

For use with Fisher Scientific* accuSpin* Micro 17 and Micro 17R centrifuges. The 24-place rotor is included with all Micro 17/Micro 17R units.

INCLUDES:

ClickSeal* biocontainment cover

Description	Cat. No.	Each
24 × 1.5/2.0mL Rotor with cover	**13-100-679**	600.00
4 × 8 PCR Tube Strip Rotor with cover	**13-100-680**	650.00
ClickSeal Biocontainment Cover	**13-100-681**	220.00

Fisher Scientific* Minicentrifuge

Economical personal benchtop centrifuge for budget-conscious labs

For quick spindowns from walls or caps of centrifuge tubes, microfiltration of HPLC samples and cell separations, and short-term coldroom use.

05-090-100 with 05-090-101 rotor

- Capacity: 12mL (6 × 2.0mL)
- Maximum speed: 6600rpm with microtube rotor
- Maximum RCF: 2200×G with PCR strip rotor
- Small footprint: 6⅜ × 6¼" (16.2 × 15.9cm)
- ON/OFF switch delivers immediate acceleration and deceleration
- Clear polycarbonate lid allows maximum visibility
- Supplied with two rotors:
  - Circular fixed-angle rotor spins 6 × 1.5/2.0mL tubes (also includes six 05-090-103 adapters to spin 0.5mL tubes)
  - Strip rotor accepts two 8 × 0.2mL thermal cycler tube strips or 16 individual 0.2mL tubes
- Off-white base with nonskid rubber feet

INCLUDES:

Strip rotor and fixed-angle rotor, power cord

CERTIFICATIONS:

CE marked

Electrical Requirements	Cat. No.	Each
115/240V 50/60Hz	**05-090-100**	385.00

SPECIFICATIONS

Maximum Speed	6600rpm
Maximum RCF	2200×G
Rotor Capacity	Circular: 6 × 1.5/2.0mL tubes (6 × 0.5 with supplied adapters) Strip: Two 8 × 0.2mL tube strips or 16 × 0.2mL tubes
Speed Control	ON/OFF switch
Dimensions (with lid closed)	6⅜L × 6¼W × 4"H (16.2 × 15.9 × 10.2cm)
Replacement Rotors	Six-place fixed angle (05-090-101) and 16 × 0.2mL strip (05-090-102)

ACCESSORIES

Replacements for parts supplied with Fisher Scientific* Minicentrifuge 05-090-100

- 6-place fixed-angle rotor 05-090-101 for 1.5/2.0mL tubes
- PCR strip rotor 05-090-102 accommodates two 8-place strips or 16 tubes, 0.2mL
- Rubber adapters 05-100-103 fit 0.5mL tubes in 05-090-101 rotor

05-090-101

Description	Cat. No.	Each
6-place Fixed-angle Rotor	**05-090-101**	53.80
PCR Tube Strip Rotor	**05-090-102**	54.74
0.5mL Tube Adapters for 05-090-101	**05-090-103**	32.48

Eppendorf* Model 5430 Microcentrifuges

State-of-the-art features, including simplified controls and a variety of rotors for application-specific microcentrifugation

Ergonomic single-function buttons make programming and operation quick and convenient.

- Capacity: 60mL (30 × 1.5/2.0mL)
- Max. speed/RCF: 17,500rpm/30,130×G
- Large multiple-status LCD with Windows*-style menus and pictogram symbols (see Menu Options)
- Variable speed control from 100 to 17,500rpm in 100rpm increments
- Timer: 1 min. to 9 hr. 59 min. with HOLD for continuous run
- Automatic lid opening at end of run for quick access to samples
- Equipped with a choice of certified aerosol-tight rotors, or centrifuge only

05-400-016

Menu Options

- Soft ramp/brake
- End-of-run alarm with adjustable volume
- At Set feature allows timer to start counting when START button is depressed or when motor reaches preset speed
- Adjustable short-spin setting
- Parameter lock to prevent accidental changes
- Enhanced display allows user to view settings and real-time results simultaneously
- Multilingual selection (English, French, Spanish, and German)
- Screen saver/power saver option

Choice of control systems

- Soft-touch rotary knob version allows quick, easy dialed settings
- Keypad version has a smooth, easy-to-clean surface

Rotor options (all sold separately)

- 18-place miniprep spin column rotor and lid (05-400-012)
- 4 × 8 tube PCR strip rotor (05-400-014)
- 24-place coated aerosol-tight fixed angle rotor and lid (05-400-010) for improved chemical resistance (phenol, acetic acid, sodium hydrochlorite)

ORDERING INFORMATION:

Dimensions: 16L × 12½W × 9½"H (40 × 32 × 24cm). Net weight: 81 lb. (37kg). Accessories available separately on next page.

INCLUDES:

Rotor

Description	Electrical Reqts.	Mfr. No.	Cat. No.	Each
With 24-Place Coated Miniprep Spin-column Rotor	120V 60Hz	022620541	**05-400-016**	4180.00
With 2-Place Microplate Rotor	120V 60Hz	022620568	**05-400-017**	4665.00

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

Rotors, Lids and Adapters

For use with Eppendorf* Model 5430 Microcentrifuge.

Standard 30-place Rotor (05-400-019)

- 30 × 1.5/2.0mL capacity
- Max. speed/RCF: 17,000rpm/20,800×G
- Supplied with aerosol-tight lid (05-400-020)

24-place High-speed Coated Fixed-Angle Rotor (05-400-023)

- Deep lip design supports open microtube lids
- Capacity: 18 × 1.5/2.0mL tubes
- Max. RCF: 18,111×G
- Supplied with lid (05-400-013)

2-place Microplate Rotor (04-400-031)

- Safely spins two standard microplates
- Max. RCF: 2200×G

Description	Mfr. No.	Cat. No.	Each
Rotors			
30 × 1.5/2.0mL Fixed-Angle Rotor w/Lid	022654004	**05-400-019**	560.00
24 × 1.5/2.0mL High-Speed Rotor w/Lid	022654080	**05-400-023**	785.00
24 × 1.5/2.0mL Miniprep Spin Column Rotor w/Lid	022654128	**05-400-025**	990.00
Two-place Microplate Rotor	022654403	**05-400-031**	1475.00
Replacement Lids			
For 05-400-023	022654101	**05-400-024**	221.83

LOOKING FOR MORE?

Millipore* Montage* - PCR Filter Unit removes primers, salts and uniacorporated dNTPs with a single, 15-minute spin. Find it in the PCR section (UFC7PCR50).

LOOKING MICROCENTRIFUGE TUBES?

Fisher Scientific has the right microtube for your application. Choose from plastic tubes in a wide range of shapes, sizes and cap styles. Check them out in the Tubes section.

LOOKING FOR A HEMATOCRIT CENTRIFUGE?

Fisher Scientific offers several models that deliver quick, accurate, quantitative hematocrit results.

Visit www.fishersci.com and search for Hematocrit

Eppendorf* Model 5424 Microcentrifuges

Compact microcentrifuges with advanced features and choice of rotary or digital control systems for easy use

Optional rotors accommodate microcentrifuge tubes, miniprep spin columns and PCR tubes.

05-400-005

- Capacity: 48mL (24 × 1.5/2.0mL)
- Max. speed/RCF: 15,000rpm/21,130×G
- Five-digit speed display
- Variable speed control from 100 to 15,000rpm in 100rpm increments
- Timer: 1 min. to 9 hr. 59 min. with HOLD for continuous run
- Controls also include Short Spin, braking, At-Set and adjustable volume alarm
- Automatic lid opening at end of run for easy sample removal
- Contoured rotor bowl design minimizes noise

Choice of control systems

- Soft-touch rotary knob version allows quick, easy dialed settings
- Keypad version has a smooth, easy-to-clean surface

Rotor options (all sold separately)

- 18-place miniprep spin column rotor and lid (05-400-012)
- 4 × 8 tube PCR strip rotor (05-400-014)
- 24-place coated aerosol-tight fixed angle rotor and lid (05-400-010) for improved chemical resistance (phenol, acetic acid, sodium hydrochlorite)

ORDERING INFORMATION:

Dimensions: 12⅝L × 9¼W × 8⅞"H (32 × 23.6 × 22.7cm). Net weight: 29½ lb. (13.4kg). Available with or without standard 24-place rotor (05-400-008); other rotors sold separately on next page.

NOTE:

These models are not refrigerated.

Model	Keypad Control	Rotary Control
With Rotor		
Electrical Reqts.	120V 60Hz	120V 60Hz
Mfr. No.	022620444	022620401
Cat. No.	**05-400-005**	**05-403-92**
Each	2450.00	2450.00
Electrical Reqts.	230V 50Hz	230V 50Hz
Mfr. No.	022620461	022620428
Cat. No.	**05-400-002**	**05-403-93**
Each	2450.00	2450.00
Without Rotor		
Electrical Reqts.	120V 60Hz	120V 60Hz
Mfr. No.	022620498	022620487
Cat. No.	**05-400-007**	**05-400-006**
Each	2195.00	2195.00
Electrical Reqts.	230V 50Hz	----
Mfr. No.	022620452	----
Cat. No.	**05-400-004**	----
Each	2195.00	----

Accessories, Contd. on next page.

Eppendorf* Model 5424 Microcentrifuges, Contd.

ACCESSORIES

Rotors and Lids

For use with Eppendorf* Model 5424 Microcentrifuges.

Standard 24-place Rotor (05-400-008)

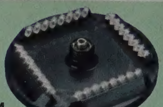
- 20 × 1.5/2.0mL capacity
- Max. speed/RCF: 15,000rpm/21,130×G
- Supplied with aerosol-tight lid (05-400-009)

Coated 24-place Rotor (05-400-010)

- Same as 05-400-008, but with coating that improves chemical resistance and makes rotor easier to clean
- Supplied with aerosol-tight coated lid (05-400-011)

18-place Miniprep Spin Column Rotor (05-400-012)

- Deep lip design supports open microtube lids
- Capacity: 18 × 1.5/2.0mL tubes
- Max. RCF: 18,111×G
- Supplied with lid (05-400-013)



04-400-014

05-400-008

4-position PCR Strip Rotor (04-400-014)

- Quickly knocks down liquids and properly supports thinwall PCR tubes
- Capacity: 4 × 8-place PCR tube strips
- Max. RCF: 18,615×G

Description	Mfr. No.	Cat. No.	Each
Rotors			
24-place Standard Rotor w/lid	022653008	**05-400-008**	740.00
24-place Coated Rotor w/Lid	022653041	**05-400-010**	875.00
18-place Miniprep Spin Column Rotor w/Lid	022653083	**05-400-012**	610.00
4 × 8 tube PCR Strip Rotor	022653121	**05-400-014**	550.00
Replacement Lids			
For 05-400-08	022653024	**05-400-009**	266.33
For 05-400-10	022653067	**05-400-011**	340.43
For 05-400-12	022653105	**05-400-013**	266.33

Eppendorf* Models 5415D/5415R Microcentrifuges

Compact lab workhorses fit easily on benchtop or in coldroom

Available with or without refrigeration. Refrigerated Model 5415R cools samples quickly and safely.

- Capacity: 48mL (24 × 1.5/2.0mL)
- Maximum speed/RCF: 13,200rpm/16,110×G
- Digital display for time and speed (rpm or rcf); 5417R also displays temperature
- Timed-run (30 seconds to 99 minutes), adjustable short-spin and continuous-run modes
- Variable speed control to maximum in 200rpm increments
- Quick acceleration and deceleration
- Maintenance-free brushless motor runs quietly—less than 60dB

Model 5415D

- With 24-place rotor
- Dimensions: 12L × 9W × 9"H (31 × 23 × 23cm)
- Net weight: 18¾ lb. (8.5kg)

Refrigerated Model 5415R

- Variable temperature control from 0° to 40°C (32° to 104°F)
- Maintains 4°C (39°F) at maximum speed for sample protection
- Stand-by cooling keeps samples at the designated temperature, even after the run has finished
- FAST COOL function cools the centrifuge to 4°C within 16 minutes
- Motorized lid latch closes the lid automatically to ensure uniform temperature
- Dimensions: 11⅜L × 17¾W × 9"H (29 × 45 × 23cm)
- Net weight: 46¾ lb. (21.2kg)
- Rotor sold separately

ORDERING INFORMATION:

Both models will accept a 24-place rotor for 1.5 to 2.0mL tubes or a 36-place rotor for Microtainer* or standard 0.5mL tubes. Rotors are autoclavable at 121°C (250°F) and come with snap-on polypropylene lids. Accessories sold separately, see next page.

eppendorf
Centrifuge 5415 R

05-40-105 with optional rotor 05-400-122

WARRANTY:

Two years

COMPLIANCE:

Units meet international safety standards for centrifuges (IEC 1010–2–020)

Description	Watts	Mfr. No.	Cat. No.	Each
115V 60Hz				
5415D with 24-place rotor	180w	022621203	**05-40-100**	2435.00
5415R without rotor	300w	022621408	**05-40-105**	5225.00
220V 50Hz†				
5415R without rotor	300w	022621459	**05-401-06**	5225.00

† *International model.*

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

24-Place Fixed-Angle Rotor with Snap-on Lid

24 × 1.5 to 2.0mL capacity

For use with Eppendorf* 5415D/5415R microcentrifuges; as supplied with 05-40-100 microcentrifuge.

- Maximum speed/RCF: 13,200rpm/16,110×G
- Directly accepts 1.5 to 2.0mL tubes, or smaller-sized tubes when equipped with accessory adapters
- Autoclavable to 121°C (250°F)

ORDERING INFORMATION:
Aerosol-tight biocontainment lid (05-400-123) available online

INCLUDES:
Rotor and snap-on lid

Capacity	Mfr. No.	Cat. No.	Each
24 × 1.5 to 2.0mL	022636502	**05-400-122**	525.00

24-Place Fixed-Angle Rotor with Aerosol-Tight Lid

24 × 1.5 to 2.0mL capacity

For use with 5415D/5415R centrifuges.

- Maximum speed/RCF: 13,200rpm/16,110×G
- Autoclavable to 121°C (250°F)

ORDERING INFORMATION:
Accepts smaller tubes with accessory adapters, sold separately.

INCLUDES:
Metal aerosol-tight lid for vapor containment

Capacity	Mfr. No.	Cat. No.	Each
24 × 1.5 to 2.0mL	022636596	**13-688-198**	735.00

36-Place Fixed-Angle Rotor with Cover

36 × 0.5mL capacity

- Maximum speed/RCF: 13,200rpm/16,110×G
- Also accepts 0.2mL PCR tubes when equipped with accessory adapters (below)
- Autoclavable

Capacity	Mfr. No.	Cat. No.	Each
36 × 0.5mL	022636600	**05-400-127**	815.00

Tube Adapters

Fit directly in 05-400-127 rotor to accommodate 0.2mL PCR tubes. Adapters are supplied in packs of six. Order the proper quantity to fully equip the rotor.

For Tubes	Mfr. No.	Cat. No.	Pack of 6
0.2mL PCR	022636286	**05-400-128**	27.16

LOOKING FOR...

Millipore* Microcon* Centrifugal Concentrator

Provides fast, convenient, high-recovery alternative to dialysis and ethanol precipitation. Find it in the Filtration section.

Eppendorf* Model 5418 Microcentrifuge

05-403-90

Easy-to-use, economical microcentrifuge

Features a certified aerosol-tight rotor (included) and a unique, contoured rotor bowl designed to reduce noise.

- Capacity: 36mL (18 × 1.5/2.0mL)
- Maximum speed/RCF: 14,000rpm/16,813×G
- Five-digit digital speed display
- Timer: 1 min. to 9 hr., 59 min., plus HOLD for continuous run
- Innovative lid design with automatic opening at end of run for quick sample removal
- Automatic one-button rcf/rpm converter

INCLUDES:
18 × 1.5/2.0mL aerosol-tight rotor and lid

Electrical Reqts.	Mfr. No.	Cat. No.	Each
120V 60Hz	022620304	**05-403-90**	1875.00
230V 50Hz†	022620321	**05-403-91**	1875.00

† International model.

ACCESSORIES

18-Place Fixed-Angle Rotor

As supplied with Eppendorf* Model 5418 Microcentrifuge.

- Capacity: 18 × 1.5/2.0mL tubes
- Max. speed/RCF: 14,000rpm/16,813×G

05-400-400

INCLUDES:
Aerosol-tight lid

Mfr. No.	Cat. No.	Each
022652061	**05-400-400**	597.00

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Eppendorf* MiniSpin* and MiniSpin Plus* Microcentrifuges

Economical desktop centrifuges are ideal for research or classroom work

05-401-07

Quickly and easily perform routine separations such as pelleting precipitated DNA. Fit in just half a square foot of benchtop space.

Operating Features

- Capacity: 24mL (12 × 2.0mL)
- Maximum speed/RCF: 14,500rpm/14,000×G
- Digital speed/time controls
- Timed, continuous-run, or short-spin modes
- Memory retains most recent settings for repeatable runs

Safety Features

- Lid interlocking system prevents accidental opening during operation
- Natural rotor airflow minimizes heat buildup to protect samples
- Brushless motor runs quietly (<60dB)

Supplied Rotor

- Autoclavable aluminum with metal lid suitable for spinning miniprep/spin columns
- For 12 × 1.5/2.0mL tubes
- Accepts adapters (05-400-124, -125, -126; sold separately) for 0.2 to 0.5mL tubes

MiniSpin

- Maximum speed/RCF with supplied rotor: 13,400rpm/12,100×G
- 30-min. timer, settable in 15-sec. increments
- Short-spin mode fixed at maximum speed

MiniSpin Plus

- Maximum speed/RCF with supplied rotor: 14,500rpm/14,000×G
- Toggle digital readout between g-force and rpm
- 99-min. timer (15-sec. increments) with continuous mode option and variable-speed short-spin mode

INCLUDES:
12-place rotor with cover

COMPLIANCE:
Meet international safety standards for centrifuges (IEC 1010-2-020)

CERTIFICATIONS:
CE, CSA

Electrical Requirements	Mfr. No.	Cat. No.	Each
MiniSpin			
115V 60Hz	022620100	**05-401-09**	1199.00
MiniSpin Plus			
115V 60Hz	022620207	**05-401-07**	1399.00
220V 60Hz	022620258	**05-401-08**	1399.00

Eppendorf* Model 5417R Microcentrifuges

Compact refrigerated unit accepts a variety of rotors for exceptional versatility

05-406-8A

Operating Features

- Capacity: 60mL (30 × 2.0mL)
- Maximum speed/RCF: 16,400rpm (25,000×G)
- Microprocessor-controlled keyboard with five-digit LED display for speed in either rpm or RCF
- Timer: 0 to 99 minutes in 1-minute increments, two-digit display
- SHORT button for quick spins
- SOFT START/STOP function protects delicate samples
- Temperature control range from -9° to +40°C (16° to 104°F)
- FAST COOL function quickly reduces temperature in the rotor chamber from ambient to 4°C in less than 20 minutes

Safety Features

- Automatic rotor recongition and load imbalance sensor
- Maintenance-free, brushless motor runs quietly

REQUIRED ACCESSORIES:
Rotor (sold separately, see following page)

COMPLIANCE:
IEC 1010

CERTIFICATIONS:
UL listed

Model	Net Weight	Mfr. No.	Cat. No.	Each
115V 60Hz				
5417R	75 lb. (34kg)	022621807	**05-406-8A**	6995.00
220V 50Hz (International Model)				
5417R	75 lb. (34kg)	022621840	**05-406-8**	6995.00

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

*Trademark. See Trademark Reference.

ACCESSORIES

8-Place Swinging Bucket Rotor

8 × 1.5 to 2.0mL capacity

05-406-41

For use with Eppendorf* 5417R Series Microcentrifuges. Provides flat pelletization for DNA recipitations and immunoprecipitations.

- Max. speed/RCF: 10,000rpm/10,600×G

ORDERING INFORMATION:

Using accessory adapters (sold separately), the rotor can accommodate 0.5mL, 0.25/0.4mL, Microtainer* and 0.2mL PCR tubes.

INCLUDES:

Cover

Capacity	Mfr. No.	Cat. No.	Each
8 × 1.5 to 2.0mL	022636138	**05-406-41**	1130.0

24-Place Fixed-Angle Rotor with Aerosol-Tight Cover

24 × 1.5 to 2.0mL capacity

For use with Eppendorf* 5417 Series Microcentrifuges. Supplied metal lid (13-688-199) provides secure containment of potentially hazardous aerosols from materials such as HIV and radioactive samples.

- Maximum speed/RCF: 16,400rpm/25,000×G
- Directly accepts 1.5 to 2.0mL tubes

13-688-197

ORDERING INFORMATION:

With accessory adapters (sold separately), can also accommodate 0.5mL, 0.25/0.4mL, Microtainer* and 0.2mL PCR tubes.

INCLUDES:

Lid

Capacity	Mfr. No.	Cat. No.	Each
24 × 1.5 to 2.0mL	022636570	**13-688-197**	810.00

Aerosol-tight Lid

Replacement metal lid for 24-place fixed-angle rotor 13-688-197. Provides aerosol containment.

Mfr. No.	Cat. No.	Each
022636782	**13-688-199**	215.81

30-Place Fixed-Angle Rotor with Cover

30 × 1.5 to 2.0mL capacity

05-406-13

For use with Eppendorf* 5417 Series Microcentrifuges. Ideal for containing hazardous materials such as HIV, TB and radioactive samples.

- Maximum speed/RCF: 14,000rpm/20,800×G
- Accepts up to 30 × 1.5 to 2.0mL tubes directly or 0.5mL, 0.25/0.4mL, Microtainer* and 0.2mL PCR tubes with accessory adapters (see below)

Quick-release lid or aerosol-tight cover

Lid Type	Capacity	Mfr. No.	Cat. No.	Each
Aerosol-tight	30 × 1.5 to 2.0mL	022636057	**05-406-14**	945.00
Quick-release	30 × 1.5 to 2.0mL	022636006	**05-406-13**	615.00

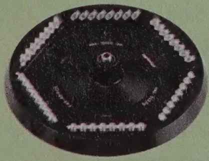
Tube Adapters

- For use with fixed-angle rotors 05-406-13 and 05-406-14 and swinging bucket rotor 05-406-41 (for Model 5417R), and fixed-angle rotors 05-400-122 and 13-688-198 (for Models 5415D/5415R)
- Adapters fit any Eppendorf* rotor with slots to hold 1.5 to 2.0 microcentrifuge tubes with maximum 11mm O.D.

For Tubes	Mfr. No.	Cat. No.	Pk. of 6
0.5mL or Microtainer*	022636227	**05-400-124**	27.16
0.25 to 0.4mL	022636243	**05-400-125**	27.16
0.2mL PCR	022636260	**05-400-126**	27.16

PCR-Strip Rotor

6 × 8-tube strip or 48 × 0.2mL PCR tube capacity


05-406-42

For use with Eppendorf* 5417 Series Microcentrifuges. Ideal rotor for centrifuging PCR tubes.

- Maximum speed/RCF: 10,000rpm/10,600×G
- Rotor directly accepts either 0.2mL PCR tubes or 8-tube strips

Capacity	Mfr. No.	Cat. No.	Each
6 × 8–tube strips or 48 × 0.2mL tubes	022636146	**05-406-42**	1080.00

LOOKING MICROCENTRIFUGE TUBES?

Fisher Scientific has the right microtube for your application. Choose from plastic tubes in a wide range of shapes, sizes and cap styles. Check them out in the Tubes section.

CLINICAL

Fisher Scientific* Centrific* Model 228 Benchtop Centrifuges

Consistent, reproducible results for a variety of applications

04-978-228Q centrifuge with supplied 04-978-232Q rotor

Compact benchtop units provide an economical alternative to higher-priced clinical centrifuges. Ideal for routine blood separations in physicians' offices and small clinics. Also handles applications in educational and industrial labs.

- Capacity: 90mL (6 × 15mL)
- Maximum speed (fixed)/RCF: 3300rpm/1380×G
- Timer: 15 min. maximum, settable from 0 to 15 min. with 30-sec. resolution
- HOLD position for untimed, continuous runs
- Reaches maximum speed in less than 15 sec. with a full load
- Supplied with six-place, 6 × 15mL fixed-angle rotor with buckets and numbered tube positions
- Stainless-steel motor shaft with permanently lubricated ball bearings for extended life

ORDERING INFORMATION:

Accessory buckets (04-978-233Q) and tube adapters (04-978-23Q) sold separately. Buckets accept tubes with dimensions of 13 to 17.3mm dia. × 100 to 133mm long and also accept 7, 10, and 15mL BD Vacutainer* tubes. Tube adapters accept 4 or 5mL tubes; no tube cushions are needed.

INCLUDES:

6-place fixed-angle rotor

WARRANTY:

One year

CERTIFICATIONS:

CSA approved

SPECIFICATIONS

Model 228	
Capacity	6 × 15mL
Maximum Tube Size	17.3 × 133mm
Maximum Speed	3300rpm
Maximum RCF	1380×G
Speed Control	Fixed
Timer	
Range	0 to 15 min. with continuous run
Resolution	30 sec.
Dimensions	13L × 12W × 9"H (33 × 31 × 23cm)
Net Weight	13 lb. (6kg)
Electrical Requirements	115V 60Hz, 2.1A
Cat. No.	**04-978-228Q**
Each	680.16
Electrical Requirements	230V 50Hz, 1.05A†
Cat. No.	**04-978-229Q**
Each	799.83

† *International model.*

ACCESSORIES

Six-Place Fixed-Angle Rotor

As supplied with Fisher Scientific* Centrific* Model 228 Benchtop Centrifuges. Without buckets.

04-978-232Q

Capacity	Cat. No.	Each
6 × 15mL	**04-978-232Q**	83.57

Buckets

For 04-978-232Q rotor.

- Hold tubes 13 to 17.3mm dia. × 100 to 133mm long, including 7, 10, or 15mL Vacutainer* tubes
- Accept 04-978-23 Tube Adapters (sold separately) to accommodate 75 to 100mm long tubes

Cat. No.	Pack of 6
04-978-233Q	61.30

Thermo Scientific* IEC* CL30/CL30R Centrifuges

High-capacity, low-speed benchtop units with quick rotor exchange offer versatility and solid performance in daily use

NEW

Unique quick-change rotor system allows user to swap rotors, change protocols or perform cleaning tasks with ease. Choose from ventilated or refrigerated units. The CL30 series functionally replaces Thermo Scientific* IEC* Centra* -CL3/-CL3R models.

05-376-100

Operating Features

- Capacity: 4 × 280mL
- Max. Speed/RCF: 14,600rpm/23,113×G
- Microprocessor control ensures continuous speed regulation for high-quality separations
- Intuitive interface with digital display
- Quick-recall keys offer push-button access to frequently used programs
- G-force run control ensures transferability of protocols from other centrifuges without cross-referencing to rpm
- 30 sec.-to-99 min. timer with HOLD feature for continuous runs
- Brushless induction drive delivers quiet operation with minimal maintenance
- Space-saving design

Safety Features

- Automatic rotor recognition
- Load imbalance detection

Auto-Lock Rotor Exchange

- Facilitates quick protocol changes and easy cleaning
- No tools required—rotor snaps and locks into place; unfastens instantly
- Rotor can be changed in as little as five seconds

Refrigerated Model CL30R

- Temperature range: -9°C to +40°C
- Ozone-free, CFC-free refrigerant

Contd. on next page.

Thermo Scientific* IEC* CL30/CL30R Centrifuges, Contd.

APPLICATIONS:
Classrooms, cleanrooms, toxicology, biotechnology, water quality analysis, food quality testing and control, drug screening, clinical chemistry/hematology

ORDERING INFORMATION:
Optional rotors and adapters are sold separately (see below and following pages).

REQUIRED ACCESSORIES:
Rotor (sold separately)

COMPLIANCE:
IEC 1010, IEC 1010-2-020

CERTIFICATIONS:
CE marked

Electrical Reqts.	Mfr. No.	Cat. No.	Each
Model CL30 (ventilated)			
120V 60Hz	11210905	**05-376-100**	3519.00
230V 50/60Hz	11210904	**05-376-319**	3519.00
Model CL30R (refrigerated)			
120V 60Hz	11210909	**05-376-101**	5049.00
230V 50/60Hz	11210908	**05-376-320**	5049.00

Specifications	Model CL30	Model CL30R
Type	Ventilated	Refrigerated
Capacity	4 × 280mL	4 × 280mL
Max. Speed/RCF	6500rpm/5300×G	6500rpm/5300×G
Control	Microprocessor	Microprocessor
Programs	5 (direct recall)	5 (direct recall)
Speed Set/Display	500-6500rpm/Digital	500-6500rpm/Digital
Timer	30 sec. to 99 min. plus HOLD	30 sec. to 99 min. plus HOLD
Temperature Range	N/A	-9°C to +40°C
Acceleration/Braking Rates	5/5	5/5
Dimensions (L × W × H)	21 × 24 × 23⅝" (54 × 61 × 60cm)	29 × 30 × 24" (74 × 76 × 61cm)
Net Weight	115 lb. (52kg)	187 lb. (85kg)

ACCESSORIES

Swinging Bucket Rotors

For use with Thermo Scientific* IEC* CL30/CL30R Centrifuges.

- Accept buckets to spin a wide range of tube styles, including standard, conical, skirted and Vacutainer*
- Two capacities: 4 × 200mL and 4 × 280mL

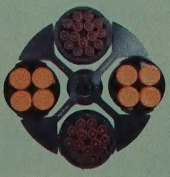
COMPLIANCE:
Sealing lids 05-376-106 and 05-376-126 provide biocontainment protection per CAMR (HPA) Porton Down, UK

ORDERING INFORMATION:
Tube adapters sold separately

INCLUDES:
Rotor body only

REQUIRED ACCESSORIES:
Buckets (order separately)

05-376-104 with bucket 05-376-105 and inserts



05-376-124

Description	Capacity	Max. Tube O.D.	Max. Speed/RCF	Cat. No.	Price
4 × 200mL Rotor 05-376-104 and Accessories					
Rotor Body	4 × 200mL	57mm	4100rpm/ 3026×G	**05-376-104**	Ea./595.00
Standard Buckets	200mL (per bucket)	57mm	4100rpm/ 3026×G	**05-376-105**	Pk. of 4/584.00
Sealing Lids for 05-376-105	----	----	----	**05-376-106**	Pk. of 4/166.94
4 × 280mL Rotor 05-376-124 and Accessories					
Rotor Body	4 × 280mL	77mm	4100rpm/ 3176×G	**05-376-124**	Ea./ 1009.00
Standard Buckets	280mL (per bucket)	77mm	4100rpm/ 3082×G	**05-376-125**	Pk. of 4/1226.00
Buckets	4 × 50mL conical (per bucket)	33mm	4100rpm/ 3176×G	**05-376-127**	Pk. of 4/650.00
Buckets	3 × 50mL conical skirted (per bucket)	33mm	4100rpm/ 3176×G	**05-376-128**	Pk. of 4/650.00
Buckets	15 × 5/7mL (per bucket)	13.5mm	4100rpm/ 3101×G	**05-376-129**	Pk. of 4/637.00
Sealing Lids for 05-376-125	----	----	----	**05-376-126**	Pk. of 4/174.97

ACCESSORIES

Tube Adapters for 05-376-104 Rotor

Capacity†	Max. Tube O.D.	No. of Tubes per Rotor	Cat. No.	Set of 4
6 × 2mL	11mm	24	**05-376-123**	131.73
1 × 25mL universal	25mm	4	**05-376-111**	542.00
5 × 5mL flat-bottom	17mm	20	**05-376-118**	434.54
5 × 5/7mL	13mm	20	**05-376-119**	131.73
3 × 12mL flat-bottom	17.5mm	12	**05-376-115**	487.61
3 × 15mL conical	17.5mm	12	**05-376-113**	141.80
1 × 50mL round	35mm	4	**05-376-108**	131.73
1 × 50mL conical skirted	30.5mm	4	**05-376-109**	290.36
1 × 50mL conical	29mm	4	**05-376-110**	284.36
5 × 10mL	16mm	20	**05-376-116**	131.73
5 × 5/10mL flat-bottom	17mm	20	**05-376-117**	633.00
9 × 5/6mL	13.5mm	36	**05-376-120**	131.73
12 × 5mL open	12.5mm	48	**05-376-121**	434.54
12 × 3/5mL	12mm	48	**05-376-122**	131.73
3 × 20mL	22mm	12	**05-376-112**	131.73
1 × 100mL	45mm	4	**05-376-107**	131.73
7 × 15mL	17mm	28	**05-376-114**	131.73

† Total capacity, least to greatest.

Tube Adapters for 05-376-124 Rotor

Capacity†	Max. Tube O.D.	No. of Tubes per Rotor	Cat. No.	Set of 4
1 × Centriprep	28mm	4	**05-376-159**	282.35
13 × 2mL	10mm	52	**05-376-155**	282.35
1 × 50mL conical skirted	29mm	4	**05-376-139**	772.00
4 × 14mL	15.5mm	16	**05-376-160**	282.35
19 × 3mL	11mm	76	**05-376-154**	282.35
4 × 15mL conical	17mm	16	**05-376-149**	282.35
4 × 15mL Corning	17mm	16	**05-376-156**	287.36
4 × 15mL Vacutainer	16mm	16	**05-376-157**	282.35
5 × 15mL conical	17mm	20	**05-376-150**	282.35
12 × 5/7mL	12.5mm	48	**05-376-158**	282.35
9 × 10mL	16mm	36	**05-376-147**	282.35
19 × 5mL	13mm	76	**05-376-153**	282.35
1 × 100mL	38mm	4	**05-376-136**	282.35
2 × 50mL conical	29mm	8	**05-376-140**	282.35
4 × 25mL conical	24mm	16	**05-376-144**	282.35
7 × 15mL urine	17mm	28	**05-376-148**	282.35
1 × 110mL	40mm	4	**05-376-135**	282.35
5 × 25mL	24mm	20	**05-376-143**	282.35
2 × 65mL	34mm	8	**05-376-137**	282.35
1 × 135mL	43mm	4	**05-376-134**	282.35
9 × 16mL	18mm	36	**05-376-145**	282.35
5 × 30mL	25.5mm	20	**05-376-142**	282.35
3 × 50mL conical, unsealed	29mm	12	**05-376-141**	346.43
19 × 8mL	12mm	76	**05-376-152**	282.35
12 × 13mL	16mm	48	**05-376-151**	282.35
1 × 175mL conical	60mm	4	**05-376-133**	282.35
12 × 10/15mL	17mm	48	**05-376-146**	282.35
1 × 190mL	55mm	4	**05-376-161**	287.36
1 × 200mL flat-bottom	55mm	4	**05-376-132**	282.35
4 × 50mL	28.5mm	16	**05-376-138**	282.35
1 × 250mL	61.7mm	4	**05-376-162**	287.36
1 × 250mL flat-bottom	61mm	4	**05-376-131**	282.35
1 × 280mL	64mm	4	**05-376-130**	282.35

† Total capacity, least to greatest.

Fixed-Angle Rotors

05-376-169

05-376-182

For use with Thermo Scientific* IEC* CL30/CL30R Centrifuges. Sealed microtube rotor 05-376-187 provides biocontainment protection per CAMR (HPA) Porton Down, UK.

05-376-187

ORDERING INFORMATION:
Tube adapters sold separately

Capacity	Angle	Max. Tube O.D.	Max. Speed/RCF	Cat. No.	Each
24 × 2mL	45°	11mm	14,600rpm/20,016×G	**05-376-187**	650.00
6 × 50mL conical	40°	29.5mm	10,000rpm/12,500×G	**05-376-182**	810.00
30 × 15mL	37°	17.5mm	4100rpm/2537×G	**05-376-169**	693.00
Spare Lid for 05-376-187	----	----	----	**05-376-188**	131.73

Microplate Rotor

05-376-163

For use with Thermo Scientific* IEC* CL30/CL30R Centrifuges.

- Capacity: 2 × 3 microplates or 2 × 1 filter blocks
- Max. Speed/RCF: 4100rpm/2160×G
- Optional sealed plate carrier 05-376-164 offers biocontainment protection per CAMR (HPA) Porton Down, UK

ORDERING INFORMATION:
Rubber cushion for microplates (05-376-294) is available online

Description	Rotor Capacity	Cat. No.	Each
Microplate Rotor	2 × 3 microplates/ 2 × 1 block	**05-376-163**	757.00
Sealed Plate Carriers	----	**05-376-164**	542.00
Microplate Adapters (Set of 2)	----	**05-376-166**	71.54
Flask Adapters (Set of 2)	2 × 1 flask	**05-376-167**	319.40
Spare Cap for Plate Carrier	----	**05-376-168**	147.62

Tube Adapters for 05-376-169 Fixed-Angle Rotor

Capacity	Max. Tube O.D. × L	Cat. No.	Each
1 × 1.5/2mL	10 × 41mm	**05-376-172**	26.76
1 × 3mL	11 × 70mm	**05-376-246**	26.76
1 × 5mL	13 × 75mm	**05-376-245**	27.25
1 × 5mL (BD-Hemogard*)	13 × 75mm	**05-376-173**	26.76
1 × 7 or 8mL†	13 × 100mm	**05-376-249**	26.76
1 × 13.5mL	16 × 82mm	**05-376-175**	21.41

† Also accepts BD-Hemogard and Vacutainer tubes*

Tube Adapters for Fixed-Angle Rotor 05-376-187 Rotor

Accepts	Max. O.D.	Cat. No.	Pack of
1× 0.2mL PCR	6mm	**05-376-254**	20/117.65
1× 0.5mL	6mm	**05-376-191**	20/562.00
1 × 0.5/0.8mL	8mm	**05-376-252**	20/277.35

Tube Adapters for Fixed-Angle Rotor 05-376-182

Accepts	Cat. No.	Pack of
1 × 30 or 38mL	**05-376-183**	8/694.29
1 × 15mL conical	**05-376-184**	4/125.59
1 × 50mL	**05-376-186**	6/232.30
1 × 10mL	**05-376-185**	4/489.73

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* IEC* CL10 Centrifuges

NEW

Complete basic centrifuges combine economy and performance for low-speed, routine clinical applications

Compact size and simple controls make them ideal for small and medium labs and medical offices. Choice of rotor options expands the range of applications supported.

05-376-199

Operating Features

- Capacity: 4 × 135mL
- Max. Speed/RCF: 6500rpm/3684×G
- Microprocessor control system ensures continuous speed regulation for high-quality separations
- User-friendly interface with digital display
- 1 to 99 min. timer with HOLD feature for continuous runs
- Superior ventilation system protects samples from heat buildup
- Brushless induction drive delivers quiet operation with minimal maintenance
- Space-saving design

Safety Features

- Automatic rotor load imbalance detection system prevents accidents
- Automatic rotor recognition prevents disallowed speeds
- Aerosol-tight accessories contain sample securely for biosafety protection

Electrical Requirements	Cat. No.	Each
120V 60Hz	**05-376-199**	2345.00
230V 50/60Hz	**05-376-318**	2345.00

APPLICATIONS:
Satellite labs, classrooms, tissue/cell culture, cleanrooms, physician/veterinary offices, clinical trials, microbiology

ORDERING INFORMATION:
Optional rotors and accessory adapters are available separately below and on the following page.

REQUIRED ACCESSORIES:
Rotor (sold separately)

COMPLIANCE:
IEC 1010-1, IEC 1010-2-020; Accessories have been tested by CAMR Portion Down

CERTIFICATIONS:
CE

Specifications	Model CL10
Capacity	4 × 135mL
Type	Ventilated
Max. Speed/RCF	6500rpm/3684×G
Control	Microprocessor
Speed Set/Step/Display	300 to 6500rpm/10rpm/Digital
Timer	1 to 99 min. plus HOLD
Acceleration/Braking Rates	High or Low
Noise	<57dBA
Dimensions (L × W × H)	21¾ × 25⅝ × 20" (55 × 64 × 51cm)
Net Weight	88 lb. (40kg)

ACCESSORIES

4-Place Swinging Bucket Rotor

For use with Thermo Scientific* IEC* CL10 Centrifuges.

- Capacity: 4 × 135mL
- Max. Speed/RCF: 4000rpm/2647×G
- Max. tube O.D. × L (direct fit in bucket): 43.4 × 112mm

05-376-200

ORDERING INFORMATION:
Sealing lids (05-376-203) sold separately

INCLUDES:
Four buckets; spares available, order 05-376-202

Capacity	Cat. No.	Each
4 × 135mL	**05-376-200**	531.00

Buckets and Lids

For use with swinging bucket rotor 05-376-200

Description	Cat. No.	Set of 4
Buckets, 135mL	**05-376-202**	361.45
Sealing Lids for 135mL buckets	**05-376-203**	145.82

Tube Adapters

For use with swinging bucket rotor 05-376-200

Capacity indicates the number and size of tube places in each individual adapter.

Capacity†	Max. O.D. × L	Tubes per Rotor	Cat. No.	Set of 4
5 × 1.5/2mL	10 × 41mm	20	**05-376-223**	153.86
1 × 15mL (conical)	16.5 × 121mm	4	**05-376-215**	153.86
1 × 15mL (urine)	17 × 105mm	4	**05-376-218**	153.86
7 × 3mL	11 × 70mm	28	**05-376-207**	153.86
1 × 25mL	24 × 104mm	4	**05-376-211**	153.86
4 × 5/7mL	13 × 100mm	16	**05-376-220**	153.86
1 × 25/30mL	25.5 × 95mm	4	**05-376-205**	153.86
1 × 30mL	23.5 × 105mm	4	**05-376-210**	153.86
7 × 5mL	12 × 75mm	28	**05-376-212**	153.86
1 × sulfate tube	30 × 115mm	4	**05-376-221**	153.86
3 × 10/13.5mL	16 × 82mm	12	**05-376-217**	153.86
3 × 10/15mL (Vacutainer*)	16 × 120mm	12	**05-376-219**	153.86
3 × 15/16mL	18 × 107mm	12	**05-376-209**	153.86
1 × 50mL	28.5 × 106mm	4	**05-376-213**	153.86
1 × 50mL (conical)	28 × 116mm	4	**05-376-214**	153.86
7 × 8mL	12 × 100mm	28	**05-376-208**	153.86
1 × 50/65mL	34 × 100mm	4	**05-376-206**	153.86
1 × 80/85/94mL	38 × 111.5mm	4	**05-376-216**	153.86
1 × 100mL	44 × 100mm	4	**05-376-222**	153.86
1 × 100/110mL	40 × 115mm	4	**05-376-204**	153.86

† *Total capacity, least to greatest.*

ACCESSORIES

Trunnion Rotors

Choice of two systems

For use with Thermo Scientific* IEC* CL10 Centrifuge.

- 16 × 15mL rotor with unsealed carriers (4 trunnion rings with 4 places per ring)
- 8 × 15mL rotor with sealed carriers (4 trunnion rings with 2 places per ring)
- Max. speed/RCF: 4000rpm/2575×G

05-376-224

05-376-227

ORDERING INFORMATION:
Spare parts available below.

INCLUDES:
Trunnions and carriers (see below for specifics).

Type	Capacity	Cat. No.	Each
With unsealed carriers	16 × 15mL	**05-376-224**	531.00
With sealed carriers	8 × 15mL	**05-376-227**	584.00

Replacement Parts

For trunnion rotors

Trunnion rings come in sets of four; all others sold individually.

Description	Cat. No.	Price
For 16 × 15mL Rotor 05-376-224		
4 × 15mL Trunnion Ring	**05-376-225**	Pk. of 4/260.46
15mL Carrier, unsealed	**05-376-226**	Ea./208.17
For 8 × 15mL Rotor 05-376-227		
2 × 15mL Trunnion Ring	**05-376-228**	Pk. of 4/155.87
15mL Carrier, sealed	**05-376-229**	Ea./36.33
Sealing Lid for 15mL carrier	**05-376-236**	Ea./10.11

Replacement Buckets for 05-376-237 Rotor

Cat. No.	Set of 6
05-376-243	198.11

Tube Adapters

Fit rotors 05-376-224, -227, and -244.

Capacity	Max. Tube O.D. × L	Cat. No.	Each
1 × 1.5/2mL	10 × 41mm	**05-376-172**	26.76
1 × 3mL	11 × 70mm	**05-376-246**	26.76
1 × 5mL	13 × 75mm	**05-376-245**	27.75
1 × 5mL (BD-Hemogard*)	13 × 75mm	**05-376-173**	26.76
1 × 7 or 8mL†	13 × 100mm	**05-376-249**	26.76
1 × 13.5mL	16 × 82mm	**05-376-175**	21.41

† Also accepts BD-Hemogard and Vacutainer tubes*

Tube Adapters

Fits rotor 05-376-251.

Accepts	Max. O.D.	Cat. No.	Pack of 20
1× 0.2mL PCR	6mm	**05-376-254**	117.65
1× 0.5mL	6mm	**05-376-191**	562.00
1 × 0.5/0.8mL	8mm	**05-376-252**	277.35

Fixed-Angle Rotors

For use with Thermo Scientific* IEC* CL10 Centrifuge.

ORDERING INFORMATION:
Spare buckets available for 05-376-237; order 05-376-243. Tube adapters are sold separately.

INCLUDES:
Rotors 05-376-237 and 05-376-244 are supplied with buckets.

05-376-251

05-376-237

05-376-244

Capacity	Max. Speed	Max. RCF	Max Tube O.D. × L	Cat. No.	Each
20 × 2mL	6500rpm	3684×G	10 × 41mm	**05-376-251**	361.45
6 × 50mL Conical Tubes	5000rpm	3661×G	28.5 × 106mm	**05-376-237**	478.60
24 × 15mL	4000rpm	2380×G	16.5 × 121mm	**05-376-244**	372.47

Thermo Scientific* IEC* Centra* CL2 Benchtop Centrifuge

Compact, simple and economical benchtop centrifuge for basic research and clinical applications

Features At-Speed* timing mode for greater quality control over sample preparation.

Thermo
Centra CL2

05-101-7

Operating Features

- Capacity: 300mL (6 × 50mL)
- Maximum speed/RCF: 8500rpm/4680×G
- Microprocessor-controlled membrane touch panel for setting speed and run time
- LCD readout for both speed and run time
- Variable speed control: 1000 to 8500rpm in 100rpm increments
- Timer: 30 min.
- Run time can be set from 5 sec. to 1 min. (in 5-sec. increments), from 1 to 5 min. (15-sec.), and from 5 to 30 min. (1-min.)
- HOLD position for continuous runs
- At-Speed timing mode: When activated, unit delays countdown until rotor reaches operating speed
- Accepts variety of tube sizes from 1.5 to 50mL based on rotor/adapter configuration (rotors and adapter sold separately)

Safety Features

- Cover interlock prevents lid from being opened until rotor reaches a complete stop
- Quiet-running motor generates less than 52dBA

ORDERING INFORMATION:

Dimensions: 15¾L × 13¼W × 10¾"H (40 × 34 × 27.5cm). Net weight: 24 lb. (11kg). Accessory rotors and tube adapters sold separately at right and on following page.

REQUIRED ACCESSORIES:

Rotor (sold separately)

COMPLIANCE:

Complies with IEC 1010-2-020; meets OSHA Bloodborne Pathogen Final Rule when equipped with 05-101-9 Rotor with Aerocarrier* tube inserts

CERTIFICATIONS:

CE marked, CSA approved

Mfr. No.	Electrical Requirements	Cat. No.	Each
004260F	120V 50/60Hz	**05-101-7**	1907.85
004270F	240V 50/60Hz†	**05-101-8**	1907.85

† International model.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

ACCESSORIES

Four-Place Swinging Bucket Rotor

4 × 50mL Capacity

05-101-9

For use with Thermo Scientific* IEC* Centra* CL2 Benchtop Centrifuge.

- For tubes from 5 to 50mL
- Operates at speeds to 3900rpm
- Maximum RCF of 2200×G

ORDERING INFORMATION:

Sealed tube inserts sold separately

INCLUDES:

Permanently attached trunnion rings which hold Aerocarrier* sealed tube inserts (sold separately) to accept tubes from 5 to 50mL

COMPLIANCE:

Meets OSHA Bloodborne Pathogen Final Rule.

Capacity	Max. Speed	Max. RCF	Mfr. No.	Cat. No.	Each
4 × 50mL	3900rpm	2200×G	02360F	**05-101-9**	675.00

Aerocarrier* Sealed Tube Adapter

Complete, self-contained polypropylene holders

For use with Thermo Scientific* IEC* Centra* CL2 Benchtop Centrifuge. Use in 05-101-9 swinging bucket rotor.

- Screw-on cap with O-ring closure for complete aerosol containment
- Transparent lid lets you check tube for breakage before opening lid
- If breakage occurs, tube inserts can be autoclaved or decontaminated with diluted household bleach

COMPLIANCE:

Inserts meet OSHA Bloodborne Pathogen Final Rule

For Tubes	Maximum O.D. × L	No. of Slots	Mfr. No.	Cat. No.	Pack of 2
50mL	29 × 115mm	1	02091SF	**05-101-13**	159.28
10 to 15mL	17 × 120mm	2	02092SF	**05-101-14**	159.28
7 to 10mL	16 × 100mm	4	02093SF	**05-101-15**	159.28
5 to 7mL	16 × 75mm	7	02094SF	**05-101-16**	159.28

Four-Place Swinging Bucket Rotor Packages

Two packages are available offering a combination of 05-101-9 rotor and Aerocarrier* tube inserts.

Tissue Culture Package

- Rotor
- Four inserts each for 15 and 50mL Falcon* and Corning* conical tubes

Blood Tube Package

- Rotor
- Four inserts for 7 to 10mL blood tubes
- Four inserts for 5 to 7mL blood tubes

COMPLIANCE:

Meet OSHA Bloodborne Pathogen Final Rule

Package	Mfr.No.	Cat. No.	Each
Tissue Culture	523670F	**05-101-10**	980.00
Blood Tube	523680F	**05-101-11**	980.00

ACCESSORIES

Six-Place Rotor System

6 × 50mL capacity

For use with Thermo Scientific* IEC* Centra*-CL3/-CL3R, Centra-CL2, and HN-SII centrifuges.

05-155-19

- Angle 45°
- Accepts 6 × 50mL Falcon/Corning* conical tubes or other tubes measuring 30 dia. × 133mm long
- Can also be used in older models Thermo Scientific IEC Centra-MP4/-MP4R, Centra-CL4, -4B, -4, -HN, HN-S, HN, H, and Clinical

INCLUDES:
Six shields and cushions

REQUIRED ACCESSORIES:
05-375-60 Shaft Adapter to use with Thermo Scientific* IEC* Centra-CL3/-CL3R (sold separately)

Mfr. No.	Cat. No.	Each
58012F	05-155-19	767.00

12-Place Microtube Rotor System

12 × 1.5/2.0mL capacity

For use with Thermo Scientific* IEC* Centra*-CL3/-CL3R, Centra-CL2, and HN-SII centrifuges.

- Accepts up to 12 × 1.5/2.0mL microtubes, or tubes as small as 0.4 to 0.5mL when equipped with supplied adapters
- Also fits older models Thermo Scientific IEC Centra-MP4/-MP4R, Centra-CL4, -4B, -4, -HN, HN-S, HN, H, and Clinical

INCLUDES:
Rotor and 12 adapters

REQUIRED ACCESSORIES:
05-375-60 Shaft Adapter needed to use with Therno Scientific IEC Centra-CL3/-CL3R (sold separately)

Mfr. No.	Cat. No.	Each
008410F	05-104J	788.00

12-Place Rotor System

12 × 15mL capacity

For use with Thermo Scientific* IEC* Centra-CL3/-CL3R, Centra-CL2, and HN-SII centrifuges.

- Angle: 45°
- Accepts 15mL Falcon/Corning* conical tubes or Millipore* Centricon* filtration devices
- Also fits older models Thermo Scientific IEC Centra-MP4/-MP4R, Centra-CL4, -4B, -4, -HN, HN-S, HN, H, and Clinical

INCLUDES:
Rotor, 12 shields and cushions

REQUIRED ACCESSORIES:
05-375-60 Shaft Adapter needed to use with Thermo Scientific IEC Centra-CL3/-CL3R (sold separately)

Mfr. No.	Cat. No.	Each
003356	05-155-20	965.00

Four-Place Rotor System

4 × 50mL capacity

For use with Thermo Scientific* IEC* Centra*-CL3/-CL3R, Centra-CL2, and HN-SII centrifuges.

05-155-15

- Accepts 4 × 50mL Falcon/Corning* conical tubes
- Rotor also fits older models Thermo Scientific IEC Centra-MP4/-MPR4, Centra-CL4, -4B, -HN, Clinical, HN-S, HN, H

INCLUDES:
Four-place rotor, trunnion rings, shields, and cushions

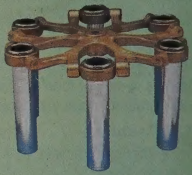
REQUIRED ACCESSORIES:
05-375-60 Shaft Adapter needed to use with Thermo Scientific IEC Centra-CL3/-CL3R (sold separately)

Mfr. No.	Cat. No.	Each
521510F	05-155-15	739.00

Six-Place Rotor System

6 × 15mL capacity

For use with Model Thermo Scientific* IEC* Centra*-CL3/-CL3R, Centra-CL2, and HN-SII.



05-155-18

- Accepts 15mL Falcon/Corning* conical tubes or other tubes measuring up to 17 O.D. × 127mm long
- Rotor can also be used in older models Thermo Scientific IEC Centra-MP4/-MP4R, Centra-CL4, -4B, -HN, Clinical, HN-S, HN, H

INCLUDES:
Rotor, open shields, and cushions

REQUIRED ACCESSORIES:
05-375-60 Shaft Adapter needed to use with Thermo Scientific IEC Centra-CL3/-CL3R (sold separately)

Mfr. No.	Cat. No.	Each
522120F	05-155-18	670.00

LOOKING FOR A SHAFT ADAPTER?

Adapter 05-375-60 is required to use these rotors with the Thermo Scientific* IEC* Centra*-CL3/-CL3R centrifuges.

Visit www.fishersci.com and search for Shaft Adapter

*Trademark. See Trademark Reference.

Prices subject to change.

Eppendorf* 5702 Series Centrifuges

Provide exceptional value for low-speed centrifugation of tubes to 85mL

Quickly and economically spin popular cell culture and blood tubes in a choice of optional rotors. Choose from ventilated and refrigerated models, or unique Model 5702RH which combines heating and refrigerating capabilities.

Operating Features

- Capacity: 340mL (4 × 85mL)
- Max. speed/RCF: 4400rpm (3000×G)
- Handles 30 × 10mL blood tubes or 20 × 15mL conical tubes
- Compact, space-saving design
- Convenient control knobs set desired time and speed (rpm or RCF); settings can be changed during run, or locked
- Digital display
- Motorized "soft-touch" lid unlocks at end of run for one-hand access
- Timed or quick-spin modes
- Maintenance-free drive

Refrigerated Model 5702R Adds:

- Variable temperature control from -9°C to +40°C (16° to 104°F)
- Fast-Cool function eliminates waiting times for unit to reach set temperatures
- Standby cooling maintains chamber temperature when unit is not in use
- Two blue-lit program buttons to store/recall frequently used parameters
- Two timer modes: standard mode begins counting when START button is pressed; AT SET RPM timer begins counting when centrifuge reaches nominal speed

Heating/Refrigerated Model 5702RH

Includes all features of Model 5702R, plus:

- Accurately maintains temperatures higher than room temperature
- Centrifuges temperature-sensitive cells under defined temperature conditions
- Active heating to 40°C
- Standby heating
- Temperature deviation in stationary state at 4°C and at 37°C of ≤1°C

INCLUDES:

Centrifuge only

REQUIRED ACCESSORIES:

Rotor (sold separately at right and on following page)

Model	Type	Mfr. No.	Cat. No.	Each
5702	Ventilated	022626001	**05-400-300**	1925.00
5702R	Refrigerated	022626205	**05-400-240**	4700.00
5702RH	Heating/Refrigerated	022626213	**04-987-370**	5801.22

SPECIFICATIONS

Capacity	4 × 85mL
Maximum Speed/RCF	4400rpm (3000×G)
Speed Control	Variable, microprocessor-based
Timer	30 sec. to 99 min., plus Hold
Temperature Control (Models 5702R/5702RH only)	-9° to +40°C (16° to 104°F)
Electrical Requirements	120V 60Hz
Dimensions	
Model 5702	16D × 12½W × 9½"H (41 × 32 × 24cm)
Models 5702R/5702RH	22¾D × 15W × 10¼"H (58 × 38 × 26cm)

05-400-300

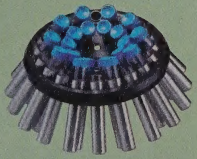
ORDERING INFORMATION:

Rotor options: Choose from 4 × 85mL Swinging Bucket Rotor (05-400-328) with round or square aerosol-tight buckets (sold separately); 8 × 15mL Swinging Bucket Rotor (05-400-301); 10 × 15mL Fixed-Angle Rotor (05-400-305); 24 × 1.5/2.0mL Fixed-Angle Rotor (05-400-370); 18 × 1.0/2.0mL Cryogenic Tube Rotor (05-400-371); or 30 × 15mL Fixed-Angle Rotor (05-400-304). Rotors are designed for quick acceleration and minimal heating of samples, are autoclavable, and can be used with all three models. All rotors and accessories sold separately.

ACCESSORIES

30-Place Fixed-Angle Rotors

30 or 10 × 15mL capacity



05-400-304

- Max. speed/force: 4400rpm/2750×G
- 05-400-304 includes 30 steel adapter sleeves, 20 cushions for conical tubes and 30 cushions for round-bottom tubes
- 05-400-305 includes 10 steel adapter sleeves, 10 cushions for conical tubes and 10 cushions for 15mL round-bottom tubes

Capacity	Mfr. No.	Cat. No.	Each
30 × 15mL	022639404	**05-400-304**	575.00
10 × 15mL	022639421	**05-400-305**	410.51

Tube Adapters

For use with fixed-angle rotors 05-400-304 and 05-400-305. Steel adapter sleeves without cushions accept 15mL conical or round-bottom tubes.

NOTE: Sleeves and adapters are sold in packs of 10. Be sure to order the proper number to fully equip your rotor.

Description	For Tubes	Mfr. No.	Cat. No.	Pack of 10
Steel Sleeves	15mL	022639439	**05-400-307**	219.82
Cushions	15mL conical	022639447	**05-400-306**	139.52
Cushions	15mL round-bottom	022639455	**05-400-308**	34.20

ACCESSORIES

Eight-Place Swinging Bucket Rotor

8 × 15mL capacity

For use Eppendorf* 5702 series centrifuges.

- Max. speed/RFC: 4400rpm/2800×G
- Accept conical or round-bottom tubes with appropriate adapters

05-400-301

Capacity	Mfr. No.	Cat. No.	Each
8 × 15mL	022639501	**05-400-301**	255.96

Tube Adapters

Fit in bucket supplied with 05-400-301 swinging bucket rotor to accept 15mL glass or conical tubes.

For Tubes	Mfr. No.	Cat. No.	Pack of 8
Glass	022639510	**05-400-302**	27.16
Conical	022639528	**05-400-303**	111.42

Four-Place Swinging Bucket Rotor

4 × 85mL capacity

- Max. speed/RFC: 4400rpm/3000×G (with round bucket 05-400-320)
- Can be used with round buckets with optional aerosol-tight lids or high-capacity square buckets for round-bottom tubes
- Round buckets accommodate conical and round-bottom tubes from 1.1 to 85mL
- Square buckets (05-400-309) accommodate round-bottom tubes from 5 to 25mL and can reach speeds up tp 4400rpm/2750×G

05-400-318

REQUIRED ACCESSORIES:
Buckets; purchase with rotor or separately

Model	Mfr. No.	Cat. No.	Each
With 4 × 85mL round buckets	022639048	**05-400-318**	650.00
Without buckets	022639064	**05-400-328**	430.54

Round Buckets

For use with 05-400-328 swinging bucket rotor or as replacements for buckets supplied with 05-400-318. Accommodate conical and round-bottom tubes from 1.1 to 85mL with appropriate adapters.

Capacity	Mfr. No.	Cat. No.	Pack of 4
4 × 85mL	022639081	**05-400-320**	585.00

Aerosol-tight Bucket Covers

For use with 05-400-320 round buckets. Covers fit over buckets individually to provide an aerosol-tight seal.

Mfr. No.	Cat. No.	Pack of 2
022639293	**05-400-319**	94.50

Tube Adapters for Round Buckets

Fit in round bucket 05-400-320 to accept tubes from 1.1 to 85mL. **NOTE:** Adapters are sold in packs of two. Be sure to order proper number to fully equip your rotor.

For Tubes	For Tube Outside Dia.	No. of Slots	Mfr. No.	Cat. No.	Pack of 2
1.1 to 1.4mL	8.5mm	5	022639285	**05-400-326**	261.00
2 to 7mL	12.5mm	4	022639242	**05-400-317**	261.00
4 to 10mL	16mm	4	022639269	**05-400-325**	261.00
9 to 15mL	17.5mm	4	022639129	**05-400-322**	261.00
15mL conical	17.5mm	1	022639188	**05-400-323**	144.00
15mL conical	17.5mm	2	022639200	**05-400-321**†	261.00
25mL	25mm	1	022639145	**05-400-315**	144.00
50mL conical	30mm	1	022639226	**05-400-324**	144.00
85mL	38mm	1	022639161	**05-400-316**	144.00

† Not compatible with aerosol-tight covers.

Square Bucket

For use with 05-400-328 to accept round-bottom tubes from 5 to 25mL with appropriate adapters.

Capacity	Mfr. No.	Cat. No.	Each
4 × 90mL	022639307	**05-400-309**	455.57

Tube Adapters for Square Bucket

Fit in square bucket 05-400-309 to accept round-bottom tubes from 5 to 25mL. **NOTE:** Adapters are sold in packs of two. Be sure to order the proper number to fully equip your rotor.

For Tube	No. of Slots	Mfr. No.	Cat. No.	Pack of 2
5 to 7mL	10	022639323	**05-400-310**	131.49
9mL	8	022639340	**05-400-311**	131.49
15mL	6	022639366	**05-400-312**	92.46
25mL	2	022639391	**05-400-314**	131.49

24-Place Fixed-Angle Rotor

24 × 1.5/2.0mL capacity

- Max. speed/RFC: 4400rpm/1770×G
- Angle: 45°
- Without lid

Capacity	Mfr. No.	Cat. No.	Each
24 × 1.5/2.0mL	022639471	**05-400-370**	455.57

18-Place Fixed-Angle Cryogenic Tube Rotor

18 × 1.0/2.0mL capacity

- Max. speed/RFC: 4400rpm/1840×G
- Directly accepts 17mm dia. screw-cap vials, or cryogenic vials (13mm dia.) with optional adapters
- Angle: 45°
- Without lid

Description	Mfr. No.	Cat. No.	Each
18 × 1.0/2.0mL rotor	022639480	**05-400-371**	525.00
Adapters for 1.5/2.0mL cryovials, set of 6	022639498	**05-400-372**	70.85

*Trademark. See Trademark Reference.

StatSpin* CritSpin* Microhematocrit System

Whisper-quiet compact system provides rapid, simple and safe hematocrits for office, lab or clinic

System offers complete cell packing with a preset, two-minute spin cycle that meets NCCLS Standard.

- Digital reader with large HCT display simplifies tube reading and minimizes error
- Readings are available as percent (to 0.5%) or decimal equivalent (to 0.005)
- Readings are unaffected by tube diameter, size or material
- Rotor installs and removes instantly; no tools required
- Tube balancing is not required with this vibration-free operation
- High-intensity, fiber-optic light brightly illuminates tubes while loaded in the rotor
- Cover interlock system prevents access until the rotor has completely stopped

CritSpin System:

CritSpin centrifuge, 12-place hematocrit rotor with transparent lid, CritSpin Digital Reader, start-up supply of capillary tubes and sealing clay, universal power supply, and interconnecting cable.

CritSpin Centrifuge:

12-place hematocrit rotor with transparent lid, card-style reader, start-up supply of capillary tubes and sealing clay, and universal power supply; CritSpin Digital Hematocrit Reader; 75mm adapter and universal power supply.

ORDERING INFORMATION:

Centrifuge and Digital Hematocrit Reader available separately or together as System (22-269-292).

COMPLIANCE:

NCCLS Standard

CERTIFICATIONS:

CE marked

Description	Mfr. No.	Cat. No.	Each
CritSpin Microhematocrit System	CS22	**22-269-292**	1642.33
CritSpin Centrifuge	CS12	**22-269-291**	1261.50
CritSpin Digital Hematocrit Reader	CSD2	**22-269-294**	443.70
Replacement 12-Place Hematocrit Rotor with Lid	RH12-1	**22-305-276**	105.58

CritSpin
MICRO-HEMATOCRIT CENTRIFUGE
CritSpin
StatSpin
SET

22-269-292

SPECIFICATIONS

Speed	15,800rpm
RCF	13,700×G
Programmed Run Time	120 seconds
Acceleration Time	≤6 seconds
Braking Time	≤10 seconds
Maximum Capacity	12 × 40mm capillary tubes
Electrical Requirements	100-240V, 50/60Hz, 1.7 amp
D × W × H	8⅝ × 6⅞ × 6" (22 × 17 × 15cm)
Weight	5 lb. (2.3kg)
CritSpin Reader	
Readout	LED display
Increments	0.5% or 0.005
Illumination	Fiber optic bundle
Maximum Tube Size	2.5 × 100mm
Electrical Requirements	100 to 240V, 50/60Hz, 1.7 amp
D × W × H	6⅜ × 6⅞ × 2⅜" (16 × 17 × 6cm)
Weight	1⅓ lb. (0.6kg)

StatSpin* MP Multipurpose Centrifuge

For microhematocrits, urine, sedimentation, and blood sample prep

ORDERING INFORMATION:

Shipping weight: 9 lb. (4.1kg)

INCLUDES:

Centrifuge, 12-place hematocrit rotor and reader, two-place tube rotor for urine and blood tubes, vial of HCT tubes (22-269-245) and HCT Sealant Pad (22-269-247)

StatSpin MP

22-314-934

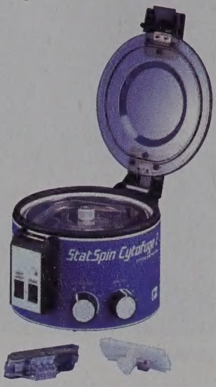
Mfr. No.	Cat. No.	Each
SSMP	**22-314-934**	1814.84

Application	Sample Volume Required	Speed/RCF	Cycle Time (seconds)
Chemistry			
Plasma (routine chemistry)	0.1 to 3.0mL	20,000rpm/11,200×G	30
HDL precipitation	0.05 or 0.5mL	15,800rpm/12,000×G	95
Clear Lipemic Samples	0.5 or 1.5mL	15,800rpm/12,000×G	95
Urine (toxicology)	1.5mL	15,800rpm/12,000×G	45
Hematology			
Platelet-poor plasma for coagulation	0.5 to 3.0mL	20,000rpm/11,200×G	120
Spun hematocrit	9µL	15,800rpm/12,000×G	120
Urinalysis			
Urine Sediment	1.5mL	9800rpm/3900×G	45

StatSpin* CytoFuge* 2 Personal Cytocentrifuge System

Concentrates cells from body fluids onto microscope slides with a level of cell recovery, clarity and detail that cannot be achieved with direct smear techniques

Consistent samples are processed quickly and quietly; monolayer cell presentations preserve excellent morphological detail. Offers a choice of filter- or gasket-seal concentrators to handle all specimens from routine body fluid preparations to multiple cell concentrations or controls on the same slide. The broad range of selectable speeds and run times allow precise reproduction of most procedures.



22-001-1

Operating Features

- Maximum speed/RCF: 4000rpm/1060×G
- Intuitive speed and cycle time controls
- Cover interlock prevents operation if cover is not completely closed; automatically releases upon cycle completion
- Automatic acceleration and braking rates assure rapid, gentle starts and stops
- Quiet-running and compact to fit any hood or benchtop space
- Unit and rotor can be easily disinfected

Rotor Features

- Requires no trunnion carriers or clamps
- High-strength chassis and unbreakable see-through lid ensure mechanical containment
- Leak-resistant and gasketed for improved biohazard containment

Disposable Polypropylene Filter Concentrators

- Hinged backing plate simplifies assembly
- Integral cellulose fiber filter card absorbs fluids at a controlled rate during centrifugation
- Cells are greatly concentrated into a monolayer with minimal loss in the filter material
- Reusable filter concentrators can be used 20 times; replace filter card before each use

Disposable/Reusable Cell Concentrators

- Available in both one- and three-well formats
- Silicone gasket-sealed for excellent application versatility and economy
- Transparent plastic
- Autoclavable versions available

INCLUDES:

Centrifuge, 100/240V power supply, four-place rotor w/cover, four filter concentrators w/clips, four one-well cell concentrators w/gaskets, four three-well cell concentrators w/gaskets, 10 cell concentrator clips, four cell concentrator backing plates.

SPECIFICATIONS

Rotor Capacity	Four slides
Speeds, RPM (RCF)	600 (20×G); 700 (27×G); 850 (40×G); 1000 (55×G); 1300 (93×G); 1600 (140×G); 2200 (265×G); 4400 (1060×G)
Operating Times	2, 4, 6, 8, 10 and 30 min.
Electrical Requirements	110/240V 50/60Hz
W × D × H	6.8 × 8.6 × 4.8" (16.3 × 19.3 × 12cm)

Description	Mfr. No.	Cat. No.	Quantity	Price
CytoFuge 2 System	CF02	**22-001-1**	Each	3946.79
Accessories (Autoclavable)				
Filter Clips (filter conc.)	FFCL	**04-981-2**	4 Clips	40.57
Stainless-Steel Clips (cell conc.)	CLIP	**22-020-739**	10 Clips	42.50
Backing Plates	BP01	**22-020-740**	10 Plates	33.70
Filter Concentrators/Cell Concentrators				
12 Heat-sealed Bags of 4	FF01	**04-981-1**	48 Concentrators	106.53
Reusable Type w/ 200 Filter Cards	FFR1	**04-981-3**	200 Concentrators	117.55
3-well w/Gasket (Disposable)	CC03	**22-020-737**	10 Concentrators	27.03
1-well w/Gasket (Disposable)	CC01	**22-020-738**	10 Concentrators	27.03
1-well w/Gasket (Autoclavable)	CCR1	**22-033-337**	10 Concentrators	75.31
3-well w/Gasket (Autoclavable)	CCR3	**22-033-338**	10 Concentrators	75.31
Silicone Gaskets—Use w/CC01, -CCR1, -CC03, -CCR3				
1-well Silicone Gaskets	GK01	**22-029-483**	100 Gaskets	43.59
3-well Silicone Gaskets	GK03	**22-029-484**	100 Gaskets	54.96

THERMO SCIENTIFIC* IEC* ACCESSORIES

Fisher Scientific offers a selection of rotors and adapters for older Thermo Scientific IEC centrifuges, including the Centra* series, HN-SII, K and EXD. For these products, as well as Centrac* and Ultrac* adapters, go online!

Visit www.fishersci.com and search for Thermo Scientific IEC Accessories

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

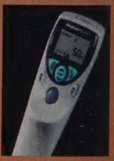
LOOKING FOR MORE?

Fisher Scientific offers more choices online, including the Fisher HealthCare/Drucker Horizon series centrifuges—perfect for clinical labs and physicians' offices.

Visit www.fishersci.com and search for Fisher HealthCare/Drucker

LOOKING FOR LIQUID HANDLING PRODUCTS?

Fisher Scientific offers unsurpassed selection for all of your liquid handling and dispensing needs. From simple dispensers to state-of-the-art ergonomic pipetters, you'll find all these products in the following sections: Pipet Fillers, Pipets, Pipetters, and Pipetter Tips.



CELL WASHERS

Thermo Scientific* Sorvall* CW2 Plus Cell Washer

Compact, automated system quickly and efficiently washes blood cells for antiglobulin reagent tests

Fits easily on most desks or benchtops.

Operating Features

- Intuitive user interface
- Microprocessor control and digital display of time and wash cycles
- Fast, automatic wash cycle with quick acceleration/braking
- Replaceable tube holders
- Supplied autoclavable rotor doubles as an incubator rack
- Single distributor for standard tubes
- Saline level detection/alarm system
- Agitates automatically after each decant (cycle is also manually operable)
- Flexible, single-speed manual mode for general pelleting applications

22-243-600

Low Maintenance

- Easy-to-clean, high-impact, corrosion-resistant housing
- Quiet, maintenance-free brushless drive
- Lifetime lubrication of all moving parts

INCLUDES:
Rotor

CERTIFICATIONS:
CSA NRTL, CSA, CE

Description	Mfr. No.	Cat. No.	Each
Cell Washer with Rotor	4531	**22-243-600**	7934.00

SPECIFICATIONS

Max. Speed (rpm)	3550 at 60Hz
Fill/decant speed (rpm)	700 at 60Hz (580 at 50Hz)
Maximum RCF (×G)	1200
Decant RCF (×G)	40
Max. Capacity	(12 Tubes) 12mm × 75mm or 10mm × 75mm tubes
Operating Modes	
Automatic	80 sec. wash cycle
Manual	High speed for time selected
Check	Stops at end of each step in cycle to enable procedure verification
Controls	
Mode	Select operating mode (auto or manual)
Cycle	Select 1, 2, 3, or 4 wash cycles in automatic mode
Time	Select centrifugation time in manual mode (999 sec.)
Command	Select operating function: start, stop, check, manual, agitate, alarm ON/OFF, low saline
Drive	2-speed brushless induction motor; dynamic braking in automatic mode
Construction	
Rotor	Polypropylene with replaceable tube holders
Collection bowl	Polypropylene
Safety and Effectiveness	510(k) number BK820020
Dimensions (H × D × W)	24.7 × 17.1 × 12.6" (62.7 × 43.4 × 32.0cm) lid open 15.2 × 17.1 × 12.6" (38.6 × 43.4 × 32.0cm) lid closed
Electrical Requirements	120/240V 60Hzz
Weight lb. (kg)	39.3 (17.8) crated; 34 (15.4) uncrated

ACCESSORIES

FIBER*Lite** Centrifuge Rotors

Carbon fiber rotors are lightweight, durable alternatives to metallic rotors

Available in fixed-angle (FA) or swinging bucket (SB) styles for the centrifuges listed in the table below.

- Weigh half as much as metallic rotors for easier handling, less wear on centrifuge drive
- Accelerate and decelerate faster for shorter run times and more efficient processing
- Excellent insulative properties permit samples to be run at a constant temperature throughout centrifugation process
- Resist corrosion from alkalis and organic solvents
- Accept standard bottle and tube sizes
- Autoclavable and coldroom compatible
- Clean easily with standard detergents
- Hub-specific: each rotor is designed for a particular centrifuge model

Standard Models

- With straight top and lid

Enhanced Liquid Containment (ELC Models)

- Special lid and curved annulus
- Annulus designed with volume equal to one bottle from that rotor, contains fluid leaks that might occur during centrifugation
- Eliminates imbalance problems and spindle damage from fluids leaking into centrifuge chamber; also provides convenient lifting handle

WARRANTY: Limited lifetime

Ordering Information on next page.

FIBER*Lite** Centrifuge Rotors, Contd.

Capacity	Style	Max. Speed	Max. RCF	Type	Replaces Rotor(s)	Fits Centrifuge(s)	Cat. No.	Each
For Beckman Centrifuges								
----	SB	3200rpm	1938×G	----	GH 3.8	GS-6, Allegra, GP Series	**15-700-749**	4200.00
6 x 1000mL	FA	6000rpm	7903×G	ELC	JS-3.0/JS-4.2/JS-5.2	J6 Series	**15-700-764**	15,500.00
4 x 1000mL	FA	9000rpm	15,241×G	ELC	No Equivalent	J2 Series	**15-700-730**	14,500.00
6 x 500mL	FA	10,000rpm	17,696×G	ELC	JA-10/JLA-10.500	J2 Series	**15-700-726**	9800.00
6 x 250mL	FA	14,000rpm	30,074×G	ELC	JA-14	J2 Series	**15-700-728**	8100.00
6 x 250mL	FA	6000rpm	5524×G	Standard	No Equivalent	J2 Series	**15-700-748**	4400.00
14 x 50mL	FA	13,000rpm	28,960×G	ELC	JA-12	J2 Series	**15-700-720**	7600.00
12 x 50mL	FA	18,000rpm	46,086×G	Standard	JA-17	J2 Series	**15-700-721**	5700.00
8 x 50mL	FA	21,000rpm	52,356×G	Standard	JA-20	J2 Series	**15-700-723**	6500.00
For Eppendorf* Centrifuges								
8 x 50mL	FA	12,000rpm	16,773×G	Standard	No Equivalent	5804/5810	**15-700-756**	3400.00
48 x 1.5/2.0mL	FA	14,000rpm	20,854×G	Standard	F-45-30-11, FA-45-30-11	5804/5810	**15-700-751**	1600.00
30 x 1.5/2.0mL	FA	14,000rpm	20,854×G	Standard	F-45-30-11, FA-45-30-11	5804/5810	**15-700-754**	1400.00
30 x 1.5/2.0mL	FA	14,000rpm	20,854×G	Standard	F-45-30-11, FA-45-30-11	5417 Series	**15-700-753**	1400.00
----	SB	3200rpm	1824×G	----	A-2-DWP, A-4-62-MTP	5804/5810	**15-700-758**	3360.00
For Thermo Scientific* Sorvall* Centrifuges								
6 x 1000mL	FA	6000rpm	6774×G	ELC	No Equivalent	RC3 Series	**15-700-767**	15,500.00
4 x 1000mL	FA	6000rpm	6774×G	ELC	No Equivalent	RC3 Series	**15-700-716**	14,500.00
6 x 500mL	FA	10,000rpm	17,696×G	ELC	SLA-3000, GS-3	RC2, RC5, RC6, RC26, Evolution RC Series	**15-700-710**	9800.00
6 x 250mL	FA	14,000rpm	30,074×G	ELC	GSA	RC2, RC5, RC6, RC26, Evolution RC Series	**15-700-712**	8100.00
6 x 250mL	FA	10,000rpm	15,344×G	Standard	No Equivalent	Legend T/RT Plus Series	**15-700-743**	4400.00
14 x 50mL	FA	13,000rpm	28,960×G	ELC	SLA-600TC	RC2, RC5, RC6, RC26, Evolution RC Series	**15-700-703**	7600.00
14 x 50mL	FA	8000rpm	10,967×G	Standard	Highconic	Legend T/RT Plus Series	**15-700-734**	5200.00
12 x 50mL	FA	18,000rpm	46,086×G	Standard	SA-600	RC2, RC5, RC26, Evolution RC Series	**15-700-704**	5700.00
8 x 50mL	FA	21,000rpm	52,356×G	Standard	SS-34	RC2, RC5, RC6, RC26, Evolution RC Series	**15-700-706**	6500.00
8 x 50mL	FA	12,000rpm	16,773×G	Standard	Highconic	Legend T/RT Plus Series	**15-700-737**	4400.00
48 x 1.5/2.0mL	FA	15,000rpm	23,940×G	Standard	Microliter	Legend T/RT Plus Series	**15-700-732**	2200.00
Ultra Rotors								
8 x 50mL	FA	30,000rpm	106,848×G	Standard	Beckman Type 28, Sorvall A-841	Beckman L Series; Sorvall OTD, Discovery, Ultra Pro 80, WX Series	**15-700-778**	11,100.00
12 x 39mL	FA	30,000rpm	126,000×G	Standard	Beckman SW28, Sorvall Surespin 630	Beckman L Series; Sorvall OTD, Discovery, Ultra Pro 80, WX Series	**15-700-774**	11,800.00
6 x 13.5mL	FA	65,000rpm	324,142×G	Standard	Beckman 50 Ti, 70.1 Ti, 75 Ti, 90 Ti, SW41 Ti,; Sorvall T-865.1, T-875, T-880, T-890, T-1270, TH-641	Beckman L Series; Sorvall OTD, Discovery, Ultra Pro 80, WX Series	**15-700-786**	12,800.00

CHARCOAL

CHARCOAL

Choice of Fisherbrand* 6 to 14 mesh (3.35 to 1.40mm particle size) or 50 to 200 mesh (300 to 75µm particle size).

Quantity	Cat. No.	Each	Case of
6 to 14 Mesh			
1 lb. (454g)	**05-685A**	41.76	12/428.26
4 lb. (1.8kg)	**05-685B**	130.72	4/465.12
50 to 200 Mesh			
1 lb. (454g)	**05-690A**	44.84	12/459.91
4 lb. (1.8kg)	**05-690B**	133.20	4/474.42

FISHERbrand
FISHERbrand

05-685B and 05-685A

Visit www.fishersci.com and search for Charcoal

*Trademark. See Trademark Reference.

Prices subject to change.

CHROMATOGRAPHY

DISSOLUTION

SUN-SRi Dissolution Test Vessels

Precision formed with flat flange and hemispherical bottom

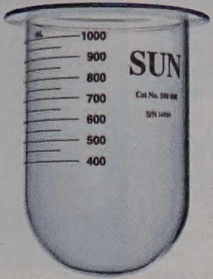
- Type 1, Class A borosilicate glass
- Glass vessels are serialized

COMPLIANCE:

Meet all specifications of USP XXIV, Monograph 711

Description	Mfr. No.	Cat. No.	Each
Clear, 1000mL, No Graduations	100 002	**22-037-015**	75.18
Clear, 1000mL, Graduated†	100 008	**14-823-122**	132.55
Amber, 1000mL, No Graduations	100 006	**14-823-121**	164.57

† Graduated in 50mL increments from 400 to 1000mL.

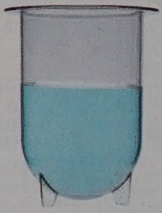


14-823-122

SUN-SRi Plastic Dissolution Vessel

For media preparation

- Comprised of clear styrene/acrylic/nitrile (SAN) plastic
- 1L capacity with molded feet and no graduations
- Chemically resistant to aqueous media such as 25% hydrochloric acid to 10% sodium hydroxide solutions



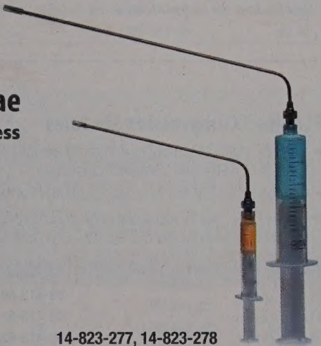
14-823-123

Description	Mfr. No.	Cat. No.	Each
1000mL, No Graduations	100 010	**14-823-123**	113.35

SUN-SRi Dissolution Testing Cannulae

Angled for easy access to samples

- Type 316 stainless steel
- Luer-Lok* connection for easy attachment
- Tip sleeve allows secure filter attachment



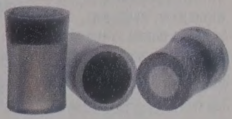
14-823-277, 14-823-278

Description	Mfr. No.	Cat. No.	Each
Cannula with 4⅜" Needle for 900mL Volume	401 350	**14-823-277**	73.74
Cannula with 7½" Needle for 500mL Volume	401 352	**14-823-278**	78.98

SUN-SRi Filter Tips

Economical dissolution filters

- Polyethylene with a limited porous area
- Fit securely on the end of a ⅛" cannula or sample probe



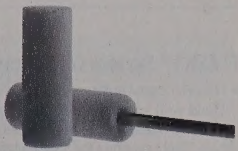
14-823 Series

Description	Mfr. No.	Cat. No.	Case of 1000
2µm Filter Tip	203 972	**14-823-233**	204.82
5µm Filter Tip	203 980	**14-823-234**	204.82
10µm Filter Tip	204 004	**14-823-500**	190.62
45µm Filter Tip	204 002	**14-823-235**	201.81

SUN-SRi SunFlo* Dissolution Filters

Made of Ultra High Molecular Weight (UHMW) foamed porous polyethylene

- Full flow design removes small particulates
- Fit securely on the end of a ⅛" cannula or sample probe



14-823-26 and -27 Series

Description	Mfr. No.	Cat. No.	Pack of 100	Mfr. No.	Cat. No.	Case of 1000
10µm Filter	400 104	**14-823-268**	66.99	400 105	**14-823-269**	581.10
20µm Filter	400 112	----	----	400 111	**14-823-274**	581.10
35µm Filter	400 101	**14-823-266**	66.38	400 102	**14-823-267**	581.10
45µm Filter	400 110	**14-823-273**	66.99	400 109	**14-823-272**	581.10
70µm Filter	400 107	**14-823-270**	66.99	400 108	**14-823-271**	586.69

LOOKING FOR AUTOSAMPLER VIALS?

See the Autosampler subsection in the Vials section or search for "autosampler vials" online.

Biotage* FLASH+* Chromatography Systems

09-413-63 with 09-413-79 ZIF-SIM10 and Test-tube Rack
(rack available as an optional accessory; sold separately, next page)

Designed for efficient performance, cartridge-based flash chromatography systems purify sample loads from 5mg to 5g

- Patented Zero Insertion Force (ZIF*) head assembly technology on compression modules improves sample purification by using axial compression on preadsorbed sample cartridges
- High-yield, high-performance purification
- Ideal for applications involving purification throughout multistep solution-phase synthesis in which complex mixtures can possibly occur
- Customizable and easily upgraded
- Inert stainless-steel and PTFE flow path for broad solvent compatibility
- Up to 100psig operation for faster flowrates and improved peak resolution
- Cartridge insertion and removal are easily accomplished

FLASH+ systems offer three methods for loading samples for purification:

1. Direct liquid injection onto the cartridge using the three-way injection valve
2. With patented Samplet* loading cartridges for preparation of multiple samples in advance
3. With patented Zero Insertion Force-Sample Injection Modules (ZIF-SIM*) for low-solubility samples such as oils

Core Components

- FLASH Start-up Kit
- Injection valve
- Solvent reservoir
- Choice of compression module

NOTE:
FLASH+ chromatography systems are customizable and can be upgraded at any time. Simply choose the precise set of components or correct component upgrade for your laboratory's specific requirements.

Building a Complete FLASH+ System†

Core Components†	ZIF-SIM(s)	Compression Module(s)	Additional Barrel(s)
A. **FLASH+ Start-Up Kit (09-413-76)** **Three-Way Injection Valve (09413-74)** **Air Regulator (09-413-75)**	ZIF-SIM10* **(09-413-79)**	FLASH 12+S **(09-413-60)**	FLASH 12+S **(09-413-68)**
		FLASH 12+M **(09-413-61)**	FLASH 12+M **(09-413-69)**
	ZIF-SIM10 **(09-413-79)** or ZIF-SIM35* **(09-413-80)**	FLASH 25+S **(09-413-62)**	FLASH 25+S **(09-413-70)**
		FLASH 25+M **(09-413-63)**	FLASH 25+M **(09-413-71)**
B. **1L Solvent Reservoir (09-413-77) or** **4L Solvent Reservoir (09-413-78)**	ZIF-SIM35 **(09-413-80)**	FLASH 40+S **(09-413-64)**	FLASH 40+S **(09-413-72)**
		FLASH 40+M **(09-413-65)**	FLASH 40+M **(09-413-73)**
	----	FLASH 65i **(09-413-66)**	----
	All	FLASH-Pac+ Set **(09-413-80)**	All

† Must purchase one each of A; choose one from B.

FLASH+* System Core Components

- FLASH+ Start-Up Kit with 12L × 4½W × 10"H (30.5 × 11.4 × 25.4cm) stand with swing-out arm and dispenser with Luer outlet port, 6' (1.8m) of ¼" (6.4mm) O.D. blue air tubing, air line adapter, four (two 2mL and two 10mL) syringes for sample loading, two stopcock valves, reservoir gasket, fittings, and adapters
- **Three-way Vertical Injection Valve** with Luer-Lok* adapter for liquids
- **Air Regulator** to regulate flowrates from 0 to 60psig
- **Stainless-steel Solvent Reservoirs** with solvent shut-off and relief valves (use 1L [0.3 gal.] for FLASH 12+*, 25+*, and 40+* compression modules; 4L [1.1 gal.] is used with the FLASH 65i* compression module only)

Description	Cat. No.	Each
FLASH+ Start-Up Kit	09-413-76	389.90
Three-Way Vertical Injection Valve	09-413-74	363.71
Air Regulator	09-413-75	146.22
1L Solvent Reservoir	09-413-77	1077.00
4L Solvent Reservoir	09-413-78	1077.00

FLASH+* Compression Modules

- With ZIF head assembly to distribute sample and solvent flow evenly through FLASH+ and Samplet* cartridges
- Choose from FLASH 12+*, 25+*, and 40+* with short or medium barrels
- FLASH-Pac+* set includes one each of FLASH 12+, 25+, and 40+ head assemblies; and one each of the 12+, 25+, and 40+ short and medium barrels

Description	Cat. No.	Each
FLASH 12+S	09-413-60	871.00
FLASH 12+M	09-413-61	922.00
FLASH 25+S	09-413-62	974.00
FLASH 25+M	09-413-63	1025.00
FLASH 40+S	09-413-64	1108.00
FLASH 40+M	09-413-65	1133.00
FLASH-Pac+* Set (contains one each of the 12+ S/M, 25+ S/M, and 40+ S/M Compression Modules)	09-413-67	4115.00

Contd. on next page.

Biotage* FLASH Chromatography Systems, Contd.

Additional FLASH+* Barrels

- For use with Compression Modules
- All FLASH+ compression modules include a head assembly and one short or medium barrel, depending on size ordered
- Barrels are interchangeable, so additional barrels of the same diameter can be ordered if the operator wants the ability to use both cartridge lengths

Description	Cat. No.	Each
FLASH 12+*S	**09-413-68**	337.51
FLASH 12+M	**09-413-69**	389.90
FLASH 25+*S	**09-413-70**	415.09
FLASH 25+M	**09-413-71**	441.29
FLASH 40+*S	**09-413-72**	467.48
FLASH 40+M	**09-413-73**	493.68

Zero Insertion Force-Sample Injection Modules (ZIF-SIM*) Modules and Tubing Kit

- Feature ZIF head assembly technology
- Add additional purification capabilities; use for simple, effective loading of liquid, oil, closely eluting, and low-solubility samples
- Choice of three silica capacities

09-413-79, 09-413-80, 09-413-81

INCLUDES:

ZIF head assembly; 20 disposable sample-loading barrels (each containing a bottom frit); top frits; polypropylene frit insertion tool; tubing kit (09-413-85; with Luer fitting with ⅛" tubing and ⅛" knurled nut [can also be purchased separately]); user's manual

Description	Holds	Cat. No.	Each
ZIF-SIM10* Module	0.09 oz. (2.5g)	**09-413-79**	510.00
ZIF-SIM35* Module	0.4 oz. (10g)	**09-413-80**	630.00
ZIF-SIM60* Module	0.7 oz. (20g)	**09-413-81**	716.00
ZIF-SIM Tubing Kit	----	**09-413-85**	40.40

Biotage* Samplet* Cartridges

Small, prepacked sample-loading cartridges for use with FLASH+* purification cartridges

- Function like guard columns, protecting cartridge from contamination and improving performance
- Increase loading capacity, compound retention, and resolution
- Many can be prepared at one time, reducing total sample preparation time
- Eliminate time-consuming rotary evaporation method, which diminishes silica and sample handling
- Accommodate a large range of sample sizes
- Available in KP-Sil* (Silica), KP-C18-HS* (reversed phase), and KP-NH* (Amine) materials

09-413 Series

To Use:

- Dissolve sample in solvent, apply sample solution to Samplet cartridges, evaporate, and insert Samplet cartridges into FLASH+ cartridges
- If dissolution solvent is nonpolar, adsorb the reaction mixture onto Samplet cartridges and load wet into the FLASH+ cartridges

Model	O.D.	I.D. × L	Amount of Sorbent Material	Sample Volume	Cat. No.	Case of
KP-Sil (Silica)						
FLASH 12+*	12mm	10 × 20mm	0.5g	1mL	**09-413-31**	48/147.61
FLASH 25+*	25mm	23 × 20mm	3g	5mL	**09-413-40**	48/137.06
FLASH 40+*	40mm	38 × 20mm	8g	10mL	**09-413-49**	48/167.66
KP-C18-HS (Reversed phase)						
FLASH 12+	12mm	10 × 20mm	0.6g	1mL	**09-413-34**	48/299.73
FLASH 25+	25mm	23 × 20mm	4.0g	5mL	**09-413-43**	20/273.45
FLASH 40+	40mm	38 × 20mm	10g	10mL	**09-413-52**	20/520.61
KP-NH (Amine)						
FLASH 12+	12mm	10 × 20mm	0.6g	1mL	**09-413-37**	48/287.14
FLASH 25+	25mm	23 × 20mm	4g	5mL	**09-413-46**	20/261.95
FLASH 40+	40mm	38 × 20mm	12g	10mL	**09-413-55**	20/498.71

ACCESSORIES

Test Tube Racks

- Use with any FLASH+* chromatography system to collect fractions
- Constructed of Sanalite* HDPE, the surface is chemical- and corrosion-resistant
- External dimensions: 13½L × 5W × 3½"H (34.3 × 12.7 × 8.9cm)

Tube Size (Dia. × Length)	No. of Holes	Cat. No.	Pack of 2
13 × 100mm	120	**09-413-86**	337.51
16 × 100mm	120	**09-413-87**	337.51
16 × 150mm	96	**09-413-88**	337.51
18 × 150mm	96	**09-413-89**	337.51
25 × 150mm	48	**09-413-90**	337.51

O-Rings

For use with various FLASH+ components; see ordering table to the right.

Material	For Use With	Cat. No.	Each
Chemraz* 107	Lower ZIF* Head of FLASH 12+* Compression Module	**09-414-08**	53.56
Chemraz 108	Upper ZIF Head of FLASH 12+ Compression Module, FLASH 12+ Barrel	**09-414-09**	43.51
Chemraz 206	ZIF-SIM35*, lower O-ring	**09-414-21**	88.00
Chemraz 208	Lower ZIF Head of FLASH 25+* Compression Module; ZIF-SIM35, upper O-ring	**09-414-10**	90.64
Chemraz 209	Upper ZIF Head of FLASH 25+ Compression Module; FLASH 25+ Barrel; ZIF-SIM60*, lower O-ring	**09-414-11**	100.94
Chemraz 215	Lower ZIF Head of FLASH 40+* Compression Module	**09-414-12**	101.97
Chemraz 218	Upper ZIF Head of FLASH 40+ Compression Module, FLASH 40+ Barrel	**09-414-13**	150.31
Chemraz 330	FLASH 65i* Compression Module	**09-414-14**	237.22

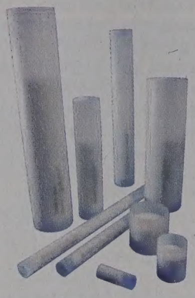
Biotage* FLASH+* HPFC Cartridges

Patented FLASH+ prepacked cartridges are flat on top and bottom for better performance

- Uniform particle-size distribution generates low elution bands
- Tolerate pressure to 100psig—enabling faster flowrates and use of higher viscosity solvents
- Recessed inlet provides room for Samplet* cartridges (sold separately)
- Food-grade polyethyene body
- Meet 21 CFR 177.1520 regulations; manufactured under strict ISO quality standards

Choice of Three Packing Materials

- **KP-Sil* Silica cartridges** feature 500m²/g surface area, 60Å porosity, 40 to 63µm particle size
- **KP-C18-HS* cartridges** are reversed phase, have 450m²/g surface area, 90Å porosity, 40 to 63µm particle size, contain 18% of carbon, and are endcapped
- **KP-NH* (Amine) cartridges** exhibit 320m²/g surface area, 100Å porosity, 40 to 75µm particle size; accept high sample loads of polar, amine-containing samples and allow minimal silanol interaction



09-413 Series FLASH+ Cartridges and 09-413 Series Samplet* cartridges (bottom right; sold separately, previous page)

Model	Sample Load	Volume (Overall)	I.D. × L (mm)	Cat. No.	Case of
KP-Sil (Silica)					
12+*S	4-200mg	6mL	12 × 75	**09-413-29**	20/116.57
12+M	8-400mg	12mL	12 × 150	**09-413-30**	20/137.03
25+*S	15-600mg	24mL	25 × 75	**09-413-38**	20/235.48
25+M	30-800mg	48mL	25 × 150	**09-413-39**	20/310.55
40+*S	40-2000mg	60mL	40 × 75	**09-413-47**	20/362.81
40+M	80-5000mg	120mL	40 × 150	**09-413-48**	20/577.00
KP-C18-HS (Reversed phase)					
12+S	0.4-20mg	6mL	12 × 75	**09-413-32**	2/66.95
12+M	0.8-40mg	12mL	12 × 150	**09-413-33**	2/111.45
25+S	1.5-60mg	24mL	25 × 75	**09-413-41**	2/237.22
25+M	3-80mg	48mL	25 × 150	**09-413-42**	2/310.55
40+S	4-200mg	60mL	40 × 75	**09-413-50**	1/195.30
40+M	8-500mg	120mL	40 × 150	**09-413-51**	1/362.81
KP-NH (Amine)					
12+M	2-100mg	12mL	12 × 150	**09-413-36**	20/440.19
25+S	4-200mg	24mL	25 × 75	**09-413-44**	20/399.98
25+M	8-400mg	48mL	25 × 150	**09-413-45**	20/630.00
40+S	15-800mg	60mL	40 × 75	**09-413-53**	5/403.00
40+M	20-1000mg	120mL	40 × 150	**09-413-54**	5/670.00

Biotage* FLASHi* Series Cartridges

Cost-sensitive FLASHi Series cartridges for use with older chromatography technology

- Uniform particle-size distribution
- Prepacked cartridges are curved on top and bottom
- Large particle-surface area
- Food-grade polyethyene body for easy disposal
- Meet 21 CFR 177.1520 regulations; manufactured under strict ISO quality standards

Choose from Two Packing Materials

- **KP-Sil* silica cartridges** feature 500m²/g surface area, 60Å porosity, 40 to 63µm particle size
- **KP-C18-HS* cartridges** are reversed phase and have 450m²/g surface area, 90Å porosity, 40 to 63µm particle size, 18% of carbon, and are endcapped

Model	Sample Load	Volume (Overall)	I.D. × L (mm)	Cat. No.	Price	Cat. No.	Case of
KP-Sil (Silica)							
12iS	4-200mg	5mL	12 × 75	**09-413-05EA**	Ea./5.70	**09-413-05**	20/104.55
12iM	10-400mg	10mL	12 × 150	**09-413-06EA**	Ea./6.75	**09-413-06**	20/123.83
40iS	100-1000mg	50mL	40 × 75	**09-413-09EA**	Ea./15.23	**09-413-09**	12/182.70
40iM	250-5000mg	100mL	40 × 150	**09-413-10EA**	Ea./24.54	**09-413-10**	12/294.47
40iL	300-7500mg	150mL	40 × 200	**09-413-11EA**	Ea./27.22	**09-413-11**	12/326.63
65i	800mg-13g	450mL	65 × 200	**09-413-15EA**	Ea./60.47	**09-413-15**	6/362.81
75iS	1.5-10g	320mL	75 × 90	**09-413-17**	Cs. of 2/218.82	**09-413-20**	10/1023.00
75iM	2.5-20g	535mL	75 × 150	**09-413-18**	Cs. of 2/305.27	**09-413-21**	10/1585.00
75iL	5-40g	1070mL	75 × 300	**09-413-19**	Cs. of 2/382.91	**09-413-22**	10/1796.00
150iM	18-125g	4.3L	150 × 300	**09-413-26**	Cs. of 2/1787.00	----	----
150iL	38-250g	8.6L	150 × 600	**09-413-27**	Cs. of 2/2555.00	----	----
KP-C18-HS (Reversed phase)							
12iS	4-200mg	5mL	12 × 75	----	----	**09-413-07**	2/66.30
12iM	10-400mg	10mL	12 × 150	----	----	**09-413-08**	2/110.64
40iS	100-1000mg	50mL	40 × 75	**09-413-12**	Ea./176.61	----	----
40iM	250-5000mg	100mL	40 × 150	**09-413-13**	Ea./342.71	----	----
65i	800mg-13g	450mL	65 × 200	**09-413-16**	Ea./925.00	----	----
75iL	5-40g	1070mL	75 × 300	**09-413-25**	Ea./2357.00	----	----
150iM	18-125g	4.3L	150 × 300	**09-413-28**	Ea./7381.00	----	----

*Trademark. See Trademark Reference.

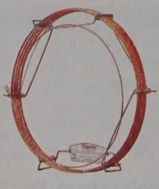
Prices subject to change.

GAS CHROMATOGRAPHY COLUMNS

Thermo Scientific* Trace* GC Columns

Extremely reliable GC columns 100% guaranteed for high performance

All Trace columns undergo rigorous testing procedures and include traceable serialized certificate. Technical support is available from Thermo Scientific.



Trace* GC Column

TR-1MS GC Columns

- 100% dimethyl polysiloxane
- Low bleed, nonpolar column for mass spectrometric detection
- High robustness, high reproducibility
- 380°C maximum operating temperature
- Stable to air contamination
- Use for a wide variety of applications that rely on the difference in boiling point

TR-5MS GC Columns

- 5% phenyl polysilphenylene-siloxane
- Low bleed for high signal to noise ratio
- High robustness, high reproducibility
- 360/370°C maximum operating temperature
- Smaller I.D.s available for faster chromatography

TR-WaxMS GC Columns

- Polyethylene glycol (PEG) phase
- High robustness, high reproducibility
- 280/300°C maximum operating temperature
- High resistance to oxygen and thermal breakdown

TR-1701 GC Columns

- 14% cyanopropylphenyl polysiloxane mid-polarity column
- Low bleed, low surface activity
- 300°C maximum operating temperature
- Useful for pesticide analysis and other applications where a change in elution order is required for confirmation purposes

TR-FAME GC Columns

- 70% cyanopropyl polysilphenylene-siloxane
- Specifically designed for the separation of Fatty Acid Methy Esters (FAMEs)—provides excellent separation of cis/trans isomers and FAMEs with various degrees of unsaturation
- 260°C maximum operating temperature
- Low bleed and high polarity for MS use

TR-V1 GC Columns

- Cyanopropylphenyl polysiloxane
- Mid-polarity, thick film column ensures good retention and separation of volatile compounds at low oven temperatures—ideal for EPA Methods 624 and 608
- 300°C maximum operating temperature
- Low bleed suitable for MS detection

I.D. × L	Film Thickness	Temp. Limits	Compare to Agilent* No.	Compare to Phenomenex* No.	Cat. No.	Each
TR-1MS Columns						
0.25mm × 30m	0.25µm	370/380°C	19091S-933	----	**26-0B14-2P**	465.00
TR-5MS Columns						
0.25mm × 30m	0.25µm	360/370°C	122-5032	7HG-G010-11	**26-0F14-2P**	429.75
0.25mm × 60m	0.25µm	360/370°C	----	----	**26-0F15-4P**	741.75
0.25mm × 60m	1.00µm	360/370°C	122-5563	----	**03-150-227**	741.75
0.32mm × 30m	0.25µm	360/370°C	123-5532	7HM-G010-11	**26-0F14-3P**	469.25
0.32mm × 30m	1.00µm	360/370°C	19091S-213	7HM-G010-22	**03-150-225**	469.25
TR-WaxMS Columns						
0.25mm × 30m	1.0µm	280/300°C	----	----	**03-150-151**	474.25
0.32mm × 30m	0.25µm	280/300°C	----	----	**26-0X14-3P**	505.50
0.32mm × 30m	0.5µm	280/300°C	----	----	**03-150-150**	582.50
0.53mm × 30m	1.0µm	280/300°C	----	----	**03-150-152**	639.75
TR-1701 Columns						
0.25mm × 15m	0.25µm	280/300°C	122-0712	7HM-G002-11	**03-150-248**	281.00
0.25mm × 30m	0.25µm	280/300°C	122-0732	7HM-G002-22	**03-150-250**	408.75
0.25mm × 60m	0.25µm	280/300°C	122-0762	7HK-G002-28	**03-150-252**	806.00
0.32mm × 15m	0.25µm	280/300°C	123-0712	7HM-G002-17	**03-150-249**	296.50
0.32mm × 30m	0.25µm	280/300°C	123-0732	7HK-G002-17	**03-150-251**	439.00
TR-FAME Columns						
0.25mm × 30m	0.25µm	250/260°C	122-2332	----	**03-150-239**	429.75
0.25mm × 60m	0.25µm	250/260°C	122-2362	----	**03-150-244**	741.75
0.32mm × 30m	0.25µm	250/260°C	123-2332	----	**03-150-240**	469.25
0.32mm × 60m	0.25µm	250/260°C	123-2362	----	**03-150-245**	781.25
TR-V1 Columns						
0.18mm × 20m	1.00µm	280/300°C	121-1324	----	**03-150-126**	361.00
0.25mm × 30m	1.40µm	280/300°C	122-1334	7EG-G003-11	**03-150-119**	425.50
0.25mm × 60m	1.40µm	280/300°C	122-1364	7EG-G003-17	**03-150-120**	697.00
0.32mm × 30m	1.80µm	280/300°C	123-1334	7EK-G003-22	**03-150-121**	454.50
0.32mm × 60m	1.80µm	280/300°C	123-1364	7HG-G003-11	**03-150-122**	761.50
0.53mm × 30m	3.00µm	280/300°C	125-1334	7HG-G003-17	**03-150-123**	484.75
0.53mm × 60m	3.00µm	280/300°C	125-1364	7HM-G003-11	**03-150-124**	801.00
0.53mm × 75m	3.00µm	280/300°C	125-1374	7HK-G003-17	**03-150-125**	1159.75

Restek* Rxi*-1ms Capillary Columns

Suggested Primary Applications for Rxi-1ms Columns

- Drugs of Abuse
- Essential Oils
- Hydrocarbons
- Pesticides
- PCB Congeners
- Sulfur Compounds
- Amines
- Solvent Impurities
- Simulated Distillation
- Oxygenates
- Gasoline Range Organics (GRO)
- Refinery Gases

Nonpolar phase, Crossbond* 100% dimethyl polysiloxane

- ▸ Fused silica capillary columns with exceptional inertness and reproducible retention
- ▸ Long lifetime
- ▸ Low bleed—improved signal-to-noise ratio, for better sensitivity and mass spectral integrity
- ▸ Equivalent to USP G2 phase

I.D.	Film	Temp. Limits	Mfr. No.	Cat. No.	Each
12m length					
0.20mm	0.33µm	-60 to +330/350°C	13397	**06-715-427**	240.00
15m length					
0.25mm	0.25µm	-60 to +330/350°C	13320	**06-715-402**	270.00
0.25mm	0.50µm	-60 to +330/350°C	13335	**06-715-408**	270.00
0.25mm	1.0µm	-60 to +330/350°C	13350	**06-715-416**	270.00
0.32mm	0.25µm	-60 to +330/350°C	13321	**06-715-403**	290.00
0.32mm	0.50µm	-60 to +330/350°C	13336	**06-715-409**	290.00
0.32mm	1.0µm	-60 to +330/350°C	13351	**06-715-417**	290.00
0.53mm	0.50µm	-60 to +330/350°C	13337	**06-715-410**	320.00
0.53mm	1.0µm	-60 to +330/350°C	13352	**06-715-418**	320.00
0.53mm	1.5µm	-60 to +330/350°C	13367	**06-715-424**	320.00
20m length					
0.18mm	0.18µm	-60 to +330/350°C	13302	**06-715-400**	385.00
0.18mm	0.36µm	-60 to +330/350°C	13311	**06-715-401**	385.00
25m length					
0.20mm	0.33µm	-60 to +330/350°C	13398	**06-715-428**	380.00
30m length					
0.25mm	0.25µm	-60 to +330/350°C	13323	**06-715-404**	450.00
0.25mm	0.50µm	-60 to +330/350°C	13338	**06-715-411**	450.00
0.25mm	1.0µm	-60 to +330/350°C	13353	**06-715-419**	450.00
0.32mm	0.25µm	-60 to +330/350°C	13324	**06-715-405**	475.00
0.32mm	0.50µm	-60 to +330/350°C	13339	**06-715-412**	475.00
0.32mm	1.0µm	-60 to +330/350°C	13354	**06-715-420**	475.00
0.53mm	0.50µm	-60 to +330/350°C	13340	**06-715-413**	535.00
0.53mm	1.0µm	-60 to +330/350°C	13355	**06-715-421**	535.00
0.53mm	1.5µm	-60 to +330/350°C	13370	**06-715-425**	535.00
50m length					
0.20mm	0.33µm	-60 to +330/350°C	13399	**06-715-429**	650.00
60m length					
0.25mm	0.25µm	-60 to +330/350°C	13326	**06-715-406**	805.00
0.25mm	0.50µm	-60 to +330/350°C	13341	**06-715-414**	805.00
0.25mm	1.0µm	-60 to +330/350°C	13356	**06-715-422**	805.00
0.32mm	0.25µm	-60 to +330/350°C	13327	**06-715-407**	850.00
0.32mm	0.50µm	-60 to +330/350°C	13342	**06-715-415**	850.00
0.32mm	1.0µm	-60 to +330/350°C	13357	**06-715-423**	850.00
0.53mm	1.5µm	-60 to +330/350°C	13373	**06-715-426**	910.00

Restek* Rxi*-5ms Capillary Columns

Suggested Primary Applications for Rxi-5ms Columns

- Semivolatiles
- Phenols
- Amines
- Drugs of Abuse
- PCB Congeners
- Solvent Impurities
- Residual Solvents
- Pesticides

Low-polarity phase, Crossbond* 5% diphenyl/ 95% dimethyl polysiloxane

- ▸ Fused silica capillary columns with exceptional reproducible retention
- ▸ High inertness for low level basic and acidic compounds
- ▸ Ultralow bleed—improved signal-to-noise ratio, for better sensitivity and mass spectral integrity
- ▸ Long lifetime
- ▸ Equivalent to USP G27 phase

I.D.	Film	Temp. Limits	Mfr. No.	Cat. No.	Each
12m length					
0.20mm	0.33µm	-60 to +330/350°C	13497	**06-715-457**	240.00
15m length					
0.25mm	0.25µm	-60 to +330/350°C	13420	**06-715-432**	270.00
0.25mm	0.50µm	-60 to +330/350°C	13435	**06-715-440**	270.00
0.25mm	1.0µm	-60 to +330/350°C	13450	**06-715-447**	270.00
0.32mm	0.25µm	-60 to +330/350°C	13421	**06-715-433**	290.00
0.32mm	0.50µm	-60 to +330/350°C	13436	**06-715-441**	290.00
0.32mm	1.0µm	-60 to +330/350°C	13451	**06-715-448**	290.00
0.53mm	0.25µm	-60 to +330/350°C	13422	**06-715-434**	320.00
0.53mm	0.50µm	-60 to +330/350°C	13437	**06-715-442**	320.00
0.53mm	1.0µm	-60 to +330/350°C	13452	**06-715-449**	320.00
0.53mm	1.5µm	-60 to +330/350°C	13467	**06-715-455**	320.00
20m length					
0.18mm	0.18µm	-60 to +330/350°C	13402	**06-715-430**	385.00
0.18mm	0.36µm	-60 to +330/350°C	13411	**06-715-431**	385.00
25m length					
0.20mm	0.33µm	-60 to +330/350°C	13498	**06-715-458**	380.00
30m length					
0.25mm	0.25µm	-60 to +330/350°C	13423	**06-715-435**	450.00
0.25mm	0.50µm	-60 to +330/350°C	13438	**06-715-443**	450.00
0.25mm	1.0µm	-60 to +330/350°C	13453	**06-715-450**	450.00
0.32mm	0.25µm	-60 to +330/350°C	13424	**06-715-436**	475.00
0.32mm	0.50µm	-60 to +330/350°C	13439	**06-715-444**	475.00
0.32mm	1.0µm	-60 to +330/350°C	13454	**06-715-451**	475.00
0.53mm	0.25µm	-60 to +330/350°C	13425	**06-715-437**	535.00
0.53mm	0.50µm	-60 to +330/350°C	13440	**06-715-445**	535.00
0.53mm	1.0µm	-60 to +330/350°C	13455	**06-715-452**	535.00
0.53mm	1.5µm	-60 to +330/350°C	13470	**06-715-456**	535.00
60m length					
0.25mm	0.25µm	-60 to +330/350°C	13426	**06-715-438**	805.00
0.25mm	0.50µm	-60 to +330/350°C	13441	**06-715-460**	805.00
0.25mm	1.0µm	-60 to +330/350°C	13456	**06-715-453**	805.00
0.32mm	0.25µm	-60 to +330/350°C	13427	**06-715-439**	850.00
0.32mm	0.50µm	-60 to +330/350°C	13442	**06-715-461**	850.00
0.32mm	1.0µm	-60 to +330/350°C	13457	**06-715-454**	850.00

Restek* Rtx*-1 Capillary Columns

Suggested Primary Applications for Rtx-1 Columns:

Solvents
Petroleum Products
Pharmaceuticals
Waxes
Fuel Oils

Similar in polarity to DB-1 and HP-1

- Nonpolar; coated with crossbonded polydimethylsiloxane (100% dimethylpolysiloxane)
- Manufactured from high-quality fused silica tubing
- Surrounded by a rugged stainless-steel cage
- Excellent thermal stability for low bleed at high temperatures

I.D.	Film	Temp. Limits	Mfr. No.	Cat. No.	Each
20m length					
0.10mm	0.10µm	-60 to +350°C	41102	**06-713-212**	465.00
30m length					
0.25mm	0.10µm	-60 to +350°C	10108	**06-708-229**	430.00
0.25mm	0.25µm	-60 to +350°C	10123	**06-708-263**	420.00
0.25mm	0.50µm	-60 to +350°C	10138	**06-708-316**	420.00
0.25mm	1.00µm	-60 to +340°C	10153	**06-708-361**	420.00
0.32mm	0.10µm	-60 to +350°C	10109	**06-708-233**	460.00
0.32mm	0.25µm	-60 to +350°C	10124	**06-708-273**	450.00
0.32mm	0.50µm	-60 to +350°C	10139	**06-708-322**	450.00
0.32mm	1.00µm	-60 to +340°C	10154	**06-708-366**	450.00
0.32mm	1.50µm	-60 to +330°C	10169	**06-708-417**	450.00
0.32mm	3.00µm	-60 to +300°C	10184	**06-708-474**	450.00
0.32mm	5.00µm	-60 to +280°C	10178	**06-708-441**	450.00
0.53mm	0.25µm	-60 to +340°C	10125	**06-708-279**	510.00
0.53mm	0.50µm	-60 to +330°C	10140	**06-708-329**	510.00
0.53mm	1.00µm	-60 to +330°C	10155	**06-708-376**	510.00
0.53mm	1.50µm	-60 to +330°C	10170	**06-708-420**	510.00
0.53mm	3.00µm	-60 to +290°C	10185	**06-708-479**	510.00
0.53mm	5.00µm	-60 to +290°C	10179	**06-708-446**	510.00
60m length					
0.25mm	0.25µm	-60 to +350°C	10126	**06-708-284**	745.00
0.25mm	0.50µm	-60 to +350°C	10141	**06-708-334**	745.00
0.25mm	1.00µm	-60 to +340°C	10156	**06-708-388**	745.00
0.32mm	0.25µm	-60 to +350°C	10127	**06-708-291**	805.00
0.32mm	0.50µm	-60 to +350°C	10142	**06-708-338**	805.00
0.32mm	1.00µm	-60 to +340°C	10157	**06-708-392**	805.00
0.32mm	1.50µm	-60 to +330°C	10172	**06-708-426**	805.00
0.32mm	3.00µm	-60 to +300°C	10187	**06-708-486**	805.00
0.32mm	5.00µm	-60 to +280°C	10180	**06-708-457**	805.00
0.53mm	0.50µm	-60 to +330°C	10143	**06-708-343**	835.00
0.53mm	1.00µm	-60 to +330°C	10158	**06-708-401**	835.00
0.53mm	5.00µm	-60 to +290°C	10183	**06-708-469**	835.00
105m length					
0.25mm	0.50µm	-60 to +350°C	10144	**06-708-346**	860.00
0.25mm	1.00µm	-60 to +340°C	10159	**06-708-404**	860.00
0.53mm	3.00µm	-60 to +290°C	10189	**06-708-493**	1075.00

Rtx*-1ms Capillary Columns

Low bleed— ideal for GC/MS

I.D.	Film	Temp. Limits	Mfr. No.	Cat. No.	Each
15m length					
0.25mm	0.25µm	-60 to +350°C	11620	**06-709-479**	280.00
0.25mm	0.50µm	-60 to +350°C	11635	**06-709-489**	280.00
0.25mm	1.00µm	-60 to +350°C	11650	**06-709-497**	280.00
30m length					
0.25mm	0.25µm	-60 to +350°C	11623	**06-709-483**	470.00
0.25mm	1.00µm	-60 to +350°C	11653	**06-709-502**	470.00
0.32mm	0.25µm	-60 to 330°C	11623-127	**06-709-485**	525.00
0.32mm	0.50µm	-60 to +350°C	11639	**06-709-494**	495.00
0.32mm	1.00µm	-60 to +350°C	11654	**06-709-505**	495.00
0.53mm	1.50µm	-60 to +330°C	11670	**06-709-510**	555.00

Restek* Rtx*-5 Capillary Columns - 30m Length

Suggested Primary Applications for Rtx-5 Columns:

Pesticides
PCBs
Aromatic Hydrocarbons
Environmental Samples
Essential Oils

Similar to DB–5, SPB–5, HP–5, and Ultra2 columns

- Popular general-purpose stationary phase—5% diphenyl/ 95% dimethyl polysiloxane
- Crossbond* technology results in longer lifetimes and low bleed, and allows for solvent rejuvenation

Inside Diameter	Film Thickness	Temp. Limits	Mfr. No.	Cat. No.	Each
30m Length					
0.25mm	0.10µm	-60 to +350°C	10208	**06-708-527**	430.00
0.25mm	0.25µm	-60 to +350°C	10223	**06-708-561**	420.00
0.25mm	0.50µm	-60 to +350°C	10238	**06-708-620**	420.00
0.25mm	1.00µm	-60 to +340°C	10253	**06-708-669**	420.00
0.32mm	0.25µm	-60 to +350°C	10224	**06-708-575**	450.00
0.32mm	0.50µm	-60 to +350°C	10239	**06-708-628**	450.00
0.32mm	1.00µm	-60 to +350°C	10254	**06-708-675**	450.00
0.32mm	1.50µm	-60 to +330°C	10269	**06-708-713**	450.00
0.32mm	3.00µm	-60 to +300°C	10284	**06-708-749**	450.00
0.53mm	0.25µm	-60 to +340°C	10225	**06-708-588**	510.00
0.53mm	0.50µm	-60 to +330°C	10240	**06-708-639**	510.00
0.53mm	1.00µm	-60 to +330°C	10255	**06-708-689**	510.00
0.53mm	1.50µm	-60 to +330°C	10270	**06-708-717**	510.00
0.53mm	3.00µm	-60 to +290°C	10285	**06-708-755**	510.00
0.53mm	5.00µm	-60 to +290°C	10279	**06-708-731**	510.00

Rtx*-5MS Capillary Columns, contd.

Developed specifically for GC/MS

- Nonpolar; 5% diphenyl/95% dimethyl polysiloxane
- Exceptionally low bleed at high temperatures
- Undergo rigorous QA testing to ensure they exceed the requirements of even the most sensitive MS

I.D.	Film	Temp. Limits	Mfr. No.	Cat. No.	Each
15m length					
0.25mm	0.25µm	-60 to +350°C	12620	**06-709-805**	280.00
0.25mm	1.00µm	-60 to +350°C	12650	**06-709-860**	280.00
0.53mm	1.00µm	-60 to +340°C	12652	**06-709-867**	305.00
30m length					
0.25mm	0.10µm	-60 to +350°C	12608	**06-709-797**	480.00
0.25mm	0.25µm	-60 to +350°C	12623	**06-709-811**	470.00
0.25mm	0.50µm	-60 to +350°C	12638	**06-709-844**	470.00
0.25mm	1.00µm	-60 to +350°C	12653	**06-709-869**	470.00
0.32mm	0.25µm	-60 to +350°C	12624	**06-709-821**	495.00
0.32mm	0.50µm	-60 to +350°C	12639	**06-709-849**	495.00
0.32mm	1.00µm	-60 to +350°C	12654	**06-709-872**	495.00
0.53mm	0.50µm	-60 to +340°C	12640	**06-709-852**	555.00
0.53mm	1.50µm	-60 to +330°C	12670	**06-709-881**	555.00
60m length					
0.25mm	0.25µm	-60 to +350°C	12626	**06-709-828**	750.00
0.32mm	0.25µm	-60 to +350°C	12627	**06-709-833**	810.00

Restek* Rtx*-5 Amine Capillary Columns

Suggested Primary Application for Rtx-5 Amine Columns:
Basic and Neutral Compounds

Tubing surface is chemically altered to eliminate tailing of basic compounds

- Crossbond* 5% diphenyl/95% dimethylpolysiloxane
- Column priming not required
- No derivatization needed
- Deactivation technology enables analysis of neutral compounds, adsorptive compounds with oxygen groups susceptible to hydrogen bonding, and even mildly acidic compounds such as phenols
- Compatible with samples having a water matrix
- Individual test chromatograms, supplied with each column, show ultra-low bleed levels at temperatures up to 315°C (599°F)

I.D.	Film	Temp. Limits	Mfr. No.	Cat. No.	Each
15m length					
0.25mm	0.25µm	-60 to +300/315°C	12320	**06-709-710**	335.00
0.25mm	0.50µm	-60 to +315°C	12335	**06-709-712**	335.00
0.25mm	1.00µm	-60 to +315°C	12350	**06-709-715**	335.00
0.32mm	1.00µm	-60 to +315°C	12351	**06-709-716**	355.00
0.53mm	1.00µm	-60 to +305°C	12352	**06-709-718**	370.00
0.53mm	3.00µm	-60 to +295°C	12382	**06-709-734**	370.00
30m length					
0.25mm	0.25µm	-60 to +300/315°C	12323	**06-709-711**	510.00
0.25mm	0.50µm	-60 to +315°C	12338	**06-709-714**	510.00
0.25mm	1.00µm	-60 to +315°C	12353	**06-709-721**	510.00
0.32mm	1.00µm	-60 to +315°C	12354	**06-709-725**	540.00
0.32mm	1.50µm	-60 to +305°C	12369	**06-709-733**	540.00
0.53mm	1.00µm	-60 to +305°C	12355	**06-709-729**	600.00
0.53mm	3.00µm	-60 to +295°C	12385	**06-709-737**	600.00

Restek* Rtx*-5Sil MS Capillary Columns

Suggested Primary Application for Rtx-5Sil MS Columns:
Semivolatiles by GC/MS

Ideal "scouting column" for method development

- Equivalent to a (5% Phenyl)—methylpolysiloxane
- Utilizes arylene technology for ultra low bleed and improved thermal stability
- Delivers excellent results on a broad pH range and wide spectrum of functional groups
- Ideal for the baseline separation of benzo(b)- and benzo(k)-fluoranthene
- 0.28mm I.D. columns increase sample capacity without a significant loss in resolution and are recommended for semivolatile pollutant analysis
- Individual test chromatogram included

I.D.	Film	Temp. Limits	Mfr. No.	Cat. No.	Each
15m length					
0.25mm	0.25µm	-60 to +350°C	12720	**06-709-900**	285.00
0.53mm	1.50µm	-60 to +330°C	12767	**06-709-939**	310.00
30m length					
0.25mm	0.25µm	-60 to +350°C	12723	**06-709-904**	470.00
0.25mm	0.50µm	-60 to +350°C	12738	**06-709-921**	470.00
0.25mm	1.00µm	-60 to +350°C	12753	**06-709-932**	470.00
0.32mm	0.25µm	-60 to +350°C	12724	**06-709-911**	495.00
0.32mm	0.50µm	-60 to +350°C	12739	**06-709-924**	495.00
0.32mm	1.00µm	-60 to +350°C	12754	**06-709-935**	495.00
40m length					
0.45mm	1.50µm	-60 to +310/330°C	12798	**06-709-956**	635.00
60m length					
0.25mm	0.25µm	-60 to +330/350°C	12726	**06-709-914**	750.00

Restek* Rtx*-35 Capillary Columns

Suggested Primary Application for Rtx-35 Columns:
Pesticides
Amines
Nitrogen-containing Herbicides

Similar to DB–35, DB–35MS, HP–35, SPB–35, SPB–608

- Crossbond* 35% diphenyl/65% dimethyl polysiloxane
- 30m length
- High phenyl content makes these columns ideal for second column confirmation
- Ideal for confirmation analysis of pesticides and herbicides
- Recommended for U.S. EPA Methods 8141, 619, and 622; equivalent to USP Phase G42
- Includes individual test chromatogram

Film Thickness	Temp. Limits	Mfr. No.	Cat. No.	Each
0.25mm I.D.				
0.25µm	0 to 320°C	10423	**06-708-857**	420.00
0.32mm I.D.				
0.25µm	0 to 320°C	10424	**06-708-863**	450.00
0.50µm	0 to 310°C	10439	**06-708-882**	450.00
1.50µm	0 to 290°C	10469	**06-708-923**	450.00
3.00µm	0 to 270°C	10484	**06-708-934**	450.00
0.53mm I.D.				
0.50µm	0 to 280°C	10440	**06-708-888**	510.00
1.00µm	0 to 280°C	10455	**06-708-910**	510.00
1.50µm	0 to 280°C	10470	**06-708-925**	510.00
3.00µm	0 to 260°C	10485	**06-708-935**	510.00

Restek* Rtx*-1701 Capillary Columns

Suggested Primary Applications for Rtx-1701 Columns:

Pesticides
PCBs
Alcohols
Oxygenates
Pharmaceuticals
Solvents

Using the Rtx-1701 column in conjunction with an Rtx-35/MXT*-35 or Rtx-5/MXT-5 column is ideal for confirmatory analysis

- Crossbond* 14% cyanopropylphenyl/86% dimethyl polysiloxane; ideal for the analysis of pesticides, solvents and drugs
- 30m length
- Low bleed
- Mix of cyano and phenyl functional groups increases the polarity of the column, making it useful for a wide variety of applications
- Include individual test chromatogram

Film Thickness	Temp. Limits	Mfr. No.	Cat. No.	Each
0.25mm I.D.				
0.25µm	-20 to +280°C	12023	**06-709-534**	420.00
0.50µm	-20 to +280°C	12038	**06-709-566**	420.00
1.00µm	-20 to +280°C	12053	**06-709-591**	420.00
0.32mm I.D.				
0.10µm	-20 to +280°C	12009	**06-709-522**	460.00
0.25µm	-20 to +280°C	12024	**06-709-541**	450.00
0.50µm	-20 to +280°C	12039	**06-709-568**	450.00
1.00µm	-20 to +280°C	12054	**06-709-594**	450.00
1.50µm	-20 to +260°C	12069	**06-709-617**	450.00
0.53mm I.D.				
0.25µm	-20 to +280°C	12025	**06-709-551**	510.00
0.50µm	-20 to +270°C	12040	**06-709-574**	510.00
1.00µm	-20 to +270°C	12055	**06-709-597**	510.00
1.50µm	-20 to +260°C	12070	**06-709-620**	510.00
3.00µm	-20 to +250°C	12085	**06-709-627**	510.00

Restek* Rtx*-Wax Capillary Columns

Suggested Primary Applications for Rtx-Wax Columns:

FAMEs
Essential Oils
Polar Solvents

With excellent selectivity compared to other Carbowax* columns

- Polyethylene glycol phase (Crossbond* polyethylene glycol) with extended operating temperatures for the analysis of compounds having a wide volatility range
- High polarity
- Provide thermal stability with guaranteed low bleed to 250°C (482°F); low (20°C) minimum usable temperature
- Ideal for fatty acid methyl esters (FAMEs), sugar derivatives, and food and flavor analysis; fast and efficient for BTEX analysis
- Include individual test chromatogram

Rtx-Wax Column

I.D.	Film	Temp. Limits	Mfr. No.	Cat. No.	Each
10m length					
0.10mm	0.10µm	20 to 250°C	41601	**06-713-224**	290.00
15m length					
0.25mm	0.10µm	20 to 250°C	12405	**06-739-292**	280.00
0.25mm	0.25µm	20 to 250°C	12420	**06-709-743**	270.00
0.25mm	0.50µm	20 to 250°C	12435	**06-739-300**	270.00
0.32mm	0.10µm	20 to 250°C	12406	**06-739-293**	295.00
0.32mm	0.25µm	20 to 250°C	12421	**06-739-296**	285.00
0.32mm	0.50µm	20 to 250°C	12436	**06-739-301**	285.00
0.32mm	1.00µm	20 to 250°C	12451	**06-739-306**	285.00
0.53mm	0.25µm	20 to 250°C	12422	**06-739-297**	305.00
0.53mm	0.50µm	20 to 250°C	12437	**06-739-302**	305.00
0.53mm	1.00µm	20 to 240/250°C	12452	**06-709-774**	305.00
30m length					
0.25mm	0.10µm	20 to 250°C	12408	**06-739-294**	430.00
0.25mm	0.25µm	20 to 250°C	12423	**06-709-747**	430.00
0.25mm	0.50µm	20 to 250°C	12438	**06-709-763**	430.00
0.32mm	0.10µm	20 to 250°C	12409	**06-739-295**	470.00
0.32mm	0.25µm	20 to 250°C	12424	**06-709-750**	460.00
0.32mm	0.50µm	20 to 250°C	12439	**06-709-765**	460.00
0.32mm	1.00µm	20 to 250°C	12454	**06-709-775**	460.00
0.53mm	0.25µm	20 to 250°C	12425	**06-739-298**	525.00
0.53mm	0.50µm	20 to 250°C	12440	**06-739-303**	525.00
0.53mm	1.00µm	20 to 240/250°C	12455	**06-709-777**	525.00
60m length					
0.25mm	0.25µm	20 to 250°C	12426	**06-709-753**	765.00
0.25mm	0.50µm	20 to 250°C	12441	**06-709-769**	765.00
0.32mm	0.25µm	20 to 250°C	12427	**06-709-756**	825.00
0.32mm	0.50µm	20 to 250°C	12442	**06-739-304**	825.00
0.32mm	1.00µm	20 to 240/250°C	12457	**06-709-783**	825.00
0.53mm	0.50µm	20 to 250°C	12443	**06-739-305**	855.00
0.53mm	1.00µm	20 to 240/250°C	12458	**06-709-785**	855.00

Restek* Stabilwax* Capillary Columns

Suggested Primary Applications for Stabilwax Columns:

FAMEs
Flavors
Acids
Essential Oils
Amines
Solvents
Xylene Isomers
BTEX

Polyethylene glycol phase resists damage from oxygen or moisture

- High thermal stability and inertness
- Crossbond* Carbowax* technology provides low bleed, increased column life, and solvent rinsability
- Ideal for the analysis of fatty acid methyl esters (FAMEs), sugar derivatives, and food and flavor analysis
- Include individual test chromatogram

I.D.	Film	Temp. Limits	Mfr. No.	Cat. No.	Each
15m length					
0.25mm	0.10µm	40 to 250°C	10605	**06-739-307**	280.00
0.25mm	0.25µm	40 to 250°C	10620	**06-709-019**	315.00
0.32mm	0.10µm	40 to 250°C	10606	**06-739-308**	295.00
0.32mm	0.25µm	40 to 250°C	10621	**06-739-316**	285.00
0.32mm	0.50µm	40 to 250°C	10636	**06-709-056**	285.00
0.32mm	1.00µm	40 to 240/250°C	10651	**06-709-091**	285.00
0.53mm	0.10µm	40 to 250°C	10607	**06-739-309**	305.00
0.53mm	0.25µm	40 to 250°C	10622	**06-739-317**	305.00
0.53mm	0.50µm	40 to 250°C	10637	**06-709-061**	305.00
0.53mm	1.00µm	40 to 240/250°C	10652	**06-709-095**	305.00
0.53mm	1.50µm	40 to 230/240°C	10666	**06-739-323**	320.00
0.53mm	2.00µm	40 to 220/220°C	10667	**06-802-650**	320.00
30m length					
0.25mm	0.10µm	40 to 250°C	10608	**06-739-310**	430.00
0.25mm	0.25µm	40 to 250°C	10623	**06-709-024**	430.00
0.25mm	0.50µm	40 to 250°C	10638	**06-709-063**	430.00
0.32mm	0.10µm	40 to 250°C	10609	**06-739-311**	470.00
0.32mm	0.25µm	40 to 250°C	10624	**06-709-030**	460.00
0.32mm	0.50µm	40 to 250°C	10639	**06-709-067**	460.00
0.32mm	1.00µm	40 to 240/250°C	10654	**06-709-102**	460.00
0.53mm	0.10µm	40 to 250°C	10610	**06-739-312**	525.00
0.53mm	0.25µm	40 to 250°C	10625	**06-709-038**	525.00
0.53mm	0.50µm	40 to 250°C	10640	**06-709-077**	525.00
0.53mm	1.00µm	40 to 240/250°C	10655	**06-709-109**	525.00
0.53mm	1.50µm	40 to 230/240°C	10669	**06-709-144**	525.00
0.53mm	2.00µm	40 to 220/230°C	10670	**06-709-150**	525.00
60m length					
0.25mm	0.10µm	40 to 250°C	10611	**06-739-313**	765.00
0.25mm	0.50µm	40 to 250°C	10641	**06-709-082**	765.00
0.32mm	0.25µm	40 to 250°C	10627	**06-739-318**	835.00
0.32mm	0.50µm	40 to 250°C	10642	**06-709-085**	825.00
0.32mm	1.00µm	40 to 240/250°C	10657	**06-709-119**	825.00
0.53mm	0.10µm	40 to 250°C	10613	**06-739-314**	855.00
0.53mm	0.25µm	40 to 250°C	10628	**06-709-052**	855.00
0.53mm	1.00µm	40 to 240/250°C	10658	**06-709-125**	855.00
0.53mm	1.50µm	40 to 230/240°C	10672	**06-709-156**	855.00

Restek* Stabilwax*-DA Capillary Columns

Suggested Primary Application for Stabilwax-DA Columns:

Underivatized Free Fatty Acids

Similar in polarity to DB-FFAP, OV-351, NUKOL FFAP, HP FFAP

- Polyethylene glycol stationary phase has high thermal stability up to 250°C (482°F)
- Crossbond* Carbowax* technology provides low bleed, increased column life, and solvent rinsability
- Resist oxidation and thermal breakdown
- Allow free fatty acids from C1 to C20 to be analyzed without derivatization; also works well for some inorganic acids
- Individual test chromatogram is provided with each column

Stabilwax* Column

I.D.	Film	Temp. Limits	Mfr. No.	Cat. No.	Each
15m length					
0.25mm	0.25µm	40 to 250°C	11020	**06-709-338**	275.00
0.53mm	0.50µm	40 to 250°C	11037	**06-709-364**	320.00
0.53mm	1.00µm	40 to 250°C	11052	**06-709-381**	320.00
30m length					
0.25mm	0.25µm	40 to 250°C	11023	**06-709-342**	445.00
0.25mm	0.50µm	40 to 250°C	11038	**06-709-367**	445.00
0.32mm	0.25µm	40 to 250°C	11024	**06-709-347**	480.00
0.32mm	0.50µm	40 to 250°C	11039	**06-709-368**	480.00
0.32mm	1.00µm	40 to 250°C	11054	**06-709-385**	480.00
0.53mm	0.10µm	40 to 250°C	11010	**06-709-334**	545.00
0.53mm	0.25µm	40 to 250°C	11025	**06-709-350**	545.00
0.53mm	0.50µm	40 to 250°C	11040	**06-709-369**	545.00
0.53mm	1.00µm	40 to 250°C	11055	**06-709-387**	545.00
0.53mm	1.50µm	40 to 240°C	11065	**06-709-397**	545.00
60m length					
0.32mm	0.50µm	40 to 250°C	11042	**06-709-374**	825.00
0.32mm	1.00µm	40 to 250°C	11057	**06-709-391**	825.00
0.53mm	1.50µm	40 to 240°C	11068	**06-709-399**	935.00

Restek* FAMEWAX* Capillary Columns

Suggested Primary Application for FAMEWAX Columns:

FAMEs

Application-specific columns for FAMEs

- Crossbond* polyethylene glycol
- Meet AOCS and AOAC method requirements
- Elution order of complex polyunsaturated fatty acid methyl esters (FAMEs) is comparable to that on other Carbowax* columns, but baseline resolution is achieved in significantly less time

I.D.	Film Thickness	Temp. Limits	Mfr. No.	Cat. No.	Each
0.25mm	0.25µm	20 to 250°C	12497	**06-709-787**	440.00
0.32mm	0.25µm	20 to 250°C	12498	**06-709-788**	480.00
0.53mm	0.50µm	20 to 250°C	12499	**06-709-789**	535.00

Restek* Rtx*-502.2 Capillary Columns

Suggested Primary Applications for Rtx-502.2 Columns:

Volatile Organic Pollutants
Gasoline Range Organics
Trihalomethanes
Light Hydrocarbons

Application-specific columns with unique selectivity for volatile organics

- Proprietary Crossbond* diphenyl/dimethyl polysiloxane phase
- Selectivity for volatile organic pollutants per US EPA Method 502.2, gasoline range organics (GRO) methods for monitoring underground storage tanks
- Separation of trihalomethanes
- Ideal polarity for light hydrocarbons and aromatics

I.D.	Film Thickness	Temp. Limits	Mfr. No.	Cat. No.	Each
20m Length					
0.18mm	1.00µm	-20 to +250/270°C	40914	**06-713-203**	385.00
30m Length					
0.25mm	1.40µm	-20 to +250/270°C	10915	**06-709-269**	460.00
0.32mm	1.80µm	-20 to +250/270°C	10919	**06-709-272**	490.00
0.53mm	3.00µm	-20 to +250/270°C	10908	**06-709-258**	545.00
40m Length					
0.18mm	1.00µm	-20 to +250/270°C	40915	**06-713-204**	690.00
60m Length					
0.25mm	1.40µm	-20 to +250/270°C	10916	**06-709-271**	765.00
0.32mm	1.80µm	-20 to +250/270°C	10920	**06-709-274**	825.00
75m Length					
0.45mm	2.55µm	-20 to +250/270°C	10986	**06-709-321**	995.00
105m Length					
0.32mm	1.80µm	-20 to +250/270°C	10921	**06-709-278**	1000.00
0.53mm	3.00µm	-20 to +250/270°C	10910	**06-709-264**	1100.00

Restek* Rtx*-624 Capillary Columns

Suggested Primary Applications for Rtx-624 Columns:

Volatile Organic Pollutants

Application-specific columns for volatile organic pollutants

- Crossbond* 6% cyanopropylphenyl/94% dimethyl polysiloxane
- Can be used with GC/MS system or PID in tandem with ELCD
- Excellent separation of the early-eluting gases

I.D.	Film Thickness	Temp. Limits	Mfr. No.	Cat. No.	Each
20m Length					
0.18mm	1.00µm	-20 to +240°C	40924	**06-713-206**	385.00
30m Length					
0.25mm	1.40µm	-20 to +240°C	10968	**06-709-286**	470.00
0.32mm	1.80µm	-20 to +240°C	10970	**06-709-293**	505.00
0.53mm	3.00µm	-20 to +240°C	10971	**06-709-299**	535.00
40m Length					
0.18mm	1.00µm	-20 to +240°C	40925	**06-713-208**	690.00
60m Length					
0.25mm	1.40µm	-20 to +240°C	10969	**06-709-290**	765.00
0.32mm	1.80µm	-20 to +240°C	10972	**06-709-305**	825.00
0.53mm	3.00µm	-20 to +240°C	10973	**06-709-311**	870.00
75m Length					
0.45mm	2.55µm	-20 to +240°C	10982	**06-709-320**	995.00
0.53mm	3.00µm	-20 to +240°C	10974	**06-709-313**	1030.00
105m Length					
0.53mm	3.00µm	-20 to +240°C	10975	**06-709-317**	1115.00

Restek* XTI*-5 Capillary Columns

Suggested Primary Applications for XTI-5 Columns:

Semivolatiles
Pesticides
PCBs
Environmental Samples
Essential Oils

Similar to DB5-HT, DB5-XLT, PTE-5

- Crossbond* 5% phenyl; highest thermal stability and lowest bleed of any similar column
- Resolve closely eluting isomers
- Include test chromatogram

I.D.	Film Thickness	Temp. Limits	Mfr. No.	Cat. No.	Each
15m length					
0.25mm	0.25µm	-60 to +360°C	12220	**06-709-635**	280.00
30m length					
0.25mm	0.25µm	-60 to +360°C	12223	**06-709-641**	470.00
0.25mm	0.50µm	-60 to +350°C	12238	**06-709-667**	470.00
0.32mm	0.25µm	-60 to +360°C	12224	**06-709-655**	495.00

Restek* Rtx*-CLPesticides Capillary Columns

Designed to overcome the coelutions and analyte breakdown typically encountered in chlorinated pesticide analyses for EPA Methods 8081, 608, and CLP

- Application-specific columns for organochlorine pesticides and herbicides; exceed performance criteria for US EPA methods 8081, 608, CLP
- Low bleed—ideal for GC/ECD or GC/MS analyses
- Baseline separations in less than 25 minutes
- Stable to 340°C

I.D.	Film Thickness	Temp. Limits	Mfr. No.	Cat. No.	Each
10m Length					
0.10mm	0.10µm	-60 to +310/330°C	43101	**06-713-245**	340.00
0.18mm	0.18µm	-60 to +310/330°C	42101	**06-713-239**	295.00
15m Length					
0.25mm	0.25µm	-60 to +310/330°C	11120	**06-709-400**	320.00
0.32mm	0.50µm	-60 to +310/330°C	11136	**06-709-403**	340.00
0.53mm	0.50µm	-60 to +310/330°C	11137	**06-709-404**	355.00
20m Length					
0.18mm	0.18µm	-60 to +310/330°C	42102	**06-713-240**	430.00
30m Length					
0.25mm	0.25µm	-60 to +310/330°C	11123	**06-709-401**	480.00
0.32mm	0.50µm	-60 to +310/330°C	11139	**06-709-405**	510.00
0.53mm	0.50µm	-60 to +310/330°C	11140	**06-709-407**	565.00
60m Length					
0.25mm	0.25µm	-60 to +310/330°C	11126	**06-709-402**	750.00

Restek* Rtx*-CLPesticides2 Capillary Columns

Application-specific columns for organochlorine pesticides and herbicides

- Low bleed for GC/ECD or GC/MS analyses
- Baseline separations in under 25 minutes
- Specially designed to overcome the coelutions and analyte breakdown typically encountered in US EPA methods 8081, 608, CLP

I.D.	Film Thickness	Temp. Limits	Mfr. No.	Cat. No.	Each
10m Length					
0.10mm	0.10µm	-60 to +310/330°C	43301	**06-713-246**	340.00
0.18mm	0.14µm	-60 to +310/330°C	42301	**06-713-243**	295.00
15m Length					
0.25mm	0.20µm	-60 to +320/340°C	11320	**06-709-439**	320.00
0.32mm	0.25µm	-60 to +320/340°C	11321	**06-709-440**	340.00
0.53mm	0.42µm	-60 to +300/320°C	11337	**06-709-446**	355.00
20m Length					
0.10mm	0.10µm	-60 to +310/330°C	43302	**06-713-247**	525.00
0.18mm	0.14µm	-60 to +320/340°C	42302	**06-713-244**	430.00
30m Length					
0.25mm	0.20µm	-60 to +320/340°C	11323	**06-709-441**	480.00
0.32mm	0.25µm	-60 to +320/340°C	11324	**06-709-442**	510.00
0.53mm	0.42µm	-60 to +300/320°C	11340	**06-709-448**	565.00
60m Length					
0.18mm	0.25µm	-60 to +320/340°C	11326	**06-709-444**	750.00

Restek* Rtx*-CLPesticides Column Kits

Application-specific columns for organochlorine pesticides and herbicides

- Exceed performance criteria for US EPA methods 8081, 608, CLP
- Column bleed measured by ECD is extremely low at temperatures greater than 300°C
- Baseline separations in less than 25 minutes
- Stable to 340°C

0.25mm I.D. Rtx-CLPesticides Kit

- Rtx-CLPesticides Column, 0.25mm I.D., 30m length, 0.25µm
- Rtx-CLPesticides2 Column, 0.25mm I.D., 30m length, 0.20µm
- Universal Angled Y Press-Tight* Connector
- Siltek* Guard Column, 0.25mm I.D., 5m length

0.32mm I.D. Rtx-CLPesticides Kit

- Rtx-CLPesticides Column, 0.32mm I.D., 30m length, 0.50µm
- Rtx-CLPesticides2 Column, 0.32mm I.D., 30m length, 0.25µm
- Universal Angled Y Press-Tight Connector
- Siltek Guard Column, 0.32mm I.D., 5m length

0.53mm I.D. Rtx*-CLPesticides Kit

- Rtx-CLPesticides Column, 0.53mm I.D., 30m length, 0.50µm
- Rtx-CLPesticides2 Column, 0.53mm I.D., 30m length, 0.42µm
- Universal Angled Y Press-Tight Connector
- Siltek Guard Column, 0.53mm I.D., 5m length

I.D.	Film Thickness	Mfr. No.	Cat. No.	Each
0.25mm	0.20µm Rtx-CLPesticides column and 0.25µm Rtx-CLPesticides2	11199	**06-709-424**	990.00
0.32mm	0.32µm Rtx-CLPesticides or Rtx-CLPesticides2	11198	**06-709-418**	1020.00
0.53mm	0.53µm Rtx-CLPesticides or Rtx-CLPesticides2	11197	**06-709-415**	1085.00

Restek* MXT-1 Sim Dist (metal, Siltek* treated) Capillary Columns

Stainless-steel capillary columns deactivated by proprietary process

- Meets all criteria for high-temperature simulated distillation, e.g., ASTM* Method D-6352
- Methyl silicone polarity

I.D.	Film Thickness	Temp. Limits	Mfr. No.	Cat. No.	Each
0.53mm	0.15µm	-60 to +400°C	70101	**06-713-286**	330.00

Restek* MXT-1HT Sim Dist (metal, Siltek* treated) Capillary Columns

Proprietary deactivation process applied to stainless-steel tubing

- Meets all resolution criteria for high temperature simulated distillation (e.g., ASTM* Method D-6352)
- Methyl silicone polarity
- Exhibits excellent peak shape and low bleed at 430°C

I.D.	Film Thickness	Temp. Limits	Mfr. No.	Cat. No.	Each
0.53mm	0.10µm	-60 to +430°C	70100	**06-713-284**	330.00

GAS CHROMATOGRAPHY ACCESSORIES

Thermo Scientific* Ferrules for Agilent* GCs

Inert, contaminant-free, and with tight dimensional requirements

- Use for Agilent* 5890, 6890, and 6850 instruments on injectors and detectors
- All ferrules are packaged in individual blister packs

100% Graphite Ferrules

- Soft material—can be compressed to grip with column; forms stable seal
- Porous to O_2 (not for GC/MS)
- Reusable

15% Graphite/85% Vespel* Ferrules

- Formed of a hard material that is mechanically robust and features a long lifetime
- Must retighten after initial temperature cycles
- For GC/MS interface
- Not reusable

03-050-2 series

Fits Column I.D.	Temp. Limit	Compare to Agilent No.	Mfr. No.	Cat. No.	Pack of 10
100% Graphite Ferrules					
0.1–0.32mm	450°C	5080-8853	290GA139	**03-050-226**	22.00
0.45–0.53mm	450°C	5080-8773	290GA140	**03-050-227**	22.00
15% Graphite/85% Vespel Ferrules					
0.10 to 0.25mm	350°C	5181-3323	290VA191	**03-050-285**	32.25
0.32mm	350°C	5062-3514	290VA192	**03-050-286**	32.25
0.45 to 0.53mm	350°C	5062-3512	290VA193	**03-050-287**	32.25

Thermo Scientific* GC Injection Port Liners

Precision manufactured for Agilent* and other leading instruments

- Improved reproducible vaporization
- Highly deactivated borosilicate glass
- Produced to exacting tolerances

FocusLiner* Injector Liners

- Contain quartz wool filters that improve the rate of vaporization, reducing the discrimination of high boiling analytes in the sample to provide high reproducibility
- Prevent nonvolatile components from entering the column, improving sensitivity and extending column lifetimes
- Lowers carryover
- Use to achieve Relative Standard Deviation (RSD) of <1%

Description	I.D. × O.D. × L	Packing Material	Compare to Agilent No.	Cat. No.	Pack of
Split/Splitless Glass FAST FocusLiner	2.3 × 6.3 × 78.5mm	Quartz Wool	20783	**453-A2-282**	25/328.00
Splitless Glass Liner with Recessed Gooseneck	2.0 × 6.3 × 78.5mm	No	5183-4712	**03-251-155**	5/77.00

Thermo Scientific* BTO* Septa

Durable, resealable, and with low bleed

- For use with Thermo Scientific Trace* and Focus* GCs and instruments from other manufacturers
- Supplied in individual contaminant-free blister packs
- Compare Cat. No. 31303230 to Agilent* Nos. 25183-4759, 701-0078, and 5080-8894-50

313-032-30

Material	Dia.	Injector Type	Temp. Limits	Cat. No.	Pack of 50
BTO* (Low Bleed Silicone)	11mm	Packed	400°C	**313-032-30**	72.83

Restek* Ferrules for Capillary Columns

Made of high-purity materials that will not contribute background impurities for sensitive and selective detectors

- Designed to seat securely in a variety of chromatography tube and pipe fittings.
- For 1⁄16" compression-type fittings.

06-717 Series

100% Graphite Ferrules

- High-density and contain no binders that can off-gas or absorb analytes
- With a smoother surface and cleaner edges than conventional graphite ferrules
- Ferrules are very soft and can be easily deformed for an effective seal with fused silica or glass columns
- Stable to 450°C (842°F)

Vespel*/Graphite Ferrules

- 60%/40% blend, offering the best combination of sealing performance and ease of workability
- Seal with minimal torque; preferred for vacuum and high-pressure uses such as GC/MS or other oxygen-sensitive detectors
- Hard material does not deform easily and may require retightening after several temperature cycles
- Reusable
- Stable to 400°C (752°F)

Ferrule I.D.	Fits Column I.D.	Mfr. No.	Cat. No.	Pack of
100% Graphite				
0.3mm	<0.20mm	20233	**06-717-641**	10/36.00
0.4mm	0.25/0.28mm	20200	**06-717-610**	10/30.00
0.4mm	0.25/0.28mm	20227	**06-717-635**	50/115.00
0.5mm	0.28/0.32mm	20201	**06-717-611**	10/30.00
0.5mm	0.28/0.32mm	20228	**06-717-636**	50/115.00
0.8mm	0.45/0.53mm	20202	**06-717-612**	10/30.00
0.8mm	0.45/0.53mm	20224	**06-717-632**	10/115.00
1.6mm	1.00mm	21060	**06-718-399**	10/30.00
Vespel/Graphite				
0.4mm	0.25/0.28mm	20211	**06-717-621**	10/35.00
0.4mm	0.25/0.28mm	20229	**06-717-637**	50/135.00
0.5mm	0.28/0.32mm	20212	**06-717-622**	10/35.00
0.5mm	0.28/0.32mm	20231	**06-717-639**	50/135.00
0.6mm	0.28mm (MXT)	20232	**06-717-640**	10/47.00
0.8mm	0.45/0.53mm	20213	**06-717-623**	10/35.00
0.8mm	0.45/0.53mm	20230	**06-717-638**	50/135.00

LOOKING FOR RESTEK* STANDARDS?

Standards for pesticides, diesel fuel, glycols, and more are available from Restek. For a complete listing,

Visit www.fishersci.com and search for Restek standards

Restek* Compact Ferrules

For Agilent* 5890, 6890, and 6850 columns

100% Graphite Ferrules

- High-density and contain no binders that can off-gas or absorb analytes
- With a smoother surface and cleaner edges than conventional graphite ferrules
- Ferrules are very soft and can be easily deformed for an effective seal with fused silica or glass columns
- Stable to 450°C (842°F)

06-717, -718, -710 Series

Vespel*/Graphite Ferrules

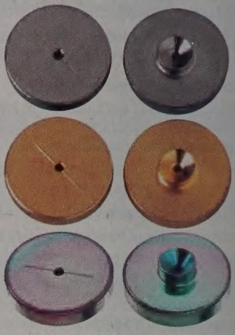
- 60%/40% blend, offering the best combination of sealing performance and ease of workability
- Seal with minimal torque; preferred for vacuum and high-pressure uses such as GC/MS or other oxygen-sensitive detectors
- Hard material does not deform easily and may require retightening after several temperature cycles
- Reusable
- Stable to 400°C (752°F)

Ferrule I.D.	Fits Column I.D.	Mfr. No.	Cat. No.	Pack of
100% Graphite				
0.4mm	0.25/0.28mm	20250	**06-717-649**	10/30.00
0.4mm	0.25/0.28mm	20251	**06-717-650**	50/115.00
0.5mm	0.28/0.32mm	21007	**06-718-349**	10/30.00
0.5mm	0.28/0.32mm	21008	**06-718-350**	50/111.00
0.8mm	0.45/0.53mm	20252	**06-717-651**	10/30.00
0.8mm	0.45/0.53mm	20253	**06-717-652**	50/111.00
1.0mm	0.75mm (for micropacked columns)	21059	**06-718-398**	10/30.00
Vespel/Graphite				
0.4mm	0.25/0.28mm	20239	**06-710-549**	1/195.00
0.5mm	0.28/0.32mm	20248	**06-717-647**	10/49.00
0.5mm	0.28/0.32mm	20249	**06-717-648**	50/195.00
0.8mm	0.45/0.53mm	20263	**06-717-658**	10/49.00
0.8mm	0.45/0.53mm	20264	**06-717-659**	50/195.00
1.6mm	1.0mm (for micropacked columns)	21057	**06-718-396**	10/50.00

Restek* Inlet Seals

Replacement seals for Agilent* 5890/6890/6850 split/splitless injection ports

- Increase column lifetime because oxygen cannot permeate into the carrier gas
- Reduced noise benefits high-sensitivity detectors (ECDs or MSDs)
- Special grade of stainless steel that is softer and deforms more easily, creating a better seal
- Gold-plated seals offer better inertness than standard stainless steel
- Siltek* seals feature inertness similar to that of fused silica capillary columns
- All seals include washers
- 1.2mm inlet seal is recommended for use with Vespel*/graphite ferrules or when installing two columns using a two-hole ferrule
- 0.8mm inlet seal is recommended for use with graphite ferrules and single capillary column installation



06-718 and 06-717 Series

Material	Mfr. No.	Cat. No.	Pack of 2	Pack of 10
Single-column Installation, 0.8mm Opening				
Stainless Steel	21315	**06-718-492**	45.25	----
Stainless Steel	21316	**06-718-493**	----	195.70
Gold Plated	21317	**06-718-494**	58.75	----
Gold Plated	21318	**06-718-495**	----	264.25
Silcosteel*	21319	**06-718-496**	58.75	----
Silcosteel	21320	**06-718-497**	----	264.25
Dual-column Installation, 0.25/0.32mm I.D., 1.2mm Opening				
Stainless Steel	20390	**06-717-746**	45.00	----
Stainless Steel	20391	**06-717-747**	----	195.00
Gold Plated	21306	**06-718-488**	----	264.25
Silcosteel	21308	**06-718-490**	----	264.25

Restek* Inlet Liners for Split Injection

Designed with mixing chambers and tortuous flow paths to fully vaporize samples into a homogeneous vapor cloud before reaching split point

- Fully deactivated to prevent degradation or adsorption of active compounds
- Wool packing traps nonvolatile residue and prevents column contamination when analyzing dirty samples
- Liners with Siltek*–deactivated surface offer high temperature stability, better durability and low bleed
- O.D. × L of all liners: 6.3 × 78.5mm; I.D. 4mm

Split liners with wool

- Provide a large surface area to deliver a uniform vapor cloud to the split point
- Economical and reproducible performance
- Compatible with Agilent* 7673 autosampler

Precision* liners

- Offer high reproducibility and maximum vaporization
- Wool placed at the injection point helps wipe the needle during injection and stays in position during pressure pulses and injection

Liner Type	Mfr. No.	Cat. No.	Pack of
Split Liners			
Glass	20781	**06-711-020†**	1/24.00
	20782	**06-717-934**	5/69.00
	20783	**06-717-947**	25/288.00
Siltek	20781-213.1	**06-711-029†**	1/44.29
Precision Liners			
Glass	21022	**06-711-357†**	1/24.00
Siltek	21022-213.1	**06-711-359†**	1/44.29

† To order larger quantities, contact your Fisher Scientific Customer Service Representative.

Restek* Split Liners for Agilent*/Finnigan* GCs: Cyclosplitter

For use with dirty samples

- Incorporate a cylindrical glass screw in the sample pathway to mix sample and trap nonvolatile residues
- 4mm I.D.
- Perform multiple injections before cleaning is required

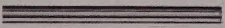
Liner Type	Packing Material	Mfr. No.	Cat. No.	Pack of
Glass	No	20706	**06-710-916**	1/45.00
Glass	No	20707	**06-717-796**	5/177.00
Glass	No	20708	**06-717-803**	25/627.00
Glass	Wool	20706-200.1	**06-710-917**	1/60.77
Glass	Wool	20707-200.5	**06-717-797**	5/212.18
Glass	FS Beads	20706-201.1	**06-710-918**	1/60.77
Glass	CarboFrit	20706-209.1	**06-710-920**	1/60.77
Glass	CarboFrit	20707-209.5	**06-717-799**	5/212.18
Glass	Base-Deactivated Wool	20706-211.1	**06-710-922**	1/63.86
Glass	Base-Deactivated Wool	20707-211.5	**06-717-801**	5/244.11
Siltek	No	20706-214.1	**06-710-923**	1/51.50
Siltek	No	20707-214.5	**06-717-802**	5/202.91
Siltek	No	20708-214.25	**06-717-805**	25/738.51

Restek* Straight Inlet Liners for Splitless Injection

Used for samples containing a narrow<None>lar weight distribution and for those not prone to thermal decomposition

- Useful for splitless mode of operation and slow injections, small (<2μL) sample volumes, and high-boiling point solvent systems
- Compatible with Agilent*/Finnigan columns
- Liners should be packed with wool or fused silica beads to trap nonvolatile residue and prevent column contamination when analyzing dirty samples; also, packing in wool is recommended to aid in vaporization of high molecular weight compounds and to minimize discrimination
- O.D. × Length: 6.5 × 78.5mm

06-711 and 06-710 Series



06-710-932

Liner Type	I.D.	Packing Material	Mfr. No.	Cat. No.	Pack of
Glass	2mm	No	20712	**06-710-932**	1/24.00
Glass	2mm	No	20713	**06-717-822**	5/81.00
Glass	2mm	No	20714	**06-717-832**	25/245.00
Glass	4mm	No	20772	**06-711-001**	1/19.50
Glass	4mm	No	20773	**06-717-904**	5/62.00
Glass	4mm	No	20774	**06-717-910**	25/245.00
Glass	4mm	FS Wool	22400	**06-711-897**	1/19.50
Glass	4mm	FS Wool	22401	**06-711-899**	1/61.00
Glass	4mm	FS Wool	22402	**06-718-788**	25/245.00
Quartz	4mm	FS Wool	22403	**06-711-901**	1/30.00
Quartz	4mm	FS Wool	22404	**06-718-792**	5/119.00

Restek* Gooseneck Inlet Liners for Splitless Injection

Help contain the sample cloud in the injector and minimize the breakdown of compounds sensitive to catalytic decomposition from metal inlet parts

- Available in single or double styles
- Use the cyclo-version for dirty samples
- O.D.× Length: 6.5 × 78.5mm

Liner Type	I.D.[†]	FS Wool	Mfr. No.	Cat. No.	Pack of
Single Gooseneck					
Glass	2mm	No	20795	**06-711-054**	1/30.00
Glass	4mm	No	20798	**06-711-063**	1/30.00
Siltek	2mm	No	20795-214.1	**06-711-062**	1/36.05
Siltek	4mm	No	20798-214.1	**06-711-069**	1/36.05
Glass	4mm	Wool	22405	**06-711-903**	1/30.00
Glass	4mm	Wool	22407	**06-718-798**	25/345.00
Double Gooseneck					
Glass	4mm	No	20784	**06-711-037**	1/30.00
Siltek	4mm	No	20784 214.1	**06-711-039**	1/36.05
Cyclo	2mm	No	20907	**06-711-212**	1/62.00
Siltek Cyclo	4mm	No	20895 214.1	**06-711-186**	1/82.40

[†] Nominal I.D. at syringe needle expulsion point.

Restek* Capillary Nuts for Agilent* 5890/6890 GCs

Available in brass or stainless steel

Material	For Use with	Mfr. No.	Cat. No.	Pack of
Brass	Standard 1⁄16-in. ferrules	21879	**06-718-727**	2/27.00
Brass	Compact Agilent-style ferrules	21878	**06-711-784**	1/27.00
Stainless steel	Standard 1⁄16-in. ferrules	20883	**06-718-135**	2/28.50
Stainless steel	Compact Agilent-style ferrules	21884	**06-718-730**	2/27.25

Restek* Siltek* Press -Tight* Connectors

Siltek deactivation for an inert pathway that maintains sample integrity

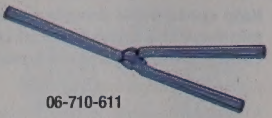
- Made from inert fused silica
- For use in connecting guard columns to analytical columns
- Fit Restek column outer diameters from 0.33 to 0.74mm (0.1 to 0.53mm inside diameter)
- Angled Press-Tight connector approximates the curvature of a capillary column to reduce strain on column-end connections

Description	Mfr. No.	Cat. No.	Pack of
Universal	20449	**06-710-638**	1/214.00
Universal	20480	**06-717-781**	5/51.00
Universal	20481	**06-717-782**	100/685.00
Universal Angled	20482	**06-717-783**	5/69.00
Universal Angled	20483	**06-717-784**	25/238.00
Universal Angled	20484	**06-717-785**	100/826.00
Universal Y	20485	**06-710-651**	1/66.00
Universal Y	20486	**06-717-786**	3/175.00
Universal Angled Y	20487	**06-710-652**	1/71.00
Universal Angled Y	20469	**06-717-776**	3/190.00

Restek* Universal Press-Tight* Connectors

Connect analytical columns, guard columns, transfer lines or detectors

- Fit column outer diameters 0.33 to 0.74mm (Restek inside diameters 0.1 to 0.53mm)
- Deactivated Press-Tight connectors for better recovery of polar and nonpolar compounds
- Angle approximates the curvature of a capillary column, reducing the strain on column-end connections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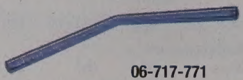

06-717-771

Description	Mfr. No.	Cat. No.	Pack of
Universal Connector	20400	**06-717-750**	5/41.00
Universal Connector	20401	**06-717-751**	25/164.00
Universal Connector	20402	**06-717-752**	100/492.00
Universal, Angled	20446	**06-717-771**	5/48.00
Universal, Angled	20447	**06-717-773**	25/185.00
Universal, Angled	20448	**06-717-775**	100/616.00
Universal, Angled, Deactivated	20446-261	**06-717-772**	5/53.00
Universal, Angled, Deactivated	20447-261	**06-717-774**	25/210.00
Universal Y	20405	**06-710-612**	1/64.00
Universal Y	20406	**06-717-754**	3/170.00
Universal Y, Deactivated	20405-261	**06-710-613**	1/65.00
Universal Y, Deactivated	20406-261	**06-717-755**	3/173.00
Universal Y, Angled	20403	**06-710-611**	1/69.00
Universal Y, Angled	20404	**06-717-753**	3/185.00

Restek* Intermediate-Polarity Deactivated Fused Silica Guard Columns and Transfer Lines

Most common solvents easily wet and create a uniform film on the tubing surface

- Wide range of applications
- Maximum temperature 325°C
- Diameters greater than 0.10mm tested with Grob test mix to ensure high inertness

I.D. x L	O.D.	Mfr. No.	Cat. No.	Pack of
0.025 x 100mm	0.363±0.012mm	10097	**06-708-208**	1/20.00
0.05 x 100mm	0.363±0.012mm	10098	**06-708-210**	1/20.00
0.05 x 500mm	0.363±0.012mm	10040	**06-708-139**	1/75.00
0.05 x 500mm	0.363±0.012mm	10040-600	**06-717-544**	6/375.00
0.075 x 100mm	0.363±0.012mm	10099	**06-708-212**	1/20.00
0.10 x 100mm	0.363±0.012mm	10100	**06-708-214**	1/20.00
0.10 x 500mm	0.363±0.012mm	10041	**06-708-140**	1/75.00
0.15 x 100mm	0.363±0.012mm	10101	**06-708-216**	1/20.00
0.15 x 500mm	0.363±0.012mm	10042	**06-708-141**	1/75.00
0.18 x 100mm	0.37±0.04mm	10102	**06-708-218**	1/15.00
0.18 x 500mm	0.37±0.04mm	10046	**06-708-149**	1/50.00
0.25 x 500mm	0.37±0.04mm	10043	**06-708-142**	1/40.00
0.25 x 500mm	0.37±0.04mm	10043-600	**06-717-546**	6/200.00
0.25 x 1000mm	0.37±0.04mm	10049	**06-708-153**	1/80.00
0.25 x 1000mm	0.37±0.04mm	10049-600	**06-717-552**	6/400.00
0.28 x 500mm	0.37±0.04mm	10003	**06-708-103**	1/45.00
0.28 x 500mm	0.37±0.04mm	10003-600	**06-717-535**	6/225.00
0.32 x 500mm	0.45±0.04mm	10044	**06-708-144**	1/45.00
0.32 x 500mm	0.45±0.04mm	10044-600	**06-717-547**	6/225.00
0.32 x 1000mm	0.45±0.04mm	10048	**06-708-152**	1/90.00
0.32 x 1000mm	0.45±0.04mm	10048-600	**06-717-551**	6/450.00
0.45 x 500mm	0.69±0.04mm	10005	**06-708-104**	1/60.00
0.45 x 500mm	0.69±0.04mm	10005-600	**06-717-536**	6/300.00
0.53 x 500mm	0.69±0.05mm	10045	**06-708-146**	1/60.00
0.53 x 500mm	0.69±0.05mm	10045-600	**06-717-548**	6/300.00
0.53 x 1000mm	0.69±0.05mm	10047	**06-708-150**	1/120.00

Restek* Capillary Adaptable FID Jet for Agilent 5890/6890/6850 GCs

Fluted tip to guide the capillary column into the jet

- Threads specially coated for easy installation and removal
- Standard version undergoes special processing to ensure the highest degree of cleanliness
- High-performance version is Siltek* treated to render extremely inert for use with active compounds

06-711-691

Adaptable FID Jet for Agilent* 5890/6850

Description	Mfr. No.	Cat. No.	Each
Standard	20670	**06-710-891**	54.00
	20671	**06-710-892**	145.00
High-Performance Siltek Treated	20672	**06-710-893**	61.00
	20673	**06-710-894**	175.00

Dedicated FID Jet for Agilent 6890/6850

Description	Mfr. No.	Cat. No.	Each
Standard	21621	**06-711-691**	44.00
	21682	**06-711-723**	130.00
High-Performance Siltek Treated	21620	**06-711-690**	49.00
	21683	**06-711-724**	145.00

*Trademark. See Trademark Reference.

Restek* Electronic Leak Detector

Microchip technology enables high sensitivity in an ergonomic, handheld unit

- Reliable thermal conductivity leak detector detects minute gas leaks that can go undetected by liquid leak detectors
- Highly sensitive; responds to leaks in less than two seconds
- Audible alarm plus LED bar graph readout
- Repositioned ON/OFF switch eliminates accidentally powering on the unit
- Probe tip design prevents debris from entering the unit
- Touch button autozero
- Internal battery charge capability
- Low-battery/battery charge indicator
- Operating temperature range: 32° to 120°F (0° to 45°C)
- Humidity range: 0 to 97%

06-750-001

INCLUDES:
Built-in rechargeable 9V NiMH battery, 10V battery charger

COMPLIANCE:
CE approved

Description	Mfr. No.	Cat. No.	Each
Leak Detector with 110V Battery Charger	22451	**06-750-001**	815.00

Gas	Minimum Detectable Leak Rate (atmcc/sec.)	Indicating LED Light Color
Helium	1.0×10^{-5}	Red
Nitrogen	1.4×10^{-3}	Yellow
Argon	2.2×10^{-3}	Yellow
Carbon Dioxide	1.1×10^{-3}	Yellow

WARNING
Electronic leak detector determines trace amounts of gas in a GC environment only. Unit is not designed for determining combustible gas leaks.

LOOKING FOR RESTEK* STANDARDS?
Visit www.fishersci.com and search for Chromatography Standards

Restek* GC Racer* System by Zip Scientific

Decrease run time by increasing the GC heating rate

- GC Racer's heating element enters the circuit when the controller, plugged into the PC board of the GC, detects a difference in programmed and actual heating rates
- For use with any capillary column
- Capillary column does not need to be removed during installation
- Agilent 5890: maintains heating rate of 70°C/min. up to 350°C or 60°C/min. up to 450°C
- Agilent 6890: maintains heating rate of 70°C/min. up to 400°C

06-712-131

For Use with	Mfr. No.	Cat. No.	Each
Agilent 5890 Series II (only)	23024	**06-712-131**	3050.00
Agilent 5890A (only)	23025	**06-712-132**	3050.00
Agilent 6890	23028	**06-712-135**	3050.00

SGE* 100% Graphite Ferrules

Use in Agilent Technologies* (HP) detectors and injectors at atmospheric pressure (e.g., FID)

- Soft 100% graphite is porous to oxygen
- Forms a stable seal with capillary columns
- Reusable on other capillary columns
- Maximum temperature: 450°C (842°F)
- Preconditioned under nitrogen for low-bleed performance
- SG-072635 and SG-072636 feature a short ferrule body style to fit standard HP injector/detector capillary nuts
- Not for GC/MS interface

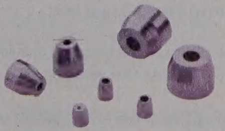
SG-0726 Series

Inside Dia.	Cat. No.	Pack of 10
0.5mm	**SG-072635**	23.92
0.8mm	**SG-072636**	23.92
¼"	**SG-072601**	23.92
⅛"	**SG-072602**	23.92

SGE* 15% Graphite/85% Vespel* Ferrules

Mechanically robust for long lifetimes

- Form strong grip with capillary column
- Maximum temperature: 300°C (572°F)
- Must retighten after initial temperature cycles
- Cannot be reused
- Preconditioned under nitrogen for low-bleed performance
- SG-073109 features short ferrule body style to fit standard Agilent Technologies* HP injector/detector capillary nuts


15% Graphite/85% Vespel Ferrules

Description	Inside Dia.	Cat. No.	Pack of 10
For 0.1 to 0.25mm Column I.D.	0.4mm	**SG-073-109**	33.24
For ⅛" O.D. Packed Columns	⅛"	**SG-072-669**	33.55
For ¼" O.D. Packed Columns	¼"	**SG-072-667**	46.25
For Column I.D. 0.1 to 0.25mm	0.4mm	**SG-072-663**	33.35
For Column I.D. 0.32mm	0.5mm	**SG-072-654**	33.35
For Column I.D. 0.53mm	0.8mm	**SG-072-655**	33.35

SGE* GC Inlet Liners

For Agilent Technologies* GC instruments

- All liners are deactivated using high temperature (420°C [788°F]) gas phase deactivation
- Supplied in blister packs to prevent contamination
- Reduced active sites mean no unwanted reaction in samples

FocusLiners*

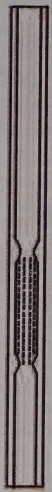
- Include two tapered sections that secure the quartz wool plug for optimum needle tip wiping and sample transfer—also prevent quartz wool from shifting towards the septum or pushing down into the liner
- Provide excellent reproducibility
- Results in lower mass discrimination
- **Fast FocusLiners** have a narrow 2.3mm I.D. for use with 0.1mm I.D. capillary columns—narrow I.D. also results in smaller peak widths

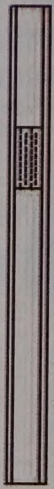
Liners for Split Injection

Quartz wool in some split liners promotes analyte mixing and results in better quantitation, provides a large surface area that aids in liquid sample vaporization, acts as a trap to collect nonvolatile residue from sample, and prevents sample from hitting the bottom of the injector before volatilization.

Liners for Splitless Injection

Tapers in some splitless liners minimize contact of analytes with the bottom of the injection port –especially useful for very active compounds; also channel analytes into column for a more robust column installation.


SG-092002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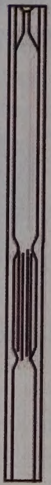
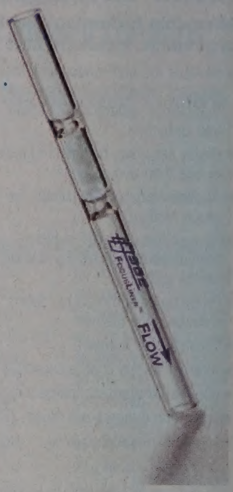

SG-092003



FocusLiner SG-092002

Description	I.D.	O.D.	Length	Cat. No.	Pack of
For Agilent Models HP5890, HP6890, HP6850, and HP4890					
Split/Splitless FocusLiner	4.0mm	6.3mm	78.5mm	**SG-092002**	5/75.02
				SG-092219	25/321.91
Split/Splitless Tapered FocusLiner	4.0mm	6.3mm	78.5mm	**SG-092003**	5/98.44
				SG-092011	25/425.50
Split/Splitless Fast FocusLiner	2.3mm	6.3mm	78.5mm	**SG-092005**	5/80.15
				SG-092008	25/357.98
Split/Splitless Tapered Fast FocusLiner	2.3mm	6.3mm	78.5mm	**SG-092111**	5/113.14
				SG-092115	25/510.70
Split Straight-Through Liner	4.0mm	6.3mm	78.5mm	**SG-092007**	1/54.65
				SG-092222	25/238.93
Split Liner with Wool	4.0mm	6.3mm	78.5mm	**SG-092001**	1/64.80
Split/Splitless Liner with Single Taper	4.0mm	6.3mm	78.5mm	**SG-092229**	25/354.72
Splitless Liner with Single Taper and Quartz Wool	4.0mm	6.3mm	78.5mm	**SG-092019**	5/84.74
Split/Splitless Liner with Double Taper	4.0mm	6.3mm	78.5mm	**SG-092018**	5/97.30
				SG-092230	25/386.58
Direct Straight-Through Liner	1.2mm	6.3mm	78.5mm	**SG-092016**	5/77.17
				SG-092224	25/280.58
Splitless Liner with Recessed Gooseneck	2.0mm	6.3mm	78.5mm	**SG-092013**	1/84.55
Split/Splitless Liner with Recessed Gooseneck and Quartz Wool	4.0mm	6.3mm	78.5mm	**SG-092010**	1/84.55
				SG-092223	25/349.17
For Agilent Models HP5880, HP5890, and HP6890					
Packed Column Liner	1.8mm	3.0mm	92.0mm	**SG-092235**	25/49.55

GC Inlet Liner Accessories

- **Viton* O-Ring**—Can be used up to temperatures of 300°C (572°F)
- **Graphite Sealing Rings**—Can be used up to temperatures of 450°C (842°F)

Description	O.D.	For	Cat. No.	Pack of 10
Viton O-Ring	----	All Inlet Liners Except SG-092235	**SG-0726-532**	12.62
Graphite Sealing Ring, 6.35mm O.D.; For All Liners Except SG092004 and SG092235	6.35mm	All Inlet Liners Except SG-092004 and SG-092235	**SG-0726-005**	32.95
	6.1mm	Inlet Liner SG-092004	**SG-0726-006**	32.75

*Trademark. See Trademark Reference.

Prices subject to change.

SGE* GC Septa

Designed specifically for use in Agilent Technologies* (HP) GC instruments

CS Septa

- PTFE-coated silicone septa for low temperature applications
- Good durability, good resealing
- Excellent solvent resistance; good tear resistance
- Maximum temperature: 200°C (392°F)

TCS Septa

- PTFE-coated triple-layer silicone septa for medium to high temperature applications
- Good durability, very good resealing
- Excellent solvent resistance; very good tear resistance
- Maximum temperature: 280°C (536°F)

Auto-Sep* Septa

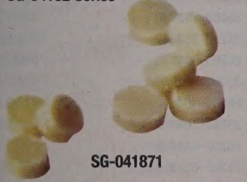
- Silicone septa for high-volume autosampler and manual use (especially for GC/MS)
- Excellent durability, resealing, solvent and tear resistance
- Maximum temperature: 320°C (608°F)

Auto-Sep T Septa

- PTFE-coated silicone septa for temperature program injectors and high-volume autosamplers (especially for GC/MS)
- Excellent durability, resealing, solvent and tear resistance
- Maximum temperature: 350°C (662°F)

SG-04182 Series

SG-041848


SG-041871

SG-04188 Series

Septum Diameter	For Use with Agilent Model No.	Cat. No.	Pack of
CS Septa			
5mm	7620, 5790, 5880, 5890	**SG-041820**	50/21.95
9.5mm	5700, 5800, 5900	**SG-0418240**	50/21.95
11mm	6890, 5890, 5880, 4890, 6850	**SG-041826**	50/29.95
12.5mm	5750, 710, 720, 810, 7610	**SG-041828**	50/29.05
TCS Septa			
12.5mm	5750, 710, 720, 810, 7610	**SG-041848**	50/55.35
Auto-Sep Septa			
9.5mm	5700, 5800, 5900	**SG-041871**	1/33.76
11mm	6890, 5890, 5880, 4890, 6850	**SG-041872**	25/34.27
Auto-Sep T Septa			
9.5mm	5700, 5800, 5900	**SG-041880**	25/37.51
11mm	6890, 5890, 5880, 4890, 6850	**SG-041882**	25/37.51
		SG-041883	100/102.15

HPLC COLUMNS

Thermo Scientific* Hypersil* Gold Columns

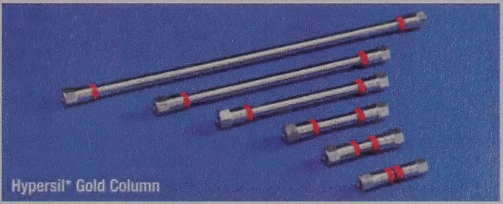
Ultrapure, silica-based columns with exceptional peak shape, sensitivity and resolution

- Provide very symmetrical peaks, even when analyzing compounds that give poor peak shape on traditional silica-based chemistries
- Manufacturing process creates an even surface that reduces unwanted interactions between analytes and acidic silanols
- Compare to Phenomenex* Luna*, Agilent* Zorbax*, Waters* SunFire*, and other similar columns
- Hypersil Gold columns with 1.9µm particle size are an alternative to Waters* Acquity* UPLC*—allow assays to be performed with a higher linear velocity through the column without loss in performance

Popular Phase Options

- **C18** offers high peak shape with generic gradients
- **C8** has similar selectivity to C18, but with less retention
- **aQ** can be used for challenging reverse phase separations employing highly aqueous mobile phases
- **PFP** offers extra retention for halogenated species
- **CN** can be used for both reversed and normal phase separations

C18 Column Packing—in 5 and 8Rm Particle Sizes



- Provide C18 selectivity and a predictable elution order
- Ideal for applications where resolution between compounds closely related in structure is very important—like in drug analyses
- Simplify separations and increase productivity
- Very symmetrical peak shapes offer enhanced sensitivity, even when analyzing compounds that give notoriously poor peak shape on traditional silica-based chemistries
- Available in many dimensions and lengths, including capillary, for analytical applications; columns with 8µm particle size and larger column dimensions can be used for preparative work

I.D.	Length	Cat. No.	Each
5µm Particle Size			
2.1mm	50mm	**25005-052130**	399.00
2.1mm	100mm	**25005-102130**	434.50
2.1mm	150mm	**25005-152130**	470.00
3mm	50mm	**25005-053030**	399.00
3mm	100mm	**25005-103030**	434.50
3mm	150mm	**25005-153030**	470.00
4.6mm	50mm	**25005-054630**	399.00
4.6mm	100mm	**25005-104630**	434.50
4.6mm	150mm	**25005-154630**	470.00
4.6mm	250mm	**25005-254630**	505.00
8µm Particle Size			
4.6mm	250mm	**25008-254630**	449.50

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Thermo Scientific* Hypersil* Gold Columns, Contd.

C18 Column Packing—in 1.9 and 3µm Particle Sizes

- Provide C18 selectivity and a predictable elution order
- Ideal for applications where resolution between compounds closely related in structure is very important—like in drug analyses
- Simplify separations and increase productivity
- Very symmetrical peak shapes offer enhanced sensitivity, even when analyzing compounds that give notoriously poor peak shape on traditional silica-based chemistries
- Available in many dimensions and lengths, including capillary, for analytical applications; columns with 8µm particle size and larger column dimensions can be used for preparative work
- 1.9µm particle size columns are especially designed for high throughput screening and ultra-high pressure LC applications

I.D.	Length	Cat. No.	Each
1.9µm Particle Size			
1mm	20mm	**25002-021030**	606.00
1mm	30mm	**25002-031030**	606.00
1mm	50mm	**25002-051030**	606.00
1mm	100mm	**25002-101030**	606.00
2.1mm	20mm	**25002-022130**	606.00
2.1mm	30mm	**25002-032130**	606.00
2.1mm	50mm	**25002-052130**	606.00
2.1mm	100mm	**25002-102130**	606.00
3mm	20mm	**25002-023030**	606.00
3mm	30mm	**25002-033030**	606.00
3mm	50mm	**25002-053030**	606.00
3mm	100mm	**25002-103030**	606.00
3µm Particle Size			
1mm	30mm	**25003-031030**	454.50
1mm	50mm	**25003-051030**	454.50
1mm	100mm	**25003-101030**	500.00
1mm	150mm	**25003-151030**	540.50
2.1mm	30mm	**25003-032130**	454.50
2.1mm	50mm	**25003-052130**	454.50
2.1mm	100mm	**25003-102130**	500.00
2.1mm	125mm	**25003-122130**	540.50
2.1mm	150mm	**25003-152130**	540.50
3mm	30mm	**25003-033030**	454.50
3mm	100mm	**25003-103030**	500.00
3mm	125mm	**25003-123030**	540.50
3mm	150mm	**25003-153030**	540.50
4mm	30mm	**25003-034030**	454.50
4mm	50mm	**25003-054030**	454.50
4mm	100mm	**25003-104030**	500.00
4mm	125mm	**25003-124030**	540.50
4mm	150mm	**25003-154030**	540.50
4.6mm	50mm	**25003-054630**	454.50
4.6mm	100mm	**25003-104630**	500.00
4.6mm	125mm	**25003-124630**	540.50
4.6mm	150mm	**25003-154630**	540.50

C8 Column Packing—in 3 and 5µm Particle Sizes

- Very symmetrical peak shapes offer enhanced sensitivity, even when analyzing compounds that give notoriously poor peak shape on traditional silica-based chemistries
- Similar selectivity to C18 columns with a predictable elution order, but with less retention
- Ideal when trying to analyze compounds in a shorter amount of time, or where smaller amounts of hydrophobicity are needed in order to successfully retain compounds of interest

I.D.	Length	Cat. No.	Each
3µm Particle Size			
1mm	30mm	**03-050-141**	454.50
2.1mm	50mm	**03-050-137**	454.50
2.1mm	100mm	**03-050-133**	500.00
2.1mm	150mm	**03-050-145**	540.50
3mm	30mm	**03-050-140**	454.50
3mm	50mm	**03-050-136**	454.50
3mm	100mm	**03-050-132**	500.00
3mm	150mm	**03-050-144**	540.50
4mm	30mm	**03-050-139**	454.50
4mm	50mm	**03-050-135**	454.50
4mm	100mm	**03-050-131**	500.00
4mm	150mm	**03-050-143**	540.50
4.6mm	30mm	**03-050-138**	454.50
4.6mm	50mm	**03-050-134**	454.50
4.6mm	100mm	**03-050-130**	500.00
4.6mm	150mm	**03-050-142**	540.50
5µm Particle Size			
2.1mm	30mm	**25205-032130**	399.00
2.1mm	50mm	**25205-052130**	399.00
2.1mm	100mm	**25205-102130**	434.50
2.1mm	150mm	**25205-152130**	470.00
2.1mm	250mm	**25205-252130**	505.00
3mm	30mm	**25205-033030**	399.00
3mm	50mm	**25205-053030**	399.00
3mm	100mm	**25205-103030**	434.50
3mm	150mm	**25205-153030**	470.00
3mm	250mm	**25205-253030**	505.00
4mm	50mm	**25205-054030**	399.00
4mm	100mm	**25205-104030**	434.50
4mm	150mm	**25205-154030**	470.00
4mm	250mm	**25205-254030**	505.00
4.6mm	30mm	**25205-034630**	399.00
4.6mm	50mm	**25205-054630**	399.00
4.6mm	100mm	**25205-104630**	434.50
4.6mm	150mm	**25205-154630**	470.00
4.6mm	250mm	**25205-254630**	505.00

*Trademark. See Trademark Reference.

Thermo Scientific* Hypersil* Gold Columns, Contd.

CN Column Packing—in 3 and 5µm Particle Sizes

- Outstanding sensitivity
- Less retention for faster analyses
- Ideal when trying to analyze a wide range of compounds very quickly or when selectivity enhancements are needed
- Use to analyze steroids in reversed phase to sugars and other polar entities in normal phase

I.D.	Length	Cat. No.	Each
3µm Particle Size			
2.1mm	30mm	**03-050-181**	454.50
2.1mm	50mm	**03-050-177**	454.50
2.1mm	100mm	**03-050-173**	500.00
2.1mm	150mm	**03-050-185**	540.50
2.1mm	250mm	**03-050-189**	601.00
3mm	30mm	**03-050-180**	454.50
3mm	50mm	**03-050-176**	454.50
3mm	100mm	**03-050-172**	500.00
3mm	150mm	**03-050-184**	540.50
3mm	250mm	**03-050-188**	601.00
4mm	30mm	**03-050-179**	454.50
4mm	50mm	**03-050-175**	454.50
4mm	100mm	**03-050-171**	500.00
4mm	150mm	**03-050-183**	540.50
4mm	250mm	**03-050-187**	601.00
4.6mm	30mm	**03-050-178**	454.50
4.6mm	50mm	**03-050-174**	454.50
4.6mm	100mm	**03-050-170**	500.00
4.6mm	150mm	**03-050-182**	540.50
4.6mm	250mm	**03-050-186**	601.00
5µm Particle Size			
2.1mm	30mm	**25805-032130**	399.00
2.1mm	50mm	**25805-052130**	399.00
2.1mm	100mm	**25805-102130**	434.50
2.1mm	150mm	**25805-152130**	470.00
2.1mm	250mm	**25805-252130**	505.00
3mm	30mm	**25805-033030**	399.00
3mm	50mm	**25805-053030**	399.00
3mm	100mm	**25805-103030**	434.50
3mm	150mm	**25805-153030**	470.00
3mm	250mm	**25805-253030**	505.00
4mm	50mm	**25805-054030**	399.00
4mm	100mm	**25805-104030**	434.50
4mm	150mm	**25805-154030**	470.00
4mm	250mm	**25805-254030**	505.00
4.6mm	30mm	**25805-034630**	399.00
4.6mm	50mm	**25805-054630**	399.00
4.6mm	100mm	**25805-104630**	434.50
4.6mm	150mm	**25805-154630**	470.00
4.6mm	250mm	**25805-254630**	505.00

PFP Column Packing—in 1.9, 3 and 5µm Particle Sizes

- The additional mechanisms of the PFP phase, such as steric selectivity of the analyte species and dipole interaction, offer alternative selectivity to C18
- Extra retention for halogenated species
- Unique selectivity for nonfluorinated polar compounds
- Ideal for use in analyzing compounds that are difficult to retain; have complex halogenated functionality like taxane samples; compounds containing hydroxyl, carboxyl, nitro, or other polar groups

I.D.	Length	Cat. No.	Each
1.9µm Particle Size			
2.1mm	20mm	**03-050-524**	600.00
2.1mm	30mm	**03-050-506**	600.00
2.1mm	50mm	**03-050-511**	600.00
2.1mm	100mm	**03-050-517**	600.00
3µm Particle Size			
2.1mm	30mm	**03-050-161**	454.50
2.1mm	50mm	**03-050-157**	454.50
2.1mm	100mm	**03-050-153**	500.00
2.1mm	150mm	**03-050-165**	540.50
3mm	30mm	**03-050-160**	454.50
3mm	50mm	**03-050-156**	454.50
3mm	100mm	**03-050-152**	500.00
3mm	150mm	**03-050-164**	540.50
4mm	30mm	**03-050-159**	454.50
4mm	50mm	**03-050-155**	454.50
4mm	100mm	**03-050-151**	500.00
4mm	150mm	**03-050-163**	540.50
4.6mm	30mm	**03-050-158**	454.50
4.6mm	50mm	**03-050-154**	454.50
4.6mm	100mm	**03-050-150**	500.00
4.6mm	150mm	**03-050-162**	540.50
5µm Particle Size			
2.1mm	30mm	**25405-032130**	399.00
2.1mm	50mm	**25405-052130**	399.00
2.1mm	100mm	**25405-102130**	434.50
2.1mm	150mm	**25405-152130**	470.00
2.1mm	250mm	**25405-252130**	505.00
3mm	30mm	**25405-033030**	399.00
3mm	50mm	**25405-053030**	399.00
3mm	100mm	**25405-103030**	434.50
3mm	150mm	**25405-153030**	470.00
3mm	250mm	**25405-253030**	505.00
4mm	50mm	**25405-054030**	399.00
4mm	100mm	**25405-104030**	434.50
4mm	150mm	**25405-154030**	470.00
4mm	250mm	**25405-254030**	505.00
4.6mm	30mm	**25405-034630**	399.00
4.6mm	50mm	**25405-054630**	399.00
4.6mm	100mm	**25405-104630**	434.50
4.6mm	150mm	**25405-154630**	470.00
4.6mm	250mm	**25405-254630**	505.00

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Thermo Scientific* Hypersil* Gold Columns, Contd.

Hypersil* Gold aQ* Columns—in 1.9, 3 and 5µm Particle Sizes

- Comprised of a polar endcapped C18 phase for high retention of polar compounds
- Optimized peak shape, resolution, sensitivity, and efficiency
- Stability in 100% aqueous mobile phases
- Medium hydrophobicity
- 2 to 9pH range
- 12% carbon load
- USP L1
- 175Å pore size

I.D.	Length	Cat. No.	Each
1.9µm Particle Size			
1mm	50mm	**25302-051030**	606.00
2.1mm	20mm	**03-050-523**	600.00
2.1mm	30mm	**03-050-501**	600.00
2.1mm	50mm	**25302-052130**	859.14
2.1mm	100mm	**03-050-512**	600.00
3µm Particle Size			
2.1mm	30mm	**03-050-502**	450.00
2.1mm	50mm	**03-050-507**	450.00
2.1mm	100mm	**03-050-513**	495.00
2.1mm	150mm	**03-050-518**	535.00
4.6mm	30mm	**03-050-503**	450.00
4.6mm	50mm	**03-050-508**	450.00
4.6mm	100mm	**03-050-514**	495.00
4.6mm	150mm	**25303-154630**	540.50
5µm Particle Size			
2.1mm	30mm	**03-050-504**	395.00
2.1mm	50mm	**03-050-509**	395.00
2.1mm	100mm	**03-050-515**	495.00
2.1mm	150mm	**03-050-519**	465.00
2.1mm	250mm	**03-050-521**	500.00
4.6mm	30mm	**03-050-505**	395.00
4.6mm	50mm	**03-050-510**	395.00
4.6mm	100mm	**03-050-516**	495.00
4.6mm	150mm	**03-050-520**	465.00
4.6mm	250mm	**03-050-522**	500.00

Thermo Scientific * Hypersil* Gold C18 Drop-In Guard Cartridges

Require the use of a Uniguard* Direct-Connection Drop-In Guard Cartridge Holder (sold separately).

Particle Size	I.D. × L	Cat. No.	Pack of 4
3µm	1 × 10mm	**25003-011001**	277.75
3µm	2.1 × 10mm	**25003-012101**	277.75
3µm	3 × 10mm	**25003-013001**	277.75
3µm	4/4.6 × 10mm	**25003-014001**	277.75
5µm	1 × 10mm	**25005-011001**	237.50
5µm	2.1 × 10mm	**25005-012101**	237.50
5µm	3 × 10mm	**25005-013001**	237.50
5µm	4/4.6 × 10mm	**25005-014001**	237.50

Thermo Scientific* Hypersil* Gold C18 Kappa* Capillary Columns

Endcapped, ultrapure capillary columns with exceptional peak shape and resolution for LC and LC/MS

- Highly efficient; exhibit high performance and sensitive separation even when sample size is limited
- Rugged sleeve design for robustness
- Ideal for new method development or in such applications as drug analyses where active constituents and other trace components must be rigorously monitored

	1.9µm		3µm Particle Size		5µm Particle Size	
I.D. × L	Cat. No.	Each	Cat. No.	Each	Cat. No.	Each
50mm Length						
0.075mm	----	----	**25003-050065**	540.50	**25005-050065**	469.75
0.1mm	----		**25003-050165**	540.50	**25005-050165**	469.75
0.18mm	----	----	**25003-050265**	540.50	**25005-050265**	469.75
0.3mm	**25002-050365**	606.00	**25003-050365**	540.50	**25005-050365**	469.75
0.5mm	----	----	**25003-050565**	540.50	**25005-050565**	469.75
100mm Length						
0.075mm	----	----	**25003-100065**	560.75	**25005-100065**	490.00
0.1mm	----	----	**25003-100165**	560.75	**25005-100165**	490.00
0.18mm	----	----	**25003-100265**	560.75	**25005-100265**	490.00
0.3mm	**25002-100365**	606.00	**25003-100365**	560.75	**25005-100365**	490.00
0.5mm	----	----	**25003-100565**	560.75	**25005-100565**	490.00
150mm Length						
0.075mm	----	----	**25003-150065**	596.00	**25005-150065**	515.25
0.1mm	----	----	**25003-150165**	596.00	**25005-150165**	515.25
0.18mm	----	----	**25003-150265**	596.00	**25005-150265**	515.25
0.3mm	----	----	**25003-150365**	596.00	**25005-150365**	515.25
0.5mm	----	----	**25003-150565**	596.00	**25005-150565**	515.25
250mm Length						
0.32mm	----	----	**25005250365**	515.25	----	----

Thermo Scientific* Hypersil* Gold C18 Javelin* Guard Columns

Economical means to extend column life and improve performance

- Direct-connection, patented fingertight design has a 1⁄16" CPI tip that attaches directly to the inlet of the HPLC column with tubing or wrenches
- Requires no holder, allowing quick and easy replacement

I.D. × L	Cat. No.	Pack of 4
3µm Particle Size		
2.1 × 10mm	**25003-012106**	303.00
2.1 × 20mm	**25003-022106**	303.00
3 × 10mm	**25003-013006**	303.00
3 × 20mm	**25003-023006**	303.00
4 × 10mm	**25003-014006**	303.00
4 × 20mm	**25003-024006**	303.00
5µm Particle Size		
1 × 10mm	**25005-011006**	267.75
2.1 × 10mm	**25005-012106**	267.75
2.1 × 20mm	**25005-022106**	267.75
3 × 10mm	**25005-013006**	267.75
3 × 20mm	**25005-023006**	267.75
4 × 10mm	**25005-014006**	267.75
4 × 20mm	**25005-024006**	267.75

*Trademark. See Trademark Reference.

Thermo Scientific* Hypersil* Gold Javelin* HTS Columns

Designed for high throughput metabolite screening; also ideal for walk up instruments and high throughput LC/MS

- 5µm particle size
- Short, slim design accommodates multiple columns in small valve settings
- Patented internal seat and fingertight fittings make columns convenient to use and easy to change
- 1/16" CPI tip for direct connection to the detector minimizes bandspreading
- Directly connect to column switching valve or detector inlet so many different phases can be evaluated for selectivity differences, helping to ensure positive metabolite identification through separation

I.D. × L	Cat. No.	Pack of 3	Cat. No.	Pack of 10
1 × 20mm	**25005-021035**	530.25	**25005-021036**	1484.75
2.1 × 20mm	**25005-022135**	530.25	**25005-022136**	1484.75
4 × 20mm	**25005-024035**	530.25	**25005-024036**	1484.75

Thermo Scientific* Hypersil* BDS Columns

Economical, original, general-purpose Hypersil BDS columns that include Certificate of Authenticity

- Base deactivated and endcapped
- Long column lifetimes with excellent column-to-column and exceptional batch-to-batch reproducibility (data is available to prove its suitability for validated methods)
- Each column is individually tested to meet well-defined, high specifications
- Manufactured with ISO 9001:2000 certified processes

3µm C18 Columns

Ideal for the determination of pharmaceutical active components.

I.D.	Length	Cat. No.	Each
1mm	50mm	**28103-051030**	372.75
1mm	100mm	**28103-101030**	430.50
2.1mm	30mm	**28103-032130**	362.25
2.1mm	50mm	**28103-052130**	372.75
2.1mm	100mm	**28103-102130**	430.50
2.1mm	150mm	**28103-152130**	462.00
3mm	50mm	**28103-053030**	372.75
3mm	100mm	**28103-103030**	430.50
3mm	150mm	**28103-153030**	462.00
4mm	100mm	**28103-104030**	430.50
4mm	150mm	**28103-154030**	462.00
4.6mm	20mm	**28103-024630**	325.50
4.6mm	50mm	**28103-054630**	372.75
4.6mm	100mm	**03-050-116**	430.50
4.6mm	250mm	**28103-254630**	498.75

5µm C18 Columns

Ideal for the determination of pharmaceutical active components.

I.D.	Length	Cat. No.	Each
2.1mm	50mm	**28105-052130**	362.25
2.1mm	100mm	**28105-102130**	388.50
3mm	125mm	**28105-123030**	420.00
3mm	250mm	**28105-253030**	451.50
4mm	125mm	**28105-124030**	420.00
4mm	150mm	**28105-154030**	420.00
4mm	250mm	**28105-254030**	451.50
4.6mm	30mm	**28105-034630**	362.25
4.6mm	50mm	**28105-054630**	362.25
4.6mm	100mm	**28105-104630**	388.50
4.6mm	125mm	**28105-124630**	420.00

3µm C8 Columns

Less retentive than C18 for faster analyses

I.D.	Length	Cat. No.	Each
2.1mm	50mm	**28203-052130**	372.75
2.1mm	100mm	**28203-102130**	430.50
3mm	50mm	**28203-053030**	372.75
3mm	150mm	**28203-153030**	462.00
4.6mm	50mm	**28203-054630**	372.75

5µm C8 Columns

Less retentive than C18 for faster analyses

I.D.	Length	Cat. No.	Each
2.1mm	50mm	**28205-052130**	362.50
3mm	150mm	**28205-153030**	420.00
4mm	70mm	**28205-074030**	388.50
4.6mm	50mm	**28205-054630**	362.50
4.6mm	100mm	**28205-104630**	388.50
4.6mm	125mm	**28205-124630**	420.00

3µm Cyano Columns

Use in reversed phase for alternate selectivity; use in normal phase for less retention than silica columns.

I.D.	Length	Cat. No.	Each
3mm	50mm	**28803-053030**	372.75
4.6mm	250mm	**28803-254630**	498.75

5µm Cyano Columns

Use in reversed phase for alternate selectivity; use in normal phase for less retention than silica columns.

I.D.	Length	Cat. No.	Each
1mm	100mm	**28805-101030**	388.50
2.1mm	125mm	**28805-122130**	420.00
3mm	50mm	**28805-053030**	362.50
4mm	150mm	**28805-154030**	420.00
4mm	250mm	**28805-254030**	451.50
4.6mm	50mm	**28805-054630**	362.50
4.6mm	100mm	**28805-104630**	388.50

3µm Phenyl Columns

Unique selectivity for aromatic and slightly polar compounds

I.D.	Length	Cat. No.	Each
2.1mm	50mm	**28903-052130**	372.75
4mm	20mm	**28903-024030**	325.50
4.6mm	50mm	**28903-054630**	372.75

5µm Phenyl Columns

Unique selectivity for aromatic and slightly polar compounds

I.D.	Length	Cat. No.	Each
3mm	150mm	**28905-153030**	420.00
4.6mm	100mm	**28905-104630**	388.50

Thermo Scientific* Hypersil* BDS Drop-In Guard Cartridges

Left: 28103 Series
Right: 851-00 Guard Cartridge Holder

Convenient, economic, and effective protection for extending column lifetimes

- Fast and simple installation
- 10mm length provides column protection with minimal impact on chromatography
- Drop-In cartridges are available for all Thermo Scientific stationary phases
- Require the use of a Uniguard Direct-Connection* Drop-In Guard Cartridge Holder (sold separately; Cat. Nos. 851-00, 852-00, 850-00)

I.D.	Length	Cat. No.	Pack of 4
C18, 3µm Particle Size			
2.1mm	10mm	**28103-012101**	215.25
4/4.6mm	10mm	**28103-014001**	215.25
C8, 3µm Particle Size			
2.1mm	10mm	**28203-012101**	215.25
4/4.6mm	10mm	**28203-014001**	215.25
Cyano, 3µm Particle Size			
4/4.6mm	10mm	**28803-014001**	215.25
Phenyl, 3µm Particle Size			
4/4.6mm	10mm	**28903-014001**	215.25
Cyano, 5µm Particle Size			
1mm	10mm	**28805-011001**	194.25
3mm	10mm	**28805-013001**	194.25

Thermo Scientific* Hypersil* Columns

- Highly efficient, proven reproducibility, long life
- Undergo multiple quality control tests to ensure high quality
- Ideal for use in QA/QC laboratories

Popular Phase Options

- **ODS (C18)** is suitable for nonpolar and moderately polar solutes including acids, neutrals, and lipophilic compounds; **ODS-2 (C18)** is a rugged and dependable alternative to L1 columns based on type A silica; endcapped
- **MOS (C8)** has a monolayer of C8 alkyl chain bonded to the silica surface and exhibits similar selectivity to C18, but is less retentive to provide reduced time for analyses—particularly for strongly hydrophobic analytes; **MOS-2 (C8)** is the endcapped version
- **SAS (C1)** is the least retentive of the Hypersil alkyl bonded phases; can be used in ion-pair separations
- **CPS (Cyano)** is a cyanopropyl phase column for both normal and reversed-phase HPLC; equilibrate rapidly and are not deactivated by small quantities of water; **CPS-2 (Cyano)** is the endcapped version
- **Phenyl** is a reversed-phase column for the analysis of aromatic and moderately polar compounds; **Phenyl-2** is the endcapped version
- **APS-2 (Amino)** is a versatile amino propyl phase column for use in weak ion exchange, reversed phase, and normal phase modes; can be used with common buffers and an organic modifier as a weak ion exchange material for analysis of anions and organic acids
- **Silica** has robust and reproducible base media for nonpolar and moderately polar organic compounds by normal phase
- **SAX** is a highly stable silica-based quarternary amine strong anion exchange column designed for aqueous and low pH mobile phases, and smaller organic molecules

For Ordering Information for the columns described above, see pp. 424 (right) to 430.

Thermo Scientific* Hypersil* Columns, Contd.

ODS (C18) Columns

2 and 3µm Particle Sizes

I.D.	Length	Cat. No.	Each
2.1mm	50mm	**30103-052130**	336.00
2.1mm	100mm	**30103-102130**	372.75
4.6mm	50mm	**30103-054630**	336.00

5µm Particle Size

- High efficiency and quality, proven reproducibility, long life
- Ideal for use in QA/QC laboratories
- Selectivities to match many applications
- Suitable for nonpolar and moderately polar solutes including acids, neutrals, and lipophilic compounds
- Pore size 120Å

I.D.	Length	Cat. No.	Each
1mm	30mm	**30105-031030**	294.00
1mm	50mm	**30105-051030**	294.00
1mm	100mm	**30105-101030**	325.50
2.1mm	20mm	**30105-022130**	294.00
2.1mm	30mm	**30105-032130**	294.00
2.1mm	100mm	**30105-102130**	325.50
2.1mm	125mm	**30105-122130**	357.00
2.1mm	150mm	**30105-15213T**	357.00
2.1mm	200mm	**30105-202130**	388.50
2.1mm	250mm	**03-050-552**	370.00
3mm	20mm	**30105-023030**	294.00
3mm	30mm	**30105-033030**	294.00
3mm	50mm	**30105-053030**	294.00
3mm	100mm	**30105-103030**	325.50
3mm	125mm	**30105-123030**	357.00
3mm	200mm	**30105-203030**	388.50
4mm	20mm	**30105-024030**	294.00
4mm	30mm	**30105-034030**	294.00
4mm	50mm	**30105-054030**	294.00
4mm	100mm	**30105-104030**	325.50
4mm	125mm	**30105-124030**	357.00
4mm	150mm	**30105-154030**	357.00
4mm	200mm	**30105-204030**	388.50
4mm	250mm	**30105-254030**	388.50
4mm	300mm	**30105-304030**	446.25
4.6mm	20mm	**30105-024630**	294.00
4.6mm	30mm	**30105-034630**	294.00
4.6mm	50mm	**30105-054630**	294.00
4.6mm	100mm	**03-050-196**	325.50
4.6mm	125mm	**30105-134630**	357.00
4.6mm	150mm	**03-050-197**	357.00
4.6mm	200mm	**30105-204630**	388.50
4.6mm	250mm	**03-050-102**	388.50
4.6mm	300mm	**30105-304630**	446.25

Thermo Scientific* Hypersil* Columns, Contd.

MOS (C8) Columns

- Highly efficient, proven reproducibility
- Undergo multiple quality control tests to ensure high quality
- Ideal for use in QA/QC laboratories

3µm Particle Size

I.D.	Length	Cat. No.	Each
1mm	20mm	**30203-021030**	309.75
1mm	30mm	**30203-031030**	309.75
1mm	50mm	**30203-051030**	336.00
1mm	100mm	**30203-101030**	372.75
1mm	150mm	**30203-151030**	399.00
1mm	250mm	**30203-251030**	430.50
2.1mm	20mm	**30203-022130**	309.75
2.1mm	30mm	**30203-032130**	309.75
2.1mm	50mm	**30203-052130**	336.00
2.1mm	125mm	**30203-122130**	399.00
2.1mm	150mm	**30203-152130**	399.00
2.1mm	200mm	**30203-202130**	430.50
3mm	20mm	**30203-023030**	309.75
3mm	30mm	**30203-033030**	309.75
3mm	50mm	**30203-053030**	336.00
3mm	100mm	**30203-103030**	372.75
3mm	125mm	**30203-123030**	399.00
3mm	150mm	**30203-153030**	399.00
3mm	200mm	**30203-203030**	430.50
3mm	250mm	**30203-253030**	430.50
4mm	20mm	**30203-024030**	309.75
4mm	30mm	**30203-034030**	309.75
4mm	50mm	**30203-054030**	336.00
4mm	100mm	**30203-104030**	372.75
4mm	125mm	**30203-124030**	399.00
4mm	150mm	**30203-154030**	399.00
4mm	200mm	**30203-204030**	430.50
4mm	250mm	**30203-254030**	430.50
4.6mm	20mm	**30203-024630**	309.75
4.6mm	30mm	**30203-034630**	309.75
4.6mm	75mm	**30203-074630**	372.75
4.6mm	125mm	**30203-124630**	399.00
4.6mm	200mm	**30203-204630**	430.50
4.6mm	250mm	**30203-254630**	430.50

5 and 10µm Particle Sizes

I.D.	Length	Cat. No.	Each
5µm Particle Size			
1mm	30mm	**30205-031030**	294.00
1mm	50mm	**30205-051030**	294.00
1mm	100mm	**30205-101030**	325.50
1mm	150mm	**30205-151030**	357.00
1mm	250mm	**30205-251030**	388.50
2.1mm	20mm	**30205-022130**	294.00
2.1mm	30mm	**30205-032130**	294.00
2.1mm	125mm	**30205-122130**	357.00
2.1mm	150mm	**30205-152130**	357.00
2.1mm	200mm	**30205-202130**	388.50
3mm	200mm	**30205-203030**	388.50
3mm	150mm	**30205-153030**	357.00
3mm	20mm	**30205-023030**	294.00
3mm	30mm	**30205-033030**	294.00
3mm	50mm	**30205-053030**	294.00
3mm	100mm	**30205-103030**	325.50
3mm	125mm	**30205-123030**	357.00
3mm	250mm	**30205-253030**	388.50
4mm	20mm	**30205-024030**	294.00
4mm	30mm	**30205-034030**	294.00
4mm	50mm	**30205-054030**	294.00
4mm	100mm	**30205-104030**	325.50
4mm	125mm	**30205-124030**	357.00
4mm	200mm	**30205-204030**	388.50
4mm	250mm	**30205-254030**	388.50
4.6mm	20mm	**30205-024630**	294.00
4.6mm	30mm	**30205-034630**	294.00
4.6mm	125mm	**30205-124630**	357.00
4.6mm	150mm	**03-050-127**	357.00
4.6mm	200mm	**30205-204630**	388.50
4.6mm	250mm	**03-050-128**	388.50
10µm Particle Size			
4.6mm	250mm	**30210-254630**	367.50

Contd. on next page.

Thermo Scientific* Hypersil* Columns, Contd.

SAS C1 Columns

- Can be used in ion-pair separations

3µm Particle Size

I.D.	Length	Cat. No.	Each
1mm	20mm	**30503-021030**	309.75
1mm	30mm	**30503-031030**	309.75
1mm	50mm	**30503-051030**	336.00
1mm	100mm	**30503-101030**	372.75
1mm	125mm	**30503-121030**	399.00
1mm	150mm	**30503-151030**	399.00
1mm	250mm	**30503-251030**	430.50
2.1mm	20mm	**30503-022130**	309.75
2.1mm	30mm	**30503-032130**	309.75
2.1mm	125mm	**30503-122130**	399.00
2.1mm	200mm	**30503-202130**	430.50
3mm	20mm	**30503-023030**	309.75
3mm	30mm	**30503-033030**	309.75
3mm	50mm	**30503-053030**	336.00
3mm	100mm	**30503-103030**	372.75
3mm	125mm	**30503-123030**	399.00
3mm	150mm	**30503-153030**	399.00
3mm	200mm	**30503-203030**	430.50
3mm	250mm	**30503-253030**	430.50
4mm	20mm	**30503-024030**	309.75
4mm	30mm	**30503-034030**	309.75
4mm	50mm	**30503-054030**	336.00
4mm	100mm	**30503-104030**	372.75
4mm	125mm	**30503-124030**	399.00
4mm	150mm	**30503-154030**	399.00
4mm	200mm	**30503-204030**	430.50
4mm	250mm	**30503-254030**	430.50
4.6mm	20mm	**30503-024630**	309.75
4.6mm	30mm	**30503-034630**	309.75
4.6mm	125mm	**30503-124630**	399.00
4.6mm	200mm	**30503-204630**	430.50
4.6mm	250mm	**30503-254630**	430.50

5 and 10µm Particle Sizes

I.D.	Length	Cat. No.	Each
5µm Particle Size			
1mm	20mm	**30505-021030**	294.00
1mm	30mm	**30505-031030**	294.00
1mm	50mm	**30505-051030**	294.00
1mm	100mm	**30505-101030**	325.50
1mm	150mm	**30505-151030**	357.00
1mm	250mm	**30505-251030**	388.50
2.1mm	20mm	**30505-022130**	294.00
2.1mm	30mm	**30505-032130**	294.00
2.1mm	125mm	**30505-122130**	357.00
2.1mm	200mm	**30505-202130**	388.50
3mm	20mm	**30505-023030**	294.00
3mm	30mm	**30505-033030**	294.00
3mm	50mm	**30505-053030**	294.00
3mm	100mm	**30505-103030**	325.50
3mm	125mm	**30505-123030**	357.00
3mm	150mm	**30505-153030**	357.00
3mm	200mm	**30505-203030**	388.50
3mm	250mm	**30505-253030**	388.50
4mm	20mm	**30505-024030**	294.00
4mm	30mm	**30505-034030**	294.00
4mm	50mm	**30505-054030**	294.00
4mm	100mm	**30505-104030**	325.50
4mm	125mm	**30505-124030**	357.00
4mm	150mm	**30505-154030**	357.00
4mm	200mm	**30505-204030**	388.50
4mm	250mm	**30505-254030**	388.50
4.6mm	20mm	**30505-024630**	294.00
4.6mm	30mm	**30505-034630**	294.00
4.6mm	100mm	**30505-104630**	325.50
4.6mm	125mm	**30505-124630**	357.00
4.6mm	150mm	**03-050-539**	340.00
4.6mm	200mm	**30505-204630**	388.50
4.6mm	250mm	**03-050-540**	370.00
10µm Particle Size			
4.6mm	250mm	**30510-254630**	367.50

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Thermo Scientific* Hypersil* Columns, Contd.

CPS (Cyano) Columns

3µm Particle Size

I.D.	Length	Cat. No.	Each
1mm	20mm	**30803-021030**	309.75
1mm	30mm	**30803-031030**	309.75
1mm	50mm	**30803-051030**	336.00
1mm	100mm	**30803-101030**	372.75
1mm	125mm	**30803-121030**	399.00
1mm	150mm	**30803-151030**	399.00
1mm	250mm	**30803-251030**	430.50
2.1mm	20mm	**30803-022130**	309.75
2.1mm	30mm	**30803-032130**	309.75
2.1mm	120mm	**30803-122130**	399.00
2.1mm	200mm	**30803-202130**	430.50
2.1mm	250mm	**30803-252130**	430.50
3mm	20mm	**30803-023030**	309.75
3mm	30mm	**30803-033030**	309.75
3mm	50mm	**30803-053030**	336.00
3mm	100mm	**30803-103030**	372.75
3mm	125mm	**30803-123030**	399.00
3mm	150mm	**30803-153030**	399.00
3mm	200mm	**30803-203030**	430.50
3mm	250mm	**30803-253030**	430.50
4mm	20mm	**30803-024030**	309.75
4mm	30mm	**30803-034030**	309.75
4mm	50mm	**30803-054030**	336.00
4mm	100mm	**30803-104030**	372.75
4mm	125mm	**30803-124030**	399.00
4mm	150mm	**30803-154030**	399.00
4mm	200mm	**30803-204030**	430.50
4mm	250mm	**30803-254030**	430.50
4.6mm	20mm	**30803-024630**	309.75
4.6mm	30mm	**30803-034630**	309.75
4.6mm	100mm	**03-050-541**	355.00
4.6mm	150mm	**03-050-542**	380.00
4.6mm	125mm	**30803-124630**	399.00
4.6mm	200mm	**30803-204630**	430.50
4.6mm	250mm	**30803-254630**	430.50

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5 and 10µm Particle Sizes

I.D.	Length	Cat. No.	Each
5µm Particle Size			
1mm	30mm	**30805-031030**	294.00
1mm	50mm	**30805-051030**	294.00
1mm	100mm	**30805-101030**	325.50
1mm	150mm	**30805-151030**	357.00
1mm	250mm	**30805-251030**	388.50
2.1mm	30mm	**30805-032130**	294.00
2.1mm	50mm	**30805-052130**	294.00
2.1mm	200mm	**30805-202130**	388.50
2.1mm	250mm	**30805-252130**	388.50
3mm	30mm	**30805-033030**	294.00
3mm	50mm	**30805-053030**	294.00
3mm	100mm	**30805-103030**	325.50
3mm	150mm	**30805-153030**	357.00
3mm	200mm	**30805-203030**	388.50
3mm	250mm	**30805-253030**	388.50
4mm	30mm	**30805-034030**	294.00
4mm	50mm	**30805-054030**	294.00
4mm	100mm	**30805-104030**	325.50
4mm	200mm	**30805-204030**	388.50
4mm	250mm	**30805-254030**	388.50
4.6mm	30mm	**30805-034630**	294.00
4.6mm	100mm	**30805-104630**	325.50
4.6mm	200mm	**30805-204630**	388.50
4.6mm	150mm	**03-050-543**	340.00
4.6mm	250mm	**03-250-454**	370.00
10µm Particle Size			
4.6mm	150mm	**30810-154630**	357.00

Phenyl Columns

3µm Particle Size

I.D.	Length	Cat. No.	Each
1mm	20mm	**30903-021030**	309.75
1mm	30mm	**30903-031030**	309.75
1mm	50mm	**30903-051030**	336.00
1mm	100mm	**30903-101030**	372.75
1mm	150mm	**30903-151030**	399.00
1mm	250mm	**30903-251030**	430.50
2.1mm	20mm	**30903-022130**	309.75
2.1mm	30mm	**30903-032130**	309.75
2.1mm	200mm	**30903-202130**	430.50
2.1mm	250mm	**30903-252130**	430.50
3mm	20mm	**30903-023030**	309.75
3mm	30mm	**30903-033030**	309.75
3mm	50mm	**30903-053030**	336.00
3mm	100mm	**30903-103030**	372.75
3mm	150mm	**30903-153030**	399.00
3mm	200mm	**30903-203030**	430.50
3mm	250mm	**30903-253030**	430.50
4mm	20mm	**30903-024030**	309.75
4mm	30mm	**30903-034030**	309.75
4mm	50mm	**30903-054030**	336.00
4mm	100mm	**30903-104030**	372.75
4mm	150mm	**30903-154030**	399.00
4.6mm	20mm	**30903-024630**	309.75
4.6mm	30mm	**30903-034630**	309.75
4.6mm	150mm	**03-050-544**	380.00
4.6mm	200mm	**30903-204630**	430.50
4.6mm	250mm	**30903-254630**	430.50

Contd. on next page.

Thermo Scientific* Hypersil* Columns, Contd.

Phenyl Columns, Contd.

5µm Particle Size

I.D.	Length	Cat. No.	Each
1mm	30mm	**30905-031030**	294.00
1mm	50mm	**30905-051030**	294.00
1mm	100mm	**30905-101030**	325.50
1mm	150mm	**30905-151030**	357.00
1mm	250mm	**30905-251030**	388.50
2.1mm	30mm	**30905-032130**	294.00
2.1mm	50mm	**30905-052130**	294.00
2.1mm	200mm	**30905-202130**	388.50
3mm	30mm	**30905-033030**	294.00
3mm	50mm	**30905-053030**	294.00
3mm	100mm	**30905-103030**	325.50
3mm	150mm	**30905-153030**	357.00
3mm	200mm	**30905-203030**	388.50
3mm	250mm	**30905-253030**	388.50
4mm	30mm	**30905-034030**	294.00
4mm	50mm	**30905-054030**	294.00
4mm	100mm	**30905-104030**	325.50
4mm	300mm	**30905-304030**	446.25
4.6mm	30mm	**30905-034630**	294.00
4.6mm	100mm	**30905-104630**	325.50
4.6mm	150mm	**03-050-545**	340.00
4.6mm	200mm	**30905-204630**	388.50
4.6mm	250mm	**03-050-129**	388.50
4.6mm	300mm	**30905-304630**	446.25

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Silica Columns

- ▸ Robust and reproducible base media for nonpolar and moderately polar organic compounds by normal phase

3µm Particle Size

I.D.	Length	Cat. No.	Each
1mm	20mm	**30003-021030**	309.75
1mm	30mm	**30003-031030**	309.75
1mm	50mm	**30003-051030**	336.00
1mm	100mm	**30003-101030**	372.75
1mm	125mm	**30003-121030**	399.00
1mm	150mm	**30003-151030**	399.00
1mm	200mm	**30003-201030**	430.50
1mm	250mm	**30003-251030**	430.50
2.1mm	20mm	**30003-022130**	309.75
2.1mm	30mm	**30003-032130**	309.75
2.1mm	50mm	**30003-052130**	336.00
2.1mm	100mm	**30003-102130**	372.75
2.1mm	125mm	**30003-122130**	399.00
2.1mm	200mm	**30003-202130**	430.50
3mm	20mm	**30003-023030**	309.75
3mm	30mm	**30003-033030**	309.75
3mm	50mm	**30003-053030**	336.00
3mm	100mm	**30003-103030**	372.75
3mm	125mm	**30003-123030**	399.00
3mm	150mm	**30003-153030**	399.00
3mm	200mm	**30003-203030**	430.50
3mm	250mm	**30003-253030**	430.50
4mm	20mm	**30003-024030**	309.75
4mm	30mm	**30003-034030**	309.75
4mm	50mm	**30003-054030**	336.00
4mm	100mm	**30003-104030**	372.75
4mm	125mm	**30003-124030**	399.00
4mm	150mm	**30003-154030**	399.00
4mm	200mm	**30003-204030**	430.50
4mm	250mm	**30003-254030**	430.50
4.6mm	20mm	**30003-024630**	309.75
4.6mm	30mm	**30003-034630**	309.75
4.6mm	75mm	**30003-074630**	372.75
4.6mm	125mm	**30003-124630**	399.00
4.6mm	150mm	**03-050-547**	380.00
4.6mm	200mm	**30003-204630**	430.50
4.6mm	250mm	**30003-254630**	430.50

*Trademark. See Trademark Reference.

Thermo Scientific* Hypersil* Columns, Contd.

Silica Columns, Contd.

5 and 10µm Particle Sizes

I.D.	Length	Cat. No.	Each
5µm Particle Size			
1mm	20mm	**30005-021030**	294.00
1mm	30mm	**30005-031030**	294.00
1mm	50mm	**30005-051030**	294.00
1mm	100mm	**30005-101030**	325.50
1mm	150mm	**30005-151030**	357.00
1mm	250mm	**30005-251030**	388.50
2.1mm	20mm	**30005-022130**	294.00
2.1mm	30mm	**30005-032130**	294.00
2.1mm	50mm	**30005-052130**	294.00
2.1mm	100mm	**30005-102130**	325.50
2.1mm	125mm	**30005-122130**	357.00
2.1mm	200mm	**30005-202130**	388.50
3mm	20mm	**30005-023030**	294.00
3mm	30mm	**30005-033030**	294.00
3mm	50mm	**30005-053030**	294.00
3mm	100mm	**30005-103030**	325.50
3mm	125mm	**30005-123030**	357.00
3mm	150mm	**30005-153030**	357.00
3mm	200mm	**30005-203030**	388.50
3mm	250mm	**30005-253030**	388.50
4mm	20mm	**30005-024030**	294.00
4mm	30mm	**30005-034030**	294.00
4mm	50mm	**30005-054030**	294.00
4mm	100mm	**30005-104030**	325.50
4mm	125mm	**30005-124030**	357.00
4mm	150mm	**30005-154030**	357.00
4mm	200mm	**30005-204030**	388.50
4mm	250mm	**30005-254030**	388.50
4mm	300mm	**30005-304030**	446.25
4.6mm	30mm	**30005-034630**	294.00
4.6mm	50mm	**30005-054630**	294.00
4.6mm	75mm	**30005-074630**	325.50
4.6mm	100mm	**30005-104630**	325.50
4.6mm	125mm	**30005-124630**	357.00
4.6mm	150mm	**03-050-548**	340.00
4.6mm	200mm	**30005-204630**	388.50
4.6mm	250mm	**03-050-549**	370.00
4.6mm	300mm	**30005-304630**	446.25
10µm Particle Size			
4.6mm	250mm	**30030-254630**	262.50
4.6mm	300mm	**30010-304630**	446.25

APS-2 Columns

5 and 10µm Particle Sizes

I.D.	Length	Cat. No.	Each
5µm Particle Size			
1mm	20mm	**30705-021030**	294.00
1mm	30mm	**30705-031030**	294.00
1mm	50mm	**30705-051030**	294.00
1mm	100mm	**30705-101030**	325.50
1mm	150mm	**30705-151030**	357.00
1mm	250mm	**30705-251030**	388.50
2.1mm	20mm	**30705-022130**	294.00
2.1mm	30mm	**30705-032130**	294.00
2.1mm	50mm	**30705-052130**	294.00
2.1mm	100mm	**30705-102130**	325.50
2.1mm	125mm	**30705-122130**	357.00
2.1mm	200mm	**30705-202130**	388.50
3mm	20mm	**30705-023030**	294.00
3mm	30mm	**30705-033030**	294.00
3mm	50mm	**30705-053030**	294.00
3mm	100mm	**30705-103030**	325.50
3mm	125mm	**30705-123030**	357.00
3mm	150mm	**30705-153030**	357.00
3mm	200mm	**30705-203030**	388.50
3mm	250mm	**30705-253030**	388.50
4mm	20mm	**30705-024030**	294.00
4mm	30mm	**30705-034030**	294.00
4mm	50mm	**30705-054030**	294.00
4mm	100mm	**30705-104030**	325.50
4mm	125mm	**30705-124030**	357.00
4mm	200mm	**30705-204030**	388.50
4mm	250mm	**30705-254030**	388.50
4.6mm	20mm	**30705-024630**	294.00
4.6mm	30mm	**30705-034630**	294.00
4.6mm	100mm	**30705-104630**	325.50
4.6mm	125mm	**30705-124630**	357.00
4.6mm	200mm	**30705-204630**	388.50
4.6mm	300mm	**30705-304630**	446.25
10µm Particle Size			
4.6mm	100mm	**30710-104630**	325.50
4.6mm	200mm	**30710-204630**	367.50
4.6mm	250mm	**30710-254630**	367.50

Contd. on next page.

Thermo Scientific* Hypersil* Columns, Contd.

SAX Columns

5µm Particle Size and 120Å Pore Size

I.D.	Length	Cat. No.	Each
1mm	30mm	**34105-031030**	294.00
1mm	50mm	**34105-051030**	294.00
1mm	100mm	**34105-101030**	325.50
1mm	250mm	**34105-251030**	388.50
2.1mm	30mm	**34105-032130**	294.00
2.1mm	50mm	**34105-052130**	294.00
2.1mm	100mm	**34105-102130**	325.50
2.1mm	200mm	**34105-202130**	388.50
3mm	30mm	**34105-033030**	294.00
3mm	50mm	**34105-053030**	294.00
3mm	100mm	**34105-103030**	325.50
3mm	150mm	**34105-153030**	357.00
3mm	200mm	**34105-203030**	388.50
3mm	250mm	**34105-253030**	388.50
4mm	30mm	**34105-034030**	294.00
4mm	50mm	**34105-054030**	294.00
4mm	100mm	**34105-104030**	325.50
4.6mm	30mm	**34105-034630**	294.00
4.6mm	50mm	**34105-054630**	294.00
4.6mm	100mm	**34105-104630**	325.50
4.6mm	200mm	**34105-204630**	388.50
4.6mm	150mm	**03-050-553**	340.00
4.6mm	250mm	**03-050-123**	388.50

Thermo Scientific* Hypersil* Drop-In Guard Cartridges—CPA, Phenyl, APS-2, SAX

Convenient, economical, and effective protection for extending column lifetimes

- Fast and simple installation
- 10mm length provides column protection with minimal impact on chromatography applications
- Drop-In cartridges are available for all Thermo Scientific stationary phases
- Require the use of a Uniguard* Direct-Connection* Drop-In Guard Cartridge Holder (Cat. Nos. 852-00, 850-00; sold separately)

Particle Size	I.D.	Cat. No.	Pack of 4
CPS (Cyano)			
3µm	1mm	**30803-011001**	173.25
3µm	3mm	**30803-013001**	173.25
5µm	1mm	**30805-011001**	162.75
5µm	3mm	**30805-013001**	162.75
5µm	4.0/4.6mm	**03-050-557**	155.00
Phenyl			
3µm	3mm	**30903-013001**	173.25
5µm	3mm	**30905-013001**	162.75
5µm	4.0/4.6mm	**03-050-556**	155.00
APS-2 (Amino)			
3µm	1mm	**30703-011001**	173.25
3µm	2.1mm	**30703-012101**	173.25
3µm	3mm	**30703-013001**	173.25
3µm	4mm	**30703-014001**	173.25
5µm	1mm	**30705-011001**	162.75
5µm	3mm	**30705-013001**	162.75
5µm	4.0/4.6mm	**03-050-559**	155.00
SAX			
5µm	2.1mm	**34105-012101**	162.75
5µm	3mm	**34105-013001**	162.75
5µm	4mm	**03-050-124**	162.75

Thermo Scientific* BioBasic* Reversed-Phase Columns

High-performance stationary phase offering different selectivity

- Extra-dense bonding chemistry gives a highly stable, reproducible surface for reliable results
- 300Å pore size for improved performance in biomolecule applications; also use for small separations in food additives, aromatic acids, small organic acids, and in LC/MS
- Stainless-steel column hardware

C18 Columns

I.D.	Length	Cat. No.	Each
1mm	30mm	**72105-031030**	324.50
1mm	50mm	**72105-051030**	324.50
1mm	125mm	**72105-121030**	381.25
1mm	150mm	**72105-151030**	381.25
1mm	200mm	**72105-201030**	412.00
1mm	250mm	**72105-251030**	412.00
2.1mm	30mm	**72105-032130**	324.50
2.1mm	50mm	**72105-052130**	324.50
2.1mm	100mm	**72105-102130**	350.25
2.1mm	125mm	**72105-122130**	381.25
2.1mm	200mm	**72105-202130**	412.00
2.1mm	250mm	**72105-252130**	412.00
3mm	30mm	**72105-033030**	324.50
3mm	50mm	**72105-053030**	324.50
3mm	100mm	**72105-103030**	350.25
3mm	125mm	**72105-123030**	381.25
3mm	150mm	**72105-153030**	381.25
3mm	200mm	**72105-203030**	412.00
3mm	250mm	**72105-253030**	412.00
4mm	125mm	**72105-124030**	381.25
4mm	150mm	**72105-154030**	381.25
4mm	200mm	**72105-204030**	412.00
4mm	250mm	**72105-254030**	412.00
4.6mm	30mm	**72105-034630**	324.50
4.6mm	50mm	**72105-054630**	324.50
4.6mm	125mm	**72105-124630**	381.25
4.6mm	150mm	**72105-154630**	381.25
4.6mm	200mm	**72105-204630**	412.00
4.6mm	250mm	**72105-254630**	412.00

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Thermo Scientific* BioBasic* Reversed-Phase Columns, Contd.

C8 Columns

I.D.	Length	Cat. No.	Each
1mm	30mm	**72205-031030**	324.50
1mm	125mm	**72205-121030**	381.25
1mm	200mm	**72205-201030**	412.00
1mm	250mm	**72205-251030**	412.00
2.1mm	30mm	**72205-032130**	324.50
2.1mm	100mm	**72205-102130**	350.25
2.1mm	125mm	**72205-122130**	381.25
2.1mm	200mm	**72205-202130**	412.00
2.1mm	250mm	**72205-252130**	412.00
3mm	30mm	**72205-033030**	324.50
3mm	125mm	**72205-123030**	381.25
3mm	200mm	**72205-203030**	412.00
3mm	250mm	**72205-253030**	412.00
4mm	125mm	**72205-124030**	381.25
4mm	150mm	**72205-154030**	381.25
4mm	200mm	**72205-204030**	412.00
4mm	250mm	**72205-254030**	412.00
4.6mm	30mm	**72205-034630**	324.50
4.6mm	125mm	**72205-124630**	381.25
4.6mm	150mm	**72205-154630**	381.25
4.6mm	200mm	**72205-204630**	412.00

C4 Columns

I.D.	Length	Cat. No.	Each
1mm	30mm	**72305-031030**	324.50
1mm	100mm	**72305-101030**	350.25
1mm	125mm	**72305-121030**	381.25
1mm	200mm	**72305-201030**	412.00
1mm	250mm	**72305-251030**	412.00
2.1mm	30mm	**72305-032130**	324.50
2.1mm	50mm	**72305-052130**	324.50
2.1mm	125mm	**72305-122130**	381.25
2.1mm	150mm	**72305-152130**	381.25
2.1mm	200mm	**72305-202130**	412.00
3mm	30mm	**72305-033030**	324.50
3mm	125mm	**72305-123030**	381.25
3mm	200mm	**72305-203030**	412.00
3mm	250mm	**72305-253030**	412.00
4mm	125mm	**72305-124030**	381.25
4mm	150mm	**72305-154030**	381.25
4mm	200mm	**72305-204030**	412.00
4mm	250mm	**72305-254030**	412.00
4.6mm	30mm	**72305-034630**	324.50
4.6mm	50mm	**72305-054630**	324.50
4.6mm	100mm	**72305-104630**	350.25
4.6mm	125mm	**72305-124630**	381.25
4.6mm	150mm	**72305-154630**	381.25
4.6mm	200mm	**72305-204630**	412.00
4.6mm	250mm	**72305-254630**	412.00

CN Columns

I.D.	Length	Cat. No.	Each
1mm	30mm	**72905-031030**	324.50
1mm	200mm	**72905-201030**	412.00
1mm	250mm	**72905-251030**	412.00
2.1mm	30mm	**72905-032130**	324.50
2.1mm	150mm	**72905-152130**	381.25
2.1mm	200mm	**72905-202130**	412.00
3mm	30mm	**72905-033030**	324.50
3mm	200mm	**72905-203030**	412.00
3mm	250mm	**72905-253030**	412.00
4mm	200mm	**72905-204030**	412.00
4mm	250mm	**72905-254030**	412.00
4.6mm	30mm	**72905-034630**	324.50
4.6mm	150mm	**72905-154630**	381.25
4.6mm	200mm	**72905-204630**	412.00

Phenyl Columns

I.D.	Length	Cat. No.	Each
1mm	30mm	**72405-031030**	324.50
1mm	125mm	**72405-121030**	381.25
1mm	200mm	**72405-201030**	412.00
1mm	250mm	**72405-251030**	412.00
2.1mm	30mm	**72405-032130**	324.50
2.1mm	50mm	**72405-052130**	324.50
2.1mm	125mm	**72405-122130**	381.25
2.1mm	150mm	**72405-152130**	381.25
2.1mm	200mm	**72405-202130**	412.00
3mm	30mm	**72405-033030**	324.50
3mm	50mm	**72405-053030**	324.50
3mm	125mm	**72405-123030**	381.25
3mm	200mm	**72405-203030**	412.00
3mm	250mm	**72405-253030**	412.00
4mm	125mm	**72405-124030**	381.25
4mm	150mm	**72405-154030**	381.25
4mm	200mm	**72405-204030**	412.00
4mm	250mm	**72405-254030**	412.00
4.6mm	30mm	**72405-034630**	324.50
4.6mm	100mm	**72405-104630**	350.25
4.6mm	125mm	**72405-124630**	381.25
4.6mm	200mm	**72405-204630**	412.00

Thermo Scientific* BioBasic* Reversed-Phase Drop-In Guard Cartridges

- Require the use of a Uniguard* Direct-Connection Drop-In Guard Cartridge Holder (sold separately)
- 10mm length

I.D.	Cat. No.	Pack of 4
C4		
1mm	**72305-011001**	170.00
4mm	**72305-014001**	170.00
C18		
1mm	**72105-011001**	170.00
2.1mm	**72105-012101**	170.00
3mm	**72105-013001**	170.00
4mm	**72105-014001**	170.00
CN		
4mm	**72905-014001**	170.00

Thermo Scientific* BioBasic* SEC Size Exclusion Columns

Ideal for molecular weight determinations of peptides, proteins, and water-soluble polymers; also for direct automated analysis of serum or urine samples

- Polymeric-coated, silica-based media
- Mechanically rigid for highly efficient separations with minimal secondary interactions
- 60Å and 120Å pore sizes can also be used for sample clean-up from biological matrices

733, 734, 735, 736 Series

Pore Size	I.D.	Length	Cat. No.	Each
60Å	7.8mm	150mm	**73305-157846**	690.25
120Å	7.8mm	300mm	**73405-307846**	901.25
300Å	7.8mm	150mm	**73505-157846**	690.25
300Å	7.8mm	300mm	**73505-307846**	906.50
1000Å	7.8mm	300mm	**73605-307846**	901.25

BioBasic SEC Guard Columns

Pore Size	I.D. × L	Cat. No.	Each
60Å	7.8 × 30mm	**73305-037821**	334.75
120Å	7.8 × 30mm	**73405-037821**	334.75
300Å	7.8 × 30mm	**73505-037821**	334.75
1000Å	7.8 × 30mm	**73605-037821**	334.75

Thermo Scientific* BioBasic* Ion Exchange Columns

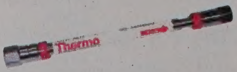
Choice of two proprietary, protein-friendly, polymeric ion exchange ligands bound to pure deactivated silica

- Provide high performance for proteins, peptides and nucleic acids
- Stable under demanding pH conditions
- AX has an ion exchange ligand of polyethyleneimine (PEI) and a capacity of 0.22mEq/g; use for normal phase and hydrophilic interaction chromatography (HILIC)
- SCX has an ion echange ligand of sulfonic acids and a capacity of 0.07mEq/g; excellent for cation exchange chromatography

AX Anion Exchange Columns

For the separation of proteins, peptides, other anionic species and highly polar molecules

- Proprietary, protein-friendly, ion exchange ligands of polyethyleneimine (PEI) bound to pure deactivated silica
- Low hydrophobicity
- Capacity of 0.22mEq/g; 3% carbon load
- Use for normal phase and hydrophilic interaction chromatography (HILIC)
- Stable under demanding pH conditions (2 to 8 pH range)



73205 Series

I.D.	Length	Cat. No.	Each
1mm	50mm	**73105-051030**	479.00
1mm	100mm	**73105-101030**	515.00
1mm	125mm	**73105-121030**	540.75
1mm	200mm	**73105-201030**	571.75
1mm	250mm	**73105-251030**	571.75
2.1mm	50mm	**73105-052130**	479.00
2.1mm	100mm	**73105-102130**	515.00
2.1mm	125mm	**73105-122130**	540.75
2.1mm	200mm	**73105-202130**	571.75
3mm	50mm	**73105-053030**	479.00
3mm	125mm	**73105-123030**	540.75
3mm	200mm	**73105-203030**	571.75
3mm	250mm	**73105-253030**	571.75
4mm	50mm	**73105-054030**	479.00
4mm	100mm	**73105-104030**	515.00
4mm	125mm	**73105-124030**	540.75
4mm	150mm	**73105-154030**	540.75
4mm	200mm	**73105-204030**	571.75
4mm	250mm	**73105-254030**	571.75
4.6mm	50mm	**73105-054630**	479.00
4.6mm	100mm	**73105-104630**	515.00
4.6mm	125mm	**73105-154630**	540.75
4.6mm	150mm	**73105-124630**	540.75
4.6mm	200mm	**73105-204630**	571.75
4.6mm	250mm	**73105-254630**	571.75

SCX Cation Exchange Columns

I.D.	Length	Cat. No.	Each
1mm	50mm	**73205-051030**	479.00
1mm	100mm	**73205-101030**	515.00
1mm	125mm	**73205-121030**	540.75
1mm	200mm	**73205-201030**	571.75
1mm	250mm	**73205-251030**	571.75
2.1mm	20mm	**73205-022130**	479.00
2.1mm	30mm	**73205-032130**	479.00
2.1mm	50mm	**73205-052130**	479.00
2.1mm	100mm	**73205-102130**	515.00
2.1mm	125mm	**73205-122130**	540.75
2.1mm	150mm	**73205-152130**	540.75
2.1mm	200mm	**73205-202130**	571.75
2.1mm	250mm	**73205-252130**	571.75
3mm	30mm	**73205-033030**	479.00
3mm	125mm	**73205-123030**	540.75
3mm	200mm	**73205-203030**	571.75
3mm	250mm	**73205-253030**	571.75
4mm	30mm	**73205-034030**	479.00
4mm	50mm	**73205-054030**	479.00
4mm	100mm	**73205-104030**	515.00
4mm	125mm	**73205-124030**	540.75
4mm	150mm	**73205-154030**	540.75
4mm	200mm	**73205-204030**	571.75
4mm	250mm	**73205-254030**	571.75
4.6mm	30mm	**73205-034630**	479.00
4.6mm	50mm	**73205-054630**	479.00
4.6mm	100mm	**73205-104630**	515.00
4.6mm	125mm	**73205-124630**	540.75
4.6mm	200mm	**73205-204630**	571.75
4.6mm	250mm	**73205-254630**	571.75

*Trademark. See Trademark Reference.

Thermo Scientific* BioBasic* Kappa* Columns

Particle size: 5µm

- Highly efficient capillary columns
- Inert stainless-steel sleeve
- Most columns have standard female endfittings that are compatible with 10-32 male nuts and 1⁄16" (1.6mm) O.D. capillary tubing; flexible 0.18 I.D. × 100mm long column has 1⁄32" (0.8mm) PEEK* male endfittings that allow it to be looped from port to port on the injector
- Proprietary bonding procedure ensures high phase coverage and resolution with shorter column lengths when compared to other 300Å columns
- Packings designed to give longer lifetimes and withstand harsh mobile phase and clean-up conditions
- Meet the sensitivity needs of demanding LC/MS applications, especially proteomics analysis at the nanomol and picomol level, as well as with microelectrospray and nanospray

BioBasic SCX Kappa Columns

I.D.	Length	Cat. No.	Each
0.18mm	100mm	**73205-100265**	458.50
0.32mm	30mm	**73205-030365**	437.75
0.32mm	150mm	**73205-150365**	484.25

BioBasic 18 Kappa Columns

I.D.	Length	Cat. No.	Each
0.5mm	250mm	**72105-250565**	468.75
0.075mm	100mm	**72105-100065**	401.75
0.075mm	150mm	**72105-150065**	432.75
0.1mm	100mm	**72105-100165**	401.75
0.1mm	150mm	**72105-150165**	432.75
0.18mm	100mm	**72105-100265**	401.75
0.18mm	150mm	**72105-150265**	432.75
0.32mm	100mm	**72105-100365**	401.75
0.32mm	150mm	**72105-150365**	432.75

BioBasic 8 Kappa Columns

I.D. × L	Cat. No.	Each
0.10 × 150mm	**72205-150165**	432.75
0.18 × 100mm	**72205-100265**	401.75
0.18 × 150mm	**72205-150265**	432.75
0.18 × 250mm	**72205-250265**	448.25
0.32 × 50mm	**72205-050365**	458.50
0.32 × 100mm	**72205-100365**	401.75
0.32 × 150mm	**72205-150365**	432.75
0.32 × 250mm	**72205-250365**	448.25

AX Kappa Columns

I.D. × L	Cat. No.	Each
0.32 × 50mm	**73105-050365**	458.50
0.32 × 150mm	**73105-150365**	484.25

Thermo Scientific* BioBasic* AX and SCX Ion Exchange Drop-In Guard Cartridges

5µm particle size

- Require the use of a Uniguard* Direct-Connection Drop-In Guard Cartridge Holder (sold separately)

I.D. × L	Cat. No.	Pack of 4
AX		
1 × 10mm	**73105-011001**	196.25
4/4.6 × 10mm	**73105-014001**	196.25
SCX		
1 × 10mm	**73205-011001**	196.25
2.1 × 10mm	**73205-012101**	196.25
4/4.6 × 10mm	**73205-014001**	196.25

Thermo Scientific* BioBasic* AX Javelin* Guard Column

One-piece format can be installed without wrenches and requires no holder

- Male outlet with a 16th inch CPI tip that attaches directly to the inlet of the HPLC column

I.D.	Length	Cat. No.	Pack of 4
2.1mm	10mm	**73105-012106**	242.25
2.1mm	20mm	**73105-022106**	242.25

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Thermo Scientific* BetaBasic* 18 Columns

- Highly efficient and reproducible columns
- 150Å pore size for small molecules, peptides and protein digests
- Superb pH stability

3µm Particle Size

I.D.	Length	Cat. No.	Each
1mm	20mm	**71503-021030**	323.50
1mm	30mm	**71503-031030**	323.50
1mm	50mm	**71503-051030**	339.25
1mm	100mm	**71503-101030**	371.00
1mm	150mm	**71503-151030**	403.00
1mm	250mm	**71503-251030**	434.75
2.1mm	20mm	**71503-022130**	323.50
2.1mm	30mm	**71503-032130**	323.50
2.1mm	50mm	**71503-052130**	339.25
2.1mm	75mm	**71503-072130**	371.00
2.1mm	100mm	**71503-102130**	371.00
2.1mm	125mm	**71503-122130**	403.00
2.1mm	150mm	**71503-152130**	403.00
2.1mm	250mm	**71503-252130**	434.75
3mm	20mm	**71503-023030**	323.50
3mm	30mm	**71503-033030**	323.50
3mm	50mm	**71503-053030**	339.25
3mm	75mm	**71503-073030**	371.00
3mm	100mm	**71503-103030**	371.00
3mm	150mm	**71503-153030**	403.00
3mm	250mm	**71503-253030**	434.75
4mm	20mm	**71503-024030**	323.50
4mm	30mm	**71503-034030**	323.50
4mm	50mm	**71503-054030**	339.25
4mm	75mm	**71503-074030**	371.00
4mm	100mm	**71503-104030**	371.00
4mm	125mm	**71503-124030**	403.00
4mm	150mm	**71503-154030**	403.00
4mm	250mm	**71503-254030**	434.75
4.6mm	20mm	**71503-024630**	323.50
4.6mm	30mm	**71503-034630**	323.50
4.6mm	50mm	**71503-054630**	339.25
4.6mm	75mm	**71503-074630**	371.00
4.6mm	80mm	**71503-084630**	371.00
4.6mm	100mm	**71503-104630**	371.00
4.6mm	125mm	**71503-124630**	403.00
4.6mm	150mm	**71503-154630**	403.00
4.6mm	250mm	**71503-254630**	434.75
4.6mm	300mm	**71503-304630**	477.00

5µm Particle Size

I.D.	Length	Cat. No.	Each
1mm	30mm	**71505-031030**	318.00
1mm	50mm	**71505-051030**	318.00
1mm	100mm	**71505-101030**	350.00
1mm	125mm	**71505-121030**	381.75
1mm	150mm	**71505-151030**	381.75
1mm	250mm	**71505-251030**	413.50
2.1mm	20mm	**71505-022130**	318.00
2.1mm	30mm	**71505-032130**	318.00
2.1mm	50mm	**71505-052130**	318.00
2.1mm	100mm	**71505-102130**	350.00
2.1mm	125mm	**71505-122130**	381.75
2.1mm	150mm	**71505-152130**	381.75
2.1mm	250mm	**71505-252130**	413.50
2.1mm	300mm	**71505-302130**	477.00
3mm	30mm	**71505-033030**	318.00
3mm	50mm	**71505-053030**	318.00
3mm	75mm	**71505-073030**	350.00
3mm	100mm	**71505-103030**	350.00
3mm	150mm	**71505-153030**	381.75
3mm	250mm	**71505-253030**	413.50
4mm	30mm	**71505-034030**	318.00
4mm	50mm	**71505-054030**	318.00
4mm	100mm	**71505-104030**	350.00
4mm	125mm	**71505-124030**	381.75
4mm	150mm	**71505-154030**	381.75
4mm	250mm	**71505-254030**	413.50
4mm	300mm	**71505-304030**	477.00
4.6mm	30mm	**71505-034630**	318.00
4.6mm	50mm	**71505-054630**	318.00
4.6mm	75mm	**71505-074630**	350.00
4.6mm	100mm	**71505-104630**	350.00
4.6mm	125mm	**71505-124630**	381.75
4.6mm	150mm	**71505-154630**	381.75
4.6mm	200mm	**71505-204630**	413.50
4.6mm	250mm	**71505-254630**	413.50

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LOOKING FOR MORE THERMO SCIENTIFIC* BETABASIC* 4 COLUMNS?

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Thermo Scientific* BetaBasic* 18 Guard Cartridge

Fits both Uniguard* and Direct Connection Uniguard* column protection systems

Particle Size	I.D.	Cat. No.	Pack of 4
3µm	1mm	**71503-011001**	169.75
3µm	2.1mm	**71503-012101**	169.75
3µm	3mm	**71503-013001**	169.75
3µm	4mm	**71503-014001**	169.75
5µm	1mm	**71505-011001**	169.75
5µm	2.1mm	**71505-012101**	169.75
5µm	3mm	**71505-013001**	169.75
5µm	4mm	**71505-014001**	169.75

Thermo Scientific* BetaBasic* 8 Columns—5µm Particle Size

150Å pore size for small molecules, peptides and protein digests

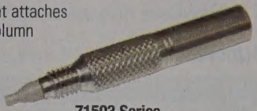
- Highly efficient and reproducible columns
- Superb pH stability

I.D.	Length	Cat. No.	Each
1mm	30mm	**71405-031030**	318.00
1mm	50mm	**71405-051030**	318.00
1mm	100mm	**71405-101030**	350.00
1mm	150mm	**71405-151030**	381.75
1mm	250mm	**71405-251030**	413.50
2.1mm	20mm	**71405-022130**	318.00
2.1mm	30mm	**71405-032130**	318.00
2.1mm	50mm	**71405-052130**	318.00
2.1mm	100mm	**71405-102130**	350.00
2.1mm	150mm	**71405-152130**	381.75
2.1mm	200mm	**71405-202130**	413.50
2.1mm	250mm	**71405-252130**	413.50
3mm	30mm	**71405-033030**	318.00
3mm	50mm	**71405-053030**	318.00
3mm	80mm	**71405-083030**	350.00
3mm	100mm	**71405-103030**	350.00
3mm	150mm	**71405-153030**	381.75
3mm	250mm	**71405-253030**	413.50
4mm	80mm	**71405-084030**	350.00
4mm	125mm	**71405-124030**	381.75
4mm	150mm	**71405-154030**	381.75
4mm	250mm	**71405-254030**	413.50
4mm	300mm	**71405-304030**	477.00
4.6mm	30mm	**71405-034630**	318.00
4.6mm	50mm	**71405-054630**	318.00
4.6mm	100mm	**71405-104630**	350.00
4.6mm	150mm	**71405-154630**	381.75
4.6mm	200mm	**71405-204630**	413.50
4.6mm	250mm	**71405-254630**	413.50
4.6mm	300mm	**71405-304630**	477.00

Thermo Scientific* BetaBasic* 18 Javelin* Guard Column

One-piece format can be installed without wrenches and requires no holder

- Male outlet with a 1⁄16" CPI tip that attaches directly to the inlet of the HPLC column



71503 Series

Particle Size	I.D.	Length	Cat. No.	Pack of 4
3µm	2.1mm	10mm	**71503-012106**	228.00
3µm	2.1mm	20mm	**71503-022106**	228.00
5µm	1mm	10mm	**71505-011006**	228.00
5µm	2.1mm	10mm	**71505-012106**	228.00
5µm	2.1mm	20mm	**71505-022106**	228.00
5µm	3mm	10mm	**71505-013006**	228.00
5µm	4mm	10mm	**71505-014006**	228.00
5µm	4.6mm	20mm	**71505-024606**	228.00

Thermo Scientific* BetaBasic* 8 Javelin* Guard Column

One-piece format that can be installed without wrenches and requires no holder

- Male outlet with a 1⁄16" CPI tip that attaches directly to the inlet of the HPLC column

I.D.	Length	Cat. No.	Pack of 4
1mm	10mm	**71405-011006**	228.00
2.1mm	10mm	**71405-012106**	228.00
3mm	10mm	**71405-013006**	228.00
4mm	10mm	**71405-014006**	228.00
2.1mm	20mm	**71405-022106**	228.00
3mm	20mm	**71405-023006**	228.00
4mm	20mm	**71405-024006**	228.00
4.6mm	20mm	**71405-024606**	228.00

Thermo Scientific* BetaBasic* 4 Javelin* Guard Column

One-piece format can be installed without wrenches and requires no holder

- Male outlet with a 1⁄16" CPI tip that attaches directly to the inlet of the HPLC column
- 5µm particle size

71605 Series

I.D.	Length	Cat. No.	Pack of 4
1mm	10mm	**71605-011006**	228.00
2.1mm	10mm	**71605-012106**	228.00
2.1mm	20mm	**71605-022106**	228.00
3mm	10mm	**71605-013006**	228.00
4mm	10mm	**71605-014006**	228.00
4mm	20mm	**71605-024006**	228.00
4.6mm	20mm	**71605-024606**	228.00

Thermo Scientific* AQUASIL* C18 Columns

Excellent retention and alternative selectivity for polar compounds

- Polar endcapped
- Compatible with 100% aqueous mobile phases

3µm Particle Size

I.D.	Length	Cat. No.	Each
1mm	20mm	**77503-021030**	339.25
1mm	30mm	**77503-031030**	339.25
1mm	50mm	**77503-051030**	339.25
1mm	100mm	**77503-101030**	376.50
1mm	125mm	**77503-121030**	408.25
1mm	150mm	**77503-151030**	408.25
1mm	200mm	**77503-201030**	440.00
1mm	250mm	**77503-251030**	440.00
2.1mm	20mm	**77503-022130**	339.25
2.1mm	30mm	**77503-032130**	339.25
2.1mm	50mm	**77503-052130**	339.25
2.1mm	75mm	**77503-072130**	376.50
2.1mm	100mm	**77503-102130**	376.50
2.1mm	125mm	**77503-122130**	408.25
2.1mm	150mm	**77503-152130**	408.25
2.1mm	200mm	**77503-202130**	440.00
2.1mm	250mm	**77503-252130**	440.00
3mm	20mm	**77503-023030**	307.50
3mm	30mm	**77503-033030**	339.25
3mm	50mm	**77503-053030**	339.25
3mm	100mm	**77503-103030**	376.50
3mm	125mm	**77503-123030**	408.25
3mm	150mm	**77503-153030**	408.25
3mm	200mm	**77503-203030**	440.00
3mm	250mm	**77503-253030**	440.00
4mm	20mm	**77503-024030**	339.25
4mm	30mm	**77503-034030**	339.25
4mm	50mm	**77503-054030**	339.25
4mm	100mm	**77503-104030**	376.50
4mm	125mm	**77503-124030**	408.25
4mm	150mm	**77503-154030**	408.25
4mm	200mm	**77503-204030**	440.00
4mm	250mm	**77503-254030**	440.00
4.6mm	20mm	**77503-024630**	339.25
4.6mm	30mm	**77503-034630**	339.25
4.6mm	50mm	**77503-054630**	339.25
4.6mm	75mm	**77503-074630**	376.50
4.6mm	100mm	**77503-104630**	376.50
4.6mm	125mm	**77503-124630**	408.25
4.6mm	150mm	**77503-154630**	408.25
4.6mm	200mm	**77503-204630**	440.00
4.6mm	250mm	**77503-254630**	440.00

LOOKING FOR SYRINGES FOR GAS CHROMATOGRAPHY?

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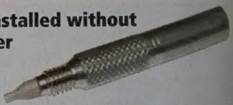
5µm Particle Size

I.D.	Length	Cat. No.	Each
1mm	30mm	**77505-031030**	318.00
1mm	50mm	**77505-051030**	318.00
1mm	100mm	**77505-101030**	350.00
1mm	125mm	**77505-121030**	387.00
1mm	150mm	**77505-151030**	387.00
1mm	200mm	**77505-201030**	424.00
1mm	250mm	**77505-251030**	424.00
2.1mm	20mm	**77505-022130**	318.00
2.1mm	30mm	**77505-032130**	318.00
2.1mm	50mm	**77505-052130**	318.00
2.1mm	75mm	**77505-072130**	350.00
2.1mm	100mm	**77505-102130**	350.00
2.1mm	125mm	**77505-122130**	387.00
2.1mm	150mm	**77505-152130**	387.00
2.1mm	200mm	**77505-202130**	424.00
2.1mm	250mm	**77505-252130**	424.00
3mm	30mm	**77505-033030**	318.00
3mm	50mm	**77505-053030**	318.00
3mm	100mm	**77505-103030**	350.00
3mm	125mm	**77505-123030**	387.00
3mm	150mm	**77505-153030**	387.00
3mm	200mm	**77505-203030**	424.00
3mm	250mm	**77505-253030**	424.00
4mm	30mm	**77505-034030**	318.00
4mm	50mm	**77505-054030**	318.00
4mm	100mm	**77505-104030**	350.00
4mm	125mm	**77505-124030**	387.00
4mm	150mm	**77505-154030**	387.00
4mm	200mm	**77505-204030**	424.00
4mm	250mm	**77505-254030**	424.00
4mm	300mm	**77505-304030**	466.50
4.6mm	30mm	**77505-034630**	318.00
4.6mm	50mm	**77505-054630**	318.00
4.6mm	75mm	**77505-074630**	350.00
4.6mm	100mm	**77505-104630**	350.00
4.6mm	125mm	**77505-124630**	387.00
4.6mm	150mm	**77505154630**	387.00
4.6mm	200mm	**77505-204630**	424.00
4.6mm	250mm	**77505-254630**	424.00
4.6mm	300mm	**77505-304630**	466.50

Thermo Scientific* AQUASIL* C18 Javelin Guard Column

Slim one-piece design can be installed without wrenches and requires no holder

- Male outlet with a 1⁄16" CPI tip to connect directly to the inlet of the analytical column



77503 Series, 77505 Series

I.D.	Length	Cat. No.	Pack of 4
3µm Particle Size			
1mm	10mm	**77503-011006**	228.00
1mm	20mm	**77503-021006**	228.00
2.1mm	10mm	**77503-012106**	228.00
2.1mm	20mm	**77503-022106**	228.00
3mm	20mm	**77503-023006**	228.00
5µm Particle Size			
2.1mm	10mm	**77505-012106**	228.00
2.1mm	20mm	**77505-022106**	228.00
3mm	10mm	**77505-013006**	228.00
4mm	10mm	**77505-014006**	228.00

Thermo Scientific* Betasil* C18 Columns—3µm Particle Size

Wide range of chemistries on fully deactivated type B silica

- High surface area with high bonded phase coverage for reproducibility and sharp peak shapes
- 100Å pore size

I.D.	Length	Cat. No.	Each
1mm	20mm	**70103-021030**	307.50
1mm	30mm	**70103-031030**	307.50
1mm	50mm	**70103-051030**	323.50
1mm	100mm	**70103-101030**	350.00
1mm	125mm	**70103-121030**	387.00
1mm	150mm	**70103-151030**	387.00
1mm	250mm	**70103-251030**	424.00
2.1mm	20mm	**70103-022130**	307.50
2.1mm	30mm	**70103-032130**	307.50
2.1mm	50mm	**70103-052130**	323.50
2.1mm	100mm	**70103-102130**	350.00
2.1mm	125mm	**70103-122130**	387.00
2.1mm	150mm	**70103-152130**	387.00
2.1mm	250mm	**70103-252130**	424.00
3mm	20mm	**70103-023030**	307.50
3mm	30mm	**70103-033030**	307.50
3mm	50mm	**70103-053030**	323.50
3mm	100mm	**70103-103030**	350.00
3mm	125mm	**70103-123030**	387.00
3mm	150mm	**70103-153030**	387.00
3mm	250mm	**70103-253030**	424.00
4mm	20mm	**70103-024030**	307.50
4mm	30mm	**70103-034030**	307.50
4mm	50mm	**70103-054030**	323.50
4mm	100mm	**70103-104030**	350.00
4mm	125mm	**70103-124030**	387.00
4mm	150mm	**70103-154030**	387.00
4mm	250mm	**70103-254030**	424.00
4.6mm	20mm	**70103-024630**	307.50
4.6mm	30mm	**70103-034630**	307.50
4.6mm	50mm	**70103-054630**	323.50
4.6mm	75mm	**70103-074630**	350.00
4.6mm	80mm	**70103-084630**	350.00
4.6mm	100mm	**70103-104630**	350.00
4.6mm	125mm	**70103-124630**	387.00
4.6mm	150mm	**70103-154630**	387.00
4.6mm	250mm	**70103-254630**	424.00

Thermo Scientific* Betasil* C18 Semi-Preparative Guard Cartridge

Protect your Betasil columns

- 10µm particle size

I.D.	Length	Cat. No.	Each
10mm	50mm	**70110-059022**	445.25
21mm	50mm	**70110-059222**	1017.75

Thermo Scientific* Betasil* Phenyl/Hexyl Columns—3µm Particle Size

Wide range of chemistries on 100Å fully deactivated type B silica

- High surface area with high bonded phase coverage for reproducibility and sharp peak shapes
- Includes a Phenyl/Hexyl mixed mode phase for alternative selectivity

I.D.	Length	Cat. No.	Each
1mm	20mm	**73003-021030**	297.00
1mm	30mm	**73003-031030**	297.00
1mm	50mm	**73003-051030**	312.75
1mm	100mm	**73003-101030**	344.50
1mm	125mm	**73003-121030**	376.50
1mm	150mm	**73003-151030**	376.50
1mm	250mm	**73003-251030**	408.25
2.1mm	20mm	**73003-022130**	297.00
2.1mm	30mm	**73003-032130**	297.00
2.1mm	50mm	**73003-052130**	312.75
2.1mm	100mm	**73003-102130**	344.50
2.1mm	125mm	**73003-122130**	376.50
2.1mm	150mm	**73003-152130**	376.50
2.1mm	250mm	**73003-252130**	408.25
3mm	20mm	**73003-023030**	297.00
3mm	30mm	**73003-033030**	297.00
3mm	50mm	**73003-053030**	312.75
3mm	100mm	**73003-103030**	344.50
3mm	125mm	**73003-123030**	376.50
3mm	150mm	**73003-153030**	376.50
3mm	250mm	**73003-253030**	408.25
4mm	20mm	**73003-024030**	297.00
4mm	30mm	**73003-034030**	297.00
4mm	50mm	**73003-054030**	312.75
4mm	100mm	**73003-104030**	344.50
4mm	125mm	**73003-124030**	376.50
4mm	150mm	**73003-154030**	376.50
4.6mm	20mm	**73003-024630**	297.00
4.6mm	30mm	**73003-034630**	297.00
4.6mm	50mm	**73003-054630**	312.75
4.6mm	100mm	**73003-104630**	344.50
4.6mm	125mm	**73003-124630**	376.50
4.6mm	150mm	**73003-154630**	376.50
4.6mm	250mm	**73003-254630**	408.25

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DON'T SEE THE RIGHT HPLC COLUMN?

Find an even wider selection for every application when you...

Visit www.fishersci.com and search for HPLC Columns

Thermo Scientific* Betasil* Silica Columns

High surface area and phase coverage for reproducibility and sharp peak shapes

- 100Å pore size makes the columns ideal for small to moderate molecular weight samples

I.D.	Length	Cat. No.	Each
3µm Particle Size			
2.1mm	30mm	**70003-032130**	307.50
2.1mm	50mm	**70003-052130**	323.50
2.1mm	100mm	**70003-102130**	350.00
3mm	50mm	**70003-053030**	323.50
4mm	75mm	**70003-074030**	350.00
4.6mm	50mm	**70003-054630**	323.50
4.6mm	150mm	**70003-154630**	387.00
4.6mm	250mm	**70003-254630**	424.00
5µm Particle Size			
1mm	30mm	**70005-031030**	291.50
1mm	50mm	**70005-051030**	291.50
1mm	100mm	**70005-101030**	323.50
1mm	150mm	**70005-151030**	350.00
1mm	200mm	**70005-201030**	387.00
1mm	250mm	**70005-251030**	387.00
2.1mm	30mm	**70005-032130**	291.50
2.1mm	50mm	**70005-052130**	291.50
2.1mm	100mm	**70005-102130**	323.50
2.1mm	150mm	**70005-152130**	350.00
2.1mm	200mm	**70005-202130**	387.00
2.1mm	250mm	**70005-252130**	387.00
3mm	30mm	**70005-033030**	291.50
3mm	50mm	**70005-053030**	291.50
3mm	100mm	**70005-103030**	323.50
3mm	150mm	**70005-153030**	350.00
3mm	200mm	**70005-203030**	387.00
3mm	250mm	**70005-253030**	387.00
4mm	30mm	**70005-034030**	291.50
4mm	50mm	**70005-054030**	291.50
4mm	150mm	**70005-154030**	350.00
4mm	200mm	**70005-204030**	387.00
4mm	250mm	**70005-254030**	387.00
4.6mm	30mm	**70005-034630**	291.50
4.6mm	50mm	**70005-054630**	291.50
4.6mm	100mm	**70005-104630**	323.50
4.6mm	150mm	**70005-154630**	350.00
4.6mm	200mm	**70005-204630**	387.00
4.6mm	250mm	**70005-254630**	387.00
4.6mm	300mm	**70005-304630**	456.00
10µm Particle Size			
4mm	300mm	**70010-304030**	445.25
4.6mm	300mm	**70010-304630**	445.25

Thermo Scientific* Hypercarb* Columns

Ideally suited to solve "problem" separations

- Use for difficult samples
  - Retention of very polar compounds
  - Resolution of closely related analytes
  - Analyses at pH extremes
- 100% porous graphitic carbon stationary phase—columns consist of fully porous spherical carbon particles comprised of flat sheets of hexagonally arranged carbon atoms
- Stable from pH 1 to 14 at ultrahigh temperatures in a wide range of solvents
- Can be used in both reversed and normal phase HPLC and LC/MS applications
- Separate highly polar compounds that are difficult to retain and resolve on silica-based alkyl phases
- Successful in the analysis of stereoisomes/diastereoisomers and positional isomers
- Use MS-friendly mobile phases

I.D.	Length	Cat. No.	Each
3µm Particle Size			
2.1mm	30mm	**35003-032130**	643.75
2.1mm	50mm	**35003-052130**	669.60
2.1mm	100mm	**35003-102130**	736.50
3mm	50mm	**35003-053030**	695.25
4mm	30mm	**35003-034030**	870.50
4mm	50mm	**35003-054030**	906.50
4mm	100mm	**35003-104030**	1195.00
4.6mm	30mm	**35003-034630**	870.50
4.6mm	50mm	**35003-054630**	906.50
4.6mm	100mm	**35003-104630**	1195.00
5µm Particle Size			
1mm	100mm	**35005-101030**	556.25
2.1mm	20mm	**35005-022130**	556.25
2.1mm	30mm	**35005-032130**	556.25
2.1mm	50mm	**35005-052130**	582.00
2.1mm	100mm	**35005-102130**	643.75
3mm	50mm	**35005-053030**	602.75
3mm	100mm	**35005-103030**	674.75
4mm	30mm	**35005-034030**	757.25
4mm	50mm	**35005-054030**	788.00
4mm	100mm	**35005-104030**	1045.50
4.6mm	50mm	**35005-054630**	788.00
4.6mm	100mm	**35005-104630**	1045.50
7µm Particle Size			
4mm	50mm	**35007-054030**	700.50
4mm	100mm	**35007-104030**	942.50
4.6mm	100mm	**35007-104630**	942.50

Thermo Scientific* Fluophase* PFP Columns

Perfluorinated phases provide unique selectivity

- Extra retention and selectivity for halogenated compounds
- Excellent for taxane analysis
- 100Å pore size
- 5µm particle size

I.D.	Length	Cat. No.	Each
1mm	30mm	**82705-031030**	450.50
1mm	50mm	**82705-051030**	450.50
1mm	100mm	**82705-101030**	461.25
1mm	150mm	**82705-151030**	487.75
1mm	250mm	**82705-251030**	519.50
2.1mm	30mm	**82705-032130**	450.50
2.1mm	50mm	**82705-052130**	450.50
2.1mm	100mm	**82705-102130**	461.25
2.1mm	150mm	**82705-152130**	487.75
2.1mm	250mm	**82705-252130**	519.50
3mm	30mm	**82705-033030**	450.50
3mm	50mm	**82705-053030**	450.50
3mm	100mm	**82705-103030**	461.25
3mm	150mm	**82705-153030**	487.75
3mm	250mm	**82705-253030**	519.50
4mm	30mm	**82705-034030**	450.50
4mm	50mm	**82705-054030**	450.50
4mm	100mm	**82705-104030**	461.25
4mm	150mm	**82705-154030**	487.75
4mm	250mm	**82705-254030**	519.50
4.6mm	30mm	**82705-034630**	450.50
4.6mm	50mm	**82705-054630**	450.50
4.6mm	100mm	**82705-104630**	461.25
4.6mm	150mm	**82705-154630**	487.75
4.6mm	250mm	**82705-254630**	519.50

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Thermo Scientific* Fluophase* PFP Columns, Contd.

Fluorophase* RP Column

I.D.	Length	Cat. No.	Each
1mm	30mm	**82505-031030**	450.50
1mm	50mm	**82505-051030**	450.50
1mm	100mm	**82505-101030**	461.25
1mm	125mm	**82505-121030**	487.75
1mm	150mm	**82505-151030**	487.75
1mm	250mm	**82505-251030**	519.50
2.1mm	30mm	**82505-032130**	450.50
2.1mm	50mm	**82505-052130**	450.50
2.1mm	100mm	**82505-102130**	461.25
2.1mm	125mm	**82505-122130**	487.75
2.1mm	150mm	**82505-152130**	487.75
2.1mm	250mm	**82505-252130**	519.50
3mm	30mm	**82505-033030**	450.50
3mm	50mm	**82505-053030**	450.50
3mm	100mm	**82505-103030**	461.25
3mm	125mm	**82505-123030**	487.75
3mm	150mm	**82505-153030**	487.75
3mm	250mm	**82505-253030**	519.50
4mm	30mm	**82505-034030**	450.50
4mm	50mm	**82505-054030**	450.50
4mm	100mm	**82505-104030**	461.25
4mm	125mm	**82505-124030**	487.75
4mm	150mm	**82505-154030**	487.75
4mm	200mm	**82505-204030**	519.50
4mm	250mm	**82505-254030**	519.50
4.6mm	30mm	**82505-034630**	450.50
4.6mm	50mm	**82505-054630**	450.50
4.6mm	100mm	**82505-104630**	461.25
4.6mm	125mm	**82505-124630**	487.75
4.6mm	150mm	**82505-154630**	487.75
4.6mm	200mm	**82505-204630**	519.50
4.6mm	250mm	**82505-254630**	519.50

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Thermo Scientific* Hypercarb* Kappa* Capillary Columns

100% porous graphite carbon for extended separation capabilities

- Exceptional retention of very polar analytes
- Separates structurally related substances
- pH stable from 0 to 14
- Excellent for high temperature applications (up to 200°C)

I.D.	Length	Cat. No.	Each
3µm Particle Size			
0.32mm	100mm	**35003-100365**	556.25
5µm Particle Size			
0.1mm	100mm	**35005-100165**	556.25
0.18mm	50mm	**35005-050265**	556.25
0.18mm	100mm	**35005-100265**	556.25
0.18mm	150mm	**35005-150265**	582.00
0.18mm	250mm	**35005-250265**	643.75
0.32mm	50mm	**35005-050365**	556.25
0.32mm	100mm	**35005-100365**	556.25
0.32mm	150mm	**35005-150365**	582.00
0.32mm	250mm	**35005-250365**	643.75
0.5mm	50mm	**35005-050565**	556.25
0.5mm	100mm	**35005-100565**	556.25
0.5mm	150mm	**35005-150565**	582.00
0.5mm	250mm	**35005-250565**	643.75
10µm Particle Size			
0.18mm	50mm	**35007-050265**	556.25
0.32mm	50mm	**35007-050365**	556.25
0.5mm	50mm	**35007-050565**	556.25

Thermo Scientific* Hypercarb* Semi-Preparative Columns

100% porous graphite carbon for extended separation capabilities

- Exceptional retention of very polar analytes
- Separates structurally related substances
- pH stable from 0 to 14

I.D.	Length	Cat. No.	Each
5µm Particle Size			
10mm	50mm	**35005-059070**	3229.25
10mm	100mm	**35005-109070**	4068.50
10mm	250mm	**35005-259070**	11,242.50
21mm	250mm	**35005-259270**	25,065.25
7µm Particle Size			
10mm	50mm	**35007-059070**	2111.50

Thermo Scientific* Hypersil* Green PAH Javelin* Guard Column

Particle Size	I.D.	Length	Cat. No.	Pack of 4
3µm	3mm	20mm	**31103-023006**	215.25

Thermo Scientific* Hypercarb* Javelin* Guard Columns

One-piece format can be installed without wrenches and requires no holder

- Male outlet with a 16th inch CPI tip that attaches directly to the inlet of the HPLC column
- 5µm particle size

I.D.	Length	Cat. No.	Pack of 2
1mm	10mm	**35005-011006**	407.00
2.1mm	10mm	**35005-012106**	407.00
2.1mm	20mm	**35005-022106**	407.00
4mm	10mm	**35005-014006**	407.00
4mm	20mm	**35005-024006**	407.00

Thermo Scientific* Hypercarb* Drop-In Guard Cartridges

Convenient, economic, and effective protection for extending column lifetimes

- Fast, simple installation
- 10mm length provides column protection
- Drop-in cartridges are available for all Thermo Scientific stationary phases
- Require the use of a Uniguard Direct-Connection Drop-In Guard Cartridge Holder (Cat. Nos. 851-00, 852-00, 850-00; sold separately)

Left: 35005 Series
Right: 851-00 Guard Cartridge Holder

I.D.	Length	Cat. No.	Pack of 2
3µm Particle Size			
2.1mm	10mm	**35003-012101**	396.75
5µm Particle Size			
1mm	10mm	**35005-011001**	345.25
2.1mm	10mm	**35005-012101**	345.25
3mm	10mm	**35005-013001**	345.25
4mm	10mm	**35005-014001**	345.25

Thermo Scientific* Uniguard* Direct-Connection Guard Cartridge Holders

Reusable, stainless-steel; attach directly to the analytical column inlet, eliminating requirement for extra fittings

- With PEEK 1/16" male outlet that fits many columns
- 1/16" female inlet tip can be used with various standard fittings

I.D.	Length	Cat. No.	Each
1mm	10mm	**851-00**	94.50
2.1/3mm	10mm	**852-00**	94.50
4/4.6mm	10mm	**850-00**	94.50

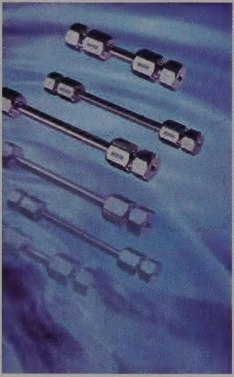
*Trademark. See Trademark Reference.

Prices subject to change.

Restek* Allure* Columns with Aqueous C18 Column Packing

Excellent choice when analyzing a wide range of compounds, as in LC/MS screening methods

- 5µm particle size, 60Å pore size
- Developed for maximum retention during LC/MS applications
- High retention, large surface area
- Not endcapped
- Also available in guard cartridge configurations
- **Aqueous C18 Columns** feature a highly retentive and selective phase for separating polar analytes, including polar acidic compounds
- Compatible with highly aqueous (up to 100%) mobile phases
- Base deactivated



06-739 Series

I.D.	Length	Mfr. No.	Cat. No.	Each
1.0mm	30mm	9168531	**06-739-124**	356.20
1.0mm	50mm	9168551	**06-739-128**	356.20
1.0mm	100mm	9168511	**06-739-116**	383.21
1.0mm	150mm	9168561	**06-739-132**	409.20
1.0mm	200mm	9168521	**06-739-120**	437.24
1.0mm	250mm	9168571	**06-739-136**	463.23
2.1mm	30mm	9168532	**06-739-125**	336.22
2.1mm	50mm	9168552	**06-739-129**	336.22
2.1mm	100mm	9168512	**06-739-117**	362.21
2.1mm	150mm	9168562	**06-739-133**	389.21
2.1mm	200mm	9168522	**06-739-121**	415.19
2.1mm	250mm	9168572	**06-739-137**	443.24
3.2mm	30mm	9168533	**06-739-126**	336.22
3.2mm	50mm	9168553	**06-739-130**	336.22
3.2mm	100mm	9168513	**06-739-118**	362.21
3.2mm	150mm	9168563	**06-739-134**	389.21
3.2mm	200mm	9168523	**06-739-122**	415.19
3.2mm	250mm	9168573	**06-739-138**	443.24
4.6mm	30mm	9168535	**06-739-127**	336.22
4.6mm	50mm	9168555	**06-739-131**	336.22
4.6mm	100mm	9168515	**06-739-119**	362.21
4.6mm	150mm	9168565	**06-739-135**	389.21
4.6mm	200mm	9168525	**06-739-123**	415.19
4.6mm	250mm	9168575	**06-739-139**	443.24

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Restek* Pinnacle* DB Columns with C18 Column Packing

Highly base-deactivated spherical silica

- Hydrophobic C18 phase suitable for analyses of a wide range of compounds, from highly acidic to slightly basic
- 5µm particle size, 140Å pore size
- Endcapped
- Carbon load 11%
- pH range 2.5 to 10
- Temperature limit 80°C

I.D.	Length	Cat. No.	Each
1.0mm	30mm	**06-728-338**	288.00
1.0mm	50mm	**06-728-345**	324.00
1.0mm	100mm	**06-728-324**	344.00
1.0mm	150mm	**06-728-352**	366.00
1.0mm	200mm	**06-728-331**	374.00
1.0mm	250mm	**06-728-359**	392.00
2.1mm	30mm	**06-728-339**	268.00
2.1mm	50mm	**06-728-346**	303.00
2.1mm	100mm	**06-728-325**	324.00
2.1mm	150mm	**06-728-353**	346.00
2.1mm	200mm	**06-728-332**	354.00
2.1mm	250mm	**06-728-360**	372.00
3.2mm	30mm	**06-728-341**	268.00
3.2mm	50mm	**06-728-348**	303.00
3.2mm	100mm	**06-728-327**	324.00
3.2mm	150mm	**06-728-355**	346.00
3.2mm	200mm	**06-728-334**	354.00
3.2mm	250mm	**06-728-362**	372.00
4.6mm	30mm	**06-728-343**	268.00
4.6mm	50mm	**06-728-350**	303.00
4.6mm	100mm	**06-728-329**	324.00
4.6mm	150mm	**06-728-357**	346.00
4.6mm	200mm	**06-728-336**	354.00
4.6mm	250mm	**06-728-364**	372.00
With Trident* Inlet Fitting			
2.1mm	30mm	**06-728 340**	283.00
2.1mm	50mm	**06-728 347**	318.00
2.1mm	100mm	**06-728 326**	339.00
2.1mm	150mm	**06-728 354**	361.00
2.1mm	200mm	**06-728 333**	369.00
2.1mm	250mm	**06-728 361**	387.00
3.2mm	30mm	**06-728 342**	283.00
3.2mm	50mm	**06-728 349**	318.00
3.2mm	100mm	**06-728 328**	339.00
3.2mm	150mm	**06-728 356**	361.00
3.2mm	200mm	**06-728 335**	369.00
3.2mm	250mm	**06-728 363**	387.00
4.6mm	30mm	**06-728 344**	283.00
4.6mm	50mm	**06-728 351**	318.00
4.6mm	100mm	**06-728 330**	339.00
4.6mm	150mm	**06-728 358**	361.00
4.6mm	200mm	**06-728 337**	369.00
4.6mm	250mm	**06-728 365**	387.00

Alltech* Prevail* HPLC Columns

Stable in 100% aqueous mobile phases

- General-purpose, reversed-phase columns
- Can be used with mobile phases from 100% aqueous to 100% organic
- Provide excellent retention of nonpolar analytes
- Stable bonding chemistry provides high efficiency, long column life and cleaner separations by reducing silanol interaction
- Use with mobile phases from 100% aqueous to 100% organic

AT99 Series

Particle Size	Packing	I.D. × L	Cat. No.	Each
Industry Standard				
3µm	C18	2.1 × 150mm	**AT99200**	529.67
3µm	C18	4.6 × 150mm	**AT99204**	529.67
5µm	C18	2.1 × 150mm	**AT99206**	529.67
5µm	C18	4.6 × 150mm	**AT99208**	529.67
5µm	C18	4.6 × 250mm	**AT99210**	546.22
3µm	C8	2.1 × 150mm	**AT99212**	529.67
3µm	C8	4.6 × 50mm	**AT43922**	466.79
5µm	C8	2.1 × 150mm	**AT99218**	529.67
5µm	C8	4.6 × 150mm	**AT99224**	529.67
3µm	Phenyl	4.6 × 100mm	**AT99233**	494.91
5µm	Amide	4.6 × 250mm	**AT88665**	536.01
Waters* Instrument				
3µm	C18	4.6 × 50mm	**AT43901**	413.29
3µm	C18	4.6 × 100mm	**AT99203**	494.91
3µm	C18	4.6 × 150mm	**AT99205**	529.67
5µm	C18	4.6 × 150mm	**AT99209**	561.59
5µm	Silica	2.1 × 150mm	**AT99274**	529.67

Alltech* Prevail* Guard Columns

- All-Guard* cartridges require guard cartridge holder AT80101 sold separately
- 5µm particle size

Column Packing	I.D. × L	Cat. No.	Pack of 3
C18	4.6 × 7.5mm	**AT99286**	144.84
C8	4.6 × 7.5mm	**AT99287**	152.81
OA (Organic Acid)	4.6 × 7.5mm	**AT96429**	152.81
Amide	4.6 × 7.5mm	**AT96443**	152.81

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Alltech* Alltima* Columns

Analyze acids, bases, and neutrals in one run

- Base-deactivated to eliminate activated silanols and reduce peak tailing
- Polymerically bonded and double endcapped for long life—even when using harsh mobile phases
- Retain capacity and selectivity after being washed for 500 hours with an acetonitrile/trifluoroacetic acid mobile phase
- When used in strongly basic compound applications, columns generally do not require mobile-phase modifiers, such as triethylamine, to produce sharp symmetrical peaks
- Also available in guard column and Rocket* column configurations

C18 Columns

	Industry Standard		Waters* Instrument	
I.D. x Length	Cat. No.	Each	Cat. No.	Each
3µm Particle Size				
4.6 × 50mm	**AT81412**	475.94	----	----
4.6 × 100mm	**AT81382**	515.78	**AT81383**	515.78
4.6 × 150mm	**AT81387**	516.81	----	----
5µm Particle Size				
4.6 × 150mm	**AT88052**	516.81	**AT88053**	548.66
4.6 × 250mm	**AT88056**	534.78	**AT88057**	534.78

Phenyl Columns—5µm Particle Size

I.D. x L	Particle Size	Cat. No.	Each
Industry Standard			
4.6 × 150mm	5µm	**AT88087**	548.66
4.6 × 250mm	5µm	**AT88092**	567.72
Waters*			
4.6 × 250mm	5µm	**AT88093**	567.72

Alltech* Alltima* Guard Columns

All-Guard* Cartridges

- Require guard cartridge holder (AT80101, sold separately)
- 5µm particle size

I.D. × Length	Cat. No.	Pack of 3
C18		
3.2 × 7.5mm	**AT96361**	150.46
4.6 × 7.5mm	**AT96080**	150.46
C18 - LL		
4.6 × 7.5mm	**AT96285**	150.46
C8		
3.2 × 7.5mm	**AT96362**	150.46
4.6 × 7.5mm	**AT96081**	150.46
AQ		
4.6× 7.5mm	**AT96344**	150.46
Phenyl		
4.6 × 7.5mm	**AT96082**	158.74
Cyano		
4.6 × 7.5mm	**AT96084**	150.46
Silica		
4.6 × 7.5mm	**AT96083**	158.74

Alltech* Platinum* Rocket* Columns

Short wide-bore format is designed for high-throughput and high-speed methods

- Methods run three to five times faster than on conventional columns with equal or better resolution
- Work well on any HPLC system without requiring special tubing, injectors or detectors for proper performance

Particle Size	I.D. × Length	Cat. No.	Each
C18			
1.5µm	7 × 33mm	**AT50527**	653.63
3µm	7 × 53mm	**AT50523**	413.81
EPS C18			
1.5µm	7 × 33mm	**AT50577**	653.63
1.5µm	7 × 53mm	**AT50579**	694.32
3µm	7 × 53mm	**AT50573**	413.81
Cyano			
3µm	7 × 53mm	**AT50595**	413.81

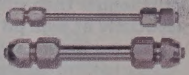
Alltech* Platinum* Guard Columns

- All-Guard* cartridges require guard cartridge holder AT80101, sold separately
- 5µm particle size

Column Packing	Pore Size	I.D. × Length	Cat. No.	Pack of 3
C18	100Å	4.6 × 7.5mm	**AT32606**	152.81
	300Å	4.6 × 7.5mm	**AT32610**	152.81
EPS C18	100Å	4.6 × 7.5mm	**AT32607**	144.84
Amino	100Å	4.6 × 7.5mm	**AT32621**	152.81

Whatman* Partisil* HPLC Columns

Irregularly shaped media in analytical, semipreparative, and preparative columns



05-713 Series

- Compatible with all HPLC and LC/MS instrumentation
- Neutral pH silica gel improves peak symmetry without the need for mobile phase modifiers
- Uniform particle sizing minimizes backpressure
- Efficiencies for Partisil 5µm media:: 50,000 N/M; Partisil 10µm media: 20,000 N/M

Standard Analytical Columns

- Allow direct scale-up or scale-down to Magnum* columns
- Applied with Whatman Compression Screw (WCS) fittings

RĀC* II Second-Generation Rapid-Analysis Columns

- Analytical columns for faster separations with reduced solvent consumption
- Special endfitting eliminates unswept corners to maximize resolution and peak symmetry
- Operate at low backpressure, even at high flowrates, for longer life
- Connect to LC instrumentation with WCS fittings

Magnum 9* Columns

- Semipreparative columns for microgram-to-gram quantities
- Coned outlet allows high load capacity with minimal peak distortion
- Compatible with HPLC instruments, allowing you to use the same equipment for both analytical and preparative work

Bonded Phase	Endcapped	Particle Size	Mfr. No.	Cat. No.	Each
Standard Analytical Columns. I.D. × L: 4.6mm × 25cm					
Silica	No	5µm	4215-001	**05-713-065**	697.72
ODS-3	Yes	5µm	4238-001	**05-713-123**	697.72
C8	Yes	5µm	4239-001	**05-713-124**	697.72
PAC	No	5µm	4235-001	**05-713-122**	697.72
Silica	No	10µm	4216-001	**05-713-066**	650.86
ODS	No	10µm	4223-001	**05-713-080**	650.86
ODS-2	No	10µm	4224-001	**05-713-081**	650.86
ODS-3	Yes	10µm	4228-001	**05-713-085**	650.86
C8	Yes	10µm	4229-001	**05-713-086**	650.86
PAC	No	10µm	4225-001	**05-713-082**	650.86
SAX	No	10µm	4226-001	**05-713-083**	650.86
SAX	No	10µm	4250-001	**05-713-128**[1]	758.39
SCX	No	10µm	4227-001	**05-713-084**	650.86
SCX	No	10µm	4251-001	**05-713-129**[1]	758.39
RĀC II Columns. I.D. × L: 4.6mm × 10cm					
ODS-3	Yes	5µm	4222-225	**05-713-073**	592.25
C8	Yes	5µm	4222-232	**05-713-077**	592.25
SAX	No	5µm	4222-227	**05-713-075**	592.25
SCX	No	5µm	4222-228	**05-713-076**	592.25
Magnum 9 Columns. I.D. × L: 9.4mm × 25cm					
ODS-3	Yes	10µm	4230-125	**05-713-090**	1463.12
Magnum 9 Columns. I.D. × L: 9.4mm × 50cm					
Silica	No	10µm	4230-220	**05-713-096**	1790.96

[1] *Includes Solvecon* precolumn kit, which extends column life up to 400%.*

PARTISIL CHARACTERISTICS

Bonded Phase	
Silica (85Å)	Irregular
ODS-3	10.5% carbon load; endcapped; polymeric
ODS-2	16% carbon load; polymeric
C_8	8.5% carbon load; endcapped; monomeric brush
PAC	0.85% N
SAX	0.85% NR5+
SCX	0.40% S

Hamilton PRP*-1 (100Å) Reversed Polymer Phase Columns

Lasts longer than silica-based C8 or C18 phase, especially at high pH levels (8 to 13)

14-816 Series

- Silanol free; no stationary phase coating for higher reproducibility
- Range of column sizes eases scale-up
- Remains stable with 0 to 100% organic modifier
- Stable from pH 0 to 14
- Maximum pressure, 5000psi
- Pore size, 100Å
- Stainless-steel or more inert PEEK* columns
- Common applications include analysis of DNA, catecholamines, amino acids, chlorophenols, sulfas, and water-soluble vitamins

Column Type	I.D. × Length	Particle Size	Mfr. No.	Cat. No.	Each
Stainless-Steel Columns					
Analytical	2.1 × 150mm	5µm	79366	**14-816-130**	479.11
Analytical	4.1 × 50mm	5µm	79443	**14-816-54**	386.85
Analytical	4.1 × 150mm	5µm	79444	**14-816-18**	479.11
Analytical	4.1 × 150mm	10µm	79425	**14-816-1**	386.85
Analytical	4.1 × 250mm	7µm	79422	**14-816-57**	601.77
Analytical	4.1 × 250mm	10µm	79427	**14-816-3**	490.65
Semipreparative	7 × 305mm	10µm	79426	**14-816-2**	625.89
Semipreparative	10 × 250mm	10µm	79496	**14-816-60**	1054.68
Preparative	21.5 × 250mm	12–20µm	79428	**14-816-202**	2399.75
PEEK Columns					
Analytical	4.6 × 150mm	5µm	79423	**14-816-55**	528.39
Analytical	4.6 × 150mm	10µm	79351	**14-816-201**	436.12
Analytical	4.6 × 250mm	10µm	79381	**14-816-103**	539.93

Hamilton PRP*-X100 Anion Exchange Columns

Separate inorganic or organic anions at concentrations from 10ppb to 1000ppm without chemical suppression

14-816 Series

- Features PRP-X100, a strong base ion exchanger (exchange capacity, 0.2mEq/g) that is stable from pH 1 to 13 and in 0 to 100% concentration of organic modifier
- 5000psi maximum pressure; flowrate range: 0 to 8mL/min.
- Longer life than silica columns
- Can be used on virtually any HPLC system
- Applications include analysis of weak acid counter ions like borate, silicate, and cyanide, and stronger anions like bromide, fluoride, chloride, and sulfate

I.D. × Length	Particle Size	Mfr. No.	Cat. No.	Each
Stainless-Steel Columns				
2.1 × 150mm	10µm	79421	**14-816-135**	514.76
2.1 × 250mm	10µm	79346	**14-816-136**	625.89
4.1 × 100mm	10µm	79439	**14-816-13**	479.11
4.1 × 150mm	10µm	79434	**14-816-9**	514.76
4.1 × 250mm	10µm	79433	**14-816-8**	625.89
PEEK Columns				
4.6 × 150mm	10µm	79354	**14-816-71**	564.03
4.6 × 250mm	10µm	79455	**14-816-109**	675.15

HPLC ACCESSORIES

Thermo Scientific* Hypersil* Javelin* Filters

One-piece filter protects HPLC systems

- Direct-connection design for maximum efficiency
- Replace entire disposable filter unit for easy changes
- Recommended for use as dedicated filters for a column rather than the HPLC system
- 1⁄16 in. CPI tip attaches directly to HPLC column inlet without tubing or wrenches
- 0.5µm porosity

I.D.	Cat. No.	Pack of 4
3.0mm	**88700**	63.00
4.6/4.0mm	**88400**	63.00

Thermo Scientific* Hypersil* PEEK* Capillary Tubing

Pre-cut and color-coded for easy identification and use

- Broad chemical compatibility
- Biocompatible
- Easily cut to desired length
- Appropriate for many HPLC applications
- Resistant to most organic solvents, but nitric acid, sulfuric acid, dichloromethane, THF and DMSO are not recommended

I.D.	Color	Length	Cat. No.	Each
0.005"	Red	5cm	**03-050-105**	7.50
0.005"	Red	10cm	**03-050-106**	8.50
0.005"	Red	20cm	**03-050-107**	9.75
0.005"	Red	30cm	**03-050-108**	9.75
0.005"	Red	50cm	**03-050-109**	10.75

Restek* Last-Drop* Filter

Allows more analyses per batch of mobile phase and helps reduce hazardous waste

- Flat filter element sits parallel to the bottom of the mobile phase reservoir, allowing the filter to draw 98% of the mobile phase without drawing air into the system
- Filter O.D.: 22.1mm

06-712-85 Series

Porosity	Mfr. No.	Cat. No.	Each
2µm	25314	**06-712-857**	62.00
10µm	25315	**06-712-858**	62.00

Restek* High-Pressure Frit-Type In-Line Filters

Designed for ease of use, low dead volume and flexibility

- Stand-alone version of the Trident* column protection system
- Uses a replaceable, PEEK*-encapsulated Type 316 stainless-steel frit with a surface area of 12mm^2 to fit 1⁄16" O.D. tubing using a CPI connector
- Standard filter comes with 2.0µm porosity/frit is replaceable with 0.5µm frit

06-712-616

06-719-062

Description	Mfr. No.	Cat. No.	Pack of
In-line Filter with 2.0µm Frit	25041	**06-712-616**	1/53.00
Replacement Frits			
0.5µm	25023	**06-719-063**	5/32.00
2.0µm	25022	**06-719-062**	5/27.00

Alltech* SofGrip* HPLC Fittings

Ergonomic fittings are extremely comfortable and easy to hand-tighten

- One-piece integrated ferrule design
- Consist of soft elastomer cushion wrapped around Graph-Tite* (graphitized-PEEK*) fitting; durable, biocompatible polymer is inert to nearly all HPLC and IC solvents
- Forms a leak-free seal with any 10-32 port, regardless of stop depth
- Choice of standard one-piece or No-Slip* that incorporates barrel tines into the bore of the fitting (No-Slip fittings lightly grip tubing during column changes or plumbing modifications)
- Two lengths and five colors for color coding
- Assortment includes two of each color

AT405 Series

Color	Mfr. No.	Cat. No.	Pack of 10
Short Standard			
Black	40501	**AT40501**	53.47
Red	40502	**AT40502**	53.47
Blue	40503	**AT40503**	53.47
Green	40504	**AT40504**	53.47
Yellow	40505	**AT40505**	53.47
Assorted	40507	**AT40507**	53.47
Long Standard			
Black	40506	**AT40506**	55.70
Short No-Slip			
Black	40511	**AT40511**	99.22
Red	40512	**AT40512**	99.22
Blue	40513	**AT40513**	99.22
Green	40514	**AT40514**	105.26
Yellow	40515	**AT40515**	105.26
Assorted	40517	**AT40517**	99.22
Long No-Slip			
Black	40516	**AT40516**	100.88

Alltech* No-Slip* One-Piece Fittings

No-Slip barrel tines lightly grip tubing to keep the fitting in place when changing columns or sample loops

- Form leak-free connections with a convenient one-piece design—no ferrules needed
- Works with all 10-32 ports; automatically adjusts to correct stop depth when connected
- Accepts 1⁄16" O.D. tubing
- Graph-Tite* (carbon-reinforced fittings PEEK*) are three times stronger than PEEK and provide excellent durability
- Completely inert to HPLC and IC solvents; 100% biocompatible
- Maximum temperature: 100°C
- Finger-Tight* version for use in pressures up to 5000psig
- Hex-head version designed for higher pressures up to 8000psig

AT31 and AT32 Series

Color	Material	Mfr. No.	Cat. No.	Pack of
Short Finger-Tight				
Black	Graph-Tite	31001	**AT31001**	10/103.11
Natural	PEEK	32293	**AT32293**	10/97.55
Red	PEEK	32936	**AT32936**	10/97.55
Yellow	PEEK	32935	**AT32935**	10/102.92
Blue	PEEK	32933	**AT32933**	10/97.55
Green	PEEK	32931	**AT32931**	10/97.55
Assorted Colors (2 Ea.)	PEEK	32937	**AT32937**	12/97.55
Long Finger-Tight				
Black	Graph-Tite	31002	**AT31002**	10/103.11
Natural	PEEK	32295	**AT32295**	10/97.55
Short Hex-Head				
Black	Graph-Tite	31003	**AT31003**	10/108.78
Long Hex-Head				
Black	Graph-Tite	31004	**AT31004**	10/108.78
Natural	PEEK	32299	**AT32299**	10/97.55

Alltech* Standard One-Piece Fittings

Color-coded fittings clearly identify fluid connections, form reliable connections without tools, and have a universal design

- Use with all 10-32 ports—regardless of stop depth
- Accept 1⁄16" O.D. tubing
- Maximum temperature: 100°C
- PEEK* fittings are chemically inert and biocompatible with nonextractable dyes
- Graph-Tite* (carbon-reinforced PEEK) fittings are three times stronger and more durable than PEEK
- Finger-Tight* version for use with pressures up to 5000psig
- Hex-head version for use with pressures up to 8000psig

Ordering Table contd. on next page.

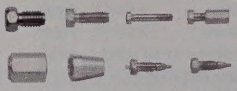
Alltech* Standard One-Piece Fittings, Contd.

Color	Material	Mfr. No.	Cat. No.	Pack of
Short Finger-Tight				
Black	Graph-Tite	32343	**AT32343**	10/57.65
Natural	PEEK	32233	**AT32233**	10/51.80
Red	PEEK	32072	**AT32072**	10/55.24
Yellow	PEEK	32074	**AT32074**	10/55.24
Blue	PEEK	32076	**AT32076**	10/49.24
Green	PEEK	32078	**AT32078**	10/55.24
Assorted Colors	PEEK	32070	**AT32070**	12/51.80
Long Finger-Tight				
Natural	PEEK	32235	**AT32235**	10/51.80
Short Hex-Head				
Black	Graph-Tite	32347	**AT32347**	10/57.65
Natural	PEEK	32236	**AT32236**	10/55.24
Long Hex-Head				
Black	Graph-Tite	32349	**AT32349**	10/60.82
Natural	PEEK	32238	**AT32238**	10/51.80

Alltech* Stainless-Steel HPLC Fittings

Various lengths for special needs

- Stagger different nut lengths to allow for wrench access without being hindered by adjacent nuts
- Manufactured of 300 Series stainless steel with 10-32 type threading
- Maximum temperature: 500°C
- Maximum pressure: 7000psig (standard format caps and plugs); 10,000psig (high-pressure format plugs)



Top, left to right: AT206085, AT286335, AT30636 Bottom, left to right: AT321355, AT286075, AT30631, AT30606

Description	Mfr. No.	Cat. No.	Pack of
Internal Nuts			
1⁄16" Nut, short	206085	**AT206085**	5/19.19
1⁄16" Nut, long	286335	**AT286335**	5/24.69
External Nuts–Standard Format			
1⁄16" Nut	321355	**AT321355**	5/34.53
Ferrules			
1⁄16" Ferrule	286075	**AT286075**	5/11.98
Plugs–Standard Format			
1⁄16" Plug	30631	**AT30631**	1/6.73
Plugs–High-Pressure			
1⁄16" Plug	30636	**AT30636**	1/7.72
Caps–Standard Format			
1⁄16" Cap	30606	**AT30606**	1/9.13

Alltech* Standard Stainless-Steel Tubing

Suitable for a variety of chromatography plumbing applications

- Type 316 for LC applications
- Type 304 for GC applications

O.D. × I.D.	Length	Mfr. No.	Cat. No.	Each
Type 304				
⅛ × 0.085"	50'	3010	**AT3010**	126.70
3⁄16 × 0.147"	50'	3020	**AT3020**	194.00
¼ × 0.210"	50'	3030	**AT3030**	185.63
⅜ × 0.305"	40'	3032	**AT3032**	481.27
Type 316				
1⁄32 × 0.007"	50'	81951	**AT81951**	137.90
1⁄16 × 0.004"	50'	30212	**AT30212**	180.35
1⁄16 × 0.007"	50'	30142	**AT30142**	170.97
1⁄16 × 0.010"	50'	3005	**AT3005**	131.64
1⁄16 × 0.020"	50'	3002	**AT3002**	116.15
1⁄16 × 0.030"	50'	3000	**AT3000**	116.15
1⁄16 × 0.040"	50'	3003	**AT3003**	144.92
1⁄16 × 0.050"	50'	3004	**AT3004**	214.51

Alltech* Color-Coded PEEK* Tubing

High-strength PEEK metal-free tubing ideal for high-pressure applications

- Chemically inert, biocompatible
- Appropriate for a wide variety of LC applications, especially those requiring metal-free conditions
- Striped tubing is colored on outside only so no dye contacts the fluid path
- Solid tubing is colored with nonextractable dye that will not interfere with analyses
- Maximum temperature: 100°C (212°F)

AT357 Series

O.D. × I.D.	Max. Pressure	Length	Mfr. No.	Cat. No.	Each
Striped Red					
1⁄16 × 0.005"	7000psig	10'	35714	**AT35714**	56.24
1⁄16 × 0.005"	7000psig	50'	35715	**AT35715**	230.54
Striped Yellow					
1⁄16 × 0.007"	7000psig	10'	35712	**AT35712**	49.55
1⁄16 × 0.007"	7000psig	50'	35713	**AT35713**	214.58
Striped Blue					
1⁄16 × 0.010"	5000psig	10'	35702	**AT35702**	41.52
1⁄16 × 0.010"	5000psig	50'	35703	**AT35703**	176.30
Solid Red					
1⁄16 × 0.005"	7000psig	10'	35720	**AT35720**	56.24
1⁄16 × 0.005"	7000psig	50'	35721	**AT35721**	230.54
Solid Yellow					
1⁄16 × 0.007"	7000psig	10'	35722	**AT35722**	49.55
1⁄16 × 0.007"	7000psig	50'	35723	**AT35723**	203.40
Solid Blue					
1⁄16 × 0.010"	5000psig	10'	35728	**AT35728**	41.52
1⁄16 × 0.010"	5000psig	50'	35729	**AT35729**	176.30

*Trademark. See Trademark Reference.

Omnifit "T" Series Bottle Caps

Easy to use and versatile range of caps requires no fittings

- Luer ported, straight through tubing
- Simply push ⅛" O.D. hard wall tubing through the ports
- For 1⁄16" O.D. hard wall tubing, use OF9LA adapter supplied with cap
- Use OF9BA series adapter for softwall tubing
- Anti-twist design prevents tubing from kinking when removing cap
- Each port also accepts male Luer connectors
- With polypropylene screw cap and chemically inert solid PTFE body

OF932T2

ORDERING INFORMATION:

Available with Luer port or Luer port and fluorocarbon check valve and 10µm porosity PTFE inlet filter, enabling air to flow into the bottle while preventing particulate contamination, and preventing harmful vapors from escaping.

NOTE:

Not recommended for use under pressure with Luer products fitting as no Luer lock is employed.

GPI Thread Size	No. of Ports	Cat. No.	Each
Without Check Valve and Filter			
GL32	Two	**OF932T2**	32.48
GL38-430	Two	**OF938T2**	34.13
GL38-430	Three	**OF938T3**	36.11
GL38-430	Four	**OF938T4**	38.09
GL45	Two	**OF945T2**	37.43
GL45	Three	**OF945T3**	39.41
GL45	Four	**OF945T4**	41.40
With Check Valve and Filter			
GL38	Two	**OF938T2F**	43.60
GL38	Three	**OF938T3F**	45.58
GL38	Four	**OF938T4F**	47.56
GL45	Two	**OF945T2F**	46.91
GL45	Three	**OF945T3F**	48.87
GL45	Four	**OF945T4F**	50.86

Omnifit "Q" Series Bottle Caps

Easy operation on/off valves offer a simple way to connect tubing

- ¼"-28 ports with a stainless-steel thread insert to enable repeated connect/disconnect
- Easily control the flow of liquid into and out of the bottle with integrated valves
- Each fluid line can be switched on or off independently
- Anti-twist design ensures no kinked tubing during cap removal
- With polypropylene screw cap, chemically inert solid PTFE body, ⅛ O.D. × 0.06" I.D. tubing

OF932Q3V

ORDERING INFORMATION:

"Q" Series Bottle Caps with valved ports include PCTFE rotors to permit manual shutoff.

REQUIRED ACCESSORIES:

Use OF9VF check valve and filter assembly to prevent harmful vapors from escaping and to stop contamination from entering the bottle.

GPI Thread Size	No. of Ports	Cat. No.	Each
Without Valved Ports			
GL38-430	Two	**OF938Q2**	44.03
GL38-430	Three	**OF938Q3**	50.09
GL38-430	Four	**OF938Q4**	56.06
GL45	Two	**OF945Q2**	47.34
GL45	Three	**OF945Q3**	53.32
GL45	Four	**OF945Q4**	59.36
With Valved Ports			
GL32	Three	**OF932Q3V**	115.76
GL38-430	Two	**OF938Q2V**	89.03
GL38-430	Three	**OF938Q3V**	117.41
GL38-430	Four	**OF938Q4V**	145.93
GL45	Two	**OF945Q2V**	92.34
GL45	Three	**OF945Q3V**	120.70
GL45	Four	**OF945Q4V**	149.22

Omnifit "C" Series Bottle Caps

Include the Omnifit Cap system for easy and versatile tubing connection

- Omnifit connection cap system accepts ¼"-28 threaded fittings and 0.5 to 4.0mm O.D. hardwall tubing
- 4.0mm hardwall tubing can be connected directly into cap using supplied PTFE cones
- Each fluid line has a control valve port with PCTFE rotors to permit manual shutoff
- Chemically inert solid PTFE body, polypropylene screw caps and Omnifit connection caps, 0.06 O.D. × 1.5mm I.D. tubing

OF945C4V

REQUIRED ACCESSORIES:

Use OF9VF check valve and filter assembly to prevent harmful vapors from escaping and to stop contamination from entering the bottle.

GPI Thread Size	No. of Ports	Cat. No.	Each
GL38-430	Two	**OF938C2V**	95.64
GL38-430	Three	**OF938C3V**	117.41
GL38-430	Four	**OF938C3V**	139.35
GL45	Two	**OF945C2V**	98.94
GL45	Three	**OF945C3V**	120.70
GL45	Four	**OF945C4V**	142.63

Omnifit Bottle Cap Accessories

Assemblies and adapters for use with "T", "Q", and "C" Series Bottle Caps

Description	Cat. No.	Pack of
"T" Series Bottle Cap Luer Port Blanking Plug	**OF9LP**	2/8.95
"T" Series Bottle Cap Luer Port To 1⁄16" O.D. Tubing Adapter	**OF9LA**	2/11.01
"T" Series Bottle Cap 1⁄16" I.D. Tubing Barb Adapter	**OF9BA16**	2/7.72
"T" Series Bottle Cap ⅛" I.D. Tubing Barb Adapter	**OF9BA32**	2/7.72
"T" Series Bottle Cap ¼" I.D. Tubing Barb Adapter	**OF9BA63**	2/7.72
Check Valve and Filter Assembly For "Q" and "C" Series Bottle Caps	**OF9VF**	1/34.90

Kontes* Ultra-Ware* HPLC Reservoirs

Designed for the preparation, storage, and delivery of liquid chromatography mobile phases

- Manufactured from Type I, Class A borosilicate glass with external plastic safety coating
- Safety coating has UV blocking agent that blocks light transmittance up to 385nm, preventing photodegradation of light-sensitive solvents
- Screw thread: GL45-4
- Maximum temperature: 120°C
- Available in flat or conical bottoms; conical-bottom reservoirs deliver virtually all of the mobile phase without having to tilt reservoir and risk solvent spill

K953901 Series

Reservoir Capacity	Diameter × Height	Cat. No.	Each
Conical Bottom			
1L	13.0 × 27.5cm	**K953901-1002**	140.46
2L	15.0 × 31.9cm	**K953901-2002**	216.30
5L	20.5 × 37.3cm	**K953901-5002**	373.61
Flat Bottom			
1L	11.1 × 20.5cm	**K953902-1002**	97.27
2L	13.8 × 25.0cm	**K953902-2002**	124.31
5L	18.6 × 32.0cm	**K953902-5002**	278.10

Kontes* Ultra-Ware* Three-Hole Cap Systems

Borosilicate glass and PTFE construction give excellent chemical resistance to HPLC mobile phases

- Supplied with three-hole cap, conical bottom reservoir, standard fittings kit, and PTFE tubing
- Reservoir has autoclavable plastic safety coating that absorbs UV up to 385nm—preserves UV-sensitive mobile-phase components
- PTFE cap body is supplied with a TFE/propylene O-ring (Kalrez* O-ring is available for use with aggressive organic solutions; contact your Fisher Scientific Customer Service Representative for more information)
- Connecting threads on top and bottom of cap use ¼-28 flangeless fittings and adapters
- Filtration of the mobile phase directly into the reservoir requires additional purchase of a filtration cap and appropriate solvent pickup adapter

K953980 Series

Reservoir Capacity	Diameter × Height	Cat. No.	Each
1L	5 × 11" (13 × 29cm)	**K953980-1002**	373.61
2L	6 × 15" (15 × 37cm)	**K953980-2002**	456.49
5L	8 × 18" (20.5 × 45cm)	**K953980-5002**	610.98
20L	12¾ × 21¼" (31.5 × 54cm)	**K953980-2003**	1376.45

Kontes* Filtration Cap System

Inline filtration cap system with solvent pickup adapter eliminates traditional pour-and-wait filtration

- Supplied with a filtration cap, standard solvent pickup adapter, and borosilicate glass, conical-bottom reservoir
- Designed to filter HPLC mobile phase directly into the reservoir using 47mm membrane filters
- Reservoir has autoclavable plastic safety coating that absorbs UV up to 385nm—preserves UV-sensitive mobile phase components
- Glass-filled PTFE cap body is supplied with a TFE/propylene O-ring and a ¼" PFA (perfluoroalkoxy resin) hose barb; excellent chemical resistance to HPLC mobile phases

K953976 Series

Reservoir Capacity	Diameter × Height	Cat. No.	Each
1L	13 × 40cm	**K953976-1002**	550.57
2L	15 × 48cm	**K953976-2002**	616.60
5L	20.5 × 56cm	**K953976-5002**	748.63

HPLC SYSTEMS

Shimadzu* LC-2010AHT/CHT HPLC System

Fully integrated, high-throughput system with near-zero sample carryover

The LC-2010HT is available in the standard model, LC-2010AHT, or the sample-cooled model, LC-2010CHT

Components include:

High-Throughput Autosampler

- Repeatability within 0.3% RSD (under certain conditions)
- Carryover within 0.01% (under certain conditions)
- Injection cycle 15s
- Two sample racks for 1.5mL vials standard equipment

220-91397 Series

Reservoir Tray

- Accommodates six 1L bottles
- Storage drawer

System Controller

- Graphical User Interface (GUI)
- Wizard function

Pump Unit

- Dynamic Inlet Check Valve for improved flow rate stability
- Quaternary solvent value for low pressure gradient formation

Column oven

- Heats and cools up to two columns
- Double temperature control mechanism for minimal temperature deviation

UV-VIS Detector with Thermostatted Flow Cell

- Baseline noise ±0.25 × 10^{-5}AU or lower (under certain conditions)
- Built-in mercury lamp

Also included:

- 5-Line Low-Volume Degasser
- Mixer

Description	Mfr. No.	Cat. No.	Each
LC-2010AHT, Standard Model	220-91397-11	**220-91397-11**	28,000.00
LC-2010CHT, With Sample Cooler	220-91397-12	**220-91397-12**	32,000.00

For Specifications, see next page.

Shimadzu* LC-2010 AHT/CHT HPLC System, Contd.

Pump	
Type	Serial dual plunger, microvolume (10RL on primary side, 5RL on secondary)
Flowrate	0.001 to 5mL/min.
Flowrate Accuracy	±2% or ±2µL/min., whichever is larger
Flowrate Precision	±0.075% RSD or 0.2minSD, whichever is larger
Degasser	
No. of Lines	Five lines (four mobile phase plus one autosampler rinsing liquid)
Autosampler	
Volume Setting Range	0.1 to 100µL (standard); 1 to 2000µL (optional)
Type	Block heating with preheating of mobile phase
Temperature Range	Ambient -15°C to 60°C
Temperature Accuracy	±0.1°C
UV Detector	
Light Source	Deuterium; Mercury (for accuracy check)
Wavelength Range	190 to 600nm
Wavelength Accuracy	±1nm
Drift	1 × 10^{-4} AU/h (250nm, air in cell, constant room temp.)
Noise	±0.25 × 10^{-5} AU (2 sec. time constant, 250nm, air in cell)
System	
Electrical Requirements	AC 100-240V, 700VA, 50/60Hz
Dimensions (L × W × H)	500 × 430 × 605mm
Weight	47kg Standard Model, 52kg with Sample Cooler

ACCESSORIES

Sample Rack for LC-2010A/CHT

Insulated metal racks

- Capacity of 350 8 x 40 mm sample vials
- Can be used in SIL-HTA , SIL-HTC, LC-2010 or LC-2010HT
- Keyed for auto-recognition by the system

INCLUDES:

One left and one right rack

Description	Cat. No.	Each
For 8 × 40mm (1mL) vials	228-37532-91	340.00

Shimadzu* HPLC System Packages

Choose isocratic, binary or quaternary systems with autosampler or manual injector to suit your needs

Add a detector and column oven to complete the system.

Key components of these packages include:

CBM-20A Controller

- Web-based interface for remote set-up, control and monitoring
- Connect up to eight modules
- Auto-purge

SIL-20A Autosampler

- Ten second injection time
- 210 sample capacity, 1.5mL vials
- Near-zero carryover

Manual Injector

- 20µL loop included
- Mounting bracket to secure injector pump
- Switch to trigger data collection system

Choice of LC-20AT (Cat. No. 228-45001-32), LC-20AT Quaternary or LC20AB pumps:

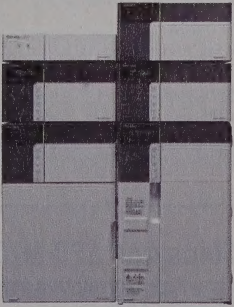
LC-20AT Quaternary

- Same features as LC-20AT but with built-in solvent valve
- Four-solvent valve for low pressure gradient formation

LC-20AB

- Binary solvent delivery unit
- Flow rate: 0.0001 to 10mL/min.
- Piston stroke volume: 10µL
- Motor resolution 3nL/step motor resolution

Key components of Food and Beverage Packages include RID-10A Refractive Index Detector or SPD-20AV Ultraviolet Detector (228-45004-32):



22091470 series

RID-10A Refractive Index Detector

- 4-partition detector design for high sensitivity in 3 modes
- Refractive index range: 1 to 1.75 RIU
- Noise: Less than 2.5 x 10^{-9} RIU
- Drift: Less than 1 x 10^{-7} RIU/hr
- Range: A mode 0.01 to 500 x 10^{-6}, P and L modes 1 to 5000 x 10^{-6}
- Flow cell volume: 9L

Contd. on next page.

Shimadzu* HPLC System Packages, Contd.

Description	Controller	Pump	Injector	Detector	Additional Equipment	Cat. No.	Each
HPLC System for Food & Beverage with RID Detector	CBM-20A	LC-20AD	SIL-20A autosampler	RID-10A	Degasser, reservoir tray and bottle set, column oven 4.6 × 250mm (I.D. × length) amino column, PEEK tubing kit	**220-91470-19**	35,000.00
HPLC System for Food & Beverage with UV Detector	CBM-20A	LC-20AB	SIL-20A autosampler	SPD-20AV UV-VIS detector	Degasser, reservoir tray and bottle set, column oven, 4.6 × 150mm C18 column, PEEK tubing kit	**220-91470-20**	39,000.00
Isocratic HPLC System with Autosampler	CBM-20A	LC-20AT	SIL-20A autosampler	Choose any Shimadzu detector	Degasser, reservoir tray and bottle set, any Shimadzu column oven, PEEK tubing kit	**220-91470-01**	22,000.00
Isocratic HPLC System with Manual Injector	CBM-20A	LC-20AT	RH-7725i manual injector with 20µL loop	Choose any Shimadzu detector	Degasser, reservoir tray and bottle set, any Shimadzu column oven, PEEK tubing kit	**220-91470-07**	12,000.00
Binary HPLC System with Autosampler	CBM-20A	LC-20AB	SIL-20A autosampler	Choose any Shimadzu detector	Degasser, reservoir tray and bottle set, any Shimadzu column oven, PEEK tubing kit	**220-91470-03**	28,000.00
Binary HPLC System with Manual Injector	CBM-20A	LC-20AB	RH-7725i manual injector with 20µL loop	Choose any Shimadzu detector	Degasser, reservoir tray and bottle set, any Shimadzu column oven, PEEK tubing kit	**220-91470-08**	18,000.00
Quaternary HPLC System with Autosampler	CBM-20A	LC-20AT	SIL-20A autosampler	Choose any Shimadzu detector	Degasser, reservoir tray and bottle set, any Shimadzu column oven, PEEK tubing kit	**220-91470-05**	26,000.00
Quaternary HPLC System with Manual Injector	CBM-20A	LC-20AT	RH-7725i manual injector with 20µL loop	Choose any Shimadzu detector	Degasser, reservoir tray and bottle set, any Shimadzu column oven, PEEK tubing kit	**220-91470-09**	16,000.00

Shimadzu* SPD-20A/20AV Absorbance Detectors

Temperature-controlled flow cell minimizes baseline drift and room temperature effects on signal-to-noise performance

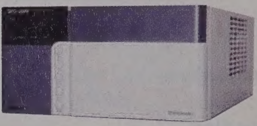
- Built-in mercury-vapor lamp
- Linear range extends to 2.5AU
- Noise of 0.5×10^{-5}AU or less

SPD-20A

- For UV analysis in 190 to 700nm range

SPD-20AV

- UV and visible range, 190 to 900nm
- Tungsten and Deuterium lamps can be lit simultaneously



228-4500 series

Model	Mfr. No.	Cat. No.	Each
SPA-20A	228-45003-32	**228-45003-32**	7210.00
SPA-20AV	228-45004-32	**228-45004-32**	8034.00

Model	SPA-20A	SPA-20AV
Cat. No.	**228-45003-32**	**228-45004-32**
Light Source	Deuterium (D2)	Deuterium (D2), Tungsten (W)
Wavelength Range	190 to 700nm	190 to 900nm
Wavelength Accuracy	1nm max.	1nm max.
Wavelength Precision	0.1nm max.	0.1nm max.
Noise Level	0.5×10^{-5}AU (under specific conditions)	0.5×10^{-5}AU (under specific conditions)
Drift	1×10^{-4} AU/hr (under specific conditions)	1×10^{-4} AU/hr (under specific conditions)
Volts	100VAC, 60VA	100VAC, 60VA
Hertz	50/60Hz	50/60Hz
Weight	13kg	13kg
Dimensions (L × W × H)	260 × 420 × 140mm	260 × 420 × 140mm

Shimadzu* SPD-M20A Photodiode Array

Stray-light correlation enhanced for excellent linearity, 2.0AU

- Temperature-controlled flow cell
- Two slit widths: 1.2nm for high-resolution work and 8nm for qualitative studies
- Four analog output channels for multi-wavelength functionality
- Self-diagnostic features include wavelength accuracy and wavelength calibration
- Software control required for spectral library searches and peak purity determinations

Model	Mfr. No.	Cat. No.	Each
SPD-M20A	220-91403-01	**220-91403-01**	13,000.00

Model	SPD-M20A
Cat. No.	**220-91403-01**
Light Source	Deuterium (D2) and Tungsten (W)
Wavelength Range	190 to 800nm
Wavelength Accuracy	1nm max.
Wavelength Precision	0.1nm max
Noise Level	0.6×10^{-5} AU (under specific conditions)
Drift	5×10^{-4} AU/hr (under specific conditions)
Volts	100 VAC, 150VA
Hertz	50/60Hz
Weight	12kg
Dimensions (L × W × H)	420 × 260 × 140nm

*Trademark. See Trademark Reference.

Prices subject to change.

Shimadzu* LC-20AD/AT Pumps

Specially machined plungers for hardness and chemical resistivity

- Plungers are mounted in a free-floating mechanism to ensure precise alignment of the plunger in the seal and pump head
- Max. discharge pressure 40MPa
- Constant pressure delivery
- Liquid-leakage sensor and high-/low-pressure limits
- Operating temperature range 4° to 35°C
- Maximum number of solvents supported in low-pressure mixing gradient is four

LC-20AD

- Parallel dual micro plunger, 10µL
- 3nL/step motor resolution

LC-20AT

- Tandem dual plunger

Model	Mfr. No.	Cat. No.	Each
LC-20AD	2284500032	**228-45000-32**	5974.00
LC-20AT	228-45001-32	**228-45001-32**	5150.00

Model	LC-20AD	LC-20AT
Cat. No.	**228-45000-32**	**228-45001-32**
Type	Parallel-type dual plunger	Serial-type dual plunger
Plunger Capacity	10µL	Primary 47µL; Secondary 23µL
Flowrate Range	0.0001 to 10.0000mL/min.	0.001 to 10.000mL/min.
Flowrate Accuracy	No more than 1% or 0.5µL/min., whichever is greater	No more than 2% or 2µL/min., whichever is greater
Flowrate Precision	0.3% max.	0.3% max.
Pulsation (for water at 1.0mL/min. and 7MPa)	0.1MPa	0.3MPa
Dimensions (W × H × D)	260 × 140 × 420mm	260 × 140 × 420mm
Weight	10kg	11kg
Power Requirements	100VAC, 150VA, 50/60Hz	100VAC, 150VA, 50/60Hz

Shimadzu* RF-10AXL Fluorescence Detector

Compact, modular detector with Raman signal-to-noise ratio of 300 for excellent sensitivity and wavelength accuracy of ±2.0nm

- Ratio system compensates for lamp intensity fluctuation
- Rugged flow cell design with elevated back-pressure tolerance
- Built-in GLP functions include self-diagnostics, maintenance information (lamp-lit hours, lamp energy), and span calibration functionality
- Remote lamp ON/OFF function for lamp shutdown
- Input and output terminals enable the RF-10AXL to be added to any existing HPLC system
- Use stand-alone or with the SCL-10Avp System Controller (228-34350-92) to integrate with other VP Series components

INCLUDES:

Detector, manual, power cord, lamp and accessories

NOTE:

Contact your Fisher Scientific Customer Service Representative to help configure a system to best meet your application needs.

Cat. No.	Each
228-35353-92	9707.54

Spectral Bandwidth	15nm (excitation and emission)
Optical System	Single beam
Wavelength	
Range	200 to 650nm
Accuracy	±2nm
Repeatability	±0.2nm
Photometric	
Readout	Emission intensity
Range	Setting depends on emission intensity desired
Lamp	Xenon
Detector	Photomultiplier tube (signal side), photodiode (monitor side)
Monochromator	Holographic concave diffraction grating
Interface Port	Fiber optic to SCL-10Avp, RS-232 to external equipment
Electrical Requirements	100–240V 50/60Hz
Dimensions (L × W × H)	24 × 16 × 18" (61.0 × 40.6 × 45.7cm)

Shimadzu* FRC-10A Fraction Collector

Meets the demands of continuous, automated fraction collection

- Collects both analytical and preparative fractions
- Peltier temperature control keeps temperatures within a 4° to 70°C range
- Allows graphical set-up of fractionation parameters to eliminate guesswork of determining slope and level values
- Choose collection criteria including volume, threshold and peak purity
- Automatic adjustment for retention time shifts
- Slope-override capability enables continued collection even when the detector signal is off-scale

Cat. No.	Each
228-45070-92	3950.00

Drive System	Arm movement (X-Y) system
Capacity	144 5mL vials standard
Collection Mechanism	Solenoid valve (inc.) or direct through nozzle (w/o solenoid valve)
Flowrate	150mL/min. (water)
Collection	Programmed operation via SCL-10Avp System controller or manually
Modes	Basic (uses slope/level parameters) and Time Program (14 different functions available)
No. Collection Files	Up to 10 in memory
Collection Based on 2-Channel Generated Ratio Chromatogram	SPD-20A/AV dual-wavelength signal or signals from 2 detectors
Temperature Range	4 to 70°C
Volts	120V
Hertz	50/60Hz
Dimensions (L x W x H)	420 x 260 x 280mm (16.8 x 10.4 x 11.2")

Shimadzu* DGU-20A3/DGU-20A5 Membrane Degassers

Additional channel for degassing the rinse phase of the autosampler for increased injector accuracy and precision

- Powered by Prominence* series pumps and can be controlled by Shimadzu software
- Output of vacuum level allows monitoring and recording stability throughout a run

228-450 series

DGU-20A3

- Degassing channels: 3
- Internal volume: 380µL
- Operating temperature range: 4° to 35°C (non-condensing conditions)
- Power supplied by LC-20AB/AD/AT pump
- Dimensions: (L x W x H): 420 x 260 x 70mm (16.8 x 10.4 x 2.8")
- Weight: 5kg (11 lbs.)

DGU-20A5

- Degassing channels: 5
- Internal volume: 380µL
- Operating temperature range: 4° to 35°C (non-condensing conditions)
- Power supplied by LC-20AB/AD/AT pump
- Dimensions: (L x W x H): 420 x 260 x 70mm (16.8 x 10.4 x 2.8")
- Weight: 5.2kg (11.5 lbs.)

No. Degassing Channels	Mfr. No.	Cat. No.	Each
3-Channel Degasser	228-45018-32	**228-45018-32**	2060.00
5-Channel Degasser	228-45019-32	**228-45019-32**	2472.00

LabAlliance* Series III Binary Gradient HPLC System

Combines a Series II digital pump, a Series III digital pump, a Model 500 variable-wavelength UV detector, and an integral keypad controller with pump control capabilities

Series II and III Digital Pumps

- Single-piston pumps with low dead-volume pulse damper and rapid refill
- Self-flushing pumpheads actively wash area behind seals
- Series III pump also offers pressure-monitoring capabilities with user-settable upper/lower pressure limits and external control capabilities

Model 500 Variable UV/Visible Detector

- 12 switch-selectable absorbance ranges
- Low-noise electronics, high-noise rejection filtering, and low-loss optics ensure low noise and low drift
- Standard Type 316 stainless steel flow cell is 6mm, 9µL; located outside the main instrument housing for easy access
- Includes standard deuterium lamp for UV wavelengths; tungsten lamp may be purchased separately for visible wavelengths (contact your Fisher Scientific Customer Service Representative for details)

System Control Unit (SCU)

- Compact, handheld controller provides gradient control of the system
- Allows user to program gradient steps, run time, method linking, and number of cycles; multiple methods may be stored
- Compact, handheld; completely controls system, including the solvent delivery pump(s), run, and event

INCLUDES:

316 stainless-steel fluid path, injection valve with a 20µL loop, injector bracket, C18 column, column holder, gland nuts, ferrules, tubing

WARRANTY:

Three years

06-657-103

Electrical Requirements	Mfr. No.	Cat. No.	Each
110/220V 50/60Hz	SD-BHPG-S	**06-657-103**	14,828.21

SPECIFICATIONS

Series II and Series III Pumps	
Flowrate	0.01–10mL/min.
Pressure	0–6000psi
Dimensions	17½L × 10⅜W × 5½"H (44.5 × 26.4 × 14cm)
Weight	24 lb. (11kg)
Model 500 UV/Vis Detector	
UV Range	190–360nm (deuterium lamp)
Monochromator	Holographic grating
Bandwidth	6nm
Wavelength	±1nm
Dimensions	13¼L × 9¾W × 6¼"H (33.7 × 24.8 × 15.9cm)
Weight	20 lb. (9.1kg)

LabAlliance* Series III Digital Pump

Patented diaphragm-type, low-volume pulse damper and a rapid-refill cam make this pump virtually pulse-free—giving minimal baseline noise for the most demanding isocratic applications

- Integrate with existing system; the Series III is a direct replacement for many popular pumps
- Analytical and preparative flowrates; can be set by voltage or frequency inputs
- Use LED display and keypad to set and monitor flowrates, psi, and upper and lower pressure limits
- Micro-stepped motor
- Digital logic
- Interfaces with a 9- or 25-pin serial I/O COM port for computer connection
- Autoprime* one-button purging makes it easy to prime or purge the pump
- Automatic, self-flushing heads provide continuous washing behind the primary high-pressure seal

ORDERING INFORMATION:

Dimensions: 17½L × 10⅜W × 5½"H (28 × 13 × 15cm); weight: 24 lb. (10.9kg), electrical requirements: 110V 50/60Hz.

Choice of 50µL pumphead for 0.01 to 9.99mL/min. flowrates or a 200µL pumphead for 0.04 to 40mL/min. flowrates. Available in Type 316 stainless steel or biocompatible PEEK* (polyetherether ketone)

WARRANTY:

Three years

Pumphead	Fluid Path	Mfr. No.	Cat. No.	Each
50µL	PEEK	310PFT01	**06-686-343**	3508.42
200µL	Stainless steel	340SFT01	**06-686-346**	3701.09
200µL	PEEK	340PFT01	**06-686-345**	3701.09

SPECIFICATIONS

Pumphead	50µL	200µL
Flowrate	0.01 to 9.99mL/min.	0.04 to 40mL/min.
Pressure	0 to 6000psi	0 to 1500psi
Accuracy	2%	2%
Precision	±0.2%	±0.2%

IC COLUMNS AND ACCESSORIES

Metrohm-Peak* Metrosep* Anion Dual Columns

IC anion columns for use in analyses with and without chemical suppression

MP61006040

Anion Dual IC 1-70

- Spherical hydroxyethyl methacrylate with quaternary ammonium groups
- 0.5mL/min. standard flow; 0.7mL/min. maximum flow
- Supplied in glass cartridge; special holder is required
- 9MPa maximum pressure
- 0 to 10% organic modifier
- 2 to 12pH range (briefly > 12)
- For applications where rapid separation is desired

Anion Dual 2

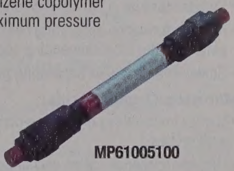
- Polymethacrylate with quaternary ammonium groups
- 0.8mL/min. standard flow; 1.2mL/min. maximum flow
- Steel cartridge—more robust than Dual 1-150 and 1-70
- 7MPa maximum pressure
- 0 to 20% organic modifier
- 1 to 12 pH range
- Primarily used for critical samples

Description	Particle Size	I.D. × L	Capacity	Cat. No.	Each
Metrosep Anion Dual 1 IC 1-70 Column	10µm	3.1 × 70mm	4µmol	**MP61006040**	423.15
Metrosep Anion Dual 2 Column	6µm	4.6 × 75mm	34µmol	**MP61006100**	1358.59
Metrosep Anion Dual 1 IC 1-70 Aluminum Cartridge Holder, 70mm	----	----	----	**MP62828120**	245.99
Metrosep Anion Dual 1 IC Guard Column Cartridge	----	----	----	**MP61006030**	453.62

Metrohm-Peak* Phenomenex* Star IC Anion Columns

For analyses with chemical suppression

- Columns with a polystyrene-divinylbenzene copolymer packing, 1-12pH range, and 7MPa maximum pressure



MP61005100

A300 IC

- Extremely short analysis times—standard ions can be determined in less than 8 minutes
- 1.5mL/min. standard flow; 2.0mL/min. maximum flow
- PEEK column body
- Also use to determine fluoride in the ppm range in the presence of a very large excess of lactate

A300 HC

- High-capacity version of the A300 IC
- 3.0mL/min. standard flow; 5.0mL/min. maximum flow
- PEEK steel jacket column body
- Particularly suitable for the determination of bromate in the ppb range

Description	Particle Size	I.D. × H	Capacity	Cat. No.	Each
A300 Column	7µm	4.6 × 100mm	29µmol	**MP61005100**	960.27
A300 HC Column	7µm	10 × 100mm	157µmol	**MP61005110**	1690.35

Looking for More Ion Chromatography Columns?

Metrohm-Peak* carries a full line of columns for ion chromatography.

Visit www.fishersci.com and search for Metrohm Peak

Metrohm-Peak* Columns for 761 SD Compact IC System

Columns and guard columns

Metrosep A Supp 4-250

- Carrier material is polyvinyl alcohol with quaternary ammonium groups
- Medium ion exchange capacity; sulfate elutes after 12 min.
- An extremely robust column with very good separating properties
- Applications include standard ions, water analysis and difficult matrices
- Capacity: 71µmol

MP61006500

Metrosep A Supp 4/5 Guard

- Guard column used to protect Metrosep A Supp 4 and Supp 5 columns

Metrosep RP Guard

- Guard column used to protect Metrosep anion columns

Description	Particle Size	I.D. x L	Cat. No.	Each
Metrosep A Supp 4-250 Column	9µm	4.0 x 250mm	**MP61006430**	934.11
Metrosep A Supp 4/5 Guard Column	5µm	4.0 x 5mm	**MP61006500**	208.08
Metrosep RP Guard Column	0.2µm	3.5 x 1.7mm	**MP61011020**	206.54
Metrosep RP Guard Spare Filter	----	----	**MP61011120**	523.76

Metrohm-Peak* Columns for 761 Compact IC System

Metrosep C 2-150

- Carrier material is silica gel with carboxyl groups
- The universal standard column used for cation analysis
- High separating performance in a short time

NOTE: This 150mm column will replace the Metrosep Cation 1-2 in the medium term. The elution sequence remains basically the same, although the separating performance and resolution are noticeably improved.

Metrosep A Supp 5-100, -150, and -250

- Carrier material is polyvinyl alcohol with quaternary ammonium groups
- High-performance separating column with an extremely high number of plates for the most demanding separating tasks
- Solves even complex separating problems easily and reproducibly

Metrosep Organic Acids

- Carrier material is polystyrene-divinylbenzene copolymer with sulfonic acid groups
- High-performance cation exchanger column for the determination of organic acids, fluoride (hydrofluoric acid), and dihydrogen phosphate (phosphoric acid)
- Solves difficult and complex separating problems, including those involving difficult matrices

Metrosep A Supp 4/5 S-Guard

- For protecting A Supp 4, 5 and 7 columns

Description	Particle Size	I.D. x L	Capacity	Cat. No.	Each
Metrosep Anion A Supp 5-100 Column	5µm	4.0 × 100mm	38µmol	**2MP61006510**	1070.63
Metrosep Anion A Supp 5-150 Column	5µm	4.0 × 150mm	70µmol	**2MP61006520**	1210.34
Metrosep Anion A Supp 5-250 Column	5µm	4.0 × 250mm	94µmol	**2MP61006530**	1138.59
Metrosep Cation C 2-150 Column	7µm	4.0 × 150mm	117µmol	**2MP61010220**	925.98
Metrosep Organic Acids Column	7µm	4.0 × 250mm	19µmol	**2MP61005200**	1765.80
Metrosep A Supp 4/5 Guard Column	5µm	4.0 x 5mm	----	**2MP61006540**	265.31

IC SYSTEMS

Metrohm-Peak* 761 Compact IC System

Rugged, economical analysis tool for isocratic separation of analytes ranging in multiple orders of magnitude.

With chemical suppression. Includes a powerful software package for full control, integration, and reporting, which also allows multiple users to create and save their methods and data independently. Accepts virtually all IC analytical and guard columns.

Small footprint, maximum power

- Dimensions (L × W × H): 13⅞ × 10⅛ × 17⅜" (35.5 × 25.9 × 44.6cm)
- Perfect integration of features in a small space
  - Convenient eluent organizer holds eluent and storage containers for regeneration of MSM, ensuring short tubing connections
  - Insulated column compartment
  - Low-pulsation double piston pump, flow range 0.2 to 2.5mL/min., maximum pressure 25MPa (250 bar, 3625 psi)
  - Built-in 6-way injection valve
  - Column
  - Metrohm Suppressor Module (MSM)
  - High-performance detector
  - Peristaltic pump
  - Data processing
- One connection to a free COM interface
- Built-in 22-bit A/D converter

Advanced Connectivity

- Eight remote I/O lines for controlling external instruments
- Rear panel has connections for the mains cable, detector, and RS-232-C interface of computer, interface for freely configurable remote lines, and ON/OFF switch
- Analog output for connection to external data systems
- Openings for attaching syringe or connecting sample changer are located on front panel

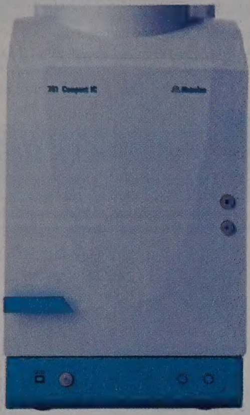
Rapid start

- Click on the required application in the menu and system is ready and configured

Contd. on next page.

*Trademark. See Trademark Reference.

Metrohm-Peak* 761 Compact IC System, Contd.


MP27610020

- Software contains more than 180 preloaded integration and calibration methods
- Application updates free of charge online via the Internet

Maximum performance for both simple and complex application work

- Allows detection of trace and highly concentrated analytes in a single analysis

Integrated with IC reagents and standards

- MPak* certified IC reagents are filtered, sterile and degassed with quick connect fittings for easy changeover
- MCal* certified IC standards are NIST* traceable and triple-checked for quality assurance
- Integration of reagents and standards virtually eliminates operator error and significantly increases productivity
- Automation capability can be added for ultimate high sample throughput

INCLUDES:

Injection valve, double-piston pump, column, Metrohm Suppressor Module (MSM), high-performance detector, peristaltic pump, data processing

WARRANTY:

10 years on MSM Suppressor Module

Description	Mfr. No.	Cat. No.	Each
With chemical suppression	2.761.0020	**MP27610020**	14,500.00

Measuring Range	0-1000µS
Detector Block Range	Single-digit ppb range
Detector Block Measuring Range	0-50µS, 0-250µS, 0-1000µS
Detector Cell Temperature Range	25-45°C in 5°C steps
Detector Temperature Stability	Better than 0.01°C
Maximum Pressure	25Mpa (250 bar, 3625 psi)
Low-Pulsation Double Piston Pump Flowrate	0.2 to 2.5mL/min.
Dimensions (L × W × H)	13⅞ × 10⅛ × 17⅜" (35.5 × 44.6 × 25.9cm)

Metrohm-Peak* 861 Advanced Compact IC Systems

Extremely compact and mobile with high sensitivity, low detection limits, comprehensive automation possibilities, easy operation

MP28610040

Flexibility of carbonate eluents with the baseline of a hydroxide eluent. Some models feature sequential suppression.

Two Models Available

- IC for anion and cation determinations without chemical suppression (MP28610010)
- IC with MSM II and Metrohm CO_2 Suppressor (MCS) for anion determinations with sequential chemical and CO_2 suppression (MP28610040)

Both Models Feature

- Eluent organizer
- Pulsation absorber
- Insulated column compartment (column heating)
- Low-pulsation serial dual-piston pump; no external gas supply required
- Built-in six-way injection valve; permits automatic or manual sample injection
- PEEK and PTFE flowpath

Communications and Operations

- Analog and digital output
- Eight remote output lines for controlling external devices
- Communication via RS-232C port
- Metrodata IC Cap software for a one-click operation with choice of languages
- Metrodata IC Net software for data evaluation and automated instrument control
- Measuring signal transferred to Metrodata IC Net software with built-in 22-bit analog/digital converter
- Free application updates from the Internet

MSM II Suppressor

- Pressure- and solvent-resistant module for chemical suppression
- Three suppressor chambers
- Built-in two-channel peristaltic pump
- Microcapillary packed bed

MCS Suppressor

- With built-in vacuum cell, gas-permeable PTFE AF membrane, and CO_2 absorber
- Removes carbonate from sample as well as CO_2 formed during suppression reaction
- Greatly reduces injection and carbonate peak; avoiding interferences and improving determination of rapidly eluting anions
- Increases sensitivity 30% or more
- Achieves detection limits from 0.7 to 1.9ppb for standard anions—with injection volume of 20µL
- For all applications in the routine IC analysis sector; can also be used in the R&D field
- Suitable for Metrohm Inline Sample Preparation (MISP) such as dialysis, ultrafiltration, and sample preconcentration

WARRANTY:

10 year warranty

Specifications and Ordering Information on next page.

Metrohm-Peak* 861 Advanced Compact IC System, Contd.

SPECIFICATIONS

Measuring Range	0-5000µS/cm
Detector Block Range	0.7-1.9ppb (for standard anions with sequential suppression)
Detector Block Measuring Range	Four: 0-50µS/cm, 0-250µS/cm, 0-1000µS/cm, 0-5000µS/cm
Detector Cell Temperature Range	25-45°C in 5°C steps
Detector Temperature Stability	≥0.01°C
Detector Sensitivity (for standard anions)	<2ppb
Serial Dual-piston Pump Flowrate	0.2-2.5mL/min.
Maximum Pressure	35MPa (350 bar, 3625 psi)
Column Heating Range (for two columns)	Adjustable between ambient temperature +5°C and 80°C
MSM II Two-channel Peristaltic Pump Flowrate	0.5-0.6mL/min.
MCS Background Conductivity	<1µS/cm
Suppressor Noise (MSM II with MCS)	<0.2nS/cm
Dimensions (L × W × H)	14 × 10¼ × 17½" (35.5 × 44.6 ×25.9cm)

Description	Cat. No.	Each
Basic 861 Advanced Compact IC	**MP28610010**	13,545.00
861 Advanced Compact IC with MSM II and MCS	**MP28610040**	21,000.00

LOOKING FOR IC STANDARDS AND HARDWARE?

To access Fisher Scientific's range of IC products, look at our Web site.

Visit www.fishersci.com and search for IC

LOW PRESSURE COLUMNS AND ACCESSORIES

Spectrum Spectra/Chrom* CF-1 Fraction Collector

Combines rugged, reliable mechanical features with highly sophisticated peak separation and collection capabilities

Use as a stand-alone unit for time, volume or drop fractioning; or in conjunction with an external detector (with a 1V output) as a user-friendly, programmable peak separator.

Three Collection Modes

- **Time-based fractions** for 0.1 to 999.9 minutes in 1-second intervals—for any fraction size between 6 seconds and 1000 minutes
- **Drop- or pumped-based volume fractions** can be collected from 1 to 9999 drops (or volumes) in 1 drop (or volume) increments
- **Pumped volume mode** available only when Model CF-1 is interfaced with Spectra/Chrom Model MP-1 or MP-2 (sold separately; contact your Fisher Scientific Customer Service Representative for information)

Integral Peak Detection Capabilities

- When connected to detector with 1V output, collector identifies and separates peaks from eluate stream

High-capacity Sampling

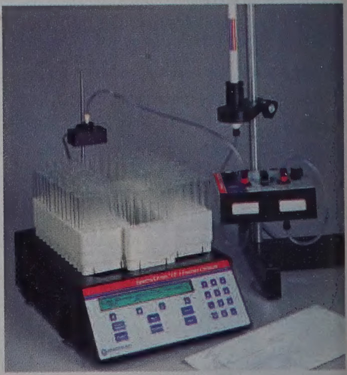
- Interchangeable racks hold up to 174 tubes ranging in size from 10 to 28mm—including scintillation vials
- Also features encoded tube positions

Operates in Cold or Hot Temperature Environments

- Heavy-gauge aluminum and plastic construction houses built-in heater circuits that eliminate internal condensation down to 0°C (32°F) —even in coldrooms with 100% humidity
- High-temperature rated electronic and mechanical parts enable continuous operation in environments with temperatures up to 40°C (104°F)

INCLUDES:

Power cord, aluminum support rod, drop counting unit, thirty 6-place racks for 12 or 13mm tubes (one red rack), fittings for 1/16 and 1/8" O.D. (1.5 and 3.2mm) and 1/16" dia. (1.5mm) tubing



11-187-37

Electrical Requirements	Mfr. No.	Cat. No.	Each
115V 50/60Hz	124845	**11-187-37**	2599.00

SPECIFICATIONS

Collection Modes	
Time (increment)	0.1 to 999.9 min. (1 sec.)
Drop or Pumped Volume† (increment)	1 to 9999 drops or volumes (1 drop or volume)
Capacity‡	174 tubes (12 or 13mm)
Data Communication	TTL
Net Weight	10 lb. (5kg)
L × W × H	15¾ × 11 × 4¾" (40 × 28 × 12cm)

† *Pumped volume mode available only when Model CF-1 is interfaced with Spectra/Chrom Model MP-1 or MP-2 or Microflow peristaltic pump.*

‡ *Capacity using rack set supplied with unit.*

Kontes* Chromaflex* Columns

Ideal for medium-pressure chromatography with aqueous mobile phases

- Threaded
- Feature PTFE-shielded O-rings and end fittings
- PTFE layer is curled over the O-ring to form a solvent- and leak-resistant seal
- Solvents contact only PTFE and borosilicate glass surfaces
- Available with three inside diameters (1.0, 2.5, and 4.8cm) and five lengths (15, 30, 60, 100, and 120cm)

INCLUDES:

Glass barrel, two PTFE end fittings with 20Rm porosity polyethylene bed supports, 5' (1.5m) of PTFE tubing (1/16" O.D. tubing with 1.0cm I.D. columns, 1/8" O.D. tubing with 2.5 and 4.8cm I.D. columns), two flangeless tubing nuts, two flangeless ferrules.

K420830 Series

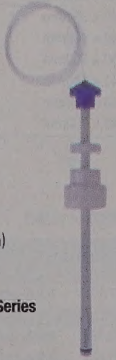
Length	Max. Volume	Max. Pressure	Cat. No.	Each
1.0cm I.D.				
15cm	12mL	100psi/6.9 bar	**K420830-1500**	168.24
30cm	24mL	100psi/6.9 bar	**K420830-3000**	174.00
60cm	47mL	100psi/6.9 bar	**K420830-6000**	188.36
100cm	79mL	100psi/6.9 bar	**K420830-1000**	218.58
120cm	95mL	100psi/6.9 bar	**K420830-1200**	237.27
2.5cm I.D.				
15cm	74mL	75psi/5.2 bar	**K420830-1510**	197.02
30cm	147mL	75psi/5.2 bar	**K420830-3010**	208.50
60cm	295mL	75psi/5.2 bar	**K420830-6010**	225.76
100cm	491mL	75psi/5.2 bar	**K420830-1010**	272.55
120cm	589mL	75psi/5.2 bar	**K420830-1210**	301.24
4.8cm I.D.				
15cm	271mL	50psi/3.4 bar	**K420830-1520**	248.80
30cm	543mL	50psi/3.4 bar	**K420830-3020**	263.93
60cm	1086mL	50psi/3.4 bar	**K420830-6020**	289.75
100cm	1810mL	50psi/3.4 bar	**K420830-1020**	351.43
120cm	2172mL	50psi/3.4 bar	**K420830-1220**	383.00

Kontes* Flow Adapters for Chromaflex* Columns

- Delivers sample and buffer directly to top of gel bed
- Ideal for concentration and pH gradients, reverse flow separations, and gravity flow separations that require a high level of resolution and reproducibility

INCLUDES:

20µm porosity HDPE bed support, TFE/propylene O-ring seal, stainless-steel adjusting rod, PTFE body and 5' (1.5m) of PTFE tubing.



K420836 Series

For Column I.D.	Tubing O.D.	Cat. No.	Each
1.0cm	1/16"	**K420836-0000**	146.67
2.5cm	1/16"	**K420836-1620**	247.34
2.5cm	1/8"	**K420836-0020**	247.34
4.8cm	1/8"	**K420836-0040**	348.57

Kontes* FlexColumn* Economy Columns

Ideal for use with FPLC* systems, peristaltic pumps, or gravity flow to 15psi.

Use columns with ion-exchange, affinity, gel filtration, and hydrophobic interaction media.

- Durable borosilicate glass
- Precision-ground column ends form positive seals with endcaps so they don't leak or "creep" under pressure
- Threaded, easy to remove reservoir cap won't pop off under pressure
- Reservoir accepts accessory funnels and glass reservoirs
- Luer-Lock* polypropylene inlet and outlet fittings
- Bed support has a 20µm polyethylene disc that retains most media for low-pressure aqueous chromatography
- Columns accept flow adapters for adjusting Flex Column bed height (order adapters separately)

NOTE:

Flow adapters not available for 0.7cm I.D. columns.

K420401 and K420400 Series

0.7cm I.D.

		Single Column		Multicolumn Pack	
Length	**Volume**	**Cat. No.**	**Each**	**Cat. No.**	**Pack of 10**
4cm	1.5mL	**K420401-0704**	16.31	**K420400-0704**	118.86
10cm	4mL	**K420401-0710**	20.29	**K420400-0710**	118.86
15cm	6mL	**K420401-0715**	20.29	**K420400-0715**	135.41
20cm	8mL	**K420401-0720**	20.29	**K420400-0720**	135.41
30cm	12mL	**K420401-0730**	24.45	**K420400-0730**	152.98
50cm	19mL	**K420401-0750**	24.45	----	----

1.0cm I.D.

		Single Column		Multicolumn Pack	
Length	**Volume**	**Cat. No.**	**Each**	**Cat. No.**	**Pack of**
5cm	4mL	**K420401-1005**	16.21	**K420400-1005**	10/118.42
10cm	8mL	**K420401-1010**	20.17	**K420400-1010**	10/118.42
20cm	16mL	**K420401-1020**	20.17	**K420400-1020**	10/134.90
30cm	24mL	**K420401-1030**	20.17	**K420400-1030**	10/134.90
50cm	40mL	**K420401-1050**	24.30	**K420400-1050**	10/152.41
120cm	94mL	**K420401-1012**	64.26	**K420400-1012**	3/203.19

1.5cm I.D.

		Single Column		Multicolumn Pack	
Length	**Volume**	**Cat. No.**	**Each**	**Cat. No.**	**Pack of**
5cm	9mL	**K420401-1505**	24.45	**K420400-1505**	5/84.53
10cm	18mL	**K420401-1510**	28.46	**K420400-1510**	5/93.50
15cm	27mL	**K420401-1515**	28.46	**K420400-1515**	5/93.50
20cm	35mL	**K420401-1520**	33.16	**K420400-1520**	5/101.98
30cm	53mL	**K420401-1530**	32.32	**K420400-1530**	5/101.98
50cm	88mL	**K420401-1550**	40.62	**K420400-1550**	5/135.41
75cm	124mL	**K420401-1575**	72.80	**K420400-1575**	3/152.98
100cm	177mL	**K420401-1511**	80.72	**K420400-1511**	3/177.78
120cm	230mL	**K420401-1512**	88.99	**K420400-1512**	3/203.95
170cm	300mL	**K420401-1517**	120.93	**K420400-1517**	2/203.95

Contd. on next page.

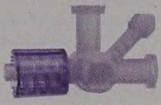
Kontes* Flex Column* Economy Columns, Contd.

2.5cm I.D.

		Single Column		Multicolumn Pack	
Length	Volume	Cat. No.	Each	Cat. No.	Pack of
10cm	49mL	K420401-2510	32.32	K420400-2510	5/118.86
20cm	98mL	K420401-2520	36.47	K420400-2520	5/126.79
50cm	245mL	K420401-2550	56.58	K420400-2550	3/126.79
75cm	344mL	K420401-2575	72.80	K420400-2575	2/101.98
100cm	490mL	K420401-2511	96.59	K420400-2511	2/152.98
120cm	638mL	K420401-2512	112.67	K420400-2512	2/169.50

Kontes* FlexColumn* Three-way Luer Stopcock

Heavy-duty nylon, 3-way control with locking fittings on all ports



K420163-4503

Cat. No.	Pack of 10
K420163-4503	44.54

Kontes* Disposaflex* Glass Columns

Multipurpose glass column with propylene reservoir

Supplied assembled with:

- Lower column fitting with a Luer outlet
- 20µm polyethylene bed support

K420166-1001

Column I.D. × L	Column Capacity	Reservoir Capacity	Overall Length	Cat. No.	Pack of
8 × 150mm	6mL	9mL	215mm	K420166-1001	5/37.71
				K420166-0001	50/333.80

Kontes* Column with Reservoir

Reservoir capacities from 200 to 500mL

- Stopcock has 2mm PTFE plug, threaded pressure nut, and 1:5 taper for easier use at greater-than-ambient temperatures
- Packing not included

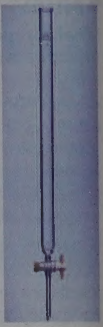
K420280 Series

I.D. × Length	Reservoir Capacity	Cat. No.	Each
11 × 250mm	200mL	K420280-0213	89.01
15 × 250mm	250mL	K420280-0222	97.80
19 × 300mm	250mL	K420280-0232	105.25
22 × 350mm	300mL	K420280-0242	114.05
30 × 400mm	500mL	K420280-0252	134.35

Kontes* PTFE-Plugged Columns

With or without fritted disc

- Sealed-in, coarse porosity (40 to 60µm) fritted disc supports packing
- Use glass wool to support packing in columns without fritted disc
- PTFE plug controls flowrate
- Packing not included



K420540 and K420530 Series

I.D. × Length	Nominal Volume	Cat. No.	Each
With fritted disc			
11 × 300mm	20mL	K420540-0213	101.89
19 × 400mm	110mL	K420540-0224	107.33
19 × 400mm	125mL	K420550-0224	150.82
22 × 300mm	110mL	K420540-0233	112.10
22 × 400mm	150mL	K420540-0234	113.13
25 × 300mm	140mL	K420540-0243	117.20
25 × 500mm	240mL	K420540-0245	156.06
41 × 600mm	775mL	K420540-0256	172.53
49 × 1000mm	1875mL	K420540-2610	287.31
Without fritted disc			
11 × 150mm	10mL	K420530-0211	88.09
11 × 250mm	20mL	K420530-0213	77.89
15 × 200mm	30mL	K420530-0221	86.05
15 × 250mm	40mL	K420530-0222	88.09
15 × 500mm	80mL	K420530-0225	100.35
19 × 300mm	80mL	K420530-0232	94.89
19 × 500mm	140mL	K420530-0234	105.64
22 × 300mm	110mL	K420530-0241	100.90
22 × 350mm	130mL	K420530-0242	103.60
22 × 500mm	190mL	K420530-0244	112.10
30 × 350mm	220mL	K420530-0251	110.06
30 × 400mm	250mL	K420530-0252	114.48
30 × 500mm	300mL	K420530-0253	122.29
41 × 500mm	650mL	K420530-0273	138.59
49 × 600mm	1100mL	K420530-0414	202.45
49 × 700mm	1300mL	K420530-0415	206.53

*Trademark. See Trademark Reference.

Prices subject to change.

Kontes* Adsorption/ Ion-Exchange Columns

With or without fritted disc

- Borosilicate glass
- Sealed-in coarse porosity (40 to 60µm) fritted disc supports packing in K420320 Series columns
- Use glass wool to support packing in K420300 Series columns (packing not included)

K420300 Series

I.D. × Length	Nominal Volume	Cat. No.	Each
With fritted disc			
11 × 300mm	20mL	**K420320-0213**	48.48
19 × 400mm	110mL	**K420320-0224**	53.59
22 × 300mm	110mL	**K420320-0233**	57.25
25 × 500mm	250mL	**K420320-0245**	63.49
41 × 600mm	790mL	**K420320-0256**	76.48
Without fritted disc			
22 × 250mm	95mL	**K420300-0021**	20.17
22 × 300mm	110mL	**K420300-0022**	25.16
22 × 400mm	150mL	**K420300-0023**	34.39

Kontes* Column for Neutral Oils Content

For determining the total neutral oil content in natural fats and oils consisting of triglycerides and unsaponifiable matter

- Uniquely designed flask (included) allows weighed sample to be transferred directly into column
- Free fatty acids and miscellaneous nonfat substances may be removed by passing the sample through a column of activated alumina; the losses may then be calculated
- Stopcocks have PTFE plugs; column has coarse porosity fritted disc
- Extension tube joint is $ 7/25, all others $ 19/22

K427100-0000

Description	I.D. × Length	Capacity	Cat. No.	Each
Apparatus				
Complete system	19 × 270mm	175mL	**K427100-0000**	362.15
Replacement parts				
Solvent reservoir	----	175mL	**K427101-0000**	86.59
Flask	----	20mL	**K427102-0000**	136.68
Weighing base	----	----	**K427103-0000**	18.66
Extension tube	----	----	**K427104-0000**	15.97
Column	19 × 270mm	----	**K427105-0000**	119.18

LOW PRESSURE PACKING AND SORBENTS

Fisher Chemical* Sorbents for Column Chromatography

Meet strict chemical purity requirements

- High-efficiency separations from laboratory to full-scale production
- Lot-to-lot reproducibility of surface area, pore volume, and pore size

S736-1

Particle Size	Mesh	Grade	pH	Quantity	Cat. No.	Each	Case of
Alumina, Adsorbent							
----	80-200	----	----	500g	**A540-500**	88.18	6/413.64
----	80-200	----	----	3kg	**A540-3**	306.75	4/947.86
Alumina, Acidic, Activity I							
----	60-325	----	4 to 5	500g	**A948-500**	212.05	6/982.82
Alumina, Basic, Activity I							
----	60-325	----	9.2 to 9.8	500g	**A941-500**	114.74	6/538.24
Alumina, Neutral, Activity I							
----	60-325	——	7 to 8	500g	**A950-500**	171.68	6/795.73
Celite* Analytical Filter Aid							
----	----	----	----	500g	**C211-500**	512.71	4/1579.12
Celite 545							
----	----	----	----	25 lb.	**C212-25LB**	262.10	----
----	----	----	----	50 lb.	**C212-50LB**	458.57	----
Davisil* Silica Gel 60							
35–70µm	200-425	633	6.5	1kg	**S733-1**	254.72	4/787.08
35–70µm	230-400	633	6.5	25kg	**S733-25**	2463.13	----
75–150µm	100-200	634	6.5	1kg	**S734-1**	274.57	4/876.29
150–250µm	60-100	635	6.5	1kg	**S735-1**	300.69	4/902.08
150–250µm	170-400	63 FC (60A)	6.5	1kg	**S732-1**	196.63	4/614.93
150–250µm	170-400	63 FC (60A)	6.5	25kg	**S732-25**	2085.39	----
250–500µm	35-60	636	6.5	1kg	**S736-1**	244.06	4/763.24
Davisil Silica Gel 150							
35–70µm	200-425	643	7.0	1kg	**S743-1**	303.38	4/1001.01
75–150µm	100-200	644	7.0	1kg	**S744-1**	293.69	4/918.47
150–250µm	60-100	645	7.0	1kg	**S745-1**	312.57	4/972.85
250–500µm	35-60	646	7.0	1kg	**S746-1**	264.60	4/830.77
Davisil Silica Gel 32 Sorbent							
75–150µm	100-200	923	----	1kg	**S817-1**	435.42	4/1361.76
Davisil Silica Gel 150 Sorbent							
75–250µm	60-200	62	----	1kg	**S818-1**	221.29	4/663.87
Rexyn* 101 (H) Beads							
----	----	Analytical	----	500g	**R208-500**	222.39	6/1000.73
Rexyn I-300 (H-OH) Beads							
----	----	Research	----	500g	**R231-500**	75.98	6/341.90
----	----	Analytical	----	500g	**R276-500**	158.14	6/732.95
Silica, Floated							
----	200 Mesh and Finer	----	----	3kg	**S153-3**	73.28	4/229.18
Silica, Fine Granules							
----	40-100	----	----	10kg	**S151-10**	93.14	----
----	----	----	----	3kg	**S150-3**	70.83	4/221.49

Selecto* Preparative and Classic Column Chromatography Silica

60Å gels made from identical starting material, making scale-up easier

- pH of 7
- Surface area of 500 to 600m²/g
- Use active silica to meet needs for standardized initial conditions and high reproducibility
- Active silica gel with 32-63µm particle size is ideal for fast, simple purifying of organic samples

05-719-8 Series

Particle Size	Mesh	Quantity	Cat. No.	Each
Silica Gels				
63-200µm	70-230	500g	**05-719-820**	51.25
63-200µm	70-230	1kg	**05-719-821**	70.13
63-200µm	70-230	2.5kg	**05-719-822**	177.43
63-200µm	70-230	25kg	**05-719-823**	1338.28
100-200µm	70-150	500g	**05-719-812**	51.25
100-200µm	70-150	1kg	**05-719-867**	70.13
100-200µm	70-150	25kg	**05-719-865**	1413.67
Active Silica Gels				
32-63µm	230-400	500g	**05-719-824**	53.61
32-63µm	230-400	1kg	**05-719-825**	85.00
32-63µm	230-400	2.5kg	**05-719-866**	229.33
32-63µm	230-400	25kg	**05-719-826**	1346.35
63-200µm	70-230	500g	**05-719-815**	70.13
100-200µm	70-150	500g	**05-719-816**	57.39

EMD Chemicals* Silica Gel 60 H 5-40µm

Consistent quality control in adsorbant manufacture

Material	Particle Size	Mfr. No.	Cat. No.	Each
Silica gel 60H	5 to 40µm	7736-3	**M77363**	260.64

Whatman* Silica Gel

For classic column or dry column chromatography

- Use dry column chromatography technique when TLC separations must be scaled up
- 60Å pore size; surface area, 450m²/g; pH, 5-6
- Without fluorescent indicator

05-713-69 Series

Quantity	Mfr. No.	Cat. No.	Each
70-230 Mesh			
1kg	4791-010	**05-713-693**	165.93
5kg	4791-050	**05-713-692**	609.86
230-400 Mesh			
1kg	4790-010	**05-713-697**	193.33
5kg	4790-050	**05-713-696**	754.99
25kg	4790-250	**05-713-695**	1826.09

Whatman* Purasil Silica Gel

High-purity silica gel for flash chromatography

- Narrow particle size distribution and minimal fines enable fast separations
- High resolution
- Excellent flowrates
- Direct scalability
- 60Å pore size
- 60-80mL/g pore volume
- Surface area, 500-600m²/g
- pH (10% suspension): 7 ± 0.5

05-713 Series

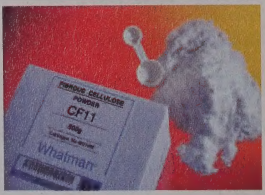
Particle Size	Mesh	Quantity	Cat. No.	Each
38-63µm	230-400	1kg	**05-713-812**	139.50
38-63µm	230-400	25kg	**05-713-813**	1351.16
63-210µm	70-230	1kg	**05-713-814**	139.50
63-210µm	70-230	25kg	**05-713-815**	1351.16

Whatman* Advanced Ion Exchange Cellulose (AIEC) for Biopolymers

For separating proteins, nucleic acids, hormones, peptides, and antibodies

For Partition Chromatography: Cellulose Powder

- Use CC-31 for column separations and binder-free CC-41 for TLC
- Fibrous cellulose powder is suitable for column (medium fiber, CF-11) or batch (long fiber, CF-1) techniques



05-713-004

For Cation Exchange Separations: Carboxymethyl Cellulose

- Preswollen CM-52 is a high-capacity media for hormones, polypeptides, and other biopolymers bearing low to high positive charges
- Dry microgranular CM-32 is virtually identical to the preswollen form after precycling
- CM-52 and CM-32 are recommended for column separations

Bifunctional Cellulose

- Use P-11 for column separations of medium-size biopolymers

For Anion Exchange Separations: Diethylaminoethyl (DEAE) Cellulose

- DE-23 is suitable for negatively charged biopolymers
- Two preswollen microgranular DEAE media are available: DE-52 for proteins with medium negative charges and nucleic acids; and DE-53, a partially quarternized anion exchanger with a higher capacity than DE-52
- After precycling, dry microgranular DE-32 performs like preswollen media

Quarternary Amine Cellulose

- QA-52 is excellent for high-pH applications
- Strong anion exchanger, fully ionized under all pH conditions

Ordering Information on next page

Whatman* Advanced Ion Exchange Cellulous (AIEC) for Biopolymers, Contd.

AIEC	Description	Quantity	Mfr. No.	Cat. No.	Each
CC-31	Microgranular Cellulose for Column Work	2kg	4014-200	**05-713-001**	368.77
CC-41	Microgranular Cellulose for TLC	500g	4061-050	**05-713-024**	116.27
CF-1	Fibrous Cellulose for Batch Separations	500g	4020-050	**05-713-002**	76.06
CF-11	Fibrous Cellulose for Column Work	500g	4021-050	**05-713-004**	76.06
CF-11	Fibrous Cellulose for Column Work	5kg	4021-500	**05-713-005**	538.38
CM-32	Dry Microgranular Carboxymethyl Cellulose	100g	4035-010	**05-713-009**	229.90
CM-52	CM Cellulose for Biopolymers with Low to High Positive Charges	500g	4037-050	**05-713-012**	250.59
CM-52	CM Cellulose for Biopolymers with Low to High Positive Charges	2kg	4037-200	**05-713-013**	783.11
DE-23	Fibrous DEAE Cellulose	100g	4053-010	**05-713-014**	154.12
DE-23	Fibrous DEAE Cellulose	250g	4053-025	**05-713-015**	303.51
DE-32	Dry Microgranular DEAE Cellulose	100g	4055-010	**05-713-017**	229.90
DE-52	DEAE Preswollen Cellulose for Biopolymers with Low to High Negative Charges	500g	4057-050	**05-720-5**	303.51
DE-52	DEAE Preswollen Cellulose for Biopolymers with Low to High Negative Charges	2kg	4057-200	**05-713-023**	962.23
DE-53	Partially Quaternized DEAE Preswollen Anion Exchanger	500g	4058-050	**05-713-366**	303.51
DE-53	Partially Quaternized DEAE Preswollen Anion Exchanger	2kg	4058-200	**05-713-367**	962.23
P-11	Orthophosphate Bifunctional Cation Exchange for Column Separations	100g	4071-010	**05-713-027**	93.40
P-11	Orthophosphate Bifunctional Fibrous Cation Exchange for Column Separations	500g	4071-050	**05-713-028**	362.30
P-11	Orthophosphate Bifunctional Fibrous Cation Exchange for Column Separations	2kg	4071-200	**05-713-029**	1156.38
QA-52	Quaternary Amine Substituted Preswollen Cellulose	500g	4065-050	**05-713-364**	303.51

SOLID-PHASE EXTRACTION

Thermo Scientific* HyperSep* Hypercarb* SPE Columns

Unique sorbents available for normal phase, reversed phase, and ion exchange extractions

- High reproducibility, efficiency, and versatility
- Controlled, even (40 to 60μm mean) particle size distribution within the bed eliminates channeling, providing a larger surface area of sorbent for interaction
- 60Å mean pore size for all except Florisil*
- Consistent high recoveries are free from contaminants and impurities
- Provides low column backpressure for automation-friendly SPE columns
- Chemically resistant polypropylene housing; two polyethylene frits support the sorbent column bed
- Conform to the industry standard configurations
- Use in biological, pharmaceutical, forensic, and environmental applications
- Not endcapped

Popular Phase Options

C18

- Trifunctional octadecyl
- Hydrophobic reversed phase
- Highly retentive
- For nonpolar to moderately polar compounds

C8

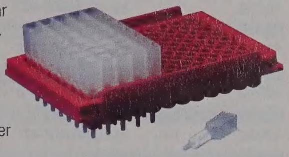
- Trifunctional octyl
- Hydrophobic reversed phase
- Less retentive alternative to C18 for polar and nonpolar compounds

Phenyl

- Trifunctional phenyl
- Hydrophobic reversed phase
- Alternative selectivity for enhanced retention of basic compounds
- Commonly used for nonpolar interactions

Silica

- Unbonded activated silica
- Hydrophilic normal phase
- Effectively separates compounds of very similar structure
- Adsorbs analytes from nonpolar solvents such as hydrocarbons, chloro- or fluoro-substituted hydrocarbons or less polar esters and ethers
- Also used as a cation exchanger of intermediate strength in zaqueous medium



Columns in Well Plate Format (sold separately)

SAX

- Trifunctional quaternary amine, 0.25 mEq/g, Cl^- counter ion
- Anion exchange
- For extraction of weak acids and negatively charged compounds from both aqueous and nonaqueous solutions
- Offers minimal nonpolar interactions

SCX

- Trifunctional benzene sulfonic acid, 0.32 mEq/g, H^+ counter ion
- Cation exchange
- With a low pK_a
- For extraction of charged basic compounds (basic drugs)
- Benzene ring provides high potential for nonpolar interactions

Verify*-CX

- Mixed mode containing C8 and benzenesulfonic acid
- Cation exchange, nonpolar
- For extraction of basic drugs
- Copolymerized on a rigid, purified silica gel support

Verify-AX

- Mixed mode, containing C8 and quaternary amine
- Anion exchange, nonpolar
- For extraction of acidic drugs and metabolites from biological matrices
- Copolymerized on a rigid, purified silica gel support

Contd. on next page.

Thermo Scientific* HyperSep* Hypercarb* SPE Columns, Contd.

Florisil

- Florisil phase; hydrophilic normal phase
- Isolates polar compounds from nonpolar matrices
- Magnesia-loaded silica gel for faster flow rates for large sample volumes
- Extremely polar

Aminopropyl

- Trifunctional aminopropyl, 0.31 mEq/g
- Normal phase, anion exhange
- Polar sorbent for both polar and anion exchange interactions
- Enhanced retention of strong anions
- Excellent retention of drugs, metabolites, and structural isomers

Bed Weight	Column Volume	Mfr. No.	Cat. No.	Pack of
HyperSep Aminopropyl SPE Columns				
100mg	1mL	60108-364	**03-251-168**	100/148.75
500mg	3mL	60108-518	**03-251-169**	100/127.50
HyperSep C8 SPE Columns				
50mg	1mL	60108-391	**03-251-159**	100/123.25
500mg	3mL	60108-309	**03-251-160**	100/89.25
500mg	6mL	60108-394	**03-251-161**	100/85.00
HyperSep C18 SPE Columns				
50mg	1mL	60108-390	**03-251-157**	100/123.25
500mg	3mL	60108-304	**03-251-158**	100/89.25
500mg	6mL	60108-305	**03-251-156**	30/85.00
HyperSep Florisil SPE Columns				
100mg	1mL	60108-403	**03-251-172**	100/144.50
HyperSep Phenyl SPE Columns				
500mg	3mL	60108-388	**03-251-162**	100/93.50
HyperSep SAX SPE Columns				
100mg	1mL	60108-418	**03-251-170**	100/140.25
HyperSep SCX SPE Columns				
100mg	1mL	60108-421	**03-251-171**	100/144.50
HyperSep Silica SPE Columns				
50mg	1mL	60108-409	**03-251-163**	100/123.25
500mg	3mL	60108-315	**03-251-164**	100/72.25
500mg	6mL	60108-411	**03-251-165**	100/76.50
HyperSep Verify-AX SPE Columns				
300mg	3mL	60108-728	**03-251-167**	50/102.85
HyperSep Verify-CX SPE Columns				
300mg	3mL	60108-720	**03-251-166**	50/94.35

LOOKING FOR A THERMO SCIENTIFIC* HyperSep* MANIFOLD?

For HyperSep manifolds, look to our Web Site.

Visit www.fishersci.com and search for HyperSep

Thermo Scientific* HyperSep* Hypercarb* SPE Plates and Wells

For solid-phase extraction applications and separations where C18 is not appropriate or applicable

03-250-4 Series

- Unique flat, 100% porous graphitic carbon (PGC) with selectivity for structurally similar compounds, offering separation of compounds with simple solvents
- Stable across the 0 to 14pH range
- High batch-to-batch reproducibility
- Strong retention properties allow use of low bed weights for concentrated extracts
- Unique interaction mechanism with polar molecules
- Hydrophobic reversed phase; normal phase adsorption; polar retention (PREG)
- 30µm mean particle size
- 250Å mean pore size

ORDERING INFORMATION:

Choose from 96-well preassembled plates or pack of 100 individual wells for convenient method development.

Bed Weight	Volume	Mfr. No.	Cat. No.	Each
96-Well Plates				
10mg	1mL	60302-606	**03-250-409**	259.25
25mg	1mL	60302-607	**03-250-410**	290.70
50mg	1mL	60302-608	**03-250-411**	379.95
100mg	1mL	60302-609	**03-250-412**	500.65
Individual Wells				
10mg	1mL	60302-601	**03-250-406**	223.55
25mg	1mL	60302-602	**03-250-407**	267.75
50mg	1mL	60302-603	**03-250-408**	357.00
100mg	1mL	60302-604	**03-250-451**	500.65

*Trademark. See Trademark Reference.

Thermo Scientific* HyperSep* Hypercarb* SPE Columns Tips and SpinTips

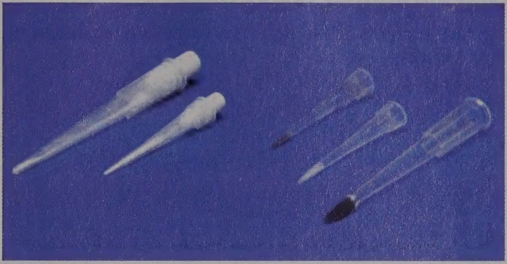
- Faster sample preparation with minimal sample loss
- No contamination from the supporting matrix
- Use for mass spectrometry, desalting, protein purification, MALDI, electrophoresis, HPCE, HPLC, and CEC

HyperSep Tips

- Patented micropipet tip in which the chromatographic material is directly attached to its inner surface
- Achieve separation in volumes as low as 100nL

HyperSep SpinTips

- Pipet tips with a 1 to 2µm wide slit at bottom that permits the liquid to pass through but retains the chromatographic material (20 to 30µm)
- Eliminate need for a filter; also eliminate dead volume
- Sample volumes as small as 0.1µL can be handled



03-250-4 Series

	1 to 10µL Volume			10 to 200µL Volume		
Description	**Mfr. No.**	**Cat. No.**	**Pack of 96**	**Mfr. No.**	**Cat. No.**	**Pack of 96**
HyperSep Tips						
BioBasic* C4	60109-203	**03-250-414**	144.00	60109-211	**03-250-422**	166.50
BioBasic C8	60109-202	**03-250-413**	144.00	60109-210	**03-250-421**	166.50
BioBasic C18	60109-201	**03-250-450**	144.00	60109-209	**03-250-420**	166.50
HILIC	60109-206	**03-250-417**	144.00	60109-214	**03-250-425**	166.50
Hypercarb	60109-204	**03-250-415**	178.20	60109-212	**03-250-423**	212.40
Hypercarb and C18 (Mix Mode)	60109-205	**03-250-416**	178.20	60109-213	**03-250-424**	212.40
Titanium Dioxide	60109-208	**03-250-419**	178.20	60109-216	**03-250-427**	212.40
Trypsin	60109-207	**03-250-418**	189.00	60109-215	**03-250-426**	261.00
BioBasic C4	60109-403	**03-250-430**	166.50	60109-414	**03-250-441**	201.60
BioBasic C8	60109-402	**03-250-429**	166.50	60109-413	**03-250-440**	201.60
HyperSep SpinTips						
BioBasic C18	60109-401	**03-250-428**	166.50	60109-412	**03-250-439**	201.60
HILIC	60109-406	**03-250-433**	189.00	60109-417	**03-250-444**	261.00
Hypercarb	60109-404	**03-250-431**	224.10	60109-415	**03-250-442**	304.20
Trypsin	60109-407	**03-250-434**	304.20	60109-416	**03-250-443**	304.20
Hypercarb and C18 (Mix Mode)	60109-405	**03-250-432**	224.10	60109-420	**03-250-447**	306.00
Poros Strong Anion Exchanger Material	60109-409	**03-250-436**	225.00	60109-421	**03-250-448**	306.00
Poros Strong Cation Exchanger Material	60109-410	**03-250-437**	225.00	60109-419	**03-250-446**	306.00
Poros Weak Anion Exchanger Material	60109-408	**03-250-435**	225.00	60109-422	**03-250-449**	304.20
Titanium Dioxide Material	60109-411	**03-250-438**	224.10	60109-418	**03-250-445**	421.20

Restek* Resprep*-C8 and Resprep*-C18 SPE Disks

Extract analytes using high flow rates with significantly less clogging

- Glass fiber disks embedded with C8 or C18 bonded silica
- Extract semivolatile organic compounds
- Deep-pore design reduces clogging and allows faster flow rates
- Meet requirements for EPA methods 525.1, 506, 550.1, 549.1

Size	Mfr. No.	Cat. No.	Pack of
C8			
47mm	24048	**06-718-826**	24/118.00
C18			
47mm	24004	**06-712-142**	1/118.00

Alltech* Prevail* C18 Solid-Phase Extraction Columns

Water-wettable cartridges don't require preconditioning with an organic solvent—saves time and reduces handling and disposal of organic solvents

- Fully endcapped
- Use for aqueous samples, including dry metabolites from blood, hormones from body fluids, and pesticides from water
- **Extract-Clean*** columns feature larger bed weights and are typically used in processes employing a vacuum manifold
- **Maxi-Clean*** cartridges are small, portable, and ideal for methods using a vacuum or syringe

AT605 series

Bed Weight	Column Size	Cat. No.	Pack of
Extract-Clean Columns			
100mg	1.5mL	**AT605001**	100/191.43
500mg	4.0mL	**AT605250**	50/133.02
500mg	8.0mL	**AT605350**	30/108.15
1000mg	8.0mL	**AT605430**	30/133.02
Maxi-Clean Cartridges			
300mg	—	**AT605926**	50/151.98
500mg	—	**AT605929**	50/181.69
900mg	—	**AT605942**	50/194.67

Alltech* Solid-Phase Extraction Columns

Typically used in processes employing a vacuum manifold, but also suitable for methods using syringes to pull or push sample

- **Extract-Clean*** SPE columns feature a polypropylene housing with a 20µm polyethylene frit
- Large-volume reservoirs ideal for large sample volumes

Bed Weight	Tube Size	Endcapped	Cat. No.	Pack of
Alumina				
500mg (Basic)	4.0mL	No	**AT228150**	50/118.97
500mg (Neutral)	4.0mL	No	**AT228550**	50/118.97
C8				
200mg	4.0mL	Yes	**AT206150**	50/94.09
500mg	4.0mL	Yes	**AT206250**	50/108.15
500mg	8.0mL	Yes	**AT206350**	30/77.87
C18				
100mg	1.5mL	Yes	**AT205000**	100/148.17
200mg	4.0mL	Yes	**AT205150**	50/94.69
500mg	4.0mL	Yes	**AT205250**	50/108.15
500mg	8.0mL	Yes	**AT205350**	30/77.87
1000mg	8.0mL	Yes	**AT205430**	30/108.15
5000mg	25mL	Yes	**AT225450**	20/210.89
Cyanopropyl				
100mg	1.5mL	Yes	**AT209300**	100/164.39
200mg	4.0mL	Yes	**AT209450**	50/108.15
500mg	4.0mL	Yes	**AT209550**	50/124.37
Diol				
100mg	1.5mL	No	**AT208000**	100/164.39
Florisil*				
100mg	1.5mL	No	**AT204500**	100/129.78
200mg	4.0mL	No	**AT207750**	50/83.28
500mg	4.0mL	No	**AT204650**	50/108.15
1000mg	8.0mL	No	**AT207930**	30/91.93
2000mg	15mL	No	**AT207962**	30/115.00
5000mg	25mL	No	**AT227950**	20/124.37
10,000mg	75mL	No	**AT237910**	16/142.76
NH_2				
100mg	1.5mL	No	**AT211000**	100/164.39
200mg	4.0mL	No	**AT211025**	50/108.15
500mg	4.0mL	No	**AT211150**	50/130.00
1000mg	8.0mL	No	**AT211153**	30/118.00
SAX				
200mg	4.0mL	No	**AT209625**	50/124.37
500mg	4.0mL	No	**AT209750**	50/136.27
SCX				
100mg	1.5mL	No	**AT209800**	100/176.28
200mg	4.0mL	No	**AT209825**	50/135.00
500mg	4.0mL	No	**AT209950**	50/140.00
Silica				
100mg	1.5mL	No	**AT209000**	100/129.78
200mg	4.0mL	No	**AT209150**	50/83.28
500mg	4.0mL	No	**AT209250**	50/108.15
500mg	8.0mL	No	**AT209200**	30/71.38
2000mg	8.0mL	No	**AT209202**	30/108.15
1000mg	8.0mL	No	**AT209100**	30/91.93
2000mg	15mL	No	**AT209362**	30/108.15
5000mg	25mL	No	**AT22935**	20/123.35

Alltech* SAX Maxi-Clean* Cartridges

Strong anion exchanger in acetate form

- Functional group tetramethyl ammonium
- Base: Styrene-divinylbenzene
- Capacity: 0.15mEq/100mg
- Retains negatively charged compounds
- 600mg bed weight

Description	Mfr. No.	Cat. No.	Pack of 100
SAX Maxi-Clean Cartridges	21908	**AT21908**	367.71

Alltech* Extract-Clean* and Maxi-Clean* IC Resin SPE Devices

Seven chemistries available in two formats

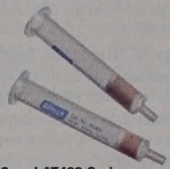
- Available in 0.5mL and 1.5mL bed volumes

Extract-Clean Columns

- Process multiple samples with vacuum manifold
- For labs with higher sample throughput requirements

Maxi-Clean Cartridges

- Use with any Luer tip syringe

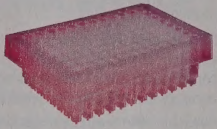

AT140 and AT402 Series

AT302 Series

Resin	Volume per Bed	Cat. No.	Pack of
Extract-Clean Cartridges			
IC-Ag	0.5mL	**AT-105-050**	50/232.52
IC-Ag	1.5mL	**AT-140-258**	30/275.78
IC-Ba	0.5mL	**AT-402-68**	50/151.41
IC-Ba	1.5mL	**AT-140-261**	30/232.52
IC-Chelate	0.5mL	**AT-402-50**	50/151.41
IC-Chelate	1.5mL	**AT-140-265**	30/227.12
IC-H	1.5mL	**AT-140-256**	30/227.12
IC-Na	0.5mL	**AT-402-70**	50/151.41
IC-Na	1.5mL	**AT-140-263**	30/232.52
IC-OH	0.5mL	**AT-402-62**	50/151.41
IC-OH	1.5mL	**AT-140-254**	30/227.12
IC-RP	0.5mL	**AT-402-60**	50/151.41
IC-RP	1.5mL	**AT-140-252**	30/227.12
Maxi-Clean Cartridges			
IC-Ag	1.5mL	**AT-302-58**	25/275.78
IC-Ba	0.5mL	**AT-302-68**	50/167.63
IC-Ba	1.5mL	**AT-302-61**	25/232.52
IC-Chelate	0.5mL	**AT-302-50**	50/167.63
IC-Chelate	1.5mL	**AT-302-65**	25/227.12
IC-H	0.5mL	**AT-302-64**	50/167.63
IC-H	1.5mL	**AT-302-56**	25/227.12
IC-Mixed Mode RP-H	1.5mL	**AT-302-67**	25/227.12
IC Mixed-Mode RP-OH	1.5mL	**AT-302-59**	25/227.12
IC-Na	0.5mL	**AT-302-70**	50/167.63
IC-Na	1.5mL	**AT-302-63**	25/227.12
IC-OH	0.5mL	**AT-302-62**	50/167.63
IC-OH	1.5mL	**AT-302-54**	25/227.12
IC-RP	0.5mL	**AT-302-60**	50/164.65
IC-RP	1.5mL	**AT-302-52**	25/227.12

3M* Empore* 96-Well Extraction Disk Plates

High-performance extraction disk plates for high-throughput SPE


14-378 and 14-379 Series

- Process 96 samples in 8 × 12 plate formats compatible with liquid handling technologies and injection systems; samples can be extracted in approximately one hour or less
- Wells contain patented Empore standard-density particle-loaded membrane for efficient sample extraction followed by elution in 100µL with mobile phase or mobile phase compatible solutions
- Ideal for sample preparation prior to LC/MS and other high-throughput applications
- C2, C8, or C18 silica sorbents for nonpolar interactions with analytes from complex samples
- Universal resin (UR) sorbent plates contain polar functioning groups to promote a much more generic approach with high retention of acidic, neutral, and base analytes
- Use with 3M Empore Vacuum Manifold Assembly when extracting multiple samples
- Available with 1.2 or 2.5mL reservoir volumes with a 5.5µm disk diameter

Type	Mfr. No.	Cat. No.	Each	Case of 12
1.2mL Well Volume				
C2-SD	6011SD	**14-378-55**	246.10	2760.00
C8-SD	6014SD	**14-378-56**	246.10	2760.00
C18-SD	6015SD	**14-378-57**	246.10	2760.14
MPC-SD	6030SD	**14-378-58**	246.10	2760.00
Filter Plate	6060	**14-378-59**	67.85	740.19
2.5mL Well Volume				
C8-SD	6314SD	**14-378-71**	270.72	3036.12
Filter Plate	6360	**14-378-74**	74.65	814.32

3M* Empore* Filter Aid 400

Nonporous, inert glass beads with average diameter of 40Rm designed for use with Empore Extraction Disks

3M Empore Filter Aid 400
3M Empore Filter Aid 400
14-378-6

- Improves flowrates and recoveries with water samples containing suspended solids
- When placed on top of Empore disks, beads act as a depth filter to inhibit migration of suspended solids to the surface of the disk
- Supplied with scoop

Size	Mfr. No.	Cat. No.	Each
1.5kg	FA400	**14-378-6**	85.45

3M* Empore* Extraction Disks

Reduce extraction time and solvent use for analytical preparation of aqueous environmental samples

- Provide up to 90% solvent reduction, excellent processing speed, and contamination-free extractions with accurate and reproducible results
- Available with a variety of packings in 47 and 90mm sizes

Anion Exchange-SR Extraction Disks

- Approved for use in EPA Methods 549.1 and 552.1
- Provide significantly faster extraction time with no negative effect on recoveries
- Replace liquid/solid procedures for the determination of haloacetic acids in water, as well as chlorinated herbicide Dalapon*

Size	Mfr. No.	Cat. No.	Pack of	Case of 3 Pk.
47mm	2252	**14-386-6**	20/236.13	662.05

C8 and C18 Extraction Disks

- Effective for extracting PCBs, PNAs, organochlorine pesticides, phenoxy acid herbicides, phthalates, and triazines
- **C8** disk is approved for use in EPA Method 549.1
- **C18** disks are approved for use in EPA Methods 506, 550.1, 525.2, 1613B, 508.1, and 3535; 14-386-3 is also approved for use in EPA Method 608

Size	Mfr. No.	Cat. No.	Pack of	Case of 3 Pk.
C8 Sorbent				
47mm	2214	**14-386**	20/191.89	538.01
C18 Sorbent				
47mm	2215	**14-386-2**	20/191.94	538.14
90mm	2315	**14-386-3**	10/279.01	782.25

Oil and Grease Extraction Disks

- Designed for use in EPA Method 1664
- Require almost half the solvent of traditional methods and do not form emulsions during sample preparation
- Reduce extraction times to an average of eight minutes/liter for most sample matrices

Size	Mfr. No.	Cat. No.	Pack of	Case of 3 Pk.
47mm	2270	**14-638-30A**	20/111.38	303.76
90mm	2370	**14-638-30B**	10/112.18	305.94

SDB-RPS Extraction Disks

- Approved for use in EPA Method 515.2
- Used to collect the more water-soluble analytes from water samples
- Adsorbent is effective for explosives, pesticides, phenolics, and drugs of abuse

Size	Mfr. No.	Cat. No.	Pack of	Case of 3 Pk.
47mm	2241	**14-386-8**	20/236.08	661.92
90mm	2341	**14-386-9**	10/472.56	1324.95

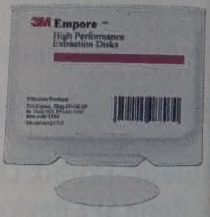
SDB-XC Extraction Disks

- Approved for use in EPA Method 515.2
- Provide the next step in environmental sample preparation, soluble polar compound extraction; ideal for phenol compounds having poor recoveries by almost any known extraction technique

Size	Mfr. No.	Cat. No.	Pack of	Case of 3 Pk.
47mm	2240	**14-386-4**	20/236.08	661.92
90mm	2340	**14-386-5**	10/472.56	1324.95

3M* Empore* Rad Disks

Effective alternative to conventional radiochemical sample preparation methods that use wet chemistry or packed columns



14-388-9 Series

- Thin membranes with densely packed, element-selective particles held in a stable inert matrix of polytetrafluoroethylene (PTFE) fibrils that separate, collect, and concentrate target surface radioisotopes
- Marked with sorbent type, lot number, and individual disk number
- Diameter: 47mm (nominal); suggested flowrate: 50mL/minute (nominal)

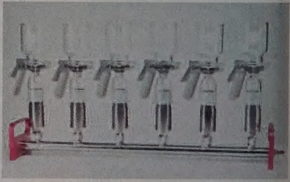
Choice of Three Disk Types

- **Strontium** disks quantitatively determine radiostrontium in aqueous samples; reduce sample manipulations by 90%
- **Radium** disks quantitatively determine radium isotopes 226 and 228 from aqueous samples; reduce sample manipulations by 50%
- **Technetium** disks selectively adsorb technetium when present with other common ions for quantitative determination of technetium in aqueous samples; reduce sample manipulations to just two steps

Disk Type	Size	Mfr. No.	Cat. No.	Pack of 20	Case of 3 Pk.
Strontium	0.5mm	3290	**14-388-91**	965.69	2707.53
Radium	0.5mm	3291	**14-388-92**	803.32	2252.29
Technetium	0.5mm	3292	**14-388-93**	403.31	1130.77

Kontes* Extraction Manifolds

Specially designed for use with solid-phase extraction disks—including 3M* Empore* extraction disks in 47mm diameters



K971000-6047

- Funnels are Type I, Class A borosilicate glass
- TFE-coated stainless-steel support screen reduces sample-to-sample cross-contamination and resists corrosion caused by acid-preserved samples
- Valves have stainless-steel bodies, PTFE plugs, and three-way operation to allow venting without affecting vacuum in the rest of the system
- Corrosion-resistant, stainless-steel manifolds are available with one, three, or six places in 47mm size

INCLUDES:

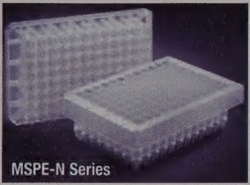
All sets have a manifold, plus the number of glassware sets indicated in the chart below. Each glassware set includes a 47mm dia./300mL capacity funnel, support base, PTFE-coated stainless-steel screen, and anodized aluminum clamp. Replacement parts are available on our Web site.

No. of Sets	Manifold Places	Cat. No.	Each
1	1	**K971000-1047**	905.57
3	3	**K971000-3047**	1839.54
6	6	**K971000-6047**	3512.61

*Trademark. See Trademark Reference.

Millipore* Multi-SPE Extraction Plates

High performance sample preparation in a 96-well format for reliable LC-MS/MS results



- High extraction efficiency eliminates steps for high throughput sample processing
- Small bed volume allows efficient recovery of retained analytes in a small volume of elution solvent, yielding a clean, concentrated sample
- Contain 3M* Empore* extraction membranes that are produced by trapping sorbent particles within an inert matrix of polytetrafluoroethylene (PTFE)—resulting in a clean recovered eluant and longer column life
- Dense particle packing and uniform distribution within Empore extraction membranes allows the use of less sorbent mass and lower elution volumes and capture analytes more efficiently than packed bed columns
- Adaptable to a variety of automated liquid handling and robotic workstations

Variety of Sorbent Types

- **C18 (Octadecyl Bonded Silica):** Strongly nonpolar for reversed phase applications
- **C8 (Octyl Bonded Silica):** Moderately nonpolar for reversed phase applications; can be more selective than C18
- **C2 (Ethyl Bonded Silica):** Weakly nonpolar for reversed phase applications
- **MPC (Mixed Phase Cation):** C8 bonded silica for reversed phase interactions; benzosulfonic acid groups for strong cation exchange interactions
- **UR (Universal Resin):** Styrene divinylbenzene terpolymer with polar functional groups; high retention of a wide range of analytes; used for rapid method development

Material	Cat. No.	Each
C18	**MSPE-N18-01**	253.00
C2	**MSPE-N02-01**	253.32
C8	**MSPE-N08-01**	253.32
MPC	**MSPE-NMP-01**	253.32
UR	**MSPE-NUR-01**	276.35

TYPICAL CHARACTERISTICS

Membrane Diameter	5.5mm
Reservoir Volume	1.2mL
Membrane Thickness	0.75mm
Bed Volume	18µL
Sorbent Mass	Bonded Silicas: 10mg (Nominal); Universal Resin: 5mg (Nominal)
Mean Particle Size	Bonded Silicas: 50µm; Universal Resin: 44µm
Membrane Composition	Bonded Silicas: Nominally 92% Sorbent, 8% PTFE (w/w); Universal Resin: Nominally 90% Sorbent, 10% PTFE (w/w)

Millipore* Multiscreen*HTS Vacuum Manifold

For vacuum filtration using 96- and 384-well MultiScreenHTS, MultiScreen* Solvinert, and Solvinert Deep Well filter plates

- Accepts deep well or standard receiver plates
- Suitable for use with manual or automated protocols; ANSI/SBS compliant footprint allows for easy robotic deck integration
- Easily configured for both flow-to-waste and analyte collection
- DirectStack* technology for crosstalk-free filtrate collection
- Manifold components are resistant to solvents

INCLUDES:

Manifold base, standard collar, gaskets and gasket inserts, tubing, valves, pressure gauge

Description	Cat. No.	Each
MultiScreen$_{HTS}$ Vacuum Manifold	**MSV MHT S00**	1250.00

Environmental Express* StepSaver* Device for Solid-Phase Extraction

Simplifies U.S. EPA Method 1664

09-735-116

- Positions the collection vessel outside of the filter flask or manifold and utilizes a vacuum bridge to connect the vacuum source
- Luer adapter, located in the solvent collection arm, permits the use of an inline Na_2SO_4 drying cartridge
- Allows the collection of the solvent with eluted oil or grease directly into a preweighed collection flask, thus eliminating the disassembly or assembly of glassware
- Already dried with the Na_2SO_4, the eluent can be directly evaporated to obtain the weight of the extracted oil or grease
- Two-way, 120° PTFE-resin stopcock prevents accidental sample loss; attaches to a filter manifold or filtration flask through the ₸ 40/35 ground glass joint on the bottom of the apparatus
- Designed for use with 47mm solid-phase extraction disks
- Manufactured of borosilicate glass with a stainless-steel filter screen

INCLUDES:

1000mL funnel reservoir, two-way base with 120° PTFE stopcock, stainless-steel filter plate, ₸ 40/35 ground glass joint, large thomas clamp, 100mL collection flask, Keck clip

REQUIRED ACCESSORIES:

Manifold and Na_2SO_4 drying cartridge must be purchased separately.

Description	Cat. No.	Pack of
StepSaver Kit, 47mm	**09-735-116**	1/700.23
Na_2SO_4 Drying Cartridge, 5.5g	**09-735-133**	50/106.06

EMD Chemicals TLC, HPTLC, and PLC Plates and Sheets

All plates and sheets are manufactured with ISO 9001-certified processes to ensure reproducibility of results and resolution of separations

Standard TLC Plates

- Average particle size is 15µm with a 5-20µm distribution

HPTLC Plates

- Average particle size is 5µm with a 4-7µm distribution
- Smaller size and distribution of the HPTLC media yields improved resolution, shorter analysis times, and higher detection sensitivity

Preparative Layer Chromatography (PLC) Plates

- Used to purify substances in milligram quantities
- Can have adsorbent layers of up to 2mm thick

Choose from several media to match separation requirements:

- **Silica Gel:** Untreated, chemically modified, and reversed-phase silica gel with a pore size of 60Å is suitable for all common gel separations, including weak to strong polar analytes; can also be used for applications requiring charring procedures
- **Aluminum Oxide:** Ideal for separating hormones, alkaloids, and antibiotics
- **Cellulose:** Cellulose and cellulose PEI (polyethyleneimine cellulose) with acid-stable fluorescent indicator for partition chromatography, and for separation of weak anion exchangers, including peptide and amino acids

NOTE: PEI should be stored at 4°C [39°F]. If stored at room temperature, PEI plates may turn slightly yellow, which could affect separation. To minimize yellow color, predevelop in distilled water.

Other features

- Sorbents also are offered with fluorescent indicators F_{254} (254nm excitation wavelength), $F_{254+366}$ (254 and 366nm excitation wavelengths), and F_{254s} (acid-stable with a 254nm excitation wavelength)
- Prescored plates can be broken down into smaller plates

Precoated HPTLC Glass Plates

Description	Plate Size	Fluorescent Indicator	Layer Thickness	Cat. No.	Pack of
Silica Gel					
Silica Gel 60	10 × 10cm	No	200µm	**M5631-5**	25/220.97
	10 × 20cm	No	200µm	**M5641-6**	50/453.06
Silica Gel 60, Concentration Zone	10 × 10cm	No	200µm	**M13748-5**	25/256.91
Silica Gel 60 F_{254}	10 × 20cm	Yes	200µm	**M5642-6**	50/453.06
	10 × 10cm	Yes	200µm	**M5629-5**	100/557.01
	10 × 10cm	Yes	200µm	**M5628-5**	25/220.97
Chemically Modified					
CN F_{254s}	10 × 10cm	Yes	200µm	**M16464-5**	25/504.59
DIOL F_{254s}	10 × 10cm	Yes	200µm	**M12668-5**	25/503.85
NH2 F_{254s}	10 × 10cm	Yes	200µm	**M15647-5**	1/495.52
RP-18 F_{254s}	10 × 10cm	Yes	200µm	**M13724-5**	1/462.40
	20 × 10cm	Yes	200µm	**M15498-6**	1/1007.18
RP-18 WF_{254s}	10 × 10cm	Yes	200µm	**M13124-1**	25/503.85

Precoated PLC Glass Plates with Fluorescent Indicator

Plate size: 20 × 20cm

Description	Layer Thickness	Cat. No.	Pack of
Silica Gel 60 F_{254}	500µm	**M5744-7**	20/402.95
	1mm	**M13895-7**	15/413.29
	2mm	**M5717-7**	12/385.12
Silica Gel 60 F_{254s}	1mm	**M13792-7**	15/413.28
	2mm	**M13793-7**	12/464.93

TLC and HPTLC Aluminum Sheets

Sheet size: 20 × 20cm

Description	Indicator	Layer Thickness	Cat. No.	Pack of
Silica Gel, TLC				
Silica Gel 60	No	200µm	**M5553-7**	25/187.85
Silica Gel 60 F_{254}	Yes	200µm	**M5554-7**	25/187.85
Cellulose, TLC				
Aluminum sheets, cellulose	No	100µm	**M5552-7**	25/281.79
Silica Gel, HPTLC				
Silica Gel 60	No	200µm	**M5547-7**	25/515.59
Reversed-Phase (RP) Silica Gel, HPTLC				
Silica Gel 60 RP-18 F_{254}	Yes	200µm	**M5559-7**	1/492.21

TLC Plastic Sheets

Plate size: 20 × 20cm

Description	Indicator	Layer Thickness	Cat. No.	Pack of 25
Silica Gel				
Silica Gel 60	No	200µm	**M5748-7**	183.91
Silica Gel 60 F_{254}	Yes	200µm	**M5735-7**	157.05
Cellulose				
Plastic sheets, cellulose	No	100µm	**M5577-7**	194.18
Plastic sheets, cellulose F_{254}	Yes	100µm	**M5565-7**	243.09
PEI-Cellulose F_{254}†	Yes	100µm	**M5579-7**	286.94

† PEI (polyethyleneimine) should be stored at 4°C (39°F). If stored at room temperture, PEI plates may turn slightly yellow, which could affect separation. To minimize yellow color, predevelop in distilled water.

Precoated TLC Glass Plates

- Choose from several media to match your separation requirements: silica gel 60 (with and without F254 fluorescent indicator), chemically modified silica gel (reversed phases RP-2, RP-8 and RP-18), aluminum oxide 60 with F254 indicator, cellulose, and cellulose PEI
- 60Å silica gel is suitable for all common gel separations including weak to strong polar analytes
- Silica can also be used for applications requiring charring procedures
- Aluminum oxide or alumina plates are ideal for separating hormones, alkaloids and antibiotics
- For partition chromatography, select cellulose plates; and for separation of weak anion exchangers, including peptide and amino acids, use cellulose PEI plates

Description	Plate Size	Indicator	Layer	Cat. No.	Pack of
Silica Gel					
Silica Gel 60	10 × 20cm	No	250µm	**M5626-6**	50/310.44
	20 × 20cm	No	250µm	**M5721-7**	25/221.93
Silica Gel 60 F_{254}	2.5 × 7.5cm	Yes	250µm	**M15341-5**	500/999.88
	5 × 20cm	Yes	250µm	**M5714-3**	100/355.01
	10 × 20cm	Yes	250µm	**M5729-6**	50/310.67
	20 × 20cm	Yes	250µm	**M5715-7**	25/221.93
	5 × 10cm	Yes	250µm	**M5719-2**	200/485.81
Silica Gel 60 F_{254}†	2.5 × 7.5cm	Yes	250µm	**M15327-1**	100/238.49
Without box	2.5 × 7.5cm	Yes	250µm	**M15341-1**	100/226.69
Silica Gel Prescored					
Silica Gel 60 No Indicator	10 × 10cm	No	200µm	**M5644-5**	25/271.46
Silica Gel 60 F_{254}	20 × 20cm	Yes	250µm	**M5608-7**	20/224.78
Multiformat Silica Gel 60 F_{254}	20 × 20cm	Yes	250µm	**M105620-7**	1/259.50
Silica Gel with Preconcentration Zone					
Silica Gel 60 F_{254}	20 × 20cm	Yes	250µm	**M11798-7**	25/238.49
Reversed-Phase (RP) Silica Gel					
Silica Gel RP-2	20 × 20cm	Yes	250µm	**M5747-7**	25/739.27
Silica Gel RP-8 (reversed phase)†	20 × 20cm	Yes	250µm	**M15388-7**	25/605.51
Silica Gel RP-8 F_{254s}	5 × 10cm	Yes	250µm	**M15684-1**	1/369.82
	5 × 20cm	Yes	250µm	**M15682-3**	1/466.69
Silica Gel RP-18 (reversed phase)	10 × 20cm	Yes	250µm	**M15423-6**	50/757.39
	20 × 20cm	Yes	250µm	**M15389-7**	25/622.16
Silica Gel RP-18 F_{254s}	5 × 10cm	Yes	250µm	**M15685-1**	25/297.87
	5 × 20cm	Yes	250µm	**M15683-3**	50/453.96
Aluminum Oxide (Alumina) Basic					
Aluminum Oxide 60 F_{254}	20 × 20cm	Yes	250µm	**M5713-7**	25/399.32
Cellulose					
Cellulose	20 × 20cm	No	100µm	**M5716-7**	25/428.93
Cellulose $F^{254+366}$	20 × 20cm	Yes	100µm	**M5718-7**	25/376.20
PEI-Cellulose-$F^{254+366}$‡	20 × 20cm	Yes	100µm	**M5725-7**	25/353.26

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† *With acid-stable fluorescent indicator.*

‡ *PEI (polyethyleneimine) should be stored at 4°C (39°F). If stored at room temperature, PEI plates may turn slightly yellow, which could affect separation. To minimize yellow color, predevelop in distilled water.*

Whatman* TLC and HPTLC Plates

High-Performance TLC (HPTLC) Plates

05-713-1 Series

- 4.5µm particle size silica gel with an inert binder in a uniform 200µm layer on glass
- Short development distances (3 to 7cm) and times (1 to 10 minutes)
- Exhibit narrow particle size distribution, homogeneity, and uniformity; low band diffusion
- Use smaller samples than conventional plates
- Some with Linear-K* preadsorbent strips to maximize sample volume, ease of application, and permit high-efficiency TLC without requiring special spotting apparatus
- Use with conventional linear development techniques or automated U-chamber radial HPTLC apparatus
- See comparison table for typical results of conventional TLC and HPTLC

Adsorption Plates

- Provide quality separation of moderately to strongly polar compounds, including carbohydrates, antibiotics, proteins, amino acids, and phospholipids
- With organic binder and moderate layer hardness for convenient spot recovery with a sample recovery tube
- Plates with 250µm thick layer for analytical work; plates with 500 and 1000µm thick layers for preparative applications
- Versions with Linear-K preadsorbent strip have a 3cm strip of inert material that acts as an inactive blotter or staging area for rapid application of samples along the edge of standard silica plate

Flexible-Backed TLC Plates

- 20 × 20cm gel plates can be trimmed to match requirements
- Ideal for applications for rapid sample isolation or elution prior to techniques, such as scintillation counting or spectrophotometry
- Adsorption silica gel plates are widely applicable for moderately to strongly polar analytes; available with aluminum or polyester backing material (use aluminum backing for applications requiring charring; polyester-backed plates can be used up to 110°C [230°F] and in solvent systems containing strong acids and alkalis)
- Ion-exchange plates (DEAE: diethylaminoethyl tertiary amine) are used for anionic polyelectrolytes such as proteins, peptides, hormones, and enzymes—available with polyester backing only

Comparison of TLC and HPTLC Plates

Plate Type	TLC	HPTLC
Typical Plate Size (for comparison)	20 × 20cm	10 × 10cm
Sample Vol. (capillary application)	1 to 5µL	0.1 to 0.5µL
Diameter of Spots	3 to 6mm	1 to 2mm
Diameter of Separated Spots	6 to 15mm	2 to 5mm
Solvent migration	10 to 15cm	3 to 6cm
Detection Limits		
Absorption	~0.1µg	~20ng
Fluorescence	~0.1µg	~0.1µg

Contd. on next page.

Whatman* TLC and HPTLC Plates, Contd.

High-Performance TLC Plates

- 60Å, 4.5µm particle size silica gel medium
- 200µm layer thickness

Size	Linear-K* Preadsorbent	No. of Channels	Mfr. No.	Cat. No.	Pack of
With fluorescent indicator					
5 × 5cm	No	----	4802-050	**05-713-240**	100/295.07
10 × 10cm	No	----	4802-400	**05-713-241**	100/662.81
10 × 20cm	No	----	4802-700	**05-713-243**	50/522.78
10 × 10cm	Yes	----	4806-410	**05-713-257**	100/739.03
10 × 10cm	Yes	----	4806-420	**05-713-259**	25/274.56
10 × 10cm	Yes	9	4806-421	**05-713-260**	25/280.25
20 × 10cm	Yes	----	4806-710	**05-713-261**	50/571.96
20 × 10cm	Yes	19	4806-711	**05-713-262**	50/583.29
Without fluorescent indicator					
5 × 5cm	No	----	4807-050	**05-713-263**	100/295.07
10 × 10cm	No	----	4807-400	**05-713-264**	100/662.81
10 × 10cm	No	----	4807-425	**05-713-265**	25/249.11
10 × 20cm	No	----	4807-700	**05-713-266**	50/522.78
10 × 10cm	Yes	----	4805-410	**05-713-251**	100/739.03
10 × 10cm	Yes	----	4805-420	**05-713-253**	25/274.56
10 × 10cm	Yes	9	4805-421	**05-713-254**	25/280.25
20 × 10cm	Yes	----	4805-710	**05-713-255**	50/571.96
20 × 10cm	Yes	19	4805-711	**05-713-256**	50/583.29

Adsorption TLC Plates

60Å Silica Gel Plates

- 250µm layer thickness
- 2.5 × 7.6cm size is a microscope slide plate

Size	Linear-K* Preadsorbent	No. of Channels	Mfr. No.	Cat. No.	Pack of
With fluorescent indicator					
2.5 × 7.6cm	No	----	4861-110	**05-713-319**	500/688.97
5 × 10cm	No	----	4861-320	**05-713-320**	150/240.26
5 × 20cm	No	----	4861-620	**05-713-321**	75/172.96
10 × 20cm	No	----	4861-720	**05-713-322**	50/201.17
20 × 20cm	No	----	4861-820	**05-713-323**	25/144.35
5 × 20cm	Yes	----	4866-620	**05-713-331**	75/244.82
5 × 20cm	Yes	4	4866-621	**05-713-332**	75/256.34
20 × 20cm	Yes	----	4866-820	**05-713-333**	25/198.37
20 × 20cm	Yes	19	4866-821	**05-713-334**	25/211.54
Without fluorescent indicator					
5 × 10cm	No	----	4860-320	**05-713-315**	150/240.26
5 × 20cm	No	----	4860-620	**05-713-316**	75/172.96
10 × 20cm	No	----	4860-720	**05-713-317**	50/201.17
20 × 20cm	No	----	4860-820	**05-713-318**	25/144.35
5 × 20cm	Yes	----	4865-620	**05-713-326**	75/244.82
5 × 20cm	Yes	4	4865-621	**05-713-327**	75/256.34
20 × 20cm	Yes	----	4865-820	**05-713-328**	25/198.37
20 × 20cm	Yes	19	4865-821	**05-713-329**	25/211.54

60Å Silica Gel Preparative Plates

- Without Linear-K* preadsorbent strip or channels
- With fluorescent indicator

Layer Thickness	Size	Mfr. No.	Cat. No.	Pack of
500µm	20 × 20cm	4861-830	**05-713-324**	22/240.93
1000µm	20 × 20cm	4861-840	**05-713-325**	20/275.69

150Å Silica Gel Plates

250µm layer thickness

Size	Linear-K* Preadsorbent	No. of Channels	Mfr. No.	Cat. No.	Pack of
With fluorescent indicator					
5 × 10cm	No	----	4851-320	**05-713-298**	150/269.99
10 × 20cm	No	----	4851-720	**05-713-300**	50/226.21
20 × 20cm	No	----	4851-820	**05-713-301**	25/155.09
5 × 20cm	Yes	4	4856-621	**05-713-311**	75/259.40
20 × 20cm	Yes	19	4856-821	**05-713-313**	20/214.06
Without fluorescent indicator					
5 × 20cm	No	----	4850-620	**05-713-292**	75/191.29
10 × 20cm	No	----	4850-720	**05-713-293**	50/226.23
20 × 20cm	No	----	4850-820	**05-713-294**	25/155.09
5 × 20cm	Yes	----	4855-620	**05-713-891**	75/249.11
20 × 20cm	Yes	----	4855-820	**05-713-307**	25/200.74
20 × 20cm	Yes	19	4855-821	**05-713-308**	25/214.06

150Å Silica Gel Preparative Plates

- 1000µm layer thickness
- Without channels

Size	Linear-K* Preadsorbent	Mfr. No.	Cat. No.	Pack of 20
With fluorescent indicator				
20 × 20cm	No	4851-840	**05-713-303**	310.00
20 × 20cm	Yes	4856-840	**05-713-314**	335.08
Without fluorescent indicator				
20 × 20cm	Yes	4855-840	**05-713-309**	335.08

Flexible-Backed TLC Plates

- 20 × 20cm size
- Adsorption plates have 60Å silica gel medium and 250µm layer thickness
- Ion-exchange plates (DEAE medium) have 100µm layer thickness and come without fluorescent indicator

Backing	Fluorescent Indicator	Mfr. No.	Cat. No.	Pack of 25
Adsorption Plates				
Polyester	Yes	4410-222	**05-713-162**	147.00
Polyester	No	4410-221	**05-713-161**	145.90
Aluminum	Yes	4420-222	**05-713-166**	145.90
Aluminum	No	4420-221	**05-713-165**	145.90
Ion-exchange Plate				
Polyester	No	4410-224	**05-713-164**	220.00

*Trademark. See Trademark Reference.

Selecto* Flexible-Backed TLC Plates

Select from four media to match your separation needs

05-719-8 Series

- Polymeric (cellulose, cellulose PEI, and alumina) and "G" (silica plates) binders are stable in aqueous solvents and virtually all mobile phases, and withstand many aggressive detection reagents
- Flexible plastic backing for high durability— can be cut to any size required and stapled into a lab notebook; backing also makes it easy to isolate one spot for subsequent isolation/detection
- **Silica-gel plates** separate weakly to strongly polar substances by adsorption chromatography
- **Cellulose plates** for partition chromatography
- **Cellulose PEI plates** separate weak anion exchangers such as amino acids and peptides (Store PEI plates at 4°C [39°F]; if stored at room temperature, plates may turn slightly yellow, affecting separation. Predevelop in distilled water to minimize yellow color.)
- **Alumina plates** separate alkaloids, antibiotics, and hormones

Size	Layer Thickness	Fluorescent Indicator	Cat. No.	Pack of
Silica Gel				
2.5 × 7.5cm	200µm	Yes	**05-719-864**	200/135.88
5 × 20cm	200µm	Yes	**05-719-857**	50/98.69
5 × 20cm	200µm	No	**05-719-858**	50/82.58
20 × 20cm	200µm	Yes	**05-719-863**	25/171.85
20 × 20cm	200µm	No	**05-719-856**	25/180.47
Cellulose 300				
20 × 20cm	100µm	Yes	**05-719-859**	25/191.27
20 × 20cm	100µm	No	**05-719-860**	25/191.27
Cellulose PEI				
20 × 20cm	100µm	Yes	**05-719-855**	25/208.30
20 × 20cm	100µm	No	**05-719-854**	25/218.71
Alumina Basic				
20 × 20cm	200µm	Yes	**05-719-862**	25/191.27
20 × 20cm	200µm	No	**05-719-861**	25/160.07

*Fisherbrand** Pure Cellulose Chromatography Paper

Pure cellulose papers with smooth surfaces are tested to assure uniformity and reproducibility, and offer optimum separation and sample resolution

05-714 Series

- **Thin paper** (05-714-1) is recommended for analytical separations
- **Thick paper** (05-714-4) is recommended for electrophoresis and general chromatography
- Both grades are carefully tested for spot formation, capillary action, water flowrate, and adsorption speed
- Supplied in 46 × 57cm (18 × 22") sheets

Thickness	Cat. No.	Pack of 100
0.19mm (thin)	**05-714-1**	104.98
0.35mm (thick)	**05-714-4**	205.86

SPECIFICATIONS

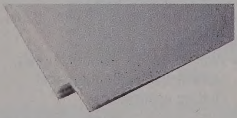
Cat. No.	05-714-1	05-714-4
Thickness	Thin, 0.19mm	Thick, 0.35mm
Flowrate (Water)[1]	96 seconds	262 seconds
Wet Strength[2]	33cm	35cm

[1] *Flowrate is time in seconds required to filter 100mL of distilled water at 20°C (68°F) under pressure supplied by a 10cm water column through a $10cm^2$ (1.6 sq. in.) section of filter paper.*

[2] *Wet strength is the height in cm of water column that will rupture a $10cm^2$ (1.6 sq. in.) section of filter paper.*

Whatman* Grade DE81 Ion Exchange Cellulose Chromatography Paper

Manufactured from pure cellulose and ion-exchange cellulose fibers to permit highly efficient, rapid separations of charged organic or inorganic substances



05-717-1A and -2A

- Thin (0.20mm) paper with diethylaminoethyl (DEAE) cellulose functional groups
- Weakly basic anion exchanger for separation of anions, nucleotides, and amino acids; also for enzyme assays and RNA fingerprinting
- Flowrate: 95mm/30 min. (in water)
- Ion-exchange capacity is 1.7µEq/cm^2

Size	Mfr. No.	Cat. No.	Pack of
Sheet			
46 × 57cm	3658-915	**05-717-1A**	25/498.12
Circle			
2.3cm dia.	3658-323	**05-717-1B**	100/18.67
2.4cm dia.	3658-324	**05-717-1C**	100/18.67
2.5cm dia.	3658-325	**05-717-1D**	100/18.67

Whatman* Grade P81 Ion Exchange Cellulose Chromatography Paper

- Thin (0.23mm) paper with cellulose phosphate functional groups
- High-capacity, strong cation exchanger for separation of biogenic amines, antibiotics, histamines, and certain metallic cations at very low concentrations
- Flowrate: 125mm/30 min. (in water)
- Ion exchange capacity is 18.0µEq/cm^2

Size	Mfr. No.	Cat. No.	Pack of
Sheet			
46 × 57cm	3698-915	**05-717-2A**	25/334.67
Circle			
2.5cm dia.	3698-325	**05-717-2B**	100/10.30

Whatman* 1 Chr Chromatography Paper

Pure cellulose produced from cotton linters with no additives

- Thickness: 0.18mm
- Linear flow rate: 130mm/30 min.
- Smooth surface
- For general analytical separations

Size	Mfr. No.	Cat. No.	Pack of
46 × 58cm	3001-917	**05-714**	100/177.65
20 × 20cm	3001-861	**05-716-2S**	100/43.68
2 × 100m	3001-614	**05-716-2A**	1/23.76
1.5cm × 100m	3001-651	**05-716-2B**	1/42.38

Whatman* 3MM Chr Chromatography Paper

Relatively thick (0.34mm) grade 3MM chromatography paper manufactured entirely from high-quality cotton linters that have an alpha cellulose content of at least 98%

- Smooth surface
- No "paper making" additives—the final organic purity of these chromatography grades represents the highest level that can be achieved without oxidation and degradation of the cellulose fibers
- Medium flowrate: 130mm/30 min. (water)
- Widely used for electrophoresis, general chromatography, and blotting applications

CHROMATOGRAPHY PAPER
3MM CHR
Whatman

05-716 Series

Size	Mfr. No.	Cat. No.	Each
Sheets in Packs of 100			
18 x 34cm	3030-221	**05-716-3E**	71.25
10.2 x 13.3cm	3030-6189	**05-716-6H**	16.28
11 × 14cm	3030-6185	**05-716-6D**	18.95
12 x 14cm	3030-6132	**05-716-6C**	20.39
15 × 17.5cm	3030-153	**05-716-3D**	30.18
15 x 20cm	3030-6188	**05-716-6G**	36.77
15.2 x 20.3cm	3030-6187	**05-716-6F**	37.49
20 x 20cm	3030-861	**05-716-3V**	46.77
20 x 25cm	3030-866	**05-716-6B**	58.42
26 x 41cm	3030-6461	**05-713-336**	117.75
35 x 43cm	3030-347	**05-716-6A**	157.91
35 x 45cm	3030-392	**05-716-3F**	145.85
46 x 57cm	3030-917	**05-714-5**	275.00
58 x 68cm	3030-931	**05-716-3W**	439.83
Rolls			
2cm x 100m	3030-614	**05-716-3A**	36.46
3.8 x 90m	3030-651	**05-716-3B**	53.46
7.5 x 100m	3030-662	**05-716-3M**	126.33
10 x 100m	3030-672	**05-716-3N**	159.53
12.5 × 100m	3030-675	**05-716-3P**	185.82
15 x 100m	3030-681	**05-716-3Q**	219.74
19 × 100m	3030-690	**05-716-3R**	225.67
23 x 100m	3030-700	**05-716-3S**	272.83
27 x 100m	3030-704	**05-716-3T**	304.49

Whatman* 3 Chr Chromatography Paper

Pure cellulose produced from cotton linters with no additives

- Thickness: 0.36mm
- Linear flow rate: 130mm/30 min.
- General applications with medium/heavy solute loadings

Size	Mfr. No.	Cat. No.	Pack of 100
46 × 57cm	3003-917	**05-716-4B**	386.69

Whatman* 4 Chr Chromatography Paper

Pure cellulose produced from cotton linters with no additives

- Thickness: 0.21mm
- Linear flow rate: 180mm/30 min.
- Smooth surface
- General applications with relatively low solute loadings

Size	Mfr. No.	Cat. No.	Each
2cm × 100m	3004-614	**05-716-5A**	26.65

Whatman* 17 Chr Chromatography Paper

Pure cellulose produced from cotton linters with no additives

- Thickness: 0.92mm
- Linear flow rate: 190mm/30 min.
- Smooth surface
- Suitable for heaviest loadings, preparative paper chromatography and electrophoresis

Size	Mfr. No.	Cat. No.	Pack of 25
46 × 57cm	3017-915	**05-716-4F**	279.94

Whatman* 31ET Chr Chromatography Paper

Pure cellulose produced from cotton linters with no additives

- Thickness: 0.50mm
- Linear flow rate: 225mm/30 min.
- Soft surface
- Principal application in electrophoresis of large molecules

Size	Mfr. No.	Cat. No.	Pack of 25
46 x 47cm	3031-915	**05-714-6**	274.14

*Fisherbrand** Rectangular TLC Developing Tank

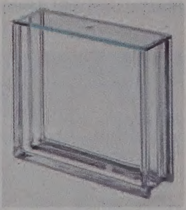
Accommodates a variety of plate sizes

- Can be used with 10 x 10cm, 5 x 10cm or 10 x 20cm plates
- Centering baffle to support plates during development
- Supplied with lid
- Beveled edges and tops and bottoms ground flat

Description	Cat. No.	Each
Rectangular Developing Tank	**K4161801020**	120.17

Kontes* Thin Layer Chromatography Tanks with Lids

Molded glass, rectangular tank with flat glass lid for development of any size TLC plate up to 20 × 20cm



K416180-0000

- Clear sides for visual inspection or photography
- Bottom ridge allows simultaneous development of two 20 × 20cm or four 5 × 20cm plates
- Dimensions (L × W × D): 4 × 11¾ × 10¾" (10 × 30 × 27cm)
- Tank lids are available in three styles: standard, nonslip, and latch
- Nonslip lids have PTFE retainers and a knob; latch lids have latches that hold the lid firmly to the tank and improve the saturated environment for developing TLC plates; also have PTFE retainers and knob

Description	Cat. No.	Each
Developing Tank with Standard Lid	**K416180-0000**	131.61
Developing Tank with Nonslip Lid	**K416185-0000**	180.52
Developing Tank with Latch Lid	**K416190-0000**	239.95
Standard Lid	**K416181-0000**	25.01
Nonslip Lid	**K416186-0000**	59.47
Latch Lid	**K416191-0000**	62.65

Kontes* Chromatography TLC Developing Tank with Ground Glass Lid

Supplied complete with ground glass joints

For Plate Size	\$ Joint	Cat. No.	Each
3 × 8cm	34/12	**K416181-0308**	66.89
3 × 10cm	34/12	**K416181-0310**	93.85
5 × 10cm	60/12	**K416181-0001**	100.38

Kontes* Chromatography Cylindrical TLC Developing Tank Lids

Lids for cylindrical glass tanks

Description	Material	Cat. No.	Pack of
Lid for cylindrical TLC developing tank, 5 × 20cm	Glass	**K416170-0520**	1/94.51
Lid for cylindrical TLC developing tank, 10 × 20cm	Glass	**K416170-1020**	1/129.19
Lid for cylindrical TLC developing tank, 1 × 3 in.	Polyethylene	**K416170-1118**	1/43.25
Lid for cylindrical TLC developing tank, 1 × 3 in.	Polyethylene	**K416170-1119**	12/377.56

Kontes* Replacement Parts for TLC Equilibration Apparatus

For use with Kontes* rectangular developing tank (K416190-4900)

Description	Cat. No.	Each
Latch for Kontes rectangular developing tank (K416190-4900)	**K416192-0000**	157.10
Hard-anodized aluminum rack, six 20 × 20cm plates	**K416175-0000**	148.84

Kontes* Reagent Sprayers with Screw Thread Ground Joint

Provide uniform spray mist of visualization reagents for TLC and paper chromatography; use with all standard TLC reagents and most corrosive liquids

K422530-0250

- Liquid touches only nonreactive borosilicate glass atomizing sprayer head and flask
- Sprayer head-to-flask connection consists of screw-thread ST ground joint, connecting cap, and loosening ring
- Operate sprayer at 3 to 5psi (0.021 to 0.035MPa)
- Adjust spray pattern by varying the position of thumb on vent hole
- Autoclavable (after cap, loosening ring, and O-ring are removed)

Capacity	Height x Diameter	\$ Joints	Cat. No.	Each
10mL	155 x 22mm (6⅛ x ⅞")	19/22	**K422530-0010**	140.57
25mL	147 x 40mm (5 13/16 x 1 9/16")	19/22	**K422530-0025**	140.57
50mL	174 x 50mm (6⅞ x 2")	19/22	**K422530-0050**	140.57
125mL	204 x 65mm (8 1/16 x 2 9/16")	24/40	**K422530-0125**	140.57
250mL	229 x 85mm (9 x 3 5/16")	24/40	**K422530-0250**	140.57
500mL	273 x 105mm (10¾ x 4⅛")	24/40	**K422530-0500**	157.10

Kontes* Chromatography TLC Reagent Sprayer with Standard Ground Joint

Working Capacity	\$ Joint	Height × Diameter	Cat. No.	Each
5mL	14/20	130 × 17mm	**K422550-0000**	85.21
25mL	24/40	175 × 25mm	**K422540-0000**	146.08
250mL	24/40	225 × 85mm	**K422500-0250**	157.88

Castaloy* Clamps

Extra strong ... won't rust ... nonskidding

Castaloy clamps and holders are die cast from high-tensile-strength zinc alloy. Tough material is backed up with tough construction details in all clamps. Where strain is greatest (jaw housing and anvil), we've built in extra strength. Strong stainless-steel spring takes abuse of prolonged compression.

- Can't rust—copper plated, then heavily nickel plated for a bright, corrosion-resistant surface
- Nonslip gripping surfaces—most clamps come with heavy, nonskid vinyl and fiberglass insulating sleeves
- Jaws clamp large cylinders or small capillaries with equal firmness
- Pressure distributed over broad area reduces chance of breaking fragile pieces, yet holds well
- Machined threads on lock-in adjustment screws allow precise application of pressure
- Clamping action of jaws is smooth and strong
- Precision, spun rivet fasteners won't collapse or crimp like swaged tubular fasteners in other clamps

COMPLIANCE:

Castaloy clamps and holders meet ASTM* Specifications E 784 and B 86 requirements in all major areas of design and construction, including base metal, fittings, springs, sleeves, overall lengths, opening diameters, tolerances, and types of jaws.

WARNING

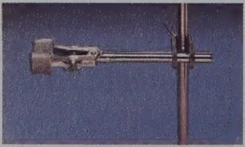
Castaloy* clamps and holders should not be subjected to direct flame or other intense heat sources. At continuous temperatures in excess of 150°C (302°F), some significant distortion can occur. Fiberglass sleeves are recommended for all applications above 100°C (212°F).

Castaloy* Two-Prong Extension Clamps

Flat, vinyl- or fiberglass-covered jaws

Hold beakers and flasks firmly at any angle, variable distance from support.

- One jaw is fixed, other opens against a stainless-steel compression spring
- Opening is gradual to maximum angle, without binding
- Noncorrosive, easy-to-clean clamps are nickel-plated zinc with seamless brass extension tube, brass compressing screw, and pivot pin
- Without clamp holder



05-769-4Q with fiberglass sleeves (included) and 14-666-18Q clamp holder (not supplied).

INCLUDES:

Vinyl and fiberglass sleeves

Maximum Grip Size	Overall Length	Extension Arm	Extension Arm O.D.	Cat. No.	Each
1½" (38mm)	8" (20cm)	4¼" (11cm)	7⁄16" (1.1cm)	**05-769-4Q**	24.89
2½" (64mm)	9" (23cm)	5⅛" (13cm)	7⁄16" (1.1cm)	**05-769-3Q**	27.19

Castaloy* Three-Prong Extension Clamps

Hold irregular shapes at any angle, surely and safely

- Two separate adjustment screws ensure even, precise pressure on glass and minimize chance of breakage
- Clamps are easily adjustable to vary holding angle, distance from stand
- Without clamp holder

05-769-7Q with vinyl sleeves (included) and 14-666-18Q holder (sold separately)

ORDERING INFORMATION:

Replacement sleeves are available online.

INCLUDES:

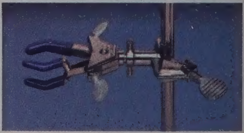
Fiberglass and vinyl sleeves

Maximum Grip Size	Overall Length	Extension Arm	Extension Arm O.D.	Cat. No.	Each
1" (25mm)	6½" (17cm)	4¼" (11cm)	5⁄16" (0.8cm)	**05-769-6Q**	31.74
2¼" (57mm)	8¾" (22cm)	5⅛" (13cm)	7⁄16" (1.1cm)	**05-769-7Q**	33.79
3½" (89mm)	10½" (27cm)	6" (15cm)	½" (1.3cm)	**05-769-8Q**	44.03

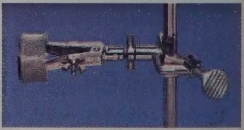
Castaloy* Adjustable-Angle Clamps

Grip rods up to ¾" diameter (19mm)

- Holding angle of jaw is adjustable, locked with a wingnut
- Wingnut also allows length adjustment
- Two-prong flat jaws for test tubes
- Three-prong for irregular shapes



05-7690Q with vinyl sleeves



05-769-5Q with fiberglass sleeves

ORDERING INFORMATION:

Replacement sleeves are available online.

INCLUDES:

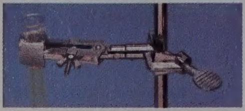
Vinyl and fiberglass sleeves

Max. Grip Size	Clamp Extension	Jaw Type	Cat. No.	Each
1½" (38mm)	½" (13mm)	Flat	**05-769-5Q**	24.90
2¼" (57mm)	⅝" (16mm)	Three-prong	**05-769Q**	35.41

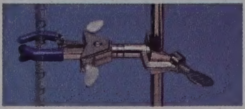
Castaloy* Fixed-Angle Clamps

One-piece clamp/holder with fixed jaw angle

- Use for snug vertical alignment of burets, thermometers, reflux condensers
- Flat jaws or three-prong grip
- Grip rods up to ¾" diameter (19mm)



05-769-1Q with fiberglass sleeves



05-769-2Q with vinyl sleeves

ORDERING INFORMATION:
Replacement sleeves are available online at **www.fishersci.com.**

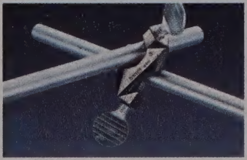
INCLUDES:
Vinyl and fiberglass sleeves

Maximum Grip Size	Jaw Type	Cat. No.	Each
1½" (38mm)	Flat	**05-769-1Q**	23.79
2¼" (57mm)	Three-prong	**05-769-2Q**	29.30

Castaloy* Clamp Regular Holder

Attaches clamp at right angles

- With 45° angle thumbscrews
- Grips rods up to ¾" diameter (19mm)



05-754Q

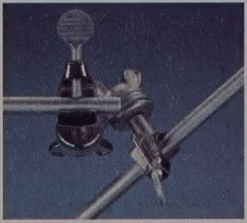
Cat. No.	Each
05-754Q	16.38

Castaloy* Clamp Contort Holder

Connects at any angle in any plane

Consists of two holders connected by double plate joint which sets holders 90° from each other.

- Each holder can be rotated 360°
- With 45° angle thumbscrews
- Grips rods up to ¾" diameter (19mm)



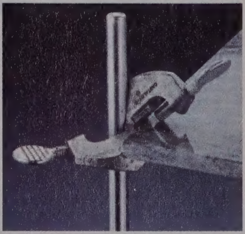
05-764Q

Cat. No.	Each
05-764Q	43.90

Castaloy* Clamp Jumbo Holder

Safest for heavy loads

- Grips in variety of positions
- Grips rods up to ⅞" diameter (22mm)
- Holds flat shelf or panel to ¾" thick (19mm)
- Made of diecast aluminum
- With 45° angle thumbscrews



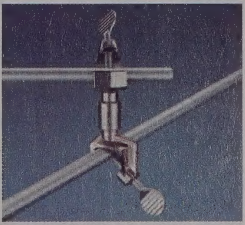
05-757Q

Cat. No.	Each
05-757Q	25.04

Castaloy* Clamp Swivel Holder

Tilt clamp at any angle in parallel planes

- Holder will not fall apart when setscrew is loosened to permit one end to swivel
- With 45° angle thumbscrews
- Grips rods up to ¾" diameter (19mm)



05-762Q

Cat. No.	Each
05-762Q	21.53

Castaloy* Double-Buret Clamp

Holds two burets from micro to 100mL size

Simply compress scissor-like mechanism, insert buret, and release.

- Numbers and graduations on burets are easy to read
- For height adjustments, just recompress mechanism, slide buret up or down, release
- Clamp unit attaches to standard support rod with convenient hook clamp
- Wingnut for tightening on front for easy access

05-779Q

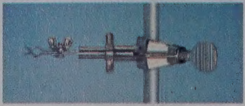
Max. Buret O.D.	Cat. No.	Each
1¹⁄₁₆" (18mm)	**05-779Q**	46.08

WARNING
Castaloy* clamps and holders should not be subjected to direct flame or other intense heat sources. At continuous temperatures in excess of 150°C (302°F), some significant distortion can occur. Fiberglass sleeves are recommended for all applications above 100°C (212°F).

Castaloy* Thermometer Clamps

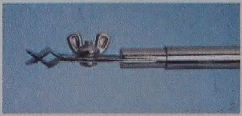
Hold ¼ to ½" diameter (6 to 13mm) glass tubes and thermometers

- Adjust to any angle
- Won't rust
- Jaws are nickel-plated phosphor bronze



05-809Q

Standard clamp. Holds thermometers 3⅞" (10cm) from support rod. Integral clamp holder. Large thumbscrew holds clamp securely to support rod.



05-809-10Q

Extension clamp. Holds thermometers up to 7" (18cm) from support rod. Overall length, 7¾" (20cm). Extension arm is 7⁄16" diameter (11mm). Use with 05-754Q clamp holder.

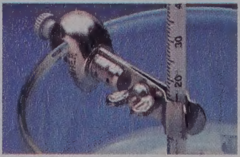
Type	Cat. No.	Each
Standard	05-809Q	29.70
Extension	05-809-10Q	25.00

Castaloy* Water Bath Clamps

C-shaped end with thumbscrew attaches securely to wall of bath ⅛ to 5⁄16" thick (3 to 8mm)

15-445-70Q

Three-prong clamp. Jaws are controlled independently by two thumbscrews, making the clamp adjustable for irregular shapes and for aligning large and small diameter objects. Accepts objects to 1" diameter (2.5cm). Won't rust or corrode. With vinyl sleeves. Overall length, 3⅞" (10cm).



15-445-80Q

Small clamp. Suspends thermometers 3⁄16 to ⅜" diameter (4.8 to 9.5mm). Clamp jaws tighten with wingnut; hold firmly. Overall length, 3¼" (8cm).

Type	Cat. No.	Each
Three-prong	15-445-70Q	32.77
Small	15-445-80Q	23.55

Castaloy* Regular or Heavy-Duty Pinchcocks

Complete closure

- Won't cut tubing, rust, or corrode
- Regular pinchcock opens when plunger is compressed to accommodate ¼" O.D. (6mm) heavy-wall tubing
- Heavy-duty model works well with stiff tubing used in gas and water connections

05-849AQ

Type	Cat. No.	Each
Regular	05-849AQ	19.04
Heavy Duty	05-849BQ	19.09

Castaloy* VariFlow* Pinchcock

Flowrates duplicable time after time

Same as 05-849AQ (below, left), but with thumbscrew and locking nut for selecting degree of closure.

- Use effectively on up to ⅜" O.D. (9.5mm) flexible tubing
- Won't cut tubing, rust, or corrode

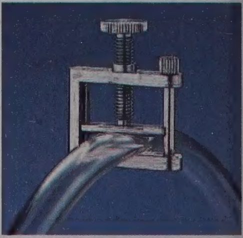
05-849-5Q

Cat. No.	Each
05-849-5Q	23.93

Castaloy* Hosecock Clamp

Fine-machined adjustment screw for very accurate regulation of flow

- Threaded keeper screw on side of clamp can be raised to allow easy positioning of tubing, then screwed back into base of clamp
- For tubing up to ¾" O.D. (19mm)
- Concave lower bearing surface, convex upper, reduces amount of pressure required for complete closure



05-847Q

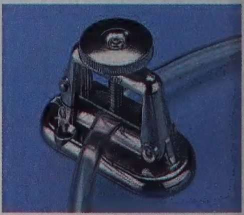
Type	Cat. No.	Each
Regular	05-847Q	16.84
With Mounting Bracket	05-848Q	32.73

Castaloy* Jumbo Hosecock

Regulates flow from full-on to completely off

- Easily compresses heaviest tubing up to ¾" O.D. (19mm)
- Hinged on one side to allow positioning of tubing without removal from apparatus
- With two countersunk holes for attaching to shelf, wall, or table

ORDERING INFORMATION:
Dimensions: 3½L × 1½W × 2¾"H (8.9 × 3.8 × 7cm)

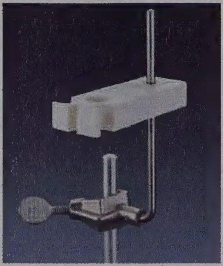


05-846Q

Cat. No.	Each
05-846Q	44.19

*Trademark. See Trademark Reference.

Castaloy* Chain and Electrode Support Clamps



13-640-282Q shown with 13-636-8Q electrode holder (not included).

Chain Clamp

- Holds 3 to 6½" (76 to 165mm) bottles and large objects
- Fast, sure way to secure large equipment to rods and lattices
- Loop steel chain around object; attach to hook on movable slide; tighten slide with large, nonslip knob
- Holds equipment firmly in place at any angle, variable distance from support
- Arm is 6" long (15cm) and ½" diameter (13mm)
- Use with 05-754Q clamps holder

Electrode Support Clamp

- Permits suspension of electrodes over beaker for potentiometric titrations
- Includes ¼" diameter (6.4mm) support rod mounted at right angle
- Secures any electrode holder at desired level
- Grips support rods up to 11⁄16" diameter (18mm)
- Resists corrosion

05-745Q

Type	Cat. No.	Each
Chain Clamp	**05-745Q**	44.03
Support Clamp and Rod	**13-640-282Q**	47.72

CLAMPS — GLASS JOINT

Plastic Joint Clips

Made of plastic for use on ₸ glass joints

- Color coded for easy size identification
- Cost less than metal clips
- Do not corrode; will not scratch glass

05-880 Series

Joint Size	Color	Cat. No.	Pack of 10
For Standard Taper Joints (of any length)			
10/...	Green	**05-880A**	40.60
12/...	Violet	**05-880B**	41.23
14/...	Yellow	**05-880C**	47.83
19/...	Blue	**05-880D**	40.29
24/...	Green	**05-880E**	48.58
29/...	Red	**05-880F**	50.72
34/...	Orange	**05-880G**	55.96
40/...	Yellow	**05-880H**	59.20
45/...	Brown	**05-880J**	65.69
For Ball-and-Socket Joints			
13	Light violet	**05-882A**	66.67
19	Light blue	**05-882C**	57.45
29	Dark red	**05-882E**	75.18
35	Light orange	**05-882G**	77.80

Stainless-Steel Pinch Clamps for Joints

Easy, secure way to marry ball-and-socket joints

Spring-loaded pinch clamp with forked jaws on both sides of the joint ensures tight fit.

- 05-885C and 05-885E through K have screw-locking device, work well on both O-ring and ball-and-socket joints
- Others are intended for ball-and-socket joints only

05-885B

Joint Size	Cat. No.	Each	Case of 12
12/1 to 12/5	**05-885B**	9.07	90.71
12/1 to 12/5	**05-885C**	16.55	169.79
18/7 & 18/9	**05-885D**	14.52	149.01
18/7 & 18/9	**05-885E**	16.63	170.56
28/11 to 28/15	**05-885F**	17.67	181.22
35/20 & 35/25	**05-885G**	20.69	212.19
40/25	**05-885H**	29.36	301.15
50/30	**05-885J**	35.95	184.38
65/40	**05-885K**	50.49	517.82

CLAMPS — TUBE

Lunge Clamp

Supports two tubes

05-795

- Distance between tubes is adjustable
- Jaw opening is ⅜ to 1⅜"
- Each clamp is individually adjustable through angles up to 180°
- Adjustable, spring-loaded, Plastisol*-coated jaws, hold ¼ to 1¾" diameter (6 to 44mm) tubing
- Attaches to rods up to ¾"
- Black enamel finish resists corrosion
- Length: 6¾"

Cat. No.	Each
05-795	41.60

CLAMPS—TUBING

Fisher*brand** Polypropylene Clamp with Flow Control

Regulates flow through tubing from fully open to closed

05-869

- Fits ⅛ to ½" O.D. (3.2 to 13mm) tubing
- Molded white polypropylene construction
- Autoclavable
- With 15-position control
- Will not distort, rust, or corrode

Cat. No.	Pack of 12	Case of 12 Pk.
05-869	8.94	89.39

*Fisherbrand** Tight-Seal* Clamps

One-piece, reusable nylon clamps for hoses and tubing

05-815-1 Series

- Chemical and corrosion resistant, with wide temperature tolerance
- Squeeze shut for leakproof seal; press on side to release
- Ideal for pressure, vacuum, and liquid applications
- Can be gas or chemically sterilized for biomedical or food applications
- Twelve sizes accommodate tubing with an O.D. of 0.246 to 1.425" (6.25 to 36.19mm)

Clamp I.D. Range	Cat. No.	Pack of 100
6.25–7.97mm (0.246–0.290")	**05-815-1A**	33.44
9.14–10.31mm (0.360–0.406")	**05-815-1B**	33.44
10.14–11.89mm (0.410–0.468")	**05-815-1C**	33.44
12.06–13.61mm (0.475–0.536")	**05-815-1D**	33.44
13.67–15.44mm (0.538–0.608")	**05-815-1E**	33.44
15.16–16.89mm (0.597–0.665")	**05-815-1F**	33.36
17.02–19.81mm (0.670–0.780")	**05-815-1G**	39.70
18.54–21.08mm (0.730–0.830")	**05-815-1H**	41.65
22.10–24.76mm (0.870–0.975")	**05-815-1J**	41.65
24.21–27.76mm (0.953–1.093")	**05-815-1K**	49.92
26.19–30.15mm (1.031–1.187")	**05-815-1L**	49.92
31.75–36.19mm (1.250–1.425")	**05-815-1M**	56.64

*Fisherbrand** Hose/Tubing Clamp Assortment

Kit ensures that proper size is always handy. Includes five each of the 12 sizes of Fisherbrand* Tight-Seal* Clamps, plus five clamps with a range of 35.71 to 40.89mm (1.406 to 1.610")—65 in all.

Cat. No.	Pack of 65
05-815	55.47

Scienceware* Acetal Screw Clamp

Complete ON/OFF and fine control with enough accuracy to replace stopcocks in many applications

- Hinged side permits installation of clamp without disconnecting tubing from apparatus or interrupting operation
- Molded of Delrin* plastic
- Easy to clean, autoclavable and resistant to weak acids and alkalis and organic solvents
- Accepts any type of flexible tubing up to ½" O.D. (13mm)

05-830

Mfr. No.	Cat. No.	Pack of 3
F18212 0000	**05-830**	15.75

Scienceware* Acetal Tubing Clamp

Molded of strong, durable acetal plastic

05-832

- Serrated jaws 1 1/16" long (27mm) make a positive closure on thin-walled tubings such as catheter tubes (1/32" wall or thinner [0.82mm])
- Can be operated with one hand, has a positive lock, and springs open when released
- Open side permits installation at any point along the tube without threading through
- Overall length, 2 5/16" (59mm)

Mfr. No.	Cat. No.	Pack of 12	Case of 6 Pk.
F18218 0000	**05-832**	16.97	87.00

Scienceware* Steel Swing Jaw* Tubing Clamps

Strong, simple, and safe to use

- Made of zinc-plated steel
- Knurled adjusting nut bears on a swinging jaw which permits full opening without removal
- Removable from tubing without disconnecting apparatus
- Smooth bearing surfaces will not damage tubing; tubing cannot slip out of clamp
- Strong enough to use with heavy wall vacuum lines

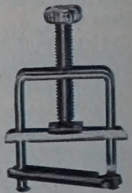
05-833

For Tubing Max. O.D.	Mfr. No.	Cat. No.	Pack of	Case of
7/16" (10mm)	H18220 0000	**05-833**	3/47.44	12 Pk./486.61
⅝" (15mm)	H18221 0000	**05-834-3**	—	36/486.61
¾" (20mm)	H18222 0000	**05-834-5**	—	36/511.20

Hoffman Tubing Clamps

Regulate flow from fully open to closed

- For flexible tubing
- Nickel-plated brass; won't rust
- Lower jaw is either fixed or swivel-mounted for easy insertion of tubing without disconnecting apparatus



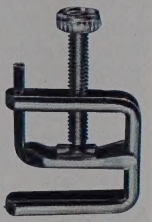
05-871 Series

Jaw Opening			
Max. Height	**Max. Width**	**Cat. No.**	**Pack of 10**
Swivel Jaw			
0-⅝" (0-16mm)	¾" (19mm)	**05-871A**	56.60
0-¾" (0-19mm)	1" (25mm)	**05-871B**	47.50
Fixed Jaw			
0-⅝" (0-16mm)	¾" (19mm)	**05-870A**	58.80
0-¾" (0-19mm)	1" (25mm)	**05-870B**	52.80

Hoffman Open-Side Tubing Clamps

For flow regulation in flexible tubing

- One side is open for easy insertion of tubing without disassembly
- Nickel-plated brass; resist corrosion, won't rust



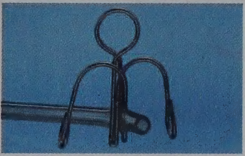
05-875B

Opening	Cat. No.	Pack of 10
½ to ¾" (13 to 19mm)	**05-875A**	53.70
⅝ to 1" (16 to 25mm)	**05-875B**	62.75

Day Pinchcock

Can be put on or removed without disconnecting apparatus

- Tough nickel-plated steel
- Holds flexible tubing up to ⅜" O.D. (9.5mm)



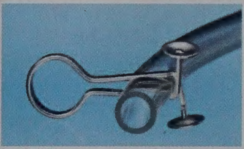
05-867

Cat. No.	Pack of 12
05-867	38.60

Flatjaw Pinchcocks

One-piece brass clamp won't rust

- Nickel-plated
- Clamp flexible tubing up to ⅝" (16mm)



05-850B

Opening	Clamp Length	Cat. No.	Each	Pack of 12
⅜" (9mm)	2¾" (70mm)	**05-850A**	33.20	338.65
⅝" (16mm)	3½" (89mm)	**05-850B**	33.50	341.70

Nalgene* Polypropylene Pinch Clamp

Accommodates a wide range of tubing

- One-piece molded plastic—won't corrode or deform
- Ideal for lab tubing; no sharp edges

05-835B

For Tubing O.D.	Mfr. No.	Cat. No.	Pack of 12	Case of 6 Pk.
¼ to 7⁄16" (6 to 11mm)	6165 0002	**05-835B**	20.32	81.30

Stant High-Pressure Clamps

For flexible tubing

- Seal with only 10 in.-lb. (1.13 Newton-m) torque
- Positive 360° sealing
- Adjust easily with ¼" (6.3mm) slotted screw
- Stainless-steel band and housing

14-198-5B

For Tubing O.D.	Cat. No.	Pack of 10
¼ to ⅝" (6.4 to 15.9mm)	**14-198-5A**	25.78
5⁄16 to ⅞" (7.9 to 22.2mm)	**14-198-5B**	25.78

SUPPORTS — FUNNEL

*Fisherbrand** Six-Funnel Support

Slotted wooden support allows easy mounting and removing

- Adjustable for various funnel lengths from 5½ to 10" (14 to 25cm)
- With no posts projecting above support to interfere

ORDERING INFORMATION:
Dimensions: 36L × 4¾W × 5½ to 10"H (91 × 12 × 14 to 25cm)

14-735

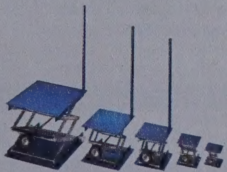
Cat. No.	Each
14-735	180.13

SUPPORTS — LAB JACKS

*Fisherbrand** Lab-Jack*

Ideal for supporting hotplates, baths, glassware and other items requiring stable regulation

- Nonsparking anodized aluminum plates for maximum safety in the lab
- Models 14-673-51, -52, and -53 have threaded holes to accommodate an 18⅞" long (48cm) aluminum rod for mounting ring stands and other lab apparatus



14-673-53, -52, -51, -50, and -15

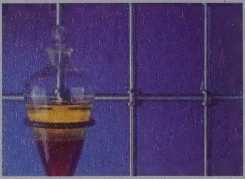
ORDERING INFORMATION:
Rod available separately; contact your Fisher Scientific Customer Service Representative.

Plate L × W	Max. Load	Max. Height	Cat. No.	Each
3 × 3" (7.6 × 7.6cm)	8¾ lb. (4kg)	3¼" (8.2cm)	**14-673-15**	163.67
4 × 4" (10 × 10cm)	30 lb. (14kg)	5½" (14cm)	**14-673-50**	159.50
6 × 6" (15 × 15cm)	59 lb. (27kg)	11" (27cm)	**14-673-51**	170.40
8 × 8" (20 × 20cm)	79 lb. (36kg)	11" (27cm)	**14-673-52**	209.55
12 × 12" (30 × 30cm)	143 lb. (65kg)	19" (48cm)	**14-673-53**	471.90

SUPPORTS–LATTICE

*Fisherbrand** Flexaframe* Support Sets

Durable aluminum lattice is easy to disassemble and store



Attach all kinds of apparatus with Castaloy* Clamps and Holders.

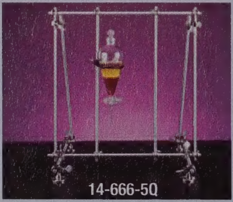
- Frames made of ½" diameter (13mm) aluminum rods held together with corrosion-resistant Castaloy Hook Connectors (14-666-18Q)
- Choose from three standard sets, or use accessory rods to custom build a setup that fits your individual needs
- Made from nickel-plated zinc castings

Contents of Flexaframe Sets

Contents	Set 1	Set 2	Set 3
Rods			
2" (5.1cm)	8	10	6
12" (31cm)	----	----	6
18" (46cm)	2	3	----
24" (61cm)	8	----	2
36" (91cm)	----	2	----
48" (122cm)	----	10	7
72" (183cm)	----	----	5
Hook Connectors	22	42	49
Supporting Feet	4	6	8
End-to-End Connectors	----	----	----

Set 1—Vertical Mounting

Great for glassware setups, etc., in small laboratories

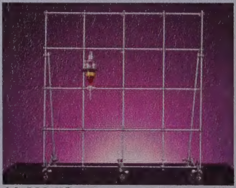


14-666-5Q

With wide, 18" (46cm) base extending out from lattice for maximum stability. Base can be permanently secured to benchtop with screws. Frame is 24L × 24"H (61 × 61cm). Contents listed in "Contents of Flexaframe* Sets" chart above.

Cat. No.	Each
14-666-5Q	328.64

Set 2—Large Capacity



14-666-7Q

48 × 48" (122 × 122cm) frame is excellent for complex glassware setups. Base is 18" wide (46cm) for stability. Contents listed in "Contents of Flexaframe* Sets" chart above.

Cat. No.	Each
14-666-7Q	632.41

Set 3—Ultimate Versatility Supports

14-666-8Q

Measures 48L × 72"H (122 × 183cm). Can be used vertically or horizontally. Includes six 12" (31cm) rods and feet for securing frame to wall. Apparatus mountable on either side of frame. Contents listed in "Contents of Flexaframe* Sets" chart left.

Cat. No.	Each
14-666-8Q	878.00

ACCESSORIES

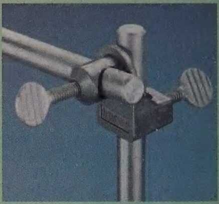
Rods for Custom Frames

14-666-10GQ

- Hard aluminum rods exactly ½" diameter (13mm) for smooth fit with Fisherbrand* Flexaframe* lattice
- Corrosion resistant

Length	Cat. No.	Each
2" (5.1cm)	**14-666-10AAQ**	10.28
12" (31cm)	**14-666-10GQ**	11.26
18" (46cm)	**14-666-10BQ**	13.31
24" (61cm)	**14-666-10CQ**	15.36
36" (91cm)	**14-666-10DQ**	17.41
48" (122cm)	**14-666-10EQ**	27.65
72" (183cm)	**14-666-10FQ**	33.79
96" (244cm)	**14-666-10HQ**	44.03

Swivel Connector

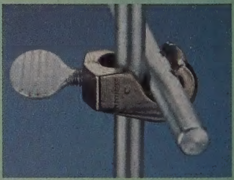


14-666-26Q

- Rotates 360°
- Mounts anywhere on lattice without having to disassemble rods
- Secures two rods at any relative angle
- Rods won't twist or slip
- Connector made of strong, diecast Castaloy* metal

Cat. No.	Each
14-666-26Q	20.48

Castaloy* Hook Connector



14-666-18Q

- Locks two Fisherbrand* Flexaframe* rods at a 90° angle
- Can't slip
- Install without disassembling frame
- Supplied with Flexaframe sets

Cat. No.	Each
14-666-18Q	19.46

Contd. on next page.

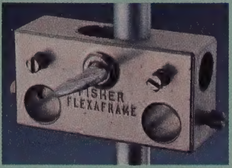
*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

Multiclutch Connector

Permits lattice adjustment after construction

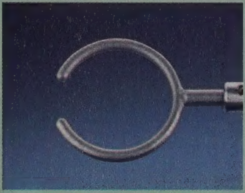


14-666-22Q

- Holds Fisherbrand* Flexaframe* rods at 90° angle in lattice
- Allows horizontal and vertical adjustment after lattice is built
- Two adjacent rods fit into oval hole in connector, prevent turning when tightened
- ½" diameter (13mm) holes in side and front of connector allow many different rod configurations
- Castaloy* metal

Cat. No.	Each
14-666-22Q	30.44

Open Rings

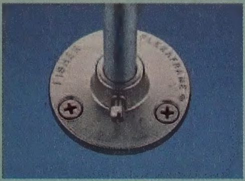


14-666-23BQ

- Hold leveling bulbs, funnels
- Mount in connectors 14-666-20Q and -22Q for use on lattices
- Not for use with burners or containers to be heated
- Cast-aluminum, ½" O.D. (13mm) stem
- Connector is not included

Ring O.D.	Cat. No.	Each
3" (76mm)	14-666-23AQ	22.09
4" (100mm)	14-666-23BQ	29.25
5" (127mm)	14-666-23CQ	39.65

Foot Plate

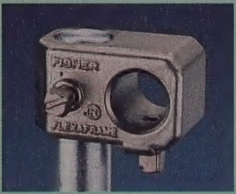


14-666-25Q

- Mounts lattice permanently
- Holds Fisherbrand* Flexaframe* poles
- Secures them to floors, walls and tables with screws
- Castaloy* metal

Cat. No.	Each
14-666-25Q	18.43

Connector for Rod Ends



14-666-20Q

- Holds rods firmly at 90° angle
- ½" diameter (13mm) holes carefully sized to eliminate play
- Castaloy* metal

Cat. No.	Each
14-666-20Q	11.26

SUPPORTS–RINGS

Fisherbrand* Cast-Iron Rings

Cast-iron construction prevents breakage under normal use

14-050CQ

- Sturdy 5⁄16" (7.9mm) setscrew in integral clamp locks ring tightly to support stands, lattices, etc.
- Ring center is standard 4½" (11cm) from support rod center
- 2" (51mm) size ring has lugs for holding crucibles

O.D.	I.D.	Cat. No.	Each
2" (51mm)	1 7⁄16" (36mm)	14-050AQ	16.38
3" (76mm)	2⅜" (60mm)	14-050BQ	16.38
4" (100mm)	3 5⁄16" (84mm)	14-050CQ	17.41
5" (130mm)	4¼" (110mm)	14-050DQ	20.48
6" (150mm)	5¼" (130mm)	14-050EQ	29.70

Fisherbrand* Split Cast-Brass Rings

Hold leveling bulbs safely with these cast-brass rings

14-052AQ

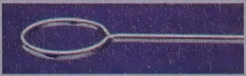
- Split ring allows easy placement and removal of bulb
- Vinyl-coated sheath on ring protects bulb from breakage
- Integral clamp holds ring tightly to support rods

O.D.	Cat. No.	Each
2" (51mm)	14-052AQ	39.92
3" (76mm)	14-052BQ	42.42

Fisherbrand* Extension Rings

Shank of extension ring clamps to support rods with clamp holder

Manufactured from steel wire; zinc-plated for corrosion resistance.



14-055C

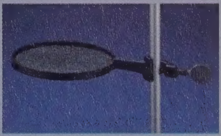
ORDERING INFORMATION:

Supports can be mounted with 05-754Q or 05-764Q Castaloy* Clamp Holders.

Size	I.D.	Overall Length	Cat. No.	Each	Pack of
2"	2 1⁄16" (52mm)	8½" (220mm)	14-055A	18.55	5/78.85
3"	2 15⁄16" (75mm)	10" (250mm)	14-055B	20.05	5/85.20
4"	3 15⁄16" (100mm)	10" (250mm)	14-055C	20.15	5/85.65
5"	4 15⁄16" (125mm)	10" (250mm)	14-055D	27.15	10/230.80
6"	6" (152mm)	10" (250mm)	14-055E	25.60	10/217.60

Fisherbrand* Cast-Iron Plate

Use support plate as a hotplate



14-750Q

- Containers held on 4¾" diameter (12cm) cast-iron plate can be heated with a burner
- 3⁄16" (4.8mm) raised rim keeps containers from slipping off accidentally
- Plate can be locked firmly to support rods or lattices with its integral clamp

Diameter	Cat. No.	Each
4¾" (12cm)	14-750Q	40.07

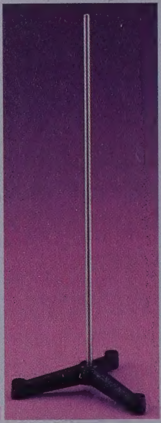
SUPPORT–STANDS

*Fisher*brand* Support Stands

Tough Rectangular Epoxyn* Stands

- Base made of Epoxyn solid epoxy resin for maximum resistance to chemicals and mechanical abuse
- With nickel-plated steel support rod

14-670 Series



14-675CQ

Base Size	Rod Length	Rod Diameter	Cat. No.	Each
4 × 6" (10 × 15cm)	18" (46cm)	5⁄16" (7.9mm)	**14-670A**	38.49
5 × 8" (13 × 20cm)	20" (51cm)	3⁄8" (9.5mm)	**14-670B**	44.35
6 × 9" (15 × 23cm)	24" (61cm)	7⁄16" (11mm)	**14-670C**	51.32
6½ × 11" (17 × 28cm)	36" (91cm)	½" (13mm)	**14-670D**	65.04

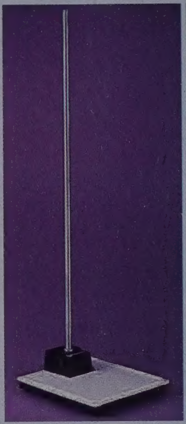
Low-Cost Cast-Iron Tripod Base Supports

- Base is heavy, rugged cast iron for stability
- Finished with chemical-resistant, baked, black enamel
- Support rods and base precisely threaded to eliminate instability

Rod Length	Rod Diameter	Cat. No.	Each
18" (46cm)	5⁄16" (7.9mm)	**14-675AQ**	54.83
20" (51cm)	3⁄8" (9.5mm)	**14-675BQ**	61.58
24" (61cm)	7⁄16" (11mm)	**14-675CQ**	63.89
36" (91cm)	½" (13mm)	**14-675DQ**	70.85

Heavy-Duty Rectangular Cast-Iron Support

- Cast-iron base for maximum stability, molded polyethylene tray for spillage protection
- Concentric rings on tray provide convenient guide for positioning containers
- Height to top of rod is 35" (89cm)
- With steel rod and rubber feet to prevent sliding



14-679Q

11-474-207

Base L × W	Cat. No.	Each
9¾ × 9 9⁄16" (25 × 23cm)	**14-679Q**	223.69

Cast-Iron L-Shaped Base Support

- Jackson support
- With three mounting holes for supporting groups of equipment concentrated in a small space
- Heavy cast-iron base has two 6¾" (17cm) legs that impart stability
- Three mounting holes tapped for ½" diameter (13mm) support rods
- Bases can be nested for easy storage

INCLUDES:

One 24L × ½" dia. (610 × 13mm) nickel-plated steel rod.

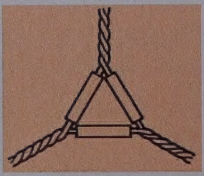
Cat. No.	Each
11-474-207	66.40

SUPPORTS–TRIANGLES

*Fisher*brand* Iron-Wire Triangles

For heating crucibles

Iron wire with ceramic coverings.



15-280B

Side Length	Cat. No.	Pack of 12
1½" (38mm)	**15-280A**	96.55
2" (51mm)	**15-280B**	100.60
2½" (64mm)	**15-280C**	113.55

SUPPORTS–TRIPODS

*Fisher*brand* Iron-Ring Tripods

Single-size-opening tripods

- Iron ring is supported on three legs to eliminate rocking of support
- Height: 9" (23cm)

15-300BQ

Ring I.D.	Ring O.D.	Cat. No.	Each
3" (7.6cm)	5" (13cm)	**15-300AQ**	42.10
4½" (11.4cm)	6" (15cm)	**15-300BQ**	40.01

*Trademark. See Trademark Reference.

CLEANERS

DETERGENTS

*Fisherbrand** Sparkleen* 1 Detergent

Removes proteins, fats, oils, media, wax pencil marks, dried blood and other organic-inorganic deposits from glassware

Especially valuable in exacting titrations and analyses. Excellent for presterilization cleaning and as soak solution to loosen frozen glass joints.

- Fast-dissolving powder
- For manual washing
- Free-rinsing
- Contains phosphates
- Softens water, removes stains

Fisherbrand
Sparkleen 1
For Manual Washing

04-320-4

Size	Cat. No.	Each	Case of 12
3¼ lb. Box (1.5kg)	**04-320-4**	29.45	301.75
100 lb. Drum (45kg)	**04-320-5**	469.95	----

*Fisherbrand** Sparkleen* 2 Detergent

Removes dried blood and stubborn organic deposits quickly and safely

- Concentrated, chlorinated powder
- For use in automated glassware washers
- High-alkaline formula
- Free-rinsing, even in hard water
- Contains phosphates

Fisherbrand
Sparkleen 2
For Machine Washing

04-320-6

Size	Cat. No.	Each	Case of 12
3¼ lb. Box (1.5kg)	**04-320-6**	23.75	243.25

*Fisherbrand** Versa-Clean* Concentrate

Penetrates, breaks up, and effectively removes oils, soils, dirt, and grime from almost any washable surface

Versatile, biodegradable, and ecologically safe because emulsifier system incorporates blends of synthetic detergents and wetting agents. Recommended for critical cleaning; trace analysis available.

Fisherbrand
Versa-Clean

04-343

- Controlled foaming liquid
- Can be used in automatic labware and glassware washers, ultrasonic cleaners, high-pressure sprayers, automatic scrubbers, and soak tank
- Safe for use on plastics, glass, glassware, labware, rubber, vinyl, and most metals
- Free-rinsing and soluble in hot or cold water
- Biodegradable, nontoxic, noncaustic, nonflammable, and ozone-friendly
- Outstanding deflocculating and dispersing properties

CERTIFICATIONS:
USDA approved for use in federally inspected meat and poultry plants. Passes inhibitory residue test.

Size	Cat. No.	Each	Case of
33⅞ oz. (1L)	**04-342**	18.20	12/186.60
1¹⁄₁₆ gal. (4L)	**04-343**	50.15	4/171.45

Decon* Dri-Clean* Detergent Powder

For manual, soak, or ultrasonic cleaning of all labware

- Powdered formula
- Effectively removes protein, dried blood, oil, grease, and most other contaminants from glassware, plasticware, ceramic, and metal
- Completely free-rinsing, residue-free, and biodegradable

04-355-75

Size	Cat. No.	Each	Case of 6
4⅜ lb. (2kg)	**04-355-75**	23.34	119.68
110¼ lb. (50kg)	**04-355-43**	307.40	----

Decon* Dri-Contrad* Detergent Powder

Cleans proteins, bloods, oils, waxes, and organic or inorganic contaminants

- Nonfoaming powder
- For automatic washers

DRI-CONTRAD

04-355-4

- Free-rinsing, rapidly soluble, and noncorrosive
- Chlorinated for biohazard control

Size	Cat. No.	Each	Case of
4⅜ lb. (2kg)	**04-355-4**	26.90	6/137.95
11 lb. (5kg)	**04-355-5**	80.95	4/286.55
27½ lb. (12.5kg)	**04-355-6**	141.40	----
110¼ lb. (50kg)	**04-355-7**	394.85	----

Decon* Contrad* NF Liquid Detergent

Cleans a wide variety of organic and inorganic contaminants from most substrates

- Super concentrated alkaline liquid
- Formulated specifically for automatic washing machines
- Nonfoaming, free-rinsing, and residue-free
- Phosphate and chlorine-free

04-355-37

Size	Cat. No.	Each	Case of
1 gal. (3.8L)	**04-355-37**	47.15	4/161.20
2⅝ gal. (10L)	**04-355-30**	----	2/183.25
30⅓ gal. (115L)	**04-355-9**	701.20	----
55½ gal. (210L)	**04-355-40**	1247.03	----

Decon* Contrad* 70 Liquid Detergent

Cleans glass, plastic, ceramic, and ferrous metals by soaking, scrubbing, or ultrasonic cleaning

Can safely replace acid washes and caustic baths. Excellent substitute for chromic acid.

- Concentrated liquid
- Removes proteins, grease, oil, and baked-on contaminants
- Nontoxic, phosphate-free, chlorine-free, and completely free-rinsing

CERTIFICATIONS:
USDA approved

04-355-1

Size	Cat. No.	Each	Case of
34 oz. (1L)	**04-355**	27.48	12/281.80
1⅓ gal. (5L)	**04-355-1**	91.42	4/323.60
5¼ gal. (20L)	**04-355-2**	312.00	----
55½ gal. (210L)	**04-355-3**	1932.36	----

Decon* Contrad* 100 Equipment Cleaner

Formulated for clean-in-place systems and high-pressure cleaning applications

- Alkaline liquid detergent
- Removes a variety of contaminants across a wide range of temperatures and pressures
- Low-foaming, free-rinsing, phosphate-free, and disposable to drain

CONTRAD 100

04-355-27

Size	Cat. No.	Each	Case of 4
1 gal. (3.8L)	**04-355-27**	33.70	115.20
5¼ gal. (20L)	**04-355-55**	155.65	----
30 gal. (115L)	**04-355-370**	504.70	----
55½ gal. (210L)	**04-355-57**	1076.83	----

Decon* Neutrad* Liquid Detergent

For manual scrubbing

Safe on all substrates with a near-neutral pH to enhance substrate compatibility.

- Chlorine-free liquid
- Noncaustic and phosphate-free
- Free-rinsing and disposable straight to drain

04-355-11

Size	Cat. No.	Each	Case of
32 oz. (950mL)	**04-355-10**	14.64	12/150.17
1⅓ gal. (5L)	**04-355-11**	66.94	4/236.96
5¼ gal. (20L)	**04-355-12**	236.94	----

Decon* Citrad* Acidic Detergent

Ideal for the removal of salts, scale, hard water mineral deposits, and metal-oxide

- Also used for metal brightening and pharmaceutical-production equipment
- Citric acid-based detergent
- Phosphate-free, free-rinsing, and biodegradable

CITRAD
Concentrated Acidic Detergent

04-355-90

Size	Cat. No.	Each	Case of 4
1 gal. (3.8L)	**04-355-90**	42.78	146.25

Decon* Enzyte* Enzyme Cleaner

Removes proteins, blood, and other organic materials from labware and hard surfaces without scrubbing

- Low-foaming multi-enzyme cleaner
- Ideal for soaking, ultrasonic cleaning, and automatic washers
- Completely rinsable
- Noncaustic, nontoxic, and biodegradable
- Concentrated—use 1 oz. (30mL) per gallon (3.8L) of water
- Unlimited shelf life

04-355-102

Size	Cat. No.	Each	Case of 4
1 gal. (3.8L)	**04-355-102**	40.76	139.34

Decon* Contrex* AW Powdered Autowasher Detergent

Formulated for use in all automatic labware washing machines

- Concentrated powder
- Low-foaming, completely soluble, and free-rinsing
- Biodegradable

04-358-12

Size	Cat. No.	Each	Case of 9
4 lb. (1.8kg)	**04-358-12**	25.38	195.23
25 lb. (11.3kg)	**04-358-13**	113.17	----
50 lb. (22.7kg)	**04-358-14**	197.09	----
100 lb. (45.4kg)	**04-358-15**	347.93	----

Decon* Contrex* AL Alkaline Liquid Detergent

For use in manual, soak, or ultrasonic cleaning

- Concentrated liquid
- Ideal for cleaning labware, scientific apparatus, and process equipment
- Free-rinsing, phosphate-free, and disposable straight to drain

Contrex
AL
ALKALINE LIQUID DETERGENT
Contrex
AL

04-358-10, 04-358-11

Size	Cat. No.	Each	Case of
1 qt. (947mL)	**04-358-11**	16.86	12/172.90
1 gal. (3.8L)	**04-358-10**	51.89	4/177.41

Decon* Contrex* CA Acidic Liquid Detergent

For use in descaling, mineral removal, oxide removal, or other applications where an acidic detergent is indicated

- Organic-acid formula concentrated liquid
- Can be used as a manual, soak, or ultrasonic cleaner
- Phosphate-free and disposable straight to drain

Contrex
CA
ACIDIC LIQUID DETERGENT

04-358-21

Size	Cat. No.	Each	Case of 4
1 gal. (3.8L)	**04-358-21**	49.57	169.48

Decon* Contrex* EZ Powdered Enzymatic Detergent

Formulated for removal of protein and fat contamination

- Powdered
- Ideal for use in manual or soak cleaning of labware and equipment
- Free-rinsing and disposable straight to drain
- Enzymatic action

04-358-23

Size	Cat. No.	Each	Case of 9
4 lb. (1.8kg)	**04-358-23**	29.95	230.36
25 lb. (11.3kg)	**04-358-24**	113.17	----
50 lb. (22.7kg)	**04-358-25**	198.29	----

Decon* Contrex* CF Cation- and Phosphate-Free Liquid Detergent

For use in cleaning of equipment and electronics that are sensitive to metal cations and phosphates

- Concentrated
- Can be used for soak, scrub, sonication, and autowashing
- Free-rinsing, phosphate-free, and disposable straight to drain

04-358-26

Size	Cat. No.	Each	Case of 4
1 gal. (3.8L)	**04-358-26**	63.68	225.41

Decon* Contrex* AP Powdered Labware Detergent

Ideal for cleaning labware, scientific apparatus, and process equipment

- Concentrated powder
- Formulated for use in manual, soak, or ultrasonic cleaning
- Free-rinsing, completely soluble, and disposable straight to drain
- Available in a user-friendly bottle that permits easy dispensing and eliminates caking

Contrex
AP
POWDERED LABWARE DETERGENT

04-358-17

Size	Cat. No.	Each	Case of 9
4 lb. (1.8kg)	**04-358-17**	25.25	9/194.23
25 lb. (11.3kg)	**04-358-18**	112.77	----
50 lb. (22.7kg)	**04-358-19**	194.78	----
100 lb. (45.4kg)	**04-358-20**	347.43	----

Decon* Contrex* TL Effervescent Detergent Tablets

For use in pipet washers, for parts cleaning, or with any application assisted by effervescent action

04-358-27

Cat. No.	Pack of 100	Case of 6 Pack
04-358-27	19.13	98.09

Labconco* LabSolutions* Powder Detergent

Removes grease, blood, agar, protein digestates, and other contaminants

- Nonfoaming powder
- For automatic glassware washers
- Free-rinsing and noncorrosive
- Contains phosphates
- Approximate pH of 1% solution: 12.5

04-335, 04-334

INCLUDES:

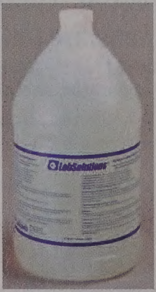
Scoop

Size	Mfr. No.	Cat. No.	Each
10 lb. (4.5kg)	4422000	04-334	92.96
27½ lb. (12.5kg)	4422100	04-335	189.71

Labconco* LabSolutions* Low-Foaming Liquid Detergent

Removes a wide range of contaminants

- Specially formulated for Labconco glassware washers
- Suitable for use with tissue culture labware
- Free-rinsing and temperature stable for use in hot or cold water
- Phosphate- and chlorine-free



04-334-1

Size	Mfr. No.	Cat. No.	Each
1 gal. (3.8L)	4522000	04-334-1	91.50

Nalgene* L900 Liquid Detergent

Formulated to clean all plastic labware, especially polycarbonate

Won't cause crazing, stress cracking, or clouding of plastic.

- Use for hand or machine washing
- Also suitable for glassware
- Biodegradable, nontoxic, and phosphate-free

04-319B

Size	Mfr. No.	Cat. No.	Each	Case of 4
1¹⁄₁₆ gal. (4L)	900 4000	04-319B	56.46	150.56

Thermo Scientific* Pierce* RBS 35* Detergent Concentrate

Removes stubborn biological residues

Removes both organic and inorganic materials and metal ions.

- Moderately alkaline mixture of anionic and nonionic surfactants
- Safely and effectively cleans glass, plastic, quartz, porcelain, and ferrous metal
- Ideal for the removal of difficult substances such as protein and blood serum residues, tars, distillation residues, silicone, and oils
- Suitable for radiochemical decontamination
- Free-rinsing and biodegradable

PI-27952

Size	Cat. No.	Each
3¼ oz. (95mL)	PI-27950	33.00
1¼ gal. (4.75L)	PI-27952	73.00

Bio-Clean* Concentrated Detergent and Deodorizer

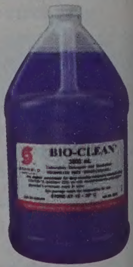
For cleaning laboratory instruments, glassware, porcelain, metal, rubber, and plastics

Eliminates odors on most surfaces.

- Biodegradable and phosphate-free
- Concentrated—use just 5mL of detergent for each gallon of water

CERTIFICATIONS:

Authorized by USDA for use in official plants operating under the Federal Inspection Program.



SB-0602-380

Size	Cat. No.	Each
1 gal. (3.8L)	SB-0602-380	95.09

*Trademark. See Trademark Reference.

Nochromix* Reagent

Chemically cleans glassware

NOCHROMIX
NOCHROMIX
04-345-20

- Inorganic oxidizer
- Valuable for trace analysis, enzymology, and tissue culture work
- Free-rinsing
- Contains no metal ions
- Each hermetically sealed 3 oz. (89mL) packet should be mixed with 1 gal. (3.8L) of concentrated sulfuric acid

Cat. No.	Pack of 10
04-345-20	167.00

DECONTAMINANTS

Decon* NoCount* Radioactive Decontaminants

Available for use on hard surfaces or for use on hands and skin

04-355-68

For Hard Surfaces

- Ideal for removing radioactive contaminants from sinks, benchtops, acrylic shields, glassware, plasticware, electrophoresis gel boxes, sequencing units, and other hard surfaces
- Foaming action helps lift and trap particles so they can be easily wiped or rinsed away
- **Warning:** Do not spray 04-355-67 on skin; avoid contact with eyes

For Hands and Skin

- Ideal for situations involving accidental contamination of skin
- Foam formula lifts and traps particles so they can be easily rinsed off hands and skin with water

Description	Size	Cat. No.	Each	Case of 12
For hard surfaces	18 oz. (510mL)	**04-355-67**	16.00	164.06
For hands and skin	18 oz. (510mL)	**04-355-68**	18.03	184.92

ELIMINase* Decontaminant

Eliminates RNase, DNase, and DNA from laboratory surfaces

ELIMINase
ELIMINase
04-355-32, 04-355-31

- Safe on glass, plastics, stainless steel, pipetters, gel boxes, and benchtops
- Also acts as a radioactive decontaminant
- Leaves no residue that could degrade RNA and DNA samples or interfere with subsequent enzymatic reaction
- Works instantly
- Nontoxic

Size	Cat. No.	Each	Case of 12
8½ oz. (250mL)	**04-355-31**	27.15	271.10
32 oz. (950mL)	**04-355-32**	42.02	427.94

Molecular BioProducts DNA Away* Surface Decontaminant

Eliminates unwanted DNA and DNase from glassware and plasticware without affecting subsequent DNA samples

21-236-28

Degrades DNA more quickly and effectively than autoclaving.

- Suitable for gel boxes, pipetters, benchtops, thermal cyclers, or other apparatus
- Use before performing PCR or working with DNA for a DNA-free work area
- Simply apply the ready-to-use formula to the surface to be decontaminated; wipe dry or rinse clean

Description	Mfr. No.	Cat. No.	Each	Case of
8½ oz. (250mL) Bottle	7010	**21-236-28**	20.50	12/215.00
Wipes				
Canister of 25	7008	**14-754-42**	----	12/336.00
Box of 35, individually wrapped	7009	**14-754-43**	----	16/552.00

Molecular BioProducts RNase Away* Surface Decontaminant

Eliminates RNase and DNA from laboratory surfaces

21-236-21

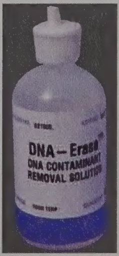
Reduces dependency on carcinogenic DEPC treatments and saves time needed to bake glassware.

- Perfect for decontaminating apparatus, benchtops, glassware, and plasticware
- Use on pipetters, gel boxes, or RNA and DNA prep areas
- Leaves no residue to interfere with gel polymerization or staining
- Chemically stable and nonabrasive
- Contains no strong acids
- Apply to the surface to be decontaminated and rinse

Size	Mfr. No.	Cat. No.	Each	Case of
8½ oz. (250mL)	7000	**21-236-21**	32.00	12/330.00
33⅞ oz. (1L)	7003	**14-375-35**	51.00	5/222.00
1 1/16 oz. (4L)	7005	**14-754-34**	109.10	4/373.00
Wipes				
Canister of 25	7006	**14-754-40**	----	12/336.00
Box of 35, individually wrapped	7007	**14-754-41**	----	16/552.00

MP Biomedicals DNA-Erase* Decontaminant

Removes DNA contamination



ICN821805

- Eliminates PCR artifacts from all laboratory surfaces and apparatus, including pipetters
- Stable, heat-resistant, and noncorrosive
- Supplied as ready-to-use formula

Quantity	Cat. No.	Each
17oz. (500mL)	**ICN821805**	42.24

MP Biomedicals RNase-Erase* Decontaminant

Completely removes RNase contamination from glass and plastic surfaces

Eliminates the need to bake glassware or use DEPC.

- Leaves no residues that might inhibit enzymatic reactions
- Supplied as ready-to-use formula

RNase ERASE

ICN82168 Series

Description	Quantity	Cat. No.	Each
Spray bottle	8½ oz. (250mL)	**ICN821682**	34.72
Dropper bottles	2 × 4¼ oz. (2 × 125mL)	**ICN821683**	35.37

DESCALERS

*Fisher*brand* Hard-Water Softener

Phosphate-free formula removes hard-water minerals and residues from autowasher water

- Increases the power of detergent, leaving labware clean and residue-free
- Also removes hard-water minerals and soap scum from most surfaces, including stainless steel, porcelain, glass, chrome, marble, and Formica*

Fisherbrand
Hard Water Softener

22-032-078

Size	Cat. No.	Each	Case of 6
4 lb. (1.8kg)	**22-032-078**	18.54	95.10

Decon* DeSCAL* Concentrate

Acidic detergent designed to remove hard-water mineral deposits

- Effectively removes urine scale from animal cages
- Use in automatic glassware washers, process equipment, stills, autoclaves, and baths

DESCAL
Descaler Concentrate
Fisher Scientific

04-355-36

Size	Cat. No.	Each	Case of
34 oz. (1L)	**04-355-36**	19.46	12/199.60
1 gal. (3.8L)	**04-355-103**	54.86	4/187.57
2¼ gal. (10L)	**04-355-100**	----	2/284.10
5¼ gal. (20L)	**04-355-45**	289.85	----
30 gal. (114L)	**04-335-46**	720.42	----

DISINFECTANTS

Current Technologies Bleach-Rite* Disinfecting Spray with Bleach

Convenient, premixed, one-step cleaner/disinfectant

- 30-second kill time for TB, VRE, streptococcus, and vegetative cells of *Clostridium difficile*
- One-minute kill time for coronavirus, HIV, MRSA, Hepatitis-A, herpes simplex, poliovirus, rotavirus, pseudomonas, salmonella, and staphylococcus
- 0.525% (1:10) dilution of sodium hypochlorite (bleach) recommended by NCCLS, OSHA, and CDC, stabilized for an 18-month shelf life; expiration date on every bottle
- Safe on stainless steel, plastic, ceramic, and glass; will corrode aluminum

Bleach-Rite
Current Technologies, Inc.

14-412-53

COMPLIANCE:

EPA registered for use on hard nonporous surfaces including counters, benchtops, and equipment.

Size	Cat. No.	Case of
Trigger spray		
16 oz. (473mL)	**14-412-65**	12/120.52
32 oz. (946mL)	**14-412-66**	6/106.20
Refill		
64 oz. (1.9L)	**14-412-54**	6/123.54
128 oz. (3.8L)	**14-412-53**	4/120.54

Decon* Conflikt* Detergent Disinfectant

Prediluted ready-to-use spray quaternary ammonium disinfectant

- Effective against TB, HBV, and a wide range of viruses, bacteria, pathogenic fungi, mold, and mildew, including HIV-1, *E. coli*, and Canine Parvovirus

COMPLIANCE:

- EPA registered
- Meets OSHA's Bloodborne Pathogen Standard

CERTIFICATIONS:

USDA approved

CONFLIKT
CONFLIKT

04-355-52, 04-355-33

Size	Cat. No.	Each	Case of
Sprays			
16 oz. (473mL) Pump	**04-355-33**	15.21	12/156.00
32 oz. (946mL) Trigger	**04-355-34**	30.92	6/158.55
Refills			
64 oz. (1.9L)	**04-355-35**	26.48	6/135.80
1 gal. (3.8L)	**04-355-52**	43.07	4/147.24

*Trademark. See Trademark Reference.

Decon* BDD* Bacdown* Detergent Disinfectant

04-355-13

Concentrated quaternary ammonium detergent disinfectant

- For cleaning and disinfecting surfaces in labs, production areas, and equipment
- Bactericidal, virucidal, fungicidal, and deodorizing
- Effective against HIV-1, HBV, Herpes Simplex, and others
- Diluted 2 oz. (59mL) per gallon (3.8L) of water

COMPLIANCE:	**CERTIFICATIONS:**
EPA registered	USDA approved

Size	Cat. No.	Each	Case of 4
1⅓ gal. (5L)	**04-355-13**	57.97	202.01
30⅓ gal. (115L)	**04-355-38**	800.44	----

Decon* CiDecon* Detergent Disinfectant

Concentrated phenolic disinfectant

04-355-64

- Designed for cleaning and disinfecting surfaces in labs, production areas, and equipment
- Effective against a wide range of pathogenic organisms, including TB, HIV-1, bacteria, viruses, and fungi in the presence of 1000ppm hard water and 10% organic soil
- Dilution ratio: 1 oz. (30mL) per gallon (3.8L) of water

COMPLIANCE:

- EPA registered
- Meets OSHA's Bloodborne Pathogen Standard

Size	Cat. No.	Each	Case of 4
1 gal. (3.8L)	**04-355-64**	42.12	143.99

Decon* CiDecon* Q Aerosol Foam Disinfectant

04-355-93

Ready-to-use foaming disinfectant for hard, nonporous surfaces

- Broad spectrum quaternary ammonium disinfectant; effective against HIV-1
- Cleans, disinfects, and deodorizes in one step
- Clings to vertical surfaces, allowing longer contact time

Size	Mfr. No.	Cat. No.	Each	Case of 12
20 oz. (591mL)	8618	**04-355-93**	11.24	112.37

Decon* CiDecon* ST Detergent Disinfectant

04-355-59, 04-355-120

For cleanroom use

- Same as 04-355-64, except double-bagged, gamma-irradiated, and sterility-tested
- The 2 oz. single-serve size is premeasured to make 2 gal. of working solution

Size	Cat. No.	Each	Case of
2 oz. (59mL)	**04-355-120**	----	24/133.22
1 gal. (3.8L)	**04-355-59**	59.33	4/209.99

Decon* HypoSol* ST Sterile Concentrated Bleach Solution

Sterile sodium hypochlorite solution 5% for dilution

- Solution is filtered to 0.2µm and individually double-bagged in an ISO Class 5 (Class 100) environment
- Each lot undergoes testing for sterility and percentage available chlorine, calcium, and phosphate
- Each case is shipped with a lot-specific document that details QC and sterility testing

Size	Cat. No.	Case of 4
1 gal. (3.8L)	**04-356-100**	151.13

Decon* Iradecon* Bleach-Based Disinfectant

One-year expiration

04-355-150

Premixed and stable Iradecon disinfectant is a safer, more convenient alternative than self-made bleach solutions that are inherently unstable and often lose their efficacy in 24 to 48 hours.

- Prediluted, stabilized bleach (sodium hypochlorite) solution
- Consists of 0.525% sodium hypochlorite (10% bleach), which is the strength recommended by CDC and OSHA for inactivating HIV, HBV, and other pathogens
- Ideal for disinfecting hard surfaces in labs and production areas

Size	Cat. No.	Each	Case of 12
32 oz. (946mL) Trigger spray	**04-355-150**	24.18	248.03

Decon* LopHene* Detergent Disinfectant

Concentrated low pH phenolic disinfectant

- For cleaning and disinfecting surfaces in labs and for production areas and equipment
- Ideal for rotational disinfection program when used with CiDecon* Detergent Disinfectant (04-355-64)
- Effective against a wide range of pathogens and organisms, including TB, HIV-1, bacteria, viruses, and fungi, in the presence of 400ppm hard water and 5% organic soil
- Diluted to ½ oz. (15mL) per gallon (3.8L) of water

COMPLIANCE:
EPA registered. Conforms to OSHA's Bloodborne Pathogen Standard.

04-355-70

Size	Cat. No.	Each	Case of 4
1 gal. (3.8L)	**04-355-70**	60.73	214.96

Decon* LopHene* ST Sterile Detergent Disinfectant

For cleanroom use

- Same features as 04-355-70
- Double-bagged, gamma-irradiated, and sterility-tested
- 1 oz. single-serve size is premeasured to make 2 gal. of working solution

04-355-101, 04-355-127

Size	Cat. No.	Each	Case of
1 oz. (30mL)	**04-355-127**	----	24/133.22
1 gal. (3.8L)	**04-355-101**	91.14	4/322.62

Decon* SporGon* Sporicidal Disinfectant

Ready-to-use peracetic acid-based disinfecting solution effective against spores

- Tuberculocidal, bactericidal, virucidal, and fungicidal
- Achieves high-level disinfection in 15 minutes and complete sterilization in three hours
- Completely biodegradable and decomposes into oxygen, water, and acetic acid

COMPLIANCE:
FDA 510K clearance. Conforms to OSHA's Bloodborne Pathogen Standard.

04-355-72

Size	Cat. No.	Each	Case of 4
1 gal. (3.8L)	**04-355-72**	42.50	145.29

Looking for Decon* Disinfectant Wipes?
CiDecon* Disinfectant Wipes, CiDecon Plus Wipes, CiDehol ST Sterile Wipes, and CiDehol* 70 Wipes can be found in the Wipers section.

Decon* CiDehol* 60 Isopropyl Alcohol

Ready-to-use 60% isopropyl alcohol (IPA) solution

- Filtered to 0.22µm
- Evaporates completely; no rinsing required
- Ideal for filter-integrity testing and for disinfecting labs, production areas, and equipment

04-355-41

Size	Cat. No.	Case of 4
1 gal. (3.8L)	**04-355-41**	128.89

Decon* CiDehol* 70 Isopropyl Alcohol

Ready-to-use 70% isopropyl alcohol (IPA)

- Filtered to 0.22µm
- Evaporates away—no rinsing, no residues
- Ideal for cleaning and decontaminating lab surfaces and production areas and equipment

04-355-63

Size	Cat. No.	Each	Case of
Trigger spray			
1 pt. (473mL)	**04-355-63**	10.77	12/107.65
1 qt. (0.9L)	**04-355-250**	18.07	12/185.30
Container			
1 gal. (3.8L)	**04-355-71**	38.35	4/131.10
5¹/₄ gal. (20L)	**04-355-130**	148.25	----
55 gal. (209L)	**04-355-42**	1283.20	----

Decon* CiDehol* ST Sterile Isopropyl Alcohol

Sterile, ready-to-use 70% isopropyl alcohol (IPA) spray

- Solution is filtered to 0.22µm and individually double-bagged in an ISO Class 5 (Class 100) environment, then sterilized via gamma irradiation, producing a Water-For-Injection Quality (WFIQ*) product
- Each lot undergoes sterility and pyrogen testing and meets WFI limits in endotoxin
- Each case shipped with a lot-specific document that details QC, irradiation, and testing

CiDehol STERILE 70% IPA ST

04-355-58

Size/Description	Cat. No.	Case of
Trigger spray bottles		
16 oz. (475mL)	**04-355-58**	12/224.37
32 oz. (950mL)	**04-355-85**	12/403.95
Refill		
1 gal. (3.8L)	**04-355-80**	4/297.50
Hands-free unit		
Wall-mounted dispenser	**04-356-16**	1/197.20
32 oz. (950mL) Dispenser bag	**04-356-15**	8/238.89

Decon* CiDehol* ST 99 Sterile Isopropyl Alcohol

Sterile, ready-to-use 99% isopropyl alcohol (IPA) solution

- Solution is filtered to 0.22µm, individually double-bagged in an ISO Class 5 environment, and sterilized via gamma irradiation, producing a Water-For-Injection Quality (WFIQ*) product
- Each lot undergoes sterility and pyrogen testing and meets WFI limits in endotoxin
- Each case shipped with a lot-specific document that details QC, irradiation, and testing

04-355-44, 04-355-48

Description	Cat. No.	Case of
16 oz. (475mL) Trigger spray bottle	**04-355-48**	12/207.26
1 gal. (3.8L) Bottle	**04-355-44**	4/270.59

Decon* SaniHol* 70 Ethanol Solution

Ready-to-use 70% denatured ethanol solution

- Filtered to 0.22µm to remove particulate contamination
- Evaporates, leaving no residues
- Perfect for disinfecting surfaces in tissue culture hoods and microbiology labs

04-355-122

Size	Cat. No.	Each	Case of
16 oz. (475mL)	**04-355-122**	18.13	12/185.99
1 gal. (3.8L)	**04-355-92**	56.78	4/200.90

Decon* SaniHol* ST Sterile 70% Ethanol Solution

Sterile, ready-to-use 70% denatured ethanol (EtOH) spray designed for cleanroom use

- Solution is filtered to 0.22µm and individually double-bagged in an ISO Class 5 (Class 100) environment, then sterilized via gamma irradiation, producing a Water-For-Injection Quality (WFIQ*) product
- Each lot undergoes sterility and pyrogen testing and meets WFI limits in endotoxin
- Each case is shipped with a lot-specific document that details QC, irradiation, and testing

04-355-54, 04-355-56

Size/Description	Cat. No.	Case of
16 oz. (475mL) Trigger spray bottle	**04-355-56**	12/222.52
1 gal. (3.8L) Bottle	**04-355-54**	4/312.51

Steris* Coverage Plus NPD* Cleaner Disinfectant

One-step concentrate cleans, disinfects, and deodorizes hard, nonporous surfaces

- Consists of four quaternary ammonium compounds formulated with a compatible detergent system
- Effective in hard water up to 400ppm hardness as $CaCO_3$ and in the presence of 5% blood serum
- Provides broad spectrum germicidal activity; effective against influenza, HIV-1 virus, and Hepatitis B and C
- Contains no dyes or perfumes that could interfere with critical research studies or manufacturing processes
- Phosphate-free
- Used at a 1:256 dilution

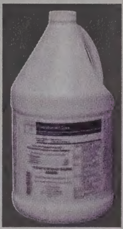
14-415-18

Size	Cat. No.	Each	Case of 4
1 gal. (3.8L)	**14-415-18**	57.35	202.46

Steris* Vesphene* IIse Cleaner and Disinfectant

One-step alkaline disinfectant cleaner and deodorizer for use on hard, nonporous surfaces

- Contains phenols blended with synthetic detergents and builders
- Kills a broad spectrum of common bacteria at a use dilution rate of 1:128 (1 oz. per gal. [30mL per 3.8L]) without harming surfaces
- Also effective against fungi and viruses, including the HIV-1 virus, Herpes Simplex Type 2, and Influenza A_2
- Effective with soft water or hard water up to 400ppm hardness (as $CaCO_3$) and in the presence of 5% serum
- Advanced detergent system provides superior cleaning and disinfecting
- Suitable for use in institutions such as pharmaceutical plants, veterinary clinics, and industrial plants
- Ideal for use in a rotation program with LpH* se One-Step Germicidal Disinfectant (14-415-10)



14-415-11

Size	Cat. No.	Each	Case of 4
1 gal. (3.8L)	**14-415-11**	53.77	190.31

ACCESSORIES

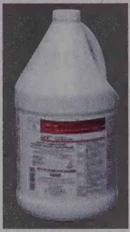
Decon* Gooseneck Trigger Sprayers

Spray solutions directly from one gallon containers

- Available sterile and regular
- Attached to flexible tubing that extends 22" from container
- Sterile trigger sprayer is double-bagged, gamma-irradiated, and comes with Certificate of Sterility
- For use with gallon sizes of Decon cleaners

Description	Cat. No.	Each	Case of 24
Sterile	**04-354-20**	----	186.75
Nonsterile	**04-356-12**	5.46	104.74

Steris* LpH* se One-Step Germicidal Detergent



14-415-10

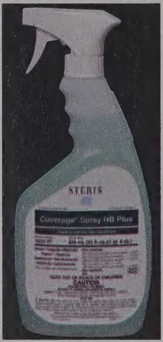
One-step nonalkaline disinfectant cleaner and deodorizer for use on hard, nonporous surfaces

- Phenolic-based germicidal detergent
- Kills a broad spectrum of common bacteria at a use dilution rate of 1:256 without harming surfaces
- Also tuberculocidal and HIV-effective
- Effective with soft water or hard water up to 400ppm hardness (as $CaCO_3$) and in the presence of 5% serum
- Ideal for use in a rotation program with Vesphene* IIse Disinfectant (14-415-11)

COMPLIANCE:
Meets OSHA guidelines for cleaning and disinfecting blood spills.

Size	Cat. No.	Each	Case of 4
1 gal. (3.8L)	**14-415-10**	64.13	227.00

Steris* Coverage* Spray HB Plus Ready-to-Use Disinfectant Cleaner



14-415-19

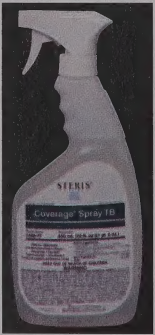
Quaternary-based, one-step disinfectant for hard surfaces

- Provides a broad range of activity against gram-positive and gram-negative bacteria, viruses, and fungi
- Effective in 5% organic soil

COMPLIANCE:
Complies with OSHA Bloodborne Pathogen Standard (29 CFR Part 1910.1030).

Description	Cat. No.	Each	Case of 12
22 oz. (651mL) Trigger spray bottle	**14-415-19**	12.41	127.25

Steris* Coverage* Spray TB Ready-to-Use Disinfectant



14-415-20

Quaternary-based disinfectant cleans, deodorizes, and disinfects

- Effective against *Mycobacterium tuberculosis* (BCG) and other bacteria, the HIV-1 virus, and pathogenic fungi in the presence of 5% organic soil (5% blood serum)
- Deodorizes areas that are difficult to keep fresh smelling, such as garbage storage areas and restrooms
- Recommended for use on metal, stainless steel, plastic, porcelain, glazed ceramic tile, and other nonporous environmental surfaces
- Ideal for use in laboratories, hospitals, doctors' offices, nursing homes, schools, and veterinary clinics

Size	Cat. No.	Each	Case of 12
22 oz. (651mL)	**14-415-20**	12.97	133.05

Steris* Coverage* Spray TB Plus Ready-to-Use Disinfectant Cleaner

Hard surface quaternary-based disinfectant kills a broad range of bacteria, viruses, and fungi within three minutes

14-415-12, 14-415-13

- Tuberculocidal and HIV-1 effective
- Leaves no hazardous residue
- Contains no dangerous phenols or chlorine
- Compatible for use on inanimate surfaces including plastics, stainless steel, chrome, vinyl, acrylic, glass, Plexiglas* resin, and baked-on painted surfaces
- Ideal for use in laboratories, hospitals, surgical centers, medical and dental offices, and other patient-care facilities
- Uses a sprayer head on the 24 oz. (710mL) bottle that allows application without producing aerosolized airborne particles that may be aspirated

COMPLIANCE:
Conforms to OSHA Guidelines (21CFR Part 1910, 1030).

Size/Description	Cat. No.	Each	Case of
24 oz. (710mL) Trigger spray bottle	**14-415-12**	18.05	12/185.10
1 gal. (3.8L) Refill	**14-415-13**	65.54	4/231.39

Steris* Staphene* Spray Environmental Disinfectant

14-415-15

Ready-to-use, aerosol disinfectant and deodorizer for hard surfaces

- Alcohol-based solution of phenolics, quaternary ammonium compounds, and deodorizing compounds
- Effective against a broad range of organisms, including *Mycobacterium tuberculosis var. bovis* and HIV-1 virus
- Bactericidal, fungicidal, and virucidal in 5% serum

COMPLIANCE:
Satisfies the OSHA Bloodborne Pathogen Guidelines (29 CFR Part 1910.1030) for cleaning blood and body fluid spills.

Size	Cat. No.	Each	Case of 12
16 oz. (475mL)	**14-415-15**	8.96	89.61

HANDCARE

Decon* Bacdown* Antimicrobial Hand Soap

Gentle, pleasant-smelling antimicrobial hand soap

- Formulated specifically for laboratory personnel who wash hands repeatedly and cannot afford dry, chapped skin
- Uses the active ingredient triclosan
- Effective against a wide variety of gram-negative and gram-positive bacteria as well as yeast and fungi
- Will not dry skin

BAC DOWN
ANTIMICROBIAL HANDSOAP
Fisher Scientific

04-355-16

Size	Mfr. No.	Cat. No.	Each	Case of
Pump bottles				
17 oz. (500mL)	7018	**04-355-50**	15.98	12/163.94
34 oz. (1L)	7001	**04-355-16**	23.90	12/245.10
Container				
1.32 gal. (5L)	7005	**04-355-17**	85.06	4/301.11

Decon* Bacdown* Gel No-Rinse Skin Sanitizer

Nondrying, antiseptic skin cleanser

Can be used anywhere soap and water are not available.

- Uses a special formula of 62% ethyl alcohol
- Reduces bacteria count on hands prior to gloving or entering aseptic environments
- With gentle emollients to soothe and moisten skin

COMPLIANCE:
Meets OSHA requirements for hand washing.

BAC DOWN
Gel
No-Rinse Skin Cleanser
Fisher Scientific

04-355-47

Description	Cat. No.	Each	Case of
4 oz. (118mL) Pocket pack	**04-355-47**	5.54	30/133.00
16 oz. (473mL) Pump pack	**04-355-53**	12.06	6/61.86
1 gal. (3.8L) Refill	**04-355-46**	44.71	4/152.87

ACCESSORIES

Decon* Multi-Use Wall Bracket

For use with 17 oz. (500mL) pump bottle of Bacdown* Antimicrobial Hand Soap, 16 oz. (473mL) pump bottle of Bacdown Gel No-Rinse Skin Sanitizer, or 16 oz. (473mL) pump bottle of Proguard* and Proguard Plus*.

Cat. No.	Each	Case of 12
04-355-51	5.48	54.82

Decon* Bacdown* Foam Hand Sanitizer

Gentle, foamed-alcohol skin sanitizer

- Ideal for hand decontamination when soap and water are not readily available
- Emollient-enriched formula will not dry skin or cause the kind of irritation typically linked to alcohol-based products
- 11 oz. size mounts on wall for one-hand dispensing

COMPLIANCE:
Meets OSHA handwashing guidelines.

BAC DOWN
foam
Decon

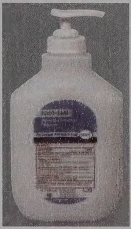
04-355-61, 04-355-62

Size	Cat. No.	Each	Case of 24
7 oz. (207mL)	**04-355-61**	16.98	325.92
11 oz. (325mL)	**04-355-62**	19.42	372.92
Wall bracket for 11 oz. bottle	**22-032-102**	2.50	12/25.00

Steris* Acute-Kare* Healthcare Personnel Handwash

Suitable for use in high-risk areas and for reducing the possibility of microbial cross-contamination

- Formulated with 1% chloroxylenol (PCMX)
- Effective against a broad spectrum of microorganisms
- Uses a gentle, emollient-enriched formula to help condition skin



14-415-35

Description	Cat. No.	Each	Case of 18
15 oz. (444mL) Pump bottle	**14-415-35**	13.40	202.46

Steris* CV* Medicated Lotion Soap

Formulated to be effective against both gram-positive and gram-negative bacteria

- Contains 0.5% triclosan
- Contains emollients and skin conditioners to be gentle on hands

REQUIRED ACCESSORIES:
14-415-33 requires use of Steris Dispensing System (14-415-21), see our Web site.

14-415-34, 14-415-37, 14-415-33

Size/Description	Cat. No.	Each	Case of
15 oz. (444mL) Pump bottle	**14-415-34**	15.99	18/246.01
33¾ oz. (1L) Dispenser pack	**14-415-33**	25.70	12/262.62
1 gal. (3.8L) Refill bottle	**14-415-37**	78.60	4/276.76

Steris* Kindest Kare* Foaming Handwash

Dispensed as a foam to provide a convenient, easy-to-use, free-rinsing handwash

- Formulated with a blend of surfactants and moisturizers at a neutral pH
- Cleans hands without impacting the skin's natural moisturizing factors
- Dermatologist tested
- Dye-free
- Hypoallergenic

14-415-39

Description	Cat. No.	Each	Case of
15 oz. (444mL) Pump bottle	**14-415-39**	14.29	18/219.82

Steris* Alcare Plus* Antiseptic Handrub with Emollients

Fast-acting, foamed, alcohol-based handwash with added emollients that moisturize skin

Ideal for use when soap and water are not available.

- Contains 62% ethyl alcohol by volume
- Provides broad spectrum activity against pathogenic microorganisms, including methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant enterococci (VRE)
- Spreads easily to facilitate even distribution over all skin surfaces for effective disinfection

14-415-25, 14-415-26

Size	Cat. No.	Each	Case of 24
5⅜ oz. (160mL)	**14-415-26**	15.73	294.88
9 oz. (266mL)	**14-415-25**	19.09	357.85

Steris* Cal Stat* Plus Antiseptic Handrub

Quickly decontaminates visibly clean hands

- A 63% v/v isopropyl-alcohol base
- Provides demonstrated complete kill of a broad spectrum of transient microorganisms in 15 seconds, including methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant enterococci (VRE)
- Emollients moisturize skin
- Does not inactivate chlorhexidine gluconate (CHG) residual on skin
- Dermatologist-tested
- Dye-free
- Hypoallergenic

14-415-29, 14-415-27, 14-415-28

REQUIRED ACCESSORIES:

14-415-27 requires use of Steris Dispensing System (14-415-21).

Description	Cat. No.	Each	Case of
4 oz. (118mL) Squeeze bottle	**14-415-29**	6.71	72/360.47
15 oz. (444mL) Pump bottle	**14-415-28**	12.76	18/196.32
33¾ oz. (1L) Dispenser pack	**14-415-27**	27.99	12/287.08

SoftCIDE* Extra-Mild Antimicrobial Handwash

Fast-acting antimicrobial hand soap

- Effective against a broad spectrum of microorganisms, including gram positive and negative bacteria, yeast, and fungi
- Uses 1% PCMX as an active ingredient
- Unique formulation replenishes the natural oils of the skin
- pH balanced with the skin
- Utilizes a thick formulation to provide excellent sudsing and reduced runoff

12-544-09

Description	Cat. No.	Each	Case of
4 oz. (118mL) Squeeze bottle	**14-379-23**	4.55	12/45.64
16 oz. (473mL) Pump bottle	**14-379-24**	13.20	6/67.56
27 oz. (798mL) Bag-in-a-box carton refill	**14-379-25**	15.60	12/160.15
32 oz. (946mL) Pump bottle	**12-544-09**	26.60	6/136.45
1 gal. (3.8L) Refill jug	**12-544-22**	52.65	4/180.01

SoftCIDE*-EC Antimicrobial Handwash

A mild antimicrobial hand soap

- Contains 0.3% triclosan as an active ingredient
- Formulated with emollients to help soften skin
- Offers high sudsing power and a thick, rich texture
- pH balanced

14-379-27

Description	Cat. No.	Each	Case of 12
27 oz. (798mL) Bag-in-a-box carton refill	**14-379-26**	12.90	131.91
32 oz. (946mL) Pump bottle	**14-379-27**	15.90	163.04

SoftCIDE*-NA Plain Hand Soap

A mild hand soap

- Washes away harmful bacteria
- pH balanced
- High sudsing formula to remove low- to medium-duty soil

14-379-29

Description	Cat. No.	Each	Case of 12
27 oz. (798mL) Bag-in-a-box carton refill	**14-379-28**	11.90	121.78
32 oz. (946mL) Pump bottle	**14-379-29**	14.75	151.17

*Trademark. See Trademark Reference.

Decon* Proguard* Professional Hand Cream

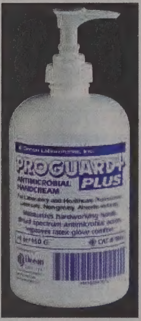
04-355-21, 04-355-20

Specially formulated lotion moisturizes dry, cracked hands and protects against latex glove irritation

- Does not contain grease, oil, perfume, aloe, or other ingredients that can compromise the integrity of latex gloves
- Absorbs instantly, leaving skin soft and protected

Description	Cat. No.	Each	Case of
3 oz. (90mL) Tube	**04-355-20**	6.84	12/68.44
16 oz. (475mL) Dispenser	**04-355-21**	23.64	6/121.25
Wall bracket for dispenser	**04-355-22**	5.44	12/54.35

Decon* Proguard* Plus Antimicrobial Hand Cream



04-355-123

The same popular formula as Proguard Professional Hand Cream with the addition of a safe antimicrobial agent

Prevents irritation from latex gloves and other irritants while moisturizing dry skin.

- Does not contain any ingredients that would compromise the integrity of latex gloves
- Absorbs instantly, leaving skin soft and protected

Size	Mfr. No.	Cat. No.	Each	Case of 6
16 oz. (473mL)	9416	**04-355-123**	24.50	125.62

Erada-Stain* Cream

For hands, glassware, and equipment

- Removes Wright's stain and most medical and histological stains
- Biodegradable
- Phosphate-free
- Safe on hands

04-330

Size	Cat. No.	Each	Pack of 12
6 oz. (170g)	**04-330**	24.19	248.14

Steris* Lotion Soft* Skin Conditioner Skin Cream

14-415-32, 14-415-30, 14-415-31

Moisturizes skin without compromising the anti-microbial activity of products containing chlorhexidine gluconate (CHG)

- Does not contain petrolatum or mineral oil—suitable for use under gloves
- Contains emollients and other softening ingredients that make it ideal for use after antimicrobial handwashing

REQUIRED ACCESSORIES:

14-415-30 requires use of Steris Dispensing System (14-415-21); visit our Web site for availability.

Description	Cat. No.	Each	Case of
4 oz. (115mL) Squeeze bottle	**14-415-32**	10.83	72/582.08
15 oz. (444mL) Pump bottle	**14-415-31**	23.81	12/244.17
33¾ oz. (1L) Dispenser pack	**14-415-30**	28.83	12/295.73

SoftGUARD* Extra-Strength Barrier Hand Cream

Prevents skin irritation caused washing and gloving

Unique barrier feature helps prevent the occlusion of the skin. Protects and moisturizes, allowing damaged skin to heal.

- Compatible with latex, nitrile, vinyl, PCMX, CHG, and antimicrobial soap—petroleum- and mineral oil-free
- Utilizes an extra-strength antimicrobial preservative to prevent cross-contamination
- Absorbs immediately
- Nongreasy, fragrance-free and pH balanced with the skin

SoftGUARD Extra-Strength Barrier Hand Cream

Description	Cat. No.	Each	Case of
2 oz. (59mL) Bottle	**14-379-20**	4.10	24/78.77
3 oz. (90mL) Tube	**19-023-979**	7.35	12/73.39
8 oz. (237mL) Tube	**14-379-46**	15.50	6/79.51
16 oz. (473mL) Pump bottle	**12-544-20**	20.80	6/106.65
27 oz. (798mL) Bag-in-a-box carton refill	**14-379-21**	20.55	12/210.45
1 gal. (3.8L) Refill jug	**14-379-22**	71.30	4/247.44

OPTICAL CLEANERS

***Fisher**brand** Optical Lens Cleaner

Excellent for removing oil and smudges from objectives or any optical surface

- Laboratory safe
- Nonflammable

22-143-974

Description	Cat. No.	Pack of 6	Case of 8 Pk.
2 oz. (59mL) bottle	**22-143-974**	33.49	228.96

CLONING AND EXPRESSION

ENZYMES

Fisher BioReagents* Restriction Enzymes

Provide the high performance and product dependability expected from Fisher BioReagents

- Each enzyme is subjected to stringent purity, activity, and functional assays
- For information on other convenient enzyme packaging sizes, contact your Fisher Scientific Customer Service Representative or visit our Web site.

Specifications for Restriction Enzyme Buffers (1X)

Buffer	pH (at 37°C)†	Tris-HCl	NaCl	KCl	MgCl$_2$	DTT
A	7.5	6mM	6mM	----	6mM	1mM
B	7.5	6mM	50mM	----	6mM	1mM
C	7.9	10mM	50mM	----	10mM	1mM
D	7.9	6mM	150mM	----	6mM	1mM
E	7.5	6mM	100mM	----	6mM	1mM
F	8.5	10mM	100mM	----	10mM	1mM
G	8.2	50mM	----	----	5mM	----
H	7.5	90mM	50mM	----	10mM	----
J	7.5	10mM	----	50mM	7mM	1mM
K	7.4	10mM	----	150mM	10mM	----
L	9.0	10mM	100mM	----	3mM	----

† Universal Buffer (1X) = 25mM Tris-acetate (pH 7.5 at 37°C), 100mM potassium acetate, 10mM magnesium acetate, 1mM DTT.

‡ For each 10°C rise in temperature between 0° and 25°C, the pH of the Tris buffers decreases 0.31 pH units. For each 10°C rise in temperature between 25° and 37°C, the pH of the Tris buffers decreases 0.25 pH units.

Name†	Recognition/ Cut Site	Units‡	Cat. No.	Each
Aat **II** Cloning (J)	GACGT▾C C▴TGCAG	50	**BP3300-1**	67.35
Acc **I** Cloning (G)	GT▾(A/C)(T/G)AC CA(T/G)(A/C)▴TG	100	**BP3302-1**	111.01
Acc **III** (F)	T▾CCGGA AGGCC▴T	200	**BP3304-1**	109.00
Acc **65 I** Cloning (D)	G▾GTACC CCATG▴G	1500	**BP3306-1**	83.83
Alu **I** (B)	AG▾CT TC▴GA	500	**BP3308-1**	76.94
Alw **44 I** (C)	G▾TGCAC CACGT▴G	1000	**BP3310-1**	74.22
Apa **I** Cloning (A)	GGGCC▾C C▴CCGGG	5000	**BP3312-1**	85.14
Ava **I** Cloning (B)	C▾(T/C)CG(A/G)G G(A/G)GC(T/C)▴C	200	**BP3314-1**	56.62
Ava **II** (C)	G▾G(A/T)CC CC(T/A)G▴G	100	**BP3316-1**	42.96
Bal **I** (G)	TGG▾CCA ACC▴GGT	50	**BP3318-1**	131.85
Bam **H I** Cloning (E)	G▾GATCC CCTAG▴G	2500 50,000 (HC)	**BP3320-1** **BP3320-7**	52.39 263.04
Ban **II** (E)	G(A/G)GC(T/C)▾C C▴(T/C)CG(A/G)G	1000	**BP3322-1**	76.77
Bcl **I** (C)	T▾GATCA ACTAG▴T	1000 5000 (HC)	**BP3324-1** **BP3324-5**	72.84 253.34
Bgl **II** (D)	A▾GATCT TCTAG▴A	500 2500 10,000	**BP3326-1** **BP3326-5** **BP3326-7**	45.11 164.15 468.15
***Bsp*1286 I** (A)	G(G/A/T)GC(C/A/T)▾C C▴(C/T/A)CG(G/T/A)G	500	**BP3328-1**	87.60
Bss **H II** (H)	G▾CGCGC CGCGC▴G	100	**BP3332-1**	72.84
Bst **98 I** (D)	C▾TTAAG GAATT▴C	500	**BP3334-1**	138.85
Bst **E II** (D)	G▾GTNACC CCANTG▴G	2000	**BP3336-1**	81.09
Bst **O I** (C)	CC▾(A/T)GG GG(T/A)▴CC	2000	**BP3338-1**	75.57
Bst **X I** Cloning (D)	CCANNNNN▾NTGG GGTN▴NNNNNACC	250	**BP3340-1**	42.96
Cfo **I** (B)	GCG▾C C▴GCG	3000	**BP3342-1**	106.96
Cla **I** Cloning and Genome (C)	AT▾CGAT TAGC▴TA	500	**BP3344-1**	76.47
Csp **I** (K)	CG▾G(A/T)CCG GCC(T/A)G▴GC	100	**BP3346-1**	131.35
Csp **45 I** Cloning and Genome (B)	TT▾CGAA AAGC▴TT	2500	**BP3348-1**	72.55
Dde **I** (D)	C▾TNAG GANT▴C	200	**BP3350-1**	36.02
Dpn **I** (B)	G^{me}A▾TC CT^{me}▴AG	200	**BP3352-1**	73.58
Dra **I** (B)	TTT▾AAA AAA▴TTT	2000	**BP3354-1**	72.84
***Eco*47 III** (D)	AGC▾GCT TCG▴CGA	50	**BP3358-1**	90.69
***Eco*R I** Cloning (H)	G▾AATTC CTTAA▴G	5000 50,000 (HC)	**BP3362-1** **BP3362-7**	36.40 169.53
***Eco*R V** Cloning (D)	GAT▾ATC CTA▴TAG	2000	**BP3356-1**	63.80
Fok **I** (B)	GGATG(N)$_9$▾ CCTAC(N)$_{13}$▴	100	**BP3364-1**	70.08
Hae **II** (B)	(A/G)GCGC▾(T/C) (T/C)▴CGCG(A/G)	1000	**BP3366-1**	70.08
Hae **III** (C)	GG▾CC CC▴GG	2500	**BP3368-1**	80.78
Hinc **II** Cloning (B)	GT(T/C)▾(A/G)AC CA(A/G)▴(T/C)TG	200	**BP3370-1**	62.28
Hind **III** Cloning (E)	A▾AGCTT TTCGA▴A	5000 50,000 (HC)	**BP3372-1** **BP3372-7**	29.12 201.82
Hinf **I** (B)	G▾ANTC CTNA▴G	1000 5000	**BP3374-1** **BP3374-5**	59.39 186.39
Hpa **I** (J)	GTT▾AAC CAA▴TTG	100	**BP3376-1**	63.21
Hpa **II** (A)	C▾CGG GGC▴C	1000	**BP3378-1**	90.69
Kpn **I** Cloning (J)	GGTAC▾C C▴CATGG	2500	**BP3380-1**	73.58

† Restriction enzyme buffer included indicated in parentheses; Cloning = Blue/White Cloning Qualified; Genome = Genome Qualified.
‡ HC = High concentration.

Continued on next page.

*Trademark. See Trademark Reference.

Fisher BioReagents* Restriction Enzymes, Contd.

Name†	Recognition/ Cut Site	Units‡	Cat. No.	Each
***Mlu* I** Cloning and Genome (D)	A▾CGCGT TGCGC▴A	1000	**BP3382-1**	59.39
***Msp* I** (B)	C▾CGG GGC▴C	2000	**BP3384-1**	72.84
***Nae* I** (A)	GCC▾GGC CGG▴CCG	250	**BP3386-1**	48.52
***Nar* I** Genome (G)	GG▾CGCC CCGC▴GG	200	**BP3388-1**	63.21
***Nco* I** Cloning (D)	C▾CATGG GGTAC▴C	200	**BP3390-1**	99.55
***Nde* I** (D)	CA▾TATG GTAT▴AC	500	**BP3392-1**	144.11
***Nhe* I** (B)	G▾CTAGC CGATC▴G	250	**BP3396-1**	82.25
***Not* I** Cloning and Genome (D)	GC▾GGCCGC CGCCGG▴CG	200	**BP3398-1**	63.64
***Nru* I** (K)	TCG▾CGA AGC▴GCT	200	**BP3400-1**	62.13
***Nsi* I** Cloning (D)	ATGCA▾T T▴ACGTA	250	**BP3402-1**	70.08
***Pst* I** Cloning (H)	CTGCA▾G G▴ACGTC	3000	**BP3404-1**	39.31
***Pvu* I** (D)	CGAT▾CG GC▴TAGC	100	**BP3406-1**	77.88
***Pvu* II** (B)	CAG▾CTG GTC▴GAC	1000	**BP3408-1**	53.38
***Rsa* I** (C)	GT▾AC CA▴TG	1000	**BP3410-1**	62.13
***Sac* I** Cloning (J)	GAGCT▾C C▴TCGAG	1000	**BP3412-1**	66.38
***Sac* II** Cloning (C)	CCGC▾GG GG▴CGCC	500	**BP3414-1**	73.58
***Sal* I** Cloning and Genome (D)	G▾TCGAC CAGCT▴G	2000	**BP3416-1**	77.93
***Sau* 3A I** (B)	▾GATC CTAG▴	100	**BP3418-1**	51.28
***Sau* 96 I** (C)	G▾GNCC CCNG▴G	300	**BP3420-1**	83.49
***Sca* I** (K)	AGT▾ACT TCA▴TGA	1000 5000 (HC)	**BP3422-1** **BP3422-5**	76.47 261.74
***Sfi* I** Cloning and Genome (B)	GGCCNNNN▾NGGCC CCGGN▴NNNNCCGG	250 1250 (HC)	**BP3424-1** **BP3424-5**	64.58 216.22
***Sma* I** Cloning and Genome (J)	CCC▾GGG GGG▴CCC	1000	**BP3426-1**	86.57
***Sna* B I** (B)	TAC▾GTA ATG▴CAT	100	**BP3428-1**	64.58
***Spe* I** Cloning and Genome (B)	A▾CTAGT TGATC▴A	200	**BP3430-1**	96.67
***Sph* I** Cloning (K)	GCATG▾C C▴GTACG	200	**BP3432-1**	101.00
***Ssp* I** (E)	AAT▾ATT TTA▴TAA	500	**BP3434-1**	103.86
***Stu* I** (B)	AGG▾CCT TCC▴GGA	400	**BP3436-1**	63.21
***Sty* I** Cloning (F)	C▾C(A/T)(T/A)GG GG(T/A)(A/T)C▴C	2000	**BP3438-1**	75.57
***Taq* I** (E)	T▾CGA AGC▴T	1000 5000 (HC)	**BP3440-1** **BP3440-7**	63.21 199.15
***Tru* 9 I** (F)	T▾TAA AAT▴T	200	**BP3442-1**	72.77
***Vsp* I** (D)	AT▾TAAT TAAT▴TA	500	**BP3446-1**	56.62
***Xba* I** Cloning and Genome (D)	T▾CTAGA AGATC▴T	2000 10,000 (HC)	**BP3448-1** **BP3448-7**	77.93 244.88
***Xho* I** Cloning and Genome (D)	C▾TCGAG GAGCT▴C	3000	**BP3450-1**	52.39
***Xho* II** (C)	(A/G)▾GATC(T/C) (T/C)CTAG▴(A/G)	100	**BP3452-1**	135.90
***Xmn* I** (B)	GAANN▾NNTTC CTTNN▴NNAAG	500	**BP3454-1**	67.35

LOOKING FOR THE RELATIVE ACTIVITY OF FISHER BIOREAGENTS* RESTRICTION ENZYMES IN 10X BUFFERS?

For a complete listing of the relative activities of Fisher BioReagents restriction enzymes in 10X restriction buffers, please see the Technical Reference section at the back of the catalog.

Takara* Restriction Enzymes

Specifications for Takara Restriction Enzyme Buffers (1X)

Buffer	pH	Tris-HCl	NaCl	KCl	$MgCl_2$	DTT
H	7.5	50mM	100mM	----	10mM	1mM
K	8.5	20mM	----	100mM	10mM	1mM
L	7.5	10mM	----	----	10mM	1mM
M	7.5	10mM	50mM	----	10mM	1mM

T Buffer (1X) = 33mM Tris-acetate (pH 7.9), 66mM potassium acetate, 10mM magnesium acetate, 0.5mM DTT. BSA should be added to a final concentration of 0.01% to obtain 100% activity.

Name†	Recognition/ Cut Site	Units‡	Cat. No.	Each
***Aat* II** Genome (T)	GACGT▾C C▴TGCAG	100	**TAK 1112A**	52.66
***Acc* I** (M)	GT▾(A/C)(G/T)AC CA(T/G)(C/A)▴TG	100	**TAK 1001A**	52.66
***Acc* II** (*Fnu*D II) (M)	CG▾CG GC▴GC	100	**TAK 1002A**	54.72
***Afl* II** (M)	C▾TTAAG GAATT▴C	100	**TAK 1003A**	46.76
***Alu* I** (L)	AG▾CT TC▴GA	500	**TAK 1004A**	68.15
***Apa* I** (L)	GGGCC▾C C▴CCGGG	10,000	**TAK 1005A**	91.89
***Bam* H I** (K)	G▾GATCC CCTAG▴G	2500 10,000	**TAK 1010S** **TAK 1010A**	33.25 45.72
***Bgl* I** Genome (*Bgl* I buffer)	GCCNNNN▾NGGC CGGN▴NNNNCCG	1000	**TAK 1020A**	23.90
***Bgl* II** (H)	A▾GATCT TCTAG▴A	500 2000	**TAK 1021S** **TAK 1021A**	33.25 54.72

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† Restriction enzyme buffer included indicated in parentheses; Cloning = Blue/White Cloning Qualified; Genome = Genome Qualified.

‡ HC = High concentration.

Takara* Restriction Enzymes, Contd.

Name†	Recognition/ Cut Site	Units‡	Cat. No.	Each
***Bln* I** (*Avr* II) Genome (K)	C▼CTAGG GGATC▲C	400	**TAK 1022A**	76.41
***Bpu* 1102 I** (*Esp* I) (T)	GC▼TNAGC CGANT▲CG	150	**TAK 1023A**	107.56
***Bsp*T107 I**	G▼G(C/T)(A/G)CC CC(G/A)(T/C)G▲G	1000	**TAK 1223A**	65.05
***Bss* H II** (*Bse*P I) Genome (M)	G▼CGCGC CGCGC▲G	300	**TAK 1119A**	64.58
***Bst* 1107 I** (*Sna* I) Genome (K)	GTA▼TAC CAT▲ATG	150	**TAK 1028A**	149.76
***Bst* X I** (H)	CCANNNNN▼NTGG GGTN▲NNNNNACC	1000	**TAK 1027A**	54.33
***Cla* I** Genome (M)	AT▼CGAT TAGC▲TA	500 1000	**TAK 1034S** **TAK 1034A**	43.39 75.85
***Cpo* I** (*Rsr* II) Genome (K)	CG▼G(A/T)CCG GCC(T/A)G▲GC	400	**TAK 1035A**	86.10
***Dra* I** (*Aha* III) Genome (M)	TTT▼AAA AAA▲TTT	4000	**TAK 1037A**	86.10
***Eco* 065 I** (*Bst* E II) (H)	G▼GTNACC CCANTG▲G	1000	**TAK 1135A**	59.89
***Eco* R I** (H)	G▼AATTC CTTAA▲G	5000 10,000	**TAK 1040S** **TAK 1040A**	26.78 38.11
***Eco* R V** (H)	GAT▼ATC CTA▲TAG	3000	**TAK 1042A**	59.45
***Fse* I**	GGCCGG▼CC CC▲GGCCGG	50	**TAK 1047A**	29.87
***Hae* III** (M)	GG▼CC CC▲GG	4000	**TAK 1051A**	54.06
***Hha* I** (*Cfo* I) (M)	GCG▼C C▲GCG	2000	**TAK 1056A**	47.10
***Hinc* II** (*Hind* II) (M)	GT(T/C)▼(A/G)AC CA(A/G)▲(T/C)TG	1000	**TAK 1059A**	45.06
***Hind* III** (M)	A▼AGCTT TTCGA▲A	5000 10,000	**TAK 1060S** **TAK 1060A**	26.62 43.01
***Hinf* I** (H)	G▼ANTC CTNA▲G	3000	**TAK 1061A**	43.01
***Hpa* I** (K)	GTT▼AAC CAA▲TTG	500	**TAK 1064A**	45.06
***Kpn* I** (*Acc*65 I) (L)	GGTAC▼C C▲CATGG	2500 5000	**TAK 1068S** **TAK 1068A**	43.01 59.16
***Mbo* I** (*Sau*3A I) (K)	▼GATC CTAG▲	1000	**TAK 1069A**	106.58
***Mbo* II** (L)	GAAGANNNNNNNN▼ CTTCTNNNNNNN▲	400	**TAK 1145A**	59.16
***Mlu* I** Genome (H)	A▼CGCGT TGCGC▲A	1000	**TAK 1071A**	45.06
***Msp* I** (*Hpa* II) (T)	C▼CGG GGC▲C	3000	**TAK 1150A**	90.78
***Mun* I** (*Mfe* I) Genome (M)	C▼AATTG GTTAA▲C	150	**TAK 1153A**	90.78
***Mva* I** (*Eco*R II) (K)	CC▼(A/T)GG GG(T/A)▲CC	2000	**TAK 1072A**	75.48
***Nae* I** Genome (L)	GCC▼GGC CGG▲CCG	500	**TAK 1155A**	45.06
***Nco* I** (K)	C▼CATGG GGTAC▲C	250 500	**TAK 1160S** **TAK 1160A**	52.02 79.56
***Nde* I** (H)	CA▼TATG GTAT▲AC	400	**TAK 1161A**	52.02
***Nhe* I** Genome (M)	G▼CTAGC CGATC▲G	250 500	**TAK 1162S** **TAK 1162A**	37.89 54.06
***Not* I** Genome (H)	GC▼GGCCGC CGCCGG▲CG	250 500	**TAK 1166S** **TAK 1166A**	43.01 59.16
***Nru* I** Genome (*Nru* I buffer)	TCG▼CGA AGC▲GCT	1000	**TAK 1168A**	47.79
***Pst* I** (H)	CTGCA▼G G▲ACGTC	5000 10,000	**TAK 1073S** **TAK 1073A**	37.89 54.06
***Pvu* I** Genome (K)	CGAT▼CG GC▲TAGC	200	**TAK 1075A**	59.16
***Pvu* II** (M)	CAG▼CTG GTC▲GAC	2000	**TAK 1076A**	52.40
***Sac* I** (L)	GAGCT▼C C▲TCGAG	1000 2000	**TAK 1078S** **TAK 1078A**	32.77 47.10
***Sac* II** Genome (T)	CCGC▼GG GG▲CGCC	1000	**TAK 1079A**	39.94
***Sal* I** Genome (M)	G▼TCGAC CAGCT▲G	1500 3000	**TAK 1080S** **TAK 1080A**	37.89 59.16
***Sau* 3A I** (*Mbo* I) (H)	▼GATC CTAG▲	200	**TAK 1082A**	45.06
***Sca* I** (H)	AGT▼ACT TCA▲TGA	1500	**TAK 1084A**	59.16
***Sma* I** Genome (T)	CCC▼GGG GGG▲CCC	1000 2000	**TAK 1085S** **TAK 1085A**	32.77 45.06
***Spe* I** Genome (M)	A▼CTAGT TGATC▲A	300	**TAK 1086A**	32.77
***Sph* I** (H)	GCATG▼C C▲GTACG	400	**TAK 1180A**	85.68
***Sse* 8387 I** Genome (M)	CCTGCA▼GG GG▲ACGTCC	400	**TAK 1183A**	75.48
***Ssp* I** Genome (*Ssp* I buffer)	AAT▼ATT TTA▲TAA	500	**TAK 1185A**	52.02
***Stu* I** (M)	AGG▼CCT TCC▲GGA	500	**TAK 1088A**	23.55
***Xba* I** Genome (M)	T▼CTAGA AGATC▲T	1500 3000	**TAK 1093S** **TAK 1093A**	37.89 54.06
***Xho* I** Genome (H)	C▼TCGAG GAGCT▲C	2500 5000	**TAK 1094S** **TAK 1094A**	37.89 59.16

† Restriction enzyme buffer included indicated in parentheses; Cloning = Blue/White Cloning Qualified; Genome = Genome Qualified.
‡ HC = High concentration.

*Trademark. See Trademark Reference.

Prices subject to change.

Promega* Restriction Enzymes

- Enzymes will perform to 100% of certified activity in the supplied 10X buffer indicated by letter in parentheses following the enzyme name
- Multi-Core* buffer provided unless the enzyme exhibits less than 25% of optimal activity when the buffer is used
- Most enzymes are supplied at 8 to 12 units/µL; higher concentrations of 40 to 80 units/µL are available for selected enzymes and are designated by (HC)

STORAGE CONDITIONS:

Store as detailed on label.

Specifications for Restriction Enzyme Buffers

Buffers are supplied as 10X stocks. The concentrations shown are for the 1X concentrations. **Note:** BSA is not included in the buffers supplied, but the user may add BSA to a final concentration of 0.1mg/mL.

Buffer	pH at 37°C†	Tris-HCl	NaCl	KCl	$MgCl_2$	DTT
A	7.5	6mM	6mM	----	6mM	1mM
B	7.5	6mM	50mM	----	6mM	1mM
C	7.9	10mM	50mM	----	10mM	1mM
D	7.9	6mM	150mM	----	6mM	1mM
E	7.5	6mM	100mM	----	6mM	1mM
F	8.5	10mM	100mM	----	10mM	1mM
G	8.2	50mM	----	----	5mM	----
H	7.5	90mM	50mM	----	10mM	----
J	7.5	10mM	----	50mM	7mM	1mM
K	7.4	10mM	----	150mM	10mM	----
L	9.0	10mM	100mM	----	3mM	----

† For each 10°C rise in temperature, the pH of the Tris buffers decreases 0.31 pH units between 0° and 25°C. For each 10°C rise in temperature, the pH of Tris buffers decreases 0.25 pH units between 25° and 37°C.

Name†	Recognition/ Cut Site	Units‡	Cat. No.	Each
***Aat* II** Cloning (J)	GACGT▼C C▲TGCAG	50	**PR-R6541**	56.28
		250	**PR-R6545**	210.79
***Acc* I** Cloning (G)	GT▼(A/C)(T/G)AC CA(T/G)(A/C)▲TG	100	**PR-R6411**	95.48
		500	**PR-R6415**	241.90
***Acc* III** (F)	T▼CCGGA AGGCC▲T	200	**PR-R6581**	103.52
***Acc* 65 I** Cloning (D)	G▼GTACC CCATG▲G	1500	**PR-R6921**	71.36
***Acc* B7 I** (E)	CCANNNN▼NTGG GGTN▲NNNNACC	200	**PR-R7081**	61.31
***Alu* I** (B)	AG▼CT TC▲GA	500	**PR-R6281**	66.33
		5 × 500	**PR-ZR6281**	305.38
***Alw* 26 I** (C)	GTCTC(N)$_1$▼ CAGAG(N)$_5$▲	100	**PR-R6761**	60.30
		500	**PR-R6765**	237.89
***Alw* 44 I** (C)	G▼TGCAC CACGT▲G	1000	**PR-R6771**	62.31
***Apa* I** Cloning (A)	GGGCC▼C C▲CCGGG	5000	**PR-R6361**	65.33
		25,000 (HC)	**PR-R4364**	230.86
***Ava* I** Cloning (B)	C▼(T/C)CG(A/G)G G(A/G)GC(T/C)▲C	200	**PR-R6091**	45.27
		1000	**PR-R6095**	166.62
***Ava* II** (C)	G▼G(A/T)CC CC(T/A)G▲G	100	**PR-R6131**	35.21
		1000	**PR-R6135**	230.86
***Bal* I** (G)	TGG▼CCA ACC▲GGT	50	**PR-R6691**	110.41
		250	**PR-R6695**	402.50
***Bam* H I** Cloning (E)	G▼GATCC CCTAG▲G	2500	**PR-R6021**	41.25
		5 × 2500	**PR-ZR6021**	190.71
		12,500	**PR-R6025**	140.53
		12,500 (HC)	**PR-R4024**	120.45
***Ban* I** (G)	G▼G(T/C)(A/G)CC CC(A/G)(T/C)G▲G	200	**PR-R6891**	62.31
***Ban* II** (E)	G(A/G)GC(T/C)▼C C▲(T/C)CG(A/G)G	1000	**PR-R6561**	71.36
***Bbu* I** (A)	GCATG▼C C▲GTACG	200	**PR-R6621**	76.38
		1000 (HC)	**PR-R4624**	270.34
***Bcl* I** Genome (C)	T▼GATCA ACTAG▲T	1000	**PR-R6651**	61.31
		5000 (HC)	**PR-R4654**	215.81
***Bgl* I** Genome (D)	GCCNNNN▼NGGC CGGN▲NNNNCCG	1000	**PR-R6071**	45.27
		5000 (HC)	**PR-R4074**	160.60
		5000	**PR-R6077**	175.66
***Bgl* II** (D)	A▼GATCT TCTAG▲A	500	**PR-R6081**	36.22
		5 × 500	**PR-ZR6081**	170.64
		2500	**PR-R6085**	138.52
		2500 (HC)	**PR-R4084**	150.56
		10,000	**PR-R6087**	457.57
***Bsp*1286 I** (A)	G(G/A/T)GC(C/A/T)▼C C▲(C/T/A)CG(G/T/A)G	500	**PR-R6741**	75.38
***Bsr* S I** (D)	ACTGGN▼ TGAC▲CN	500	**PR-R7241**	63.32
***Bss* H II** Genome (H)	G▼CGCGC CGCGC▲G	100	**PR-R6831**	61.31
		500	**PR-R6835**	208.78
***Bst* 98 I** (D)	C▼TTAAG GAATT▲C	500	**PR-R7141**	63.32
***Bst* E II** (D)	G▼GTNACC CCANTG▲G	2000	**PR-R6641**	67.34
***Bst* O I** (C)	CC▼(A/T)GG GG(T/A)▲CC	2000	**PR-R6931**	63.32
***Bst* X I** Cloning (D)	CCANNNNN▼NTGG GGTN▲NNNNNACC	250	**PR-R6471**	36.22
		5 × 250	**PR-ZR6471**	170.64
		1000	**PR-R6475**	138.52
***BstZ* I** Cloning and Genome (D)	C▼GGCCG GCCGG▲C	500	**PR-R6881**	54.27
***Bsu* 36 I** (E)	CC▼TNAGG GGANT▲CC	500	**PR-R6821**	56.28
		5 × 500	**PR-ZR6821**	260.33
***Cfo* I** (B)	GCG▼C C▲GCG	3000	**PR-R6241**	88.44
***Cla* I** Cloning and Genome (C)	AT▼CGAT TAGC▲TA	500	**PR-R6551**	63.32
		2500	**PR-R6555**	213.80
		5 × 500	**PR-ZR6551**	285.36
***Csp* I** Genome (K)	CG▼G(A/T)CCG GCC(T/A)G▲GC	100	**PR-R6671**	110.41
		500	**PR-R6675**	402.50
***Csp*45 I** Cloning and Genome (B)	TT▼CGAA AAGC▲TT	2500	**PR-R6571**	61.31
***Eco* ICR I** Cloning (B)	GAG▼CTC CTC▲GAG	1000	**PR-R6951**	44.26
		5000 (HC)	**PR-R4954**	160.60
***Eco*R I** Cloning (H)	G▼AATTC CTTAA▲G	5000	**PR-R6011**	30.18
		5 × 5000	**PR-ZR6011**	140.53
		15,000	**PR-R6017**	72.36
		25,000 (HC)	**PR-R4014**	85.43
		50,000 (HC)	**PR-R4017**	140.53

Restriction enzyme buffer included indicated in parentheses; Cloning = Blue/White Cloning Qualified; Genome = Genome Qualified.
HC = High concentration.

Promega* Restriction Enzymes, Contd.

Name†	Recognition/ Cut Site	Units‡	Cat. No.	Each
Eco RV Cloning (D)	GAT▾ATC CTA▴TAG	2000	**PR-R6351**	49.30
		5 × 2000	**PR-ZR6351**	230.86
		10,000	**PR-R6355**	188.71
		10,000 (HC)	**PR-R4354**	185.69
***Fok* I** (B)	GGATG$(N)_9$▾ CCTAC$(N)_{13}$▴	100	**PR-R6781**	60.30
***Hae* II** (B)	(A/G)GCGC▾(T/C) (T/C)▴CGCG(A/G)	1000	**PR-R6661**	60.30
***Hae* III** (C)	GG▾CC CC▴GG	2500	**PR-R6171**	67.34
		5 × 2500	**PR-ZR6171**	305.38
		10,000	**PR-R6175**	191.72
		50,000 (5 × 10,000)	**PR-ZR6175**	880.00
		12,500 (HC)	**PR-R4174**	205.77
***Hha* I** (C)	GCG▾C C▴GCG	1000	**PR-R6441**	46.28
		5 × 1000	**PR-ZR6441**	215.81
***Hinc* II** Cloning (B)	GT(T/C)▾(A/G)AC CA(A/G)▴(T/C)TG	200	**PR-R6031**	46.28
		5 × 200	**PR-ZR6031**	215.81
		1000	**PR-R6035**	161.60
		1000 (HC)	**PR-R4034**	160.60
		5000	**PR-R6037**	575.00
***Hind* III** Cloning (E)	A▾AGCTT TTCGA▴A	5000	**PR-R6041**	25.15
		5 × 5000	**PR-ZR6041**	115.43
		15,000	**PR-R6045**	67.34
		75,000 (5 × 15,000)	**PR-ZR6045**	310.39
		25,000 (HC)	**PR-R4044**	90.45
		50,000 (HC)	**PR-R4047**	165.62
***Hinf* I** (B)	G▾ANTC CTNA▴G	1000	**PR-R6201**	46.28
		5000	**PR-R6205**	180.68
		5000 (HC)	**PR-R4204**	185.70
		5 × 5000 (HC)	**PR-ZR4204**	855.00
***Hpa* I** (J)	GTT▾AAC CAA▴TTG	100	**PR-R6301**	50.30
		500	**PR-R6305**	188.71
***Hpa* II** (A)	C▾CGG GGC▴C	1000	**PR-R6311**	75.38
		5000	**PR-R6315**	275.34
***Hsp* 92 I** (F)	G(A/G)▾CG(T/C)C C(T/C)GC▴(A/G)G	500	**PR-R7151**	50.30
***Hsp* 92 II** (K)	CATG▾ ▴GTAC	1000	**PR-R7161**	66.33
		5 × 1000	**PR-ZR7161**	305.38
I-*Ppo* I Buffer	CTCTCTTAA▾GGTAGC GAGAG▴AATTCCATCG	10,000	**PR-R7031**	114.43
***Kpn* I** Cloning (J)	GGTAC▾C C▴CATGG	2500	**PR-R6341**	62.31
		5 × 2500	**PR-ZR6341**	285.36
		10,000	**PR-R6345**	126.47
		12,500 (HC)	**PR-R4344**	165.62
***Mbo* I** (C)	▾GATC CTAG▴	200	**PR-R6711**	62.31
***Mlu* I** Cloning and Genome (D)	A▾CGCGT TGCGC▴A	1000	**PR-R6381**	63.32
		5 × 1000	**PR-ZR6381**	295.37
***Msp* I** (B)	C▾CGG GGC▴C	2000	**PR-R6401**	63.32
		5 × 2000	**PR-ZR6401**	295.37
		10,000	**PR-R6405**	215.81
		10,000 (HC)	**PR-R4404**	215.81
***MspA1* I** (B)	C(A/C)G▾C(G/T)G G(T/G)C▴G(C/A)C	1000	**PR-R7021**	76.38
		5 × 1000	**PR-ZR7021**	355.44
***Nco* I** Cloning (D)	C▾CATGG GGTAC▴C	200	**PR-R6513**	75.38
		5 × 200	**PR-ZR6513**	383.43
		1000	**PR-R6515**	307.38
		5 × 1000	**PR-ZR6515**	1430.00
***Nde* I** (D)	CA▾TATG GTAT▴AC	500	**PR-R6801**	117.44
		5 × 500	**PR-ZR6801**	545.00
***Nde* II** (D)	▾GATC CTAG▴	1000	**PR-R7295**	180.68
***Nhe* I** Genome (B)	G▾CTAGC CGATC▴G	250	**PR-R6501**	67.34
		5 × 250	**PR-ZR6501**	310.39
		1250	**PR-R6505**	228.86
***Not* I** Cloning and Genome (D)	GC▾GGCCGC CGCCGG▴CG	200	**PR-R6431**	60.20
		5 × 200	**PR-ZR6431**	280.75
		1000	**PR-R6435**	226.40
		1000 (HC)	**PR-R4434**	252.75
***Nsi* I** Cloning (D)	ATGCA▾T T▴ACGTA	250	**PR-R6531**	61.31
		5 × 250	**PR-ZR6531**	285.36
***Pst* I** Cloning (H)	CTGCA▾G G▴ACGTC	3000	**PR-R6111**	32.20
		5 × 3000	**PR-ZR6111**	150.56
		15,000	**PR-R6115**	117.44
		15,000 (HC)	**PR-R4114**	115.43
***Pvu* I** (D)	CGAT▾CG GC▴TAGC	100	**PR-R6321**	61.31
		500	**PR-R6325**	236.89
***Pvu* II** (B)	CAG▾CTG GTC▴GAC	1000	**PR-R6331**	41.25
		5 × 1000	**PR-ZR6331**	185.69
		5000	**PR-R6335**	151.57
***Rsa* I** (C)	GT▾AC CA▴TG	1000	**PR-R6371**	50.30
		5 × 1000	**PR-ZR6371**	235.88
		5000 (HC)	**PR-R4374**	190.71
***Sac* I** Cloning (J)	GAGCT▾C C▴TCGAG	1000	**PR-R6061**	52.31
		5 × 1000	**PR-ZR6061**	240.90
		5000	**PR-R6065**	188.71
		5000 (HC)	**PR-R4064**	184.69
***Sac* II** Cloning (C)	CCGC▾GG GG▴CGCC	500	**PR-R6221**	61.31
		5 × 500	**PR-ZR6221**	285.36
***Sal* I** Cloning and Genome (D)	G▾TCGAC CAGCT▴G	2000	**PR-R6051**	64.32
		5 × 2000	**PR-ZR6051**	300.38
		10,000	**PR-R6055**	230.86
		10,000 (HC)	**PR-R4054**	229.86
***Sau* 3A I** (B)	▾GATC CTAG▴	100	**PR-R6191**	42.26
		5 × 100	**PR-ZR6191**	195.73
		500	**PR-R6195**	160.60
		5 × 500	**PR-ZR6195**	745.00
***Sca* I** (K)	AGT▾ACT TCA▴TGA	1000	**PR-R6211**	63.32
		5 × 1000	**PR-ZR6211**	295.37
		5000 (HC)	**PR-R4214**	225.84
***Sfi* I** Cloning and Genome (B)	GGCCNNNN▾NGGCC CCGGN▴NNNNCCGG	250	**PR-R6391**	52.26
		1250 (HC)	**PR-R4394**	210.79
***Sgf* I** Genome (C)	GCGAT▾CGC CGC▴TAGCG	250	**PR-R7103**	70.35
		1250 (HC)	**PR-R5104**	265.33
***Sin* I** (A)	G▾G(A/T)CC CC(T/A)G▴G	1000	**PR-R4144**	165.62

Continued on next page.

† *Restriction enzyme buffer included indicated in parentheses; Cloning = Blue/White Cloning Qualified; Genome = Genome Qualified.*

‡ *HC = High concentration.*

*Trademark. See Trademark Reference.

Prices subject to change.

Promega* Restriction Enzymes, Contd.

Name†	Recognition/ Cut Site	Units‡	Cat. No.	Each
***Sma* I** Cloning and Genome (J)	CCC▼GGG GGG▲CCC	1000	**PR-R6121**	70.35
		5 × 1000	**PR-ZR6121**	325.41
		5000	**PR-R6125**	215.81
		5000 (HC)	**PR-R4124**	202.76
***Sna* B I** (B)	TAC▼GTA ATG▲CAT	100	**PR-R6791**	52.26
		500	**PR-R6795**	210.79
***Spe* I** Cloning and Genome (B)	A▼CTAGT TGATC▲A	200	**PR-R6591**	73.37
		1000	**PR-R6595**	279.35
***Sph* I** Cloning (K)	GCATG▼C C▲GTACG	200	**PR-R6261**	80.40
		5 × 200	**PR-ZR6261**	375.47
		1000	**PR-R6265**	298.37
***Ssp* I** Genome (E)	AAT▼ATT TTA▲TAA	500	**PR-R6601**	88.45
		2500 (HC)	**PR-R4604**	300.38
***Stu* I** (B)	AGG▼CCT TCC▲GGA	400	**PR-R6421**	50.30
***Taq* I** (E)	T▼CGA AGC▲T	5 × 1000	**PR-ZR6151**	240.90
		10,000	**PR-R6155**	290.36
		5000 (HC)	**PR-R4154**	170.64
***Xba* I** Cloning and Genome (D)	T▼CTAGA AGATC▲T	2000	**PR-R6181**	64.32
		5 × 2000	**PR-ZR6181**	290.36
		10,000	**PR-R6185**	205.77
		10,000 (HC)	**PR-R4184**	205.77
***Xho* I** Cloning and Genome (D)	C▼TCGAG GAGCT▲C	3000	**PR-R6161**	41.25
		5 × 3000	**PR-ZR6161**	190.71
		10,000	**PR-R6165**	130.49
		15,000 (HC)	**PR-R4164**	175.66
***Xho* II** (C)	(A/G)▼GATC(T/C) (T/C)CTAG▲(A/G)	100	**PR-R6811**	113.42
		500	**PR-R6815**	428.54
***Xma* I** Cloning (B)	C▼CCGGG GGGCC▲C	5 × 50	**PR-ZR6491**	305.38
		250	**PR-R6495**	227.85
***Xmn* I** (B)	GAANN▼NNTTC CTTNN▲NNAAG	500	**PR-R7271**	56.28
		2500	**PR-R7273**	180.68

† Restriction enzyme buffer included indicated in parentheses; Cloning = Blue/White Cloning Qualified; Genome = Genome Qualified.

‡ HC = High concentration.

Fisher BioReagents* Modifying Enzymes

Provide the high performance and dependability expected from Fisher BioReagents

- Each enzyme is subjected to stringent purity, activity, and functional assays
- For information on other convenient enzyme packaging sizes, contact your Fisher Scientific Customer Service Representative or visit our Web site.

Name	Units†	Cat. No.	Each
Alkaline Phosphatase, Calf Intestinal (CIAP)	1000	**BP3217-1**	77.28
AMV Reverse Transcriptase	300	**BP3207-1**	100.89
	1000	**BP3207-5**	247.54
DNA Polymerase I	500	**BP3200-1**	124.43
	2500	**BP3200-5**	460.77
DNA Polymerase I Large (Klenow) Fragment	150	**BP3201-1**	111.82
	500	**BP3201-5**	257.89
Exonuclease III	5000	**BP3213-1**	80.35
	25,000	**BP3213-5**	243.51
Mung Bean Nuclease	2000	**BP3214-1**	94.76
Ribonuclease H	50	**BP3215-1**	194.05
	250	**BP3215-5**	693.18

Contd. above.

Fisher BioReagents* Modifying Enzymes, Contd.

Name	Units†	Cat. No.	Each
RQ1 RNase-Free DNase	1000	**BP3223-1**	49.37
S1 Nuclease	10,000	**BP3216-1**	40.53
SP6 RNA Polymerase	1000	**BP3204-1**	181.88
T3 RNA Polymerase	1000	**BP3206-1**	45.69
	2500 (HC)	**BP3206-5**	80.35
T4 DNA Ligase	100	**BP3210-1**	43.61
	500	**BP3210-5**	190.04
T4 DNA Polymerase	100	**BP3202-1**	98.13
	500	**BP3202-5**	344.69
T4 Polynucleotide Kinase	100	**BP3212-1**	59.45
	1000	**BP3212-5**	370.70
T4 RNA Ligase	500	**BP3211-1**	121.91
T7 RNA Polymerase	1000	**BP3205-1**	66.38
	5000	**BP3205-5**	208.28
	10,000 (HC)	**BP3205-7**	331.77
Terminal Deoxynucleotidyl Transferase (Recombinant)	300	**BP3203-1**	77.54
	1500	**BP3203-5**	272.24
Topoisomerase I	200	**BP3221-1**	145.49

† HC = High concentration.

Takara* Modifying Enzymes

All enzymes are manufactured to the highest quality specifications

Name	Units†	Cat. No.	Each
		TAK 2250A	75.85
BAL 31 Nuclease	50	**TAK 2510A**	75.85
DNA Ligase (*E. coli*)	1000	**TAK 2160A**	75.85
DNA Polymerase I	500	**TAK 2130A**	64.58
Exonuclease III	5000	**TAK 2170A**	43.26
Klenow Fragment (DNA Polymerase I Large Fragment)	100	**TAK 2140S**	29.87
	200	**TAK 2140A**	47.38
Mung Bean Nuclease	2000	**TAK 2420A**	64.58
Ribonuclease H (RNase H)	1000	**TAK 2150A**	75.85
S1 Nuclease	20,000	**TAK 2410A**	64.58
SP6 RNA Polymerase	3000	**TAK 2520A**	213.94
T4 DNA Ligase	12,500	**TAK 2011S**	26.78
	25,000	**TAK 2011A**	43.26
T4 DNA Polymerase	100	**TAK 2040A**	80.00
T4 Polynucleotide Kinase	100	**TAK 2021S**	33.06
	1000	**TAK 2021A**	106.97
T4 RNA Ligase	1000	**TAK 2050A**	149.76
T7 RNA Polymerase	5000	**TAK 2540A**	54.33

†HC = High concentration.

Promega* Modifying Enzymes

Available in convenient, cost-effective concentrations that are economical and easy to pipet

PR-M Series

- The activity of each enyzme is 100% guaranteed through the expiration date on the vial
- Selected enzymes are available at high concentration and are designated by (HC)
- Many items have 24-month lifetimes
- Enzymes are rigorously tested for performance in the actual applications for which they are commonly used

STORAGE CONDITIONS:

Store as detailed on label.

Name	Units†	Cat. No.	Each
AMV Reverse Transcriptase	300	**PR-M5101**	82.20
	1000	**PR-M5108**	221.40
	600 (HC)	**PR-M9004**	158.40
Alkaline Phosphatase, Calf Intestinal	1000	**PR-M1821**	63.20
DNA Polymerase I	500	**PR-M2051**	113.40
Klenow Fragment, DNA Polymerase I	150	**PR-M2201**	93.20
	150, kit‡	**PR-U1300**	99.20
Klenow, Exo Minus	100	**PR-M2181**	47.20
M-MLV Reverse Transcriptase	10,000	**PR-M1701**	53.20
	50,000	**PR-M1705**	196.40
M-MLV Reverse Transcriptase Buffer Pack	2 × 1mL	**PR-M5313**	15.20
Mung Bean Nuclease	2000	**PR-M4311**	78.20
Ribonuclease H	50	**PR-M4281**	165.40
RNase One*	1000	**PR-M4261**	93.20
RQ1 RNase-Free DNase	1000	**PR-M6101**	41.25
S1 Nuclease	10,000	**PR-M5761**	34.20
SP6 RNA Polymerase	1000	**PR-P1085**	158.40
	2500 (HC)	**PR-P4084**	305.75
T3 RNA Polymerase	1000	**PR-P2083**	38.20
	2500 (HC)	**PR-P4024**	70.20
T4 DNA Ligase	100	**PR-M1801**	41.20
	500	**PR-M1794**	165.40
T4 DNA Polymerase††	100	**PR-M4211**	82.20
T4 Polynucleotide Kinase	100	**PR-M4101**	47.20
T4 RNA Ligase	500	**PR-M1051**	108.40
T7 RNA Polymerase	1000	**PR-P2075**	54.20
	10,000 (HC)	**PR-P4074**	302.75
Terminal Deoxynucleotidyl Transferase	300	**PR-M1871**	67.20
Topoisomerase I	200	**PR-M2851**	129.40

† HC= High concentration.

‡ DNA polymerase kit includes 5µmoles each of dATP, dCTP, dGTP, and dTTP at 10mM in water.

†† Licensed under U.S. Patent 4,935,361.

Fisher BioReagents* Optizyme Ribonuclease Inhibitor, Recombinant

Protects RNA from degradation by RNases

- Supplied as a recombinant product from *E. coli* (originally isolated from rat lung) and provides superior protection of RNA from degradation by RNases
- Commonly added to all solutions used during the isolation of RNA, and will not interfere with the performance of most enzymes in downstream applications
- Active over a broad temperature range, and even provides some RNase inhibition at 60°C, which is useful when performing reverse transcription reactions at elevated temperatures to overcome secondary structure in RNA
- Storage Buffer Components: 20mM HEPES-KOH (pH 7.6 at 4°C), 50mM KCl, 8mM DTT, and 50% glycerol (v/v)
- Displays a broad spectrum of inhibitory activity against RNases and does not have activity against other polymerases and reverse transcriptases
- Suitable for use in common molecular biology applications such as isolation and purification of RNA, cDNA synthesis, RT-PCR, in vitro RNA transcription/translation, ribonuclease protection assay, and preparation of RNase-free antibodies

NOTE:

Inactivates RNase A, RNase B, and RNase T2; No activity against SP6, T7, or T3 RNA polymerases, AMV or MMLV reverse transcriptases, and *Taq* DNA polymerase.

Quantity	Concentration	Cat. No.	Each
2500U	20–40U/µL	**BP3222-1**	102.44
10,000U	20–40U/µL	**BP3222-5**	256.89

Takara* Ribonuclease Inhibitor from Human Placenta

Noncompetitively inhibits a variety of eukaryotic RNases, including RNase A, B, and C

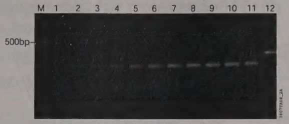
- Active over a wide range of pH in the presence of 1mM DTT
- Supplied in 20mM HEPES-KOH pH 7.5, 50mM KCl, 5mM DTT, and 50% glycerol

Source	Quantity	Concentration	Cat. No.	Each
Human Placenta	2500U	40U/µL	**TAK 2310S**	64.26
	5000U	40U/µL	**TAK 2310A**	106.58
	5 × 5000U	40U/µL	**TAK 2310B**	476.84

Promega* RNasin* Ribonuclease Inhibitor

Ideal for any application where eukaryotic RNase contamination is a potential problem

- Inhibits a broad spectrum of RNases, including RNase A, RNase B, RNase C, and human placental RNase
- Does not inhibit RNase T1, S1 nuclease, RNase from *Aspergillus*, RNase H, or RNase ONE* Ribonuclease
- Compatible with the use of other enzymes, including SP6, T7 or T3 RNA Polymerase, ImProm-II*, AMV or M-MLV Reverse Transcriptase, and *Taq* DNA Polymerase
- Available as both natural[1] and recombinant[2] preparations



RT-PCR Analysis of bcr-abl transcript in K562 cells lysed in a Recombinant RNasin Ribonuclease Inhibitor solution without prior RNA isolation. Lanes 1–11 represent amplification signals from K562 cells numbering 0, 1, 5, 10, 20, 50, 100, 200, 500, 1000, and 5000, respectively. Lane 12 positive control primers. Lane M, 100bp DNA Ladder. Reprinted from Shultz, J., *et al* (2001) *Promega Notes* 77, 12-15.

STORAGE CONDITIONS:

Store at -20°C.

Type	Units	Concentration	Cat. No.	Each
Natural	2500	20–40U/µL	**PR-N2111**	100.40
	10,000	20–40U/µL	**PR-N2115**	248.40
Recombinant	2500	20–40U/µL	**PR-N2511**	93.20
	10,000	20–40U/µL	**PR-N2515**	227.40

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[1] *U.S. Patents 4,966,964, 5,019,556, and 5,266,687; Australian Patents 616881 and 641261 and other pending and issued patents, which claim vectors encoding a portion of human placental ribonuclease inhibitor, are exclusively licensed to Promega Corporation.*

[2] *U.S. Patent 5,552,302, Australian Patent 646803 and other patents.*

Patents for the foundational PCR process, European Patents 201,184 and 200,362, expired on March 28, 2006. In the U.S., the patents covering the foundational PCR process expired on March 29, 2005.

Takara* DNA Ligation and Blunting Kits

Provide high-efficiency DNA ligation in only five minutes for general ligation reactions, and in 30 minutes for most other types of ligation

Simple, two-component systems allow rapid performance of all cloning procedures requiring the covalent joining of DNA molecules in vitro.

Version 1

- Ideal for lambda DNA concatenation

Version 2.1

- Contains a convenient premix of enzyme and buffer that minimizes pipetting steps and final reaction volume in standard reactions
- Suitable for ligation in small reaction volumes, ligation of DNA fragments into plasmid vectors, insertion of linker DNA into plasmid vectors, self-circularization of linear DNA molecules, and adaptor ligation to cDNA
- Includes Transformation Enhancer Solution (Solution III)

DNA Blunting Kit

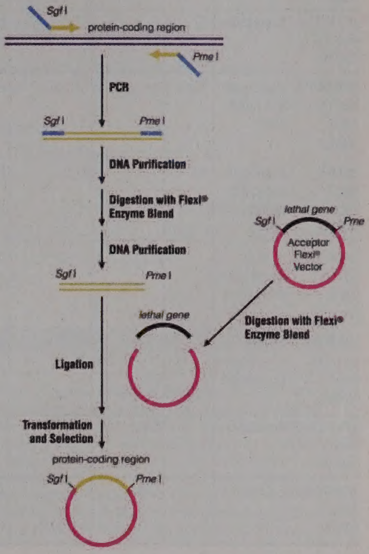
- Uses T4 DNA polymerase to convert 3' and 5' overhangs to blunt or flush ends

Description	Quantity	Cat. No.	Each
DNA Ligation Kit, Version 1	50 rxns	**TAK 6021**	169.46
DNA Ligation Kit, Version 2.1	50 rxns	**TAK 6022**	169.46
DNA Blunting Kit	20 rxns	**TAK 6025**	183.84

CLONING SYSTEMS AND VECTORS

Promega* Flexi* Cloning System and Vectors

Provide a rapid, efficient, and high-fidelity method to transfer protein-coding regions between a variety of Flexi Vectors[1,2,3,4] without the need to resequence



Cloning a protein-coding region into the Flexi Vectors

The Flexi Vector System[1,2] is based on two rare-cutting restriction enzymes, *Sgf* I[5] and *Pme* I[6], in a simple yet powerful directional cloning method for protein-coding sequences. Each Flexi vector contains *Sgf* I and *Pme* I sites, into which the protein-coding regions are cloned. The vectors also carry the lethal barnase gene, which is replaced by the DNA fragment of interest and acts as a positive selection for the successful ligation of the insert. The vector backbones contain expression or peptide tag options, while maintaining orientation, reading frame, and the ability to share protein coding regions with other Flexi vectors.

- Do not require attachment of multiple amino acids to the amino or carboxy termini of the protein of interest, unlike site-specific recombination vector systems
- Do not require an archival entry vector
- Offer a choice of initial applications, including bacterial protein, mammalian, or cell-free protein expression
- Allow direct use of recombinant clones, minimizing wasted time screening background colonies
- Adaptable to high-throughput formats for large screening projects

STORAGE CONDITIONS:

Store all products at -20°C, except for the Wizard* SV Gel and PCR Clean-Up System component of PR-C8640, which should be stored at room temperature.

INCLUDES:

10X Flexi Enzyme Blend (*Sgf* I and *Pme* I); 2X Flexi Ligase Buffer; 5X Flexi Digest Buffer; Nuclease-free water; T4 DNA ligase; Wizard SV Gel and PCR Clean-Up System

NOTE:

Vectors supplied separately.

Contd. on next page.

Flexi* Vector Features

		Promoter for Expression				Peptide Fusion Tag
Vector[7]	Application	*E. coli*	Mammalian Cells	In vitro Transcription /Translation	Drug Selection	N-terminus
pF1A T7 Flexi Vector	Expression	T7		T7	Ampicillin	
pF1K T7 Flexi Vector	Expression	T7		T7	Kanamycin	
pFN2A (GST) Flexi Vector	Expression and purification	T7		T7	Ampicillin	GST
pFN2K (GST) Flexi Vector	Expression and purification	T7		T7	Kanamycin	GST
pF3A WG (BYDV) Flexi Vector	In vitro wheat germ expression			T7, SP6	Ampicillin	
pF3K WG (BYDV) Flexi Vector	In vitro wheat germ expression			T7, SP6	Kanamycin	
pF4A CMV Flexi Vector	Expression		CMV	T7	Ampicillin	
pF4K CMV Flexi Vector	Expression		CMV	T7	Kanamycin	

Description	Quantity	Cat. No.	Each
Flexi System, Entry/Transfer	5 entry and 20 transfer rxns	**PR-C8640**	200.75
pF1A T7 Flexi Vector	20µg	**PR-C8441**	200.75
pF1K T7 Flexi Vector	20µg	**PR-C8451**	200.75
pFN2A (GST) Flexi Vector	20µg	**PR-C8461**	225.84
pFN2K (GST) Flexi Vector	20µg	**PR-C8471**	225.84
pF3A WG (BYDV) Flexi Vector	20µg	**PR-L5671**	232.87
pF3K WG (BYDV) Flexi Vector	20µg	**PR-L5681**	230.00
pF4A CMV Flexi Vector	20µg	**PR-C8481**	225.84
pF4K CMV Flexi Vector	20µg	**PR-C8491**	225.84

[1] *Patent pending.*

[2] *For research use only. Persons wishing to use this product or its derivatives in other fields of use, including without limitation, commercial sale, diagnostics or therapeutics, should contact Promega Corporation for licensing information.*

[3] *This product or portions thereof is manufactured under license from Amrad Corporation Limited. For noncommercial research use only. All other uses require a license from Amrad Corporation Limited, Unit 6, 663 Victoria Street, Abbotsford, Victoria 3067, Australia, under U.S. Patent 5,654,176; Australian Patent 607511, Canadian Patent 1338903 and other issued patents.*

[4] *The CMV promoter and its use are covered under U.S. Patents 5,168,062 and 5,385,839 owned by the University of Iowa Research Foundation, Iowa City, Iowa, and licensed for research use only. Research use includes contract research for which monetary or other consideration may be received. Other commercial users must obtain a license to these patents directly from the University of Iowa Research Foundation.*

[5] *U.S. Patent 5,391,487.*

[6] *Licensed under U.S. Patent 5,945,288.*

[7] *The "pF" indicates that the vector is a Flexi vector. The letter after "pF" indicates the position of any expression tags ("N" = an N-terminal expression tag). The number associated with the vector specifies the type of expression and application. The letters "A" and "K" designate the bacterial drug selection for the vector ("A" = ampicillin and "K" = kanamycin).*

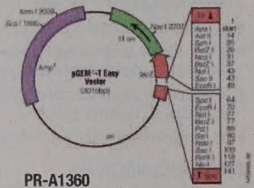
LOOKING FOR TRANSFECTION REAGENTS AND KITS?

For a wide variety of transfection reagents and kits, see the Transfection/Transformation section.

Promega* pGEM*-T and pGEM-T Easy Vector Systems

Convenient systems for the routine subcloning of PCR products

The pGEM-T Vector is prepared by cutting Promega's pGEM-5Zf(+) Vector with *Eco*R V and adding a 3' terminal thymidine to both ends. These single 3'-T overhangs at the insertion site greatly improve the efficiency of ligation of a PCR product into the plasmid.



PR-A1360

- 2X Rapid Ligation Buffer allows reactions to be completed in one hour at room temperature
- Blue/white screening can be used to directly identify recombinant clones, as T7 and SP6 RNA polymerase promoters flank a multiple cloning region within the α-peptide coding region for β-galactosidase, permitting insertional inactivation of the α-peptide
- f1 Origin of Replication allows the preparation of single-stranded DNA

pGEM-T Vector Systems

- Multiple cloning site is flanked by recognition sites for the restriction enzyme *BstZ* I
- Single-enzyme digestion allows release of the insert
- Double digestion may also be used to release the insert from the vector

pGEM-T Easy Vector Systems

- Recognition sites for *BstZ* I, *Eco*R I, and *Not* I flank the insertion site
- Several options are available for removal of the desired insert DNA with a single restriction digestion

INCLUDES:

Vector, Control insert DNA, T4 DNA ligase, Ligation buffer, High efficiency competent cells (PR-A3610 and PR-A1380 only)

Description	Quantity	Cat. No.	Each
pGEM-T Vector System I	20 rxns	**PR-A3600**	107.40
pGEM-T Vector System II	20 rxns	**PR-A3610**	197.40
pGEM-T Easy Vector System I	20 rxns	**PR-A1360**	130.40
pGEM-T Easy Vector System II	20 rxns	**PR-A1380**	219.40

LOOKING FOR NUCLEIC ACID PURIFICATION KITS?

For a wide range of Nucleic Acid Purification Kits, see the Nucleic Acid Research section.

*Trademark. See Trademark Reference.

Prices subject to change.

Promega* siSTRIKE* U6 Hairpin Cloning Systems

Series of linearized plasmids designed for fast, easy cloning of hairpin target sequences for expression of siRNA target sequences in human cells

- Ideal for DNA-directed RNA interference in human cells
- Provide vectors containing a variety of eukaryotic antibiotic-selectable markers
- Predigested to eliminate time-consuming vector preparation
- *Pst* I digestion quickly identifies positive recombinants

INCLUDES:

T4 DNA Ligase, 100U; 2X Rapid Ligation Buffer, 200µL; Oligo Annealing Buffer, 1mL; psiSTRIKE Vector, 1.2µg; Nuclease-free water, 1.25mL.

Description	Quantity	Cat. No.	Each
Basic System	20 tests	**PR-C7890**	268.34
Puromycin System	20 tests	**PR-C7900**	268.34
Hygromycin System	20 tests	**PR-C7910**	268.34
Neomycin System	20 tests	**PR-C7920**	268.34

This product is covered under license from Carnegie Institution of Washington under U.S. Patent 6,506,559; Australian Patent 743798 and other patents pending. Commercial use of this product may require a separate license from Carnegie.

LOOKING FOR MORE siRNA PRODUCTS?

For more siRNA products, see the siRNA Technologies section.

Promega* siSTRIKE* U6 Hairpin Cloning System—hMGFP

For monitoring short hairpin RNA- (shRNA-) expressing constructs

Uses an shRNA expression vector which contains a synthetic version of the green fluorescent protein, hMGFP. The synthetic gene expresses a 26kDa protein which shows improved fluorescence and reduced cytotoxicity when compared to the native gene.

- Vectors are supplied predigested, eliminating the need for time-consuming preparation
- Low-level expression can be visualized in situ using fluorescence microscopy, fluorescence imagers, or fluorescence-activated cell sorting (FACS*)
- Positive recombinants can quickly be identified by *Pst* I
- Ideal for DNA-directed RNA interference in human cells

INCLUDES:

psiSTRIKE* hMGFP Vector, 1.2µg; 2X Rapid Ligation Buffer, 200µL; Nuclease-free water, 1.25mL; Oligo Annealing Buffer, 1mL; T4 DNA Ligase, 100U.

STORAGE CONDITIONS:

Store at -20°C.

Quantity	Cat. No.	Each
20 rxns	**PR-C3550**	313.39

This product is sold solely for use for research purposes in fields other than plants. This product is not transferable. If the purchaser is not willing to accept the conditions of this label license, Promega is willing to accept the return of the product and provide the purchaser with a full refund. However if the product is used, then the purchaser agrees to be bound by the conditions of this limited use statement. This product is sold by Promega Corporation under license from Benitec Australia Ltd and CSIRO as co-owners of U.S. Patent 6,573,099 and foreign counterparts. For information regarding licenses to these patents for use of ddRNAi as a therapeutic agent or as a method to treat/prevent human disease, please contact Benitec at: licensing@benitec.com. For the use of ddRNAi in other fields, please contact CSIRO at: ***www.pi.csiro.au/RNAi.***

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For research use only. Researchers may use this product obtained from Promega for their own research and they may transfer derivatives of this product to their research colleagues who agree in writing to be bound by the terms and conditions of this label license. No transfer of unmodified product is authorized. Research performed on behalf of another party is permitted. No other use of transfer of this product or its derivatives is authorized without the express, written consent of Promega. Such prohibition includes, without limitation, any and all non-research uses of this product in any procedure, application, product, manufacture, or product transfer for which monetary or other consideration is received from another party. With respect to such commercial use, or any therapeutic or diagnostic uses, please contact Promega Corporation for supply and licensing information.

Certain applications of this product may require licenses from others.

Patent pending.

TRANSCRIPTION AND TRANSLATION

Promega* Gold TNT* Express 96 Transcription/Translation Systems

For transcription and translation of genes cloned downstream from the T7 or SP6 RNA polymerase promoter

- Contain 20µL of high-quality lysate that has been evaluated for optimal transcriptional/translational activity in each well of the 96-well plate
- Minimize lost time, resources, and material associated with aliquoting from bulk lysate
- Ideal for high-throughput applications such as in vitro expression cloning (IVEC)

STORAGE CONDITIONS:

Store at -70°C.

Description	Quantity	Cat. No.	Each
Gold TNT T7 Express 96 System	1 × 96 rxns	**PR-L5600**	579.00
Gold TNT SP6 Express 96 System	1 × 96 rxns	**PR-L5800**	579.00

U.S. Patents 5,283,179; 5,641,641; 5,650,289; and 5,814,471; Australian Patent 649289 and other patents.
U.S. Patents 5,324,637 and 5,492,817; Australian Patent 660329 and other patents.
U.S. Patent 5,552,302; Australian Patent 646803 and other patents.
U.S. Patents 4,966,964; 5,019,556; and 5,266,687; Australian Patents 616881 and 641261 and other pending and issued patents, which claim vectors encoding a portion of human placental ribonuclease inhibitor, are exclusively licensed to Promega Corporation.

Promega* TNT* Coupled Reticulocyte Lysate Systems

Single-tube, coupled transcription/translation systems for eukaryotic in vitro translations

- Produce data in as little as five to six hours, half the time of conventional two-step systems
- Provide two to six times the protein of standard translation reactions
- Compatible with linear or circular templates (T7 and T3 systems only; SP6 systems should be used with circular DNA only)
- Rigorously quality controlled to ensure the highest level of transcription/translation
- Available in configurations that permit co-expression of genes under the control of different phage polymerase promoters

INCLUDES:

TNT Rabbit Reticulocyte Lysate, appropriate TNT polymerase, control DNA, TNT Reaction Buffer, luciferase assay wells, luciferase assay reagent, amino acid mixtures.

STORAGE CONDITIONS:

Store polymerase at -20°C to -70°C; store luciferase assay wells at room temperature; store other components at -70°C. Do not freeze-thaw lysate more than two times.

Description	Quantity	Cat. No.	Each
TNT SP6 Coupled Reticulocyte Lysate System	8 rxns	**PR-L4601**	116.40
	40 rxns	**PR-L4600**	419.75
TNT T7 Coupled Reticulocyte Lysate System	8 rxns	**PR-L4611**	116.40
	40 rxns	**PR-L4610**	422.75
TNT T3 Coupled Reticulocyte Lysate System	40 rxns	**PR-L4950**	422.75
TNT T7/T3 Coupled Reticulocyte Lysate System	40 rxns	**PR-L5010**	422.75
TNT T7/SP6 Coupled Reticulocyte Lysate System	40 rxns	**PR-L5020**	435.75

U.S. Patents 5,324,637 and 5,492,817; Australian Patent 660329 and other patents.
U.S. Patents 5,283,179; 5,641,641; 5,650,289; and 5,814,471; Australian Patent 649289 and other patents and patents pending.
U.S. Patents 4,966,964; 5,019,556; and 5,266,687; Australian Patents 616881 and 641261 and other pending and issued patents, which claim vectors encoding a portion of human placental ribonuclease inhibitor, are exclusively licensed to Promega Corporation.
The method of recombinant expression of Coleoptera *luciferase is covered by U.S. Patents 5,583,024; 5,674,713; and 5,700,673. A license (from Promega for research reagent products and from The Regents of the University of California for all other fields) is needed for any commercial sale of nucleic acid contained within or derived from this product.*
Patents for the foundational PCR process, European Patents 201,184 and 200,362, expired on March 28, 2006. In the U.S., the patents covering the foundational PCR process expired on March 29, 2005.

Promega* TNT* Coupled Wheat Germ Extract Systems

Ideal for the translation of mammalian transcription factors

- Permit one-tube, coupled transcription/translation reactions for eukaryotic in vitro translation
- Produce twofold to sixfold more protein than standard wheat germ extract translations
- Eliminate the time and effort required to prepare RNA for a standard wheat germ translation
- Provide results through autoradiography in six to eight hours
- Compatible with linear or circular templates (T7 and T3 systems only; SP6 systems should be used with circular DNA only)
- Available in formats that permit simultaneous expression of multiple genes that are under control of different phage polymerase promoters

INCLUDES:

TNT Wheat Germ Extract, appropriate TNT wheat germ polymerase, control DNA, TNT Reaction Buffer, luciferase assay reagent, luciferase assay wells, amino acid mixtures.

STORAGE CONDITIONS:

Store polymerase at -20°C; store luciferase assay wells at room temperature; store other components at -70°C. Avoid multiple freeze-thaw cycles.

Description	Quantity	Cat. No.	Each
TNT SP6 Coupled Wheat Germ Extract System	40 rxns	**PR-L4130**	393.49
TNT T7 Coupled Wheat Germ Extract System	40 rxns	**PR-L4140**	393.49
TNT T3 Coupled Wheat Germ Extract System	40 rxns	**PR-L4120**	393.49
TNT T7/T3 Coupled Wheat Germ Extract System	40 rxns	**PR-L5040**	404.51
TNT T7/SP6 Coupled Wheat Germ Extract System	40 rxns	**PR-L5030**	404.51

U.S. Patents 5,283,179; 5,641,641; 5,650,289; and 5,814,471; Australian Patents 649289 and other patents and patents pending.
U.S. Patents 5,324,637 and 5,492,817; Australian Patent 660329 and other patents.
The method of recombinant expression of Coleoptera *luciferase is covered by U.S. Patents 5,583,024; 5,674,713; and 5,700,673. A license (from Promega for research reagent products and from The Regents of the University of California for all other fields) is needed for any commercial sale of nucleic acid contained within or derived from this product.*
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Patents for the foundational PCR process, European Patents 201,184 and 200,362, expired on March 28, 2006. In the U.S., the patents covering the foundational PCR process expired on March 29, 2005.

Promega* TNT* Quick Coupled Transcription/Translation System

Convenient system combines RNA polymerase, nucleotides, salts, amino acids, and Recombinant RNasin* Ribonuclease Inhibitor with reticulocyte lysate solution in a single TNT Quick Master Mix

- Optimized for transcription/translation of genes cloned downstream from either the T7 or SP6 RNA polymerase promoter
- Produces two- to six-fold more protein in a 60- to 90-minute reaction than do standard in vitro rabbit reticulocyte lysate reactions using RNA templates
- Includes Luciferase Control DNA; 40-reaction systems also include Luciferase Assay Reagent

Storage Conditions:

Store at -70°C; do not freeze-thaw the lysate more than two times.

Description	Quantity	Cat. No.	Each
TNT T7 Quick Coupled Transcription/Translation System	5 rxns	**PR-L1171**	116.40
	40 rxns	**PR-L1170**	427.75
TNT SP6 Quick Coupled Transcription/Translation System	5 rxns	**PR-L2081**	117.40
	40 rxns	**PR-L2080**	427.75

U.S. Patents 5,283,179; 5,641,641; 5,650,289; and 5,814,471; Australian Patent 649289 and other patents.

U.S. Patents 5,324,637 and 5,492,817; Australian Patent 660329 and other patents.

U.S. Patent 5,552,302; Australian Patent 646803 and other patents.

The method of recombinant expression of Coleoptera *luciferase is covered by U.S. Patents 5,583,024; 5,674,713; and 5,700,673. A license (from Promega for research reagent products and from The Regents of the University of California for all other fields) is needed for any commercial sale of nucleic acid contained within or derived from this product.*

U.S. Patents 4,966,964; 5,019,556; and 5,266,687; Australian Patents 616881 and 641261 and other pending and issued patents, which claim vectors encoding a portion of human placental ribonuclease inhibitor, are exclusively licensed to Promega Corporation.

For Laboratory Use. Any use of the product for diagnostics requiring clearance or approval by the FDA may require a license under Mayo Clinic U.S. Patents 6,027,913 and 6,361,949.

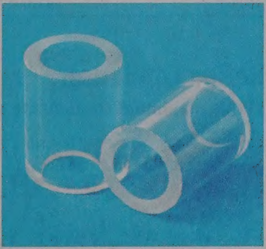
Patents for the foundational PCR process, European Patents 201,184 and 200,362, expired on March 28, 2006. In the U.S., the patents covering the foundational PCR process expired on March 29, 2005.

CLONING RINGS AND CYLINDERS

Pyrex* Cloning Cylinders

Create identical cells by surrounding a single cell or group of cells

- Borosilicate glass
- Flat ends ensure a good seal

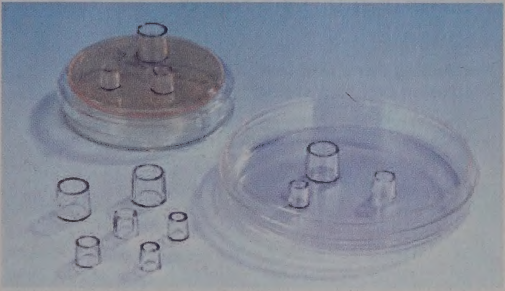


09-522-22

O.D. × H	Mfr. No.	Cat. No.	Case of 125
6 × 8mm	3166-6	**09-552-20**	47.15
8 × 8mm	3166-8	**09-552-21**	47.15
10 × 10mm	3166-10	**09-552-22**	53.83

Scienceware* Cloning Cylinders

For cloning a homogenous culture of cells rather than a mixed population



14-512 Series

- Polystyrene
- Tapered design ensures an excellent seal to the surface

ORDERING INFORMATION:

Individual sizes supplied five bags of 10 cylinders each; Variety Pack contains four bags with 10 of each size.

O.D. × H	Mfr. No.	Cat. No.	Pack of
4.7 × 8mm	37847 0100	**14-512-78**	50/44.26
6.4 × 8mm	37847 0200	**14-512-79**	50/46.53
9.5 × 6.4mm	37847 0300	**14-512-66**	50/59.30
Variety Pack	37847 0000	**07-907-10**	120/78.39

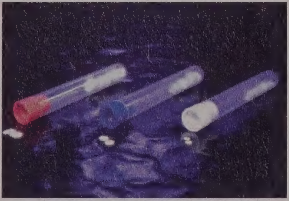
Scienceware* Cloning Discs

Reduce the time required to collect a large number of colonies, with less risk of contamination

- Alternative to cloning cylinders for isolating cell colonies
- Radiation sterilized paper

ORDERING INFORMATION:

Supplied in vials of 50, two vials per pack.



07-907-10C, 07-907-10B, 07-907-10A

Size	Mfr. No.	Cat. No.	Pack of 100
3mm	37847 0001	**07-907-10A**	28.17
5mm	37847 0002	**07-907-10B**	28.17
6mm	37847 0003	**07-907-10C**	28.17

LOOKING FOR MICROBIOLOGY MEDIA?

For a full line of microbiology media and other microbiology supplies, see the Microbiology section.

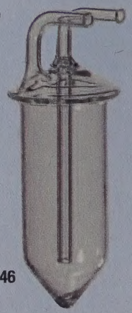
CONDENSERS

*Fisherbrand** Cold Finger Condenser

For boiling nitric acid test (corrosion-resistant steels)

- Borosilicate glass
- Overall length, 170mm; body diameter, 47.6mm

COMPLIANCE:
Meets ASTM* A 262-98



07-746

Cat. No.	Each
07-746	78.75

Pyrex* Allihn Condensers with ₷ Joints

Suited for use in vacuum distillation

- ₷ inner and outer joints
- Hose connections are 10mm O.D.

07-736B

Jacket L	₷ Joint	Mfr. No.	Cat. No.	Each†
200mm	19/38	2480 200	**07-736A**	135.99
300mm	24/40	2480 300	**07-736B**	165.73
400mm	24/40	2480 400	**07-736C**	192.55
500mm	24/40	2480 500	**07-736D**	157.28
600mm	29/42	2480 600	**07-736E**	184.21

† Available in alternate quantities. Contact your Fisher Scientific Customer Service Representative for details or visit our Web site.

Kontes* Allihn Condensers with Straight Outlet Tube

For refluxing applications including Soxhlet extractions

- Straight outlet tube at top
- Water-cooled ₷ inner drip joint at bottom
- Accept No. 2 hose connections, except for 350mm size which accepts No. 3

K456000-0021

Jacket L	₷ Joint	Cat. No.	Each
190mm	34/45	**K456000-0021**	94.42
260mm	45/50	**K456000-0022**	117.38
300mm	55/50	**K456000-0023**	135.99
350mm	71/60	**K456000-0024**	159.07

Kontes* Allihn Condensers with ₷ Joints

Drip tip at end of inner joint

- 24/40 inner and outer joints
- Hose connections accept 7.9mm I.D. flexible tubing

COMPLIANCE:
Designed from Fed. Spec. NNN-C-1504 Type III

K431000-2430

Jacket L	Cat. No.	Each
300mm	**K431000-2430**	103.21
400mm	**K431000-2440**	112.45

Reflux Condenser

Yields maximum condensate purity

Double-wall thimble-shaped borosilicate condenser sealed inside outer bulb.

- Side arms for water connection extend through outer bulb
- ₷ 24/40 joint at top
- ₷ 24/40 inner joint at bottom
- External bulb of condenser measures 64 dia. × 110mm long

07-748

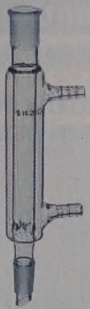
Overall Height	Cat. No.	Each
240mm	**07-748**	176.60

*Trademark. See Trademark Reference.

Kontes* Micro Condenser Distillation Columns

Supplied jacket allows column to be used as a condenser

- Outer $ joint at top
- Inner $ joint with drip tip at bottom
- Indentation at bottom supports packing material
- Accept No. 1 hose connections

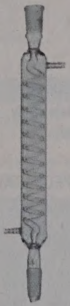

K286820-0110

Jacket L	$ Joint	Cat. No.	Each
110mm	14/20	**K286820-0110**	57.66
300mm	19/22	**K286810-0300**	66.99
200mm	19/22	**K286810-0200**	59.19

yrex* Graham Condensers with $ Inner and Outer Joints

or use in vacuum distillation

- Jacket sealed to inner tube
- Drip tip at end
- Hose connections are 10mm O.D.


07-728D

acket L	$ Joint	Mfr. No.	Cat. No.	Each	Case of
00mm	19/38	2560 200	**07-728D**	142.06	----
00mm	24/40	2560 300	**07-728A**	196.06	6/826.16
00mm	24/40	2560 400	**07-728B**	822.26	----
00mm	24/40	2560 500	**07-728C**	886.70	----

yrex* Graham Condensers with uter $ Joint at Top

or use in distillation setups

ith 10mm tube connections.

07-729A

cket L	$ Joint	Mfr. No.	Cat. No.	Each
0mm	19/38	2540 200	**07-729A**	136.81
0mm	24/40	2540 300	**07-729B**	157.95

Pyrex* Liebig Condensers

For vacuum distillation

- $ outer joint at top
- $ inner joint with drip tip at bottom
- Both $ joints are same size
- Hose connections are 10mm O.D.

07-721A

Jacket L	$ Joint	Mfr. No.	Cat. No.	Each	Case of 4
200mm	19/38	2400 200	**07-721A**	100.68	----
300mm	24/40	2400 300	**07-721B**	134.38	375.40
400mm	24/40	2400 400	**07-721C**	157.95	437.43

Kimax* West Condensers

With sloped inner tube and small annular space

Drip Tip, Medium Length 14/20 $ Joints

- One-piece sealed condenser
- 14/20 $ outer joint at the inlet
- 14/20 $ inner joint at the outlet
- Inlet end is sloped to avoid trapping condensate
- Inner tube is light-walled with a small diameter jacket for narrow annular space
- Hose connections accept 5⁄16" I.D. flexible tubing

Medium Length 19/22 $ Joints

- Useful for refluxing and distillation assemblies
- Accept No. 1 hose connections
- Overall height: approximately 285mm
- Approximate condensing area: 66cm^2

Full Length $ 24/40 Joints

- $ outer joint at the top
- $ inner drip joint at the bottom
- Narrow annular space provides high cooling efficiency due to the increased flowrate of the cooling medium
- Accepts No. 2 hose connections
- Approximate condensing area: 102cm^2
- Overall height: 442mm

10-310-46

Description	Jacket L	$ Joint	Cat. No.	Each
Medium Length, Drip Tip	200mm	14/20	**10-310-46**	110.43
Medium Length	200mm	19/22	**K282460-0200**	53.45
Full Length	300mm	24/40	**K452000-2430**	85.05

CONDUCTIVITY

METERS, BENCHTOP

Fisher Scientific* accumet* Excel XL30 Conductivity Meter

Measures conductivity, resistivity, salinity, and temperature with Windows CE* operating system and user-friendly, full-color touchscreen

- Reads conductivity in µS/cm; resistivity in ohms•cm, kilohms•cm, megohms•cm; salinity in ppt; and temperature in °C
- Built-in replatinizing circuit aids in extending life of conductivity cells
- 4½W × 6"H (11 × 15cm), scratch-resistant color LCD screen
- Displays current measurement value, stability indicator, buffers or standards, time/date stamp, temperature
- On-screen operational prompts, recognizable icons, and context-specific help screens
- Durable ABS plastic housing resists dust and chemicals
- Accepts two- or four-cell probes

Customizable Features

- Selectable temperature coefficients and display units ensure accurate readings
- Choose appropriate operating parameters, resolution, buffer sets, and similar settings within the operational modes
- Selectable cell constants enable meter to be used for general purpose (1.0cm^{-1}), high purity water (0.1cm^{-1}), brines or other concentrated solutions (10cm^{-1})

Extensive GLP and Communication Capabilities

- Customizable printer or computer output and 1000-reading datalog capability
- Print Setup lets you print exactly what you want, when you want it
- Displays time in 12- or 24-hour format, date in U.S. or international format
- USB port connects a keyboard, mouse or trackball, or connects printer or PC for data output
- RS-232 port connects PCs or printers without USB, or frees your computer USB for other devices while meter is in operation
- Ethernet allows unmatched LAN connectivity and even allows software upgrades

ORDERING INFORMATION:

Dimensions (L x W x H): 9¼ x 6½ x 3½" (23.5 x 16.5 x 9cm)
Net weight: 2¾ lb. (1.2kg)

INCLUDES:

Meter Kit includes meter, conductivity probe (13-620-100), ATC probe (13-620-19), electrode support arm and bracket, 110/220V 50/60Hz power supply and operation manual.

Meter Only includes meter, electrode support arm and bracket, 110/220V 50/60Hz power supply and operation manual.

WARRANTY:

Warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

accumet
XL30

13-636-XL30

Package	Probe	Cat. No.	Each
Meter Only	----	**13-636-XL30A**	1668.03
Meter Kit	Conductivity Probe 13-620-100, ATC Probe 13-620-19	**13-636-XL30**	1901.66

SPECIFICATIONS

Model	Fisher Scientific accumet* XL30 Conductivity/ Resistivity/ Salinity/Temperature Meter Kit
Display	640 × 480 pixel STN Color LCD; 4½"W × 6"H (11 × 15cm). Measurement Characters: ¾"H (1.9cm). Other Data: ¼"H (0.6cm)
Keypad/Controls	Touch Screen and External Keypad
Menus	Microsoft* Windows CE* pull-down menu options; extensive Help screens.
Remote Access	Parameters remotely controllable and monitorable via Win CE Remote Application Interface.
Connectivity	USB Host/Device 1.1 connectivity to printer, PC, bar code scanner, mouse, keypad etc. Ethernet port connectivity to LAN.
Data Memory	Internal: 1,000 Data points. External: USB storage device connectivity, SDCARD Memory Interface ver 1.0, RS-232 connectivity.
Data Output	On Stable; via timer; Manual
Special Features	User upgradable software (Flash ROM via Ethernet). Powerup self test; error messages; alarm, real-time clock/calendar.
Conductivity Mode	
Cell Constants	0.1cm^{-1}, 1.0cm^{-1}, 10cm^{-1}
Conductivity Range	0 to 5 × 10^{5}µS/cm
Resistivity Range	3ohms·cm to 100megohms·cm
Salinity Range	0 to 90ppt
Relative Accuracy	±0.5% of Full Scale reading ±1 least significant digit
Temperature Mode	
Range/Resolution	-10.0° to +110.0°C (14° to 230°F)/0.1°C
Relative Accuracy	±0.2°C
Compensation	Automatic or Manual
Inputs	1 DIN (4-cell cond.), 2-pin cond., 1 ATC
Outputs	USB Host/Device, Bidirectional RS-232, Ethernet, SDCard
Electrical Requirements	110V/220V 50/60Hz

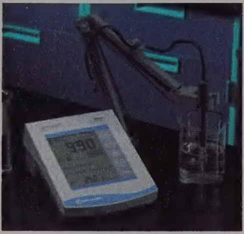
*Trademark. See Trademark Reference.

Prices subject to change.

Fisher Scientific* accumet* AB30 Conductivity Meter

Accurate, affordable, and easy-to-operate conductivity meter

- Measures conductivity in µS/cm, resistivity in megohm•cm and TDS in ppm
- Custom LCD shows readings in ¾"H (1.9cm) characters
- Plain-language prompts and error messages make operation a breeze
- Five-button soft-key controls
- Internal diagnostic capabilities, including self-test on powerup
- Two pin and four-cell conductivity inputs plus ATC input
- Ideal for routine conductivity measurements



13-636-AB30, shown with supplied electrode support.

ORDERING INFORMATION:

Meter dimensions (L × W × H): 7½ × 5½ × 3¼" (19 × 14 × 8cm). Net weight: 1.86 lb. (0.8kg). For 115V 60Hz. For Conductivity probes, see p. 522.

INCLUDES:

Meter Only package includes meter, power supply, operation manual, Fisher Scientific accuflex* electrode support (13-637-671).

Meter Kit includes meter, power supply, operation manual, Fisher Scientific accuflex electrode support (13-637-671), Fisher Scientific ATC probe (13-620-19).

NOTE: Order conductivity cells separately.

WARRANTY:

Warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years.

Model	**Fisher Scientific accumet AB30 Conductivity/ Resistivity/TDS/°C**
Conductivity Mode	
Range	0 to 3×10^5µS/cm
Relative Accuracy	±0.5%
Cell Constant	0.1cm^{-1}, 1.0cm^{-1}, 10cm^{-1}
Resistivity Range	30ohms•cm to 100megohms•cm
TDS Range	0 to 1.8×10^5ppm
Temperature Mode	
Range	-5° to +105°C (23° to 221°F)
Resolution	0.1°C
Relative Accuracy	±0.5°C
Meter Only	
Cat. No.	**13-636-AB30A**
Each	907.28
Meter Kit	
Cat. No.	**13-636-AB30**
Each	970.16

More Fisher Scientific* accumet* Meters with Conductivity Mode

For Multiparameter Meters XL60, XL50 and XL20 with Conductivity Mode, see the pH/pX Section.

Thermo Scientific* Orion* 3-Star* Benchtop Conductivity Meter

Dedicated measurement of conductivity, resistivity, salinity and TDS in a compact, ergonomic package

Easy-to-use single-channel meter provides reliable, accurate measurements for soil and water analysis applications.

13-642-054

- Displays conductivity and temperature measurements simultaneously
- Accepts both four-electrode and two-electrode cells
- Offers a full complement of GLP-related features
- Stores up to 10 password protected methods, including setup parameters and calibrations; download additional methods and software updates via the Web
- 200-point datalogger, downloadable to printer or computer via an optional RS-232 or USB interface
- SMART STABILITY* and SMART AVERAGING* functions automatically optimize accuracy, precision and response time
- Meets all U.S. Pharmacopeia (USP) requirements
- Auto stirrer control
- IP54 dustproof and splashproof
- Mini-DIN locking conductivity probe connectors
- Advanced self-tests and diagnostics on meter operation
- Universal power adapter for worldwide operation

ORDERING INFORMATION:

More Star Series Application Packages are available for specific applications, including meter, all required accessories, Tech Notes on procedure, and validation service. Contact your Fisher Scientific Customer Service Representative for details.

INCLUDES:

Meter Only includes meter and instruction manual.

Meter Kit includes meter, conductivity probe (13-642-225) with 1.5m cable, 1413µS/cm conductivity/TDS standard (13-301-77), benchtop electrode stand, instruction manual.

Meter Kit for Ultrapure Water includes meter, stainless-steel conductivity probe (13-642-227), 100mS/cm conductivity/TDS standard (13-301-78; 5 × 60mL), benchtop electrode stand, instruction manual.

Meter Kit for USP 645 includes meter, stainless-steel conductivity probe (13-642-227), 100mS/cm conductivity/TDS standard (13-301-78; 5 × 60mL), benchtop electrode stand, instruction manual.

WARRANTY:

Three-year replacement warranty

COMPLIANCE:

CE, CSA, UL and FCC Class A limits approved

Contd. on next page.

Thermo Scientific* Orion* 3-Star* Benchtop Conductivity Meter, Contd.

Model	Thermo Scientific* Orion 3-Star Conductivity Benchtop Meter
Modes	Conductivity, Resistivity, TDS, Salinity, Temperature
Display	Custom backlit LCD
Data Management	Saves 200 datapoints by time, stability or manual read with time/date stamp. Calibration log of last 10 calibrations. User method storage for 10 procedures. Advanced self-test and diagnostics routines. Password protection. Downloadable software and methods updates via Internet.
Conductivity Mode	
Range	0 to 3000mS/cm
Resolution	Four significant digits down to 0.001µS/cm, dependent on cell constant
Relative Accuracy	±0.5% ±1 digit or 0.01µS/cm, whichever is greater
Cell Constants	0.001 to 199.9cm^{-1}
Calibration Points	1 to 5 points
Resistivity	
Range	0.0001 to 100megohm•cm
Resolution	0.0001megohm•cm
Relative Accuracy	±0.5% ±1 digit
Salinity	
Range	0.01 to 80.0ppt NaCl equivalent; 0.01 to 42ppt practical
Resolution	0.01ppt
Relative Accuracy	±0.1ppt ±1 digit
TDS Mode	
Range	0 to 19,999mg/L; adjustable TDS Factor, 0.00 to 10.00
Resolution	1mg/L
Relative Accuracy	±0.5% ±1 digit
Temperature Mode	
Range	-5° to +105°C
Resolution	0.1° up to 99.9°C, 1.0° over 99.9°C
Relative Accuracy	±0.1°C, ±1 digit
Compensation Range	-5° to +105°C
Compensation Reference Temperature	15°C, 20°C or 25°C (default); autoranging
Inputs	Mini-DIN conductivity, locking; RCA phone jack for stirrer
Data Output	Bidirectional RS-232, stereo jack, optional USB interface cable
Electrical Requirements	Universal AC power adapter or 4 × 1.5V AA (optional)
Meter Only	
Mfr. No.	1114000
Cat. No.	**13-642-054**
Each	780.86
Meter/Probe Kit	
Mfr. No.	1114001
Cat. No.	**13-645-104**
Each	1116.00
Meter Kit for Ultrapure Water	
Mfr. No.	1114002
Cat. No.	**13-645-105**
Each	1019.00
Meter Kit for USP 645	
Mfr. No.	1114003
Cat. No.	**13-645-106**
Each	1359.00

Oakton* CON 510 Benchtop Meter

Affordable and reliable, with consistent and accurate measurements

13-620-328

- Reads conductivity across five ranges, TDS across six
- Dual display shows conductivity or TDS plus temperature in °C and °F
- Built-in memory stores up to 50 readings
- Autoranging across five ranges offers the best resolution for measurements
- Single-point and multipoint automatic or manual calibration (up to five—one per conductivity range)
- Adjustable temperature coefficient, selectable cell constant for very high or low range measurements
- Manual or automatic temperature compensation
- Adjustable conductivity-to-TDS conversion factor
- Choice of normalization temperature: 15°C or 30°C (59°F or 86°F)
- Advanced setup mode enables recall of previous data calibration, conductivity/TDS effective cell constants per range, and selectable READY indicator

ORDERING INFORMATION:

Dimensions (L × W × H): 9 × 7 × 2⅜" (22.9 × 6 × 17.8cm). For Conductivity cells and for Oakton Multiparameter Meters with Conductivity mode, contact your Fisher Scientific Customer Service Representative.

INCLUDES:

Meter, 1.0cm^{-1} conductivity/temperature plastic-bodied probe with 3' (0.9cm) long cable (13-620-AP54), built-in electrode holder arm, 110/220V 50/60Hz power adapters, instructions with pull-out reference guide.

WARRANTY:

Three-years

Model	Oakton CON 510
Conductivity Mode	
Range	0 to 19.99µS, 0 to 199.9µS, 0 to 1999µS, 0 to 19.99mS, 0 to 199.9mS
Resolution	0.01µS, 0.1µS, 1µS, 0.01mS, 0.1mS
Relative Accuracy	±1% of FS + 1 digit
Cell Constants	0.1cm^{-1}, 1.0cm^{-1}, 10cm^{-1}
TDS Mode	
Range	0.00 to 9.99ppm, 10.0 to 99.9ppm, 100 to 999ppm, 1.00 to 9.99ppt, 10.0 to 99.9ppt, 100 to 200ppt
Resolution	0.01ppm, 0.1ppm, 1.0ppm, 0.01ppt, 0.1ppt, 1.0ppt
Relative Accuracy	±1% of FS +1 digit
Temperature Mode	
Range	0° to 100°C (32° to 212°F)
Resolution	0.1°C/°F
Relative Accuracy	±0.5°C (±0.9°F)
Compensation	Manual or Automatic
Cat. No.	**13-620-328**
Each	594.72

ACCESSORIES

Replacement Conductivity/TDS/Temperature Probe

Replacement for:

- Oakton* CON 510, pH/CON 510 Benchtop Meters
- Fisher Scientific accumet* AP75, AP85 Portable Meters
- Oakton CON 11, CON 110, CON 400, CON 410, pH/CON 300, TDS 400 Portable Meters

Cat. No.	Each
13-620-AP54	246.36

YSI* Benchtop Conductivity Meters

Measure conductivity, salinity, and temperature, with temperature compensation

Model 3200

- Measures conductivity (up to three Siemens), resistivity, TDS, salinity, temperature—plus conductance and resistance
- Resistance Ratio Technology* continually compares sample resistance to a calibrated resistor in its circuitry
- Uses one conductivity cell over a broad measurement range:
  - Calibrate with up to five standards
  - Instrument chooses appropriate calibration for each sample
  - Eliminates guessing sample conductivity before you measure
- Helps assure highly accurate ultrapure water analysis
- Three temperature compensation options:
  - Enter linear compensation factor
  - Choose one of the stored nonlinear temperature compensation curves
  - Vary sample temperature and instrument stores a linear or nonlinear curve
- Microprocessor-based, with cell configuration storage, high/low alarm, data storage and logging, and variable reference temperature

09-324-48

09-324-46

Model 3100

- Measures conductivity, salinity, and temperature with accuracy and reliability
- Uses forced-current technology to measure conductivity over a broad range
- Linear temperature compensation is variable from 0 to 4%—choose reference temperature from 15° to 25°C
- Can platinize a conductivity cell directly—no need for a separate replatinizing instrument

ORDERING INFORMATION:

Order probes separately. YSI Multiparameter Meters with Conductivity mode available; see the pH/pX section.

COMPLIANCE:

Meet CE requirements

Model	**3200**	**3100**
Modes	Conductivity, Resistivity, Salinity, Temperature, TDS, Conductance, Resistance	Conductivity, Salinity, Temperature
Conductivity Mode		
Range	0 to 3,000,000µS/cm (in 8 ranges)	0 to 499,999µS/cm (in 5 ranges)
Relative Accuracy	±0.1 to 1% FS (depending on range)	±0.5% FS (depending on range)
Cell Constants	0.001 to 100cm^{-1}	0.01, 0.1, 1, 10cm^{-1}
Resistivity Mode		
Range	0 to 29.9megohms	----
Relative Accuracy	±0.1 to 1% FS (depending on range)	----
TDS Mode		
Range	0 to 19,999mg/L	----
Relative Accuracy	±0.5%	----
Temperature Mode		
Range	-5° to +100°C	-5° to +95°C
Relative Accuracy	±0.1°C +1 least significant digit	±0.1°C +1 least significant digit
Compensation	Linear, Nonlinear	Linear
Coefficient	0 to 10%, Nonlinear	0 to 4%
Data Output	Display, RS-232-C	Display
Electrical Requirements	120V 60Hz	120V 60Hz
Mfr. No.	3200 120	3100 120
Cat. No.	**09-324-48**	**09-324-46**
Each	1625.00	898.00
Electrical Requirements	230V 50/60Hz	230V 50/60Hz
Mfr. No.	3200 230	3100 230
Cat. No.	**09-324-49**	**09-324-47**
Each	1625.00	898.00

Mettler Toledo* Seven Series Conductivity Meters

Basic and advanced meters measure conductivity, esistivity, TDS, salinity, temperature

Model S30 Basic Conductivity Meter

- Simultaneously displays temperature with all parameters
- Simple one-point calibration with auto buffer recognition, prompting and endpoint
- Editable cell constants; outputs cell constants after calibration
- Autoranging for best resolution
- Manual or automatic temperature compensation
- Selectable reference temperature: 20°C or 25°C, linear, nonlinear, or no correction
- Adjustable solids factor from 0.4 to 1.0
- Automatically indicates when reading is stabilized and ready; freeze functions are manually controlled
- Power loss memory protection; stores last calibration
- Self-diagnostics test ensures meter is operating properly
- Mini-DIN inputs
- Bidirectional RS-232 interface enables output of data to printer or computer

Model S70 Advanced Conductivity Meter

- Includes all the features of Model S30
- Modular design accepts color-coded pH, ISE, ISFET modules for enhanced capabilities
- Stores last 10 calibrations, 10 methods, 1000 measurement/temperature data pairs
- Auto read, manual read, and timed read with autoranging resolution
- Automatic or timed endpoints; high/low alarms alert operator
- Takes readings at preset intervals, with values output to PC/printer/memory at defined periods
- Back-lit display with online help, GLP menus, five languages; graphically presents calibration curve; displays last 25 readings with high/low endpoints
- Recognizes 84µS/cm, 1413µS/cm, 12.88mS/cm, or custom standards
- Operator-defined calibration reminder: simply input number of use or time
- Key in alphanumeric input of meter ID, user name, sample ID, sensor ID, and serial number
- Enhanced communication through bidirectional RS-232 interface supports barcode reader for sample or sensor ID

Specifications and Ordering Information on next page.

Mettler Toledo* Seven Series Conductivity Meters, Contd.

01-913-800

01-913-802

ORDERING INFORMATION:

Model S30:
Dimensions (L × W × H): 7 × 7 × 2½" (18 × 18 × 6.5cm). Electrical requirements: 120V 50/60Hz. Operates on 9V power supply or uses four "AA" batteries (not included).

Model S70:
Dimensions (L × W × H): 7½ × 9½ × 2½" (19 × 24 × 6.5cm). Electrical requirements: 120V 50/60Hz. Operates on 9V power supply.

Mettler Toledo Portable and Multiparameter Meters with Conductivity mode available; see Conductivity Meters, Portable, p. 515 and the pH/pX section. For S70 modules, see the pH/pX section.

INCLUDES:

Meter Only option comes with 9V power supply, electrode holder and operating instructions.

Meter Kit option includes meter, 9V power supply, electrode holder, operating instructions, InLab* 730 conductivity probe (01-911-258), two 12.88mS/cm and two 1413µS/cm 20mL calibration sachets.

WARRANTY:

Two years on meter; one year on probe

NOTE:

Conductivity measurements compliant to USP 26 are possible with the InLab 740 ultralow conductivity probe (01-920-143, sold separately).

Model	S30	S70
Conductivity Mode		
Range	0.01µS to 500mS/cm	0.01µS/cm to 1000mS/cm
Resolution	0.01µS/cm	0.01µS/cm
Relative Accuracy	±0.5%	±0.5%
Cell Constants	0.000001 to 200cm^{-1}	0.000001 to 200cm^{-1}
TDS Mode		
Range	0.1mg/L to 500g/L	0.1mg/L to 1000g/L
Resolution	0.1mg/L	0.1mg/L
Relative Accuracy	±0.5%	±0.5%
Resistivity [Range]	0.00 to 20megohms•m	0.00 to 20megohms•cm
Salinity [Range]	0.00 to 80.00ppt	0.00 to 80.00ppt
Temperature Mode		
Range	-5° to +105°C	-5° to +130°C
Resolution	0.1°C	0.1°C
Relative Accuracy	±0.5°	±0.1°
Compensation	Manual or Automatic	Manual or Automatic
Meter Only		
Cat. No.	**01-913-800**	**01-913-802**
Each	905.00	1660.00
Meter Kit		
Cat. No.	**01-913-801**	**01-913-803**
Each	1130.00	1880.00

ACCESSORIES

Probes for Mettler Toledo* S30 and S70 Meters

Description	Cell onstant	Measuring Range	Probe Material	Mfr. No.	Cat. No.	Each
2-cell Probes						
InLab* 720	0.06cm^{-1}	0.1 to 500µS/cm	Glass/Platinum	51302255	**01-928-133**	269.00
InLab 740	0.08cm^{-1}	0.001 to 500µS/cm	PVC, V4A Steel/Steel	51340260	**01-920-143**	456.00
4-cell Probes						
InLab 710	0.56cm^{-1}	0.01 to 500mS/cm	Glass/Platinum	51302256	**01-928-132**	269.00
InLab 730	0.56cm^{-1}	0.01 to 1000mS/cm	Epoxy/Graphite	51302119	**01-911-258**	311.00

PORTABLE

Fisher Scientific* accumet* AP85 Portable Waterproof pH/Conductivity Meter

Durable, waterproof, dustproof—ideal for rough field applications

Measures pH, conductivity and TDS plus temperature. Switches between pH, conductivity and TDS with the press of a button. Dual-display LCD shows all parameters with temperature; recalls previous calibration points, too.

- Advanced set-up mode for customizing meter parameters
- Selectable automatic endpoint freezes reading immediately after stabilization
- HOLD button freezes reading
- Self-diagnostic: meter indicates when it is ready to operate; error messages alert operator to problems
- Manufactured with ISO 9001:2000-certified processes

accumet
MEAS
7.25
23.5

13-636-AP85

Powerful pH Mode

- Recalls pH electrode slope and offset
- Has five-point calibration with automatic buffer recognition

Conductivity and TDS Modes

- Recalls and customizes effective cell constants for each range
- Autoranging for conductivity across five ranges
- Autoranging for TDS across six ranges
- Five-point calibration for ±1% full-scale accuracy

Flexible Temperature Mode

- Select temperature in °C or °F
- Set coefficient from 0 to 10% for accurate compensation in almost any solution
- Manual or automatic temperature compensation

INCLUDES:

Meter/Probe package includes meter, 1.0cm^{-1} conductivity/temperature plastic-bodied probe with 3' (0.9m) long cable (13-620-AP54), All-in-One pH/temperature probe (13-620-AP55), four "AAA" batteries, and instruction manual.

Meter Kit package includes meter, 1.0cm^{-1} conductivity/temperature plastic-bodied probe with 3' (0.9m) long cable (13-620-AP54), All-in-One pH/temperature probe (13-620-AP55), 4.00 and 7.00pH buffer solutions, 1413µS conductivity calibration solution, sample bottle, four "AAA" batteries, instruction manual, and hard plastic carrying case.

WARRANTY:
Warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years.

Model	Fisher Scientific accumet AP85
pH Mode	
Range	-2.00 to +16.00pH
Resolution	0.01pH
Relative Accuracy	±0.01pH
Calibration	5 points (pH 1.68, 4.01, 7.00, 10.00, 12.45)
Conductivity Mode	
Range	0.00 to 19.99µS, 0.0 to 199.9µS, 0 to 1999µS, 0.00 to 19.99mS, 0.0 to 199.9mS
Resolution	0.01µS, 0.1µS, 1µS, 0.01mS, 0.1mS
Relative Accuracy	±1% of FS
Cell Constant	1.0cm^{-1}
TDS Mode	
Range	0.00 to 9.99ppm, 10.0 to 99.9ppm, 100 to 999ppm, 1.00 to 9.99ppt, 10.0 to 99.9ppt, 100 to 200ppt
Resolution	0.01ppm, 0.1ppm, 1ppm, 0.01ppt, 0.1ppt, 1ppt
Relative Accuracy	±1% of FS
Temperature Mode	
Range	0.0° to 100.0°C/32° to 212°F
Resolution	0.1°C/0.1°F
Relative Accuracy	±0.5°C/±0.5°F
Compensation	Manual or Automatic
Display	Backlit dual-display LCD
Special Features	Displays calibration points, slope/effective cell constant, auto endpoint; auto shutoff, Hold function, Ready indicator, error messages
Dimensions (L x W x H)	7½ × 3¾ × 2¼" (19 × 9.5 × 5.7cm)
Shipping Weight	1.4 lb. (0.6kg)
Meter/Probe	
Cat. No.	**13-636-AP85A**
Each	945.79
Meter Kit	
Cat. No.	**13-636-AP85**
Each	1021.69

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

ACCESSORIES

Conductivity/TDS/Temperature Probe

Replacement for:

- Fisher Scientific* accumet* AP75, AP85 Portable Meters
- Oakton* CON 11, CON 110, CON 400, CON 410, pH/CON 300, TDS 400 Portable Meters
- Oakton CON 510, pH/CON 510 Benchtop Meters

13-620-AP54

Cat. No.	Each
13-620-AP54	246.36

Fisher Scientific* accumet* AP75 Portable Waterproof Conductivity/TDS Meter

Durable, dustproof, waterproof

Rugged meter floats and withstands rough conditions existing in the field or industrial settings. Dual-display LCD shows conductivity or TDS plus temperature in °C or °F. Meter switches between readings with the press of a button. Advanced features for easy customization.

accumet
1288
25.7

13-636-AP75A

- Selectable cell constant (0.1cm⁻¹, 1.0cm⁻¹, or 10cm⁻¹)
- Autoranges for conductivity across five ranges and TDS across six for fast response
- Calibration up to five points for both conductivity and TDS measurements
- Adjustable temperature coefficient from 0 to 10% per °C offers accurate compensation in almost any solution
- Selectable auto endpoint freezes reading immediately after meter indicates stabilization
- Expanded memory function stores and recalls up to 50 readings
- Real-time clock enables stored and calibration data to be combined with date and time for more complete recordkeeping
- HOLD function and auto shutoff
- Manufactured with ISO 9001:2000-certified processes

ORDERING INFORMATION:

Dimensions (L × W × H): 7½ × 3¾ × 2¼" (19 × 9.5 × 5.7cm)

INCLUDES:

Meter/Probe package includes meter, K = 1.0cm⁻¹ conductivity/temperature plastic-bodied probe with 3' (0.9m) long cable (13-620-AP54), four "AAA" batteries, and instruction manual.

Meter Kit includes meter, K = 1.0cm⁻¹ conductivity/temperature plastic-bodied probe with 3' (0.9m) long cable (13-620-AP54); four each of 447µS, 1413µS, 2764µS, and 15,000µS 20mL conductivity calibration solution pouches; sample bottle; four "AAA" batteries; instruction manual; hard plastic carrying case.

WARRANTY:

Warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years.

Model	Fisher Scientific accumet AP75
Conductivity Mode	
Range	0.00 to 19.99µS, 0.0 to 199.9µS, 0 to 1999µS, 0.00 to 19.99mS, 0.0 to 199.9ms
Resolution	0.01µS, 0.1µS, 1µS, 0.01mS, 0.1mS
Accuracy	±1% of FS
Cell Constants	0.1cm⁻¹, 1.0cm⁻¹, 10cm⁻¹
TDS Mode	
Range	0.00 to 9.99ppm, 10.0 to 99.9ppm, 100 to 999ppm, 1.00 to 9.99ppt, 10.0 to 99.9ppt, 100 to 200ppt
Resolution	0.01ppm, 0.1ppm, 1ppm, 0.01ppt, 0.1ppt, 1ppt
Accuracy	±1% of FS
Temperature Mode	
Range	0° to 100°C/32° to 212°F
Resolution	0.1°C/0.1°F
Accuracy	±0.5°C/0.5°F
Compensation	Manual or Automatic
Meter/Probe	
Cat. No.	**13-636-AP75A**
Each	757.85
Meter Kit	
Cat. No.	**13-636-AP75**
Each	856.44

Thermo Scientific* Orion* 3-Star* Portable Conductivity Meter

Dedicated measurement of conductivity, resistivity, salinity and TDS in a durable, waterproof, IP67 meter

Easy-to-use single-channel meter provides reliable, accurate measurements for soil and water analysis applications.

13-642-061

- Displays conductivity and temperature simultaneously
- Easy-to-use three-button keypad; balanced comfortable handling
- Accepts both four-electrode and two-electrode cells
- Offers a full complement of GLP-related features
- Stores 10 password-protected methods, including setup parameters and calibrations; additional methods/updates downloadable
- 200-point datalogger, downloadable to printer or computer via an optional RS232 or USB interface accessory
- Flexible autocalibration
- SMART STABILITY* and SMART AVERAGING* functions automatically optimize accuracy, precision and response time
- IP67 waterproof and dustproof
- Delivers 2000 hours of continuous operation
- Quick-Start Guide on meter back
- Mini-DIN locking conductivity probe connectors
- Advanced self-diagnostics

ORDERING INFORMATION:

Thermo Scientific Orion 3-Star Star Benchtop Conductivity Meter is on p. 511; Thermo Scientific Orion Star Multiparameter Meters with Conductivity mode are found in the pH/pX section. Additional application kits as well as validation services are available; contact your Fisher Scientific Customer Service Representative for details.

INCLUDES:

Meter Only option includes meter and instruction manual.

Meter/Probe Kit includes meter, four-cell conductivity probe (13-642-228), 1413µS/cm Conductivity/TDS Standard (10 × 15mL pouches), hard field case and instruction manual.

Meter Kit for Conductivity Fresh Surface Water Applications and **Meter Kit for Salinity Fresh Surface Water Applications** include meter, four-cell conductivity probe with 118⅛" (3m) cable (13-632-226), 1413µS/cm and 12.9mS/cm Conductivity/TDS Standards, electrode storage sleeve, hard field case, instruction manual and appropriate Star Series Method Note.

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* Orion* 3-Star* Portable Conductivity Meter, Contd.

WARRANTY:

Three-year replacement warranty

COMPLIANCE:

CE, CSA, UL and FCC Class A limits approved. Meets all U.S. Pharmacopeia (USP) requirements.

Model	Thermo Scientific Orion 3-Star Portable Conductivity Meter
Display	Custom backlit LCD
Data Management	Saves 200 datapoints by time, stability or manual read with time/date stamp. Calibration log of last 10 calibrations. User method storage for 10 procedures. Data is preserved without power. Advanced self-test and diagnostics routines. Password protection. Downloadable software and methods updates via Internet.
Conductivity Mode	
Range	0 to 3000mS/cm
Resolution	Four significant digits down to 0.001µS/cm, dependent on cell constant
Relative Accuracy	±0.5% ±1 digit or 0.01µS/cm, whichever is greater
Cell Constants	0.001 to 199.9cm^{-1}
Calibration Points	1 to 5 points
Resistivity Mode	
Range	0.0001 to 100megohm•cm
Resolution	0.0001megohm•cm
Relative Accuracy	±0.5% ±1 digit
Salinity Mode	
Range	0.01 to 80.0ppt NaCl equivalent; 0.01 to 42ppt practical
Resolution	0.01ppt
Relative Accuracy	±0.1ppt ±1 digit
TDS Mode	
Range	0 to 19,999mg/L; adjustable TDS Factor, 0.00 to 10.00
Resolution	1mg/L
Relative Accuracy	±0.5% ±1 digit
Temperature Mode	
Range	-5° to +105°C
Relative Accuracy	±0.1°, ±1 digit
Compensation Range	-5° to +105°C
Compensation Reference	15°C, 20°C or 25°C (default); autoranging
Temperature	
Inputs	Mini-DIN conductivity, locking
Data Output	Waterproof bidirectional RS-232, stereo jack, optional USB interface cable
Electrical Requirements	4 × 1.5V "AA" batteries
Meter Only	
Mfr. No.	1214000
Cat. No.	**13-642-061**
Each	700.00
Meter Kit	
Mfr. No.	1214003
Cat. No.	**13-645-121**
Each	873.00
Meter Kit/Fresh Water Conductivity	
Mfr. No.	1010122
Cat. No.	**13-643-031**
Each	1059.00
Meter Kit/Fresh Water Salinity	
Mfr. No.	1010128
Cat. No.	**13-643-036**
Each	1059.00

Oakton* CON 110 Advanced Meter

Customize meter parameters for specific applications

Reads conductivity 0.00µS to 199.9mS across five ranges with single or five-point, manual or automatic calibration. Stores and recalls 100 readings with temperature in °C or °F.

OAKTON
10.00
25.8

13-620-241

- Advanced set-up mode enables user to check calibration data and customize features
- Adjustable temperature coefficient
- Select one of three cell constants: 1.0cm^{-1} 0.1cm^{-1} or 10cm^{-1}
- Select manual or autoranging and manual or automatic temperature compensation
- Mode can also be used to program Ready indicator, auto shutoff, and more
- Press HOLD button to freeze data on the LCD display
- RS-232 output enables continuous download of data to printer
- Membrane keypad is water resistant
- Compatible with AC adapter 13-300-126 (not included)
- Manufactured with ISO 9000:2000-certified processes

ORDERING INFORMATION:

Dimensions (L × W × H): 3½ × 1¾ × 7½" (6.9 × 4.5 × 19cm)

INCLUDES:

Meter/Probe includes built-in stand, electrode holder, 1.0cm^{-1} conductivity/TDS/temperature plastic-bodied probe with 3' (0.9m) cable (13-620-AP54), four "AAA" batteries, and instructions.

Meter Kit includes meter with built-in standard electrode holder; 1.0cm^{-1} conductivity/TDS/temperature plastic-bodied probe with 3' (0.9m) cable (13-620-AP54); four each of 477µS, 1431µS, 2764µS, 15,000µS 20mL calibration solution pouches; four rinse water pouches; sample bottle; four "AAA" batteries; and hard plastic carrying case.

WARRANTY:

Backed by a full two-year warranty

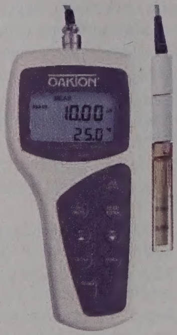
Model	Oakton CON 110
Conductivity Mode	
Range	0.00 to 19.99µS, 0.0 to 199.9µS, 0 to 1999µS, 0.00 to 19.99mS, 0.0 to 199.9mS
Resolution	0.01µS, 0.1µS, 1.0µS, 0.01mS, 0.1mS
Relative Accuracy	±1% of FS
Cell Constant	0.1cm^{-1}, 1.0cm^{-1}, 10cm^{-1}
Temperature Mode	
Range	-10° to +110°C (14° to 230°F)
Resolution	0.1°C/°F
Relative Accuracy	±0.5°C (±0.9°F)
Compensation	Manual or Automatic
Meter/Probe	
Cat. No.	**13-620-241**
Each	498.50
Meter Kit	
Cat. No.	**13-620-240**
Each	584.32

Oakton* CON 11 Standard Conductivity Meter

Reads both conductivity and TDS with autoranging across five ranges; ergonomically designed for one-handed use

Simple-to-use portable meter. Dual-display shows conductivity plus temperature in °C with pushbutton ease; memory saves 50 data sets.

- With manual or automatic temperature compensation and auto or manual, single or multipoint calibration for ±1% full-scale accuracy
- Features HOLD function, Auto off, Ready indicator, error messages
- Water-resistant membrane keypad
- Conductivity-to-TDS factor is adjustable from 0.4 to 1.0
- Manufactured with ISO 9001:2000-certified processes



13-620-237

ORDERING INFORMATION:
Dimensions (L × W × H): 3½ × 1¾ × 7½" (6.9 × 4.5 × 19cm). Compatible with AC adapter (13-300-126, sold separately).

INCLUDES:
Meter/Probe package includes meter with built-in stand; electrode holder; 1.0cm^{-1} conductivity/TDS/temperature plastic-bodied probe with 3' (0.9m) cable (13-620-AP54); instructions; and four "AAA" batteries.

Meter Kit package includes meter with built-in stand and electrode holder; 1.0cm^{-1} conductivity/TDS/temperature plastic-bodied probe with 3' (0.9m) cable (13-620-AP54); four each of 447µS, 1413µS, 2764µS, and 15,000µS 20mL conductivity calibration solution pouches; four rinse water pouches; sample bottle; four "AAA" batteries; instructions; and hard plastic carrying case.

WARRANTY:
Backed by a full two-year warranty

CERTIFICATIONS:
CE marked

Model	Oakton CON 11
Conductivity Mode	
Range	0.00 to 19.99µS, 0.0 to 199.9µS, 0 to 1999µS, 0.00 to 19.99mS, 0.0 to 199.9mS
Resolution	0.01µS, 0.1µS, 1µS, 0.01mS, 0.1mS
Relative Accuracy	±1% of FS
Cell Constants	0.1cm^{-1}, 1.0cm^{-1}, 10cm^{-1}
TDS Mode	
Range	0.00 to 9.99ppm, 0.0 to 99.9ppm, 0 to 999ppm, 1.00 to 9.99ppt, 1.0 to 199.9ppt
Resolution	0.01ppm, 0.1ppm, 1ppm, 0.01ppt, 0.1ppt
Relative Accuracy	±1% of FS
Temperature Mode	
Range	-10° to +110°C
Resolution	0.1°C
Relative Accuracy	±0.5°C
Compensation	Manual or Automatic
Meter/Probe	
Cat. No.	**13-620-237**
Each	434.69
Meter Kit	
Cat. No.	**13-620-236**
Each	521.46

ACCESSORIES

Conductivity/TDS/Temperature Probe

Replacement for:

- Oakton* CON 11, CON 110, CON 400, CON 410, pH/CON 300, TDS 400 Portable Meters
- Fisher Scientifc accumet* AP75, AP85 Portable Meters
- Oakton CON 510, pH/CON 510 Benchtop Meters

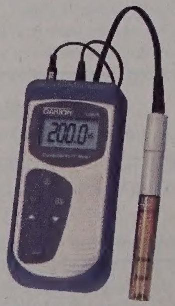
Cat. No.	Each
13-620-AP54	246.36

Oakton* Acorn* CON 6 and TDS 6 Economy Meters

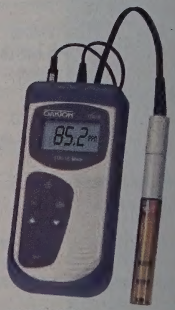
Economical meters with enhanced capabilities, accuracy and pushbutton operation

Compact, accurate meters for the budget-conscious laboratory.

- CON 6 measures conductivity from 0.0µS/cm to 200.00mS/cm; TDS 6 measures from 0.0ppm to 1200.0ppt
- Autoranging for fast response and best resolution
- Press a button to switch between conductivity or TDS and temperature readings
- Calibrate at up to five points for ±1% full-scale accuracy
- HOLD function plus auto shutoff after 17 minutes of inactivity
- Auto temperature compensation with readout in °C
- Splash-resistant membrane keypad and plastic housing protect meter components from occasional spills
- Calibration instructions printed on meter back
- Operates on four 1.5V "AAA" batteries



15-500-052



15-500-053

Contd. on next page.

Oakton* Acorn* CON 6 and TDS 6 Economy Meters, Contd.

INCLUDES:

Meter/Probe package includes meter; 1.0cm^{-1} conductivity/TDS/temperature probe with 3' (0.9m) cable (13-620-AP54); instructions; four "AAA" batteries; protective rubber boot with built-in stand.

Meter Kit package includes meter; 1.0cm^{-1} conductivity/TDS/temperature probe with 3' (0.9m) cable (13-620-AP54); conductivity calibration solutions; sample bottle; four" AAA" batteries; instructions; hard plastic carrying case; protective rubber boot with built-in stand.

WARRANTY:

Three-years

Model	Oakton Acorn CON 6		Oakton Acorn TDS 6	
Modes	Conductivity, Temperature °C		TDS, Temperature °C	
Conductivity Mode				
Range	0.0µS to 19.99mS/cm (3 ranges)		----	
Resolution	0.1µS, 1µS, 0.01mS		----	
Relative Accuracy	±1% of full scale		----	
Cell Constant	±1% of full scale		----	
Calibration	1 to 5 points		----	
TDS Mode				
Range	----		0.0ppm to 200.0ppt	
Resolution	----		0.1ppm, 1ppm, 0.01ppt	
Relative Accuracy	----		±1% of full scale	
Calibration	----		1 to 5 points	
Temperature Mode				
Range	-10° to +110.0°C		-10° to +110.0°C	
Resolution	0.1°C		0.1°C	
Relative Accuracy	±0.5°C		±0.5°C	
Compensation	Automatic		Automatic	
Inputs	Waterproof BNC, ATC		Waterproof BNC, ATC	
Packaging Option	**Meter/Probe**	**Meter Kit**	**Meter/Probe**	**Meter Kit**
Mfr. No.	WD-35606-10	WD-35606-71	WD-35606-15	WD-35606-76
Cat. No.	**15-500-052**	**15-500-050**	**15-500-053**	**15-500-051**
Each	290.25	388.83	290.25	388.83

Oakton* TDSTestr* 11 and ECTestr* 11 Series Meters

Versatile, waterproof pocket testers that float

Rugged construction for long service; convenient operation.

- IP67 waterproof/dustproof rated
- Chemical-resistant, floatable Valox* housing so tester won't sink to the bottom of tank or pond
- Stainless-steel electrodes are replaceable without losing IP67 protection, have good chemical compatibility and durability
- Microprocessor-controlled TDS or conductivity testing
- Single- or one-point-per-range calibration
- Auto shutoff, low-battery indicator, error messages
- Automatic temperature compensation over the entire 0° to 50°C (32° to 122°F) range for quick response, even with fluctuating temperatures
- Accuracy of ±1% full-scale (each range)

TDSTestr 11

- Ranges of 0 to 2000ppm; 0 to 10.00ppt
- Resolution of 10ppm; 0.10ppt
- Pushbutton calibration, one point per range

TDSTestr 11 Plus

- Three-range instrument covers most applications
- Cup or dip style testing: pour sample into sensor cup or dip sensor into sample
- Ranges of 0 to 200.0ppm; 0 to 2000ppm; 0 to 10.00ppt
- Resolution, 0.1ppm; 1ppm; 0.01ppt
- Pushbutton calibration, one point per range

ECTestr 11

- Covers a broad range of applications
- Ranges of 0 to 2000µS; 0 to 20.00mS
- Resolution of 10µS; 0.10mS
- Pushbutton calibration, one point per range

ECTestr 11 Plus

- Three ranges for maximum resolution
- Cup or dip style testing: pour sample into sensor cup or dip sensor into sample
- Automatically or manually select measuring range
- Pushbutton calibration, HOLD function, and error messages
- Ranges of 0 to 200.0µS; 0 to 2000µS; 0 to 20.00mS
- Resolution 0.1µS, 1µS; 0.01mS
- Pushbutton calibration, one point per range

13-200-275

13-200-276

13-200-277

13-200-278

ORDERING INFORMATION:

All models measure 6½L x 1½" diameter. Shipping weight, 0.45 lb. (0.2kg). Operate on four 1.5V batteries (included); battery life, over 150 hours.

INCLUDES:

Housing, replaceable electrode, batteries, operating instructions

NOTE:

Before measuring, calibrate tester as either cup style or dip style (depending on intended method of use)

Specifications and Ordering Information on next page.

ACCESSORIES

Replacement Electrode Sensors

For Standard (Oakton TDSTestr, ECTestr) or Plus (Oakton TDSTestr Plus*, ECTestr Plus*) Series Models.

For Models	Cat. No.	Each
Standard Series	**13-200-233**	49.34
Plus Series	**13-200-240**	58.19

Oakton* TDSTestr* 11 and ECTestr* 11 Series Meters, Contd.

Model	Oakton TDSTestr 11	Oakton TDSTestr 11 Plus	Oakton ECTestr 11	Oakton ECTestr 11 Plus
Modes	Total Dissolved Solids, Temperature	Total Dissolved Solids, Temperature	Conductivity, Temperature	Conductivity, Temperature
Display	Large LCD	Large LCD	Large LCD	Large LCD
Ranges	0 to 2000ppm; 0 to 10.00ppt	0 to 200.0ppm, 0 to 2000ppm; 0 to 10.00ppt	0 to 2000µS; 0 to 20.00mS	0 to 200.0µS, 0 to 2000µS, 0 to 20.00mS
Resolution	10ppm; 0.10ppt	0.1ppm, 1ppm; 0.01ppt	10µS; 0.10mS	0.1µS, 1µS, 0.01mS
Relative Accuracy	±1% full-scale (each range)	±1% full-scale (each range)	±1% full scale (each range)	±1% full scale (each range)
Calibration	Pushbutton, one point per range	Pushbutton, one point per range	Pushbutton, one point per range	Pushbutton, one point per range
Temperature Range	0° to 50°C (32° to 122°F)	0° to 50°C (32° to 122°F)	0° to 50°C (32° to 122°F)	0° to 50°C (32° to 122°F)
Temperature Compensation	Automatic	Automatic	Automatic	Automatic
Housing Material	Chemical-resistant, floatable Valox	Chemical-resistant, floatable Valox	Chemical-resistant, floatable Valox	Chemical-resistant, floatable Valox
Electrode Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Power	Four 1.5V batteries	Four 1.5V batteries	Four 1.5V batteries	Four 1.5V batteries
Mfr. No.	3566210	3566215	3566230	3566235
Cat. No.	**13-200-275**	**13-200-276**	**13-200-277**	**13-200-278**
Each	69.52	99.74	69.52	99.74

YSI* Pro30 Handheld Conductivity/TDS/Salinity Meter

Compact, handheld instrument provides user-selectable cable lengths

- IP67 waterproof rating (even without battery cover)
- Backlit display and glowing keypad
- Choice of conductivity probes with 4, 10 and 20 meter cables
- Fuel gauge continuously displays battery level
- 50 dataset memory
- One-button calibration routine

Pro 30
0.723
23.8
YSI

15-177-453

ORDERING INFORMATION:
Dimensions (D × W × H): 2¼ × 3¼× 8½" (2.3 × 8.3 × 21.6cm). Weight with batteries 1¹⁄₁₆ lb. (475g). Power: Two alkaline "C" cells; battery life, 100 hours depending on usage. Order probe/cable combinations separately, right.

REQUIRED ACCESSORIES:
Probe/cable combinations must be ordered separately. See Ordering Chart, right.

WARRANTY:
Three years for the instrument, two years for the cables, one year for probes

Description	Mfr. No.	Cat. No.	Each
Pro30 Meter	6050030	**15-177-453**	500.00
Probe with 4m cable	60530-4	**15-177-474**	375.00
Probe with 10m cable	60530-10	**15-177-475**	395.00
Probe with 20m cable	60530-20	**15-177-476**	445.00

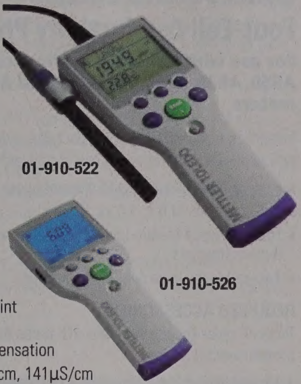
SPECIFICATIONS

Model	YSI Pro30
Conductivity Mode	
Range	0 to 200mS/cm
Resolution	0.001mS/cm to 0.1mS/cm (range-dependent)
Relative Accuracy	±0.5% of reading or ±0.001mS/cm (whichever is greater) with cable; ±1.0% of reading or ±0.001mS/cm (whichever is greater) with cable
TDS Mode	
Range	0 to 100g/L
Resolution	0.001, 0.01, 0.1g/L
Salinity Mode	
Range	0.00 to 70.00ppt
Resolution	0.01ppt
Relative Accuracy	±1.0% of reading or ±0.1ppt, whichever is greater
Temperature Mode	
Range	-5° to +70°C
Resolution	0.1°C
Relative Accuracy	±0.2°C

LOOKING CONDUCTIVITY/pH METERS?
YSI* Pro Multiparameter Meters with conductivity mode can be found in the pH/pX section.

Mettler Toledo* SevenGo* and SevenGo pro* Conductivity Meters

Built-in data memory and automatic functions for outstanding performance



- Measure conductivity, TDS, resistivity, salinity, temperature
- Designed for easy, comfortable right- or left-handed operation
- Waterproof and dustproof to IP67 standards
- Large display of measured value and settings
- Rotatable electrode clip mounts left or right for single-handed operation

SevenGo Model SG3

- Automatic and manual endpoint recognition
- Automatic temperature compensation
- Automatic recognition 84µS/cm, 141µS/cm or 12.88mS/cm
- Data memory for 30 GLP data points

SevenGo pro Model SG7

- Separate operating modes for expert and routine use
- Linear and nonlinear temperature compensation
- Calibration with user-defined standard or cell constant
- Water measurements according to USP
- Record date, time, time interval
- Intuitive menu operation using softkeys
- GLP memory for 200 datapoints
- Contact-free infrared communication with notebook, printer or PC
- On/off backlit display

ORDERING INFORMATION:

Choose from three packaging options. All include wrist strap, 1.8M cable, four "AA" batteries, operating instructions, test certificate, and declaration of conformity.

- Meter with electrode
- Meter with electrode and field case with electrode arm and cover
- Meter with electrode, field case with electrode arm and cover, and ErGo* field assistant that:
  - Converts SevenGo meter into mobile benchtop instrument or lets you wear it around your neck for hands-free operation
  - Can be used for a variety of functions
  - Stores pH electrodes wet for immediate use without watering caps

Model	**Mettler Toledo SevenGo SG3**	**Mettler Toledo SevenGo pro SG7**
Conductivity Mode		
Range	0.01µS/cm to 500mS/cm	0.01µS/cm to 1000mS/cm
Resolution	0.01 or 1.0µS/cm	0.01µS/cm
Accuracy	±0.5%	±0.5%
Temperature Mode		
Range	-5° to +105°C	-5° to +105°C
Resolution	0.1°C	0.1°C
Accuracy	±0.2°C	±0.1°C
TDS Mode		
Range	0.01mg/L to 300g/L	0.01mg/L to 600g/L
Resolution	0.01 or 1.0mg/L	0.01 or 1.0mg/L
Accuracy	±0.5%	±0.5%
Resistivity Range	0.00 to 100.00megohm•cm	0.00 to 100.00megohm•cm
Salinity Range	0.00 to 80.00ppt	0.00 to 80.00ppt
Inputs	LTW 7 pin (IP67)	LTW 7 pin (IP67)
Outputs	----	IR to printer or PC via RS-232 or USB
Power Requirements	4 × 1.5V "AA" batteries or 1.3V NiMH accumulators	4 × 1.5V "AA" batteries or 1.3V NiMH accumulators
Environmental Conditions	0° to 40°C (32° to 104°F), 5 to 85% RH (non-cond.)	0° to 40°C (32° to 104°F), 5 to 85% RH (non-cond.)
L x W x H	1¾ × 3½ × 8⅝" (45 × 90 × 220cm)	1¾ × 3½ × 8⅝" (45 × 90 × 220cm)
Weight (without batteries)	11½ oz. (325g)	11½ oz. (325g)
Meter with Electrode and 1.8m Cable		
Mfr. No.	SG3-ELK	SG7-ELK
Cat. No.	**01-910-522**	**01-910-526**
Each	750.00	1070.00
Meter with Electrode, 1.8m Cable and Case		
Mfr. No.	----	SG7-FK2
Cat. No.	----	**01-910-527**
Each	----	1155.00
Meter with Electrode, 1.8m Cable, Case and ErGo Field Assistant		
Mfr. No.	SG3-ASK	SG7-ASK
Cat. No.	**01-910-525**	**01-910-529**
Each	1130.00	1450.00

CELLS

Fisher Scientific accumet* Temperature-Compensated Two-Cell Conductivity Probes

For use on the Fisher Scientific accumet Excel (XL) series benchtop meters

- Immersion-type cell
- Use in standard electrode holder: unique compact size is same as typical pH electrode
- Built-in temperature sensors provide temperature-compensated readings
- Epoxy body
- 8-pin connectors

13-620-100

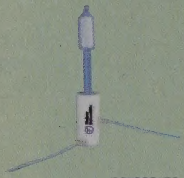
Cell Constant (K)	Cat. No.	Each
0.1cm^{-1}	**13-620-101**	325.56
1.0cm^{-1}	**13-620-100**	325.56
10.0cm^{-1}	**13-620-102**	325.56

ACCESSORIES

Fisher Scientific pH/Conductivity Universal Flow-thru Adapter

Accepts all 12mm dia. pH and conductivity probes to permit constant monitoring of flowing fluids

- Side connectors accept tubing from ⅛ to 3⁄16" I.D.
- Flowrates range from 0.001 to 50mL/min., depending on tube size
- Two O-rings ensure a secure, leakproof seal
- Cell volume (approx. 2 to 4mL) depends on how far into the adapter the probe is placed
- Manufactured from chemically inert PTFE
- Withstands temperatures from -73° to +260°C (-100° to +500°F)



06-662-59

ORDERING INFORMATION:
Measures 1" dia. × 2¼"L (2.5 × 5.6cm)

Cat. No.	Each
06-662-59	81.06

Fisher Scientific accumet* Two-Cell and Four-Cell Conductivity Probes

For use with Fisher Scientific accumet AR60, AR50, AR20, AB30 benchtop and AP65 portable meters

Immersion-type cell. Unique compact size is the same as a typical pH electrode, allowing use in standard electrode holder.

- Two- or four-cell types with glass or epoxy bodies
- Cell constants of 0.1, 1.0, or 10.0cm^{-1}
- Four-cell types feature built-in temperature sensors and 8-pin connectors
- Two-cell types have dual-pin connectors

REQUIRED ACCESSORIES:
Two-cell types require separate ATC probe for temperature-compensated readings.

13-620-163

Body Type	Cell Constant (K)	Cat. No.	Each
2-Cell			
Glass	0.1cm^{-1}	**13-620-156**	247.38
	1.0cm^{-1}	**13-620-155**	247.40
	10.0cm^{-1}	**13-620-157**	247.38
Epoxy	0.1cm^{-1}	**13-620-161**	247.40
	1.0cm^{-1}	**13-620-160**	247.38
	10.0cm^{-1}	**13-620-162**	247.38
4-Cell			
Glass	1.0cm^{-1}	**13-620-163**	410.01
	10.0cm^{-1}	**13-620-164**	410.01
Epoxy	1.0cm^{-1}	**13-620-165**	392.15
	10.0cm^{-1}	**13-620-166**	390.99

*Trademark. See Trademark Reference.

Thermo Scientific* Orion* Conductivity Cells

Two-electrode and DuraProbe* four-electrode cells

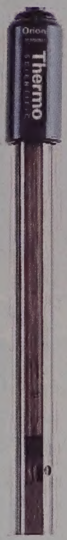
Developed and manufactured under highest quality standards. Conventional two-electrode cells and DuraProbe four-electrode cells are available in a variety of styles for field and laboratory applications, with a variety of cell constants.

Two-electrode Glass Cells

- Models with 8-pin DIN, 8-pin DIN waterproof and Mini-DIN connectors
- Stainless-steel, epoxy or glass bodies

DuraProbe Four-electrode Cells

- Maximum precision and linearity, extremely large linear measuring range
- Long-term stability of cell constant
- Epoxy/graphite construction
- Integrated temperature sensor; 40mm or less immersion depth
- Eliminate errors from electrode fouling, cable length or age, polarization effects, or fringe field changes



13-642-223

13-642-224

13-642-225

Applications	Cell Constants	Probe/Electrode Material	Probe Dia. × L	Min./Max. Immersion	Cable Length	Cable Connector	Mfr. No.	Cat. No.	Each
Conventional 2-electrode cells									
Boiler feedwater, ultrapure water (Includes flow cell)	0.1cm^{-1}	Steel, V4A/Steel, V4A	13 × 120mm	35mm/110mm	3' (1m)	8-pin DIN	013016D	**13-302-18**	552.80
	0.1cm^{-1}	Steel, V4A/Steel, V4A	13 × 120mm	35mm/110mm	3' (1m)	Mini-DIN	013016MD	**13-642-227**	557.81
	0.1cm^{-1}	Steel, V4A/Steel, V4A	13 × 120mm	35mm/110mm	3' (1m)	8-pin DIN, waterproof	013016A	**13-302-7**	593.86
Field and laboratory applications	0.1cm^{-1}	Epoxy/Graphite	17.8 × 134mm	----/----	10' (3m)	8-pin DIN	011510	**13-302**	263.60
	0.1cm^{-1}	Epoxy/Graphite	17.8 × 134mm	35mm/NA	3' (1m)	Mini-DIN	011510MD	**13-642-224**	321.81
	0.1cm^{-1}	Epoxy/Graphite	12 × 100mm	20mm/90mm	5' (1.5m)	8-pin Mini-DIN	011050MD	**13-642-223**	360.30
High electrolyte concentrations (acids, lyes, industrial process water, seawater)	10cm^{-1}	Glass/Platinum, platinized	20 × 120mm	55mm/110mm	3' (1m)	8-pin DIN, waterproof	018020A	**13-302-8**	431.69
DuraProbe 4-electrode cells									
Field and laboratory applications	0.475cm^{-1}	Epoxy/Graphite	15 × 163mm	35mm/NA	5' (1.5m)	8-pin DIN	013005D	**13-302-15**	411.56
	0.475cm^{-1}	Epoxy/Graphite	15 × 163mm	35mm/NA	5' (1.5m)	8-pin Mini-DIN	013005MD	**13-642-225**	418.57
	0.475cm^{-1}	Epoxy/Graphite	15 × 163mm	35mm/NA	5' (1.5m)	8-pin DIN, waterproof	013005A	**13-302-9**	411.56
	0.475cm^{-1}	Epoxy/Graphite	15 × 163mm	35mm/NA	10' (3m)	8-pin DIN	013010MD	**13-642-226**	451.69
	0.475cm^{-1}	Epoxy/Graphite	15 × 163mm	35mm/NA	66' (20m)	8-pin DIN, waterproof	013060A	**13-302-12**	596.00
	0.55cm^{-1}	Epoxy/Graphite	12 × 159mm	35mm/NA	10' (3m)	8-pin DIN, waterproof	013610	**13-302-1**	408.54
	0.55cm^{-1}	Epoxy/Graphite	12 × 159mm	35mm/NA	10' (3m)	8-pin DIN, waterproof	013610MD	**13-642-228**	426.60

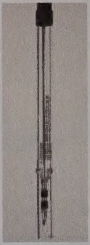
YSI* Conductivity Cells

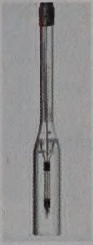
For use with YSI 3200 and 3100 Conductivity Meters

Rugged; suitable for field work. Models with built-in thermistors (CON/ATC) allow automatic temperature compensation without another probe. Models without thermistor (CON) require separate probe for temperature compensation. Contain platinized platinum electrodes.

09-324-54

09-324-28


09-324-22


09-324-31

Choose from five cell types:

- **Dip-type Plastic Cells** have ABS plastic body, O.D. of ½" (1.3cm)
- **Flow-through Cell** for flow systems has thermistor, borosilicate glass body, 30mL nominal volume, O.D. of 1" (2.5cm)
- **Fill Cell** for small volumes has thermistor, borosilicate glass body, 5mL nominal volume, O.D. of ¾" (2cm)
- **Dip-type Glass Cells** have borosilicate glass body; O.D. of 09-324-33 is ½" (1.3cm); all others have O.D. of 1" (2.5cm)
- **Dip-Type Glass Micro Cells** have borosilicate glass body; O.D. of ½" (1.3cm); usable in test tubes with 5mL samples

ORDERING INFORMATION:

CON Cells (without built-in thermistors) have banana-type connectors and require 09-324-50 Cell Adapter for use with Models 3200 and 3100 Conductivity Meters. CON/ATC Cells (with built-in thermistors) have seven-pin mini-DIN connectors and are compatible only with YSI Models 3200 and 3100 Conductivity Meters.

Type	Cell Constant	Overall Length	Mfr. No.	Cat. No.	Each
Dip-Type Plastic Cells					
CON/ATC	1.0cm^{-1} (±1%)	5¾" (14.6cm)	3252	**09-324-51**	228.38
CON	1.0cm^{-1} (±1%)	5¾" (14.6cm)	3417	**09-324-28**	225.00
CON	0.1cm^{-1} (±1%)	6¼" (16cm)	3418	**09-324-30**	225.00
Flow-Through Cell					
CON/ATC	0.1cm^{-1} (±1%)	5¾" (14.6cm)	3255	**09-324-54**	437.72
Fill Cell					
CON/ATC	1.0cm^{-1} (±1%)	5¼" (13.5cm)	3254	**09-324-53**	427.66
Dip-Type Glass Cells					
CON/ATC	0.1cm^{-1} (±1%)	6¼" (16cm)	3256	**09-324-55**	427.66
CON	1.0cm^{-1} (±1%)	7½" (19cm)	3401	**09-324-31**	398.67
CON	0.1cm^{-1} (±1%)	6¼" (16cm)	3402	**09-324-32**	427.66
CON	10.0cm^{-1} (±1%)	8" (20cm)	3440	**09-324-33**	392.44
Dip-Type Glass Micro Cells					
CON/ATC	1.0cm^{-1} (±1%)	7" (17.8cm)	3253	**09-324-52**	397.46
CON	1.0cm^{-1} (±1%)	7" (17.8cm)	3403	**09-324-22**	377.34

ACCESSORIES

Cell Adapter

Adapter required to use cells without thermistor with YSI Models 3200 and 3100 Conductivity Meters.

Mfr. No.	Cat. No.	Each
3232	**09-324-50**	158.61

STANDARDS AND SOLUTIONS

*Fisherbrand** Traceable* Conductivity Calibration Standards

Highly accurate; traceable to NIST* standards

- Calibrate conductivity, resistivity, and dissolved solids
- In 16 oz. bottle (473mL) or 100mL single-use container
- Accurate to ±0.25% for all solutions except 06-664-24, 06-664-25, 09-328-1 and 09-328-6, with accuracy of ±0.25μmhos (or the uncertainty listed on certificate)

Additional values and NIST/A2LA bottle-tested standards available; see our Web site.

CERTIFICATIONS:

ISO 17025 certificate provided to indicate solution traceability to NIST standards

Conductivity	Calibration Resistance	Dissolved Solids	Cat. No.	Each
In 16 oz. Bottles				
5μmhos	0.5megohms	3.3ppm	**06-664-24**	55.59
10μmhos	0.1megohms	6.6ppm	**09-328-1**	27.60
100μmhos	0.01megohms	66ppm	**09-328-2**	27.60
1000μmhos	0.001megohms	666ppm	**09-328-3**	27.60
1413μmhos	0.00071megohms	933ppm	**09-328-11**	25.71
10,000μmhos	0.0001megohms	6666ppm	**09-328-4**	27.60
100,000μmhos	0.00001megohms	66,666ppm	**09-328-5**	27.60
In 100mL One-Shot Container				
5μmhos	0.2megohms	3.3ppm	**06-664-25**	73.38
10μmhos	0.1megohms	6.6ppm	**09-328-6**	30.82
100μmhos	0.01megohms	66ppm	**09-328-7**	30.82
1000μmhos	0.001megohms	666ppm	**09-328-8**	30.82
1413μmhos	0.00071megohms	933ppm	**09-328-12**	30.82
10,000μmhos	0.0001megohms	6666ppm	**09-328-9**	30.82
100,000μmhos	0.00001megohms	66,666ppm	**09-328-10**	30.82

*Fisherbrand** Traceable* One-Shot* Conductivity Calibration Standard Assortment

One each of 09-328-6, -7, -8, -12, -9, -10.

Cat. No.	Pack of 6
09-328-20	42.75

*Fisherbrand** Redi-Stor* Conductivity Probe Storage Solution

Ideal for storing conductivity probes

- Preserves probe cleanliness
- Eliminates growths found when probes are stored in water
- Keeps probes ready for immediate use with no conditioning

ORDERING INFORMATION:

16 oz. (473mL) bottle

Cat. No.	Pack of 6
09-330-1	29.95

CONTAINERS

BINS/BOXES

*Fisherbrand** Workstation Storage/Dispenser Bins

Excellent space-saving storage

Ideal for holding and dispensing pipet tips, microcentrifuge tubes, finger cots, cotton swabs, alcohol packs, or any small items used in the laboratory.

- Clear acrylic front with white acrylic sides and back
- Provides easy content identification and keeps items dust free
- Front hinged and provides large opening for easy removal
- Removable top cover for easy filling

03-340-194B 03-340-194A

Size	L x W x H	Cat. No.	Each
Small	6 × 6½ × 7" (15 × 16.5 × 17.8cm)	**03-340-194B**	84.24
Large	6 × 6½ × 14" (15 × 16.5 × 35.5cm)	**03-340-194A**	108.68

*Fisherbrand** Pasteboard Pill Boxes

Ideal for lab storage or samples

- Manufactured with white recyclable board
- Rectangular
- Sliding form
- White interior

03-505 Series

L × W × H (of inside tray)	Cat. No.	Pack of 72
2⅛ × 1⅛ × ⅝" (54 × 29 × 16mm)	**03-505A**	57.00
2⁹⁄₁₆ × 1⁹⁄₁₆ × 1" (65 × 40 × 25mm)	**03-505B**	65.24
2⅞ × 1⅞ ×1⅛" (73 × 48 × 29mm)	**03-505C**	116.98
3½ × 2⅜ × 1⅜" (89 × 60 × 35mm)	**03-505D**	161.15

*Fisherbrand** Tin Specimen Boxes

Excellent for sample collection and storage

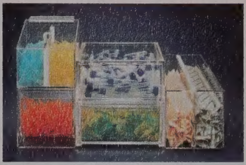
- Round seamless tin
- Low-form, flat bottom
- With label on lid
- Also known as ointment boxes

03-490 Series

Capacity	Outside Dia. x H	Cat. No.	Pack of
½ oz. (15mL)	1½ × ½" (38 × 13mm)	**03-490A**	144/79.16
1 oz. (30mL)	2 × ⅝" (51 × 16mm)	**03-490B**	72/70.42
2 oz. (60mL)	2⅜ × ¾" (60 × 19mm)	**03-490C**	72/95.29
4 oz. (120mL)	3⅛ × ¹⁵⁄₁₆" (79 × 24mm)	**03-490D**	36/92.89

Nalgene* Lab Organizers

Build a workstation to suit your needs



For use on the bench. Clear acrylic modules are easy to clean, permit easy viewing of supplies. Modules attach to each other with Velcro* tabs. With rubber feet for stability.

Pipet Holder

- Holds bags, boxes, pipet canisters or serological pipets (up to 3⅜ oz. [100mL])
- With divider to separate items; remove divider to form large storage area
- Outside L × W × H: 15 × 6 × 6" (38 × 15 × 15cm)

Top Dispensing Bin

- All-purpose
- Hinged dust cover keeps items clean
- With divider to separate items; remove divider to form large storage area
- Outside L × W × H: 6 × 6 × 6" (15 × 15 × 15cm)

Front Dispensing Bin

- All-purpose
- Large bottom dispensing bin with hinged front access
- Allows easy removal, keeps items clean
- Outside L × W × H: 6 × 6 × 6" (15 × 15 × 15cm)

Multiple Dispensing Bin

- All-purpose
- Contains four storage areas of various sizes
- With hinged dust cover to keep supplies clean
- Outside L × W × H: 15 × 6 × 12" (38 × 15 × 30.5cm)

Stackable Drawer

- Units nest for high-density storage
- Can be mounted under a shelf with included hardware included
- Outside L × W × H: 9 × 9 × 4½" (23 × 23 × 11.4cm)

Description	Mfr. No.	Cat. No.	Each
Pipet Holder	5810 0002	**13-715A**	66.83
Top Dispensing Bin	5830 0001	**15-350-85A**	73.40
Front Dispensing Bin	5830 0002	**15-350-85B**	78.00
Multiple Dispensing Bin	5830 0003	**15-350-85C**	169.42
Stackable Drawer	5832 0001	**15-350-87**	97.79

Nalgene* Reusable Plastic Utility Boxes

Great for storing dry materials, small parts

Attractive, easy-to-clean, general-purpose laboratory storage boxes. Not leakproof.

- Manufactured from clear styrene-acrylonitrile with tight-fitting, molded, white, LDPE lids that include inserts
- Withstand temperatures down to -25°C (-13°F) for freezer storage
- 03-484C is ideal for electrophoresis gels

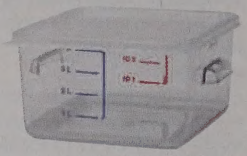
03-484 Series

Capacity	L × W × H	Mfr. No.	Cat. No.	Pack of	Case of
4 oz. (125mL)	3 × 2¼ × 2¼" (7 × 6 × 6cm)	5700 0125	**03-484A**	4/42.19	6 Pk./168.75
9 oz. (300mL)	3 × 2¼ × 4½" (7 × 6 × 12cm)	5700 0300	**03-484G**	4/54.57	6 Pk./218.25
10 oz. (325mL)	5 × 3 × 2¼" (13 × 7 × 6cm)	5700 0325	**03-484B**	4/56.19	6 Pk./224.75
16 oz. (500mL)	7½ × 6 × 1 ½" (19 × 16 × 4cm)	5700 0500	**03-484C**	2/42.13	6 Pk./168.50
24 oz. (750mL)	5 × 3 × 4½" (13 × 7 × 12cm)	5700 0750	**03-484J**	2/46.32	8 Pk./247.00
32 oz. (1000mL)	5 × 2⅞ × 6⅞" (13 × 7 × 18cm)	5700 1000	**03-484D**	2/47.12	6 Pk./188.50
64 oz. (2000mL)	7½ × 6 × 4" (19 × 16 × 10cm)	5700 2000	**03-484E**	1/30.00	8/160.00

Rubbermaid* Square Space-Saving Containers

Store up to 25% more than conventional round containers in the same space

- FDA-compliant clear polycarbonate construction resists breakage
- Marked with precise graduations—English in red, metric in blue
- Smooth surfaces for easy cleaning: commercial dishwasher safe
- Textured bottom protects container from abrasion and reduces sliding on slippery surfaces
- Pocket-style handles, for easy lifting, have holes that allow complete draining when inverted in washer
- Nest for compact storage



03-484-21 (with 03-484-24 lid)

ORDERING INFORMATION:

Lids sold separately.

CERTIFICATIONS:

Certified to NSF Standard 2

Capacity	L × W × H	Mfr. No.	Cat. No.	Each
2 qt. (1.8L)	8¾ × 8⁵⁄₁₆ × 2¹¹⁄₁₆" (22.2 × 21.1 × 6.8cm)	6302	**03-484-20**	6.69
4 qt. (3.8L)	8¾ × 8⁵⁄₁₆ × 4²³⁄₃₂" (22.2 × 21.1 × 12.0cm)	6304	**03-484-21**	10.04
6 qt. (5.7L)	8¾ × 8⁵⁄₁₆ × 6²⁹⁄₃₂" (22.2 × 21.1 × 17.5cm)	6306	**03-484-22**	13.38
8 qt. (7.5L)	8¾ × 8⁵⁄₁₆ × 8¾" (22.2 × 21.1 × 22.2cm)	6308	**03-484-23**	17.12

ACCESSORIES

Mark-it Fresh* Lid

- Flexible white polyethylene lids fit square Rubbermaid* Square Space-Saving Containers
- Snap-tight fit reduces leakage and keeps food fresh
- Write-on surface lets you record date of preparation or sampling

L × W	Mfr. No.	Cat. No.	Each
8¾ × 8⁵⁄₁₆" (22.2 × 21.1cm)	6509	**03-484-24**	4.55

JARS

Nalgene* HDPE Jars with Covers

Ideal for transporting and storing solids

- Can be used for long-term storage
- Larger sizes make excellent waste crocks

NOTE:

Avoid direct UV exposure.

11-815-11D

Capacity	O.D. × H	Mfr. No.	Cat. No.	Each	Case of 6
36 oz. (1.1L)	5⅛ × 4⅛" (13.2 × 10.5cm)	5350 0001	**11-815-11C**	48.69	194.73
72 oz. (2.1L)	5⅛ × 7½" (13.2 × 19.0cm)	5350 0002	**11-815-11D**	56.15	224.59
1⅛ gal. (4.4L)	6⅝ × 9⅜" (16.8 × 23.7cm)	5350 0010	**11-815-11H**	64.33	257.32

Surgical Dressing Jars

Keep surgical dressings clean and free from dust

- Round clear glass jar with stainless-steel cover
- Cover fits closely over shoulder
- Not a screw cap

11-835B

Dia. × H	Cat. No.	Each	Case of 6
4 × 4" (10 × 10cm)	**11-835B**	35.55	161.53
6 × 6" (15 × 15cm)	**11-835C**	47.43	220.05

*Trademark. See Trademark Reference.

Prices subject to change.

SAMPLE-DISPOSABLE

*Fisherbrand** Multipurpose Specimen Storage Containers

Designed for collection, transport, and storage of liquid and dry specimens and samples

- Molded of autoclavable high-quality HDPE with thick walls
- Tight fitting LDPE lids (not autoclavable) prevent leaks and odors
- Inert to most chemicals including formaldehyde, weak acids and all bases
- Resist freezing and boiling—virtually indestructible
- Easy to write on with pen or pencil
- Stackable for compact storage

14-955-1 Series

Capacity	O.D. × H	Cat. No.	Case of
Translucent			
4 oz. (118mL)	3 × 1½" (7.6 × 3.8cm)	**14-955-114A**[1]	300/107.36
4 oz. (118mL)	2½ × 2½" (6.4 × 6.4cm)	**14-955-114B**[2]	300/112.55
8 oz. (237mL)	3¾ × 2¼" (9.5 × 5.7cm)	**14-955-115A**[1]	100/56.94
8 oz. (237mL)	3¼ × 3¼" (8.3 × 8.3cm)	**14-955-116A**[2]	100/61.95
16 oz. (473mL)	3¾ × 4¼" (9.5 × 10.8cm)	**14-955-117A**	100/69.45
32 oz. (1.1L)	4⅝ × 5⅜" (11.8 × 13.8cm)	**14-955-118A**[3]	100/113.38
64 oz. (1.9L)	5¾ × 6" (14.6 × 15.2cm)	**14-955-119A**	50/99.27
86 oz. (2.5L)	5¾ × 7½" (14.6 × 19cm)	**14-955-120A**	25/71.05
172 oz. (5.1L)	8¾ × 7" (22.2 × 17.8cm)	**14-955-121A**	10/48.68
White			
8 oz. (237mL)	3¾ × 2¼" (9.5 × 5.7cm)	**14-955-115B**[1]	100/56.76
8 oz. (237mL)	3¼ × 3¼" (8.3 × 8.3cm)	**14-955-116B**[2]	100/61.84
16 oz. (473mL)	3¾ × 4¼" (9.5 × 10.8cm)	**14-955-117B**	100/69.39
32 oz. (1.1L)	4⅝ × 5⅜" (11.8 × 13.8cm)	**14-955-118B**[3]	100/113.38
64 oz. (1.9L)	5¾ × 6" (14.6 × 15.2cm)	**14-955-119B**	50/96.14
86 oz. (2.5L)	5¾ × 7½" (14.6 × 19cm)	**14-955-120B**	25/70.71
172 oz. (5.1L)	8¾ × 7" (22.2 × 17.8cm)	**14-955-121B**	10/48.68

[1] *Short/wide style*
[2] *Tall/thin style*
[3] *Graduated*

Corning* Snap-Seal* Disposable Plastic Sample Containers

Convenient one-handed operation

- Manufactured from recyclable, translucent polypropylene with straight sides and flat bottoms
- Ideal for liquids or solids
- Graduated in mL and oz.
- Hinged cap with rough surface for marking with pen or pencil
- Patented sealing mechanism provides leak-resistant seal

02-540 Series

Capacity	Mfr. No.	Cat. No.	Case of
0.45 oz. (13mL)	1730 5X	**02-540-13**	500/102.90
1.5 oz. (45mL)	1730 2C	**02-540-15**	400/109.76
4 oz. (120mL), High-profile	1730 4H	**02-540-17**	200/72.08
4 oz. (120mL), Low-profile	1730 4L	**02-540-19**	200/72.08
8 oz. (240mL)	1730 8	**02-540-21**	100/53.18
10 oz. (300mL)	1730 10	**02-540-23**	100/60.04

Corning* Graduated Disposable Polypropylene Beaker

Excellent chemical resistance

- Flexible polypropylene beakers
- Holds up to 250mL; graduated in mL and oz.
- Sterile and certified nonpyrogenic
- Available with or without snap-on polyethylene lids

02-540-10

ORDERING INFORMATION:

Beakers with lids, individually packaged; without lids, packaged 20 per sleeve

Description	Mfr. No.	Cat. No.	Case of
With snap-on lids	430179	**02-540-10**	100/180.61
Without lids	430180	**02-540-11**	500/580.95

ACCESSORIES

Snap-on Lids

Sterile polyethylene lids for 02-540-11 beaker. In sleeves of 20.

Mfr. No.	Cat. No.	Case of 500
430181	**02-540-12**	181.99

Cargille Labs Discups* Disposable Paper Beakers

Ideal for measuring, weighing, mixing, formulating, and sampling

- Constructed of unwaxed, plain finished paper
- Use once, then throw away
- Graduated at 10cc and ½ fl. oz. intervals

Cargille
DISCUP
Cat 06803

02-544-120

Capacity	Mfr. No.	Cat. No.	Pack of 100	Case of 24 Pack
4 fl. oz. (120cc)	06803	**02-544-120**	23.05	276.05

SAMPLE-REUSABLE

*Fisherbrand** Aluminum Container

Excellent for moisture determinations in soil analysis

Collect soil in this container, weigh it, then dry it in oven. Moisture content is determined by reweighing soil after drying.

- Round seamless aluminum
- Cover fits on bottom to prevent misplacement
- Recommended for general use

03-485C

Dia. x H	Cat. No.	Each	Pack of 12
3½ × 2" (8.9 × 5cm)	**03-485C**	28.88	296.19

Nalgene* Large Cylindrical HDPE Containers with Covers

Ideal for storing and transporting dry and solid materials, specimens, and general lab supplies

- Excellent chemical and temperature resistance
- Positive-lock lid ensures tight seal
- Easy-grip handles
- Stackable

CERTIFICATIONS:
NSF approved for food and beverage storage

11-843J

Capacity	Dia. × H	Mfr. No.	Cat. No.	Each	Case of 6
4 gal. (15L)	12 × 9½" (30.5 × 24cm)	7142 0015	**11-843H**	52.76	211.04
5¼ gal. (20L)	12 × 15" (30.5 × 38cm)	7142 0020	**11-843J**	78.09	312.39
8 gal. (30L)	15½ × 12" (39 × 30.5cm)	7142 0030	**11-843K**	81.85	327.41

SPECIALTY

*Fisherbrand** Collapsible 4L Sample Containers

Can be stacked when not in use to save space

Containers made of durable LDPE with extra-strong seams that virtually eliminate leakage. Amber tinted to inhibit ultraviolet degradation of the sample. Designed for, but not limited to, urine collection.

- Graduated from 500 to 3500mL
- Wide mouth in two diameters for easy sample entry and pouring
- Inert to most aqueous- and alcohol-based solutions
- Feature a screw-on cap, handle for convenient transporting, and a detachable identification tag

14-375-115

NOTE:
Do not use for solutions containing nitric acids.

Opening Dia.	Cat. No.	Case of 100
1½" (38mm)	**14-375-115**	264.63
2½" (63mm)	**11-375-115B**	475.52

I-Chem* Series 300 Cubitainer* Containers

Excellent for transporting to remote sampling sites

- Translucent LDPE containers in a space-saving square body
- Perfect for storage, collapsible when empty

INCLUDES:
Each container supplied with a 38mm-400 foam-lined polypropylene closure.

From left: 05-719-307, 05-719-308, and 05-719-304

CERTIFICATIONS:
Certified to meet certain U.S. EPA analyte specifications for metal analysis. Certificate of Analysis listing all analytes and their respective detection/quantitation limits accompanies each case.

Capacity	Mfr. No.	Cat. No.	Case of
1 qt. (1L)	314-1000	**05-719-308**	12/42.77
1 gal. (4L)	314-0001	**05-719-303B**	12/60.60
2½ gal. (9L)	314-0025	**05-719-307**	12/76.22
5 gal. (18L)	314-0005	**05-719-304**	4/31.19

Cubitainer* Insert Plastic Containers

Stores corrosive and noncorrosive chemicals, foods and drugs

- Semirigid polyethylene
- Lightweight and economical
- Screw cap, with 1½" (38mm) opening
- Can be nested for an 8-to-1 space savings in shipping and storage

COMPLIANCE:
Meet all applicable FDA specifications

14-375-115A

Capacity	Cat. No.	Case of
1 qt. (946mL)	**14-375-115B**	128/328.86
1 gal. (3.8L)	**14-375-115A**	160/823.86

Nalgene* Sterile InVitro* Biotainer* Bottles

Excellent for freezing, storing, and transporting biological reagents

- Translucent HDPE with silicone rubber lined polypropylene 38mm closure
- Black printed graduations to 3000mL
- Space-saving square shape with convenient handle
- Offer excellent chemical resistance
- Temperature range of -100° to +99°C
- Capacity, 4L

02-540-269

ORDERING INFORMATION:
Closure size: 38mm

COMPLIANCE:
Meet USP 87, 88. Lot tested for pyrogenicity

Packaging Style	Mfr. No.	Cat. No.	Case of 24
3 × 8/Pack	3751-42	**02-540-267**	295.50
3 × 8/Pack; With shrink bands	3750-24	**02-540-268**	306.38
Bulk	3751-24	**02-540-269**	275.50

*Trademark. See Trademark Reference.

Prices subject to change.

*Fisherbrand** 4 oz./118mL Containers

Meet NCCLS Specimen Handling Guidelines for primary containers (M29-T2, Vol. 11, No. 14)

- Made of translucent, break-resistant, inert polypropylene
- Graduated in both oz. and mL
- Tolerate strong acids and bases, and most organic solvents
- Supplied with full-turn screw thread cap for a leak-resistant seal

ORDERING INFORMATION:
Sterile containers are individually wrapped with an integrity seal.

14-375-147

Type	Cap Color	Cat. No.	Case of
Sterile	Blue	**14-375-147**	100/50.73
Nonsterile	White	**14-375-148**	500/123.10

*Fisherbrand** Polypropylene Graduated Containers

Ideal for specimen collection, transportation and storage

- Autoclavable
- Graduated
- With or without nonautoclavable polyethylene snap lid

ORDERING INFORMATION:
Sterile containers with lids are individually wrapped. Nonsterile and sterile containers without lids are bulk packed.

14-955-104

Capacity	Sterile	With Lid	Cat. No.	Case of
4.5 oz. (133mL)	Yes	Yes	**14-955-102**	100/105.18
	Yes	No	**14-955-101**	500/127.48
	No	No	**14-955-103**	500/128.14
8 oz. (237mL)	Yes	Yes	**14-955-105**	100/125.54
	Yes	No	**14-955-104**	500/258.93
	No	No	**14-955-106**	500/194.64

TANKS

Nalgene* Heavy-Duty Rectangular HDPE Tank with Cover

Ideal as a dip tank or for soaking labware

- Molded as one piece, no seams
- Good chemical resistance
- Graduated
- Stepped flange at top provides reinforcement and grip for lifting

COMPLIANCE:
Meets USP-VI, noncytotoxic and complies with FDA 21 CFR 177.1520.

14-831-330A

NOTE:
Tanks used at elevated temperatures or with high specific-gravity liquids should have external support to prevent deformation

Capacity	L × W × H	Mfr. No.	Cat. No.	Each
2 gal. (7.6L)	8 × 8 × 8" (20.3 × 20.3 × 20.3cm)	14100 0002	**14-831-330H**	83.16
6 gal. (22.7L)	14 × 10 × 10" (35.6 × 25.4 × 25.4cm)	14100 0005	**14-831-330J**	105.14
7 gal. (26.5L)	12 × 12 × 12" (30.5 × 30.5 × 30.5cm)	14100 0010	**14-831-330A**	105.39
11 gal. (41.6L)	18 × 12 × 12" (45.7 × 30.5 × 30.5cm)	14100 0015	**14-831-330B**	137.26
15 gal. (56.8L)	24 × 12 × 12" (61.0 × 30.5 × 30.5cm)	14100 0020	**14-831-330K**	158.84
15 gal. (56.8L)	18 × 12 × 18" (45.7 × 30.5 × 45.7cm)	14100 0040	**14-831-330C**	168.63
30 gal. (113.6L)	24 × 18 × 18" (61.0 × 45.7 × 45.7cm)	14100 0045	**14-831-330D**	229.61
45 gal. (170.3L)	24 × 18 × 24" (61.0 × 45.7 × 61.0cm)	14100 0065	**14-831-330R**	315.64

Nalgene* Closed-Dome Bio Tanks

Excellent for preparing media components and growing cultures

- Polypropylene
- Tanks, gaskets, closures and all components are noncytotoxic
- 6" (15.2cm) polypropylene gasketed closures make filling and dispensing easy
- Molded-in graduations
- Leakproof[1]
- Autoclavable
- Flat bottom on 20 gal. (75L) size is ideal for use with magnetic stir bars

COMPLIANCE:
Comply with FDA Reg. 177.1520 for food service work

14-831-122

Capacity	O.D. × H	Mfr. No.	Cat. No.	Each
20 gal. (75L)	18½ × 35" (47 × 89cm)	2650 0020	**14-831-124**	305.25
30 gal. (115L)	18 × 36¾" (46 × 93.3cm)	2650 0030	**14-831-122**	452.25
55 gal. (210L)	22 × 39½" (56 × 100.3cm)	2650 0055	**14-831-123**	558.75

[1] Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

Nalgene* Rectangular Polypropylene Tank with Cover

Ideal for disinfecting biological waste

- Suitable for use with many organic chemicals
- Offers good stress-crack resistance
- Wall thickness, 3⁄16" (4.7mm)
- Autoclavable
- Maximum service temperature: 220°F (104°C)

14-831-113 (front) and 14-831-115

COMPLIANCE:

Resin complies with FDA Reg. 177.1520 for food use.

NOTE:

Nalgene recommends using an exterior support with rectangular tanks used at elevated temperatures or with high specific-gravity liquids.

Capacity	L × W × H	Mfr. No.	Cat. No.	Each
2 gal. (7.6L)	8 × 8 × 8" (20.3 × 20.3 × 20.3cm)	14200 0002	**14-831-110**	120.50
6 gal. (22.7L)	14 × 10 × 10" (35.6 × 25.4 × 25.4cm)	14200 0005	**14-831-111**	155.75
7 gal. (26.5L)	12 × 12 × 12" (30.5 × 30.5 × 30.5cm)	14200 0010	**14-831-112**	157.50
11 gal. (41.6L)	18 × 12 × 12" (45.7 × 30.5 × 30.5cm)	14200 0015	**14-831-113**	203.25
15 gal. (56.8L)	24 × 12 × 12" (61.0 × 30.5 × 30.5cm)	14200 0020	**14-831-114**	302.50
30 gal. (113.6L)	24 × 18 × 18" (61.0 × 45.7 × 45.7cm)	14200 0045	**14-831-115**	375.00

Nalgene* Cylindrical Polypropylene Tank with Cover

Economical and versatile

- Offers good stress-crack resistance
- Tolerates many organic chemicals
- Suitable for disinfecting biological wastes
- Autoclavable; maximum service temperature: 220°F (104°C)

14-831-100 (front), 14-831-101

COMPLIANCE:

Resin complies with FDA Reg. 177.1520 for food use and USP Class VI.

NOTE:

Nalgene recommends using an exterior support with rectangular tanks used at elevated temperatures or with high specific-gravity liquids.

Capacity	O.D. × D	Mfr. No.	Cat. No.	Each
5 gal. (18.9L)	11 × 15" (27.9 × 38.1cm)	11200 0005	**14-831-100**	131.50
7½ gal. (28.4L)	12 × 18" (30.5 × 45.7cm)	11200 0007	**14-831-101**	183.50
10 gal. (38L)	13 × 20" (33 × 51cm)	11200 0010	**14-831-102**	189.15
15 gal. (56.8L)	13 × 27" (33.0 × 68.6cm)	11200 0015	**14-831-332E**	206.44
30 gal. (113.6L)	18 × 30" (45.7 × 76.2cm)	11200 0030	**14-831-104**	265.50
55 gal. (208.2L)	22 × 36" (55.9 × 91.4cm)	11200 0055	**14-831-105**	417.00
100 gal. (378L)	28 × 44" (71 × 112cm)	11200 0100	**14-831-108**	708.75

Nalgene* Heavy-Duty Graduated Cylindrical HDPE Tanks

Conform to USP Class VI

- Rigid tanks with hard surface
- Graduated in L and gal. (except for 7½- and 10-gal. sizes, which are graduated in gal. only)
- Available with cover and polyethylene needle-type spigot for drawoff, or with cover only
- Spigot accepts 5⁄8" I.D. (1.3cm) tubing
- Not autoclavable

14-831-310B

NOTE:

Nalgene recommends using an exterior support with rectangular tanks used at elevated temperatures or with high specific-gravity liquids.

Capacity	O.D. × D	Mfr. No.	Cat. No.	Each
With Cover				
5 gal. (18.9L)	11 × 15" (27.9 × 38.1cm)	11100 0005	**14-831-310A**	86.75
7½ gal. (28.4L)	12 × 18" (30.5 × 45.7cm)	11100 0007	**14-831-310E**	121.25
10 gal. (37.9L)	13 × 20" (33.0 × 50.8cm)	11100 0010	**14-831-310F**	116.50
15 gal. (56.8L)	13 × 27" (33.0 × 68.6cm)	11100 0015	**14-831-310B**	129.25
30 gal. (113.5L)	18 × 30" (45.7 × 76.2cm)	11100 0030	**14-831-310C**	169.78
55 gal. (208L)	22 × 36" (55.9 × 91.4cm)	11100 0055	**14-831-310D**	246.12
With Cover and Spigot				
5 gal. (18.9L)	11 × 15" (27.9 × 38.1cm)	11102 0005	**14-831-312A**	127.25
7½ gal. (28.4L)	12 × 18" (30.5 × 45.7cm)	11102 0007	**14-831-312B**	161.25
10 gal. (37.9L)	13 × 20" (33.0 × 50.8cm)	11102 0010	**14-831-312C**	161.25
15 gal. (56.8L)	13 × 27" (33.0 × 68.6cm)	11102 0015	**14-831-312D**	171.25
30 gal. (113.5L)	18 × 30" (45.7 × 76.2cm)	11102 0030	**14-831-312E**	199.95
55 gal. (208L)	22 × 36" (55.9 × 91.4cm)	11102 0055	**14-831-312F**	280.80

ACCESSORIES

Nalgene* Spigots

For safe, efficient liquid dispensing from storage tanks

- Needle type for tanks up to 100 gallons
- PTFE O-rings provide positive seal: 02-963-7C and -7B come with one; 02-963-7A with two

02-963-7A

NOTE:

Make sure container and spigot have compatible chemical resistance before installing.

Fitting	Mfr. No.	Cat. No.	Each	Case of
LDPE				
½" NPT male thread	6420 0500	**02-963-7C**	41.22	6/164.87
¾" NPT male thread	6420 0750	**02-963-7B**	44.79	6/179.17
Polypropylene				
1⅛-12 female screw thread	6421 0010	**02-963-7A†**	42.24	12/337.92

†Replacement spigot for 14-831-312 Series tanks.

Nalgene* Lightweight Graduated Cylindrical HDPE Tank with Cover

External flange at rim for extra strength

- Approximate wall thickness, $\frac{3}{32}$" (2.4mm)
- 55-gallon size can be used as liner for steel drums
- Available with spigot for drawoff

14-834-31D

COMPLIANCE:

Complies with FDA Reg. 177.1520 for food use and USP Class VI requirements

NOTE:

Nalgene recommends using an exterior support with rectangular tanks used at elevated temperatures or with high specific-gravity liquids.

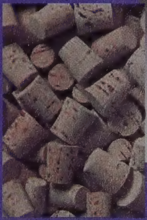
Capacity	O.D. × D	Grads.	Mfr. No.	Cat. No.	Each
With Cover					
5 gal. (18.9L)	11 × 15" (27.9 × 38.1cm)	½ gal./2L	54100 0005	**14-834-29A**	77.25
7½ gal. (28.4L)	12 × 18" (30.5 × 45.7cm)	½ gal./2L	54100 0007	**14-834-29B**	106.50
10 gal. (37.9L)	13 × 20" (33.0 × 50.8cm)	----	54100 0010	**14-834-29C**	103.50
15 gal. (56.8L)	13 × 28" (33.0 × 71.1cm)	1 gal./4L	54100 0015	**14-834-29D**	105.75
30 gal. (113.6L)	18 × 30" (45.7 × 76.2cm)	2½ gal./ 10L	54100 0030	**14-834-29E**	128.25
55 gal. (208L)	22 × 36" (55.9 × 91.4cm)	2½ gal./ 10L	54100 0055	**14-834-29F**	188.25
With Cover and Spigot					
5 gal. (18.9L)	11 × 15" (27.9 × 38.1cm)	½ gal./2L	54102 0005	**14-834-31A**	122.50
7½ gal. (28.4L)	12 × 18" (30.5 × 45.7cm)	½ gal./2L	54102 0007	**14-834-31B**	139.50
10 gal. (37.9L)	13 × 20" (33.0 × 50.8cm)	----	54102 0010	**14-834-31C**	135.75
15 gal. (56.8L)	13 × 28" (33.0 × 71.1cm)	1 gal./4L	54102 0015	**14-834-31D**	137.50
30 gal. (113.6L)	18 × 30" (45.7 × 76.2cm)	2½ gal./ 10L	54102 0030	**14-834-31E**	160.75
55 gal. (208L)	22 × 36" (55.9 × 91.4cm)	2½ gal./ 10L	54102 0055	**14-834-31F**	204.00

CORKS

CORKS

Choose laboratory- or superior-grade cork stoppers, then use the cork-boring machine to bore $\frac{3}{16}$ to $\frac{5}{8}$" holes anywhere in any stopper!

07-855



07-792 Series

Size No.	Cat. No.	Pk. of 100	Cat. No.	Pk. of 500
Laboratory-grade Stoppers				
3/0	**07-781A**	16.71	**07-782A**	47.04
00	**07-781B**	17.52	**07-782B**	56.55
0	**07-781C**	17.52	**07-782C**	47.72
1	**07-781D**	16.62	**07-782D**	46.50
2	**07-781E**	15.99	**07-782E**	53.27
3	**07-781F**	18.21	**07-782F**	48.32
4	**07-781G**	19.09	**07-782G**	54.70
5	**07-781H**	21.15	**07-782H**	72.15
6	**07-781J**	21.91	**07-782J**	82.42
7	**07-781K**	25.81	**07-782K**	86.31
Superior-grade Stoppers				
0	**07-791A**	16.62	**07-792A**	58.87
1	**07-791B**	18.09	**07-792B**	75.83
2	**07-791C**	25.07	**07-792C**	67.62
3	**07-791D**	23.44	**07-792D**	75.42
4	**07-791E**	23.69	**07-792E**	77.62
5	**07-791F**	30.48	**07-792F**	112.37
6	**07-791G**	38.54	**07-792G**	117.85
7	**07-791H**	38.54	**07-792H**	123.19

Description	Cat. No.	Each
Boring Machine	**07-855**	545.00

Visit www.fishersci.com and search for Cork, Stoppers, or Borers

COTTON

COTTON

100% cotton balls and rolls

Medium-size balls are not sterile. Rolls are sanitary USP Grade A and bleached snowy white. For more choices,

07-900

07-886

Description	Cat. No.	Each	Cs. of
Medium-size Balls	**07-886**	----	4000/33.30
1 lb. (454g) Roll	**07-900**	23.55	25/498.88

Visit www.fishersci.com and search for Cotton

COUNTERS

*Fisherbrand** Digital Counter

Solid-state construction and single, tactile-feel "click" button ensure accurate operation without gear and miscount problems

- Easy-to-read ¼" LCD tallies up to 99,999
- Fail-safe design prevents unintentional reset
- Housed in a rugged but lightweight ABS plastic case
- Unit is water- and shock-resistant—perfect for lab or plant use

Fisher Scientific
02395

07-905-2

ORDERING INFORMATION:
Dimensions (D × W × H): ⅞ × 1⅝ × 2⅝" (2.1 × 4.24 × 6.67cm). Net weight: 1 oz. (28.3g).

INCLUDES:
1.5V Button Cell 375 Battery (02-440-1C), battery powers unit for two years of continuous operation

Cat. No.	Each
07-905-2	20.19

*Fisherbrand** Hand Tally Counter

For counting blood cells, drops of liquid, inventory items, and more

- Tallies up to 9999
- Easily resets to zero
- Compact
- Fits in lab coat pocket
- Chrome-finished metal construction for reliability, long life, and hard usage

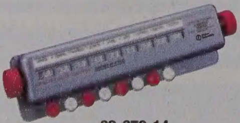
07-905-6

Cat. No.	Each
07-905-6	33.66

Lab Counters

With nine counting units

- Eight units record up to 999, each with its own key
- Last unit is the totalizing unit, which records total number of strokes made on other keys
- At 100 increments, totalizing unit rings bell
- When totalizing unit records 100, each figure corresponding to individual key automatically displays percentage
- Two reset knobs
- Removable tabs on top of counter provide area for identification of classification being counted



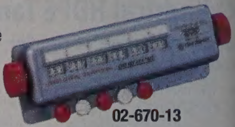
02-670-14

Mfr. No.	Cat. No.	Each
42409C	02-670-14	617.74

Lab Counters, Contd.

With six counting units

- Five counting keys with 0 to 999 range
- Totalizing counter records total number of strokes made on other keys; rings bell at increments of 100
- Feature dual reset knobs



02-670-13

Mfr. No.	Cat. No.	Each
42306C	02-670-13	456.58

With two counting units

- Two keys each with 0 to 999 range
- Single reset knob
- With removable tabs for top identification

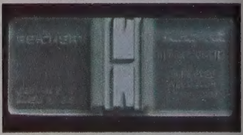
02-670-12

Mfr. No.	Cat. No.	Each
42202C	02-670-12	132.77

Bright-Line* Counting Chambers

For accurate white blood cell, red blood cell, and platelet counts

Difference in surface tension between cover glass and metal counting surface assures smooth capillary action for precise loading and more even cell distribution.



02-671-5

- Reichert Bright-Line Counting Chambers are molded from quartz Pyrex* glass; Hausser Bright-Line Counting Chambers are milled from soda lime glass
- H-shaped moat forms two counting areas
- Thin metal surface on each counting area has double Neubauer rulings with 400 small squares in central 1mm square
- When viewed through microscope, rulings appear as white lines on dark background
- Flat, polished cover glass covers moat region 0.1mm above ruled surface
- V-shaped slashes at each loading side of counting chambers reduce overflow into moat
- Without pipets

INCLUDES:
Two 0.4mm cover glasses

Counting Chamber	Cat. No.	Each
Reichert Bright-Line	02-671-5	155.08
Hausser Bright-Line	02-671-10	141.95

Reichert Bright-Line* Counting Chamber Set

Supplied in polyethylene carrying case.

INCLUDES:
Counting chamber (02-671-5), two cover glasses, one pipet for red blood cells, one pipet for white blood cells, tubing, and mouthpieces

Cat. No.	Each
02-672-5	202.12

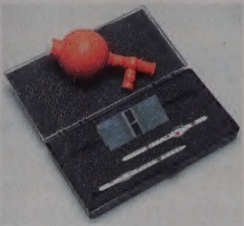
*Trademark. See Trademark Reference.

Prices subject to change.

Hausser* Counting Chamber Set

Supplied with polyethylene carrying case.

INCLUDES:
Counting chamber (02-671-10), two cover glasses, two Thoma pipets (one for red and one for white corpuscles), and pipet filler



Cat. No.	Each
02-671-11	190.95

Bright-Line* Phase Hemacytometer

Counting chamber with reduced thickness for use on phase microscopes

- Provides accurate platelet counts
- Molded from durable Pyrex* brand glass
- Without cover glasses or pipets

Description	Cat. No.	Each
Bright-Line Phase Hemacytometer	**02-671-6**	166.93

Orbeco Cover Glasses

Fit all popular counting chambers

- Precision cut from extra-hard, alkali-free optical-quality glass
- Polished thickness and flatness for exact sample volume
- Edges polished for handling safety

ORDERING INFORMATION:
(L × W): 0.8 × 1" (20 × 26mm). Thickness: 0.016 to 0.024" (0.4 to 0.6mm).

Type	For Counting Chamber	Cat. No.	Pack of 12	Case of 12 Pack
Octagonal	Double or Single	**02-671-30**	53.10	563.83
Rectangular	Double	**02-671-35**	47.42	503.51

CROSSLINKERS

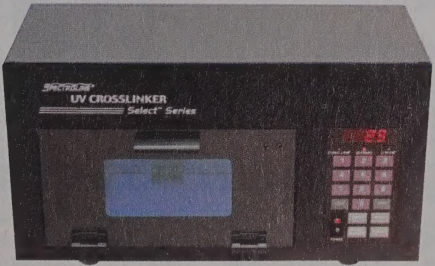
Spectroline* Microprocessor-Controlled UV Crosslinkers

Produce publication-quality results every time

- Covalently bind nucleic acids to membranes in 30 seconds or less following Southern, Northern, or dot blotting, and colony/plague lifts
- Eliminate PCR contamination
- Four operating modes: Optimal Crosslink Mode delivers energy doses of 120mJ/cm^2; Energy Mode varies dosage from 100μJ/cm^2 to 0.9999J/cm^2; Time Mode used for UV-induced gel polymerization, drying and sanitization; and Intensity Mode permits continuous operation and provides accurate intensity readout
- Large LED display and built-in "Help" messages guide user through operations
- Programmable memory stores recently entered conditions—repetitive procedures begin with just the push of the START button
- Internal photo sensor measures only true shortwave UV radiation to ensure precise energy dosage to samples
- Individually calibrated and certified with safety interlock and UV-blocking door window
- Spectrolinker* Series features anodized aluminum housing for corrosion resistance; Select* Series offers painted sheet metal housing

Model	Chamber (D × W × H)	Includes	Cat. No.	Each
Spectrolinker Series with anodized aluminum housing				
XL-1000	7½ × 13½ × 7" (19 × 34 × 18cm)	Five 8w, 254nm UV tubes[1]	**11-992-89**	1472.21
XL-1500	12½ × 18¼ × 6¼" (32 × 46 × 6cm)	Six 15w, 254nm UV tubes[1]	**11-992-90**	1690.71
Select Series with painted sheet metal housing				
XLE-1000	7½ × 13½ × 7" (19 × 34 × 18cm)	Five 8w, 254nm UV tubes	**11-982-20**	983.21

*[1] The Spectrolinker*XL-1000 Crosslinker is also available with five 8w, 312nm or five 8w, 365nm UV tubes. The XL-1500 is available with six 15w, 312nm or six 15w 365nm UV tubes. For more information, contact your Fisher Scientific Customer Service Representative at 1-800-766-7000.*



11-982-20

SPECTROLINKER
XL-1500 UV CROSSLINKER
SPECTROLINKER
XL-1000 UV CROSSLINKER

From left to right: 11-992-90, 11-992-89

CRUCIBLES

METAL

*Fisherbrand** Nickel Crucibles

Withstand temperatures up to 800°C (1472°F)

- Drawn from one piece of heavy pure sheet nickel and trimmed to final form
- Highly resistant to dilute alkalis
- Covers are made from the same nickel material
- Covers sold separately (visit our Web site for details)

13-812-126

Capac.	Dia. × H	Cat. No.	Each
20mL	1½ × 1¼" (38 × 32mm)	**13-812-126**	38.87
30mL	1¾ × 1¾" (44 × 44mm)	**13-812-127**	40.05
50mL	1¾ × 2" (44 × 51mm)	**13-812-128**	47.87
75mL	2¼ × 2¼" (57 × 57mm)	**13-812-129**	61.11
100mL	2½ × 2¼" (64 × 57mm)	**13-812-130**	82.83
250mL	3¼ × 3" (84 × 78mm)	**13-812-131**	154.52

*Fisherbrand** Steel Crucibles

Withstands temperatures up to 500°C (932°F)

- Low-form
- Made from one-piece sheet steel
- Suitable for many alkali and peroxide fusions
- Cover sold separately (visit our Web site for details)

13-812-153

Capac.	I.D. × H	Cat. No.	Price
20mL	1 7/16 × 1" (36 × 26mm)	**13-812-151**	Pk. of 10/131.01
100mL	2 3/16 × 1⅞" (56 × 48mm)	**13-812-152**	Ea./12.95
200mL	2 11/16 × 2⅜" (68 × 60mm)	**13-812-153**	Ea./15.45
400mL	3 11/16 × 2 7/16" (94 × 65mm)	**13-812-154**	Pk. of 10/290.79

*Fisherbrand** Nickel Chromium Crucible

Withstand temperatures up to 1000°C (1832°F)

- For volatile matter tests
- Also for ignition, ashing, and incineration purposes where free acids are not present
- Determines volatile matter in coke
- Made of uniform nickel chromium alloy
- Cover sold separately (13-812-121; visit our Web site for details)

13-812-120

ORDERING INFORMATION:
Weight: 7 to 8g

Capac.	Dia. × H	Cat. No.	Each
13mL	1 × 1 5/16" (26 × 34mm)	**13-812-120**	28.10

*Fisherbrand** Zirconium Crucibles

Withstand about 100 two- to five-minute fusions between 460°C (860°F) and 900°C (1652°F)

- Ideal for sodium peroxide fusions conducted by hand over gas flame
- Made from a polished, solid zirconium strip

13-812-122

ORDERING INFORMATION:
2" dia. (51mm) covers are available, but must be requested at time of order.

NOTE:
Temperatures above 900°C (1652°F) will damage and reduce the service life of the crucible.

Capac.	I. D. × H	Cat. No.	Each
25mL	1¾ × ⅞" (44 × 22mm)	**13-812-122**	151.76
35mL	1¾ × 1⅛" (44 × 29mm)	**13-812-123**	156.98
45mL	1¾ × 1⅜" (44 × 34mm)	**13-812-124**	166.09
55mL	1¾ × 1⅝" (44 × 41mm)	**13-812-125**	170.03

ALUNDUM*, METALLURGICAL

Saint-Gobain* Alundum* Crucibles

Withstand temperatures up to 1450°C (2642°F)

- For ignitions of carbonaceous material
- AN788 Alundum has high thermal conductivity
- Approximate particle retention size, 0.1µm
- Not suitable for alkali fusions

07-995 Series

Capac.	I.D. × H	Mfr. No.	Cat. No.	Each	Case of 12
20mL	1½ × 1 3/16" (38 × 30mm)	5202	**07-995A**	----	470.22
30mL	1⅝ × 1⅝" (40 × 40mm)	9007	**07-995B**	55.84	572.72
40mL	1⅞ × 1⅝" (48 × 40mm)	5203	**07-995C**	50.01	512.89

*Trademark. See Trademark Reference.

Prices subject to change.

CoorsTek* Alumina Crucibles

Withstand temperatures up to 1750°C (3182°F)

- High-purity (99.8%) recrystallized aluminum oxide
- Nonporous, gas and vacuum tight
- Can be used in oxidizing and reducing atmospheres and with all kinds of metals
- Covers sold separately

12-220 Series

Capac.	Top Dia.	Base Dia.	Height	Mfr. No.	Cat. No.	Each
High-Form						
10mL	1⅛" (29mm)	1¹⁄₁₆" (18mm)	1¼" (31mm)	65501	**12-220A**	20.16
20mL	1½" (38mm)	1⁵⁄₁₆" (24mm)	1⅜" (35mm)	65503	**12-220B**	24.15
50mL	1⅞" (48mm)	1³⁄₁₆" (30mm)	1⅞" (47mm)	65504	**12-220C**	41.45
100mL	2¼" (58mm)	1⅜" (35mm)	2⅜" (61mm)	65505	**12-220D**	62.30
Conical						
50mL	1¹¹⁄₁₆" (43mm)	1⁵⁄₁₆" (33mm)	2⅛" (53mm)	65518	**12-220H**	32.50
Cylindrical						
6mL	¹⁵⁄₁₆" (24mm)	⅞" (23mm)	¾" (19mm)	65532	**12-220J**	21.20

ACCESSORIES

High-Form Crucible Covers

Flat flanged style

- Flange holds covers securely in place

ORDERING INFORMATION:
Thickness: ⅛" (3.2mm)

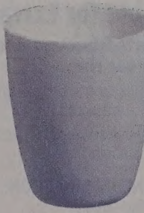
Flange O.D.	Flange I.D.	For Use With	Mfr. No.	Cat. No.	Each
1¼" (31mm)	1¹⁄₁₆" (27mm)	12-220A	65605	**12-220-2A**	22.62
1⁹⁄₁₆" (39.4mm)	1⁵⁄₁₆" (34mm)	12-220B	65608	**12-220-2B**	21.36
1⅞" (48mm)	1¾" (44mm)	12-220C	65611	**12-220-2C**	23.31
2⁵⁄₁₆" (59mm)	2⅛" (53mm)	12-220D	65613	**12-220-2D**	25.03

FILTERING-ALUNDUM*, METALLURGICAL

Saint-Gobain* Alundum* Filtering Crucibles

For melting metals and vaporizing liquids

- Not affected by acids or alkalis
- Porous for filtering with suction and holding finest precipitates
- Dry quickly to constant weight
- Available in medium, made from AN889 Alundum; coarse, made from AN485 mix


08-230 Series

Capac.	I.D.× H	Mfr. No.	Cat. No.	Case of 12
Medium grain				
25mL	1⅜ × 1½" (35 × 38mm)	5204 AL889	**08-230A**	489.50
35mL	1⅝ × 1¹¹⁄₁₆" (41 × 43mm)	5205 AL889	**08-230B**	517.64
Coarse grain				
35mL	1⅝ × 1¹¹⁄₁₆" (41 × 43mm)	5205 AL485	**08-231B**	533.50

FILTERING — GLASS

Kimax* Gooch Filtering Crucibles

Dry precipitates to constant weight at 110°C (230°F)

- At higher temperatures, heat in electric furnace
- Do not remove crucibles until temperature is reduced to about 250°C (482°F)
- Fritted disc
- Avoid exposure to sudden temperature changes
- Coarse (C), medium (M), and fine (F) porosities

KIMAX
USA
30ml-30F
08-235-1C

Porosity	Capac.	Disc Dia.	Approx. Height	Mfr. No.	Cat. No.	Pack of	Case of 6 Pack
Low Form							
M	15mL	20mm	45mm	28260-152	**10-310-106**	1/30.91	----
C	30mL	30mm	50mm	28260 301	**08-235-1A**	2/70.03	305.78
M	30mL	30mm	50mm	28260 302	**08-235-1B**	2/65.05	284.03
F	30mL	30mm	50mm	28260 303	**08-235-1C**	2/70.03	305.78
High Form							
M	30mL	30mm	60mm	28250 302	**10-310-100**	1/23.78	----

Pyrex* Gooch Type Filtering Crucibles

For drying precipitates to constant weight at 110°C (230°F)

- For higher temperatures, use electric furnace
- Fritted glass disc
- Avoid sudden temperature changes
- To avoid strain, do not remove from furnace until temperature drops to 250°C (482°F)

ORDERING INFORMATION:
For crucible holders, see 08-238B.

08-237-1C

Porosity	Capac.	Disc Dia.	Approx. Height	Mfr. No.	Cat. No.	Price
Low Form						
Coarse	15mL	20mm	44mm	32960 15C	**08-236A**	Ea./28.24
Medium	15mL	20mm	44mm	32960 15M	**08-236B**	Ea./28.24
Coarse	30mL	30mm	50mm	32960 30C	**08-236-1A**	Pk. of 3/109.06
Medium	30mL	30mm	50mm	32960 30M	**08-236-1B**	Ea./35.99
Fine	30mL	30mm	50mm	32960 30F	**08-236-1C**	Pk. of 3/109.06
High Form						
Coarse	30mL	30mm	60mm	32940 30C	**08-237A**	Ea./37.11
Medium	30mL	30mm	60mm	32940 30M	**08-237B**	Ea./47.23
Fine	30mL	30mm	60mm	32940 30F	**08-237C**	Cs. of 12/316.41
Coarse	50mL	40mm	60mm	32940 50C	**08-237-1A**	Ea./47.25
Medium	50mL	40mm	60mm	32940 50M	**08-237-1B**	Ea./47.25
Fine	50mL	40mm	60mm	32940 50F	**08-237-1C**	Ea./40.25

Also available in alternate quantities; contact your Fisher Scientific Customer Service Representative or visit our Web site.

ACCESSORIES

Corning* Crucible Holder

For 08-236, 08-236-1, 08-237 Series Crucibles

- Borosilicate glass
- Should be used with 08-239 rubber adapter (sold separately; visit our Web site for details)

08-238A holder and 08-239A adapter plus crucible.

For Crucible	Cat. No.	Price
08-236 Series (15mL)	**08-238A**	Cs. of 6/160.00
08-236-1 Series, 08-237 Series (30mL)	**08-238B**	Ea./56.90

Glass Frit Porosity Chart for Glass Filtering Crucibles

Porosity Grade	Nominal Maximum Pore Size	Principal Uses
Coarse (C)	40 to 60µm	Coarse filtration; mercury filtration. Extraction apparatus.
Medium (M)	10 to 15µm	Filtration of crystalline precipitates. Extraction apparatus. Removal of floaters from distilled water.
Fine (F)	4 to 5.5µm	Fine filtration; mercury valve; extraction apparatus.
Very Fine (VF)	2 to 2.5µm	Clarification of growth bacteria and colloidal particles; plating; soil applications.

FILTERING—PORCELAIN

CoorsTek* Porcelain Gooch Filtering Crucibles

Glazed inside and out except for outside bottom surface

- Perforated bottoms
- Perforations, 1⁄32" dia. (0.7mm) in 13 to 40mL size; 3⁄64" dia. (1mm) in 130mL size
- Covers sold separately

08-195 Series

Capac.	Top Dia.	Base Dia.	Cover Cat. No.	Mfr. No.	Cat. No.	Each	Case of
13mL	1⅛" (29mm)	1 1⁄16" (18mm)	07-970D	60146	**08-195B**	10.56	24/202.69
25mL	1 7⁄16" (36mm)	⅞" (21mm)	07-970E	60148	**08-195D**	11.06	24/212.34
40mL	1⅝" (40mm)	1" (24mm)	07-970F	60151	**08-195E**	11.23	18/169.11
130mL	2 3⁄16" (55mm)	1 3⁄16" (30mm)	07-970H	60153	**08-215-1**	35.69	6/194.67

ACCESSORIES

Plasticoid Walter Crucible Holder

Rubber with removable glass stem ground at 45° angle

- Holds 08-195D Gooch Crucible
- Fits neck of filter flasks that take rubber stopper sizes 6, 7, or 8
- Top of glass stem, inside the holder, is flared to collect filtrate
- With glass stem, but without filter flask or crucibles

08-285

ORDERING INFORMATION:
Tapered rubber portion, 1½" (38mm) at top and ⅞" (22mm) at bottom

Cat. No.	Each	Case of 12
08-285	11.98	122.86

CoorsTek* Porcelain Crucibles with Filtering Discs

Disc permanently fused into crucible walls

- Will not disintegrate when in contact with moderately alkaline solutions or acids (except HF)
- Stable porosity and flowrate

ORDERING INFORMATION:
Height: 1 11⁄16" (44mm)

226-10 Series

Porosity	Capac.	Top Dia.	Base Dia.	Mfr. No.	Cat. No.	Each	Case of 8
Very Fine	25mL	1 7⁄16" (36mm)	15⁄16" (24mm)	60525	**08-226-10A**	----	306.01
Fine	25mL	1 7⁄16" (36mm)	15⁄16" (24mm)	60528	**08-226-10B**	42.36	308.09
Medium	25mL	1 7⁄16" (36mm)	15⁄16" (24mm)	60531	**08-226-10C**	----	305.06

CoorsTek* Porcelain Gooch Filtering Crucible for Extractions

Perforated bottom and two holes near rim

- Glazed inside and out except for outside bottom surface and rim
- Commonly used in total suspended solids determinations

ORDERING INFORMATION:
Height: 1⅝" (40mm)

08-220-10

Capac.	Top Dia.	Base Dia.	Mfr. No.	Cat. No.	Each	Case of 18
25mL	1⅜" (35mm)	⅞" (21mm)	60155	**08-220-10**	12.90	198.41

*Trademark. See Trademark Reference.

CoorsTek* Filtering Crucible for Bitumens

For ASTM D 04-86 and D 2042; also USDA Bulletin 1216

08-215

- Perforated bottom
- Glazed inside and out except for outside bottom surface
- Can be used with 08-216 Adapter for holding crucible during filtration (visit our Web site for details)

ORDERING INFORMATION:
Height: 15/16"(24mm)

Capac.	Top Dia.	Base Dia.	Mfr. No.	Cat. No.	Each	Case of 12
28mL	1¾" (44mm)	1 5/16" (33mm)	60170	08-215	12.77	130.99

GLASS

*Fisherbrand** Self-Sealing Quartz Crucibles

Withstand temperatures up to 1000°C (1832°F)

10-490-4

- Unique self-sealing lids form airtight seals around the crucible's ground rim
- During a volatiles run, the lid automatically rises to expel accumulated gases
- Lid sinks back to restore the seal and form an oxygen-free atmosphere to prevent sample ashing
- Produces more reproducible results than conventional methods
- During moisture and ash determinations, the lid keeps sample moisture-free
- Eliminate inaccurate weighings caused by moisture uptake
- Perform proximate analysis to determine moisture, volatiles, ash, and fixed carbon on the same sample

Capac.	O.D. × H	Cat. No.	Case of 4
10mL	⅞ × 1 5/16" (22.5 × 34mm)	10-490-4	282.98

Corning* Vycor* Glass Crucibles

Withstand temperatures up to 900°C (1652°F)

- Useful in analytical work
- Ideal where ashing of sample is required
- Withstand up to 1200°C (2192°F) for short periods
- Sudden thermal change will not cause breakage
- Covers sold separately

08-057 Series

Capac.	O. D. x H	Mfr. No.	Cat. No.	Each	Case of 6
30mL	1¾ x 1⅝" (45 x 40mm)	12940 30BO	08-057A	113.44	483.67
50mL	2 x 2" (50 x 50mm)	12940 50BO	08-057B	126.84	539.14

ACCESSORIES

Glass Crucible Covers

Covers for 08-057 Series Crucibles (next page)

08-058 Series

May also be used with platinum or opaque crucibles.

For Crucible	Mfr. No.	Cat. No.	Each	Case of 6
30mL	12940 30CO	08-058A	75.31	317.73
50mL	12940 50CO	08-058B	90.61	377.87

Fused-Quartz Crucibles

Withstand temperatures up to 1250°C (2282°F)

08-072 Series

- Withstand severe temperature changes
- Insoluble in water and acids except hydrofluoric and phosphoric acids
- Covers sold separately (below)

Capac.	Dia. × H	Cover Cat. No.	Cat. No.	Each	Pack of 12
10mL	1⅛ × 1 3/16" (29 × 30mm)	08-074A	08-072A	49.00	517.63
20mL	1⅜ × 1½" (36 × 38mm)	08-074C	08-072C	43.00	453.25
30mL	1 11/16 × 1½" (43 × 38mm)	08-074D	08-072D	45.89	483.69
100mL	2 7/16 × 2⅝" (62 × 66mm)	08-074F	08-072F	51.81	547.30

ACCESSORIES

Fused Quartz Crucible Covers

For 08-072 Series Crucibles (above)

08-074 Series

Transparent fused quartz.

For Crucible	For Use With	Cat. No.	Each	Pack of 12
10mL	08-072A	08-074A	49.57	523.67
20mL	08-072C	08-074C	49.05	518.20
30mL	08-072D	08-074D	55.46	588.97
100mL	08-072F	08-074F	64.10	680.69

PORCELAIN

CoorsTek* Porcelain Coal Moisture Testing Crucibles

Withstand temperatures up to 1150°C (2102°F), not to exceed 200°C/hour

08-103 Series

- Porcelain with rounded bottom
- Glazed inside and out except on rim
- 20mL size recommended for ASTM D 3176
- Capsule form; without covers

Capac.	Dia. × H	Mfr. No.	Cat. No.	Each	Case of
17mL	1⅝ × ⅞" (41 × 21mm)	60051	08-103A	13.20	36/380.23
25mL	1¾ × 1" (45 × 25mm)	60052	08-103B	8.18	36/245.47
20mL	1 11/16 × ⅞" (42.5 × 22.5mm)	60053	08-103C	7.26	36/217.89
35mL	2 × 1 5/16" (50 × 34mm)	60054	08-103D	10.21	24/204.27

CoorsTek* Wide-Form Porcelain Crucibles

Withstand temperatures up to 1150°C (2102°F), not to exceed 200°C/hour

- Popular, low-form crucibles
- Glazed inside and out except for outside bottom surface and rim
- Covers sold separately next page

07-955A Series

Capac.	Dia. × H	Cover Cat. No.	Mfr. No.	Cat. No.	Each	Case of
2mL	1 1/16 × ½" (18 × 12mm)	----	60132	**07-955A**	6.32	72/364.02
8mL	1¼ × 25/32" (32 × 20mm)	07-970D	60133	**07-955B**	6.49	72/373.59
17mL	1⅝ × 1" (41 × 26mm)	07-970F	60135	**07-955D**	5.98	48/240.22
30mL	2 × 1¼" (50 × 31mm)	07-970G	60136	**07-955E**	7.62	36/228.73
50mL	2⅜ × 1 7/16" (61 × 37mm)	07-970H	60137	**07-955F**	9.31	24/186.79
100mL	3 × 1 13/16" (76 × 46mm)	07-970J	60138	**07-955G**	10.58	24/211.63
150mL	3 5/16 × 2" (84 × 52mm)	07-970K	60139	**07-955H**	11.48	18/172.89
250mL	4 × 2⅜" (102 × 60mm)	07-970L	60140	**07-955J**	13.01	12/141.96

CoorsTek* High-Form Porcelain Crucibles

Withstand temperatures up to 1150°C (2102°F), not to exceed 200°C/hour

- Glazed inside and out except for outside bottom surface and rim
- Covers sold separately next page

07-965 Series

Capac.	Dia. × H	Cover Cat. No.	Mfr. No.	Cat. No.	Each	Case of
1.3mL	9/16 × 9/16" (15 × 15mm)	----	60101	**07-965J**	4.28	24/85.84
5mL	15/16 × 25/32" (24 × 20mm)	07-970C	60103	**07-965B**	4.74	72/272.78
10mL	1 3/16 × 1" (31 × 26mm)	07-970D	60104	**07-965C**	4.74	72/272.99
15mL	1⅜ × 1⅛" (35 × 29mm)	07-970E	60105	**07-965D**	6.30	72/362.86
30mL	1 11/16 × 1 7/16" (43 × 37mm)	07-970F	60107	**07-965E**	7.82	36/234.70
40mL	2 × 1⅝" (50 × 40mm)	07-970G	60108	**07-965F**	8.38	36/251.51
50mL	2 1/16 × 1 11/16" (53 × 43mm)	07-970G	60109	**07-965G**	9.15	24/183.77
100mL	2 7/16 × 2⅛" (65 × 54mm)	07-970H	60110	**07-965H**	10.94	24/210.04

ACCESSORIES

Porcelain Crucible Covers

Glazed everywhere except on rim

07-970 Series

Compatible with CoorsTek*:

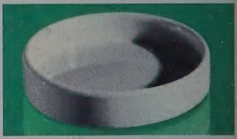
- Wide-form crucibles
- High-form crucibles
- Porcelain gooch filtering crucibles

I.D.	Mfr. No.	Cat. No.	Each	Case of
1" (26mm)	60121	**07-970C**	9.36	72/539.27
1 5/16" (34mm)	60122	**07-970D**	9.36	72/539.27
1½" (38mm)	60123	**07-970E**	9.44	72/543.95
1¾" (45mm)	60124	**07-970F**	9.61	72/553.25
2⅛" (54mm)	60125	**07-970G**	9.44	72/543.95
2¾" (66mm)	60126	**07-970H**	10.59	60/508.15
3 5/16" (77mm)	60127	**07-970J**	11.28	48/433.06
3½" (90mm)	60128	**07-970K**	15.06	36/433.72
4⅛" (105mm)	60129	**07-970L**	15.41	36/443.67

CoorsTek* Porcelain Capsule-Form Crucibles

Withstand temperatures up to 1150°C (2102°F), not to exceed 200°C/hour

- Suitable for ash determinations, organic combustions, ignitions
- Capsule form with straight sides, flat bottom
- Glazed inside and out except on rim



08-108 Series

Capac.	Dia. × H	Mfr. No.	Cat. No.	Each	Case of
12mL	1¾ × ⅜" (45 × 10mm)	60048	**08-108A**	8.04	36/241.89
25mL	2¾ × ½" (69 × 12mm)	60050	**08-108B**	11.70	24/224.58

CoorsTek* Porcelain Rose Crucible

Withstand temperatures up to 1400°C (2550°F), not to exceed 200°C/hour

- Unglazed porcelain crucible
- Eliminates possibility of reaction between contents and glaze coating

08-215-2

Capac.	Dia. × H	Mfr. No.	Cat. No.	Each	Case of 24
75mL	2 × 2⅜" (50 × 60mm)	60166	**08-215-2**	11.71	224.81

*Trademark. See Trademark Reference.

Prices subject to change.

CRYOGENICS

VIALS AND ACCESSORIES

*Fisherbrand** Externally and Internally Threaded Cryogenic Storage Vials

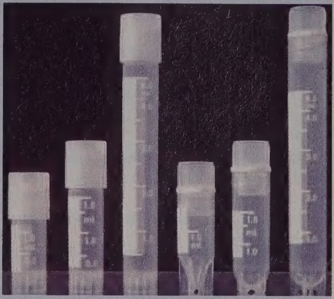
Choice of externally threaded vials with HDPE closures for aseptic technique or internally threaded vials featuring polypropylene closures with silicone gasket for tight seal

- Externally threaded vials have a conical-style bottom; self-standing
- Internally threaded vials have conical- or round-style bottoms with a star-style foot; also self standing
- Sterile; not autoclavable
- Noncytotoxic; nonpyrogenic
- Large white writing area
- Graduations in 0.5mL increments
- Use with Fisherbrand Color Coders for easier sample identification

APPLICATIONS:
Suitable for storage of biological materials in mechanical freezers or in the vapor phase of liquid nitrogen

CERTIFICATIONS:
CE marked

NOTE:
Vials are for research use only; not for in vitro diagnosis or parenterals.



Left to Right 10-500-25; 10-500-26; 10-500-27; 12-567-500; 12-567-501; 12-567-502

Capacity	Bottom Style	Foot Style	O.D. x H	Cat. No.	Pack of	Case of
Externally Threaded Vials						
1.2mL	Conical	—	13.5 × 38mm	**10-500-25**	100/39.99	10 Pk./341.83
2.0mL	Conical	—	13.5 × 48mm	**10-500-26**	100/39.99	10 Pk./341.83
5.0mL	Conical	—	13.5 × 92mm	**10-500-27**	50/27.69	20 Pk./473.28
Internally Threaded Vials						
1.2mL	Conical	Star Foot	12.5 × 42mm	**12-567-500**	100/38.02	10 Pk./324.94
2.0mL	Round	Star Foot	12.5 × 49mm	**12-567-501**	100/39.05	10 Pk./333.76
5.0mL	Round	Star Foot	12.5 × 92mm	**12-567-502**	100/51.26	10 Pk./438.16

*Fisherbrand** Color Coders for Externally and Internally Threaded Cryogenic Storage Vials

Fit into the caps of Fisherbrand Externally Threaded Cryogenic Storage Vials (10-500-25, -26, and -27) or Internally Threaded Cryogenic Storage Vials (12-567-500, -501, -502)

- For color-coded sample identification
- Polystyrene
- Nonsterile

10-500 Series

12-567 Series

Color	Cat. No.	Case of 500
For Externally Threaded Vials		
White	**10-500-30**	16.35
Yellow	**10-500-31**	16.35
Green	**10-500-32**	16.35
Blue	**10-500-33**	16.35
Red	**10-500-34**	16.35
For Internally Threaded Vials		
White	**12-567-503**	13.87
Yellow	**12-567-504**	13.87
Green	**12-567-505**	13.87
Blue	**12-567-506**	13.87
Red	**12-567-507**	13.87

WARNING

Cryogenic vials are intended for placement only in the vapor phase of liquid nitrogen, and should not be used for storage in the liquid phase of liquid nitrogen. Immersion of the vials in the liquid phase could result in penetration of the liquefied gas into the vial, resulting in rapid vaporization of the liquid upon removal and possible violent explosion or leakage from the vial/closure perimeter.

To prevent cryogenic vials from exploding, never overfill liquid nitrogen storage units. Always examine vials before use to ensure no visible defects around the closure rims. Always use full faceshields, heavy safety gloves and laboratory protective apparel when removing vials from cryogenic storage. Always permit vials to warm slowly in a biological safety cabinet. Never reuse cryogenic vials.

Nalgene* Cryogenic Vials

Two-turn deep-skirted screw closure system minimizes contamination

- Polypropylene
- Conical bottoms allow full retrieval of sample
- Vials are self-standing and may be used without holder
- Do not autoclave

Styles

- All vials with high-density polyethylene closures, except 03-337-7X and -7Y, which have polypropylene closures
- System-100 vials 03-337-7X and -7Y also have gasket seats for excellent seals during shipping
- Preassembled, radiation-sterilized vials are noncytotoxic, nonpyrogenic, and have a large white marking area, graduations, and fill line printed on side
- Nonsterile vials without printing and graduations; packed separately from closures

03-337-7N, 03-337-7P

APPLICATIONS:

For cryogenic storage of cell and microbiological cultures, sperm and serum/blood or other biologicals in vapor phase of liquid nitrogen

Capacity	O.D. × H	Mfr. No.	Cat. No.	Case of
Sterile Vials				
1.2mL	13.5 × 38mm	5000 0012	**03-337-7C**	500/211.25
1.2mL	13.5 × 38mm	5012 0012	**03-337-7V**	1000/369.75
2.0mL	13.5 × 48mm	5000 0020	**03-337-7D**	500/211.25
2.0mL	13.5 × 48mm	5012 0020	**03-337-7W**	1000/369.75
5.0mL	13.5 × 92mm	5000 0050	**03-337-7H**	250/171.00
Nonsterile Vials				
1.2mL	13.5 × 38mm	5011 0012	**03-337-7N**	1000/310.50
2.0mL	13.5 × 48mm	5011 0020	**03-337-7P**	1000/310.50
System-100 Sterile Vials with Gasket Seat				
1.0mL	12 × 38mm	5000 1012	**03-337-7X**	500/216.50
1.5mL	12 × 48mm	5000 1020	**03-337-7Y**	500/216.50

ACCESSORIES

Cryogenic Vial Closure Color Coders

Fit into top of 1.0, 1.2, 1.5, 1.8, 2.0, or 5.0mL Nalgene* Cryogenic Vial Closures

- Simplify inventory maintenance
- Polystyrene
- Remain firmly in place during storage in mechanical and liquid-nitrogen freezers
- Cut-out top facilitates handling of vials with forceps
- Flat surface for writing

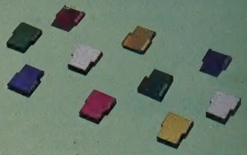
15-350-40 Series

Color	Mfr. No.	Cat. No.	Pack of 100	Case of 5 Pk.
White	5045 0000	**15-350-45**	18.85	62.82
Yellow	5045 0002	**15-350-46**	18.85	62.82
Blue	5045 0003	**15-350-47**	18.85	62.82
Green	5045 0004	**15-350-48**	18.85	62.82
Red	5045 0005	**15-350-49**	18.85	62.82

CryoCane* Color Coders

Slip onto the end of a Nalgene* CryoCane Holder (15-350-20 and 15-350-21, below)

- Use to identify a particular batch of vials or a specific technician's work
- Aluminum
- Remain firmly in place during storage in mechanical or liquid-nitrogen freezers
- Flat writing surface for additional identification



15-350-30 Series through 15-350-39

Color	Mfr. No.	Cat. No.	Case of 100
White	DS5020 0000	**15-350-35**	26.96
Yellow	DS5020 0002	**15-350-36**	26.96
Blue	DS5020 0003	**15-350-37**	26.96
Green	DS5020 0004	**15-350-38**	26.96
Red	DS5020 0005	**15-350-39**	26.96

CryoCane* Holders

Firmly hold 1.0, 1.2, 1.5, or 2.0mL Nalgene* Cryogenic Vials for storage in Dewar-type, liquid-nitrogen freezers

- Also accommodates most other brands of cryogenic vials
- Aluminum

15-350-20

ORDERING INFORMATION:

Length of 15-350-20: $11\frac{5}{16}$" (28.7cm); 15-350-21: $11\frac{13}{16}$" (30cm)

No. of Vials	Mfr. No.	Cat. No.	Pack of 12	Case of 4 Pk.
5	5015 0001	**15-350-20**	19.11	50.95
6	5015 0002	**15-350-21**	19.11	50.95

WARNING

Cryogenic vials are intended for placement only in the vapor phase of liquid nitrogen, and should not be used for storage in the liquid phase of liquid nitrogen. Immersion of the vials in the liquid phase could result in penetration of the liquefied gas into the vial, resulting in rapid vaporization of the liquid upon removal and possible violent explosion or leakage from the vial/closure perimeter.

To prevent cryogenic vials from exploding, never overfill liquid nitrogen storage units. Always examine vials before use to ensure no visible defects around the closure rims. Always use full faceshields, heavy safety gloves and laboratory protective apparel when removing vials from cryogenic storage. Always permit vials to warm slowly in a biological safety cabinet. Never reuse cryogenic vials.

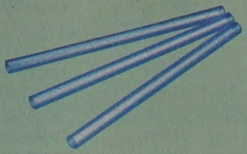
*Trademark. See Trademark Reference.

ACCESSORIES

CryoSleeve* Tubing

Clear polyvinyl chloride sleeve encloses a Nalgene* CryoCane* Holder (15-350-20, -21)

- Fits over most other canes
- Will not become brittle during freezing or thawing



15-350-23

Mfr. No.	Cat. No.	Case of 100
5016 0001	**15-350-23**	58.39

Nalgene* Holders

For single-handed capping/uncapping of cryogenic vials

- Polycarbonate holders for 1.0, 1.2, 1.5, 2.0, or 5.0mL vials
- Bottom of each well interlocks with Nalgene Cryogenic Vial's base to prevent vial turning when closure is opened or closed
- Stackable
- Autoclavable

03-337-7E (Vials not included)

Array	Dimensions (L × W × H)	Mfr. No.	Cat. No.	Each	Case of 4
5 × 10	4⅛ × 7⅞ × 1" (10.5 × 20 × 2.5cm)	5030 0510	**03-337-7E**	34.63	92.36
5 × 5	4 × 7¾ × ⅞" (10.2 × 19.7 × 2.5cm)	5030 0505	**03-337-7Z**	35.39	94.37

Nalgene* Wide-Mouth Cryogenic Vial

For storage and retrieval of solid specimens, such as tumor, bone, and organ samples, as well as larger volumes of cell culture and liquid samples

- Made of polypropylene, with high-density polyethylene screw closures
- Self-standing
- Radiation sterilized, noncytotoxic, nonpyrogenic
- Can be used in mechanical freezers only

03-337-7B

ORDERING INFORMATION:

With caps attached in 15 bags of five vials each

COMPLIANCE:

This product is in compliance to Directive 98/79/EC of the European Parliament and of the Council of 27 October 1998 on in vitro diagnostic medical devices.

Capacity	O.D. × H (with closure)	Mfr. No.	Cat. No.	Case of 75
15mL	1 5/16 × 1 13/16" (33 × 47mm)	5005 0015	**03-337-7B**	80.40

Nunc* Externally Threaded CryoTube* Vials

Externally threaded polypropylene vials with deep-skirted polyethylene screw caps

- Sterile
- Nontoxic, nonmutagenic, and nonpyrogenic
- For mechanical freezer and gas phase of liquid nitrogen

Styles

- Self-standing styles with a star-foot design interlock in the CryoTube rack (12-565-178) for one-handed opening and capping
- Standard vials have a body diameter of 12.5mm and a neck of reduced diameter so that even with the cap on, the vial has the same 12.5mm diameter
- Self-standing vials have 12.5mm diameter with 13mm diameter cap
- Both styles have a white marking area for labeling; self-standing vials without a marking area are also available

ORDERING INFORMATION:

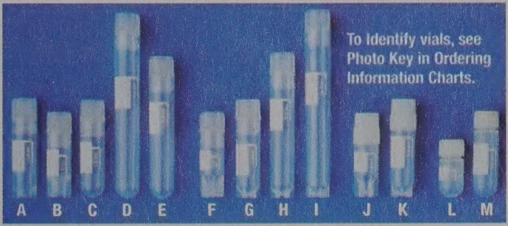
Packed in sleeves of 50

COMPLIANCE:

Meet IATA Dangerous Goods Regulations for the transport of infectious substances and diagnostic specimens

CERTIFICATIONS:

Carries CE mark for containers for samples of human origin



To Identify vials, see Photo Key in Ordering Information Charts.

Nunc* Internally Threaded CryoTube* Vials

Polyethylene cap has silicone gasket for the best possible seal

- Polypropylene
- Available standard or self-standing in two foot styles: solid skirt or star-foot
- Sterile, nontoxic, nonmutagenic, and nonpyrogenic
- Fill line and white marking area for labeling

ORDERING INFORMATION:

Packed in sleeves of 50

Specifications and Ordering Tables on next page.

Nunc* Threaded CryoTube* Vials, Contd.

Externally Threaded Vials

Capacity	Bottom Style	Foot Style	O.D. × H	Photo Key	Mfr. No.	Cat. No.	Pack of	Case of 4 Pk.
Self-standing with writing surface								
1.0mL	Conical	Star	12.5 × 41mm	J	375353	**12-565-164N**	500/243.36	844.75
1.8mL	Round	Star	12.5 × 48mm	K	375418	**12-565-163N**	450/218.58	760.25
4.5mL	Round	Star	12.5 × 91mm	----	337516	**12-565-291**	300/239.78	819.75
Self-standing without writing surface								
1.0mL	Conical	Star	12.5 × 41mm	----	347597	**12-565-297**	500/243.36	844.75
1.8mL	Round	Star	12.5 × 48mm	----	347627	**12-565-298**	450/218.58	760.25
4.5mL	Round	Star	12.5 × 91mm	----	347643	**12-565-299**	300/239.78	819.75
Standard with narrow neck								
1.0mL	Round	----	12.5 × 29mm	L	375299	**12-565-165N**	500/243.36	844.75
1.8mL	Round	----	12.5 × 43mm	M	340711	**12-565-166N**	500/243.36	844.75

Internally Threaded Vials

Capacity	Bottom Style	Foot Style	O.D. × H	Photo Key	Mfr. No.	Cat. No.	Pack of	Case of 4 Pk.
Self-standing								
1.0mL	Conical	Skirt	12.5 × 41mm	B	366656	**12-565-169N**	500/262.57	897.67
1.0mL	Conical	Star	12.5 × 41mm	F	377224	**12-565-168N**	500/262.57	897.67
1.8mL	Round	Skirt	12.5 × 49mm	A	368632	**12-565-171N**	450/245.49	853.85
1.8mL	Round	Star	12.5 × 48mm	G	377267	**12-565-167N**	450/245.49	853.85
3.6mL	Round	Star	12.5 × 71mm	H	379189	**12-565-162N**	400/271.69	944.00
4.5mL	Round	Star	12.5 × 91mm	I	379146	**12-565-161N**	300/243.43	832.25
Standard								
1.8mL	Round	----	12.5 × 48mm	C	363401	**12-565-170N**	500/262.57	897.67
3.6mL	Round	----	12.5 × 70mm	E	366524	**12-565-172N**	400/271.69	944.00
4.5mL	Round	----	12.5 × 91mm	D	363452	**12-565-173N**	300/243.43	832.25
Standard without cap, Nonsterile								
1.8mL	Round	----	12.5 × 48mm	----	351934	**12-566-97**	2500/766.25	----
3.6mL	Round	----	12.5 × 48mm	----	367997	**12-566-98**	1500/555.00	----
4.5mL	Round	----	12.5 × 48mm	----	361247	**12-566-99**	1500/634.00	----

ACCESSORIES

CryoTube* Colored Caps

For use with Nunc* Internally Threaded CryoTube Vials

- Replacement polypropylene screw caps with a silicone gasket to provide the best seal
- Sterile

12-565-170

Color	Mfr. No.	Cat. No.	Case of 2500
Clear	363436	**12-567-00**	429.50
Yellow	336092	**12-565-167**	429.50
Blue	336088	**12-565-168**	429.50
Red	336081	**12-565-169**	429.50
Assorted (Yellow, Red, and Blue)	336094	**12-565-170**	429.50

CryoFlex* Tubing

Encases and seals CryoTube* vials when storing samples in liquid nitrogen

- Polyethylene

12-565-177

I.D. × L	Mfr. No.	Cat. No.	Pack of 15	Case of 20 Pk.
9/16 × 19 11/16" (1.4 × 50cm)	343958	**12-565-177**	75.09	1307.00

WARNING

Cryogenic vials are intended for placement only in the vapor phase of liquid nitrogen, and should not be used for storage in the liquid phase of liquid nitrogen. Immersion of the vials in the liquid phase could result in penetration of the liquefied gas into the vial, resulting in rapid vaporization of the liquid upon removal and possible violent explosion or leakage from the vial/closure perimeter.

To prevent cryogenic vials from exploding, never overfill liquid nitrogen storage units. Always examine vials before use to ensure no visible defects around the closure rims. Always use full faceshields, heavy safety gloves and laboratory protective apparel when removing vials from cryogenic storage. Always permit vials to warm slowly in a biological safety cabinet. Never reuse cryogenic vials.

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

CryoColorCode Cap Inserts

Snap inside of all CryoTube* vial caps, except those supplied with 12-565-165N and 12-565-166N vials

- Polystyrene
- Assortment contains a mix of ten colors

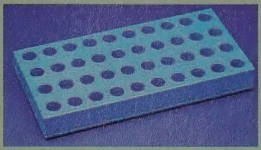
12-565-180

Color	Mfr. No.	Cat. No.	Pack of 500	Case of 4 Pk.
Green	355018	**12-565-245**	31.37	107.25
Red	354968	**12-565-244**	31.37	107.25
Pink	375884	**12-565-252**	31.37	107.25
Orange	355158	**12-565-247**	31.37	107.25
Yellow	355077	**12-565-246**	31.37	107.25
Brown	375868	**12-565-251**	31.37	107.25
Purple	375922	**12-565-254**	31.37	107.25
White	354755	**12-565-242**	31.37	107.25
Gray	375906	**12-565-253**	31.37	107.25
Blue	354879	**12-565-243**	31.37	107.25
Assorted	375930	**12-565-180**	31.37	107.25

CryoTube* Racks

Hold externally or internally threaded CryoTube vials

- Autoclavable
- 12-565-178 allows vials with self-standing star-foot design to lock into rack for one-handed capping and uncapping



12-565-178

Array	Material	Mfr. No.	Cat. No.	Each	Case of
4 × 10	Polyphenyleneoxide	376589	**12-565-178**	33.88	15/393.24
7 × 10	Polycarbonate	347155	**12-565-179**	72.56	30/1676.00

Nunc* Cryobank and Bank-It* Vial Systems

96 polypropylene CryoTube* vials with a low-binding surface, in a low-profile microplate-format frame (SBS footprint)

NEW

- 14 × 14 array 2D open DataMatrix ECC 200 code is laser-etched into bottom of each 2D-coded vial
- Automation-friendly—code is easily read by instruments; allows for safe sample identification and reading of whole racks in one process
- Vials click firmly into the rack—will not get lost during manual or automated handling
- Two-shot molded screw cap and gasket eliminate risk of overtightening
- Microplate format enables high density storage in low temperature environments
- Can place both 0.5mL and 1.0mL capacity vials in the same rack

Choose from two styles

- **Cryobank vials** for storage of cells and proteins; nonpyrogenic, 10^{-6} sterility assurance level
- **Bank-It vials** for storage of DNA samples

12-570 Series

COMPLIANCE:

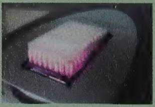
CE marked for diagnostic use; DNAse, RNAse free; nontoxic according to USP Class VI test; conform to IATA requirements for the transport of diagnostic specimens, UN packing instruction 602 and 650

Capacity	2D Coded	Packaged	Mfr. No.	Cat. No.	Case of
Cryobank Vials					
0.5mL	Yes	Racked, 96 × 2	374082	**12-570-200**	192/109.15
0.5mL	Yes	Racked, 96 × 10	374086	**12-570-208**	960/518.50
0.5mL	No	Racked, 96 × 2	374083	**12-570-201**	192/89.98
0.5mL	No	Racked, 96 × 10	374087	**12-570-209**	960/423.69
0.5mL	No	Bulk Packed	374080	**12-570-216**	960/327.51
1.0mL	Yes	Racked, 96 × 2	374084	**12-570-204**	192/120.71
1.0mL	Yes	Racked, 96 × 10	374088	**12-570-212**	960/576.00
1.0mL	No	Racked, 96 × 2	374085	**12-570-205**	192/101.59
1.0mL	No	Racked, 96 × 10	374089	**12-570-213**	960/480.90
1.0mL	No	Bulk Packed	374081	**12-570-217**	960/384.72
Bank-It Vials					
0.5mL	Yes	Racked, 96 × 2	374066	**12-570-202**	192/109.15
0.5mL	Yes	Racked, 96 × 10	374074	**12-570-210**	960/518.50
0.5mL	No	Racked, 96 × 2	374067	**12-570-203**	192/89.98
0.5mL	No	Racked, 96 × 10	374075	**12-570-211**	960/423.69
1.0mL	Yes	Racked, 96 × 2	374070	**12-570-206**	192/120.71
1.0mL	Yes	Racked, 96 × 10	374078	**12-570-214**	960/576.00
1.0mL	No	Racked, 96 × 2	374090	**12-570-207**	192/101.59
1.0mL	No	Racked, 96 × 10	374079	**12-570-215**	960/480.90

ACCESSORIES

Nunc* 96 Scanner Package for Cryobank and Bank-It* Vial Systems

Simultaneouly scans 2D codes from all vials racked in a 96-well format


12-565-005

- Scanned values are sent to an external file or database
- Software can read most common brands of microtubes (12 × 12 array codes or 14 × 14 array codes)
- Output file can be customized and may be connected to external databases by ODBC data source standard

INCLUDES:
Epson* scanner and software

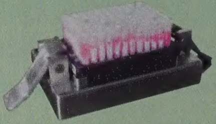
REQUIRED ACCESSORIES:
PC with Windows XP* operating system

Mfr. No.	Cat. No.	Each
330041	**12-565-005**	5750.00

Press Out Tool

Quickly picks multiple vials from rack to avoid thawing of remaining vials

- Cut off corner ensures that rack and press out tool orientation are always aligned
- Selected vials are released by levers and can be easily harvested
- Stainless steel

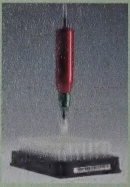

12-565-003 (racked vials sold separately)

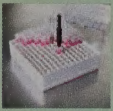
Mfr. No.	Cat. No.	Each
374009	**12-565-003**	711.25

Screwdrivers

Facilitate unscrewing and fastening of caps

Cap is retained by socket, allowing one-handed manipulation of the cap.


12-570-219

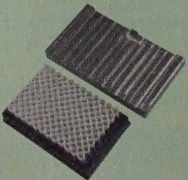

12-570-220

Description	Mfr. No.	Cat. No.	Each
Electric screwdriver, US plug	369641	**12-570-219**	2139.00
Manual screwdriver	369643	**12-570-220**	15.84

Retention Plate

Holds Cryobank and Bank-It* system racks securely for easier vial manipulation

- Recommended for use with electric screwdriver (12-570-219) to prevent rack from turning, while leaving one hand free for pipetting
- Stainless steel


12-565-002 (shown with racked vials, sold separately)

Mfr. No.	Cat. No.	Each
374011	**12-565-002**	278.35

Corning* Cryogenic Vials

Silicone washer provides secure seal

- Polypropylene
- Self-standing vials have slotted skirts allowing vials to lock into place for easy one-handed manipulation in a workstation or rack
- Sterilized by gamma radiation
- Certified RNase-/DNase-free and nonpyrogenic
- Vials have black graduations and large white marking spot
- Accept Corning cap inserts for color coding (see p. 545.)
- Can be used to –196°C (–320.8°F) in vapor phase of liquid nitrogen

09-761-7 Series and 03-374-2 Series

INCLUDES:
50-position polyfoam rack with each case, for easy carrying

Externally Threaded Cryogenic Vials

Capacity	O.D. × H	Mfr. No.	Cat. No.	Case of 500
Round bottom				
2.0mL	12.7 × 47.6mm	430661	**09-761-72**	210.30
Round bottom, self-standing				
2.0mL	12.7 × 48.7mm	430659	**09-761-71**	210.30
4.0mL	12.7 × 76.5mm	430662	**09-761-73**	294.12
5.0mL	12.7 × 92.1mm	430663	**09-761-74**	343.61
Conical bottom, self-standing				
1.2mL	12.7 × 41.5mm	430658	**09-761-70**	210.30

Internally Threaded Cryogenic Vials

Capacity	O.D. × H	Mfr. No.	Cat. No.	Case of
Round bottom				
2.0mL	12.7 × 47mm	430489	**03-374-22**	500/210.30
4.0mL	12.7 × 70mm	430490	**03-374-23**	500/294.12
5.0mL	12.7 × 90.2mm	430492	**03-374-25**	500/343.61
Round bottom, self-standing				
2.0mL	12.7 × 49mm	430488	**03-374-21**	500/225.41
2.0mL	12.8 × 39.8mm	431386	**03-374-059**	250/115.17
4.0mL	12.7 × 71.2mm	430491	**03-374-24**	500/294.12
5.0mL	12.7 × 92.1mm	430656	**09-761-69**	500/343.61
Conical bottom, self-standing				
1.2mL	12.7 × 41.6mm	430487	**03-374-20**	500/210.30

WARNING

Cryogenic vials are intended for placement only in the vapor phase of liquid nitrogen, and should not be used for storage in the liquid phase of liquid nitrogen. Immersion of the vials in the liquid phase could result in penetration of the liquefied gas into the vial, resulting in rapid vaporization of the liquid upon removal and possible violent explosion or leakage from the vial/closure perimeter.

To prevent cryogenic vials from exploding, never overfill liquid nitrogen storage units. Always examine vials before use to ensure no visible defects around the closure rims. Always use full faceshields, heavy safety gloves and laboratory protective apparel when removing vials from cryogenic storage. Always permit vials to warm slowly in a biological safety cabinet. Never reuse cryogenic vials.

Corning* Disposable Plug Seal Cryogenic Vial

Plug seal cap provides secure seal

03-374-6

- Translucent polypropylene
- Round-bottom
- Certified nonpyrogenic
- Sterilized by gamma radiation
- Caps do not accept color-coded cap inserts
- Designed for low-temperature storage of cells and biological fluids; can withstand temperatures from –196° to +121°C (–320.8° to +250°F)
- To prevent leakage, store vials in the vapor phase above liquefied nitrogen or other gases

ORDERING INFORMATION:

Supplied in bags of 50 vials, 500 per case

Capacity	O.D. × H	Mfr. No.	Cat. No.	Case of 500
2.0mL	12.2 × 43mm	430289	**03-374-6**	226.91

ACCESSORIES

Color-Coded Cap Inserts

For use with Corning* cryogenic vials except 03-374-6

03-374-36G

- Provide color-coding for easy sample identification
- Polypropylene

Color	Mfr. No.	Cat. No.	Case of 500
Blue	2016	**07-202-621**	42.25
Green	2018	**07-202-623**	42.25
Red	2017	**07-202-622**	42.25
White	2015	**07-202-620**	42.25
Yellow	2019	**07-202-624**	42.25
Assorted	430499	**03-374-36G**	41.49

Cryogenics Workstation

Rack grips Corning* externally and internally threaded self-standing vials, so caps can be removed with one hand

03-374-37A

- Reusable polycarbonate rack and storage tray
- Removable rack has an alphanumeric grid and holds 30 vials
- Tray can also be used to hold water or crushed ice
- Rack and tray can be autoclaved at 121°C (250°F)

ORDERING INFORMATION:

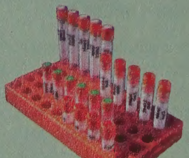
Workstation dimensions (L × W × H): $14\frac{5}{8} \times 5\frac{11}{16} \times 3$" (37.1 × 14.5 × 7.6cm)

Description	Mfr. No.	Cat. No.	Each
Workstation (rack and tray)	430525	**03-374-37A**	75.04
Rack only	430526	**03-374-37B**	57.69

ACCESSORIES

Cryogenic Vial Rack

Fits all Corning* vials



07-200-618

- Reusable polypropylene
- Features self-locking design for one-handed capping and uncapping of self-standing cryogenic vials
- Withstands temperatures to –196°C (–320.8°F)
- Autoclavable at 121°C (249.8°F)

ORDERING INFORMATION:

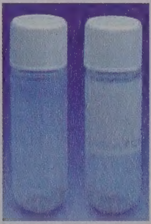
L × W × H: $7\frac{5}{8} \times 4 \times \frac{15}{16}$" (19.4 × 10.2 × 2.4cm)

Accepts	Mfr. No.	Cat. No.	Case of 2
50 vials	431131	**07-200-618**	51.73

Wheaton Cryule* Externally Threaded Cryogenic Vials

- External threads minimize chance of contamination
- Cap attaches to outside of each vial for more efficient utilization of vial capacity; also protects lip and user's hands from contamination from vial contents
- Polypropylene vials with polypropylene screw caps
- Vertical inner wall and conical inner bottom facilitate filling and provide maximum product retrieval
- Choose standard round-bottom style or with freestanding flat base that lets vial stand without support on benches or in 03-341-18S rack (see p. 546) for one-handed cap removal
- Available in sterile or nonsterile round-bottom or sterile freestanding styles
- Ideal for preserving biological specimens under mechanical refrigeration at temperatures as low as -196°C (-320.8°F); also use them as mailing tubes
- Autoclavable at 121°C (249.8°F) for 20 minutes, but caps must be sufficiently loosened or removed to allow pressure equalization upon cooling to prevent wall collapse

Round-Bottom Vials



03-341-18A, 03-341-18

Available sterilized with white marking area or nonsterilized with or without white marking area.

ORDERING INFORMATION:

Nonsterilized vials and caps are packed separately in polyethylene bags; sterilized vials are supplied with caps attached, 50 per bag, 10 bags per case.

Capacity	With Marking Spot	O.D. × H	Mfr. No.	Cat. No.	Pack of
Sterile					
1.0mL	Yes	12 × 24mm	985730	**03-341-18B**	500/210.94
2.0mL	Yes	12 × 44mm	985731	**03-341-18C**	500/246.09
Nonsterile					
2.0mL	Yes	12 × 44mm	985721	**03-341-18**	1000/363.18
2.0mL	No	12 × 44mm	985726	**03-341-18A**	1000/296.81

Contd. on next page.

Wheaton Cryule* Externally Threaded Cryogenic Vials, Contd.

Freestanding Sterile Vials with Color-Coded Caps

Stand upright without support on benches or lock into 03-341-18S rack for one-handed cap removal. White marking area and color-coded caps allow complete lot and sample identification.

WHEATON
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WHEATON

03-341-18H, E, G

ORDERING INFORMATION:

Supplied with polypropylene caps attached, 50 per bag, 10 bags per case.

Cap Color	Capacity	O.D. × H	Mfr. No.	Cat. No.	Pack of 500
White	2.0mL	12 × 46mm	985734	**03-341-18D**	192.49
Red	2.0mL	12 × 46mm	985735	**03-341-18E**	192.49
Pink	2.0mL	12 × 46mm	985736	**03-341-18F**	192.49
Yellow	2.0mL	12 × 46mm	985737	**03-341-18G**	192.49
Green	2.0mL	12 × 46mm	985738	**03-341-18H**	192.49
Blue	2.0mL	12 × 46mm	985739	**03-341-18J**	192.49

Wheaton Cryule* Internally Threaded Cryogenic Vials

Internal threads offer greater stability

- Sterile, streamlined polypropylene vials with polypropylene screw stoppers and silicone rings seal securely
- Free-standing or round-bottom base
- White marking area allows sample identification
- Ideal for preservation of biological specimens in the gas phase of liquid nitrogen at temperatures to -196°C (-320.8°F)
- Autoclavable at 121°C (249.8°F) for 20 minutes, but stoppers must be sufficiently loosened or removed to allow pressure equalization upon cooling to prevent wall collapse

03-341-18K, 03-341-18L, 03-341-18M

ORDERING INFORMATION:

Supplied with caps attached, in 10 bags of 50 per pack.

03-341-18N, 03-341-18P, 03-340-18Q

Capacity	O.D. × H	Mfr. No.	Cat. No.	Pack of 500
With round base				
2.0mL	12 × 48mm	985742	**03-341-18K**	189.43
4.0mL	12 × 70mm	985743	**03-341-18L**	241.03
5.0mL	12 × 90mm	985744	**03-341-18M**	259.04
With freestanding base				
1.2mL	12 × 42mm	985745	**03-341-18N**	200.85
2.0mL	12 × 49mm	985746	**03-341-18P**	221.02
4.0mL	12 × 71mm	985747	**03-341-18Q**	241.03

ACCESSORIES

Cryule* Polypropylene Racks

Molded corners provide stability during stacking

- Alphanumeric index provides easy sample identification
- Autoclavable at 121°C (249.8°F) for 20 minutes
- See ordering chart for tube compatibilities

WHEATON
WHEATON
WHEATON

06-408-10 (Vials not included.)

ORDERING INFORMATION:

L × W × H: 4 × 7⅝ × ⅞" (10.2 × 19.4 × 2.2cm)

Accepts	Mfr. No.	Cat. No.	Pack of 5
50 Cryule 1.0 and 2.0mL Round-Bottom Vials with screw caps, 12mm diameter autosampler vials, or 12 × 75mm glass culture tubes	985800	**06-408-10**	81.38
50 Cryule 2.0mL Freestanding Vials with Color-Coded Caps	985810	**03-341-18S**	91.29

LABELING SUPPLIES

Nalgene* Cryoware Markers

Permanent markers with extra-fine tips for marking vials, cardboard, and plastic boxes

- Ink will not fade at ultralow temperatures
- Each pack is a resealable bag of four pens, one each of red, green, blue, and black ink

13-382-52; labels not included, see below

Mfr. No.	Cat. No.	Pack of 4	Case of 6 Pk.
6313 0010	**13-382-52**	22.28	89.14

Nalgene* Cryoware Labels

Durable cloth labels adhere to plastic as well as cardboard cryogenic storage boxes

- Designed for use at ultralow temperatures
- Won't peel or shrink, even when removed from mechanical or liquid-nitrogen freezers
- Accept ballpoint pen—not compatible with printers

03-337-7G; marker sold separately, above

ORDERING INFORMATION:

L × W: 1 × 2" (25 × 50mm), plain. 20 labels per sheet, 10 sheets per pack.

Mfr. No.	Cat. No.	Pack of 200	Case of 10 Pack
5040 0002	**03-337-7G**	54.83	365.50

WARNING

Cryogenic vials are intended for placement only in the vapor phase of liquid nitrogen, and should not be used for storage in the liquid phase of liquid nitrogen. Immersion of the vials in the liquid phase could result in penetration of the liquefied gas into the vial, resulting in rapid vaporization of the liquid upon removal and possible violent explosion or leakage from the vial/closure perimeter.

To prevent cryogenic vials from exploding, never overfill liquid nitrogen storage units. Always examine vials before use to ensure no visible defects around the closure rims. Always use full faceshields, heavy safety gloves and laboratory protective apparel when removing vials from cryogenic storage. Always permit vials to warm slowly in a biological safety cabinet. Never reuse cryogenic vials.

Nunc* CryoPens

Ideal for writing on CryoColorCode cap inserts, CryoTube* vial marking areas, and polyester labels on MAX storage boxes

- With indelible, quick-drying ink and extra fine tips
- Available with black or red ink

12-565-238 (bottom) and
12-565-237 (top)

Ink Color	Mfr. No.	Cat. No.	Case of 10
Black	343850	**12-565-237**	45.17
Red	343869	**12-565-238**	45.17

Thermo Scientific* Cryo Marker Pen Set

Recommended for all cryogenic vials to temperatures to -200°C (-328°F)

- Fast drying, nonsmearing, permanent ink
- Includes four fine-tip pens in black, blue, green, and red

Mfr. No.	Cat. No.	Each
4000221	**TF4000221**	19.85

STORAGE BOXES AND FREEZER RACKS

*Fisher*brand* Cryogenic Vial Storage Boxes

Suitable for ultralow temperature storage of both internally and externally threaded cryogenic vials

- 81-place white polycarbonate storage boxes
- Use in mechanical freezers and liquid nitrogen dewars
- Cover is printed with a 9 × 9 numbered grid for inventory purposes
- Stackable
- Autoclavable

10-500-28

Accepts	L × W × H	Cat. No.	Pack of 4	Case of 6 Pk.
1.2 to 2.0mL Vials	5¼ × 5¼ × 2" (13.3 × 13.3 × 5.1cm)	**10-500-28**	40.61	208.27
Up to 5.0mL Vials	5¼ × 5¼ × 3¾" (13.3 × 13.3 × 9.5cm)	**10-500-29**	56.60	290.24

*Fisher*brand* Cryo/Freezer Boxes

Choice of boxes and dividers to accommodate tubes from 0.5 to 50mL

03-395-100 Series

Sturdy yet economical

Fisherbrand Cryo/Freezer Boxes and Dividers are made of sturdy white cardboard, with a special moisture-repellent coating to protect them from the effects of liquid nitrogen or condensation from refrigerated equipment. Small holes on the bottom allow for safe drainage of liquid nitrogen or water.

Simple design for versatile use

- Unbreakable white fiberboard to protect samples
- Can be used in mechanical freezers and liquid nitrogen tanks at temperatures to -196°C
- Sized to fit all standard stainless-steel and polycarbonate storage systems
- Surface is easy to write on for identification
- Protective coating prevents water or liquid nitrogen from saturating box for increased longevity
- Tight lid-to-box fit means accidental separation is next to impossible
- Bottom drain holes allow safe drainage of liquid nitrogen, prevent moisture buildup

Choice of sizes and dividers for flexibility

- Three boxes come with dividers in popular configurations
- Four boxes come without dividers: choose the divider you need, replace it with another divider when needs change

APPLICATIONS:

Provide low-cost storage for laboratories in universities, government, medical research and pharmaceutical facilities; in institutions performing artificial insemination, biotech, blood bank and stem cell/bone marrow procedures

ORDERING INFORMATION:

Sold individually, with or without dividers as noted in table.

REQUIRED ACCESSORIES:

Boxes without dividers require Cat. Nos. 03-395-099 or 03-395-104 through -111 (next page).

L × W × H	No. of Cells	Cat. No.	Each
With Dividers			
3 × 3 × 2" (7.6 × 7.6 × 5.1cm)	25	**03-395-112**	6.00
5¼ × 5¼ × 2" (13.4 × 13.4 × 5.1cm)	81	**03-395-113**	6.00
5¼ × 5¼ × 2" (13.4 × 13.4 × 5.1cm)	100	**03-395-114**	6.00
Without Dividers			
3 × 3 × 2" (7.6 × 7.6 × 5.1cm)	----	**03-395-100**	3.00
5¼ × 5¼ × 2" (13.4 × 13.4 × 5.1cm)	----	**03-395-102**	3.10
5¼ × 5¼ × 3" (13.4 × 13.4 × 7.6cm)	----	**03-395-103**	6.00
5¾ × 5¾ × 4⅞"(14.6 × 14.6 × 12.3cm)	----	**03-395-101**	7.00

ACCESSORIES

Dividers

Fit Fisherbrand* Cryo/Freezer Boxes

- Choice of nine divider configurations to accommodate tubes from 0.5 to 50mL
- Unbreakable white fiberboard to protect samples
- Protective coating prevents water or liquid nitrogen from saturating box for increased longevity
- Can be used in mechanical freezers and liquid nitrogen tanks at temperatures to -196°C

L x W x H	No. of Cells	Cell Opening	Cat. No.	Each	Pack of 12
Cell Dividers for 50mL Tubes					
5⅝ x 5⅝ x 2¾" (14.2 × 14.2 × 7cm)	16	33.5mm	**03-395-108**	6.00	72.00
Cell Dividers for 15mL Tubes					
5⅜ x 5⅜ x 2¾" (13.7 × 13.7 × 7cm)	36	22.0mm	**03-395-109**	6.00	72.00
Cell Dividers for Standard Tubes					
4⅞ x 4⅞ x 1 5/16" (12.4 × 12.4 × 3.3cm)	25	24.5mm	**03-395-110**	6.00	72.00
4⅞ x 4⅞ x 1 5/16" (12.4 × 12.4 × 3.3cm)	49	16.7mm	**03-395-107**	6.00	72.00
4⅞ x 4⅞ x 1 5/16" (12.4 × 12.4 × 3.3cm)	64	14.6mm	**03-395-106**	6.00	72.00
4⅞ x 4⅞ x 1 5/16" (12.4 × 12.4 × 3.3cm)	81	12.7mm	**03-395-105**	6.00	72.00
4⅞ x 4⅞ x 1 5/16" (12.4 × 12.4 × 3.3cm)	100	11.5mm	**03-395-104**	1.85	22.20
4⅞ x 4⅞ x 1 5/16" (12.4 × 12.4 × 3.3cm)	144	9.5mm	**03-395-111**	6.50	78.00

*Fisherbrand** CombiPack Freezer Racks

Polypropylene racks and boxes suitable for use with 1.5mL conical microtubes, cryogenic vials, and 12mm diameter tubes or vials

- Supplied in a five-level benchtop carrier/workstation unit
- Conical holes in the boxes keep microtubes upright
- Both boxes and racks have frosted writing areas and feature stamped-in alphanumerics for sample identification
- Dimensions L × W × H: 6¼ × 6¼ × 16½" (16 × 16 × 42cm)

CombiPack 405

- Holds up to 405 samples in five 81-section lightweight Maxicold racks
- Clear polycarbonate slip-on lids accept varying tube heights up to 55mm
- Rack colors are pink, blue, green, yellow, and natural

CombiPack 500

- Holds up to 500 samples in five 100-section storage boxes with colored hinged lids
- Box lid colors are blue, green, red, yellow, and natural; also available with all black boxes

03-692-142

03-692-141

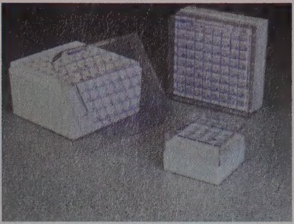
03-692-140

Description	Cat. No.	Pack of 5
CombiPack 405	**03-692-142**	301.00
CombiPack 500, Multi	**03-692-141**	319.00
CombiPack 500, Black	**03-692-140**	319.00

Nalgene* Cryogenic Storage Boxes

Square polycarbonate boxes with lids

- Use in mechanical or liquid nitrogen freezers
- Vented for rapid freeze-down
- Usable temperature range: -196° to +121°C (-320.8° to +249.8°F)
- Box and lid have numerical grid system to keep track of cryogenic vial inventory
- 10 × 10 array box, combined with 03-337-7X (1.0mL, 12 × 38mm) and -7Y (1.5mL, 12 × 48mm) cryogenic vials, increases freezer capacity 23% without increasing size of box



03-337-7J, 15-350-107B, and (bottom) 15-350-107

Accepts Vials	L × W × H	Mfr. No.	Cat. No.	Pack of	Case of
5 × 5 array					
1.0, 1.2, 1.5, 1.8, 2.0mL	3 × 3 × 2" (7.6 × 7.6 × 5.1cm)	5025 0505	**15-350-107**	8/59.81	6 Pk./239.25
9 × 9 array					
1.0, 1.2, 1.5, 1.8, 2.0mL	5¼ × 5¼ × 2" (13.3 × 13.3 × 5.1cm)	5026 0909	**15-350-107B**	4/46.93	6 Pk./187.75
4.0, 5.0mL	5¼ × 5¼ × 3¾" (13.3 × 13.3 × 9.5cm)	5027 0909	**03-337-7J**	4/64.50	6 Pk./258.00
10 × 10 array					
1.0, 1.5mL†	5¼ × 5¼ × 2¹⁄₁₆" (13.3 × 13.3 × 5.2cm)	5026 1010	**03-337-7AA**	----	10/83.10

† Fits 03-337-7X and -7Y tubes. Also holds similarly sized externally threaded microtubes and vials, and most 1.0 and 2.0mL internally threaded vials.

Nalgene* "Mr. Frosty" Freezing Container

Low-cost, nonmechanical freezing unit provides repeatable -1°C/min. cooling rate for successful cryopreservation and recovery

- Labeled with graphic, step-by-step instructions
- Rigid, floating vial holder isolates vials from alcohol, preventing contamination of samples by wicking
- For thawing of samples, holder can be removed from container and transferred to water bath

ORDERING INFORMATION:
Container has 4¾" diameter (120mm) closure

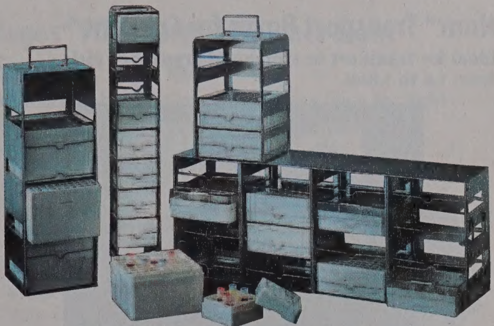
REQUIRED ACCESSORIES:
Isopropyl alcohol and a mechanical freezer

Accepts	O.D. × H	Mfr. No.	Cat. No.	Each
18 Nalgene 1.0, 1.2, 1.5, 1.8 and 2.0mL cryogenic vials or equivalent	4⅝ × 3⁷⁄₁₆" (117 × 86mm)	5100 0001	**15-350-50**	61.25

Nalgene* Storage Racks

With handles at both ends, these racks serve equally well in freezers with right- or left-hand doors

- Retainers hold each box securely but separately
- Stainless steel
- Vertical racks for chest-type freezers come with two, four, or nine shelves
- Horizontal racks fit most upright freezers; come with 12 (4 × 3 array) or 16 (4 × 4 array) shelves (horizontal racks accept only 15-350-107B and 03-337-7AA storage boxes)



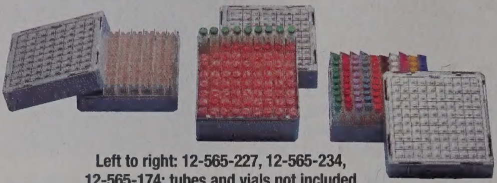
03-337 and 15-350 Series; boxes not included

Accepts	No. of Shelves	L × W × H†	Mfr. No.	Cat. No.	Each	Case of
Vertical						
9 × 9 and 10 × 10 boxes for 5mL vials and "Mr. Frosty" Freezing Container	2	5½ × 5⅝ × 8¼" (14 × 14.3 × 21.0cm)	DS5037 0002	**03-337-7K**	123.75	----
	4	5½ × 5⅝ × 16" (14 × 14.3 × 40.6cm)	DS5037 0004	**03-337-7L**	140.50	----
5 × 5 boxes for 1 to 2mL vials	4	3¼ × 3⅜ × 8¾" (8.3 × 8.4 × 22.4cm)	DS5035 0004	**15-350-107C**	104.75	----
	9	3¼ × 3⅜ × 19¾" (8.3 × 8.4 × 50.2cm)	DS5035 0009	**15-350-107D**	129.00	----
9 × 9 and 10 × 10 boxes for 1 to 2mL vials	4	5½ × 5⅝ × 8¾" (14 × 14.3 × 22.4cm)	5036 0004	**15-350-107E**	140.63	4/375.00
	9	5½ × 5⅝ × 19¾" (14 × 14.3 × 50.2cm)	5036 0009	**15-350-107F**	185.34	4/494.25
Horizontal						
9 × 9 and 10 × 10 boxes for 1 to 2mL vials	12 (4 × 3 array)	5⅝ × 17½ × 8⅞" (14.3 × 44.5 × 22.5cm)	5038 4322	**03-337-7R**	----	2/306.25
	16 (4 × 4 array)	5⅝ × 23¼ × 8⅞" (14.3 × 59.0 × 22.5cm)	5038 4422	**03-337-7S**	----	2/342.25

† Dimensions are stated given the rack orientation shown in photo, i.e., the loading position.

Nunc* MAX Storage Boxes

For CryoTube* vials and microcentrifuge tubes



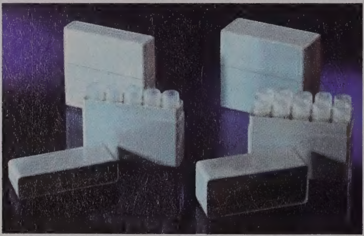
Left to right: 12-565-227, 12-565-234, 12-565-174; tubes and vials not included

- Molded polycarbonate
- For use in mechanical or liquid nitrogen freezers at temperatures to -196°C (-320.8°F)
- Stackable, impact-resistant units fit most rack storage systems
- Provide 23% more storage than many boxes of comparable size
- Printed grid on top for easy identification of contents
- Dividers can be removed completely for storage of larger containers
- Storage box 12-565-174 has a 10 × 10 divider that stores 100 internally threaded CryoTube vials
- 12-565-227 box has an 8 × 8 divider that stores up to sixty-four 1.5mL microcentrifuge tubes with caps

Accepts	L × W × H	Mfr. No.	Cat. No.	Pack of 4	Case of 6 Pk.
Hold 100 Internally Threaded CryoTube Vials					
1.0 to 1.8mL	5¼ × 5¼ × 2⅛" (13 × 13 × 5.4cm)	374187	**12-565-174**	46.02	236.00
3.6mL	5¼ × 5¼ × 3¹⁄₁₆" (13 × 13 × 7.8cm)	341483	**12-565-234**	55.14	282.75
Hold 64 Microcentrifuge Tubes w/caps					
1.5mL	5¼ × 5¼ × 2⅛" (13 × 13 × 5.4cm)	330821	**12-565-227**	44.70	229.25

Nunc* Transport Boxes for CryoLine*

Ideal for transport or storage of CryoTube* vials from 1.0 to 1.8mL



12-565-184, 12-565-185

- Constructed of high-impact polystyrene
- Keep special samples separate
- Available in two sizes
- Nonsterile

Holds	Mfr. No.	Cat. No.	Case of
5 CryoTube Vials	534479	**12-565-184**	350/631.75
10 CryoTube Vials	534592	**12-565-185**	200/455.00

Nunc* Polyethylene-Coated Chipboard Storage Boxes

Sturdy boxes store 1.0 to 4.5mL externally and internally threaded CryoTube* vials at temperatures to -196°C (-320.8°F)

- Fit standard rack systems
- Supplied with dividers and vented for good drainage
- Choose from 25-, 81- or 100-vial capacities

12-565-183 and 12-565-182

Color	Accepts	For Vial Size	L × W × H	Mfr. No.	Cat. No.	Case of
Brown	25 vials	1.0 to 1.8mL	2⅞ × 2⅞ × 2" (7.5 × 7.5 × 5.1cm)	378247	**12-565-183**	24/101.35
Brown	81 vials	1.0 to 1.8mL	5¼ × 5¼ × 2" (13.2 × 13.2 × 5.1cm)	378220	**12-565-182**	6/29.80
White	81 vials	1.0 to 1.8mL	5¼ × 5¼ × 2" (13.2 × 13.2 × 5.1cm)	369639	**12-567-01**	48/328.25
White	81 vials	3.6 to 4.5mL	5¼ × 5¼ × 2⅞" (13.2 × 13.2 × 7.5cm)	369647	**12-567-02**	30/208.00
White	100 vials	1.0 to 1.8mL	5¾ × 5¾ × 2" (14.5 × 14.5 × 5.1cm)	340053	**12-567-03**	42/436.00
White	100 vials	3.6 to 4.5mL	5¾ × 5¾ × 2⅞" (14.5 × 14.5 × 7.5cm)	340061	**12-567-04**	30/331.75

Nunc* Storage Box for Cryobank and Bank-It* Vial Systems

White cardboard box holds 169 vials in a 13 × 13 grid

12-570-218 (racked vials and screwdriver sold separately)

L × W × H	Mfr. No.	Cat. No.	Case of 48
5 × 5 × 2" (13.2 × 13.2 × 5cm)	369640	**12-570-218**	372.46

Nunc* Microplate Storage Racks for Cryobank and Bank-It* Vial Systems

Accommodate 0.5 and 1.0mL Cryobank and Bank-It racks

- Shelves are adjustable, allowing storage of a mixture of 0.5 and 1.0mL racks
- Alignment rod on the front side secures plates and allows for barcode reading
- Aluminum
- Autoclavable
- Also accommodates microplates, low-profile microplates, and DeepWell* plates

Color	L × W × H	Mfr. No.	Cat. No.	Each
Blue	5¼ × 3¾ × 9¼" (13.5 × 9.5 × 23.5cm)	367001	**12-566-192**	107.40
Gray	5¼ × 3¾ × 9¼" (13.5 × 9.5 × 23.5cm)	367002	**12-566-191**	107.40
Red	5¼ × 3¾ × 9¼" (13.5 × 9.5 × 23.5cm)	367004	**12-566-194**	107.40
Yellow	5¼ × 3¾ × 9¼" (13.5 × 9.5 × 23.5cm)	367003	**12-566-193**	107.40

Corning* Cryogenic Vial Storage Boxes

For storage of internally and externally threaded vials in temperatures to –196°C (–320.8°F)

- Durable polycarbonate
- Vented for drainage, stack interchangeably, and feature large labeling area
- Clear silk-screened lid features nonreversible design and numeric grid to prevent misalignment of lid and provide easy identification of vials
- Autoclavable at 121°C (249.8°F)

07-200-615

INCLUDES:

Unique vial handler for easy removal of vials with each case

Accepts	L × W × H	Mfr. No.	Cat. No.	Pack of	Case of 2 Pk.
Hold 81 Internally or Externally Threaded Vials					
1.0 to 2.0mL	5¼ × 5¼ × 2" (13.3 × 13.3 × 5.1cm)	431119	**07-200-615**	5/52.00	92.78
4.0 to 5.0mL	5¼ × 5¼ × 3¾" (13.3 × 13.3 × 9.5cm)	431120	**07-200-616**	10/122.35	----
Hold 100 Internally Threaded Vials					
1.0 to 2.0mL	5¼ × 5¼ × 2" (13.3 × 13.3 × 5.1cm)	431121	**07-200-617**	5/53.85	95.31

Wheaton Cryule* Disposable Freezer Boxes

Hold 81 externally threaded Cryule Round-Bottom Cryogenic Vials with Screw Caps (03-341-18, -18A, -18B, and -18C)

- Cardboard boxes withstand liquid nitrogen temperatures to -196°C (-320.8°F)
- Use in freezers or at room temperature
- Eliminate cleanup and provide easy handling of vials during filling

12-009-30 (top);
12-009-31 (bottom)

Accepts	L × W × H	Mfr. No.	Cat. No.	Pack of 15
03-341-18B	5 × 5 × 1¼" (12.7 × 12.7 × 3.2cm)	651490	**12-009-30**	94.35
03-341-18C, -18, -18A	5 × 5 × 1¾" (12.7 × 12.7 × 4.4cm)	651492	**12-009-31**	72.35

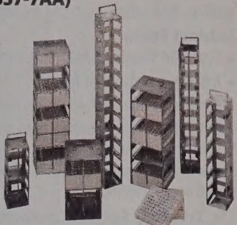
Thermo Scientific* Stainless-Steel Ultralow Temperature Freezer Racks

For use with 2.0mL or smaller vials in 2"H (5.1cm) cardboard or cryoplastic boxes (see Nalgene* Cryogenic Boxes 11-676-3 Series and 03-337-7AA)

- For storage in liquid nitrogen or mechanical freezers
- Stainless-steel retaining rod prevents accidental spilling of boxes from rack

ORDERING INFORMATION:

Racks for 25-vial (5 × 5 array) boxes are 3 5/16L × 3 5/16"W (8.4 × 8.4cm). Racks for 81-vial (9 × 9 array) and 100-vial (10 × 10 array) boxes are 5 9/16L × 5 9/16"W (14.1 × 14.1cm).



11-670-18 and -19 Series; boxes not included

NOTE:

These racks are not to be used with Thermo Scientific* Locator* or Locator Plus vessels.

Height	No. of Shelves	Mfr. No.	Cat. No.	Each
Racks for 25-vial boxes				
9" (22.9cm)	4	HR509X7A	**11-670-18A**	90.80
15½" (39.5cm)	7	HR509X5A	**11-670-18B**	103.30
20" (50.6cm)	9	HR509X9A	**11-670-18C**	115.80
26½" (67.3cm)	12	HR509X4A	**11-670-18D**	133.90
Racks for 81- and 100-vial boxes				
9" (22.9cm)	4	HR509X8A	**11-670-19A**	95.30
15½" (39.5cm)	7	HR509X6A	**11-670-19B**	114.60
20" (50.6cm)	9	HR509X10A	**11-670-19C**	138.50
26½" (67.3cm)	12	HR509X3A	**11-670-19D**	156.60

Argos* PolarSafe* 100-Place Light Sensitive Cryo Box

All-black polypropylene storage box ideal for light-sensitive samples

- Holds 0.5, 1.5, and 2.0mL microtubes as well as most brands of vials
- Taller than other available storage boxes to accommodate vials or tubes up to 2⅛" (5.35cm) high
- Lid has alphanumeric grid for sample identification
- Matte surfaces on box sides are suitable for marking or labeling
- Stackable
- Withstands conditions to -112°F to +249.8°F (-80°C to +121°C)

03-391-206

Accepts	L × W × H	Mfr. No.	Cat. No.	Pack of 5	Case of 10 Pk.
100 vials or tubes	5½ × 5½ × 2⅜" (14 × 14 × 6cm)	R3121	**03-391-206**	41.36	353.51

LN$_2$ FREEZERS AND STORAGE SYSTEMS

Thermo Scientific* Forma* CryoMed* Freezers

Precise, controlled-rate freezing from -180°C to +50°C for maximum accuracy of cell freezing

With six standard preset and 10 user-defined (20 steps each) freezing profiles that can be modified for custom protocols.

Cabinet Features

- Type 304 stainless-steel construction
- Exterior powder-coat finish
- Foamed in-place polyurethane insulation
- Bulb-style gaskets ensure tight door seal; PTFE heat-breaks prevent door from freezing closed
- Some front and top access models are designed for human IVF and easy "seeding"

LN$_2$ Freezing System Components

- Intuitive control panel and integrated thermal printer
- Dual solenoid valves increase LN$_2$ injection volume for precise temperature control and accelerated freezing for optimum cell viability
- Specially designed air handling system and liquid nitrogen ring work in tandem for precise temperature control and uniformity
- Overtemperature protection on heating element

Easy Programming and Monitoring

- Chamber and sample temperatures and operation status simultaneously display on backlit LCD; chamber temperature monitored by fixed-mount Type T thermocouple, sample temperature monitored by Type T thermocouple with flexible cable (included)
- Pre-Cool step automatically begins temperature ramp when chamber and sample temperatures are equilibrated within 1°C
- Audible indicators alert operator when hold time has elapsed
- Continual operation if power outage lasts less than 10 seconds; audible/visual alarm for outages lasting longer than 10 seconds
- Modifiable access code for added security

TF7450 Series

INCLUDES:

6' (1.8m) stainless-steel transfer hose, thermal paper, 25-pin to 9-pin serial interface cable/adapter, and 10' (3m) RS-232 cable

Note: All Thermo Scientific* CryoMed Freezers come with Controlled Rate Freezing PC Interface software for connection to IBM*-compatible computer and external printer—download profiles and capture graphs, profile, and sample information (computer and external printer sold separately; contact your Fisher Scientific Customer Service Representative).

COMPLIANCE:

UL listed

Capacity	Interior D × W × H	Exterior L × W × H†	Net Weight	Electrical Reqts.	Plug Type	Cat. No.	Each
Front Access Models							
17L (4½ gal.)	13 × 7 × 19" (33 × 17.8 × 30.5cm)	20⅜ × 31¾ × 21¼" (78.7 × 80.5 × 53.8cm)	140 lb. (63.5kg)	120V 60Hz 12A	NEMA 5-15P	**TF7450**	17,421.00
34L (9 gal.)	13 × 13 × 12" (33 × 33 × 30.5cm)	20⅜ × 37¾ × 21¼" (78.7 × 95.8 × 53.8cm)	160 lb. (72.6kg)	120V 60Hz 12A	NEMA 5-15P	**TF7452**	17,670.00
48.1L (13¾ gal.)	13 × 19 × 12" (33 × 48.3 × 30.5cm)	20⅜ × 43¾ × 21¼" (78.7 × 111 × 53.8cm)	180 lb. (81.6kg)	120V 60Hz 12A	NEMA 5-15P	**TF7454**	17,862.00
Front and Top Access IVF Units							
17L (4½ gal.)	13 × 7 × 19" (33 × 17.8 × 30.5cm)	20⅜ × 31¾ × 22½" (78.7 × 80.5 × 57.2cm)	140 lb. (63.5kg)	120V 60Hz 12A	NEMA 5-15P	**TF7456**	18,417.00
34L (9 gal.)	13 × 13 × 12" (33 × 33 × 30.5cm)	20⅜ × 37¾ × 22½" (78.7 × 95.8 × 57.2cm)	160 lb. (72.6kg)	120V 60Hz 12A	NEMA 5-15P	**TF7458**	19,039.00

† Width includes vent. Add 2¾" (7.1cm) to length for the door handle and LN$_2$ injection fittings.

ACCESSORIES

Thermo Scientific* Forma* CryoMed* Thermocouple Sensors

Sample thermocouple sensors

All include male plug.

Description	For Use with Thermo Scientific Forma CryoMed Models	Cat. No.	Each
1.2/2mL Cryo Tube	7450, 7456 (17L [4½ gal.])	**TF4000381**	168.00
	7452, 7458 (34L [9 gal.]); 7454 (48.1L [13¾ gal.])	**TF4000385**	225.00
Ribbon Type; Bag	7452, 7458 (34L [9 gal.]); 7454 (48.1L [13¾ gal.])	**TF4000393**	61.00

Thermo Scientific* Forma* CryoMed* Bag Freezing Presses

For	Holds No. of Bags	Use In	Cat. No.	Each
Nexell* R4R9953/ Fenwal* 4R5461 Bags	Two	All Thermo Scientific Forma CryoMed Freezers	**TF4000314**	339.00
Nexell R4R9953/ Fenwal 4R5461 Bags	Four	All Thermo Scientific Forma CryoMed Freezers	**TF4000318**	356.00

IQ/OQ Kits and Manuals

Use with Thermo Scientific* Forma* CryoMed* Freezers

- Include the documented disks and detailed checklists needed to perform the uniformity portion of the IQ/OQ
- Kits also include rack holders, racks, and vials

For Use with	Includes	Cat. No.	Each
IQ/OQ Kits			
0.6 cu. ft. 7450, 7451, 7472	One 4000702 Thermo Scientific Forma Cryo Rack Holder, five 4000701 Cryo Racks, and 20 1.2/2mL 4000709 Vials	**TF4007450**	666.00
1.2 cu. ft. 7452, 7453, 7473	One 4000704 Thermo Scientific Forma Cryo Rack Holder, five 4000703 Cryo Racks, and 20 1.2/2mL 4000709 Vials	**TF4007452**	842.00
IQ/OQ Manuals			
0.6, 1.2 and 1.7 cu. ft. Front Access Models 7450, 7452, 7454	Manual with disks and checklist	**TF6007452**	427.00

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* Forma* CryoPlus* LN_2 Storage Systems

Low-profile storage tanks combine liquid nitrogen storage reliability with microprocessor technology

TF7400, TF7406, TF7404, TF7402

- Standard temperature sleeve for cold temperatures and efficient vapor phase operation
- Autofill

Microprocessor Features and Capabilities

- Easy, precise, and accurate liquid level control over all 16 parameters
- Top-mounted control panel for convenient access to microprocessor control and easy programming via touchpad
- Digital temperature display located under the lid indicates highest temperature reading inside tank
- 24 tri-color LEDs continuously display actual liquid nitrogen level and high level/low level setpoints
- Alarm contacts for remote monitoring of storage tank conditions

Durable Construction

- Double-walled, vacuum-insulated, stainless-steel LN_2 storage tanks
- Liquid level sensor and fill port located within vacuum space, ensuring maximum storage area and protecting sensor
- Exterior cabinet constructed of 18 gauge, cold-rolled steel with powder-coated paint
- Counterbalanced lid with foamed-in-place, high density polyurethane insulation; patented, dedicated vent; 100% clearance
- Two independent, flexible lid gaskets reduce moisture migration into the chamber
- Convenient, front-mounted key lock and rear-mounted recessed power switch provide product security; control panel can also be locked
- Heavy-duty casters

INCLUDES:

Model 1 has ½" 45° flare, 4' (1.2m) flexible hose. Models 2, 3, and 4 come with ½" 45° flare, 6' (1.8m) flexible hose.

REQUIRED ACCESSORIES:

Inventory systems of racks, canisters, and frames are available separately.

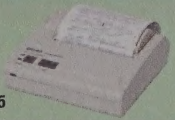
Model	Capacity	Tank Dia.	Overall L × W × H†	Weight Full	Weight Empty	Static Evap.	Static Holding Time	Holds No. of 2mL Vials	Cat. No.	Each
1	90L (23¾ gal.)	16" (40.6cm)	26 × 21½ × 41" (66 × 54.6 × 104.1cm)	354 lb. (160.6kg)	214 lb. (97.1kg)	3L/day (¾ gal./day)	30 days	5500 with 11 TF4000012 Vertical Racks, 6318 with 6 TF4000044 Arrowhead Racks	**TF7400**	7656.00
2	200L (52¾ gal.)	24" (61cm)	34 × 28½ × 41" (86.4 × 72.4 × 104.1cm)	680 lb. (308.4kg)	325 lb. (147.4kg)	5L/day (1¼ gal./day)	40 days	13,000 with 10 TF4000006 Square Racks and 26 TF4000012 Vertical Racks	**TF7402**	9855.00
3	340L (89¾ gal.)	31" (78.7cm)	41½ × 34½ × 41" (105.4 × 87.6 × 104.1cm)	1021 lb. (463.1kg)	416 lb. (188.7kg)	8L/day (2⅛ gal./day)	42.5 days	22,100 with 17 TF4000006 Square Racks, 24,000 with 48 TF4000012 Vertical Racks	**TF7404**	15,336.00
4	552L (145¾ gal.)	39½" (100.3cm)	50 × 43½ × 47" (127 × 110.5 × 119.4cm)	1620 lb. (734.8kg)	820 lb. (371.9kg)	10L/day (2⅝ gal./day)	55 days	36,400 with 28 TF4000006 Square Racks, 38,500 with 77 TF4000012 Vertical Racks	**TF7406**	19,223.00

† Add 5" (12.7cm) to length for utilities and lid opening.

ACCESSORIES

Printers for Thermo Scientific* Forma* CryoMed* and CryoPlus* Freezers

- Hewlett-Packard* 5550 Inkjet Color Printer (TF297265) has 2400 × 1200 dpi and includes 6" (15.2cm) USB cable; use with Thermo Scientific Forma CryoMed Freezers
- Thermal Data Printer (TF400565) produces hard copy of operational functions and 16 alarm systems logged to Thermo Scientific Forma CryoMed and CryoPlus document system performances; includes cable assembly and RS-232 connector kit


TF4000565

Description	Electrical Reqts.	Cat. No.	Price
Hewlett-Packard 5550 Inkjet Color Printer	Switchable 110/240V 50/60Hz	**TF297265**	Ea./426.00
Thermal Data Printer	120V 60Hz	**TF4000565**	Ea./1025.00
Thermal Printer Paper for Printer TF4000565	----	**TF4000566**	Pk. of 5/79.00

Thermo Scientific* Forma* Cryo LN$_2$ Storage Systems

Low-profile storage systems with choice of four tank sizes

- Front-mounted control panel provides audible and visual alarms
- Choice of manual fill or built-in automatic liquid level control with factory preset levels of 3" (7.6cm) low and 5" (12.7cm) high
- Access plate at top of unit makes it easy to adjust liquid level sensor
- Alarm contacts for remote monitoring of storage tank conditions
- Autofilling system

Durable Construction

- Double-walled, vacuum-insulated, stainless-steel LN$_2$ storage tanks
- Liquid level sensor and fill port located within vacuum space, ensuring maximum storage area and protecting sensor
- Exterior cabinet constructed of 18 gauge, cold-rolled steel with powder-coated paint
- Counterbalanced lid with foamed-in-place, high density polyurethane insulation; patented, dedicated vent; 100% clearance
- Two independent, flexible lid gaskets reduce moisture migration into the chamber
- Convenient, front-mounted key lock and rear-mounted recessed power switch provide product security
- Heavy-duty casters

Thermo
Thermo

TF744, TF742

INCLUDES:

Model 100 has ½" 45° flare, 4' (1.2m) flexible hose. Models 200, 300, and 400 come with ½" 45° flare, 6' (1.8m) flexible hose.

REQUIRED ACCESSORIES:

Inventory systems of racks, canisters, and frames are available separately.

Model	Capacity	Tank Dia.	Overall L × W × H†	Weight Full	Weight Empty	Static Evaporation Rate	Static Holding Time	Holds No. of 2mL Vials	Cat. No.	Each
100	90L (23¾ gal.)	16" (40.6cm)	26 × 21½ × 41" (66 × 54.6 × 104.1cm)	354 lb. (160.6kg)	214 lb. (97.1kg)	3L/day (¾ gal./day)	30 days	5500 with 11 TF4000012 Vertical Racks; 6318 with 6 TF4000044 Arrowhead Racks	**TF740**	6153.00
200	200L (52¾ gal.)	24" (61cm)	34 × 28½ × 41" (86.4 × 72.4 × 104.1cm)	680 lb. (308.4kg)	325 lb. (147.4kg)	5L/day (1¼ gal./day)	40 days	13,000 with 10 TF4000006 Square Racks and 26 TF4000012 Vertical Racks	**TF742**	7706.00
300	340L (89¾ gal.)	31" (78.7cm)	41½ × 34½ × 41" (105.4 × 87.6 × 104.1cm)	1021 lb. (463.1kg)	416 lb. (188.7kg)	8L/day (2⅛ gal.)	42.5 days	22,100 with 17 TF4000006 Square Racks; 24,000 with 48 TF4000012 Vertical Racks	**TF744**	12,283.00
400	552L (145¾ gal.)	39½" (100.3cm)	50 × 43½ × 47" (127 × 110.5 × 119.4cm)	1620 lb. (734.8kg)	820 lb. (371.9kg)	10L/day (2⅝ gal.)	55 days	36,400 with 28 TF4000006 Square Racks; 38,500 with 77 TF4000012 Vertical Racks	**TF746**	15,407.00

† Add 5" (12.7cm) to length for utilities and lid opening.

LOOKING FOR LAB AUTOMATION SECTION?
It has moved and is now called Cell Culture

LOOKING FOR TISSUE CULTURE SECTION?
It has moved and is now called Cell Culture.

LOOKING FOR MICRO ARRAYS SECTION?
It has now moved and is called Array Analysis.

*Trademark. See Trademark Reference.

ACCESSORIES

Thermo Scientific* Forma* CryoMed*, CryoPlus*, and Cryo* Series Racks and Holders

Freezer racks, holders, risers, and other accessories for use in various Thermo Scientific Forma cryopreservation equipment

Description	For Use with these Thermo Scientific Forma Models	Holds	Cat. No.	Each
Racks				
Cryo Rack	All CryoMed Freezers	76 1.2mL/2mL Ampules	**TF4000701**	166.00
	17L (4½ gal.) and 34L (9 gal.) CryoMed Freezers	161 1.2mL/2mL Ampules	**TF4000703**	188.00
Cord Blood Freezer Rack	All CryoMed Freezers	10 Places	**TF4000340**	301.00
Two-Level Skin Rack		48 Skin Packets 5 × 7" (12.7 × 17.8cm) and 4 × 6" (10.2 × 15.2cm)	**TF4000310**	373.00
Cane Freezing Rack	17L (4½ gal.) and 48.1L (12¾ gal.) CryoMed Freezers	77 Canes, 5 to 6 Ampules/Cane	**TF4000700**	367.00
Cane Freezing Rack	34L (9 gal.) and 48.1L (12¾ gal.) CryoMed Freezers	162 Canes, 5 to 6 Ampules/Cane	**TF4000303**	275.00
4-Box Vapor-Phase Vertical Rack	All CryoPlus and Cryo Series LN_2 Storage Systems	4 2" (5.1cm) Boxes (included) that hold 2mL Vials	**TF4000011**	92.00
5-Box Liquid-Phase Rack		5 2" (5.1cm) Boxes (included) that hold 2mL Vials	**TF4000012**	122.00
12-Box Vapor-Phase Square Rack	All CryoPlus and Cryo Series LN_2 Storage Systems	12 2" (5.1cm) Boxes (included) that hold 2mL Vials	**TF4000042**	197.00
13-Box Liquid-Phase Arrowhead Rack	CryoPlus 1 and Cryo 100 LN_2 Storage Systems	13 2" (5.1cm) Boxes (included) that hold 2mL Vials	**TF4000044**	329.00
Cryo Vial Filling Rack	CryoMed Freezers	50 Vials	**TF4000226**	49.35
8-Box Liquid-Phase Square Rack	All CryoPlus and Cryo Series Storage Systems	8 3" (7.6cm)Boxes (included) that hold 4mL Vials	**TF4000008**	133.00
11-Box Vapor-Phase Square Rack		11 2" (5.1cm) Boxes (included) that hold 2mL Vials	**TF4000001**	172.00
13-Box Vapor-Phase Square Rack	CryoPlus 1 and Cryo 100 Storage Systems	13 2" (5.1cm) Boxes (included) that hold 2mL Vials	**TF4000006**	203.00
10-Box Vapor-Phase Arrowhead Rack		10 2" (5.1cm) Boxes (included) that hold 2mL Vials	**TF4000108**	242.00
Holders				
Cryo Rack Holder	CryoMed Freezers	50 Vials	**TF4000226**	49.35
	17L (4½ gal.) and 48.1L (12¾ gal.) CryoMed Freezers	Five 1.2mL/2mL Cryo Racks	**TF4000702**	201.00
	34L (9 gal.) and 48.1L (12¾ gal.) CryoMed Freezers	Five 1.2mL/2mL Cryo Racks	**TF4000704**	212.00
Cane Holder	17L (4½ gal.) and 34L (9 gal.) CryoMed Freezers with Top and Front Access	Six 1.2mL or five 2mL Vials	**TF4000714**	38.85
Vial Holder		One 1.2 and one 2mL Vial (included)	**TF4000711**	157.00
Risers				
3½" (8.9cm) Riser	CryoPlus 2/Cryo 200 Freezers with 24" Tanks	Racks 4000001 and 4000002	**TF4000060**	141.00
3½" (8.9cm) Riser	CryoPlus 3/Cryo 300 Storage Systems with 31" Tanks	Racks 4000001 and 4000002	**TF4000063**	165.00
5" (12.7cm) Riser		Racks 4000011, 4000003 and 4000004	**TF4000064**	165.00
3½" (8.9cm) Riser	CryoPlus 4/Cryo 400 Storage Systems with 39½" Tanks	Racks 4000001 and 4000002	**TF4000066**	231.00
Dividers				
81-Cell Divider	Arrowhead Racks (4000044)	----	**TF4000181**	4.41
100-Cell Divider	Square (4000001) and Vertical (4000011, 4000012) Racks	----	**TF4000013**	1.11

ACCESSORIES

Canisters, Frames, Dividers for Thermo Scientific* Forma* Cryo and CryoPlus* LN$_2$ Storage Systems

Inventory control systems to organize biological specimens

Description	Cat. No.	Each
Canisters		
Slide; for 250mL Bags (Nexell No. R4R9953/ Fenwal No. 4R5461)	**TF4000335**	25.36
Slide; for 500mL Bags (Nexell No. R4R9955/ Fenwal No. 4R5462)	**TF4000336**	25.36
Frames		
Four-Place; for 250mL Slide Canister	**TF4000371**	39.90
Platform Dividers		
For 50mL Bags in Cryo 100/CryoPlus 1 Systems	**TF4000616**	539.00
For 250mL Bags in Cryo 400/CryoPlus 4 Systems	**TF4000053**	910.00

Temperature Recorder

Thermo Scientific* Forma* Seven-day temperature recorder for Cryo/CryoPlus* units

- 6" (15.2cm) dia.
- With single pen and chart driver
- -100°C to -200°C temperature range
- 115V 60Hz
- Customer installed; contact your Fisher Scientific Customer Service Representative to specify top, left side, or right side mount

Description	Cat. No.	Each
Seven-day Temperature Recorder	**TF201175**	1439.00

Cryogenic Boxes

Size	Type	Shape	For Use in	Cat. No.	Each
3" (7.6cm)	Cardboard	Rectangular	Thermo Scientific* Forma* Cryopreservation Equipment	**TF4000190**	2.21
3" (7.6cm)	Stainless steel	Square	Thermo Scientific Forma Cryo Series and CryoPlus Freezer Equipment	**TF4000239**	11.03
2" (5.1cm)	White with hole/100-cell divider	Square	Thermo Scientific Forma Cryo and CryoPlus Freezers	**TF4000014**	2.21

PORTABLE LN$_2$ CONTAINERS

Thermo Scientific* Locator* Plus Cryobiological Storage Systems

11-676-59, 11-676-55, 11-676-56, 11-676-71; cart not included (see next page)

Systems incorporate all the features of Locator Cryobiological Storage Systems (next page), plus increased working liquid nitrogen andvial capacities

- Locator Jr. Plus and Locator 8 Plus accommodate up to 2000 vials
- Locator 4 Plus holds up to 4000 vials
- High-capacity Locator 6 Plus is ideal for compact storage of up to 6000 vials

INCLUDES:

Indexed stainless-steel racks designed for use with Nalgene* Cryogenic Boxes (larger racks available for storage of 5.0mL ampules in Locator Jr. Plus and Locator 4 Plus).

Each system is available with or without Liquid Nitrogen Level Monitor (monitor can also be purchased separately).

REQUIRED ACCESSORIES:

Nalgene Cryogenic Boxes (03-337-7AA, 11-676-61, -3A, -3B, -3C; order separately)

Model	Locator Jr. Plus	Locator 4 Plus	Locator 6 Plus	Locator 8 Plus
LN$_2$ Capacity	16⅛ gal. (61L)	32 gal. (121L)	46¼ gal. (175L)	32 gal. (121L)
No. of Vials	2000[1]	4000[1]	6000[1]	2000[2]
No. of Racks	4	4	6	8
Boxes per Rack	5	10	10	10
Boxes per System	20	40	60	80
Dia. × H	22 × 28⅞" (55.8 × 73.3cm)	22 × 39½" (55.8 × 100.3cm)	26 × 39½" (66 × 100.3cm)	22 × 39½" (55.8 × 100.3cm)
Neck Diameter	8½" (21.5cm)	8½" (21.5cm)	8½" (21.5cm)	6" (15.2cm)
Static Evaporation Rate	¼ gal./day (0.85L/day)	¼ gal./day (0.99L/day)	¼ gal./day (0.99L/day)	⅛ gal./day (0.6L/day)
Static Holding Time (Days)	74	122	176	201
With Level Monitor				
Mfr. No.	CY50955-70	CY50965-70	CY50995-70	CY50975-70
Cat. No.	**11-676-59**	**11-676-54**	**11-676-57**	**11-676-72**
Each	4595.00	5135.00	5574.00	4989.00
Without Level Monitor				
Mfr. No.	CY50925-70	CY50935-70	CY50985-70	CY50945-70
Cat. No.	**11-676-58**	**11-676-55**	**11-676-56**	**11-676-71**
Each	3457.00	3982.00	4440.00	3688.00

[1] *Using Nalgene Cryogenic Box 03-337-7AA.*
[2] *Using Nalgene Cryogenic Box 11-676-3A.*

hermo Scientific* Locator* Cryobiological Storage Systems

11-676-1C, 11-676-1A, 11-676-1B; cart and boxes not included (for cart, see below)

nventory system that makes cell sample retrieval uick and easy

- Compact design minimizes space requirements while maximizing storage capacity
- Super-insulated vessels have special, narrow-mouth design that conserves liquid nitrogen by minimizing evaporation
- Optional sonar-equipped Liquid Nitrogen Level Monitor mounts directly to vessel lid, never contacts liquid nitrogen (order separately)
- Monitor provides continuous LED readout of liquid nitrogen level, activates visual and audible alarms when level falls below safe range of approximately 1" (2.5cm)
- Alarm also alerts operator in the event of excessive liquid nitrogen loss
- Locator 4 is ideal for large-capacity, general-purpose applications
- Locator 8 is specially designed for applications where the system is shared among researchers or research projects
- Locator Jr. can be used where less capacity is needed

INCLUDES:
Stainless-steel indexed racks that fit into corresponding locations in the vessel. Each rack has individual storage compartments that hold one Nalgene* Cryogenic Storage Box.

REQUIRED ACCESSORIES:
Nalgene Cryogenic Storage Boxes (03-337-7AA; 11-676-61, -3A, -3B, -3C); each box has individually numbered storage areas for use with vials sized 2.0mL and smaller. (Boxes must be ordered separately.)

Model	Locator Jr.	Locator 4	Locator 8
LN$_2$ Capacity	11⅜ gal. (50L)	29¼ gal. (111L)	29¼ gal. (111L)
No. of Ampules	1600[1]	3600[2]	1800[3]
No. of Racks	4	4	8
Boxes per Rack	4	9	9
Boxes per System	16	36	72
Dia. × H	22 × 28⅞" (56 × 73.5cm)	22 × 37½" (56 × 95.5cm)	22 × 37½" (56 × 95.3cm)
Neck Dia.	8½" (21.5cm)	8½" (21.5cm)	6" (15cm)
Static Evap. Rate	¼ gal./day (0.65L/day)	¼ gal./day (0.65L/day)	⅛ gal./day (0.4L/day)
Static Holding Time (Days)	60	112	185
With Level Monitor			
Mfr. No.	CY50955	CY50965	CY50975
Cat. No.	**11-676-7**	**11-676-8**	**11-676-9**
Each	4406.00	5027.00	4838.00
Without Level Monitor			
Mfr. No.	CY50925	CY50935	CY50945
Cat. No.	**11-676-1C**	**11-676-1A**	**11-676-1B**
Each	3202.00	3773.00	3613.00

[1] Using Nalgene Cryogenic Boxes 11-676-3A, 11-676-3B, or 11-676-3C.
[2] Using Nalgene Cryogenic Box 03-337-7AA.
[3] Using Nalgene Cryogenic Box 11-676-3A.

ACCESSORIES

Thermo Scientific* Locator* Plus Liquid Nitrogen Level Monitor

Ultrasonic monitor for Locator Plus Cryobiological Storage Systems

- Ultrasonic device eliminates contact with LN$_2$ to reduce conduction and LN$_2$ evaporation
- LED panel gives at-a-glance reading of liquid nitrogen levels
- Low level indicator flashes when volume drops to 2" (5.1cm); indicator flashes and audible alarm activates when volume falls below safe range of approximately 1" (2.5cm)
- Continuous alarm sounds in the event of excessive liquid nitrogen loss; can be connected to building alarm system to provide remote warning of vacuum failure
- Unit is mounted directly on vessel lid, never contacts the liquid nitrogen

ORDERING INFORMATION:
Electrical requirements: 120V 50/60Hz

CERTIFICATIONS:
CSA approved

For Thermo Scientific Models	Mfr. No.	Cat. No.	Each
Locator Jr. Plus	CN509X3 70	**11-676-65**	1373.60
Locator 4 Plus	CN509X6 70	**11-676-64**	1322.60
Locator 6 Plus	CN509X10 70	**11-676-62**	1334.00
Locator 8 Plus	CN509X9 70	**11-676-63**	1322.60

Thermo Scientific* Locator* and Locator Plus Carts

For easy movement of Locator and Locator Plus vessels in your lab

- Molded to fit snugly around vessel base
- 11-676-2 fits Locator and Locator Plus Jr., 4, and 8
- 11-676-66 specially designed for larger diameter Locator 6 Plus

11-676 Series

For Thermo Scientific Models	Mfr. No.	Cat. No.	Each
Locator, Locator Plus Jr., 4 and 8	AY509X1	**11-676-2**	257.00
Locator 6 Plus	AY509X1 70	**11-676-66**	257.00

ACCESSORIES

Nalgene* Cryogenic Storage Boxes for Thermo Scientific* Locator* and Locator Plus Systems

Fit in stainless-steel ultralow temperature freezer racks (11-670-18A through -18D, and -19A through -19D) for storage in liquid nitrogen and mechanical freezers.

11-676-61 (top left), 11-676-3C (top right), 11-676-3A (bottom)

For Use with Thermo Scientific Models	L × W × H	Mfr. No.	Cat. No.	Case of
81-Vial Boxes for 2.0mL Vials				
Locator Jr. and 4; Locator Jr. Plus and 4 Plus; Locator 6 Plus	5¼ × 5¼ × 2" (13.3 × 13.3 × 5.1cm)	CS509X5	**11-676-3C**	20/184.00
Locator Jr. and 4; Locator Jr. Plus and 4 Plus; Locator 6 Plus	5¼ × 5¼ × 2" (13.3 × 13.3 × 5.1cm)	CS509X4	**11-676-3B**	40/369.60
81-Vial Box for 5.0mL Vials				
Locator Jr. Plus Rack 11-676-67 and 4 Plus Rack 11-67 6-68	5¼ × 5¼ × 3¾" (13.3 × 13.3 × 9.5cm)	CS509X10	**11-676-61**	1/26.16
25-Vial Box for 2.0mL Vials				
Locator 8, and Locator 8 Plus	3 × 3 × 2" (7.6 × 7.6 × 5.1cm)	CS509X3	**11-676-3A**	80/475.99

Thermo Scientific* Forma* CMR/CMC Portable LN$_2$ Storage Containers

Cost-effective containers have high storage capacities but minimum LN$_2$ consumption—ideal for long-term storage

- Constructed of durable, lightweight aluminum with vacuum insulation
- CMR Series containers include racks; CMC Series containers have canisters
- Color-coded/numbered inventory systems make sample retrieval easy and reduce the risk of misplacing specimens
- Lockable clasp (lock not included) for specimen security
- Accessories such as low level alarms with remote contacts are available

REQUIRED ACCESSORIES:
Straws are available separately.

TF8000 Series

Model	LN$_2$ Capacity	Holds‡	Dia. × H	Neck Dia.	Static Evap. Rate	Static Holding Time	Weight Full	Weight Empty	Cat. No.	Each
CMR Series										
8030	110L (29 gal.)	4-5½L × 5½"W (14 × 14cm) Size Racks with Boxes, 3564-2mL Vials, 2376-4mL Vials, 1980-5mL Vials	22 × 37⅛" (55.9 × 94.2cm)	8½" (21.6cm)	0.7L/day (¼ gal./day)	69 days	255 lb. (115.8kg)	60 lb. (27.2kg)	**TF8030**	3707.00
8041†	110L (29 gal.)	3564-2mL Vials, 2376-4mL Vials, 1980-5mL Vials	22 × 37⅛" (55.9 × 94.2cm)	8½" (21.6cm)	0.7L/day (¼ gal./day)	69 days	255 lb. (115.8kg)	60 lb. (27.2kg)	**TF8041**	3478.00
8031	110L (29 gal.)	8-3¼L × 5"W (8.4 × 12.7cm) Size Racks with Boxes, 2880-2mL Vials, 1872-4mL Vials, 1560-5mL Vials	22 × 37⅛" (55.9 × 94.2cm)	6" (15.2cm)	0.4L/day (⅛ gal./day)	275 days	255 lb. (115.8kg)	60 lb. (27.2kg)	**TF8031**	3863.00
CMC Series										
8036	(5⅜ gal.)	6-1½" (3.8cm) dia. Canisters, 180-2mL Vials, 90-4mL Vials, 60-5mL Vials, 540 Straws	14½ × 25¾" (36.8 × 65.3cm)	2" (5.1cm)	0.1L/day (0.03 gal./day)	186 days	63 lb. (28.2kg)	26 lb. (11.8kg)	**TF8036**	1301.00
8037	(8¾ gal.)	6-1½" (3.8cm) dia. Canisters, 180-2mL Vials, 90-4mL Vials, 60-5mL Vials, 540 Straws	18½ × 25⅞" (46.2 × 65.8cm)	2" (5.1cm)	0.1L/day (0.03 gal./day)	303 days	94 lb. (42.7kg)	34 lb. (15.4kg)	**TF8037**	1468.00
8038	(12½ gal.)	6-4" (10.2cm) dia. Canisters, 1512-2mL Vials, 756-4mL Vials, 504-5mL Vials, 4500 Straws††	20 × 26½" (50.8 × 67.3cm)	5" (12.7cm)	0.4L/day (⅛ gal./day)	121 days	120 lb. (54.5kg)	36 lb. (16.3kg)	**TF8038**	2134.00
8033	(20¾ gal.)	8-4¾" (12.2cm) dia. Canisters, 2808-2mL Vials, 1440-4mL Vials, 960-5mL Vials, 5000 Straws	22 × 29½" (55.9 × 74.9cm)	6" (15.2cm)	0.4L/day (⅛ gal./day)	194 days	192 lb. (87.2kg)	52 lb. (23.6kg)	**TF8033**	3290.00

† Model 8041 is similar to Model 8030, but does not include boxes.
‡ Vial capacity is based on six 2mL vials per cane.
†† Optional square rack (TF195749) for Model 8038 holds 750 2mL vials.

Thermo Scientific* Forma* CMD LN_2 Dry Shipping Containers

Provide stable temperature and long holding time for safe and reliable sample transport

Thermo
SCIENTIFIC

TF8039, TF8040, TF8032

- Interior is lined with absorbent material that allows samples to be transported in dry vapor condition, eliminating LN_2 spillage
- Container itself is constructed of lightweight aluminum with vacuum insulation
- Retain temperatures as low as -190°C (-310°F)
- Easy-to-grasp handle
- Lockable clasp (lock not included)
- Models 8039 and 8040 include racks and canister for easy transfer of small quantities of 2mL vials
- Model 8032 includes cardboard shipping container—use for transporting bone marrow, heart valves, and oversized samples (optional hard shell shipping container available for Model 8032 [TF195460])

EQUIRED ACCESSORIES:

traws available separately.

Model	**8039**	**8040**	**8032**
LN_2 Capacity	1.6L (3/8 gal.)	4.3L (1 1/8 gal.)	10L (2 5/8 gal.)
Holds	1-1 1/4" (3.1cm) Canister, 9-2mL Vials, 6-4mL Vials, 3-5mL Vials, 15 Straws (5 straws/cane)	1-1 3/4" (4.6cm) Caninster, 48-2mL Vials, 24-4mL Vials, 16-5mL Vials, 120 Straws	966-2mL Vials, 483-4mL Vials, 322-5mL Vials, 1610 Straws†
Dia. × H	7 1/4 × 13 1/2" (18.5 × 34.3cm)	8 3/4 × 19 3/8" (22.1 × 49.3cm)	15 × 23" (38.1 × 58.4cm)
Neck Dia.	1 3/8" (3.6cm)	2" (5.1cm)	8 1/2" (21.6cm)
Static Evap. Rate	0.1L/day (0.03 gal./day)	0.1L/day (0.03 gal./day)	0.7L/day (1/8 gal./day)
Static Holding Time	8 days	14 days	11 days
Weight Full	8 3/4 lb. (4kg)	20 5/8 lb. (9.4kg)	47 lb. (21.3kg)
Weight Empty	6 lb. (2.7kg)	13 lb. (5.9kg)	30 lb. (13.6kg)
Cat. No.	**TF8039**	**TF8040**	**TF8032**
Each	1080.00	1136.00	3064.00

† Inside dia. × H: 8 1/2 × 11" (21.6 × 27.9cm). Shipments of bone marrow, heart valves, or other large samples require specific package size to determine storage capacity for Model 8032.

ACCESSORIES

Low-Level Alarms

For use with Thermo Scientific* Forma* CMR/CMC Portable LN_2 Storage Containers

TF4000574

Description	For Use with	Electrical Reqts.	Cat. No.	Each
Low-level Alarm with 18" (45.7cm) dia. Sensor, Factory Installed	TF8033 Portable LN_2 Storage Container	115V 60Hz	**TF4000574**	475.00
		230V 50Hz	**TF4000576**	475.00
Low-level Alarm with 27" (68.6cm) dia. Sensor, Factory Installed	TF8030, TF8041, TF8031 Portable LN_2 Storage Containers	115V 60Hz	**TF4000575**	475.00
		230V 50Hz	**TF4000577**	475.00
Low-level Alarm with dry contacts for connection to telephone dialing system or remote alarm, Customer Installed	Any Standard-sized LN_2 Container	115V 60Hz	**TF8130**	571.00

Inventory and Storage Accessories

For use with Thermo Scientific* Forma* CMR/CMC/CDM Storage Systems

TF189705

Description	For Use with	Cat. No.	Each
Hard Shell Shipping Container	Model 8039 and 8040 CMD Containers	**TF189705**	357.00
	Model CMD Containers	**TF195460**	518.00
Universal Roller Base, 3 5/8" (9.1cm) high	Any CMC/CMR/CMD Container up to 325 lb. (147.4kg) and 14 1/2 to 22" (36.8 to 55.9cm) dia.	**TF195230**	351.00
Square Inventory Rack; 5 position, 25 cell	Model 8038 CMC Containers	**TF195555**	122.00
Inventory Rack Kit; includes 6 Square Inventory Racks (TF195555)	Model 8038 CMC Containers	**TF195749**	411.00

hermo Scientific* Forma* LN_2Supply Tanks

ressurized stainless-steel tanks for LN_2 ansportation

- Rated at 22psi (151.7kPa); evaporate 2% of volume per day
- TF8120 is 210 lb. (95.3kg) when empty; TF8121 is 290 lb. (131.5kg) when empty
- TF8121 has caster base and fold-down handle; dimensions at caster base: 28L × 27"W (71.1 × 68.6cm)

Description	Capacity	Dia. × H	Cat. No.	Each
Pressurized LN_2 Tank	35L (9 1/4 gal.)	16 × 28 1/2" (40.6 × 72.4cm)	**TF8126**	2964.00
	50L (13 1/4 gal.)	16 × 35 1/2" (40.6 × 90.2cm)	**TF8127**	2995.00
Low-Pressure LN_2 Tank	180L (47 1/2 gal.)	20 × 63 1/2" (50.8 × 161.3cm)	**TF8120**	4173.00
	230L (60 3/4 gal.)	26 × 54 3/4" (66 × 139.2cm)	**TF8121**	5408.00
Cylinder Hand Truck w/Pneumatic Wheels (for TF8120)	----	----	**TF4000173**	879.00

ACCESSORIES

Transfer Hose For LN$_2$ Supply Tanks

- Flexible metal hose used for dispensing liquid nitrogen
- Includes ½" (1.3cm) diameter, swivel ends, and 45° flare

Length	Dia.	Cat. No.	Each
4' (1.2m)	2" (1.3cm)	**TF4000400**	150.00

Phase Separator For LN$_2$ Supply Tanks

O.D. × L	Fitting Size	Cat. No.	Each
4 × 3" (3.3 × 7.6cm)	4" (0.6cm) FPT	**TF4000571**	73.00

Withdrawal Devices/LN$_2$ Transfer Units for Dewar Flasks

For Use With	Stainless-Steel Draw Tube Length	Stopper Dia.	Cat. No.	Each
21L Dewar Flask Model 8124	19" (48.3cm)	2" (5.1cm)	**TF4000071**	570.00
32L Dewar Flask Model 8125	20½" (52.1cm)	2½" (6.4cm)	**TF4000072**	570.00

Thermo Scientific* Forma* Lab Dewars

Provide convenient LN$_2$ storage in the lab

- Aluminum
- With carrying handles

Thermo
Thermo

TF8122, TF8123, TF8124, TF8125

Model	8122	8123	8124	8125
LN$_2$ Capacity	5L (1⅜ gal.)	10L (2⅝ gal.)	21L (5½ gal.)	32L (8½ gal.)
Dia. × H	8¾ × 18¼" (22.2 × 46.2cm)	10¼ × 21½" (26 × 54.6cm)	14½ × 24¾" (36.8 × 62.7cm)	17 × 24⅛" (43.2 × 61.2cm)
Neck Dia.	2¼" (5.6cm)	2¼" (5.6cm)	2" (5cm)	2½" (6.4cm)
Static Evaporation Rate	0.15L/day (0.04 gal./day)	0.18L/day (0.05 gal./day)	0.18L/day (0.05 gal./day)	0.25L/day (0.07 gal./day)
Cat. No.	**TF8122**	**TF8123**	**TF8124**	**TF8125**
Each	697.00	696.00	1044.00	1249.00

Looking for more Dewar Flasks?

Additional Dewars are located in the Flasks section.

Thermo Scientific* Transfer Vessels for Liquid Nitrogen

Lightweight design makes these vessels ideal for everyday laboratory use

- Provide safe and efficient storage and handling of liquid nitrogen
- Narrow neck and vacuum insulation keep evaporation rates low
- Durable aluminum, double-wall construction ensures years of trouble-free service even with the rough handling associated with portable cryogenic equipment
- Pail-style handle on the Thermo 5 and 10 makes pouring easy even in hard-to-reach places
- Thermo 20 and 30 offer a lightweight design and low liquid nitrogen consumption rate in a larger Dewar
- Thermo 35 and 50 are pressurized cylinders designed for researchers who need a continuous source of liquid nitrogen, but lack space for larger cylinders
- Relief valve setting on the 35- and 50-liter models is 22psi

THERMO 30
THERMO 35
NITROGEN
REFRIGERATED LIQUID
THERMO 50
NITROGEN
REFRIGERATED LIQUID
THERMO 5
THERMO 10
THERMO 20

Left to right: 11-670-5D, -5E, -5A; 11-676-1D; 11-670-5B, -5C

Model	Capacity	Dia. × Height	Neck Diameter	Static Evap. Rate	Static Holding Time	Weight Full	Weight Empty	Mfr. No.	Cat. No.	Each
Thermo 5	5L	8¾ × 18 3/16" (22.4 × 46.2cm)	2 3/16" (5.6cm)	5 oz./day (0.15L/day)	33 days	17 lb. (7.7kg)	8 lb. (3.6kg)	TY509X1	**11-670-5A**	850.00
Thermo 10	10L	10 5/16 × 21½" (26.2 × 54.6cm)	2 3/16" (5.6cm)	6 oz./day (0.18L/day)	56 days	31 lb. (14kg)	13 lb. (5.9kg)	TY509X2	**11-670-5B**	877.00
Thermo 20	21L	14½ × 24 11/16" (36.8 × 62.7cm)	2" (5.1cm)	6 oz./day (0.18L/day)	117 days	56 lb. (25.4kg)	19 lb. (8.6kg)	TY509X3	**11-670-5C**	1054.00
Thermo 30	32L	17 × 24" (43 × 61cm)	2½" (6.4cm)	7⅜ oz./day (0.22L/day)	128 days	84 lb. (38kg)	27 lb. (12.2kg)	TY509X4	**11-670-5D**	1230.00
Thermo 35	35L	16 × 35" (40.6 × 88.9cm)	16" (40.6cm)	¾ gal./day (2.9L/day)	23 days	107 lb. (48.5kg)	45 lb. (20.4kg)	TY509X5	**11-670-5E**	3050.00
Thermo 50	50L	16 × 41" (40.6 × 104.1cm)	16" (40.6cm)	¾ gal./day (2.9L/day)	25 days	155 lb. (70.3kg)	65 lb. (29.5kg)	TY509X6	**11-676-1D**	3212.00

*Trademark. See Trademark Reference.

ACCESSORIES

Thermo Scientific* Transfer Vessels Withdrawal Device

- Easy dispensing of up to 8L/min. (2⅛ gal./min.) without pouring
- Available for 10L, 20L, and 30L models

11-670-10

For	Mfr. No.	Cat. No.	Each
Thermo 10	AY509X5	**11-670-12**	634.50
Thermo 20	AY509X4	**11-670-11**	606.70
Thermo 30	AY509X3	**11-670-10**	606.70

Thermo Scientific* Transfer Vessels Cart

Adjustable cart for safe and easy transport of the Thermo Scientific Thermo 20, 30, 35, and 50 lab dewars

11-670-16

Mfr. No.	Cat. No.	Each
AY509X9	**11-670-16**	264.89

Dispensing Spout and Hose for Thermo Scientific* 35 and 50 Transfer Vessels

Spout includes built-in phase separator to prevent splashing and excessive loss

- Transfer hose is 6' long (1.8m)

Description	Mfr. No.	Cat. No.	Each
Spout	AY509X8	**11-670-15**	166.53
Hose	AY509X7	**11-670-14**	361.16

Phase Separator for Thermo Scientific* 35 and 50 Transfer Vessels

- For 11-670-14, above
- Transfer Hose sold separately

Mfr. No.	Cat. No.	Each
AY509X11	**11-670-20**	166.53

hermo Scientific* Thermolyne* Bio-Cane Can and Cane Cryogenic Systems

anister storage systems for canes in five sizes meet he needs of almost any research or clinical laboratory

Include six stainless-steel cans to accommodate vials; cans are numbered and color coded to simplify sample identification

Durable aluminum construction and vacuum insulation

Narrow-mouth design minimizes LN$_2$ evaporation

Secure locking hasp

11-675-90 Series

$_2$ Capacity	No. of Ampules†	Dia. × H	Neck Dia.	Static Evaporation Rate	Static Holding Time	Mfr. No.	Cat. No.	Each
L (2⅞ gal.)	150	10¼ × 21⅝" (25.9 × 54.9cm)	2" (5.1cm)	5 oz./day (0.15L/day)	73 days	CK509X1	**11-675-90**	1061.00
.5L (5⅜ gal.)	150	14½ × 25¾" (36.8 × 65.4cm)	2" (5.1cm)	3 oz./day (0.09L/day)	227 days	CK509X2	**11-675-91**	1085.00
.8L (9¼ gal.)	630	18¼ × 26⅝" (46.4 × 67.6cm)	3½" (8.9cm)	6 oz./day (0.18L/day)	193 days	CK509X3	**11-675-92**	1600.00
.4 (12½ gal.)	1320	20 × 26½" (50.8 × 67.3cm)	5" (12.7cm)	⅛ gal./day (0.39L/day)	121 days	CK509X4	**11-675-93**	1758.00
.7 (18¾ gal.)	1560	22 × 27¼" (55.9 × 69.3cm)	6¼" (15.9cm)	3⁄16 gal./day (0.6L/day)	117 days	CK509X5	**11-675-94**	2465.00

ased on six ampules per cane.

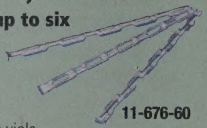
LOOKING FOR THERMO SCIENTIFIC* ULTRALOW TEMPERATURE FREEZER RACKS?

See Storage Boxes and Freezer Racks in this section.

ACCESSORIES

Thermo Scientific* Thermolyne* CryoCane* Holder

Aluminum cane securely holds up to six 1.2 or five 2.0mL vials for storage in Thermo Scientific Thermolyne Bio-Cane Cryogenic Systems


11-676-60

- Accommodates most brands of cryogenic vials
- Each cane is 11 5/16" long (28.7cm)

Mfr. No.	Cat. No.	Case of 48
AY509X20	**11-676-60**	59.30

Replacement rubber cups

- Suction cup grippers on Thermo Scientific* Thermolyne* Cryo Claw* Ampule Remover
- Two cups per pack

Mfr. No.	Cat. No.	Pack of 2
AY509X19	**11-675-96**	17.21

Thermo Scientific* Thermolyne* CryoClaw* Ampule Remover

Heavy-duty, stainless-steel gripping device

11-675-95

- Rubber suction cups retrieve ampules or boxes that fall from racks or cans into cryogenic vessels
- Can also be used to reach overhead items or to safely move radioisotopes without touching containers
- Length 41" (104cm)

Mfr. No.	Cat. No.	Each
AY509X18	**11-675-95**	142.03

Thermo Scientific* Thermolyne* Arctic Express* Shipper/Lab Storage Vessels

Allow dry liquid nitrogen transport of nonhazardous samples for up to 30 days

- When filled with liquid nitrogen and placed in the laboratory, unit can be used as a "can and cane" storage system indefinitely with static holding times of up to 125 days
- Lockable lid
- Aluminum vessel holds six numbered, color-coded, stainless-steel cans (included), which accommodate canes that hold ampules
- Dual 10 and 28 models have a reusable Styrofoam*-insulated plastic shipping case to prevent damage
- Weights listed are when the vessel is empty of liquid nitrogen, but includes the six can containers

WARRANTY:
36-month vacuum warranty

11-675-900 Series

Model	LN$_2$ Capacity	No. of Ampules (1.2mL)	Dia. × H	Neck Diameter	Static Evaporation Rate	Static Holding Time	Weight Empty	Mfr. No.	Cat. No.	Each
Dual 10†	10L (2⅝ gal.)	150	10¼ × 21⅝" (25.9 × 54.9cm)	2" (5.1cm)	⅞ gal./day (3L/day)	42	24 lb. (10.9kg)	CK50920	**11-675-900**	1418.00
Dual 28†	28L (7⅜ gal.)	810	18¼ × 22" (46.2 × 55.9cm)	3¾" (9.7cm)	2⅛ gal./day (8L/day)	50	39 lb. (17.7kg)	CK50922	**11-675-903**	1879.00
Dual 46	46L (12⅛ gal.)	1320	20 × 26½" (50.8 × 67.3cm)	5" (12.7cm)	2⅛ gal./day (8L/day)	74	47 lb. (21.3cm)	CK50925	**11-675-905**	2292.00

† Plastic shipping case included for extra protection in transit.

Thermo Scientific* Thermolyne* Arctic Express* 10 Cryogenic Sample Shipper

Designed for safe shipping of cryogenically frozen samples

- Unique binding agent absorbs and secures all liquid nitrogen around samples, prevents spillage if vessel is tipped on its side
- Lightweight, yet built to withstand rough handling during shipment
- Vessel holds eighteen 2.0mL ampules and 1⅛ gal. (4.3L) LN$_2$
- 21-day holding time ensures fully frozen samples on delivery

ORDERING INFORMATION:
Net weight: filled, 20 lb. (9.1kg); empty, 13 lb. (5.9kg)

INCLUDES:
Reusable shipping case

11-676-69

LN$_2$ Capacity	No. of Ampules	Dia. × H	Neck Dia.	Static Holding Time	Weight Full	Weight Empty	Mfr. No.	Cat. No.	Each
4.3L (1⅛ gal.)	48 × 2mL	8¾ × 19⅜" (22.1 × 49.2cm)	2" (5.1cm)	21 days	20 lb. (9.1kg)	13 lb. (5.9kg)	CY50905	**11-676-69**	1762.00

ThermoSafe* DG and DS Cryogenic Shippers

Fully comply with DOT regulations and IATA Packing Instructions for air transport of infectious substances and diagnostic specimens

- Use dry vapor liquid nitrogen to preserve specimens at temperatures of -150°C (-238°F) for up to 20 days (static holding time) or 12 to 16 days (shipping time)
- One-piece, tip-tolerant design is leak resistant and eliminates the need to purchase a separate exterior shipping case; rugged HDPE outer case has all-aluminum cryogenic vacuum interior
- Patented screw closure seals in residual liquid nitrogen, yet allows vapor to vent if necessary
- Multiple-layer polyethylene plug provides thermal insulation between specimen and screw closure
- Competitively priced and comprised of durable components for years of operation
- Weigh 18 lb. (8kg) when empty; return shipping can be done at a minimal cost
- Ready to use in only four hours
- DS (Diagnostic Specimens) model meets IATA Packing Instruction 650
- DG (Dangerous Goods) model meets IATA Packing Instruction 602 and 650

03-522-51 (left) and 03-522-50 (right)

INCLUDES:

Three secondary containment bags, three absorbent pouches, three security tags, three packages of diagnostic specimen or infectious substance labels, three packages of directional labels

Model	Color	LN$_2$ Capacity	Holds	Dia. × H	Neck Diameter	Static Holding Time	Weight Full	Mfr. No.	Cat. No.	Each
DS	Yellow	5L (1¼ gal.)	45 × 4.5mL vials; 75 × 1.5, 1.8 or 2mL vials†	18 × 24½" (45.7 × 62.2cm)	2¾" (7.1cm)	20 days	30 lb. (13.5kg)	LN2DS	**03-522-50**	912.13
DG	Orange	5L (1¼ gal.)	45 × 4.5mL vials; 75 × 1.5, 1.8 or 2mL vials†	18 × 24½" (45.7 × 62.2cm)	2¾" (7.1cm)	20 days	30 lb. (13.5kg)	LN2DG	**03-522-51**	1072.21

Use with Nalgene Cryogenic Vials 03-337-7P, 03-337-7Y; Nunc* CryoTube* Vials 12-565-161N, 12-565-171N, 12-565-291, 12-565-163N; Corning* Cryogenic Vials 03-374-21, 03-761-71.*

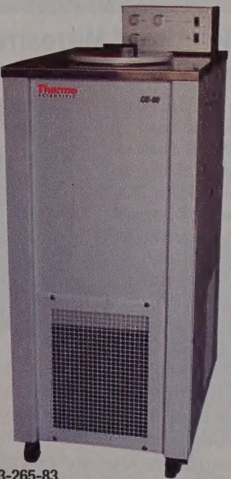
hermo Scientific* Neslab* Low-Temperature Cryobath with Magnetic Stirring

elf-contained, easy-to-operate cold baths

liminate the inconvenience of dry ice in a Dewar flask. Solid-state magnetic stirrer with ndependent power control provides excellent fluid mixing and temperature stability; eversibility prevents excessive fluid vortexing.

- Manual refrigeration ON/OFF permits quick cooldown
- Temperature can be precisely controlled with analog control dial of the accessory Cryotrol Temperature Controllers
- Stainless-steel bath work areas and are supplied with PVC reservoir covers

lodel	Thermo Scientific* Neslab* Cryobath CB-80
emperature	
lange	-25° to -80°C
tability	±0.5°C
ooling Capacity	120w at -50°C
ath Reservoir	
apacity	7.5L (2 gal.)
laterial	Stainless Steel
ia. × D	7¾ × 7¾" (19.7 × 19.7cm)
verall L × W × H	22½ × 16 × 40" (57.2 × 40.6 × 101.6cm)
lectrical Reqts.	115V 60Hz, 9A
lfr. No.	CB80115V
at. No.	**13-265-83**
ach	6634.31



13-265-83

DON'T SEE THE RIGHT PRODUCT?

For additional chillers and ultralow temperature baths, please see the Baths section.

CUSTOM SERVICES

Fisher Scientific is your one-stop provider of Custom Services for Life Science

Our custom services offer you cost-effective solutions, allowing you to focus on core activities

Life Science research requires products with exacting specifications. If you can't find the product you need, let Fisher Scientific help you find the solution that meets your requirements—from custom antigen design to chemical and DNA synthesis.

Our portfolio of custom services includes:

GENOMIC SERVICES:

RNA/Microarray from Genome Explorations*

- Sample Preparation
- siRNA Vector Construction
- High Efficiency Profiling
- Data Analysis
- **www. fishersci.com/lifescience/custserv**

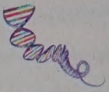
Custom DNA Synthesis from Operon*

- Custom Oligos
- Sequencing/Resequencing
- Custom PCR Kits
- DNA Methylation Analysis
- **www.fisheroligo.com**

Custom DNA Packages from SeqWright*

- siRNA Vector/Expression Cassette Construction
- Custom Cloning
- Site-Directed Mutagenesis
- cDNA Services
- **www.fishersci.com/lifescience/custserv**

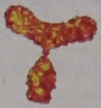
DNA Sequencing Services from SeqWright*



- Primer Extension Sequencing
- High-Throughput Sequencing
- DNA Methylation Analysis
- Serial Analysis of Gene Expression (SAGE)
- **www.fishersequencing.com**

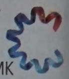
PROTEOMIC SERVICES:

Antibodies on Demand from Affinity BioReagents*



- Custom Production
- Antibody Purification
- ELISA Titers
- Antigen Conjugation
- **www.fishersci.com/lifescience/custserv**

Custom Peptides from American Peptide*



- Peptide-Protein conjugation
- Peptide labeling AMC, aldehyde, CMK
- Heavy Peptide* AQUA Kits
- FAM/FJTC/TAMRA Labeling
- **www.fishersci.com/lifescience/custserv**

ORDERING INFORMATION:

Visit our Fisher Scientific Custom Services Web site at: **www.fishersci.com/lifescience/custserv** to learn more about these services.

GENOMIC SERVICES

Genome Explorations* Microarray Services

Complete solutions for gene expression profiling

Cost-effective services for the academic, biotechnology, and pharmaceutical industries, from experimental design to advanced data analysis and bioinformatics. Using your minimally prepared RNA, we can provide reproducible differential expression data with high sensitivity for low copy numbers. Our expert staff runs a series of quality control tests on each sample of extracted RNA, including hybridization of the sample to a test array. Upon successful processing, we will work one-on-one with you to conduct a customized data analysis.

Featured Services Include:

- Complete sample preparation
- High efficiency profiling using the Affymetrix* Gene Chip* platform
- Complete, unfiltered expression profiles
- Advanced data analysis

To Bring You:

- Increased productivity
- High quality gene expression data in a few days
- Raw data for further in-house analysis
- Easy-to-interpret reports
- Standard platform

ORDERING INFORMATION:

To order, simply provide 10 to 20µg of total RNA for each sample that you would like to have processed. For a complete listing of services and capabilities, visit **www.fishersci.com/lifescience/custserv.**

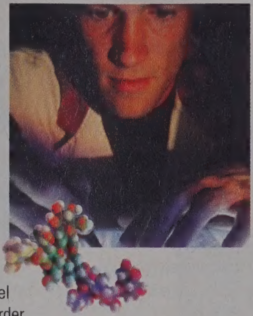
LOOKING FOR MORE SERVICES?

For other services Fisher Scientific provides, see the Services section. For chemical services, see the Chemicals section.

*Trademark. See Trademark Reference.

Operon* Custom Oligonucleotides

Wide variety of affordable, high quality oligos



Choose from a full range of long-mers and modified oligos in a ariety of scales, formats, and urification levels. Our technology, xperience, and capacity are nparalleled in the industry, bring-ng you unsurpassed quality and ervice. Custom DNA is produced sing optimized phosphoramidite hemistry and reagents of the high-st quality. Proprietary synthesis latforms provide computer-ontrolled oligo synthesis, cleavage, eprotection, and desalting in a parallel rocessing format. You can place an order irectly on our Web site or use our down-adable email forms. Our rapid turnaround time is made ossible through quick order processing and fully automated synthesis.

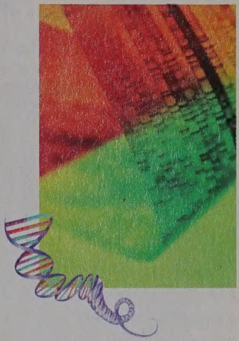
- High coupling efficiency, salt-free synthesis
- High quality longmers
- Fast turnaround times
- Easily scalable production
- GC rich/difficult templates
- Competitive pricing
- Dual-labeled probes
- Superior quality without the need for additional purification
- Unique longmer capability
- Reliable service for any order size
- High capacity and flexibility

RDERING INFORMATION:

isit **www.fisheroligo.com** to access state-of-the-art Nucleic Acid ynthesis Technology. You will find information on our products and ervices, as well as links to product literature and helpful online tools. ur Oligo Microarray Database (OMAD) provides information on each esigned oligo and its representative gene or open reading frame (ORF).

SeqWright* DNA Sequencing Services

Fast, reliable and high quality



From large-scale genome projects to FDA submissions, we offer a complete range of cost-effective solutions with a guaranteed accuracy of 100%. Choose from an array of options including DNA sequencing, SNP discovery, shotgun library construction, genotyping, quantitative PCR and DNA synthesis. Proprietary sequencing chemistry enhances mutation detection protocols, allowing rapid and consistent analysis of a large number of samples.

Featured Services Include:

Primer Extension Sequencing

- 24-hour production turnaround
- Accommodate single tube reactions to high-throughput reactions
- Samples may be submitted as cells or DNA
- Automated fluorescent dye-terminator sequencing
- Universal primers available for most common vectors
- Phred data analysis

High-throughput Sequencing

- Custom packages
- Customers can enter the production workflow at any stage
- Technical advisors available to assist package design

ORDERING INFORMATION:

For ordering, visit **www.fishersequencing.com.**

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ustom DNA Packages from SeqWright*

iRNA vector and expression cassette construction

u select the target, we'll do the rest. We offer customizable siRNA vector construction services for gene lencing studies of any construct. Our vector construction services include target design through final product.

RNA Construction

- Target design
- DNA oligo synthesis
- Cloning
- Double-stranded confirmation sequencing
- Viral particle production and purification

RNA Expression Cassette onstruction

- Design of four target regions
- DNA oligo synthesis
- PCR amplification and purification
- Final product ready for transfection

To Bring You:

- Final product confirmed by DNA sequencing
- Multiple siRNAs for each target gene—you choose the one that yields the best silencing
- Flexibility—you select the target sequence and promoter for optimal gene silencing
- Integral restriction sites for effective cloning into a vector

Custom Cloning

- We can introduce any mutation, including single-or multiple-site deletions, insertions, and substitutions, into your gene of interest
- All gene alterations are confirmed by DNA sequencing
- Custom subcloning and construction of recombinant vectors is also available.
- Turnaround for most services is two to three weeks

ORDERING INFORMATION:

For a complete listing of cloning/subcloning and cDNA options or to place an order, visit **www.fishersci.com/lifescience/custserv.**

PROTEOMIC SERVICES

Custom Peptide Services from American Peptide*

Expanding the frontiers of peptide products

Fisher Scientific provides competitive pricing of peptides with a rapid turnaround. We offer custom synthesis from simple to highly modified peptides. Our high quality production facility uses the latest technologies to support your research.

We Specialize In:

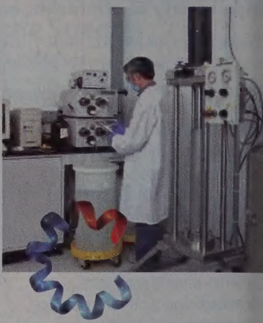
- Peptide-protein conjugation
- Complex peptides/ peptidomimetrics
- Peptide labeling AMC, aldehyde, CMK
- Heavy Peptide* AQUA kits
- FAM/FJTC/TAMRA labeling
- Calorimetry mass spec analysis
- Special amino acids and their derivatives
- Phosphorylated/Biotinylated structures
- Solid Phase/Solution/Segment coupling
- Pharmaceutical grade peptides
- Chromogenic/Fluorogenic substrates
- Quantities to kilograms
- Multiple disulfide bridges
- Purity from crude to 98%
- PEGylation

Featured Services Include:

- Functional peptides
- Heavy peptide synthesis
- Customer support from design phase to synthesis strategy
- Conjugation, packaging, documentation
- No additional charge for setup, acetylation or amidation
- Certificate of analysis, HPLC chromatogram, MS chromatogram
- Additional QC analysis provided on request

To Bring You:

- Cost-effective processing
- Guaranteed quality
- Customized reporting
- Complete and collaborative support
- Synthesis of especially complex biopolymers



ORDERING INFORMATION:

For more detailed information or to place an order, visit **www.fishersci.com/lifescience/custserv.**

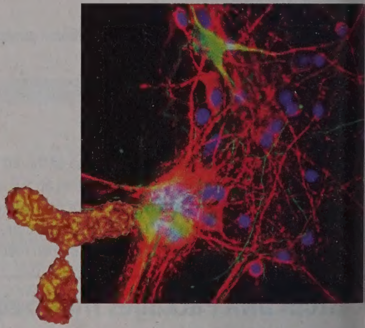
Custom Antibody Services from Affinity BioReagents*

Your complete antibody solution

Antibody production requires strong design and application knowledge. Our Antibody on Demand* program ensures ongoing management and support from start to finish for optimum performance of your custom antibody project. A variety of production plans let you select the elements you need for optimal cost management.

Create Your Own Plan

Affinity BioReagents Antibody on Demand Custom Antibody Production Services allow you to control your project from start to finish. Just provide ABR with your protein sequence, Accession number, peptide, or protein, and ABR's laboratory professionals will produce your custom antibodies. ABR offers a range of inclusive plans that provide the most efficient, versatile and cost-effective antibody production in the industry. Whether you are interested in a different host animal or multiple extension bleeds, ABR will work with you to make your project a success. Choose the plan that best meets your research needs or supply ABR with your own plan.



Featured Services Include:

- Antigen Design
- Peptide Synthesis
- Antigen Prep
- Production Bleeds
- ELISA Titers
- Affinity Purification
- SDS-PAGE Analysis
- Comprehensive Reporting

To Bring You:

- Nearly two decades of custom production expertise
- Cost containment—choose only the services you need
- Optimum performance of your project
- Unequaled customer support

ORDERING INFORMATION:

Simply provide your protein sequence, accession number, peptide or protein, and ABR-Affinity BioReagents will produce your antibody, complete with a comprehensive antibody performance report. For more information on custom products and services, visit **www. fishersci.com/lifescience/custserv.**

Plans	Antigen Design	Peptide Synthesis	Antigen Prep	Four Boosts	Three Production Bleeds	ELISA Titers	Affinity Purification	SDS-PAGE Analys
BioReady*				X	X	X		
BioReady Plus*			X	X	X	X		
BioPerformance*			X	X	X	X		
BioPerformance Plus*	X	X	X	X	X	X	X	X
BioSpecific*[1]	X	X	X	X	X	X	X	X

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[1] *Designed for antibodies against post-translationally modified proteins.*

CYLINDERS

GLASS-CALIBRATED "TO DELIVER"

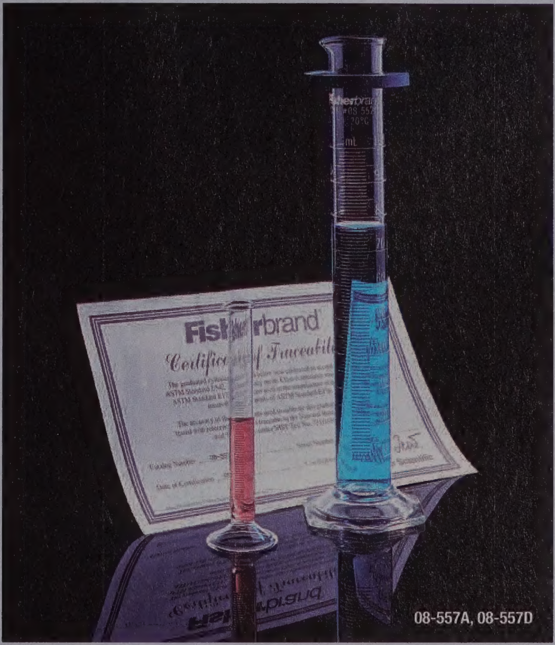
***Fisher**brand** Serialized Class A Cylinders

Calibrated "To Deliver"

- Individual serial numbers
- Calibrated in accordance with ASTM* E 542
- Accuracy is assured even at the lowest graduations
- White scale
- Molded hexagonal base keeps cylinder from rolling off the benchtop
- Bumper guards on sizes 25 through 500mL

Compliance

Glass meets the requirements of ASTM E 438; Cylinders Support ISO-9000 documentation requirements; meets ASTM E 694 specifications, and the accuracy requirements of ASTM E 1272.



08-557A, 08-557D

With Certificate of Traceability

INCLUDES:

Certificate that indicates cylinder is individually calibrated and certified against equipment whose calibration is traceable to the National Institute of Standards and Technology (NIST); lists the weight set used, the test number, and the date of testing.

Capac.	Subdiv.	Tol.	Approx. Height	Cat. No.	Each	Case of
10mL	0.1mL	±0.10mL	175mm	**08-557A**	69.79	6/370.57
25mL	0.2mL	±0.17mL	200mm	**08-557B**	75.93	6/403.15
50mL	1mL	±0.25mL	225mm	**08-557C**	77.03	6/408.99
100mL	1mL	±0.40mL	255mm	**08-557D**	83.26	6/442.09
250mL	2mL	±0.50mL	330mm	**08-557E**	94.58	4/334.80
500mL	5mL	±1.0mL	375mm	**08-557F**	113.35	4/387.51
1000mL	10mL	±6.0mL	460mm	**09-730-30**	133.49	2/228.19
2000mL	20mL	±2.0mL	520mm	**08-557H**	195.87	----

With Certificate of Calibration

INCLUDES:

Individual fused-in serial numbers and, in addition to traceability certification, are supplied with Certificates of Calibration that list apparent volumes and calibration correction factors.

Capac.	Subdiv.	Tol.	Approx. Height	Cat. No.	Each	Case of
10mL	0.1mL	±0.10mL	175mm	**08-557AC**	226.93	6/1163.73
25mL	0.2mL	±0.17mL	200mm	**08-557BC**	231.20	6/1185.62
50mL	1mL	±0.25mL	225mm	**08-557CC**	231.78	6/1188.60
100mL	1mL	±0.40mL	255mm	**08-557DC**	236.76	6/1214.15
250mL	2mL	±0.50mL	330mm	**08-557EC**	257.00	4/878.64
500mL	5mL	±1.0mL	375mm	**08-557FC**	261.51	4/894.04
1000mL	10mL	±6.0mL	460mm	**09-730-31**	319.14	2/545.54
2000mL	20mL	±2.0mL	520mm	**08-557HC**	334.19	----

Pyrex* Certified/Serialized Class A Cylinders with Metric Scale

Calibrated "To Deliver"

- Individual serial number
- Easy-to-read permanent white graduations
- Bumper guards with 25 through 2000mL sizes
- 10mL size has a funnel-shaped top

INCLUDES:

Certificate of Identification and Capacity traceable to standards provided by NIST*.

COMPLIANCE:

Class A tolerances in accordance with ASTM* E 1272 and E 542.

08-553A

Capac.	Subdiv.	ASTM Tol.	Approx. Height	Mfr. No.	Cat. No.	Each
10mL	0.1mL	±0.10mL	178mm	3062 10	**08-553G**	72.48
25mL	0.2mL	±0.17mL	192mm	3062 25	**08-553E**	77.79
50mL	1mL	±0.25mL	225mm	3062 50	**08-553A**	79.07
100mL	1mL	±0.50mL	254mm	3062 100	**08-553B**	84.19
250mL	2mL	±1.0mL	340mm	3062 250	**08-553F**	95.16
500mL	5mL	±2.0mL	390mm	3062 500	**08-553C**	111.38
1000mL	10mL	±3.0mL	465mm	3062 1L	**08-553D**	137.13
2000mL	20mL	±6.0mL	520mm	3062 2L	**08-553H**	213.56

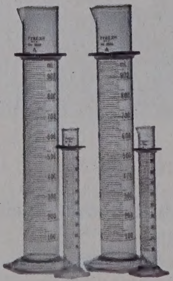
Pyrex* Class A Cylinders with Double Metric Scale

Calibrated "To Deliver"

- Double scale in durable white or blue enamel
- Shock-absorbing polyethylene bumper guards

COMPLIANCE:

Class A tolerances in accordance with ASTM* E 1272 and E 542.



08-549-11F, 08-549-11C, 08-549-11M, and 08-562-6

Capac.	Subdiv.	ASTM Tol.	Approx. Height	Mfr. No.	Cat. No.	Case of
White-Enamel Markings						
25mL	0.2mL	±0.17mL	192mm	3023 25	**08-549-11A**	18/340.22
50mL	1mL	±0.25mL	225mm	3023 50	**08-549-11B**	18/353.27
100mL	1mL	±0.5mL	254mm	3023 100	**08-549-11C**	12/281.06
250mL	2mL	±1.0mL	340mm	3023 250	**08-549-11D**	12/388.64
500mL	5mL	±2.0mL	390mm	3023 500	**08-549-11E**	8/362.37
1000mL	10mL	±3.0mL	465mm	3023 1L	**08-549-11F**	1/71.25
2000mL	20mL	±6.0mL	520mm	3023 2L	**08-562-5**	1/113.96
Blue-Enamel Markings						
25mL	0.2mL	±0.17mL	192mm	3026 25	**08-549-11H**	18/318.16
50mL	1mL	±0.25mL	225mm	3026 50	**08-549-11I**	18/329.86
100mL	1mL	±0.5mL	254mm	3026 100	**08-562-6**	12/262.37
250mL	2mL	±1.0mL	340mm	3026 250	**08-549-11K**	12/362.54
500mL	5mL	±2.0mL	390mm	3026 500	**08-549-11L**	8/338.23
1000mL	10mL	±3.0mL	465mm	3026 1L	**08-549-11M**	1/62.90
2000mL	20mL	±6.0mL	520mm	3026 2L	**08-549-11N**	1/102.04

Pyrex* Vista* Class A Cylinder

Calibrated "To Deliver"

- Blue enamel graduations
- 10mL size has a funnel top for easier filling

COMPLIANCE:

Class A tolerances in accordance with ASTM* E 1272 and E 542.

07-250-070

Capacity	Mfr. No.	Cat. No.	Each	Case of
10mL	70024-10	**07-250-066**	11.89	24/208.38
25mL	70024-25	**07-250-067**	16.80	18/220.74
50mL	70024-50	**07-250-068**	17.47	18/229.46
100mL	70024-100	**07-250-069**	20.83	12/182.42
250mL	70024-250	**07-250-070**	28.73	12/251.65
500mL	70024-500	**07-250-071**	40.28	8/235.20

Kimax* Serialized Class A Cylinders with Single Metric Scale

Calibrated "To Deliver"

- Individual serial number
- Durable white scale
- SafeGard* bumpers, with all but 10mL size
- 10mL size has enlarged funnel top for easy filling

INCLUDES:

Certificate of Graduation Accuracy

COMPLIANCE:

Designed from ASTM* E 1272, Style 1, Class A requirements; meet accuracy requirements of ASTM E 694.

08-548E

Capac.	Subdiv.	Tol.	Approx. Height	Mfr. No.	Cat. No.	Each	Case of
10mL	0.1mL	±0.09mL	165mm	20026 10	**08-548A**	97.47	6/426.90
25mL	0.2mL	±0.17mL	195mm	20026 25	**08-548B**	104.60	6/458.10
50mL	1mL	±0.25mL	190mm	20026 50	**08-548C**	105.34	6/461.22
100mL	1mL	±0.40mL	255mm	20026 100	**08-548D**	116.82	6/511.62
250mL	2mL	±0.80mL	330mm	20026 250	**08-548E**	126.72	4/370.00
500mL	5mL	±1.3mL	375mm	20026 500	**08-548F**	148.33	4/433.08
1000mL	10mL	±2.5mL	460mm	20026 1000	**08-548G**	182.63	2/266.62

*Fisherbrand** Standard Class B Graduated Cylinders

Calibrated "To Deliver"

- White-ceramic graduations
- Heavy round bases
- Handy pouring spouts
- Accuracy is assured even at the lowest graduations; first 10% volume is not graduated

Capac.	Subdiv.	Tol.	Approx. Height	Cat. No.	Each	Case of
5mL	0.1mL	±0.1mL	120mm	**08-550A**	17.10	36/492.50
10mL	0.2mL	±0.1mL	140mm	**08-550B**	15.24	36/395.31
25mL	0.5mL	±0.20mL	140mm	**08-550C**	22.19	36/639.18
50mL	1mL	±0.34mL	190mm	**08-550D**	25.03	36/720.84
100mL	1mL	±0.50mL	260mm	**08-550E**	29.87	36/860.14
250mL	2mL	±2.0mL	330mm	**08-550F**	37.87	18/469.65
500mL	5mL	±4.0mL	375mm	**08-550G**	54.14	12/466.46
1000mL	10mL	±6.0mL	460mm	**08-550H**	67.46	8/477.61
2000mL	20mL	±12.0mL	520mm	**08-550J**	111.46	6/571.59

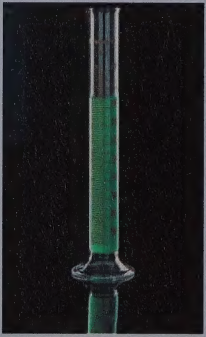
*Fisherbrand** Class B Cylinders with Single Amber Metric Scale

Calibrated "To Deliver"

- Ideal for use with light-colored liquids
- Dark amber graduations provide contrast for easy readings
- Heavy round bases and pouring spouts
- Accuracy is assured even at lowest graduations; first 10% of volume is not graduated

COMPLIANCE:

Designed from ASTM* E 1272, Style 1, Class B requirements.



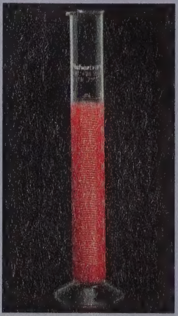
08-570E

Capac.	Subdiv.	Tol.	Approx. Height	Cat. No.	Each	Case of
5mL	0.1mL	±0.1mL	120mm	**08-570A**	16.72	36/481.64
10mL	0.2mL	±0.1mL	140mm	**08-570B**	15.47	36/400.62
25mL	0.5mL	±0.20mL	140mm	**08-570C**	22.43	36/646.07
50mL	1mL	±0.34mL	190mm	**08-570D**	25.28	36/728.03
100mL	1mL	±0.5mL	260mm	**08-570E**	30.17	36/868.89
250mL	2mL	±2.0mL	330mm	**08-570F**	38.27	18/474.05
500mL	5mL	±4.0mL	375mm	**08-570G**	54.69	12/471.66
1000mL	10mL	±6.0mL	460mm	**08-570H**	67.13	8/475.28
2000mL	20mL	±12.0mL	520mm	**08-570J**	112.54	6/577.13

*Fisherbrand** Class B Cylinders with Double Metric Scales

Calibrated "To Deliver"

- Two sets of white ceramic graduations for reading up or down
- Heavy base
- Pouring lip
- Accuracy assured even at lowest graduations; first 10% of volume at bottom is not graduated



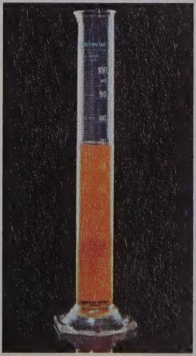
08-555D

Capac.	Subdiv.	Tol.	Cat. No.	Each	Case of
10mL	0.2mL	±0.1mL	**08-555A**	15.91	36/393.92
25mL	0.5mL	±0.20mL	**08-555B**	21.81	36/628.16
50mL	1mL	±0.34mL	**08-555C**	19.11	36/470.17
100mL	1mL	±0.50mL	**08-555D**	22.65	36/555.61
250mL	2mL	±2.0mL	**08-555E**	34.84	18/440.80
500mL	5mL	±4.0mL	**08-555F**	46.15	12/389.08
1000mL	10mL	±6.0mL	**08-555G**	60.05	8/339.12

PyrexPlus* Class B Cylinders with Single Metric Scale, Protective Coating

Calibrated "To Deliver"

- PVC coating for longer life and safety
- Autoclavable to 121°C (250°F) moist heat or 110°C (230°F) dry heat
- Resistant to thermal shock
- White graduations
- Without bumper guards



08-562-10C

Capac.	Subdiv.	ASTM* Tol.	Approx. Height	Mfr. No.	Cat. No.	Each	Case of
100mL	1mL	±1.0mL	254mm	63024 100	**08-562-10C**	42.52	4/116.71
250mL	2mL	±2.0mL	340mm	63024 250	**08-562-10D**	58.82	4/161.53
500mL	5mL	±4.0mL	390mm	63024 500	**08-562-10E**	82.17	4/225.79
1000mL	10mL	±6.0mL	460mm	63024 1L	**08-562-10F**	113.69	4/313.18
2000mL	20mL	±12.0mL	520mm	63024 2L	**08-562-10G**	195.67	2/269.50

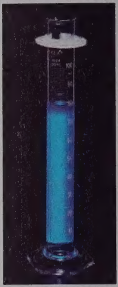
WARNING

Do not place over direct heat or flame.

Pyrex* Class B Cylinders with Single White-Enamel Metric Graduations

Calibrated "To Deliver"

- Bumper guards with 25 through 2000mL sizes
- Capacities of 5 and 10mL have funnel tops



08-552-4C

Capac.	Subdiv.	ASTM* Tol.	Approx. Height	Mfr. No.	Cat. No.	Each
5mL	0.1mL	±0.1mL	117mm	3024 5	**08-552-4G**	26.94
10mL	0.1mL	±0.2mL	177mm	3024 10	**08-552-4H**	17.99
25mL	0.2mL	±0.3mL	192mm	3024 25	**08-552-4A**	25.44
50mL	1mL	±0.5mL	225mm	3024 50	**08-552-4B**	26.47
100mL	1mL	±1.0mL	254mm	3024 100	**08-552-4C**	31.51
250mL	2mL	±2.0mL	340mm	3024 250	**08-552-4D**	43.61
500mL	5mL	±4.0mL	390mm	3024 500	**08-552-4E**	60.92
1000mL	10mL	±6.0mL	465mm	3024 1L	**08-552-4F**	65.21
2000mL	20mL	±12.0mL	520mm	3024 2L	**08-552-4J**	106.20

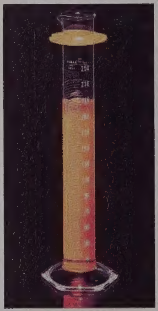
Kimax* Class B Cylinders with Single White Metric Scale

Calibrated "To Deliver"

- Durable scale
- 10 and 25mL sizes are short for stability
- 100mL size suitable for ASTM* distillation tests when hexagonal base fits in cooling baths and does not interfere with delivery from condensers
- SafeGard* bumpers with 25 to 2000mL sizes
- Funnel-shaped top on 10mL size for easy filling

COMPLIANCE:

Designed from ASTM E 1272, Style 1, Class B requirements.



08-549-5G

Capac.	Subdiv.	Tol.	Approx. Height	Mfr. No.	Cat. No.	Price
10mL	0.2mL	±0.1mL	135mm	20024 10	**08-549-5B**	Pk. of 4/68.78
25mL	0.5mL	±0.3mL	140mm	20024 25	**08-549-5C**	Pk. of 4/95.84
50mL	1mL	±0.4mL	190mm	20024 50	**08-549-5D**	Pk. of 4/99.52
100mL	1mL	±0.6mL	255mm	20024 100	**08-549-5E**	Pk. of 4/118.76
250mL	2mL	±1.4mL	330mm	20024 250	**08-549-5G**	Pk. of 2/82.12
500mL	5mL	±2.6mL	375mm	20024 500	**08-549-5H**	Ea./59.19
1000mL	10mL	±5.0mL	460mm	20024 1000	**08-549-5J**	Ea./86.43
2000mL	20mL	±10.0mL	520mm	20024 2000	**08-549-5K**	Ea./140.22

Kimax* Class B Cylinders with Double Metric Scales

Calibrated "To Deliver"

- Two white scales for reading up or down
- SafeGard* bumpers with 25 through 2000mL sizes
- 10mL size has large funnel top for easy filling

08-554F

Capac.	Subdiv.	Tol.	Approx. Height	Mfr. No.	Cat. No.	Price
10mL	0.2mL	±0.1mL	135mm	20030 10	**08-554B**	Pk. of 4/101.14
25mL	0.5mL	±0.3mL	140mm	20030 25	**08-554C**	Pk. of 4/132.46
50mL	1mL	±0.4mL	190mm	20030 50	**08-554D**	Pk. of 4/129.28
100mL	1mL	±0.6mL	255mm	20030 100	**08-554E**	Pk. of 4/148.02
250mL	2mL	±1.4mL	330mm	20030 250	**08-554F**	Pk. of 2/114.06
500mL	5mL	±2.6mL	375mm	20030 500	**08-554G**	Ea./74.65
1000mL	10mL	±5.0mL	460mm	20030 1000	**08-554H**	Ea./99.83
2000mL	20mL	±10.0mL	520mm	20030 2000	**08-554J**	Ea./157.94

Kimax* Class B Cylinders with Single Metric Scale, Red Stripe

Calibrated "To Deliver"

- Red stain provides contrast for easy readings
- SafeGard* bumpers with all except 10mL size
- Funnel-shaped top on 10mL size for easy filling

COMPLIANCE:

Designed from ASTM* E 1272, Style 1, Class B requirements.

08-556E

Capac.	Subdiv.	Tol.	Approx. Height	Mfr. No.	Cat. No.	Price
10mL	0.1mL	±0.1mL	165mm	20024D 10	**08-556A**	Pk. of 4/88.99
25mL	0.2mL	±0.3mL	195mm	20024D 25	**08-556B**	Pk. of 4/137.61
50mL	1mL	±0.4mL	190mm	20024D 50	**08-556C**	Pk. of 4/150.05
100mL	1mL	±0.6mL	255mm	20024D 100	**08-556D**	Pk. of 4/150.70
250mL	2mL	±1.4mL	330mm	20024D 250	**08-556E**	Pk. of 2/116.15
500mL	5mL	±2.6mL	375mm	20024D 500	**08-556F**	Ea./69.13
1000mL	10mL	±5.0mL	460mm	20024D 1000	**08-556G**	Ea./104.18
2000mL	20mL	±10.0mL	520mm	20024D 2000	**08-556H**	Ea./158.26

*Trademark. See Trademark Reference.

Kimble* Class B Cylinders with Single Blue Metric Scale

Calibrated "To Deliver"

- Blue ceramic scale
- 10mL size has funnel-shaped top
- SafeGard* bumpers with all except 10mL size

COMPLIANCE:
Designed from ASTM* E 1272, Style 1, Class B requirements

08-549G

Capac.	Subdiv.	Tol.	Approx. Height	Mfr. No.	Cat. No.	Price
10mL	0.2mL	±0.1mL	135mm	20025 10	**08-549B**	Pk. of 4/68.77
25mL	0.5mL	±0.3mL	140mm	20025 25	**08-549C**	Pk. of 4/97.10
50mL	1mL	±0.4mL	190mm	20025 50	**08-549D**	Pk. of 4/100.72
100mL	1mL	±0.6mL	255mm	20025 100	**08-549E**	Pk. of 4/119.02
250mL	2mL	±1.4mL	330mm	20025 250	**08-549G**	Pk. of 2/82.23
500mL	5mL	±2.6mL	375mm	20025 500	**08-549H**	Ea./57.58
1000mL	10mL	±5.0mL	460mm	20025 1000	**08-549J**	Ea./80.02
2000mL	20mL	±10.0mL	520mm	20025 2000	**08-549K**	Ea./129.78

*Fisherbrand** Low-Form Cylinders with Double Metric Scales

Calibrated "To Deliver"

- Two white scales for reading up or down
- Accuracy assured even at lowest graduations
- Won't easily tip
- Two pouring lips

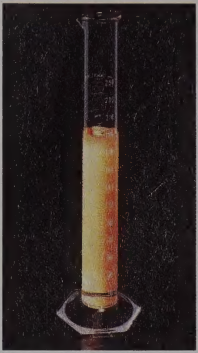
08-562A

Capac.	Subdiv.	Tol.	Approx. Height	Cat. No.	Each	Case of 12
50mL	1mL	±1.5mL	145mm	**08-562A**	33.08	339.27
100mL	2mL	±1.5mL	150mm	**08-562B**	37.28	382.35

Kimax* Educational-Grade Cylinders with Single Metric Scale

Calibrated "To Deliver"

- Borosilicate glass
- Durable white scale
- 10mL size has funnel-shaped top

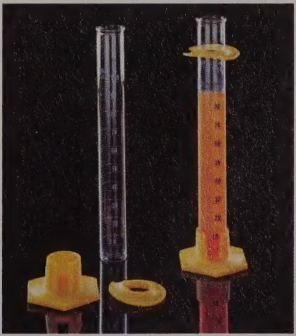

08-549-2F

Capac.	Subdiv.	Approx. Height	Mfr. No.	Cat. No.	Price
10mL	0.2mL	135mm	20025K 10	**08-549-2B**	Pk. of 4/53.10
25mL	0.5mL	140mm	20025K 25	**08-549-2C**	Pk. of 4/58.83
50mL	1mL	190mm	20025K 50	**08-549-2D**	Pk. of 4/66.37
100mL	1mL	255mm	20025K 100	**08-549-2E**	Pk. of 4/74.68
250mL	2mL	330mm	20025K 250	**08-549-2F**	Pk. of 2/66.34
500mL	5mL	375mm	20025K 500	**08-549-2G**	Ea./43.52
1000mL	10mL	460mm	20025K 1000	**08-549-2H**	Ea./65.73
2000mL	20mL	520mm	20025K 2000	**08-549-2J**	Ea./102.12

Kimax* Educational-Grade Cylinders with Single Metric Scale, Removable Plastic Base

Calibrated "To Deliver"

- Borosilicate glass
- Blue-ceramic-enamel graduations
- Bumpers with 25 to 100mL sizes
- 10mL size has funnel-shaped top



Capac.	Subdiv.	Approx. Height	Mfr. No.	Cat. No.	Pack of 6	Case of 4 Pack
10mL	0.2mL	132mm	20025H 10	**08-549-17A**	40.52	118.32
25mL	0.5mL	138mm	20025H 25	**08-549-17B**	44.14	128.88
50mL	1mL	185mm	20025H 50	**08-549-17C**	49.41	144.24
100mL	1mL	248mm	20025H 100	**08-549-17D**	64.53	188.40

GLASS CALIBRATED "TO CONTAIN"

*Fisherbrand** Serialized Class A Cylinders

Calibrated "To Contain"

- Individual serial numbers
- Calibrated in accordance with ASTM* E 542
- Accuracy is assured even at the lowest graduations
- White scale
- Molded hexagonal base keeps it from rolling off the benchtop
- Bumper guards on sizes 25 through 1000mL

With Certificate of Traceability

INCLUDES:

Certificate indicates that cylinder is individually calibrated and certified against equipment whose calibration is traceable to the National Institute of Standards and Technology (NIST*); lists the weight set used, the test number, and the date of testing.

Capac.	Subdiv.	Tol.	Approx. Height	Cat. No.	Each	Case of
10mL	0.1mL	±0.10mL	140mm	**08-559A**	69.65	6/369.83
25mL	0.5mL	±0.17mL	140mm	**08-559B**	78.68	6/417.78
50mL	1mL	±0.25mL	190mm	**08-559C**	83.43	6/443.01
100mL	1mL	±0.40mL	260mm	**08-559D**	80.88	6/429.43
250mL	2mL	±0.50mL	330mm	**08-559E**	91.61	4/324.27
500mL	5mL	±1.0mL	375mm	**08-559F**	110.75	4/378.64
1000mL	10mL	±2.0mL	460mm	**08-559G**	134.74	2/230.32
2000mL	20mL	±6.0mL	520mm	**08-559H**	197.19	----

COMPLIANCE

Glass meets the requirements of ASTM E 438; calibrated in accordance with ASTM E 542; manufacturing supports ISO-9000 documentation requirements; cylinder meets accuracy requirements of ASTM E 1272

08-559E, 08-559D

With Certificate of Calibration

INCLUDES:

Traceability Certification and Certificates of Calibration that list apparent volumes and calibration correction factors.

Capac.	Subdiv.	Tol.	Approx. Height	Cat. No.	Each	Case of
10mL	0.1mL	±0.10mL	140mm	**08-559AC**	225.19	6/1154.81
25mL	0.5mL	±0.17mL	140mm	**08-559BC**	231.81	6/1188.77
50mL	1mL	±0.25mL	190mm	**08-559CC**	230.00	6/1179.51
100mL	1mL	±0.50mL	260mm	**08-559DC**	235.66	6/1208.49
250mL	2mL	±1.0mL	330mm	**08-559EC**	269.66	4/921.90
500mL	5mL	±2.0mL	375mm	**08-559FC**	260.68	4/891.23
1000mL	10mL	±3.0mL	460mm	**08-559GC**	318.19	2/543.91
2000mL	20mL	±6.0mL	520mm	**08-559HC**	334.19	----

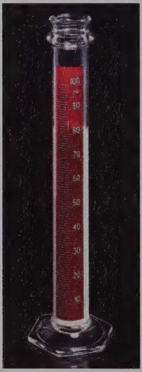
Pyrex* Lifetime Red* Cylinders

Calibrated "To Contain"

- Reinforced bead near top helps prevent breakage
- White-enamel graduations on Lifetime Red background
- Bumper guards included with the 100 and 250mL sizes

COMPLIANCE:

100mL size in accordance with ASTM* E 133 and E 1272; used in ASTM test D 86


08-551D

Capac.	Subdiv.	ASTM Tol.	Approx. Height	Mfr. No.	Cat. No.	Each
10mL	0.1mL	±0.2mL	179mm	3046 10	**08-551A**	25.05
25mL	0.2mL	±0.3mL	205mm	3046 25	**08-551B**	37.13
50mL	1mL	±0.5mL	238mm	3046 50	**08-551C**	40.76
100mL	1mL	±1.0mL	267mm	3046 100	**08-551D**	47.47
250mL	2mL	±2.0mL	353mm	3046 250	**08-551E**	63.68

Pyrex* Vista* Class A Cylinders

Calibrated "To Contain"

- Blue enamel graduations
- Capacity is in accordance with ASTM*E-1272
- 10mL size has a funnel top for easier filling

07-250-064

Capacity	Mfr. No.	Cat. No.	Each	Case of
10mL	70022-10	**07-250-060**	11.93	24/209.10
25mL	70022-25	**07-250-061**	16.90	18/222.05
50mL	70022-50	**07-250-062**	17.47	18/229.46
100mL	70022-100	**07-250-063**	20.82	12/182.36
250mL	70022-250	**07-250-064**	28.73	12/251.65
500mL	70022-500	**07-250-065**	40.28	8/235.20

*Trademark. See Trademark Reference.

Prices subject to change.

***Fisher**brand** Standard Class B Graduated Cylinders

Calibrated "To Contain"

- White ceramic graduations
- Heavy round bases (except 2000mL size, which has molded hexagonal base)
- Handy pouring spouts
- Accuracy is assured even at the lowest graduations

COMPLIANCE:

100mL size meets ASTM* E 133 requirements; used in ASTM tests D 86 and D 447.

Capac.	Subdiv.	Tol.	Approx. Height	Cat. No.	Price	Case of
10mL	0.2mL	±0.2mL	140mm	**08-557-1A**	Pk. of 2/34.11	12 Pk./349.84
25mL	0.2mL	±0.34mL	140mm	**08-557-1B**	Ea./20.76	18/319.44
50mL	1mL	±0.5mL	190mm	**08-557-1C**	Ea./19.86	18/253.63
100mL	1mL	±1.0mL	260mm	**08-557-1D**	Ea./23.04	12/184.39
250mL	2mL	±2.0mL	330mm	**08-557-1E**	Ea./34.28	12/351.60
500mL	5mL	±4.0mL	375mm	**08-557-1F**	Ea./43.91	8/267.26
1000mL	10mL	±6.0mL	460mm	**08-557-1G**	Ea./64.28	4/227.54
2000mL	20mL	±12mL	520mm	**08-557-1H**	Ea./112.66	4/385.16

yrex* Class B Lifetime Red* Cylinders vith Single Metric Scale

alibrated "To Contain"

08-552-1C

- Durable white enamel scale and figures stand out against red color band
- 10mL size has funnel top
- Bumper guards with 100 through 2000mL sizes

OMPLIANCE:

0mL size complies with ASTM* E 133 and 1272, and is used in ASTM test D 86.

apac.	Subdiv.	ASTM Tol.	Approx. Height	Mfr. No.	Cat. No.	Each
0mL	0.1mL	±0.2mL	178mm	3042 10	**08-552-1B**	22.91
00mL	1mL	±1.0mL	254mm	3042 100	**08-552-1C**	40.05
00mL	5mL	±4.0mL	390mm	3042 500	**08-552-1E**	73.46
000mL	10mL	±6.0mL	465mm	3042 1L	**08-552-1F**	79.76
000mL	20mL	±12.0mL	520mm	3042 2L	**08-552-1G**	121.17

Pyrex* Class B Lifetime Red* Cylinders with Single Metric Scale, Double Pour Out

Calibrated "To Contain"

- Tuttle-type low form for stability
- White enamel graduations on Lifetime Red background

08-562-10B

Capac.	Subdiv.	Tol.	Approx. Height	Mfr. No.	Cat. No.	Each	Case of 12
50mL	1mL	±0.5mL	148mm	3044 50	**08-562-10A**	42.74	354.74
100mL	2mL	±1.0mL	157mm	3044 100	**08-562-10B**	49.82	413.59

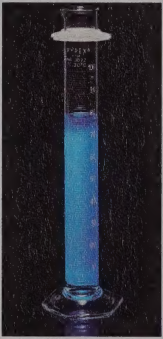
Pyrex* Class B Cylinders with Single White-Enamel Metric Graduations

Calibrated "To Contain"

- 10mL size has funnel top
- Bumper guards with 25 through 2000mL sizes

COMPLIANCE:

100mL size meets ASTM* E 133 and E 1272 requirements and is used in ASTM test D 86.


08-552E

Capac.	Subdiv.	ASTM Tol.	Approx. Height	Mfr. No.	Cat. No.	Each	Case of
10mL	0.1mL	±0.2mL	178mm	3022 10	**08-552B**	17.08	24/300.11
25mL	0.2mL	±0.3mL	192mm	3022 25	**08-552C**	25.56	18/318.54
50mL	1mL	±0.5mL	225mm	3022 50	**08-552D**	26.47	18/329.28
100mL	1mL	±1.0mL	254mm	3022 100	**08-552E**	31.51	12/261.87
250mL	2mL	±2.0mL	340mm	3022 250	**08-552F**	43.61	12/362.03
500mL	5mL	±4.0mL	390mm	3022 500	**08-552G**	60.92	8/337.55
1000mL	10mL	±6.0mL	465mm	3022 1L	**08-552H**	63.49	----
2000mL	20mL	±12.0mL	520mm	3022 2L	**08-552J**	104.69	----

Kimax* Class B Cylinders with Single Metric Scale

Calibrated "To Contain"

- Demonstrate emulsion and demulsifying characteristics of oils
- Determine sedimentation values of precipitates
- Receive condensate from distillation procedures
- White scale
- Pour spout
- Hexagonal base ground flat for stability
- 10mL size has an enlarged funnel top for easy filling
- Sizes 25mL and larger have SafeGard* bumpers

08-566-15D

COMPLIANCE:

Designed from ASTM* E 1272, Style 1, Class B requirements

Capac.	Subdiv.	Tol.	Approx. Height	Mfr. No.	Cat. No.	Case of
10mL	0.2mL	±0.1mL	135mm	20022 10	**08-566-15A**	12/150.60
25mL	0.5mL	±0.3mL	140mm	20022 25	**08-566-15B**	1/17.72
50mL	1mL	±0.4mL	190mm	20022 50	**08-566-15C**	12/217.92
100mL	1mL	±0.6mL	255mm	20022 100	**08-566-15D**	12/260.04
250mL	2mL	±1.4mL	330mm	20022 250	**08-566-15E**	6/179.82
500mL	5mL	±2.6mL	375mm	20022 500	**08-566-15F**	4/167.64
1000mL	10mL	±5.0mL	460mm	20022 1000	**08-566-15G**	4/254.36
2000mL	20mL	±10.0mL	520mm	20022 2000	**08-566-15H**	2/203.46

Pyrex* Vista* Economy Cylinders with Blue Graduations

Calibrated "To Contain"

- Two-piece construction
- Detachable plastic base absorbs impact and reduces breakage
- Plastic bumper guards supplied with 25 through 100mL sizes
- 10mL size has an enlarged top for easy filling

Capac.	Subdiv.	Tol.	Approx. Height	Mfr. No.	Cat. No.	Case of 12
10mL	0.1mL	±0.5mL	160mm	70075-10	**07-770-208**	51.57
25mL	0.2mL	±1.2mL	188mm	70075-25	**07-770-209**	55.44
50mL	1mL	±2.5mL	218mm	70075-50	**07-770-210**	62.85
100mL	1mL	±5.0mL	248mm	70075-100	**07-770-211**	82.16

Pyrex* Economy Grade Cylinders with Double Metric Scales

Calibrated "To Contain"

- Two white scales for reading up or down
- Shorter than standard cylinders
- Without bumper guards

08-562-5C

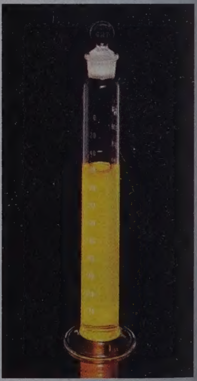
Capac.	Subdiv.	Approx. Height	Mfr. No.	Cat. No.	Each	Case of
10mL	0.1mL	140mm	3025 10	**08-562-5H**	14.79	24/259.76
25mL	0.2mL	144mm	3025 25	**08-562-5A**	17.33	18/215.33
50mL	1mL	166mm	3025 50	**08-562-5B**	18.15	18/225.93
100mL	1mL	254mm	3025 100	**08-562-5C**	21.30	12/177.20
250mL	2mL	340mm	3025 250	**08-562-5D**	37.69	12/313.29
500mL	5mL	390mm	3025 500	**08-562-5E**	48.12	8/266.76
1000mL	10mL	465mm	3025 1L	**08-562-5F**	55.24	----
2000mL	20mL	520mm	3025 2L	**08-562-5G**	88.59	----

MIXING

*Fisherbrand** Class B Mixing Cylinders

Calibrated "To Contain"

- Double metric scale
- White-enamel graduations
- Ground-glass pennyhead stoppers
- First 10% of volume not graduated



08-565E

Capac.	Subdiv.	Tol.	Cat. No.	Each	Case of
10mL	0.2mL	±0.1mL	**08-565A**	72.12	12/596.85
25mL	0.5mL	±0.3mL	**08-565B**	99.84	12/826.33
50mL	1mL	±0.4mL	**08-565C**	110.50	12/914.43
100mL	1mL	±0.6mL	**08-565D**	111.80	12/925.21
250mL	2mL	±1.4mL	**08-565E**	189.05	6/782.26
500mL	5mL	±2.6mL	**08-565F**	214.61	6/888.04

*Trademark. See Trademark Reference.

Prices subject to change.

Pyrex* Certified/Serialized Class A Mixing Cylinders

Calibrated "To Contain"

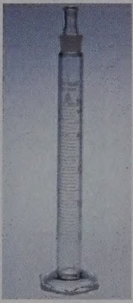
- Individual serial number
- Single scale with white-enamel graduations
- Pyrex stopper

NCLUDES:

ertificate of Identification and Capacity traceable to tandards provided by NIST*.

OMPLIANCE:

leet ASTM* E 1272 and E 542 requirements



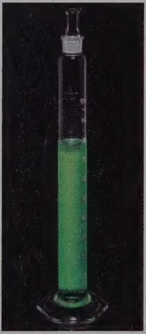
08-531C

apac.	Subdiv.	ASTM Tol.	Approx. O.D. × H	Mfr. No.	Cat. No.	Each
0mL	0.1mL	±0.10mL	13 × 195mm	3002 10	**08-531A**	76.54
5mL	0.2mL	±0.17mL	18 × 225mm	3002 25	**08-531B**	83.04
0mL	1mL	±0.25mL	24 × 255mm	3002 50	**08-531C**	90.36
00mL	1mL	±0.50mL	29 × 295mm	3002 100	**08-531D**	95.16
50mL	2mL	±1.0mL	39 × 385mm	3002 250	**08-531E**	111.67
00mL	5mL	±2.0mL	50 × 445mm	3002 500	**08-531F**	147.71
000mL	20mL	±6.0mL	83 × 550mm	3002 2L	**08-531H**	287.46

yrex* Class B Mixing Cylinders

alibrated "To Contain"

- Single metric scale
- White-enamel graduations



08-566D

pac.	Subdiv.	ASTM* Tol.	Approx. O.D. × H	Mfr. No.	Cat. No.	Each
mL	0.1mL	±0.2mL	13 × 195mm	2982 10	**08-566A**	27.35
mL	0.2mL	±0.3mL	18 × 225mm	2982 25	**08-566B**	35.55
mL	1mL	±0.5mL	24 × 255mm	2982 50	**08-566C**	44.47
0mL	1mL	±1.0mL	29 × 295mm	2982 100	**08-566D**	51.37
0mL	2mL	±2.0mL	39 × 385mm	2982 250	**08-566E**	68.65
0mL	5mL	±4.0mL	50 × 445mm	2982 500	**08-566F**	88.80
00mL	10mL	±6.0mL	64 × 520mm	2982 1L	**08-566G**	99.25
00mL	20mL	±12.0mL	83 × 590mm	2982 2L	**08-566H**	147.73

Kimax* Serialized Class A Mixing Cylinders

Calibrated "To Contain"

- Permanently marked with individual serial number
- Supplied with Certificate of Graduation Accuracy
- Single metric white ceramic-enamel scale
- With $ stopper
- Heights shown in ordering table do not include stopper

INCLUDES:

Certificate of Graduation Accuracy.

REQUIRED ACCESSORIES:

Replacement stoppers available (14-642-2 Series)

COMPLIANCE:

Designed from ASTM* E 1272, Class A, Style 2 requirements; accuracy meets ASTM E 694 requirements.

08-563-1C

Capac.	Subdiv.	Tol.	Approx. Height	Mfr. No.	Cat. No.	Case of
10mL	0.1mL	±0.08mL	170mm	20036 10	**08-563-1G**	6/451.40
25mL	0.2mL	±0.14mL	215mm	20036 25	**08-563-1F**	6/489.67
50mL	1mL	±0.2mL	195mm	20036 50	**08-564-5C**	6/532.14
100mL	1mL	±0.35mL	255mm	20036 100	**08-563-1C**	6/560.40
250mL	2mL	±0.65mL	330mm	20036 250	**08-563-1E**	1/115.59
500mL	5mL	±1.10mL	380mm	20036 500	**08-564-5D**	1/152.88
1000mL	10mL	±2.0mL	475mm	20036 1000	**08-564-5E**	1/186.74

Kimax* Class B Mixing Cylinders

Calibrated "To Contain"

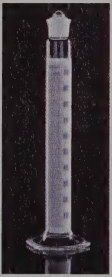
- Single metric blue ceramic-enamel scale
- Heights shown in ordering table do not include stopper
- The 10 and 25mL sizes are short form for extra stability

REQUIRED ACCESSORIES:

Replacement stoppers available (14-642-2 Series)

COMPLIANCE:

Designed from ASTM* E 1272, Class B, Style 2 specifications; 250mL size meets ASTM D 460 requirements; 500mL size meets ASTM D 244 requirements.



08-566-11D

Capac.	Subdiv.	Tol.	Approx. Height	Mfr. No.	Cat. No.	Price
10mL	0.2mL	±0.1mL	135mm	20040 10	**08-566-11A**	Pk. of 4/99.85
25mL	0.5mL	±0.3mL	160mm	20040 25	**08-566-11B**	Pk. of 4/122.58
50mL	1mL	±0.4mL	195mm	20040 50	**08-566-11C**	Pk. of 4/153.05
100mL	1mL	±0.6mL	255mm	20040 100	**08-566-11D**	Pk. of 4/176.51
250mL	2mL	±1.4mL	330mm	20040 250	**08-566-11E**	Pk. of 2/116.12
500mL	5mL	±2.6mL	380mm	20040 500	**08-566-11F**	Ea./84.57
1000mL	10mL	±5.0mL	475mm	20040 1000	**08-566-11G**	Ea./118.39
2000mL	20mL	±10.0mL	550mm	20040 2000	**08-566-11H**	Cs. of 2/256.52

Kimax* Class B Mixing Cylinders with HDPE Stoppers

Calibrated "To Contain"

- Single white metric scale
- Heavy-duty polyethylene stopper with closed bottom end fits the Ꞩ neck
- Flange on stopper protects cylinder neck
- Heights shown in ordering table do not include stopper

REQUIRED ACCESSORIES:
Replacement stoppers available (14-644-1 Series)

COMPLIANCE:
Designed from ASTM* E 1272, Class B, Style 2 specifications; meets ASTM D 460, D 820, and D 244 requirements

08-566-10D

Capac.	Subdiv.	Tol.	Approx. Height	Mfr. No.	Cat. No.	Price
50mL	1mL	±0.4mL	195mm	20039P 50	**08-566-10C**	Pk. of 4/183.25
100mL	1mL	±0.6mL	255mm	20039P 100	**08-566-10D**	Pk. of 4/214.22
1000mL	10mL	±5.0mL	475mm	20039P 1000	**08-566-10G**	Ea./128.40

SPECIAL PURPOSE

Kimax* Soil Test Cylinders

Calibrated "To Contain"

- Use with hydrometer to measure particle size distribution in soil suspensions (ASTM* D 422 and AASHTO T-88)
- 1205mL cylinder is not specified, but is useful for certain special cases
- Permanent white graduations fused onto glass without etching
- Round base (approximately 107mm diameter) fits into metal baths
- 1000mL cylinder also used in pipet methods of mechanical analysis of soils
- Approx. height, 457mm

08-568-2A

Capac.	Grad. Lines	Tol.	Mfr. No.	Cat. No.	Each	Case of 4
1000mL	1000mL	±5.0mL	20023 1000	**08-568-2A**	101.99	296.16
1205mL	1130, 1205mL	±5.0mL	20023 1205	**08-568-2B**	117.65	342.04

Looking for Cloning Cylinders?
You can find them in the Cloning and Expression section.

UNGRADUATED

*Fisherbrand** Borosilicate Cylinders with Pouring Lip

Ungraduated

- Heavy-wall construction resists breakage
- Fused round base
- For use with hydrometers

08-530F

Approx. Capac.	O.D.	Approx. Height Inside	Outside	Cat. No.	Each	Case of
25mL	25mm	115mm	125mm	**08-530A**	13.02	24/249.92
50mL	25mm	140mm	150mm	**08-530B**	13.61	24/261.38
125mL	41mm	135mm	150mm	**08-530C**	15.07	24/289.38
175mL	41mm	185mm	200mm	**08-530E**	17.49	24/335.82
225mL	41mm	235mm	250mm	**08-530F**	21.12	36/608.20
275mL	41mm	285mm	300mm	**08-530G**	23.60	18/363.12
300mL	41mm	310mm	325mm	**08-530J**	25.17	12/258.12
350mL	41mm	360mm	375mm	**08-530K**	25.13	12/257.79
500mL	51mm	285mm	300mm	**08-530H**	27.06	12/277.53
600mL	51mm	360mm	375mm	**08-530L**	31.68	12/324.90
1000mL	64mm	440mm	460mm	**09-730-32**	38.01	----
2000mL	82.5mm	500mm	520mm	**09-730-33**	78.61	----

*Fisherbrand** Borosilicate Cylinders without Pouring Lip

Ungraduated

- Heavy-wall construction resists breakage
- Fused round base
- For use with hydrometers

08-535C

Approx. Capac.	O.D.	Approx. Height Inside	Outside	Cat. No.	Each	Case of
50mL	25mm	140mm	150mm	**08-535A**	14.29	6/73.26
125mL	41mm	135mm	150mm	**08-535B**	23.30	24/447.30
175mL	41mm	185mm	200mm	**08-535C**	20.60	24/395.60
225mL	41mm	235mm	250mm	**08-535E**	34.83	24/668.73
500mL	51mm	285mm	300mm	**08-535F**	33.65	18/517.73
620mL	51mm	360mm	375mm	**08-535G**	37.08	18/570.39

*Trademark. See Trademark Reference.

Prices subject to change.

Pyrex* Heavy-Wall Cylinders

Ungraduated

- Heavy-wall construction minimizes breakage
- Hexagonal base sealed to body increases stability

COMPLIANCE:

Meet ASTM* D 287 and E 100 requirement

08-532B

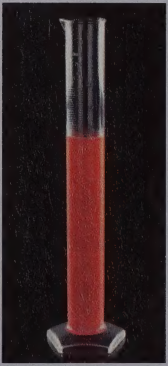
		Approx. Height					
pprox. apac.	O.D.	Inside	Outside	Mfr. No.	Cat. No.	Each	Case of
00mL	29mm	240mm	254mm	2962 100	**08-532A**	22.07	18/262.64
50mL	39mm	320mm	340mm	2962 250	**08-532B**	28.30	18/352.17
00mL	39mm	349mm	381mm	2962 300	**08-532F**	32.12	12/265.65
00mL	50mm	375mm	390mm	2962 500	**08-532C**	34.01	12/282.43
000mL	64mm	445mm	465mm	2962 1L	**08-532D**	37.10	----

PLASTIC

*Fisherbrand** Polymethylpentene Graduated Cylinders

Calibrated "To Contain/To Deliver" at 20°C

- Transparent cylinders with large molded-in graduations
- Easy to read
- Large rounded bases ribbed for reinforcement and stability
- Generous pour spout; 10mL size has a conical top for easier filling and pouring
- Nonwetting
- Chemical, heat and impact resistant
- Window-clear



03-007-33

Capac.	Subdiv.	Cat. No.	Each	Case of
10mL	0.2mL	**03-007-30**	13.09	24/209.50
25mL	0.5mL	**03-007-31**	16.57	18/198.84
50mL	1mL	**03-007-32**	17.99	18/215.86
100mL	1mL	**03-007-33**	19.50	12/155.97
250mL	2mL	**03-007-34**	25.86	12/206.87
500mL	5mL	**03-007-35**	32.37	8/172.62
1000mL	10mL	**03-007-36**	40.83	6/163.31
2000mL	20mL	**03-007-37**	55.87	4/148.98

*Fisherbrand** Polypropylene Graduated Cylinders

Calibrated "To Contain/To Deliver" at 20°C

- Translucent cylinders
- Molded-in large, easy-to-read graduations
- Large rounded base ribbed for reinforcement and stability
- Generous pour spout; 10mL size has a conical top for easier filling and pouring
- Nonwetting
- Chemical resistant
- Contact-clear

03-007-42

Capacity	Subdivisions	Cat. No.	Each	Case of
10mL	0.2mL	**03-007-38**	9.86	12/78.90
25mL	0.5mL	**03-007-39**	12.46	12/99.65
50mL	1mL	**03-007-40**	12.45	12/99.62
100mL	1mL	**03-007-41**	13.03	8/69.47
250mL	2mL	**03-007-42**	21.95	8/117.07
500mL	5mL	**03-007-43**	23.83	6/95.31
1000mL	10mL	**03-007-44**	30.74	4/81.97
200mL	20mL	**03-007-45**	64.54	2/86.06

Corning* Graduated Polystyrene Cylinder

Accurately dispense culture media or other biological fluids

- Optically clear polystyrene
- Sterile
- Polyethylene dust cover included

08-558-10

Capacity	Subdiv.	Mfr. No.	Cat. No.	Case of 50
100mL	1mL	430182	**08-558-10**	284.19

Nalgene* Polymethylpentene Cylinders

Calibrated "To Contain/To Deliver" at 20°C

- Transparent, nontoxic, noncontaminating, biologically inert
- Offer excellent chemical resistance
- Absence of meniscus makes liquid level easy to read
- Resist most dyes and stains
- Shatterproof
- Resist temperatures to 135°C (275°F)
- Sterilize by standard chemical means; autoclaving will alter accuracy
- 10, 25, 50, 100, 250, 500 and 1000mL sizes have front-to-back raised graduations
- 2000 and 4000mL sizes have standard graduations

08-572-5D

ORDERING INFORMATION:

Individually packaged

COMPLIANCE:

Meet Fed. Spec. and ASTM* E 1272 Class B accuracy requirements, as well as requirements of ISO Standard 6706.

Capac.	Subdiv.	Tol.	Mfr. No.	Cat. No.	Each	Case of
10mL	0.2mL	±0.20mL	3663-0010	**08-572-5A**	18.49	24/295.75
25mL	0.5mL	±0.34mL	3663-0025	**08-572-5B**	21.09	18/253.00
50mL	1mL	±0.50mL	3663-0050	**08-572-5C**	23.15	18/277.75
100mL	1mL	±1.0mL	3663-0100	**08-572-5D**	25.88	12/207.00
250mL	2mL	±2.0mL	3663-0250	**08-572-5E**	34.81	12/278.50
500mL	5mL	±4.0mL	3663-0500	**08-572-5F**	45.56	8/243.00
1000mL	10mL	±6.0mL	3663-1000	**08-572-5G**	56.50	6/226.00
2000mL	20mL	±12.0mL	3663-2000	**08-572-5H**	94.32	4/251.50
4000mL	50mL	±29.0mL	3663-4000	**08-572-5J**	224.63	2/299.50

Nalgene* Polypropylene Cylinders

Calibrated "To Contain/To Deliver" at 20°C

- Translucent polypropylene
- Molded-in silk-screened graduations
- Absence of meniscus eliminates guesswork
- Octagonal base prevents rolling and tipping
- Offer excellent chemical resistance
- Resist temperatures to 135°C (275°F)
- Autoclaving may alter accuracy slightly
- Sterilize by standard chemical methods

08-572D

ORDERING INFORMATION:

Individually packaged

COMPLIANCE:

Meet Fed. Spec. and ASTM* E 1272 Class B requirements, as well as all requirements of ISO Standard 6706.

Capac.	Subdiv.	Tol.	Mfr. No.	Cat. No.	Each	Case of
10mL	0.2mL	±0.20mL	3662-0010	**08-572A**	17.60	24/281.50
25mL	0.5mL	±0.34mL	3662-0025	**08-572B**	19.62	18/235.50
50mL	1mL	±0.50mL	3662-0050	**08-572C**	21.78	18/261.25
100mL	1mL	±1.0mL	3662-0100	**08-572D**	24.47	12/195.75
250mL	2mL	±2.0mL	3662-0250	**08-572E**	33.13	12/265.00
500mL	5mL	±4.0mL	3662-0500	**08-572F**	43.13	8/230.00
1000mL	10mL	±6.0mL	3662-1000	**08-572G**	53.69	6/214.75
2000mL	20mL	±12.0mL	3662-2000	**08-572H**	89.16	4/237.75
4000mL	50mL	±29.0mL	3662-4000	**08-572J**	212.44	2/283.25

Nalgene* Economy Cylinders

Calibrated "To Contain/To Deliver"

- Break-resistant
- Nonwetting
- No meniscus
- Large, raised graduations
- Resist temperatures up to 135°C (275°F)
- Large, ribbed, rounded base
- Autoclavable, but repeated autoclaving may affect accuracy
- Generous pour spouts; the 10mL size has a conical top
- Polypropylene offers greater chemical resistance than polymethylpentene

08-572-7D

Polymethylpentene (PMP) Cylinders

Capac.	Subdiv.	Mfr. No.	Cat. No.	Each	Case of
10mL	0.2mL	3665-0010	**08-572-7A**	5.88	24/94.22
25mL	0.5mL	3665-0025	**08-572-7B**	7.08	18/84.92
50mL	1mL	3665-0050	**08-572-7C**	8.84	18/106.15
100mL	1mL	3665-0100	**08-572-7D**	10.68	12/85.43
250mL	2mL	3665-0250	**08-572-7E**	14.15	12/113.17
500mL	5mL	3665-0500	**08-572-7F**	19.85	8/105.90
1000mL	10mL	3665-1000	**08-572-7G**	24.75	6/98.99

Polypropylene (PP) Cylinders

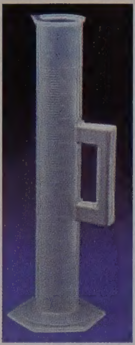
08-572-6D

Capac.	Subdiv.	Mfr. No.	Cat. No.	Each	Case of
10mL	0.2mL	3664-0010	**08-572-6A**	4.20	24/67.08
25mL	0.5mL	3664-0025	**08-572-6B**	4.92	18/59.04
50mL	1mL	3664-0050	**08-572-6C**	5.94	18/71.36
100mL	1mL	3664-0100	**08-572-6D**	6.91	12/55.28
250mL	2mL	3664-0250	**08-572-6E**	8.92	12/71.36
500mL	5mL	3664-0500	**08-572-6F**	12.96	8/69.09
1000mL	10mL	3664-1000	**08-572-6G**	15.95	6/63.82

Scienceware* Holdfast* Polypropylene Graduated Cylinders

Calibrated "To Contain/To Deliver"

- Ergonomically designed 2.9W × 8.9cmH handle
- Double scale with raised graduations
- Hexagonal base for stability
- Steam autoclavable at 121°C (250°F)
- Chemical-resistant



15-252-14

apac.	Subdiv.	Approx. Height	Mfr. No.	Cat. No.	Each
000mL	10mL	44cm	F28461 1000	**15-252-14**	18.86
000mL	20mL	50cm	F28461 2000	**15-252-15**	36.97

DESICCANTS

*Fisherbrand** Humidity Sponge Desiccant

Absorbs 16% moisture by weight

- Tyvek* pack contains 10g sodium calcium aluminosilicate hydrate
- Maintains dry atmosphere in 2 gal. (7.6L) container
- Nontoxic, meets FDA specifications for use in direct contact with food and drugs, and certified as Class M3.5 (Class 100) cleanroom compatible
- Shell is resistant to chemicals, abrasion, and aging
- Disposable window type contains blue gel that turns pink when pack is exhausted
- Reusable type comes with Relative Humidity Card that changes from blue to pink when pack is exhausted; heat pack at 177°C (350°F) to regenerate

07-580, 07-580-1

ORDERING INFORMATION:

Measures 3L × 3W × ¼"H (7.6 × 7.6 × 0.6cm)

Description	Cat. No.	Pack of 40
Disposable Window Type	**07-580**	33.40
Reusable Type	**07-580-1**	31.33

Scienceware* Reusable Desiccant Bags

Supplied in sealed, moisture-proof pouch

- Permeable polyester/felt bags contain indicating silica gel beads
- Fit bottom section of standard glass and plastic desiccators
- Bags have transparent, perforated, sealed Mylar* disc tops
- Gel beads are blue when dry, pink when moist
- Regenerate desiccant by placing cartridge in vented oven at 149°C (300°F) for three hours or until blue color returns

08-594-17B, 08-594-17A

For Desiccator Diameter	Cartridge Diameter	Mfr. No.	Cat. No.	Each
160mm	4½" (114mm)	F42045 0160	**08-594-17A**	23.39
200mm	7¾" (197mm)	F42045 0200	**08-594-17B**	51.26
250mm	9⅜" (238mm)	F42045 0250	**08-594-17C**	85.43

Drierite* Absorbents

Indicating and nonindicating

- No danger of shrinking or channeling
- Stable, constant in volume
- Nonpoisonous and noncorrosive
- In 1 or 5 lb. bottles

07-578-4A

Indicating

- Absorbs 10 to 14% of its weight in water when drying gases
- Turns pink when exhausted
- Regenerate to original blue color by heating in oven at 218°C (425°F) for one hour

Nonindicating (White)

- Absorbs 6.6% of its weight in water when drying liquids
- Regenerate by heating in oven at 218°C (425°F) for one hour
- Insoluble in organic liquids

Mesh	Size[s]	Cat. No.	Each	Case of
Indicating				
8	1 lb.	**07-578-3A**	20.90	12/227.97
8	5 lb.	**07-578-3B**	58.60	4/207.43
10–20	1 lb.	**07-578-4A**	18.61	12/203.06
10–20	5 lb.	**07-578-4B**	62.36	4/220.76
Nonindicating				
4	1 lb.	**07-577-1A**	103.56	----
4	5 lb.	**07-577-1B**	37.31	4/135.69
6	1 lb.	**07-577-2A**	78.45	----
6	5 lb.	**07-577-2B**	37.71	4/137.13
8	1 lb.	**07-577-3A**	5.45	12/59.70
8	5 lb.	**07-577-3B**	37.71	4/137.13
10–20	1 lb.	**07-577-4A**	9.10	12/99.43
10–20	5 lb.	**07-577-4B**	35.62	4/129.51

cienceware* Disposable Desiccant Cartridges

ndividually sealed in aluminum foil

- Clear plastic Petri dish-type cartridges contain silica gel that changes from blue (dry) to pink (moist), indicating disposal or replacement
- Porous membrane on top of silica gel allows air and moisture exchange, but prevents silica gel spillage
- Cartridges can be regenerated when heated according to directions

Disposable Desiccator Plate

08-594-14 Series

Cartridge Diameter	Mfr. No.	Cat. No.	Pack of 6
65mm	F42048 0065	**08-594-14A**	42.00
100mm	F42048 0100	**08-594-14B**	53.75

Drierite* Gas Purifier

Dries gases to -73.3°C (-100°F) dew point

For the removal of moisture, impurities, and particulates from gas lines.

- Refillable polycarbonate column
- Safe for working pressures up to 100psig (0.69MPa)
- Both outlet and inlet have a ⅛" (1.3mm) male tube connector
- Fritted outlet assembly prevents particulates from entering instrumentation

ORDERING INFORMATION:
Dia. × H: 2⅝ × 11⅜" (6.66 × 28.89cm)

INCLUDES:
15 cu. in. (250cm^3) each of indicating Drierite absorbent and 5A molecular sieves that can be regenerated.

09-206

Cat. No.	Each	Case of 6
09-206	144.00	788.47

Drierite* Gas Drying Jar

Dries 200L of gas per hour to -73.3°C (-100°F) dew point

Gas is fed into system through lower serrated nipple. Moisture is absorbed as gas moves through Drierite absorbent. Dry gas is expelled through top outlet.

- Jar is made of polycarbonate
- For pressure systems up to 90psig (0.62MPa)

ORDERING INFORMATION:
Dia. × H: 2⅝ × 11⅜" (6.7 × 29cm)

INCLUDES:
Approximately 20 oz. (567g) of Drierite absorbent that can be regenerated

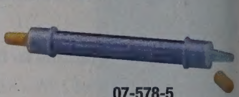
09-204

Cat. No.	Each	Case of 6
09-204	113.00	620.90

Drierite* Indicating Drying Tube

Absorbent changes color from blue to pink when exhausted

- Polycarbonate tube with polypropylene end caps
- Useful for drying gas streams and as vent dryers for Karl Fischer reaction chambers
- Unit may also be used for gravimetric determination of water vapor in air and gases
- Accepts tubing ¼ to ⅜" I.D. (6.4 to 9.5mm)


07-578-5

ORDERING INFORMATION:
Overall length: 8" (20.3cm)

INCLUDES:
1⅛ oz. (30g) of indicating Drierite absorbent

Cat. No.	Each
07-578-5	7.16

DESICCATORS

NONVACUUM

*Fisherbrand** Heavy Glass Desiccators

Annealed glass provides durability

- Apply grease to internal edges of flanges
- Press lid on jar and rotate at least 360° to ensure airtight seal
- Rim in lower portion of jar holds sample plate over desiccant

INCLUDES:
Cover

REQUIRED ACCESSORIES:
Desiccant plate

08-595A

I.D.	Uses Plate	Cat. No.	Each
100mm	95mm	08-595A	76.17
125mm	115mm	08-595B	89.77
150mm	142mm	08-595C	103.56
200mm	190mm	08-595D	172.17
250mm	230mm	08-595E	210.69

With Porcelain Plate

- Similar to 08-595 Series
- Desiccant-holding chamber has straight sides
- Sample plate has 5mm center hole, glaze on one side, and no feet

INCLUDES:
Cover and porcelain plate (08-641 Series)

08-615A

I.D.	Cat. No.	Each
200mm	08-615A	201.03
250mm	08-615B	232.28

ACCESSORIES

Replacement Covers

For 08-595 Series and 08-615 Series desiccators

For Desiccator Diameter	Cat. No.	Each	Case of
100mm	**08-595-2A**	48.61	12/425.78
125mm	**08-595-2B**	60.32	12/528.38
150mm	**08-595-2C**	55.46	12/485.83
200mm	**08-595-2D**	61.24	4/178.79
250mm	**08-595-2E**	111.00	4/324.08

Pyrex* Knob Top Desiccators

Strong, easily cleaned, borosilicate glass

- Grease sealing
- Large, sturdy knob on lid for easy handling
- Lower portion shaped to support sample plate over desiccant

08-633

APPLICATIONS:

For general analytical work

INCLUDES:

Cover

REQUIRED ACCESSORIES:

Desiccant plate

Description	Mfr. No.	Cat. No.	Each
For Small Diameter			
Complete	3078 160	**08-633**	166.44
Cover only	3078 160CO	**08-633-1**	88.26
Jar only	3078 160LO	**08-633-2**	139.37
For Large Diameter			
Cover only	3080 200CO	**08-624-1**	165.33
Jar only	3080 200LO	**08-624-3**	277.31
Complete	3080 250	**08-624B**	410.38
Cover only	3080 250CO	**08-624-2**	190.54
Jar only	3080 250LO	**08-624-4**	362.40

WARNING

Not for vacuum applications. Do not heat or subject to pressure.

Kimax* Nonvacuum Glass Desiccators

Made for durability and efficiency in daily use

- Jars shaped to hold sample plate (not supplied) above desiccant
- Bottoms sloped so desiccant can be removed easily

08-595-5A

INCLUDES:

Cover

REQUIRED ACCESSORIES:

Desiccant plate

.D.	For Plate	Mfr. No.	Cat. No.	Each
60mm	140mm	21050 160	**08-595-6**	217.07
00mm	190mm	21050 200	**08-595-5A**	346.14
50mm	230mm	21050 250	**08-595-5B**	380.73

VACUUM

*Fisherbrand** Desi-Vac Container* Desiccator with Vacuum Pump

Built-in manual vacuum pump eliminates need for separate pump, tubing and stopcock

08-664-5 Series

- Ideal for drying, preserving, storing and shipping samples
- Self-contained unit holds a vacuum of 14.7"Hg (373mm) in excess of 24 hours
- Rubber O-ring in cover ensures a tight seal
- To remove cover, simply push release button to allow air into container
- Clear polycarbonate body, metal pump handle, chemical-resistant ABS plastic pump and cover
- No plate required

APPLICATIONS:

Ideal for drying, preserving, storing and shipping samples

ORDERING INFORMATION:

Can be used with Fisherbrand Humidity Sponge* Desiccant (07-580)

Volume	Diameter × Height	Cat. No.	Each
600mL	4⅛ × 3¾" (10.5 × 9.5cm)	**08-664-5A**	24.95
850mL	4⅛ × 5" (10.5 × 12.7cm)	**08-664-5B**	27.95
1100mL	4⅛ × 6" (10.5 × 15.2cm)	**08-664-5C**	31.12

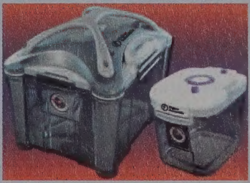
WARNING

Do not autoclave or expose container to organic solvents or their vapors. Do not use concentrated acids as desiccants.

*Fisherbrand** Desi-Vac* Containers

Vacuum and desiccants keep material dry

Plastic container with built-in vacuum pump is ideal for drying, preserving, storing, and even shipping samples.



15-077-956, -955

- Vacuum pump built into the top removes air with manual strokes
- Rubber O-ring-sealed cover maintains vacuum
- Achieves a vacuum of better than 200" of water (15" of mercury)
- Release button allows air into the container to remove lid
- Vacuum-indicating button confirms interior vacuum
- Dial hygrometer displays 0 to 100% relative humidity with a resolution of 2% RH
- Perfect for storing chemicals, powders, tissues, plant sections, electronics, and weighing samples

INCLUDES:

Fisherbrand Sample Humidity Sponge* Desiccant drying packets

Volume	Length × Width	Cat. No.	Each
3000cc	8½ × 6½" (21.6 × 16.5cm)	**15-077-955**	31.44
11,500cc	11⅘ × 10" (30 × 25.4cm)	**15-077-956**	82.59

Pyrex* Sleeve Top Desiccators

Can be used in bacteriological work as an anaerobic culture jar

- Rated 1 atmosphere vacuum
- Low height makes it easy to place in incubator
- ⅜" O.D. (10mm) tooled hose connection to sleeve for vacuum hookup
- Sleeve turns to open or close air pathway for pulling or releasing vacuum
- Holds vacuum of 500mm of mercury over 24-hour period
- Small diameter model has $ 40/35 external sleeve and rim to support sample plate
- Large diameter model has $ 55/38 sleeve joint along with three internal molded lugs to support plate

08-631B

REQUIRED ACCESSORIES:
Desiccant plate

I.D.	For Plate	Mfr. No.	Cat. No.	Each
Small Diameter				
160mm	140mm	3118 160	**08-632**	269.47
Large Diameter				
200mm	190mm	3120 200	**08-631A**	569.87
250mm	230mm	3120 250	**08-631B**	550.13

WARNING
Do not heat or subject to pressure.

ACCESSORIES

Pyrex* Vacuum Desiccator Replacement Parts

Description	Mfr. No.	Cat. No.	Each
For Small Diameter			
Cover[1]	3118 160CO	**08-632-1**	138.28
Sleeve	3118 SO	**08-632-2**	71.65
Ring	3118 RO	**08-631-1A**	6.63
For Large Diameter			
Cover (200mm I.D.)[1]	3120 200CO	**08-632-3**	226.97
Cover (250mm I.D.)[1]	3120 250CO	**08-631-1B**	254.85
Sleeve[2]	3120 SO	**08-631C**	133.74
Ring[2]	3120 RO	**08-631-1C**	5.97

[1] *When ordering cover assembly, sleeve and ring must be purchased.*
[2] *For both 08-631A and 08-631B Desiccators.*

LOOKING FOR DESICCATOR PLATES?
See Desiccator Plates subsection on pp. 584-585.

Pyrex* Stopper Top Large-Diameter Desiccator

Convenient access port in cover

- Rated 1 atmosphere vacuum
- Grease sealing
- Opening in knob accommodates No. 8 one-hole rubber stopper
- Insert 5mm glass tubing through hole in stopper and attach to vacuum pump for fast moisture removal
- Holds vacuum of 19.7"Hg (50cm) over 24-hour period
- Three internal lugs support plate above desiccant

08-626A

REQUIRED ACCESSORIES:
Desiccant plate

I.D.	For Plate	Mfr. No.	Cat. No.	Each
200mm	190mm	3100 200	**08-626A**	375.70
250mm	230mm	3100 250	**08-626B**	400.64

WARNING
Do not heat or subject to pressure.

ACCESSORIES

Pyrex* Stopper Top Desiccator Replacement Parts

Fit large desiccators

Description	I.D.	Mfr. No.	Cat. No.	Each
Cover only, 200mm I.D.	200mm	3100 200CO	**08-626-1**	182.25
Jar only	200mm	3080 200LO	**08-624-3**	277.31
Cover only, 250mm I.D.	250mm	3100 250CO	**08-626-2**	220.84
Jar only	250mm	3080 250LO	**08-624-4**	362.40

Wheaton Dry Seal* Desiccator

No need to use flange grease

- Silicone O-ring fits into grooves in both flanges
- Forms an airtight seal as lid is compressed onto lower body by vacuum
- As soon as vacuum is released, lid can be lifted; no need to twist or slide it open

INCLUDES:
Cover, sleeve valve, silicone O-ring, and aluminum plate

08-634A

Size	$ Joint Size	Mfr. No.	Cat. No.	Each
100mm	40/35	365882	**08-634A**	162.25
150mm	40/35	365884	**08-634B**	218.72
250mm	55/38	365886	**08-634C**	444.63

*Trademark. See Trademark Reference.

Prices subject to change.

Nalgene* Transparent Polycarbonate Desiccator

or easy viewing of vessels and desiccant in base

- Lightweight and virtually unbreakable
- Similar in dimensions to glass desiccators but more cost-effective
- Wide base provides superior stability
- Includes ports on both cover and base for maximum convenience
- Holds a vacuum of 28"Hg (71.1cm) for 24 hours
- Silicone O-ring ensures an airtight seal; no need to use grease
- With removable stopcock

08-642-7 (plate and desiccant must be ordered separately)

PPLICATIONS:

deal for vacuum and nonvacuum pplications

RDERING INFORMATION:

akes standard 230mm desiccator plate, uch as 08-642-10; accepts ¼ to ⅜" I.D. .6 to 1cm) vacuum tubing

INCLUDES:

TPE cap to seal side arm for nonvacuum use

eight	O.D.	Mfr. No.	Cat. No.	Each	Case of 4
3" (33cm)	11" (28cm)	5311 0250	**08-642-7**	154.97	413.27

WARNING

Do not autoclave or expose polycarbonate to organic solvents or their vapors. Will not shatter or implode at full vacuum when used according to instructions included with product.

algene* Desiccator with Stopcock

ill not shatter or implode t full vacuum

- Vacuum connector is on the chemical-resistant, polypropylene body
- Polypropylene stopcock has PTFE resin TFE plug; makes 250mm cover easy to handle
- Can be used with ¼" I.D. (6.4mm) vacuum tubing
- Straight bore design eliminates leakage
- No gasket necessary; grease makes polycarbonate cover airtight
- Recessed rim keeps grease off benchtop when cover is set down

RDERING INFORMATION:

erall height: 9⅝" (24cm); outside ameter: 13" (33cm), including opcock

INCLUDES:

Cover, stopcock

REQUIRED ACCESSORIES:

230mm plate

r. No.	Cat. No.	Each	Case of 4
10 0250	**08-642-5**	162.96	434.54

WARNING

For use at room temperature only. Do not use concentrated acids as desiccants.

Scienceware* Chemical-Resistant Vacuum Desiccator

Lower section is chemical-resistant polypropylene; upper section is shatterproof, transparent polycarbonate

- Holds vacuum of 29"Hg (73.6cm) below ambient pressure for 24 hours
- Molded groove in flange holds neoprene O-ring; seal unaffected by low temperature to 0°C
- Stopcock is highly visible red

08-594-15 Series

ORDERING INFORMATION:

Retention valve takes ¼" I.D. (6.4mm) tubing; can be used with incandescent crucibles if conventional porcelain plate is substituted for the plastic plate supplied.

INCLUDES:

Upper and lower sections, stopcock, neoprene O-ring, perforated polypropylene sample plate

Height	Flange O.D.	For Plate	Mfr. No.	Cat. No.	Each	Case of 4
8⅛" (206mm)	171mm	140mm	F42010 0000	**08-594-15A**	58.86	204.77
10¼" (260mm)	230mm	190mm	F42020 0000	**08-594-15B**	78.30	272.34
12⅛" (311mm)	273mm	230mm	F42025 0000	**08-594-15C**	107.09	372.47

Scienceware* Transparent Vacuum Desiccator

Transparent lower section makes it easy to check desiccant color

- With clear polycarbonate upper and lower sections
- Otherwise the same as 08-594-15 Series

INCLUDES:

Upper and lower sections, neoprene O-ring, stopcock, polypropylene sample plate

08-594-16C (rack not included)

Height	Flange O.D.	For Plate	Mfr. No.	Cat. No.	Each
206mm	171mm	140mm	F42012 0000	**08-594-16A**	55.28
260mm	230mm	190mm	F42022 0000	**08-594-16B**	71.36
311mm	273mm	230mm	F42027 0000	**08-594-16C**	96.48

Scienceware* Secador* Techni-Dome* Vacuum Dessicator

High-volume dessicator for large items or loads; safeguards samples, electronics, other high-value items

01-817-50

Spherical shape accommodates racks, trays, instruments, items up to 18" (46cm) tall, 20" (51cm) wide.

- Holds vacuum of 29"Hg (73.7cm) for 24 hours
- Clear polycarbonate construction for corrosion resistance, enhanced visibility, easy cleaning
- Molded-in handles allow easy transport and removal of top half of unit
- Neoprene O-ring requires no vacuum grease at room temperature; under cold conditions, grease ensures a tight seal to 0°C
- Polypropylene stopcock with PTFE plug easily turns to minimize disturbance to contents

REQUIRED ACCESSORIES:
For vacuum applications, unit requires ¼" I.D. (6.4mm) tubing; for nonvacuum applications, dessicator drying material (not included) can be used.

ORDERING INFORMATION:
Storage capacity: 4000 cu. in. Weight: 11 lb. (5kg).
Max. O.D. (at handles): 23" (58cm). Footprint: 12" (31cm).

INCLUDES:
Two removable polypropylene shelves

Capacity	Mfr. No.	Cat. No.	Each
4000 cu. in.	F42029 0000	**01-817-50**	599.00

Jencons Desiccators with SealCote*

With protective shielding for added safety against vacuum glassware damage

- SealCote coating contains broken glass and provides excellent chemical resistance
- Requires no grease

INCLUDES:
Sealing ring, desiccator plate, PTFE stopcock

08-625A

I.D.	Plate Size	Cat. No.	Each
100mm	76mm	**08-625A**	244.11
150mm	127mm	**08-625B**	281.88
200mm	178mm	**08-625C**	398.73
250mm	229mm	**08-625D**	563.75
300mm	279mm	**08-625E**	962.48

PLATES

*Fisherbrand** Polypropylene Desiccator Plates

Unbreakable, economical

- Without feet
- Outside rim is flanged to increase rigidity and retard sliding

08-643-2A

ORDERING INFORMATION:
Thickness: 6mm. Center hole: ¾" (2cm).

Plate Dia.	Hole Dia.	No. Holes	Cat. No.	Each	Case of 10
140mm	6mm	24	**08-643-2A**	18.21	154.38
190mm	11mm	24	**08-643-2B**	21.80	184.74
238mm	14mm	32	**08-643-2C**	24.38	206.63

Nalgene* Ceramic Metal Desiccator Plate

Metal with bonded, fire-polished surfaces of inert, nonstick glass

Guaranteed unbreakable.

- With numbered quadrants for easy location of crucibles and other containers
- Has six holes in each quadrant and a 3mm center hole
- Autoclavable

08-642-10

ORDERING INFORMATION:
Individually packaged

Plate Dia.	Mfr. No.	Cat. No.	Each	Case of 6
230mm	5312 0230	**08-642-10**	96.68	386.75

Coors* Porcelain Desiccator Plates for Crucibles

With 30mm diameter holes for crucibles

- With or without three 16mm feet to support plate
- Glazed on top

08-636A

Plate Dia.	No. of Holes	Mfr. No.	Cat. No.	Each	Case of
With Feet					
95mm	3	60444	**08-636A**	37.74	8/274.47
115mm	4	60445	**08-636B**	79.27	8/561.20
142mm	5	60446	**08-636C**	57.20	6/293.35
146mm	7	60447	**08-636D**	49.71	6/254.95
190mm	7	60448	**08-636E**	58.91	4/208.52
230mm	8	60449	**08-636F**	75.43	3/200.26
Without Feet					
230mm	8	60451	**08-641D**	63.86	3/169.53

*Trademark. See Trademark Reference.

Coors* Porcelain Desiccator Plates

One large center hole

- Without feet
- Glazed on one side

08-641F

Hole Dia.	Plate Dia.	Mfr. No.	Cat. No.	Each	Case of
1mm	190mm	60452	**08-641F**	54.77	4/193.89
2mm	230mm	60453	**08-641E**	63.86	3/169.53
5mm	140mm	60454	**08-641A**	41.94	6/228.76
5mm	190mm	60455	**08-641B**	54.77	3/145.41
5mm	230mm	60456	**08-641C**	63.86	3/169.53

CABINETS

Fisherbrand* Stainless-Steel Desiccator Cabinets

Manual relief valve lets you equalize chamber pressure before opening door

- Polished stainless steel with 3⁄16" thick (4.8mm) glass
- Airtight door with neoprene gasket, full-height hinges and double-action bar locks
- Fixed wire shelf brackets every ½" (13mm)

08-645-11

Standard Size

- Glass on door and sides
- Tray holds 454g of desiccant
- Weighs 23 lb. (10kg)

Large Size

- Glass on door and back, stainless-steel sides
- Shelf W × D: 13⅜ × 18" (34 × 46cm)
- Weighs 57 lb. (26kg)

INCLUDES:

Two stainless-steel shelves, desiccant tray

Cabinet Size	Outside L × W × H	Cat. No.	Each
Standard	12¼ × 12½ × 12¼" (31 × 32 × 31cm)	**08-645-6**	1010.96
Large	22¼ × 16½ × 23" (56.5 × 42 × 58cm)	**08-645-11**	2091.59

ACCESSORIES

Accessories/Replacement Parts

Additional trays and shelves for Fisherbrand* Stainless-steel Desiccator Cabinets (08-645-6, -11 above).

Description	For Cabinet	Cat. No.	Each
Desiccant Tray	08-645-6	**08-645-13**	100.00
Desiccant Tray	08-645-11	**08-645-23**	172.89
Cabinet Shelf	08-645-6	**08-645-15**	123.51
Door Gasket	08-645-6	**08-645-17**	83.48
Door Gasket	08-645-11	**08-645-27**	161.14

Fisherbrand* Desiccator Cabinets

Durable construction withstands shock

- Made of clear, strong ⅛" thick (3mm) polymethyl methacrylate (PMMA) resin
- Rubber door gasket ensures airtight seal
- Removable shelves on brackets allow for low or high objects
- Maximum load: 4½ lb. (2kg)

08-647-46

Horizontal Cabinet

- Includes tray for silica gel and two clear molded shelves with vent holes
- Two sets of removable shelf rails allow for eight levels of shelf placement
- Door opening: 18¼W × 10¼"H (47 × 26cm)
- Inside depth: 11⅝" (30cm)

08-647-47

Tall Cabinet

- Includes tray for silica gel and three clear molded shelves with vent holes
- Three sets of removable shelf rails allow for 14 levels of shelf placement
- Door opening: 10¼W × 18⅜"H (26 × 47cm)
- Inside depth: 11⅝" (30cm)

ORDERING INFORMATION:

Distance between shelves: 2" (5cm) between bottom and first shelf; 1¼" (3cm) between other shelves.

INCLUDES:

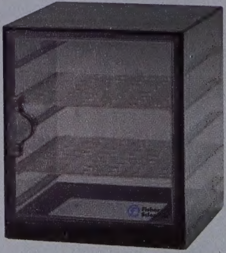
Desiccant tray

Description	Outside L × W × H	Cat. No.	Each
Horizontal	20 × 13¾ × 13⅜" (51 × 35 × 34cm)	**08-647-46**	478.603
Tall	12 × 13¾ × 21" (31 × 35 × 53cm)	**08-647-47**	440.52

*Fisherbrand** Pasolina* Desiccator Cabinets

Easy-open latch makes it simple to insert and remove samples quickly

- Made of molded, smoke-brown-tinted acrylonitrile-styrene (AS) resin
- Urethane gasket on door ensures airtight seal
- Five sets of shelf rails allow for low or high objects



08-647-44

ORDERING INFORMATION:

Maximum load: 11 lb. (5kg)
Distance between shelves: 2⅝" (7cm)
Door opening: 11⅝W × 15¼"H (30 × 39cm)
Overall dimensions: 14L × 14W × 16⅛"H (36 × 36 × 41cm)
Inside depth: 13⅞" (35cm)
Optional handle on top of unit for easy transport
Carrying weight: 8 lb. (3.6kg)

INCLUDES:

Tray for silica gel, two clear molded polystyrene shelves with vent holes, four rubber legs

Description	Cat. No.	Each
With handle	**08-647-45**	250.18
Without handle	**08-647-44**	239.30

*Fisherbrand** Unit Desiccator Cabinets

Made of smoke-brown-tinted acrylonitrile-styrene (AS) resin

- Neoprene gasket on door ensures airtight seal
- Stainless-steel door latch
- Four sets of shelf rails accommodate short or tall objects
- Optional handle on top of unit for easy transport

08-647-41

ORDERING INFORMATION:

Maximum loaded weight: 11 lb. (5kg)
Distance between shelves: 1⅝" (4cm)
Door opening: 8¼W × 7⅝"H (21 × 19cm)
Outside dimensions: 10L × 10W × 10"H (25 × 25 × 25cm)
Inside depth: 8¾" (22cm)
Carrying weight: 3¼ lb. (1.5kg)

INCLUDES:

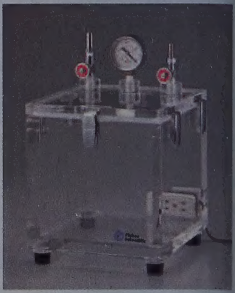
Tray for silica gel, two clear polystyrene shelves with vent holes.

Description	Cat. No.	Each
With handle	**08-647-41**	184.91
Without handle	**08-647-40**	174.03

*Fisherbrand** Vacuum Desiccator Cabinets

Ideal for vacuum testing, defoaming, and storing samples under various atmospheres

- Available with or without plug socket
- Made of clear, strong, reinforced ¾" thick (2cm) polymethylmethacrylate (PMMA)
- Maximum vacuum pressure: 1 torr



08-647-42

With plug socket

- Can be used with inert gases (e.g., nitrogen)
- Removable cover makes it easy to insert and take out samples
- Lid opening: 8⅜W × 8⅜"H (21 × 21cm)
- Inside dimensions: 8⅜D × 8⅜W × 8⅜"H (21 × 21 × 21cm)
- Overall height: 15¼" (39cm)

08-647-43

Without plug socket

- Capable of withstanding 1mmHg pressure
- Silicone gasket on door ensures airtight seal and eliminates need for vacuum grease
- Includes tray for silica gel and two clear PMMA ⅛" thick (4mm) shelves with vent holes
- Distance between shelves: 4¼" (11cm)
- Door opening: 10⅜W × 10⅜"H (26 × 26cm)
- Inside depth: 7¼" (18cm)
- Overall height: 18⅜" (47cm)

ORDERING INFORMATION:

Each model has a 0 to 30"Hg vacuum gauge and two vacuum valves mounted to top. One vacuum valve accepts ¼ to ⅜" I.D. (6 to 8mm) intake tubing; the other accepts ½" (13mm) exhaust tubing.

Description	Outside L × W × H	Cat. No.	Each
With plug socket	10 × 10 × 10" (25 × 25 × 25cm)	**08-647-42**	1432.61
Without plug socket	12 × 8¾× 12" (31 × 22 × 31cm)	**08-647-43**	1326.49

*Trademark. See Trademark Reference.

Prices subject to change.

*Fisherbrand** Acrylic Desiccator Cabinets

Dust- and moisture-free storage in refrigerators, freezers, and on benchtops

08-642-23C

Ideal for storing anhydrous and hygroscopic biological and chemical compounds, as well as electronic assemblies and any components requiring controlled storage conditions.

- Neoprene gasket on door ensures tight seal
- Door is secured with two stainless-steel latches (large size has three latches) and full-height hinge
- Removable, lipped tray holds solid desiccant
- Shelves are removable, adjustable, and vented to maximize airflow

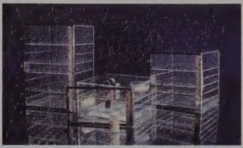
ORDERING INFORMATION:

Cabinets measure 12L × 12"W (30.5 × 30.5cm).

No. of Shelves	No. of Grooves	Height	Cat. No.	Each
2	3	7" (17.8cm)	**08-642-23A**	248.83
3	5	12" (30.5cm)	**08-642-23B**	317.02
4	7	18" (45.7cm)	**08-642-23C**	404.69

Nalgene* Acrylic Desiccator Cabinets

Provide dust- and moisture-free storage



Left to right: 08-642-22, 08-642-20, 08-642-21

Ideal for storing anhydrous and hygroscopic biological and chemical compounds, as well as electronic assemblies and any components requiring controlled storage conditions. Use in refrigerators, freezers, and on the benchtop

- Neoprene gasket on door ensures tight seal
- Door is secured with two stainless-steel latches and full-height hinge
- Removable, lipped tray holds solid desiccant
- Shelves are removable, adjustable, and vented to maximize airflow

ORDERING INFORMATION:

Cabinets measure 12L x 12"W (30.5 x 30.5cm).

Height	No. of Shelves	No. of Grooves	Mfr. No.	Cat. No.	Each
7" (17.8cm)	2	3	5317 0070	**08-642-20**	339.42
12" (30.5cm)	3	5	5317 0120	**08-642-21**	439.55
18" (45.7cm)	4	7	5317 0180	**08-642-22**	549.00

Scienceware* Secador* Desiccator Cabinets

Small Desiccator Cabinets

Compact desiccator cabinets with small footprint; stackable for maximizing laboratory storage space

08-647-51

- Airtight, one-latch construction
- Nonelectric
- Capacity: 0.75 cu. ft. (21L)

ORDERING INFORMATION:

Weight: 13½ lb. (6.1kg)
Outside dimensions: 16¼L × 13⅜W × 8⅜"H (41 × 34 × 21cm)
IInside depth: 14" (36cm)

Color	Mfr. No.	Cat. No.	Each
Clear	F42071 0000	**08-647-50**	155.58
Clear with Blue End Caps	F42071 0006	**08-647-51**	155.58

Large Desiccator Cabinets

Can be reconfigured as either horizontal or vertical using conversion shelves

- Polystyrene shelves with waffle pattern for maximum air circulation
- Two latches in horizontal or vertical configurations
- Vertical cabinets: three shelves adjustable up to four positions
- Horizontal cabinets: two shelves adjustable up to two positions

08-647-58

Standard Models

- Nonelectric
- Weight: 24⅜ lb. (11.1kg)

Auto-Desiccator Models

- Continual silica gel desiccation is regenerated every 20 minutes
- Reduces RH from 75% to less than 25% in approximately eight hours
- Keeps the RH at a constant level
- Heater and two fans provide continuous airflow and humid air exhaust
- Conversion shelves reconfigure cabinets between vertical and horizontal

08-647-57

ORDERING INFORMATION:

Capacity: 2 cu. ft. (57L)
Inside depth: 14" (36cm)
Outside dimensions:
16¼L × 13⅜ × 20⅜" (41 × 34 × 52cm)
Weight: 26⅜ lb. (12kg)
115V, 50/60Hz

08-647-52

CERTIFICATIONS:

UL listed

Description	Mfr. No.	Cat. No.	Each
Nonelectric Cabinets, Vertical			
Clear	F42074 1000	**08-647-54**	550.00
Clear with Blue End Caps	F42074 1006	**08-647-55**	550.00
Nonelectric Cabinets, Horizontal			
Clear	F42074 0000	**08-647-58**	550.00
Clear with Blue End Caps	F42074 0006	**08-647-59**	550.00
Auto-Desiccator Cabinets, Vertical			
Clear	F42074 1115	**08-647-52**	675.00
Clear with Blue End Caps	F42074 1116	**08-647-53**	675.00
Conversion shelf	F42074 1001	**01-816-19**	24.31
Auto-Desiccator Cabinets, Horizontal			
Clear	F42074 0115	**08-647-56**	675.00
Clear with Blue End Caps	F42074 0116	**08-647-57**	675.00
Conversion shelf	F42074 0001	**01-816-18**	27.50

Scienceware* Dry-Keeper* Desiccator Cabinets

- Horizontal or tall cabinets molded of clear and black methylmethacrylate plastic
- Features 0 to 100 scale hygrometer with a 2¼" (57mm) dial mounted in door to measure relative humidity inside
- Optional Autodesiccator, has an electronic control section that automatically regenerates the silica gel desiccant for ½ hour after every 4½ hours of operation
- Maintains low (30 to 40%) relative humidity inside the cabinet

08-647-24

ORDERING INFORMATION:
Control section dimensions: 4½L × 6W × 12"H (11 × 15 × 30cm). With desiccant tray. For 110V 50/60Hz.

Horizontal Cabinet. Two sets of shelf rails and two clear molded shelves with vent holes allow eight levels of shelf placement. Door frame inside dimensions: 17⅞W × 10"H (45 × 25cm); Cabinet depth: 13¼" (34cm); Overall dimensions: 19⅝L × 14¾W × 13¾"H (50 × 37 × 35cm).

Tall Cabinet. Three sets of removable shelf rails and three clear molded shelves with vent holes allow 15 levels of shelf placement. Door frame inside dimensions: 10W × 17⅞"H (25 × 45cm). Cabinet depth: 13¼" (34cm). Overall dimensions: 12½L × 15¼W × 20"H (32 × 39 × 51cm).

Cabinet	Mfr. No.	Cat. No.	Each
Horizontal Cabinet			
Standard	H42058 0001	**08-647-28**	798.00
With Autodesiccator	H42058 0003	**08-647-30**	973.89
Tall Cabinet			
Standard	H42056 0001	**08-647-24**	695.37
With Autodesiccator	H42056 1003	**08-647-26**	1029.00

Labconco* Fiberglass Desiccator Cabinet

Leak tested at 25"Hg (0.09MPa) below ambient pressure

- Withstands 29"Hg (0.1MPa) pressure
- Vacuum release needle valve equalizes chamber pressure gradually
- Made of fiberglass-reinforced polyester resins
- Clear tempered-glass door
- Nine molded shelf supports permit flexible shelf arrangements
- Can be stacked on top of each other using accessory Stacking Rack (16-307-242), available online

08-644

ORDERING INFORMATION:
Overall: 13½L × 17W × 14¾"H (34 × 43 × 37cm). Height on stand: 15⅜" (39cm).

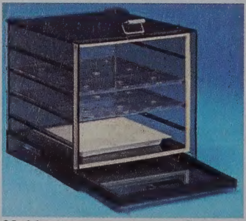
INCLUDES:
Two 12 × 12" (30.5 × 30.5cm) shelves with twelve ⅞" (22mm) holes in each; door; needle valve; desiccant pan; wire support stand

Mfr. No.	Cat. No.	Each
5530000	**08-644**	1675.00

Scienceware* Dry-Keeper* Stackable Desiccator Cabinets

- Injection-molded, high-impact polystyrene
- Strong, rigid, airtight
- Open door slides into a compartment underneath
- Can be stacked five high

ORDERING INFORMATION:
Small Stackable Cabinet. Transparent. Inside dimensions: 7D × 8¼W × 5"H (18 × 21 × 13cm). Door opening: 7½W × 4⅜"H (19 × 11cm). Overall size: 8⅞L × 9¼W × 6⅝"H (22 × 23 × 17cm).


08-647-22

Medium Stackable Cabinet. Smoke-tinted. Includes tray for silica gel and two molded shelves with vent holes. Four sets of shelf rails allow for low or high objects. Door opening: 9W × 8"H (23 × 20cm). Inside depth: 9" (23cm). Outside dimensions: 10L × 10W × 10"H (25 × 25 × 25cm).

Cabinet Size	Mfr. No.	Cat. No.	Each
Small	H42053 0000	**08-647-20**	123.53
Medium	H42053 0001	**08-647-22**	265.32

*Trademark. See Trademark Reference.

Prices subject to change.

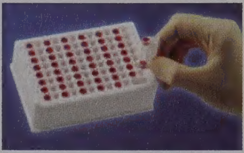
DIALYSIS

DEVICES

Thermo Scientific* Pierce* Rapid Equilibrium Dialysis (RED) System

NEW

Offers greater ease-of-use and versatility in less time than traditional equilibrium dialysis methods



PI-89809, PI-89811

Equilibrium dialysis is the preferred method to determine plasma protein binding, a critical step in drug development. Traditional methods of equilibrium dialysis are labor-intensive, time-consuming, cost-prohibitive, and difficult to automate. The RED Device for rapid equilibrium dialysis was developed in close association with the pharmaceutical industry to specifically address these issues.

- Comprised of disposable tube inserts and a 96-well PTFE base plate
- Each lot is tested in a protein binding assay for guaranteed performance
- Validated for plasma binding assays, producing results consistent with those reported in literature
- Convenient insert removal tool available

Inserts

- Disposable—require no presoaking, assembly, or specialized equipment
- Short incubation time—large dialysis surface area accelerates equilibrium
- MWCO: 8000 Daltons
- Membrane material: Regenerated cellulose with low glycerol content as a humectant

Base Plate

- Compatible with automated systems
- Compartmentalized—eliminates potential for crosstalk or leakage
- PTFE construction—eliminates nonspecific binding and risk of contamination
- Accepts 1 to 48 inserts—run number of assays needed without waste

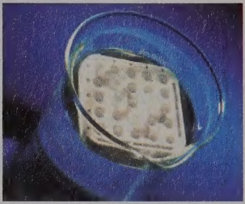
APPLICATIONS:

Determination of free drug vs. drug bound to plasma proteins; pharmacokinetics studies; formulation of drug dosage for in vivo studies; drug-drug interaction studies; selection criteria during drug lead optimization

Description	Cat. No.	Price
RED Inserts	PI-89809	Pk. of 50/360.50
RED Inserts	PI-89810	Cs. of 250/1545.00
Base Plate	PI-89811	Ea./329.60
Insert Removal Tool	PI-89812	Ea./82.40

Thermo Scientific* Pierce* Slide-A-Lyzer* MINI Dialysis Units

Designed for dialyzing and recovering extremely small sample volumes



PI-69552

- No wicking around the membrane—an occurrence in homemade devices
- 100% leak tested
- Units have working sample volume range of 10 to 100µL
- >90% sample recovery
- Ready to use; no membrane treatment or assembly required
- Inert polypropylene cup has a regenerated cellulose membrane on the bottom
- Caps are provided to seal each unit to prevent evaporation and airborne contamination

INCLUDES:

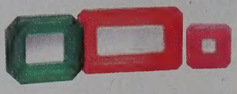
Caps

Description	Cat. No.	Each
3500 Dalton MWCO		
50 units	PI-69550	126.00
250 units	PI-69552	384.00
7000 Dalton MWCO		
50 units	PI-69560	126.00
250 units	PI-69562	394.00
10,000 Dalton MWCO		
10 units, plus microtubes	PI-69574	50.00
10 units, plus float	PI-69576	53.00
50 units	PI-69570	126.00
250 units	PI-69572	394.00

Slide-A-Lyzer MINI Dialysis Unit Technology is protected by U.S. Patent 6,039,871.

Thermo Scientific* Pierce* Slide-A-Lyzer* Dialysis Cassettes

Flat shape has better surface area/sample volume ratio than flat dialysis tubing—dialyze the same volume in half the time



Dialysis membranes made of low-binding regenerated cellulose remove low molecular weight contaminants and perform buffer exchange, desalting, and concentration.

- Recover up to 95% of sample volume with a needle and syringe
- Available in 2000, 3500, 7000, 10,000 and 20,000 Dalton MWCO
- Membranes separated by a gasket and held in place by a color-coded rigid frame
- Manufactured under cleanroom conditions to ensure absence of contaminants
- Sample chambers are hermetically sealed to maintain the highest possible sample integrity
- 30mL cassette has built-in buoy for flotation

Capacity	Sulfur Content	Heavy Metals Content	Glycerol Content	Cat. No.	Pack of
2000 Dalton MWCO					
0.2–0.5mL	0.169%	Trace	Trace	**PI-66205**	10/73.37
0.5–3mL	0.169%	Trace	Trace	**PI-66203**	10/73.37
3–12mL	0.169%	Trace	Trace	**PI-66212**	8/94.47
12–30mL	0.169%	Trace	Trace	**PI-66230**	6/75.38
3500 Dalton MWCO					
0.1–0.5mL	0.1–0.15%	Trace	Trace	**PI-66333**	10/73.00
0.5–3mL	0.1–0.15%	Trace	Trace	**PI-66330**	10/73.00
3–12mL	0.1–0.15%	Trace	Trace	**PI-66110**	8/94.00
12–30mL	0.1–0.15%	Trace	Trace	**PI-66130**	6/76.00
7000 Dalton MWCO					
0.10–0.5mL	0.1–0.15%	Trace	13%	**PI-66373**	10/73.00
0.5–3mL	0.1–0.15%	Trace	13%	**PI-66370**	10/73.00
3–12mL	0.1–0.15%	Trace	13%	**PI-66710**	8/94.00
10,000 Dalton MWCO					
0.1–0.5mL	0.1–0.15%	Trace	21%	**PI-66383**	10/73.00
0.1–0.5mL	0.1–0.15%	Trace	21%	**PI-66384**	50/340.43
0.5–3mL	0.05%	Trace	21%	**PI-66380**	10/73.00
3–12mL	0.05%	Trace	21%	**PI-66810**	8/94.00
3–12mL	0.05%	Trace	21%	**PI-66811**	40/440.55
12–30mL	0.1–0.15%	Trace	21%	**PI-66830**	6/76.00
20,000 Dalton MWCO					
0.2–0.5mL	0.04%	Trace	Trace	**PI-66005**	10/70.00
0.5–3mL	0.04%	Trace	Trace	**PI-66003**	10/70.00
3–12mL	0.04%	Trace	Trace	**PI-66012**	10/90.00
12–30mL	0.04%	Trace	Trace	**PI-66030**	10/72.00

Slide-A-Lyzer Dialysis Cassette Technology is protected by U.S. Patent 5,503,741 and other patent pending.

ACCESSORIES

Dialysis Buoys

Serve as a flotation device for cassettes during dialysis and as a benchtop stand to hold cassettes during sample loading and recovery

- Single buoys hold one 0.1–0.5mL, 0.5–3mL, or 3–12mL capacity cassette
- Carousel Buoy holds ten 0.1–0.5mL or 0.5–3mL cassettes

Description	Holds	Cat. No.	Pack of
Single Buoys	One 3–12mL cassette	**PI-66432**	8/21.13
Single Buoys	One 0.1–0.5mL or 0.5–3mL cassette	**PI-66430**	10/26.16
Carousel Buoy	Ten 0.1–0.5mL or 0.5–3mL cassettes	**PI-66431**	1/37.22

Syringes and Needles

Sterile 1" long beveled needles in packs of 10 syringes and needles.

Description	Cat. No.	Pack of 10
1mL Syringe and 18-gauge Needle	**PI-66494**	21.13
5mL Syringe with 18-gauge Needle	**PI-66490**	21.13
20mL Syringe with 18-gauge Needle	**PI-66493**	22.13

Thermo Scientific* Pierce* Gamma Irradiated Slide-A-Lyzer* Dialysis Cassettes

For performing sample preparation in applications that require sterile conditions

PI-66455, PI-66454, PI-66453

- Sterility tested in both trypticase soy broth medium for identifying total growth and fluid thioglycollate medium for identifying anaerobic growth
- Require half the time of flat dialysis tubing because of better surface area/sample volume ratio and double membrane
- Produce sample volume recovery up to 95% with needle and syringe
- Eliminate preparation and loading hassles
- Manufactured under cleanroom conditions; sample chambers are hermetically sealed to maintain the highest possible sample integrity
- Frames can be easily labeled for quick sample identification
- Do not require the use of knots or clips that can lead to leaking and sample loss

APPLICATIONS:

Ideal for researchers culturing cells and microorganisms; purifying viruses, DNA and RNA; or performing sample preparation for other applications requiring minimal risk of sample contamination.

MWCO	Capacity	Cat. No.	Pack of
10,000 Daltons	0.1–0.5mL†	**PI-66454**	10/99.00
10,000 Daltons	0.5–3mL	**PI-66455**	10/109.41
10,000 Daltons	3–12mL	**PI-66453**	8/100.50

† Extra-strength membrane

Slide-A-Lyzer Dialysis Cassette Technology is protected by U.S. Patent 5,503,741 and other patent pending.

Thermo Scientific* Pierce* Slide-A-Lyzer* Dialysis Kits

Contains cassettes, buoys, syringes, and 18-gauge needles for convenient dialysis

NEW

- 0.1–0.5mL and 0.5–3mL sample volume range kits contain 10 cassettes, 10 buoys, 10 syringes, and 10 18-gauge needles
- 3–12mL capacity kits contain eight cassettes, eight buoys, 10 syringes, and 10 18-gauge needles

PI-66000 Series

Capacity	Cat. No.	Each
3500 Daltons		
0.1–0.5mL	PI-66335	88.00
0.5–3mL	PI-66332	102.00
3–12mL	PI-66107	115.00
7000 Daltons		
0.1–0.5mL	PI-66375	88.00
0.5–3mL	PI-66372	102.00
3–12mL	PI-66707	115.43
10,000 Daltons, Original		
0.1–0.5mL	PI-66385	88.00
10,000 Daltons, Extra Strength		
0.5–3mL	PI-66382	102.00
3–12mL	PI-66807	115.00

Slide-A-Lyzer Dialysis Cassette Technology is protected by U.S. Patent 5,503,741 and other patent pending.

MEMBRANES/MEMBRANE TUBING

*Fisherbrand** Regenerated Cellulose Dialysis Tubing

Diffuses low molecular weight compounds in aqueous solutions; retains proteins and bacteria in tubing

- Made from regenerated cellulose membrane
- MWCOs from 3500 to 14,000 Daltons
- Individual lot data sheets from outside laboratory are supplied with tubing Types T1, T2, and T3; standard grade Type T4 is not tested in outside laboratory

Fisherbrand
DIALYSIS
TUBING
Instructions
Fisherbrand

21-152-8

ORDERING INFORMATION:
Comes on compact polystyrene spool that eliminates adsorption of glycerin from membranes. Dispenser box is packaged in plastic bag with desiccant for humidity control.

INCLUDES:
Two locking nylon membrane clamps; pair of disposable surgical scissors; individual lot data sheets as noted above

Flat Width	Dia. × Length	Vol./cm	Cat. No.	Each
T1 Membranes: 3500 Dalton MWCO				
19mm	12.1mm × 15m	1.15mL	21-152-10	148.20
46mm	29.3mm × 15m	6.74mL	21-152-9	150.35
T2 Membranes: 6000 to 8000 Dalton MWCO				
23mm	14.6mm × 30m	1.67mL	21-152-3	134.50
32mm	20.4mm × 30m	3.27mL	21-152-4	134.50
40mm	25.5mm × 30m	5.10mL	21-152-5	143.55
50mm	31.8mm × 30m	7.94mL	21-152-6	172.90
T3 Membranes: 12,000 to 14,000 Dalton MWCO				
10mm	6.37mm × 15m	0.32mL	21-152-7	165.80
25mm	15.9mm × 15m	1.98mL	21-152-18	159.50
45mm	28.6mm × 15m	6.42mL	21-152-8	159.50
T4 Standard Grade Membranes: 12,000 to 14,000 Dalton MWCO				
10mm	6.37mm × 30m	0.32mL	21-152-17	223.45
25mm	15.9mm × 30m	1.98mL	21-152-16	106.35
33mm	21.0mm × 30m	3.46mL	21-152-15	111.10
45mm	28.6mm × 30m	6.42mL	21-152-14	107.90

Thermo Scientific* Pierce* SnakeSkin* Dialysis Tubing

Easy to prepare—just pull out the required length and cut

- Comes pleated in a convenient 20cm (8") hollow tube
- Regenerated cellulose
- Matches performance of traditional flat regenerated-cellulose dialysis tubing

STORAGE CONDITIONS:
Store at room temperature in original packaging

PI-68035

MWCO	Flat Width	Dia. × Length	Vol./cm	Cat. No.	Each
3500 Daltons	34mm	22mm × 10.5m	3.7mL	PI-68035	118.00
7000 Daltons	34mm	22mm × 10.5m	3.7mL	PI-68700	118.00
10,000 Daltons	34mm	22mm × 10.5m	3.7mL	PI-68100	118.00

LOOKING FOR DIALYSIS CLIPS?

You can find clips for use with Thermo Scientific* Pierce* SnakeSkin* Dialysis Tubing on our Web site.

Visit www.fishersci.com and search for PI-68011

Spectrum* Spectra/Por* Biotech Cellulose Ester (CE) Dialysis Membrane Tubing

Selected MWCOs from 100 to 300,000 Daltons

Ideal for desalting, purification, and molecular separation. Supplied in 10m (33 ft.) lengths in two rolls of 5m each, in 0.1% sodium azide solution.

- Many other MWCOs available to 1 million Daltons
- Ready to use

NOTE:
Do not tie—must be used with Spectra/Por nylon closures (08-671-52, -53, -55). Strong polar solvents such as acetone, MEK, or dioxane will irreparably damage membranes. Contact Spectrum Technical Service, **1-800-634-3300**, for more information.

Spectra/Por
molecularporous
membrane

08-750-2C

100 Dalton MWCO

Flat Width	Dia. x Length	Vol./cm.	Mfr. No.	Cat. No.	Each
8mm	5mm × 10m	0.20mL	131009	**08-750-1A**	258.26
10mm	6.4mm × 10m	0.32mL	131012	**08-750-1B**	261.00
12mm	7.5mm × 10m	0.45mL	131015	**08-750-1C**	280.51
16mm	10mm × 10m	0.81mL	131018	**08-750-1D**	299.10
24mm	15mm × 10m	1.80mL	131021	**08-671-23**	343.52
31mm	20mm × 10m	3.10mL	131024	**08-670-256**	362.00

500 Dalton MWCO

Flat Width	Dia. x Length	Vol./cm.	Mfr. No.	Cat. No.	Each
8mm	5mm × 10m	0.20mL	131045	**08-750-2A**	258.26
10mm	6.4mm × 10m	0.32mL	131048	**08-750-2B**	260.90
12mm	7.5mm × 10m	0.45mL	131051	**08-750-2C**	280.51
16mm	10mm × 10m	0.81mL	131054	**08-750-2D**	307.82
24mm	15mm × 10m	1.80mL	131057	**08-671-24**	343.52
31mm	20mm × 10m	3.10mL	131060	**08-671-25**	372.50

1000 Dalton MWCO

Flat Width	Dia. x Length	Vol./cm.	Mfr. No.	Cat. No.	Each
8mm	5mm × 10m	0.20mL	131081	**08-670-259**	258.26
10mm	6.4mm × 10m	0.32mL	131084	**08-750-3B**	260.90
12mm	7.5mm × 10m	0.45mL	131087	**08-750-3C**	280.51
16mm	10mm × 10m	0.81mL	131090	**08-750-3D**	299.10
24mm	15mm × 10m	1.80mL	131093	**08-671-26**	353.13
31mm	20mm × 10m	3.10mL	131096	**08-671-27**	372.50

10,000 Dalton MWCO

Flat Width	Dia. x Length	Vol./cm.	Mfr. No.	Cat. No.	Each
8mm	5mm × 10m	0.20mL	131261	**08-750-28A**	260.90
10mm	6.4mm × 10m	0.32mL	131264	**08-750-8B**	260.90
16mm	10mm × 10m	0.81mL	131270	**08-750-8D**	299.10
24mm	15mm × 10m	1.80mL	131273	**08-671-32**	353.13
31mm	20mm × 10m	3.10mL	131276	**08-671-33**	373.00

100,000 Dalton MWCO

Flat Width	Dia. x Length	Vol./cm.	Mfr. No.	Cat. No.	Each
8mm	5mm × 10m	0.20mL	131405	**08-670-267**	258.26
10mm	6.4mm × 10m	0.32mL	131408	**08-671-38**	261.00
12mm	7.5mm × 10m	0.45mL	131411	**08-670-268**	280.51
16mm	10mm × 10m	0.81mL	131414	**08-671-39**	299.10
24mm	15mm × 10m	1.80mL	131417	**08-671-40**	343.52
31mm	20mm × 10m	3.10mL	131420	**08-671-41**	373.00

Spectrum* Spectra/Por* RC Dialysis Membranes

Supplied as flat-width tubing or flat sheets that can be folded to fit various funnel-type dialysis apparatus

Pure regenerated natural cellulose membranes with 1000 to 50,000 molecular weight cutoffs. Transparent and flexible. Ideal for molecular separation, protein binding studies, electrolyte removal, desalting.

Clockwise from left:
08-682-54A,
08-671-20, 08-670-4

- Low molecular weight compounds in aqueous solutions diffuse through membrane
- Higher molecular weights, such as proteins and bacteria, are retained by membrane
- Convenient dispenser boxes protect unused membranes
- Glycerol preserves membrane and must be removed before use
- Soak membrane for three hours in deionized water, then rinse well with running water

NOTE:
Do not tie knots in tubing; use closures. Contact Spectrum Technical Service, **1-800-634-3300**, for more information.

Spectra/Por RC Membranes in Flat Sheets

Membrane	MWCO	Length × Width	Mfr. No.	Cat. No.	Pack of 25
Spectra/Por 1	6–8kDa	240 × 240mm	132677	**08-682-54A**	299.10
Spectra/Por 2	12–14kDa	200 × 200mm	132686	**08-670-4**	222.10
Spectra/Por 3	3.5kDa	108 × 108mm	132723	**08-671-20**	191.67
Spectra/Por 4	12–14kDa	150 × 150mm	132712	**08-671-21**	168.50

Spectra/Por 1 RC—6000 to 8000 Dalton MWCO

Flat Width	Dia. × Length	Mfr. No.	Cat. No.	Each
23mm	14.6mm × 30.5m	132650	**08-670A**	202.00
32mm	20.4mm × 30.5m	132655	**08-670B**	202.00
40mm	25.5mm × 30.5m	132660	**08-670C**	216.24
50mm	32mm × 30.5m	132665	**08-670D**	253.00
100mm	64mm × 15m	132670	**08-670E**	314.00
120mm	76mm × 15m	132675	**08-670F**	318.00

Spectra/Por* 2 Membrane Tubing—12,000 to 14,000 Dalton MWCO

Flat Width	Dia. × Length	Mfr. No.	Cat. No.	Each
10mm	6.4mm × 15m	132676	**08-670-3AA**	272.76
25mm	16mm × 15m	132678	**08-670-3BB**	272.76
45mm	29mm × 15m	132680	**08-670-3A**	272.76
105mm	67mm × 15m	132682	**08-670-3B**	628.34
120mm	76mm × 15m	132684	**08-670-3C**	628.34

Spectra/Por 3 Membrane Tubing—3500 Dalton MWCO

Flat Width	Dia. × Length	Mfr. No.	Cat. No.	Each
18mm	11.5mm × 15m	132720	**08-670-5A**	242.60
45mm	29mm × 15m	132724	**08-670-5B**	242.60
54mm	34mm × 15m	132725	**08-670-5C**	257.59

Spectra/Por 4 Membrane Tubing—12,000 to 14,000 Dalton MWCO

Flat Width	Dia. × Length	Mfr. No.	Cat. No.	Each	Case of
10mm	6.4mm × 30.5m	S432697	**08-667A**	278.68	12/2858.28
25mm	16mm × 30.5m	S432700	**08-667B**	125.54	12/1287.59
32mm	20.4mm × 30m	S432703	**08-667D**	129.17	36/3974.59
45mm	29mm × 30m	S432706	**08-667E**	150.15	24/3079.93

Spectra/Por 6 Membrane Tubing—1000 to 50,000 Dalton MWCO, No Glycerol[1]

MWCO	Flat Width[2]	Dia. × Length[2]	Mfr. No.	Cat. No.	Each
1000 Daltons	18mm	11.5mm × 10m	132636	**08-670-12B**	287.74
	38mm	24mm × 10m	132638	**08-670-12C**	287.74
	45mm	29mm × 10m	132640	**08-670-12D**	287.74
2000 Daltons	18mm	11.5mm × 10m	132620	**08-670-13B**	279.30
	38mm	24mm × 10m	132625	**08-670-13C**	279.30
	45mm	29mm × 10m	132633	**08-670-13D**	279.30
3500 Daltons	18mm	11.5mm × 10m	132590	**08-670-14A**	279.30
	45mm	29mm × 10m	132592	**08-670-14B**	287.74
	54mm	34.4mm × 10m	132594	**08-670-14C**	279.30
8000 Daltons	24mm	15mm × 10m	132580	**08-670-15A**	279.30
	32mm	20.4mm × 10m	132582	**08-670-15B**	279.30
	50mm	31.8mm × 10m	132586	**08-670-15D**	287.74
10,000 Daltons	12mm	7.5mm × 10m	132570	**08-670-16A**	279.30
	24mm	15mm × 10m	132572	**08-670-16B**	279.30
	32mm	20.4mm × 10m	132574	**08-670-16C**	287.74
	45mm	29mm × 10m	132576	**08-670-16D**	287.74
15,000 Daltons	12mm	7.5mm × 10m	132560	**08-670-17A**	279.30
	24mm	15mm × 10m	132562	**08-670-17B**	279.30
	32mm	20.4mm × 10m	132564	**08-670-17C**	279.30
25,000 Daltons	12mm	7.5mm × 10m	132550	**08-670-18A**	279.30
	28mm	17.8mm × 10m	132552	**08-670-18B**	279.30
	34mm	21.6mm × 10m	132554	**08-670-18C**	287.74
50,000 Daltons	12mm	7.5mm × 10m	132540	**08-670-19A**	279.30
	28mm	17.8mm × 10m	132542	**08-670-19B**	279.30
	34mm	21.6mm × 10m	132544	**08-670-19C**	287.74

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[1] *Spectra/Por 6 is packaged wet in 0.1% sodium azide preservative.*

[2] *Measurement of flat width and diameter of Spectra/Por and Spectra/Por 7 membranes may vary by 1 to 2mm.*

Spectra/Por 7 Membrane Tubing—1000 to 50,000 Dalton MWCO, Sulfur and Heavy Metal Free[1]

Flat Width[2]	Dia. × Length[2]	Mfr. No.	Cat. No.	Each
MWCO 1000 Daltons				
18mm	11.5mm × 5m	132103	**08-680-2C**	226.70
38mm	24mm × 5m	132104	**08-680-2E**	226.70
45mm	29mm × 5m	132105	**08-680-2G**	226.70
MWCO 2000 Daltons				
18mm	11.5mm × 5m	132107	**08-680-3C**	226.70
38mm	24mm × 5m	132108	**08-680-3E**	226.70
45mm	29mm × 5m	132109	**08-680-3G**	226.70
MWCO 3500 Daltons				
18mm	11.5mm × 5m	132110	**08-680-4C**	226.70
45mm	29mm × 5m	132111	**08-680-4E**	226.70
54mm	34.4mm × 5m	132112	**08-680-4G**	226.70
MWCO 8000 Daltons				
12mm	7.5mm × 5m	132113	**08-680-5A**	226.70
24mm	15mm × 5m	132114	**08-680-5C**	226.70
32mm	20.4mm × 5m	132115	**08-680-5E**	226.70
40mm	25.5mm × 5m	132116	**08-680-5G**	226.70
50mm	34.4mm × 5m	132131	**08-680-5J**	226.70
MWCO 10,000 Daltons				
12mm	7.5mm × 5m	132117	**08-680-6A**	226.70
24mm	15mm × 5m	132118	**08-680-6C**	226.70
32mm	20.4mm × 5m	132119	**08-680-6E**	226.70
45mm	29mm × 5m	132120	**08-680-6G**	226.70
MWCO 15,000 Daltons				
6mm	3.8mm × 5m	128458	**08-671-62**	220.00
12mm	7.5mm × 5m	132121	**08-680-7A**	226.70
24mm	15mm × 5m	132122	**08-680-7C**	226.70
32mm	20.4mm × 5m	132123	**08-680-7E**	226.70
45mm	29mm × 5m	132124	**08-680-7G**	226.70
MWCO 25,000 Daltons				
12mm	7.5mm × 5m	132125	**08-680-8A**	226.70
28mm	17.8mm × 5m	132126	**08-680-8C**	226.70
34mm	21.6mm × 5m	132127	**08-680-8E**	226.70
MWCO 50,000 Daltons				
12mm	7.5mm × 5m	132128	**08-680-9A**	226.70
28mm	17.8mm × 5m	132129	**08-680-9C**	226.70
34mm	21.6mm × 5m	132130	**08-680-9E**	226.70

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[1] *For use in any separation where there is a chance of sensitivity to trace metals or sulfur. Contain no sulfur and have been EDTA-treated to remove trace metals. Supplied wet in 0.1% sodium azide preservative.*

[2] *Measurement of flat width and diameter of Spectra/Por 6 and Spectra/Por 7 membranes may vary by 1 to 2mm.*

LOOKING FOR MORE DIALYSIS PRODUCTS?

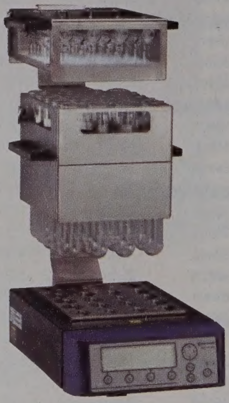
Browse our complete selection of devices, membranes, and tubing for dialysis.

Visit www.fishersci.com and search for Dialysis Supplies

Fisher Scientific* Digestion Systems

Digestion units, with integrated programmable controllers, can be combined with a range of accessories to match individual needs

Choose from basic units capable of handling just a few samples a day to fully automated systems for high sample throughput.



TC2520-011

Benefits

- Economy of chemicals, energy, labor, space and time
- Efficient fume containment through optional exhaust manifold
- Efficient fume removal through optional scrubber
- Systems are compatible with Kjeltec* Distilling Units

Standard Features

- Three configurations available: Auto Lift, Auto Rack, and Basic
- System consists of a digestion unit and tube rack with capacity for either eight or 20 tubes
- Audible "ready" or "cycle over" alerts advise user when digestion application is completed
- Audible "alarm" alerts advise user when errors/interruptions occur within running application program
- Unit is insulated to minimize heat transfer to the surroundings and allow fast, even heating
- Auto versions have an integrated all-activity controller that is programmable using supplied software
- Auto models can be connected to a PC for datalogging and downloading of standard, user-defined applications

Basic Model

- Temperature and time for digestion are selected on front panel; all other procedures are performed manually
- Can be fitted with rack system at any time to save fume hood space
- Cannot be upgraded to Auto model

Auto Lift Models

- Fully automated digestion with user interface adapting to actual product configuration
- GLP-support through two-way PC communication
- Auto Lift models, with exhaust docking facility, allow fully automated unattended operation
- Facilitate highly automated procedures, eliminating heavy and risky handling of hot chemicals; save fume hood space
- When lift or scrubber unit is connected, they are controlled by the selected application program
- Exhaust manifold docks automatically with the tube rack as the tubes move down into the preheated digestion unit; scrubber unit, if connected, starts
- Scrubber capacity is automatically adjusted to contain fumes and minimize acid losses
- When digestion is completed, the combined tube rack and exhaust manifold move to the cooling position with scrubber unit still running until no further fumes are evolved
- Audible signal indicates "cycle over"
- To avoid spillage, a drip tray is inserted under exhaust manifold after cooling

Auto Rack Models

- Allow automated digestions but require manual placement of tube rack and exhaust manifold which are stored above the digestion unit
- Can be upgraded to Auto Lift systems

Software for Auto Systems

- Preinstalled software system controls all necessary functions of the unit
- Additional PC application software has two-way communication with Digestion Unit via serial RS-232 cable (supplied)

NOTE:

For reflux chemistries, such as Chemical Oxygen Demand (COD), a reflux head connected to a cold water supply should be used in place of the exhaust manifold. For Kjeldahl digestions, the Scrubber Unit (TC2501-001) should be considered for neutralization of corrosive gases; this replaces the water aspirator. For most Kjeldahl digestions, straight 250mL tubes are recommended.

INCLUDES:

Digestion unit, tube rack with integrated heat shields. Auto Lift models include lift and integrated controller; Auto Rack models include rack and integrated controller.

COMPLIANCE:

Software for Auto Systems supports Good Laboratory Practice (GLP) routines and accreditation procedures. Standard power failure/interrupt function complies with GLP and Health & Safety routines. To comply with GLP and Health & Safety requirements, we recommend that all digestion units are used with an exhaust manifold or reflux head and are located in a fume cupboard.

Description	Electrical Reqts.	Cat. No.	Each
Basic Models			
For 8 tubes	110V 50/60Hz	**TC2508-052**	3600.00
For 20 tubes	230V 50/60Hz	**TC2520-051**	7500.00
Auto Lift Models			
For 8 tubes	110V 50/60Hz	**TC2508-002**	8000.00
For 20 tubes	230V 50/60Hz	**TC2520-001**	12,000.00
Auto Rack Models			
For 8 tubes	110V 50/60Hz	**TC2508-012**	4500.00
For 20 tubes	230V 50/60Hz	**TC2520-011**	8500.00

Note: All of the above models are for use with 250mL tubes. Versions for 100mL tubes are available; contact your Fisher Scientific Customer Service representative or visit our Web site.

Looking for Fisher Scientific* Digestion System Accessories?

Find auto rack systems and boiling rods for your Fisher Scientific Digestion System online.

Visit www.fishersci.com and search for Digestion Systems

ACCESSORIES FOR FISHER SCIENTIFIC* DIGESTION SYSTEMS

Exhaust Manifolds

- Facilitate fume removal and containment
- Ensure Good Laboratory Practice (GLP)
- Should be connected to water aspirator (supplied) or to a suitable scrubber unit

For Digestion Unit	Cat. No.	Each
TC2508 Series	**TC2508-020**	1400.00
TC2520 Series	**TC2520-020**	2995.00

Scrubber Unit

- For neutralization of corrosive fumes in acid digestions
- Can be combined with any of the exhaust manifolds
- Handles up to 100 samples without changing reagent

TC2501-001

Electrical Reqts.	Cat. No.	Each
110/230V 50/60Hz	**TC2501-001**	3995.00

Digestion Tubes

- Straight-sided tubes are recommended for the majority of digestion applications
- Volumetric tubes with constriction at the neck are recommended for applications where the digestate requires dilution to a fixed volume before analyses such as FIA, SFA, and AA

Volume	Cat. No.	Pack of
Straight-Sided Tubes		
75mL	**TC1000-0546**	12/257.48
75mL	**TC1000-0203**	40/756.45
100mL	**TC1000-0825**	12/260.54
100mL	**TC1000-0735**	40/700.00
250mL	**TC1000-0155**	6/195.00
250mL	**TC1001-4278**	8/253.75
250mL	**TC1000-0158**	20/609.49
Constricted, Volumetric Tubes		
75mL	**TC1000-0539**	12/483.44
75mL	**TC1000-0160**	40/1200.00
100mL	**TC1000-0826**	12/466.38
100mL	**TC1000-0737**	40/1273.35
250mL	**TC1000-0154**	6/411.27
250mL	**TC1001-4315**	8/477.38
250mL	**TC1000-0157**	20/1183.39

WHAT HAPPENED TO THE "NITROGEN ANALYSIS" SECTION?

The Nitrogen Analysis section is now divided into Digestion and Distillation. If you're looking for distillation units like Fisher Scientific* DU100, check out the Distillation section of the catalog.

Foss* Tecator* Fibertec* 2010 System

Semi-automated extraction system for simple determination of crude fiber, detergent fiber and related parameters in plant materials, compound feeds and foodstuffs

TC20100002

Single or sequential extractions including boiling, use of internally preheated reagents, rinsing and filtration are performed under reproducible, controlled conditions.

Standard Features

- For fiber determination in accordance with the Weende, van Soest and other recognized methods
- Samples are handled in specially designed filter crucibles
- Integrated extraction and filtration of six samples simultaneously saves time
- Automatic water filling/topping up
- Batch handling devices for simple transfer of samples to balance or furnace
- Enhanced precision due to integrated extraction and filtration, thus avoiding sample transfer
- Timer function ensures same extraction condition in each analysis

Modules

- Hot Extractor: for hot hydrolysis and extraction, featuring built-in systems for heating and filtration, and for automatic preheating and addition of reagents
- Cold Extraction Unit: for defatting samples, extraction at ambient temperatures (e.g., in lignin determination) and solvent dehydration of fiber residues
- Both modules use the same crucible system, permitting samples to be dried and weighed between extractions if required

Specifications

- Sample size: 0.5–3g
- Capacity per batch: Up to six samples simultaneously
- Measuring range: 0.1–100%
- Reproducibility: ±1% relative at 5–30% fiber level

Safety Features

- Automated heating of reagents in an integrated, closed system
- Simple handling of cold reagents (acid/alkali)
- Automated addition of preheated reagents
- Integration of all functions saves bench space

APPLICATIONS:

Crude fiber (Weende method); Neutral Detergent Fiber; Acid Detergent Fiber; Permanganate Lignin. Also suitable for use with most other chemical extraction methods except those that involve the use of acetic acid, trichloracetic acid and/or nitric acid.

ORDERING INFORMATION:

Dimensions (Hot Extractor), 29¼W × 15⅝D × 26½"H (75 × 40 × 68cm); Weight, 143⅝ lb. (65kg). Dimensions (Cold Extraction Unit), 22⅝W × 14¾D × 11H" (58 × 38 × 28cm); Weight, 31 lb. (14kg).

INCLUDES:

Hot extractor, cold extraction unit, crucibles, crucible stand, crucible holder, reflector, spray bottle, tubing, antifoaming agent, water supply tank, crucible seals

COMPLIANCE:

Official approval: ISO 5498 (feed). Fulfills boiling start time requirements for crude fiber specified in ISO and EC standards.

Electrical Reqts.	Cat. No.	Each
200-240V 60Hz	**TC20100002**	28,500.00

Foss* Tecator* Kjeltec* 2200 Auto Distillation Unit

Microprocessor-controlled distilling unit provides automated features that improve the classic Kjeldahl distillation process

These include dilution of sample; addition of alkali, water and receiver solution; distillation and tube draining.

TC2200-001

Standard Features

- Built-in steam generator speeds up operation for fast, effective test runs
- Versatile unit performs several different distillation methods, including Kjeldahl nitrogen/protein, ammonia, TKN and alkaline direct distillation
- Accurate bellow pumps give long-term stability in dispensing reagents

Specifications

- Distillation time: 3½ min. at 30mg nitrogen (6½ min. at 200mg nitrogen) with distillation capacity of approximately 40mL/min.
- Measuring range: 0.1–200mg nitrogen
- Reproducibility: ±1.0% relative (including the digestion step)
- Recovery is greater than 99.5% at nitrogen levels between 1 and 200mg

Design

- Consists of a microprocessor-controlled distilling unit with tube emptying and automatic addition of receiver solution
- Built-in steam generator for deionized water or tap water
- Alkali/water/receiver/waste tanks with level sensors

Safety Features

- Sensors for tube in place, safety door and front hood
- Alarms for reagent availability
- Plus level/overpressure sensors for steam generator
- Patented Steam Addition for Equilibration (SAfE) technology reduces exothermic reaction when alkali is added to the acid/salt digestate and eliminates need for manual predilution of samples

ORDERING INFORMATION:

Dimensions: 20⅞L × 17⅜W × 29⅞"H (53 × 44 × 76cm). Net Weight: 75 lb. (34kg).

INCLUDES:

Set of 10 receiver flasks, test tubes for 100 and 250mL, adapters for 100 and 250mL tubes

Electrical Reqts.	Cat. No.	Each
230V 50/60Hz	TC2200-001	12,000.00

Foss* Tecator* Kjeltec* 2300 Analyzer Unit

The ultimate solution for automation in the routine Kjeldahl laboratory

Automatic distillation and approved colorimetric titration for analysis of Kjeldahl nitrogen/protein, ammonium-nitrogen, TKN, Direct Distillation (DD), and volatile acids/bases.

TC2300-001

Standard Features

- Automatic distillation procedure, including sample dilution, alkali and receiver addition, distillation, titration, calculation, reporting and tube draining
- Can be preprogrammed for ten different distillation routines
- Alarms for reagent availability
- Approved colorimetric titration system
- Accurate bellow pumps; high-precision refillable buret
- Distillate temperature sensor automatically shuts down unit if risk exists for inaccurate results

Specifications

- Distillation time: 3½ min. at 30mg nitrogen (6½ min. at 200mg nitrogen)
- Distillation capacity: approximately 40mL/min.
- Measuring range: 0.1–200mg nitrogen
- Reproducibility: ±1.0% relative (including the digestion step)
- Recovery is greater than 99.5% at nitrogen levels between 1 and 200mg

Design

- Built-in steam generator for deionized or tap water
- Alkali/water/receiver/waste tanks with level sensors
- Surfaces exposed to reagents are made of corrosion-free, chemical-resistant dyed plastic materials

Safety Features

- Sensors for: 1) tube in place, 2) safety door, 3) front hood, 4) reagent level, 5) plus level and 6) overpressure for steam generator
- SAfE* (Steam Addition for Equilibration) technology improves safety by incorporating its own mixing procedure, reducing exothermic reaction between alkali and acid and making manual predilution of samples unnecessary
- A fast tube draining system removes the need for handling hot reagents after distillation
- Safety door and drip tray can both be easily removed for cleaning

ORDERING INFORMATION:

Dimensions: 20⅞L × 17⅜W × 29⅞"H (53 × 44 × 76cm).
Net Weight: 77¼ lb. (35kg).

INCLUDES:

Automatic distilling/titration unit, adapters for 100 and 250mL tubes, digestion tube for 100 and 250mL

COMPLIANCE:

Officially approved colorimetric titration system (AOAC, EPA, DIN, ISO) simplifies validation. GLP Routines are supported by Recovery Test process and documentation of all events during analysis.

Electrical Reqts.	Cat. No.	Each
200-240V 50/60Hz	TC2300-001	26,000.00

*Trademark. See Trademark Reference.

Prices subject to change.

Labconco* Micro Digestor for Kjeldahl Digestions

Individual electric heaters with adjustable controls

21-131-5

Each 200w heater consists of tubular steel heater element and stainless-steel cup recessed into top insulating board.

- Accommodates 100mL flasks
- Six-port glass manifold exhausts fumes
- Serrated connector for water aspirator
- Well ventilated to prevent heat accumulation
- Top is 1½" thick (3.8cm) insulating board; protects wiring and controls
- Heavy-gauge epoxy-coated aluminum case

ORDERING INFORMATION:

Dimensions: 9L × 22½W × 14"H (23 × 57 × 36cm) to top of manifold

INCLUDES:

Manifold, two rear brackets and six 100mL flasks

Electrical Requirements	Mfr. No.	Cat. No.	Each
115V 50/60Hz, 12A	6030000	**21-131-5**	2205.00
230V AC/DC 50/60Hz, 6A	6030001	**21-131-6**	2215.00

Parr* Acid Digestion Bomb

General-purpose acid digestion bomb for organic and norganic analytical samples

For use at high temperatures and pressures.

- With PTFE liner
- Operates at up to 250°C (482°F) and 1800psig (12.4MPa)
- PTFE sample cup has spring-loaded, flanged closure; permits a good seal when bomb cap is tightened with a spanner (not included)

04-731-54

APPLICATIONS:

- Dissolves both organic and inorganic analytical samples
- Good for digesting alumina samples or reactants of unknown behavior
- Useful for complete containment of volatile chemicals; safety rupture disc in bomb head blows out to release pressure through opening in cover

ORDERING INFORMATION:

Contact your Fisher Scientific Customer Service Representative for nformation on spanner wrench and other accessories.

Description	Capacity	Mfr. No.	Cat. No.	Each
Acid Digestion Bomb	23mL	4749	**04-731-54**	533.00
Acid Digestion Bomb	45mL	4744	**04-731-53**	578.98
Replacement PTFE 23mL Sample Cup with Cover	23mL	A280AC	**01-023-21A**	85.28

FisherTab* Kjeldahl Tablets

Achieve an optimal salt/acid ratio for every Kjeldahl digestion

- Catalyst tablets are formulated to exact specifications, ensuring reproducibility and the correct dosage for proper boiling conditions
- Each poly bottle contains 1000 tablets

Description	Composition per Tablet	Cat. No.	Each
AT-50	4.9g K_2SO_4 + $NaSbO_3$ + $ZnSO_4$ + 0.1g $CuSO_4$	**K300-1000**	397.07
CT-37	3.5g K_2SO_4 + 0.4g $CuSO_4$	**K301-1000**	380.77
CT-50	5g K_2SO_4 + 0.15g $CuSO_4$	**K310-1000**	433.15
CT-AUTO	1.5g K_2SO_4 + 0.125g $CuSO_4$	**K303-1000**	348.74
LCT-40	4g K_2SO_4 + 0.0175g $CuSO_4$	**K304-1000**	372.71
MT-37	3.5g K_2SO_4 + 0.175g HgO	**K306-1000**	430.40
MT-47	4.5g K2SO4 + 0.21g HgO	**K308-1000**	460.25
MT-50	5g K_2SO_4 + 0.25g HgO	**K307-1000**	442.87
MT-AUTO	1.5g K_2SO_4 + 0.075g HgO	**K309-1000**	352.92
SST-35	3.5g K_2SO_4 + 0.1g $CuSeO_3$	**K312-1000**	401.78
ST-35	3.5g K_2SO_4 + 0.35g Se	**K311-1000**	371.84
ST-AUTO	1.5kg K_2SO_4 + 0.015g Se	**K313-1000**	356.44
TT-35	3.5g K_2SO_4 + 0.1g $CuSO_4$ + 0.1g TiO_2	**K315-1000**	404.24
TT-50	5g K_2SO_4 + 0.15g $CuSO_4$ + 0.15g TiO_2	**K316-1000**	408.71
TT-57	5.57g K_2SO_4 + 0.0033g $CuSO_4$ + 0.2g TiO_2	**K318-1000**	441.81
TT-43	4.18g K_2SO_4 + 0.0025g $CuSO_4$ + 0.15g TiO_2	**K317-1000**	338.72

DISHES

EVAPORATING

*Fisherbrand** Low and Tall-Form PTFE Dishes

Inert and usable to 280°C (536°F)

- With heavy walls
- Smooth internal finish
- With pouring spout

02-617 Series

Diameter	Height	Capacity	Cat. No.	Each
Low-Form				
63mm	10mm	25mL	**02-617-146**	13.05
79mm	13mm	50mL	**02-617-147**	22.87
100mm	16mm	100mL	**02-617-148**	33.66
121mm	19mm	180mL	**02-617-149**	43.30
130mm	34mm	350mL	**02-617-150**	59.19
130mm	36mm	400mL	**02-617-151**	64.41
Tall-Form				
38mm	34mm	25mL	**02-617-139**	16.70
40mm	50mm	50mL	**02-617-140**	20.70
64mm	50mm	100mL	**02-617-141**	30.22
78mm	43mm	150mL	**02-617-142**	34.61
97mm	50mm	250mL	**02-617-144**	47.81
100mm	60mm	350mL	**02-617-145**	53.13

LOOKING FOR WEIGHING DISHES?

You will find them in the Balances/Accessories section.

*Fisherbrand** Disposable Aluminum Dishes with Fluted Sides

Useful as evaporating and general utility dishes

- Larger sizes are ideal for food processing applications
- Inexpensive enough for single use
- Made of lightweight aluminum
- Flat bottoms
- Fluted or slightly fluted sides
- Flanged rims

08-732-108

Capacity	Bottom I.D.	Top I.D.	Depth	Cat. No.	Pack of	Case of
Fluted Sides						
75mL	1.83" (4.6cm)	2.44" (6.2cm)	1.22" (3.1cm)	**08-732-107**	100/27.81	10 Pk./237.70
200mL	3.03" (7.7cm)	4.29" (10.9cm)	1.22" (3.1cm)	**08-732-108**	50/22.24	----
500mL	5.39" (13.7cm)	7.09" (18cm)	1.02" (2.6cm)	**08-732-109**	50/33.86	----
Slightly Fluted Sides						
20mL	1.57" (4.0cm)	1.71" (4.3cm)	0.53" (1.3cm)	**08-732-105**	100/25.52	10 Pk./218.10
60mL	2.32" (5.9cm)	2.52" (6.4cm)	0.75" (1.9cm)	**08-732-106**	100/32.08	12 Pk./329.00

*Fisherbrand** Disposable Aluminum Weighing/Drying Pans

Compatible with many popular balances and moisture analyzers including Ohaus*, Mettler Toledo*, Sartorius*, Denver Instrument*, and more

08-732-110

- General-purpose pans ideal for weighing, dispensing, storage, and drying
- Inexpensive enough for single-use applications

Choice of:

- 4¼" (10.9cm) dishes with slightly fluted sides and beaded rim
- 4¾" (12.2cm) dishes with flat tops

08-732-111

Capacity	Top ID	Height	Cat. No.	Pack of	Case of 10 Pk.
With Slightly Fluted Sides and Beaded Rim					
2 fl. oz. (60mL)	4¼" (10.9cm)	1¼" (3.1cm)	**08-732-111**	50/24.30	207.70
With Flat Tops					
1¾ fl. oz. (50mL)	4¾" (12.2cm)	¼" (.51cm)	**08-732-110**	100/27.02	230.90

CoorsTek* Porcelain Casseroles

Withstand temperatures to 1150°C (2102°F)

- Glazed inside and outside except on rims
- With lip

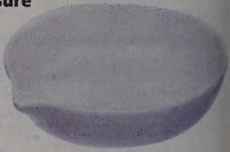
04-695F

Diameter	Capacity	Mfr. No.	Cat. No.	Each	Case of
43mm	20mL	60056	**04-695B**	14.94	12/162.93
70mm	60mL	60058	**04-695D**	19.68	12/201.85
89mm	140mL	60059	**04-695E**	24.34	12/265.51
100mm	210mL	60060	**04-695F**	30.65	12/314.35
133mm	500mL	60062	**04-695H**	46.94	6/256.03
144mm	750mL	60063	**04-695J**	62.31	4/220.56
174mm	1200mL	60064	**04-695K**	81.13	4/287.19

CoorsTek* Shallow-Form Porcelain Dishes

Provide greater surface exposure

- Glazed except on bottoms and rims for easy cleaning
- With lip

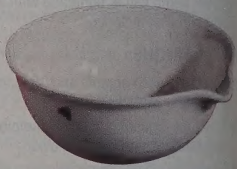

08-693C

Diameter	Capacity	Mfr. No.	Cat. No.	Each	Case of
70mm	30mL	60230	**08-693A**	12.11	24/232.53
80mm	50mL	60231	**08-693B**	12.42	24/238.53
90mm	75mL	60232	**08-693C**	13.36	18/218.63
105mm	100mL	60233	**08-693H**	14.33	18/234.57
120mm	195mL	60234	**08-693D**	18.45	12/189.24
160mm	290mL	60236	**08-693F**	33.22	8/227.14

CoorsTek* Porcelain Dishes

Glazed except on rim for easy cleaning

- Round bottoms
- With pour-out spouts


08-690B

Diameter	Capacity	Mfr. No.	Cat. No.	Each	Case of
60mm	35mL	60196	**08-690A**	9.52	48/382.13
75mm	70mL	60197	**08-690B**	9.91	48/396.57
80mm	80mL	60198	**08-690C**	11.31	24/217.21
94mm	120mL	60200	**08-690E**	14.14	24/271.58
100mm	150mL	60201	**08-690F**	15.42	18/237.16
115mm	250mL	60202	**08-690G**	17.35	18/283.91
145mm	385mL	60204	**08-690J**	33.78	12/368.50
162mm	525mL	60205	**08-690K**	48.31	12/526.99
185mm	765mL	60206	**08-690L**	70.29	8/497.64
215mm	1285mL	60207	**08-690M**	100.26	6/532.38
265mm	2100mL	60209	**08-690P**	136.88	4/467.95
305mm	3250mL	60210	**08-690Q**	157.82	3/404.66

*Trademark. See Trademark Reference.

Prices subject to change.

Pyrex* Evaporating Dishes

Withstand temperatures to 230°C (446°F)

- Beaded rims
- Flat bottoms
- Medium depth
- With pouring spouts

08-710B

Diameter	Capacity	Mfr. No.	Cat. No.	Case of 6
80mm	140mL	3180 80	**08-710A**	63.06
90mm	170mL	3180 90	**08-710B**	71.61
105mm	290mL	3180 105	**08-710C**	200.75

Vycor* Evaporating Dishes

Withstand temperatures to 900°C (1652°F)

- ▸ Comprised of 96% silica to withstand high-temperature ashing
- ▸ With flat bottoms and pour-out spouts
- ▸ High thermal and chemical resistance

08-708A

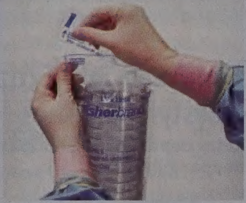
Diameter	Capacity	Mfr. No.	Cat. No.	Each	Case of
70mm	45mL	13180 45	**08-708A**	101.86	12/854.02
90mm	100mL	13180 100	**08-708B**	159.14	8/900.50

PETRI/DISPOSABLE

*Fisher*brand* Petri Dishes with Clear Lids

Polystyrene, radiation-sterilized dishes are easy to handle with just one hand

- ▸ Top and bottom edges are squared off (not rounded) to provide a firm, sure grip
- ▸ Bottom is flat so medium spreads evenly over the entire dish bottom
- ▸ Three venting ribs built into the underside of the lid prevent buildup of condensation that would drip onto the media
- ▸ Lid skirt is flared just enough so that it can be replaced quickly after streaking
- ▸ Lid fits loosely enough to provide air exchange, yet is tight enough to reduce risk of aerial contamination
- ▸ Place lid upside down on dish to close off dish from outside environment



08-757-13

Beveled Ridge Petri Dishes

- ▸ Ideal for automated filling systems
- ▸ Remove dishes easily from the center of a stack
- ▸ 150 × 15mm Kirby-Bauer dish has a larger capacity for antimicrobial susceptibility testing

Raised Ridge Petri Dishes

- ▸ Stack high and remain stacked
- ▸ Minimum of slipping, sliding, and resulting scratches

Outside Dia. × H	Cat. No.	Case of
Beveled Ridge		
100 × 15mm	**08-757-13**	500/147.10
150 × 15mm	**08-757-14**	100/149.40
Raised Ridge		
100 × 15mm	**08-757-12**	500/147.10

*Fisher*brand* Media-Miser* Dishes

Space-saving, stackable, and sterilized

These disposable polystyrene dishes are smaller than standard Petri dishes so less media is used.

- ▸ Clear tops for distortion-free viewing
- ▸ Venting ribs prevent condensation
- ▸ Lids fit snugly when turned over, to reduce the risk of aerial contamination
- ▸ Packaged in cut-apart polyethylene sleeves, 20 per sleeve
- ▸ Radiation sterilized

Clockwise from top:
08-757-14G,
08-757-11YZ, 08-757-13A

35 × 10mm Dishes

- ▸ Raised, straight ridge around the top permits high stacking with little or no slipping, sliding, or scratching

60 × 15mm Dishes

- ▸ Raised, straight ridge for high stacking

95 × 15mm Dishes

- ▸ Raised, beveled ridge around the top for easy removal from a stack

Dia. × H	Percent Media Saved[1]	Cat. No.	Case of 500
35 × 10mm	11%	**08-757-11YZ**	174.04
60 × 15mm	N/A	**08-757-13A**	171.20
95 × 15mm	11%	**08-757-14G**	170.90

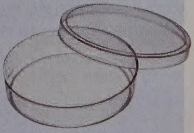
[1] *Compared to standard-size Petri dishes.*

*Fisher*brand* Extra-Deep Dishes

For fungal cultures and plant propagation

Disposable polystyrene dishes accommodate deeper media fills for longer culture periods.

- ▸ Radiation sterilized and supplied 20 per polyethylene sleeve



08-757-11Z

Stackable Dishes

- ▸ 100 × 20mm dish has a raised straight ridge around the top for stable stacking

Vented Dishes

- ▸ 100 × 25mm dish features three venting ribs on the underside of the lid

Description	Dia. × H	Cat. No.	Case of 500
Stackable	100 × 20mm	**08-757-11Z**	194.35
Vented	100 × 25mm	**08-757-11**	235.08

*Fisherbrand** Petri Dishes and Pad Dishes

Available with or without absorbent pads

Feature tight fitting lid to prevent dehydration.

Sterilized Petri Dishes

- 47mm dishes can be used with solid agar medium or add absorbent pads for liquid medium
- Molded polystyrene

Sterilized Pad Dishes

- Preloaded 47mm dishes with sterilized absorbent pads
- Minimize contamination
- Pure cellulose pad
- Extended 3-year shelf-life

09-720-501

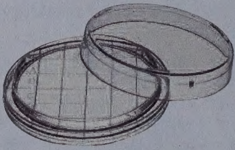
Description	Cat. No.	Pack of
Petri Dishes	09-720-500	150/43.00
Petri Dishes	09-720-502	600/130.00
Petri Dishes with Pads	09-720-501	150/57.00
Petri Dishes with Pad	09-720-503	600/172.00

*Fisherbrand** Contact Plate

For determining surface microbial contamination

Dishes have a raised agar bed for surface contact.

- Grid consists of sixteen 10 × 10mm squares
- Marked numerically in one direction and alphabetically in the other
- Disposable polystyrene
- Radiation sterilized



08-757-11C

ORDERING INFORMATION:

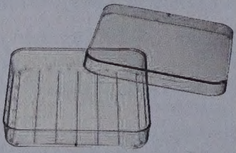
Supplied 25 per sleeve.

Dia. × H	Cat. No.	Case of 500
65 × 15mm	08-757-11C	230.00

*Fisherbrand** Square Dish with Grid

Ideal for phage typing, probe assays, susceptibility testing, and plate counts

- Grid consists of thirty-six 13 × 13mm squares
- Marked numerically in one direction and alphabetically in the other
- Disposable polystyrene
- Radiation sterilized



08-757-11A

ORDERING INFORMATION:

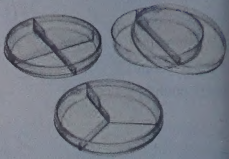
Supplied 10 per polyethylene sleeve.

L × W × H	Cat. No.	Case of 500
100 × 100 × 15mm	08-757-11A	279.65

*Fisherbrand** Compartmentalized Dishes

Select from 2-, 3-, or 4-section plates with numbered sections

- Radiation sterilized
- Size: 100 × 15mm
- Disposable polystyrene



Clockwise from top left: X Dish, I Dish, Y Dish

ORDERING INFORMATION:

Supplied 25 per polyethylene sleeve.

Description	Cat. No.	Case of 500
I Dish (2 sections)	08-757-150	260.25
Y Dish (3 sections)	08-758-3	274.75
X Dish (4 sections)	08-758-2	272.75

LOOKING FOR MORE?

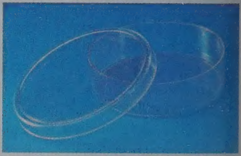
A complete offering of Fisherbrand* Petri Dishes is available online.

Visit www.fishersci.com and search for Fisherbrand Premium Plus Dishes

Nunc* Lab-Tek* Extra-Depth Polystyrene Dishes

Extra depths of 20 and 25mm accommodate deeper fills

- Promote larger plaques used for efficient library screening
- Also suitable for fungal cultures, plant propagation
- Compatible with automated systems
- Sterile
- Disposable



08-757-28

ORDERING INFORMATION:

Supplied 12 per sealed plastic sleeve.

Description	Dia. × H	Mfr. No.	Cat. No.	Case of
Vented	60 × 20mm	4036	08-757-10M	400/220.25
Stackable	100 × 25mm	4031	08-757-28	300/225.10
Plain	150 × 25mm	4014	08-757-10E	72/151.55

*Trademark. See Trademark Reference.

Millipore* Petri Dishes and Petri-Pad* Dishes

Available with or without absorbent pads

Petri Dishes

- 47mm sterilized Petri dishes
- Use with solid agar medium
- Dishes are made of molded polystyrene

Petri-Pad Dishes

- Presterilized disposable 47mm dishes preloaded with sterilized absorbent pads
- Eliminate labor and cost of hand-loading pads and minimize contamination
- Pads are pure cellulose

PD20 047 00

REQUIRED ACCESSORIES:

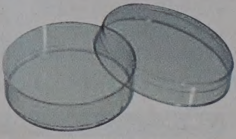
When using with liquid medium, add sterile absorbent pads (order Cat. No. AP10 047 S0, 47mm Sterile Pads; or AP10 045 S1, Millipore Pad Dispenser with Sterile Pads).

Description	Cat. No.	Pack of
Petri Dishes	PD20 047 00	150/43.00
	PD20 047 05	600/130.00
Petri-Pad Dishes with Pad	PD20 047 S0	150/57.00
	PD20 047 S5	600/172.00

BD* Falcon* Standard Dishes

Made of crystal-grade polystyrene for optical clarity

- Durable construction for stable dish manipulation
- Variety of sizes meet specialized and routine needs
- Easy-Grip* feature on 08-757-100A dish ensures convenient and secure handling
- Sterile and disposable



08-757-100B

ORDERING INFORMATION:

Supplied in sleeves of 10 or 20.

Dia. × H	Mfr. No.	Cat. No.	Case of
35 × 10mm	351008	08-757-100A	500/209.30
60 × 15mm	351007	08-757-100B	500/151.20
100 × 15mm	351029	08-757-100D	500/142.50
150 × 15mm	351058	08-757-148	100/110.65

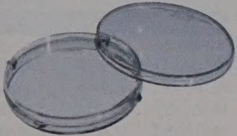
BD* Falcon* Tight-Fit Lid Dish

Tightly fitting lid minimizes sample dehydration

- Durable polystyrene construction
- Suitable for classroom observation
- Sterile and disposable

ORDERING INFORMATION:

Supplied 20 per sleeve.



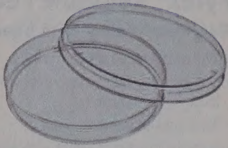
08-757-105

Dia. × H	Mfr. No.	Cat. No.	Case of 500
50 × 9mm	351006	08-757-105	237.95

BD* Optilux* Dishes

Provide exceptional optical clarity

- Design permits unimpaired observation of growth characteristics
- Reference mark on sides of dish and lid aids in positioning when scanning with microscope
- Sterile polystyrene
- Disposable



08-757-103C

ORDERING INFORMATION:

Supplied 20 per sleeve.

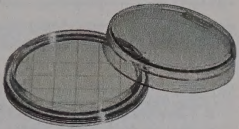
Dia. × H	Mfr. No.	Cat. No.	Case of
100 × 20mm	351005	08-757-103C	200/95.20

BD* Falcon* Rodac* Plate

Designed for environmental studies of microbial contamination

For determining total or specific level of microbial contamination of impervious surfaces in environmental studies.

- 10mm grid with 21 squares
- Surface area: approximately 25cm^2
- Sterile
- With lid
- Disposable



08-757-152

ORDERING INFORMATION:

Supplied 20 per sleeve.

Dia. × H	Mfr. No.	Cat. No.	Case of 500
65 × 15mm	210340	08-757-152	244.00

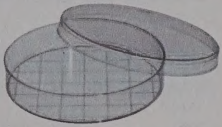
BD* Falcon* Integrid* Dish with Grids

Marked numerically in one direction; alphabetically in the other

- 20mm grid squares
- Sterile polystyrene
- Disposable

ORDERING INFORMATION:

Supplied 10 per sleeve.



08-757-145

Dia. × H	Mfr. No.	Cat. No.	Case of 100
150 × 25mm	351013	08-757-145	173.95

LOOKING FOR CULTURE MEDIA OR SUPPLEMENTS?

See Microbiology section under Media and Additives/Supplements.

PETRI/REUSABLE

Pyrex* Reusable Petri Dishes

Flat, clear dishes with beaded edges

- Withstand repeated sterilization
- Not affected chemically or thermally; resist blooming or fogging
- Tops marked in blue
- Bottoms marked in white with triangular enamel reference point for serial dilutions

PYREX COVER
PYREX ▲ BOTTOM

08-747A

Dia. × H	Mfr. No.	Cat. No.	Pack of 12	Case of
60 × 15mm	3160 60	**08-747A**	107.04	6 Pk./425.68
100 × 10mm	3160 100	**08-747B**	88.54	6 Pk./384.89
100 × 15mm	3160 101	**08-747C**	88.83	6 Pk./391.56
100 × 20mm	3160 102	**08-747D**	76.57	6 Pk./336.74
150 × 15mm	3160 150	**08-747E**	224.86	2 Pk./344.35
150 × 20mm	3160 152	**08-747F**	215.29	2 Pk./328.89

Kimax* Reusable Dishes

Reinforced beaded edges designed from Fed. Spec. NNN-D-1478

- Withstand repeated sterilization
- Covers with fused-on red enamel inscription
- Bottoms with white enamel inscription and vertical arrow on side to locate starting point for serial dilutions

08-746A

Dia. × H	Mfr. No.	Cat. No.	Case of 72
60 × 15mm	23060 6015	**08-746A**	404.42
100 × 15mm	23060 10015	**08-746C**	382.80

PETRI/ACCESSORIES

*Fisherbrand** Easyplate* Petri Dish Rack

Color-coded racks optimize sample organization and identification

- Four channels hold 100mm Petri dishes
- Silicone edges permit random plate entry and retrieval without disturbing the upper stack
- Inserted plates—media side up—remain suspended without needing the support of the lower plate
- Made of lightweight polycarbonate that is autoclavable and chemical resistant

ORDERING INFORMATION:

Available in two sizes—the 14" (35.5cm) rack holds a total of 84; the 9" (22.8cm) rack holds 48.

14-793-03

Color	Cat. No.	Each	Pack of 4
9" Rack for 48 Dishes			
Natural	**14-793-00**	143.91	----
Red	**14-793-01**	143.91	----
Yellow	**14-793-02**	143.91	----
Blue	**14-793-03**	143.91	----
Natural, Red, Yellow, Blue	**14-793-04**	----	548.90
14" Rack for 84 Dishes			
Natural	**14-793-05**	165.77	----
Blue	**14-793-06**	165.77	----

*Fisherbrand** Stackable Petri Dish Incubation Tray

Increases incubator capacity

- Hold five 100mm or fifteen 60mm Petri dishes
- Durable, chemical-resistant polypropylene construction
- Two large label areas for sample marking

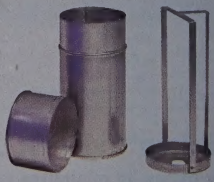
14-793-07

L × W × H	Cat. No.	Pack of 3	Case of 4 Pk.
9⅞ × 9 5⁄16 × 1⅜" (25 × 24 × 3cm)	**14-793-07**	45.70	156.23

*Fisherbrand** Sterilizer Box

Protects Petri dishes during and after heat sterilization

- Polished stainless steel, including deep telescoping cover and removable rack
- Holds 18 glass Petri dishes size 100 × 10mm, or 10 size 100 × 15mm
- Overall, 4¼ O.D. × 10½"H (12 × 27cm)

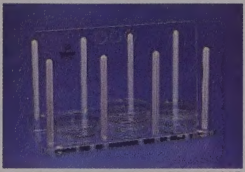


03-460

Cat. No.	Each	Case of 15
03-460	79.16	1027.29

Nalgene* Autoclavable Petri and Bioassay Dish Racks

For glass and plastic dishes


08-759-10B

- Racks are easily sterilized by autoclaving
- Smooth rounded corners, finger-grip handle, and rubber feet make carrying dishes safe and secure
- Clear racks permit side visibility for culture checks during incubation
- Useful for media preparation, inoculations, incubation, and storage
- Simple assembly required

For No. of Dishes	For Dish Dia.	Mfr. No.	Cat. No.	Each	Case of
56/72	60mm	5921 0060	**08-759-10D**	114.61	2/152.82
42/54	100mm	5920 0060	**08-759-10A**	150.94	2/201.25
24	100mm	5922 0024	**08-759-10B**	74.81	4/199.50
18	150mm	5923 0020	**08-759-11**	101.63	----
8	245mm	5925 0008	**08-759-13**	107.40	----

SPECIAL PURPOSE

*Fisherbrand** Stackable Preparation Dish

These preparation dishes are built to stack

08-807

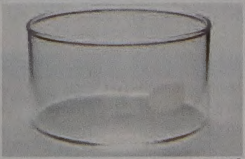
- Top dish of set acts as cover
- Glass
- 300mL capacity

Dia. × H	Cat. No.	Each	Pack of 24
4½ × 2" (115 × 50mm)	**08-807**	23.42	410.35

Pyrex* Crystallizing Dishes

Ideal for storage and crystallization

- Reinforced and fire-polished rims reduce chipping
- Withstand repeated autoclaving


08-741C

Dia. × H	Capacity	Mfr. No.	Cat. No.	Pack of	Case of
70 × 50mm	180mL	3140 70	**08-741A**	6/91.87	4 Pk./269.43
80 × 40mm	180mL	3140 80	**08-741B**	6/89.82	4 Pk./263.71
90 × 50mm	270mL	3140 90	**08-741C**	6/98.00	3 Pk./215.89
100 × 50mm	325mL	3140 100	**08-741D**	6/120.42	3 Pk./265.14
125 × 65mm	740mL	3140 125	**08-741E**	4/150.95	3 Pk./332.24
150 × 75mm	1200mL	3140 150	**08-741F**	4/200.39	2 Pk./294.09
170 × 90mm	1770mL	3140 170	**08-741G**	2/121.05	4 Pk./355.34
190 × 100mm	2500mL	3140 190	**08-741H**	2/143.14	3 Pk./315.11

Kimax* Crystallizing Dishes

Ideal for storage and crystallization

- Reinforced and fire polished to reduce chipping
- Flat bottoms, straight sides

KIMAX
No. 23000
80 x 50
08-762-6

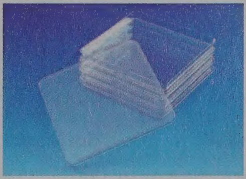
Dia. x H	Capacity	Mfr. No.	Cat. No.	Case of
50 × 35mm	50mL	23000 5035	**08-762-5**	24/277.68
60 × 35mm	80mL	23000 6035	**08-762-3**	4/330.24†
70 × 50mm	160mL	23000 7050	**08-762-4**	24/273.84
80 × 40mm	170mL	23000 8040	**08-762-6**	24/267.36
90 × 50mm	270mL	23000 9050	**08-762-7**	18/218.88
100 × 50mm	340mL	23000 10050	**08-762-1**	18/266.40
125 × 65mm	700mL	23000 12565	**08-762-8**	12/383.40
150 × 75mm	1200mL	23000 15075	**08-762-9**	8/316.80
170 × 90mm	1800mL	23000 17090	**08-762-10**	8/404.96
190 × 100mm	2600mL	23000 19100	**08-762-2**	6/318.24

† Available in Pk. of 6/113.10

TISSUE CULTURE DISHES

Nunc* 245mm Square BioAssay Dishes

Large 500cm² square growth area


12-565-101

- Made of clear polystyrene
- Available untreated or with Nunclon* Δ cell culture surface treatment

Untreated

- Ideal for screening libraries or isolating clones

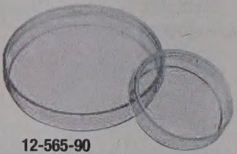
Nunclon Δ treated

- Provide an optimal surface for cell attachment and growth
- Sterile, supplied with lid
- Dimensions, 245L × 245W × 25mmH
- Four dishes per sleeve

Treatment	Mfr. No.	Cat. No.	Case of 16
Untreated	240835	**12-565-224**	132.93
Nunclon Δ	166508	**12-565-101**	255.75

Nunclon* Δ Dishes

Treated dishes provide excellent cell attachment and growth



12-565-90

- Available with culture areas ranging from 9 to 150cm²
- Polystyrene provides high optical quality—especially when microscopic examination is required; also available in Permanox* plastic (12-565-97)
- Top and bottom stacking rings for easier handling and more stable stacking
- Tested for cell growth and plating efficiency
- Radiation sterilized

Polystyrene Plastic Dishes

- Come with or without air vents for gas exchange
- For cloning experiments and plating efficiency determinations
- Cat. Nos. 12-565-92 and -96 feature 2mm grid

Permanox* Plastic Dish

- Chemically resistant to many solvents and useful with EM embedding reagents
- Low dissolved O_2 makes this plate ideal for culturing anoxic cells

INCLUDES:

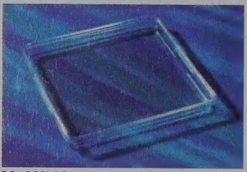
Certificate that assures user of biological performance as well as traceability.

Dia. × H	I.D. Bottom	Culture Area	Mfr. No.	Cat. No.	Case of
With Vent					
35 × 10mm	33mm	9cm²	153066	**12-565-91**	500/236.75
35 × 10mm	33mm	9cm²	174926	**12-565-92†**	500/278.25
60 × 15mm	51mm	21cm²	150288	**12-565-95**	400/214.75
60 × 15mm	52mm	21cm²	169558	**12-565-96†**	400/268.75
60 × 15mm	48mm	21cm²	174888	**12-565-97††**	500/595.25
100 × 15mm	86mm	57cm²	150679	**12-565-98**	450/501.92
100 × 20mm	86mm	57cm²	172958	**12-565-99**	480/540.23
150 × 20mm	136mm	145cm²	168381	**12-565-100**	80/186.50
150 × 15mm	136mm	150cm²	157150	**12-565-352**	120/280.00
Without Vent					
35 × 10mm	33mm	9cm²	150318	**12-565-90**	500/236.75
60 × 15mm	48mm	18cm²	150326	**12-565-94**	400/214.75

† With 2mm gridded bottom.
†† Permanox plastic.

Corning* 245mm Square BioAssay Dishes

Generous growth area of 500cm² allows for larger assays and better overall use of space in incubators



06-443-22

- Improve the efficiency of microbial assays including library replication, colony picking, and plaque lift studies
- Polystyrene dishes feature stacking beads for stable stacking
- Available with or without special handles for easy manipulation
- Compatible with various automated colony picking and gridding robots
- Supplied with vented lid to provide consistent gas exchange
- Sterile, certified nonpyrogenic

Description	L × W × H†	Mfr. No.	Cat. No.	Case of
With Handles	245 × 245 × 26mm	431111	**07-200-600**	16/114.34
Without Handles	245 × 245 × 26mm	431272	**06-443-22**	16/156.42
Without Handles	245 × 245 × 20mm	431301	**07-200-134**	20/156.55

† Height of dish with lid.

Corning* Untreated Culture Dishes

Ideal for special applications such as suspension culture and plant cell culture

- Manufactured from optically clear virgin polystyrene
- Radiation sterilized

CERTIFICATIONS:

Certified nonpyrogenic

Dia. × H†	Culture Area	Mfr. No.	Cat. No.	Case of
35 × 10mm	8cm²	430588	**08-772-30**	500/238.13
60 × 15mm	21cm²	430589	**08-772-31**	500/274.87
100 × 20mm	55cm²	430591	**08-772-32**	500/598.54
150 × 25mm	151cm²	430597	**08-772-25**	60/136.75

†Actual growth surface diameters: 35mm dish=33.9mm; 60mm dish=51.4mm; 100mm dish=80.5mm; 150mm dish=138.7mm; 245mm dish=225mm.

Corning* Cell Culture-Treated Polystyrene Dishes

Surface treated to enhance cell attachment and growth

08-722-20, 08-772-22, 07-200-599, 08-772-24

- Tested for sterility and cell growth
- The 60 × 15mm dish is also available with a 2mm grid to facilitate enumeration of cells or plaques
- Radiation sterilized

ORDERING INFORMATION:

Shelf pack 08-772-23 consists of six-pack carriers which hold six sleeves of 10 dishes each—minimizing contamination of unused dishes after sleeve is opened.

Supplied in sleeves of 20 dishes (except 150 × 25mm dish which is packaged five per sleeve and 245 × 245mm dish which comes four per sleeve).

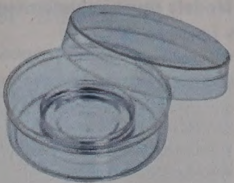
Dimensions†	Culture Area	Mfr. No.	Cat. No.	Case of
35 dia. × 10mmH	8cm²	430165	**08-772-20**	500/241.01
60 dia. × 15mmH	21cm²	430166	**08-772-21**	500/277.22
60 dia. × 15mmH	21cm²	430196	**08-757-168†**	500/358.08
100 dia. × 20mmH	55cm²	430167	**08-772-22**	500/594.58
100 dia. × 20mmH	55cm²	430293	**08-772-23††**	480/577.52
150 dia. × 25mmH	148cm²	430599	**08-772-24**	60/141.43
245L × 245mmW†††	500cm²	431110	**07-200-599**	16/254.00

† Actual growth surface: 35mm dish=33.9mm; 60mm dish=51.4mm; 100mm dish=80.5mm; 150mm dish=134.5mm; 245mm dish=224mm.
†† With 2mm grid.
††† Shelf pack.
†††† Square dish.

BD Falcon* Organ Culture Dish

Vacuum-gas plasma tissue culture treated polystyrene dish

- For organ culture and membrane diffusion
- Center well area of 2.45cm²
- Sterile, nonpyrogenic


08-772-12

ORDERING INFORMATION:

Supplied 20 per sleeve.

Dia. × H	Mfr. No.	Cat. No.	Case of 500
60 × 15mm	353037	**08-772-12**	874.72

BD Falcon* Square BioDish XL

Automation-friendly for use in colony-picking robots

- Contains alphanumeric 5 × 7 grid lid, providing a visual guide to colony location
- Square durable construction offers stable dish manipulation
- Stacking rings protect the viewing surface and allow for easier handling
- Crystal-grade polystyrene maintains optical clarity
- Radiation sterilized

02-667-21

L × W × H	Mfr. No.	Cat. No.	Case of 20
245 × 245 × 18mm	351040	**02-667-21**	138.01

BD Falcon* Tissue Culture Dishes

Optically clear and perfectly flat

- Manufactured from polystyrene
- Tissue-culture treated
- Lids are designed for optimum gas exchange
- Sterile, nonpyrogenic

Easy-Grip* Tissue Culture Dishes

- Unique design simplifies lifting one dish or a stack of small dishes

08-772 Series

ORDERING INFORMATION:

Supplied 20 per sleeve.

Dia. × H	Mfr. No.	Cat. No.	Case of 500
35 × 10mm	353001	**08-772A**	230.40
60 × 15mm	353004	**08-772F**	275.57

Standard Tissue Culture Dishes

ORDERING INFORMATION:

Supplied 20 per sleeve.

Dia. × H	Mfr. No.	Cat. No.	Case of
60 × 15mm	353002	**08-772B**	500/264.50
100 × 20mm	353003	**08-772E**	200/228.70

BD Falcon Tissue Culture Dishes, contd.

Gridded Tissue Culture Dishes

- With 20mm grid molded into dish bottom for procedures requiring location and counting of cell populations
- Growth area, 151.9cm²

ORDERING INFORMATION:

Supplied 10 per sleeve.

Dia. × H	Mfr. No.	Cat. No.	Case of 100
150 × 25mm	353025	**08-772-6**	245.00

LOOKING FOR MEDIA?

Cell Culture media can be found in the Cell Culture section.

DISPENSERS/DILUTERS

*Fisherbrand** Bottle-Top Dispensers

Five fully adjustable models cover a dispensing range from 0.05 to 50mL

Deliver even aggressive liquids and organic solvents safely and effortlessly (except hydrofluoric acid).

- Accuracy: ±0.7%
- Repeatability: ±0.1% or better
- Fully autoclavable to 121°C (250°F)
- Precision valve mechanism ensures easy priming and minimum reagent waste, with no leakage back to the reservoir
- Polypropylene protection sleeve surrounds the borosilicate glass barrel
- New antidrip taps prevent accidental spillage

03-692-180

- Low-profile amber reservoirs (sold separately, see next page) have a wide footprint to prevent tipping
- Side neck lets you refill the reservoirs without removing the dispenser assembly, eliminating a potential handling hazard
- New spring-lock provides quicker, more accurate volume selection
- Dispenser head can be rotated 360° for convenient dispensing and volume adjustment
- Smooth-moving PTFE piston minimizes operator fatigue and can be removed in seconds for cleaning
- Dispensers fit directly onto 30mm-neck bottles
- Manufactured with ISO 9002-certified processes

INCLUDES:

Adapters for use with 38, 40, and 45mm-neck bottles

CERTIFICATIONS:

CE marked

Range	Increments	Cat. No.	Each
0.05 to 2.5mL	0.05mL	**03-692-177**	328.75
0.1 to 5.0mL	0.1mL	**03-692-178**	328.75
0.2 to 10mL	0.2mL	**03-692-179**	340.50
1.0 to 30mL	1.0mL	**03-692-180**	435.00
1.0 to 50mL	1.0mL	**03-692-181**	451.50

ACCESSORIES

Anti-tip Reservoirs

Side neck allows filling of reservoir without removing the dispenser

- Amber borosilicate glass
- Low profile and wide footprint for extra stability
- Fit directly on 1.4L reservoir
- Require 45mm adapter (included with bottle-top dispenser) to fit 2.5L reservoir

Size	Cat. No.	Each
1.4L	**03-692-182**	107.00
2.5L	**03-692-183**	125.00

Thermo Scientific* Repipet* Dispensers

Dispense any common reagent except hydrofluoric acid

Protect valuable reagents—air intake tube and filter keep out airborne contamination.

- 0.5mL capacity dispenser
- Volume range: 0.01 to 50mL
- Accuracy 1%
- Reproducibility 0.1%
- Plunger-type operation
- Devices automatically expel air bubbles
- With round 1 qt. (950mL) amber bottle

13-687-56

Volume	Increments	Mfr. No.	Cat. No.	Each
0.5mL	0.01mL	3001/2A	**13-687-30**	370.00
1mL	0.01mL	3001A	**13-687-53**	370.00
5mL	0.05mL	3005A	**13-687-54**	370.00
10mL	0.10mL	3010A	**13-687-55**	370.00
20mL	0.25mL	3020A	**13-687-56**	385.00
50mL	0.50mL	3050A	**13-687-57**	475.00

Thermo Scientific* Repipet* II Dispensers

Tough fluorocarbon resin sleeve entirely protects dispensing mechanism

Suitable for use with all lab reagents except hydrofluoric acid and organic solvents.

- Reproducibility ±0.2%
- Volume range: 0.01 to 20mL
- Accuracy ±1.5%
- Magnifying indicator allows easy and accurate viewing of scale
- Dispensing mechanism features extra-thick borosilicate glass barrel and plunger
- PTFE inlet and outlet tips
- With amber glass bottles; 500mL for 5mL dispenser and 1250mL bottle for 10 and 20mL dispensers

13-687-62A

Volume	Increments	Mfr. No.	Cat. No.	Each
5mL	0.01mL	9005	**13-687-62A**	178.00
10mL	0.01mL	9010	**13-687-62B**	178.00
20mL	0.01mL	9020	**13-687-62C**	206.00

Thermo Scientific* Repipet* Jr. Dispensers

Models cover volume range from 0.01 through 10mL

- Accuracy: ±2%
- Reproducibility: 5%

Adjustable Volume

- Simple plunger operation to dispense liquids
- Volumes variable over entire range
- Graduations: 0.1mL
- Ideal for repetitive dispensing of aqueous solutions, water, diluted acids and bases, foods, and unhydrolyzed proteins
- Not recommended for oils, hydrocarbons, iodine, petroleum-based chemicals, oxidizing acids, alicyclics, or solvents
- All plastic
- 10¼"H (26cm)
- With 32 oz. (960mL) plastic container
- Without stand—available on request

13-687-59B

Fixed Volume

- Just press once to quickly dispense a fixed volume
- Made of rugged polypropylene to reduce breakage
- Dispense a variety of chemicals
- Not for use with oils, hydrocarbons, petroleum-based chemicals, oxidizing acids, concentrated acids, alicyclics and solvents
- Supplied with amber glass container, plastic container, four interchangeable cap adapters for 20-400, 22-400, 24-400, and 28-400 screw caps, and an extra 12" (30.5cm) of PTFE resin intake tubing
- 1.0 to 3.0mL sizes come with 8 oz. (240mL) containers
- 4.0 to 10.0mL sizes come with 16 oz. (480mL) containers

13-687-49F

Volume	Mfr. No.	Cat. No.	Each
Adjustable Volume			
2mL	70021	**13-687-49P**	119.00
5mL	7005	**13-687-59A**	120.00
10mL	7010	**13-687-59B**	120.00
Fixed Volume			
1.0mL	7701	**13-687-49F**	125.00
2.0mL	7702	**13-687-49H**	125.00
3.0mL	7703	**13-687-49K**	125.00
4.0mL	7704	**13-687-49L**	125.00
5.0mL	7705	**13-687-49M**	125.00
10.0mL	7710	**13-687-49N**	125.00

*Trademark. See Trademark Reference.

Thermo Scientific* Universal and Low-Profile Repipet* Dispensers

Handy, accurate Pyrex* glass reagent diluters

13-687-22

Safely handle most any reagent, including concentrated acids (except hydrofluoric) and alkalis, chlorinated hydrocarbons. Only glass and fluorocarbon resin come in contact with reagent. Repipet dispensers dispense 20 times/min.

- Lift plunger to fill, depress to deliver
- Accuracy: 1%
- Reproducibility: 0.1%

Universal Diluters

- Fit common screw-cap reagent bottles with openings greater than ¾" I.D. (19mm)
- Ideal for blood chemistries and biological and microbiological analyses
- Come with three sets of caps and washers to fit 28-430, 33-430, and 38-430 bottle threads (other sizes available on request)
- Features magnifying indicator, integral air filter, and 24" (61cm) of PTFE resin tubing (metal indicator for diluters available on special order)
- Without bottle

Low-Profile Diluters

- Wide-mouth, 1000mL reservoir containers have Halar* fluorocarbon resin caps with two openings: one for dispenser; other to allow refilling (no need to remove dispenser)
- Bottle designed for solid support, less chance of breakage
- Low profile allows easy fit into shelf space and refrigerators
- Amberized glass
- PTFE resin outlet tip
- With air intake tubulation

NOTE:

PTFE resin caps may distort with autoclaving or use of strong solvents.

Volume	Grad.	Mfr. No.	Cat. No.	Each
Repipet Dispensers				
Universal				
1mL	0.01mL	3001AU	**13-687-18**	377.00
5mL	0.05mL	3005AU	**13-687-19**	387.00
10mL	0.10mL	3010AU	**13-687-20**	380.00
20mL	0.25mL	3020AU	**13-687-21**	410.00
50mL	0.50mL	3050AU	**13-687-22**	494.00
100mL	1.00mL	3100AU	**13-687-23**	617.00
Low-Profile				
1mL	0.01mL	3001AL	**13-687-31**	389.00
5mL	0.05mL	3005AL	**13-687-33**	390.00
10mL	0.10mL	3010AL	**13-687-35**	390.00
20mL	0.25mL	3020AL	**13-687-37**	406.00
50mL	0.50mL	3050AL	**13-687-39**	497.00

Brinkmann* Bottle-Top Dispensers

With a broad array of adapters and accessories available, dispensers are designed to fit almost any size reagent bottle for almost any application

Brinkmann fixed- and adjustable-volume bottle-top dispensers shown with reservoirs (not supplied); some with accessory extended discharge tube or drying tube.

Fixed- and adjustable-volume dispensers cover a volume range of 0.1 to 100mL. Deliver even the harshest reagents safely. Choose standard models or ChemSaver models, which recirculate the reagent used during the priming step. Accuracy ±0.5%,† precision ≤0.1%.

- Clear plastic sleeve surrounds the glass cylinder to protect the user from chemical hazards should the cylinder break
- Support sleeve surrounds the discharge tubing to restrict its movement and provide an additional safety barrier during dispensing
- Entire assembly rotates 360° to allow the user to obtain the safest dispensing position and reach the volume adjustment at all times
- Autoclavable without having to loosen valves or remove individual parts
- Easy to use and maintain
- Unique "wiping" piston seal of PTFE resin eliminates the problems of piston swelling/freezing common to conventional floating-piston dispensers
- Reagent is wiped out of the cylinder with each stroke to prevent the buildup of residue that can lead to malfunction
- Grooved, positive-lock volume adjustment ensures precision and prevents accidental setting changes during use
- Unique telescoping filling tube adjusts to fit the reagent bottle, without cutting
- Filling valve, tubing, and even the piston can be individually replaced, to minimize repairs and downtime
- ChemSaver models eliminate reagent waste through the use of a recirculating safety valve that diverts reagent used in priming back into the reservoir bottle
- ChemSaver valve can be closed to prevent unintended flow of reagent
- ChemSaver models can be user-calibrated for fine adjustment of volume when working with viscous or high-density solutions

INCLUDES:

All dispensers are supplied with a certificate of calibration to aid in GLP compliance. Standard dispensers come in fixed- as well as adjustable-volume styles; ChemSaver dispensers, in adjustable-volume style only.

Ordering Table Contd. on next page.

Brinkmann* Bottle-Top Dispensers, Contd.

Volume	Increments	Mfr. No.	Cat. No.	Each
Fixed-Volume Dispensers				
1mL	——	2222060-8	**13-688-137**	380.00
5mL	——	2222070-5	**13-688-138**	380.00
10mL	——	2222080-2	**13-688-139**	380.00
Adjustable-Volume Dispensers				
0.1 to 2.5mL	0.05mL	2222000-4	**13-688-130**	380.00
1 to 5mL	0.10mL	2222010-1	**13-688-131**	380.00
2 to 10mL	0.20mL	2222020-9	**13-688-133**	380.00
5 to 25mL	0.50mL	2222030-6	**13-688-134**	510.00
10 to 50mL	1.00mL	2222040-3	**13-688-135**	540.00
20 to 100mL	1.00mL	2222050-1	**13-688-136**	800.00
ChemSaver Dispensers (Adjustable Volume)				
0.1 to 2.5mL	0.05mL	2222090-0	**13-688-140**	405.00
1 to 5mL	0.10mL	2222100-1	**13-688-141**	405.00
2 to 10mL	0.20mL	2222110-8	**13-688-142**	405.00
5 to 25mL	0.50mL	2222120-5	**13-688-143**	555.00
10 to 50mL	1.00mL	2222130-2	**13-688-144**	560.00
20 to 100mL	1.00mL	2222140-0	**13-688-145**	860.00

† For all except 1mL fixed-volume (13-688-137) and 0.1-2.5mL adjustable-volume models (13-688-130 and -140), which are accurate to ±0.6%.

DON'T SEE THE RIGHT PRODUCT?

For accessories, including bottle-top adapters and discharge tubes, ...

Visit www.fishersci.com and search for 13-688-154 and 13-688-146

Jencons Safety Zippette Bottle-Top Dispensers

Five fully adjustable models cover a dispensing range from 0.05 to 50mL

Deliver even aggressive liquids and organic solvents safely and effortlessly (except HF). Precision valve mechanism ensures easy priming and minimum reagent waste, with no leakage back to the reservoir.

- Accuracy: ±0.7%
- Repeatability: ±0.1% or better
- Fully autoclavable to 121°C (250°F)
- Polypropylene protection sleeve surrounds the borosilicate glass barrel
- Anti-drip tap prevents accidental spillage
- Low-profile amber reservoirs (not included) specially designed for use with Zippette systems have wide footprint to prevent tipping
- Side neck lets you refill reservoirs without removing dispenser assembly—eliminating a potential handling hazard
- New spring-lock adjustment provides quicker, more accurate volume selection
- Dispenser head can be rotated 360° for convenient dispensing and volume adjustment
- Smooth-moving PTFE piston minimizes operator fatigue; can be removed in seconds for cleaning

03-692-95

- Dispensers fit directly onto 30mm-neck bottles
- Manufactured with an ISO 9002-certified process

INCLUDES:

Adapters for use with 38, 40, and 45mm-neck bottles, a calibration certificate, and "Quick Calibration" wheel for in-lab calibration.

CERTIFICATIONS:

CE marked

Range	Increments	Mfr. No.	Cat. No.	Each
0.05 to 2.5mL	0.05mL	263 000	**03-692-60**	308.00
0.1 to 5.0mL	0.1mL	263 001	**03-692-65**	308.05
0.2 to 10mL	0.2mL	263 002	**03-692-67**	319.00
1.0 to 30mL	1.0mL	263 003	**03-692-95**	408.00
1.0 to 50mL	1.0mL	263 004	**03-692-96**	435.00

LOOKING FOR MORE DISPENSERS?

For more dispensers from Jencons, as well as accessories such as reservoirs and bottle adapters, ...

Visit www.fishersci.com and search for Zippette

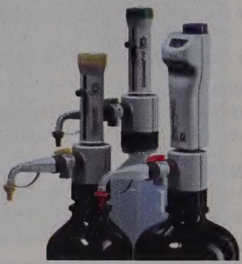
*Trademark. See Trademark Reference.

Prices subject to change.

Brand* Dispensette* III Bottle-Top Dispensers from BrandTech*

For safe and accurate dispensing of many laboratory liquids, including most acids, bases, salt solutions, scintillation fluids and many organic solvents

Low-friction floating piston design provides reliable, smooth, one-handed operation without wiping seals to wear out. Suitable for most laboratory applications; fit most bottles with included adapters and autoclavable for use with sterile reagents.



13-688-2 Series

- Digital Easy Calibration, analog, and fixed-volume models from 50 to 100mL
- Rugged floating piston design, adapts to nearly any unpressurized container
- All models can be calibrated easily
- Digital models include Easy Calibration* feature
- Integral SafetyPrime* valve permits recirculation of dispensed liquid into reagent bottle during priming to reduce sputtering and conserve reagents
- Safety discharge system protects against inadvertent dispensing
- Polypropylene cylinder sleeve helps contain dispenser contents in event of breakage
- Flowpath consists of: borosilicate glass, Al_2O_3 ceramic, platinum-iridium, PFTE, ETFE, FEP and PFA
- Polypropylene safety screw cap on discharge tube
- Accuracy for all models is within ±0.5% (±1.0% for 0.05-0.5mL size), with reproducibility of ≤0.1% (≤0.2% for 0.05-0.5mL size)
- Autoclavable at 250°F (121°C) for sterile dispensing or decontamination
- Supplied with thread adapters and telescoping filling tube that adjusts to length without cutting
- Valve block rotates 360°

ORDERING INFORMATION:

Accessories available that allow dispenser to adapt to nearly any unpressurized reagent container; tube-to-tube serial dispensing with flexible discharge tubing, and dispense sterile or moisture/CO_2 sensitive reagents. For a complete listing, visit our Web site.

INCLUDES:

45mm thread, discharge tube, telescoping filling tube, valve mounting tool, polypropylene thread adapters (10mL or smaller units supplied with 24, 28, 33 and 38mm adapters; 25 and 50mL units come with 28, 33 and 38mm adapters; 100mL units come with 33 and 38mL adapters), certificate of performance, and operating manual

WARRANTY:

One year

COMPLIANCE:

Can be calibrated by users for GLP and ISO 9000 compliance

NOTE:

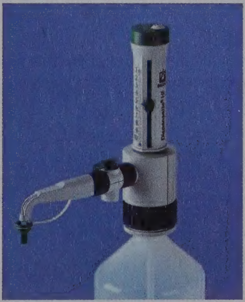
For dispensing concentrated fuming acids, peroxides, or difficult organic solvents, select the Dispensette Organic (see next page). Not for use with hydrofluoric acid (HF) or carbon disulfide (CS_2).

Range	Mfr. No.	Cat. No.	Each
Digital Easy Calibration Adjustable-volume Models			
0.2 to 2mL	4701321	**13-688-220**	417.60
0.5 to 5mL	4701331	**13-688-221**	417.60
1 to 10mL	4701341	**13-688-222**	418.60
2.5 to 25mL	4701351	**13-688-223**	551.00
5 to 50mL	4701361	**13-688-224**	562.00
Analog Adjustable-volume Models			
0.05 to 0.5mL	4701101	**13-688-225**	361.25
0.2 to 2mL	4701121	**13-688-226**	361.25
0.5 to 5mL	4701131	**13-688-227**	361.25
1 to 10mL	4701141	**13-688-228**	361.25
2.5 to 25mL	4701151	**13-688-230**	502.15
5 to 50mL	4701161	**13-688-231**	510.00
10 to 100mL	4701171	**13-688-232**	780.00
Fixed-volume Models			
1mL	4701211	**13-688-233**	361.25
2mL	4701221	**13-688-234**	361.25
5mL	4701231	**13-688-235**	361.25
10mL	4701241	**13-688-236**	361.25

Brand* Dispensette* HF Bottle-Top Dispensers from BrandTech*

Safely and accurately dispense acid (up to 52%) and organic solvents up to a density of 3.8g/cm³ (i.e., bromoform, dibromoethane and tetrabromoethane)

- Analog-adjustable model features a SafetyPrime* valve to purge bubbles without dispensing, and reduce spurting and reagent waste
- Flowpath consists of the following high-grade materials: Al_2O_3 ceramic, platinum-iridium, PTFE, ETFE, FEP, and PFA
- Discharge screw cap is polypropylene



13-688-101

INCLUDES:

Discharge tube, telescoping filling tube, polypropylene bottle-top thread adapters, operating manual, and certificate of calibration

WARRANTY:

One year

NOTE:

None of the Dispensette dispensers should be used with carbon disulfide (CS_2). See Dispensette III and Dispensette Organic dispensers to dispense many other liquids.

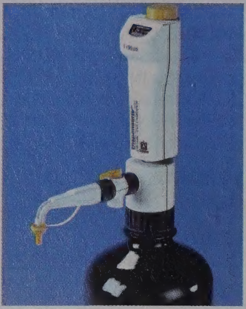
Range	Mfr. No.	Cat. No.	Each
1 to 10mL	4701041	**13-688-101**	900.00

Brand* Dispensette* Organic Bottle-Top Dispensers from BrandTech*

Ideal for HPLC and combinatorial chemistry labs

For dispensing of critical organic solvents including chlorinated and fluorinated hydrocarbons, concentrated acids (e.g., fuming HCl and HNO_3), trifluoroacetic acid (TFA) tetrahydrofuran (THF), methanol, acetonitrile, methylene choride, DMF, and DMSO.

- Mounts directly on most solvent and reagent bottles for fast, convenient dispensing
- Reinforced discharge tube with threaded safety cap
- Safety discharge system to reduce the chance of inadvertent dispensing
- Telescoping filling tube and polypropylene thread adapters (ETFE adapters available separately)
- Easily disassemble for cleaning and autoclaving
- Choice of analog adjustable and digital Easy Calibration* models that reduce calibration time by half compared to conventional instruments



13-688-276

- Optional SafetyPrime* valve reduces spurting and reagent waste while priming
- Flowpath consists of borosilicate glass, ceramic, tantalum, PTFE, ETFE, FEP, and PFA
- Discharge tube safety screw cap is polypropylene

INCLUDES:

Discharge tube, telescopic filling tube, selection of bottle-top thread adapters, manual, and calibration certificate

NOTE:

Must not be used for hydrofluoric acid (HF), alkaline solutions, hydrochloride salts, or liquids incompatible with the listed flowpath materials.

SPECIFICATIONS

Accuracy	±0.5%
Reproducibilty	±0.1%
Max. Vapor Pressure	500mbar
Max. Viscosity	500mm²/sec.
Max. Temperature	40°C
Max. Density	2.2g/cm³

		With SafetyPrime Valve			Without SafetyPrime Valve		
Range	**Increments**	**Mfr. No.**	**Cat. No.**	**Each**	**Mfr. No.**	**Cat. No.**	**Each**
Analog Adjustable Models							
0.5 to 5mL	0.1mL	4731131	**13-688-270**	382.35	4731130	**13-642-890**	387.25
1 to 10mL	0.2mL	4731141	**13-688-272**	382.35	4731140	**13-642-891**	387.25
2.5 to 25mL	0.5mL	4731151	**13-688-273**	520.00	4731150	**13-642-892**	540.00
5 to 50mL	1.0mL	4731161	**13-688-274**	536.00	4731160	**13-642-893**	551.00
10 to 100mL	1.0mL	4731171	**13-688-100**	827.00	----	----	----
Digital Easy Calibration Models							
0.5 to 5mL	0.02mL	4731331	**13-688-275**	438.75	4731330	**13-642-886**	435.25
1 to 10mL	0.05mL	4731341	**13-688-276**	438.75	4731340	**13-642-887**	435.25
2.5 to 25mL	0.1mL	4731351	**13-688-277**	572.00	4731350	**13-642-888**	588.00
5 to 50mL	0.2mL	4731361	**13-688-278**	588.00	4731360	**13-642-889**	605.45

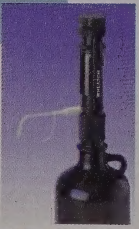
Wheaton Socorex* 520/521 Bottle-Top Dispensers

These accurate, user-friendly bottle-top dispensers are an affordable alternative to their all-glass counterparts

Volume selection is fast, easy and accurate. Simply rotate the selector ring while viewing the settings on the fixed window. Volume adjustments are made in calibrated steps and "locked in" to ensure that the amount dispensed is the amount required.

- High chemical resistance
- Easy in-lab calibration
- Six models cover volume range from 0.25 to 109mL
- Fit reservoirs with 33mm screw neck finish
- Accuracy: <±0.7%
- Reproducibility: <0.1%
- Syringe barrel is encased in a protective sleeve to prevent breakage and eliminate risk of spilling
- Dispenser can be quickly disassembled for cleaning
- Autoclavable fully assembled
- Dispenser rotates 360° on bottle

13-706-32 (reservoir not included).



13-706-4 (reservoir not included).

- All parts that come in contact with the liquid in use are chemically inert
- PTFE resin coating on the glass plunger prevents the "freezing" normally associated with dispensing caustic solutions

INCLUDES:

Adapters to fit bottles with 28, 38, and 45mm finishes

NOTE:

Not for use with concentrated or full-strength acids.

Range	**Increments**	**Mfr. No.**	**Cat. No.**	**Each**
0.25 to 2mL	0.05mL	844000	**13-706-30**	353.78
1 to 5mL	0.10mL	844002	**13-706-31**	353.78
1 to 10mL	0.25mL	844004	**13-706-32**	353.78
2 to 20.9mL	0.1mL	844021	**13-706-4**	611.19
10 to 59mL	1.0mL	844022	**13-706-5**	679.42
10 to 109mL	1.0mL	844023	**13-706-6**	840.20

LOOKING FOR WHEATON BOTTLE-TOP ACCESSORIES?

For accessories, including reservoirs, adapters and extension tubing, ...

Visit www.fishersci.com and search for Wheaton Bottle-top

Hamilton* Microlab* Series 500 Diluters/Dispensers

These precision fluid-handling devices use positive displacement for highly accurate dispenses or dilutions

Hamilton 500 Series Diluter/ Dispenser with optional printer.

hoose economical Series 500A diluter or dispenser for simple fluid handling asks, or Series 500B multiprogrammable diluter/dispensers to perform more ntricate tasks such as titrations. You can perform diluting and dispensing perations via fill, dispense, auto-refill and pathway priming capabilities ith dispensing volumes of 0.025µL to 25mL.

- Syringe plunger fills or releases a desired volume of fluid with the touch of a button
- Programmable devices eliminate the problems associated with manual techniques using volumetric flasks and pipetters
- Liquid contacts only chemically inert Kel-F*, PTFE resin, and borosilicate glass
- Language switch allows display readouts in English, French, German, Portuguese or Spanish

odel 503A Dual Syringe Diluter

- Primarily for simple dilutions, but will perform single syringe dispensing as well

odel 504A Dual Syringe Dispenser

- Designed to dispense two separate liquids, providing a unique pathway for each

odel 510B Single Syringe Dispenser

- Primarily for dispensing a single fluid from a reservoir but will also perform titrations, aliquot and serial dispensing

odel 530B Dual Syringe Diluter

- Obtain ratios from 1:1 to 1:25,000
- Performs titrations, aliquot dispensing, serial dilutions and standards preparation may also be performed

odel 540B Dual Syringe Dispenser

- Equipped with independent fluid paths with user-programmable valve control for complicated applications

PPLICATIONS:

erfect for QC, production, environmental or chemical/life cience laboratories

ORDERING INFORMATION:

For 115V 50/60Hz. 220V models available; contact your Fisher Scientific Customer Service Representative.

INCLUDES:

Controller, ergonomically designed hand probe, valve, fill and dispense tubing in both 18- and 12-gauge, power cord and user manual. Everything required for operation is included; other size syringes available.

COMPLIANCE:

Units meet TUV/GS standards, are CSA approved.

CERTIFICATIONS:

CE marked; NIST* traceable. Each device is calibrated and certified against equipment whose calibration is traceable to NIST.

Series	500A	500B
Programmability	Create/retain one program while power is on	Create/store 21 methods in battery-backed-up memory and one in an EEPROM
Communications	Model 500A Series controller only	Model 500B Series controller or computer via RS-232-C port
Syringe Sizes		
Diluent/Reagent	25, 50, 100, 250, 500µL, 1.0, 2.5, 5.0, 10.0, 25mL	25, 50, 100, 250, 500µL, 1.0, 2.5, 5.0, 10.0, 25mL
Sample	25, 50, 100, 250, 500µL, 1.0mL	25, 50, 100, 250, 500µL, 1.0mL
Smallest Volume Increment	0.025µL	0.025µL
Dispense Range	1µL to 25mL†	1µL to 25mL†
Accuracy	Within ±1.0%‡	Within ±1.0%‡
Precision	Within ±0.2%‡	Within ±0.2%‡
Resolution	0.1% of syringe volume	0.1% of syringe volume
Operating Speed (per full syringe stroke)	2 to 20 seconds	1 to 250 seconds
Dimensions (L × W × H)	7 × 6⅛ × 13⅛" (17.8 × 15.6 × 33.3cm)	7 × 6⅛ × 13⅛" (17.8 × 15.6 × 33.3cm)
Weight	10⅜ lb. (4.7kg)	10⅜ lb. (4.7kg)

Model	Mfr. No.	Cat. No.	Each
503A Diluter (dual syringe)	ML503115	**13-684-73A**	4213.47
504A Dispenser (dual syringe with independent fluid paths)	ML504115	**13-684-74A**	4338.23
510B Dispenser (single syringe)	ML510115	**14-813-118**	4118.06
530B Diluter (dual syringe)	ML530115	**14-813-120**	4867.66
540B Dispenser (dual syringe with independent fluid paths)	ML540115	**14-813-122**	4993.47

† Dispensing less than 1µL is not recommended. For optimum results, dispense at 10% of syringe volume or greater.

‡ Values apply at 10% syringe volume.

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ostar* Aspirator

or removal of supernatants—an alternative to glass Pasteur pipets

andheld vacuum manifold permits afe removal/disposal of supernatants om a wide range of laboratory vessels.

- Connects to in-house vacuum source
- Fingertip vacuum controls let you aspirate with precision
- Reduces risk of losing valuable samples

07-200-564 (pipet tip not included)

- Use with disposable pipet tips, polyethylene and polystyrene aspiration pipets, or Pasteur pipets
- Fully autoclavable

INCLUDES:

Handpiece, grommet for attachment of accessories, and a single-channel adapter for use with disposable pipetter tips

Mfr. No.	Cat. No.	Each
4930	**07-200-564**	270.60

Kontes* Tilting Repeating Dispensers

Fixed-volume models, from 5 through 100mL

- Made entirely of glass
- Fixed-volume dispensing head secured by a polyacetal ₮ clamp
- Tilt flask back to fill to designated volume, forward to dispense
- Available in many different flask capacities

INCLUDES:
One clamp

K759300-0005

Volume Dispensed	Flask Capacity	₮ Joint	Mfr. No.	Cat. No.	Each
5mL	250mL	24/40	759300-0005	**K759300-0005**	146.25
10mL	500mL	24/40	759300-0010	**K759300-0010**	148.81
15mL	500mL	24/40	759300-0015	**K759300-0015**	151.38
20mL	1000mL	29/42	759300-0020	**K759300-0020**	157.79
25mL	1000mL	29/42	759300-0025	**K759300-0025**	161.64
30mL	1000mL	29/42	759300-0030	**K759300-0030**	164.19
40mL	2000mL	29/42	759300-0040	**K759300-0040**	179.60
50mL	2000mL	29/42	759300-0050	**K759300-0050**	187.30
60mL	2000mL	29/42	759300-0060	**K759300-0060**	195.00
100mL	2000mL	29/42	759300-0100	**K759300-0100**	206.54

Nalgene* Single-Volume Dispensers

Deliver precise volumes automatically every time

Low-density polyethylene dispensers with polypropylene measuring chambers.

- Accuracy: ~2.5%
- A squeeze of the 250mL reservoir fills measuring chamber—another squeeze dispenses exact amount
- Disassembles in seconds for refilling or cleaning

13-683-20D

Chamber Capacity	Mfr. No.	Cat. No.	Each	Case of 6
1mL	3700-0001	**13-683-20A**	40.91	163.61
2mL	3700-0002	**13-683-20B**	40.91	163.61
5mL	3700-0005	**13-683-20D**	40.91	163.61

Nalgene* Variable-Volume Dispensers

Volume range 1 to 60mL

- Measuring cup slides up or down on vertical tube
- Height of tube inside measuring chamber determines volume to be dispensed
- Fill cup by squeezing bottle, forcing liquid up tube
- Release bottle pressure to draw excess liquid (above top of tube) back into bottle
- Desired volume remains in cup

25mL dispenser

- Measuring chamber graduated from 1 to 25mL; with 500mL graduated bottle and dust cover

60mL dispensers

- Measuring chamber calibrated in ounces (½, 1, 1½, 2) and milliliters (10 to 60 in 10mL increments)
- Patented push-pull stopper provided on end of measuring chamber stem makes dispenser leak resistant when closed
- For dispensing bases, aqueous solutions, and alcohols
- Has high-density polyethylene ring-tab around bottle neck for attaching a label

13-683-55

INCLUDES:
Low-density polyethylene bottle, graduated transparent polymethylpentene measuring chamber, polyethylene fill tube that connects bottle with chamber, polypropylene stem closure and push-pull stopper

Chamber Capacity	Bottle Capacity	Mfr. No.	Cat. No.	Each	Case of 6
25mL	500mL	3702-0025	**13-683-55**	22.26	89.04
60mL	500mL	3702-1660	**13-683-55A**	26.47	105.90
60mL	1000mL	3702-3260	**13-683-55B**	28.23	112.92

DISSECTING

INSTRUMENTS

*Fisherbrand** Dissecting Set

All components come in plastic case

- Forceps: medium points, nickel plated
- Scissors: 1½" (40mm) blades, stainless steel
- Dissecting Knife Handle: nickel plated
- Knife Blades: stainless steel pack of 3
- Dropping Pipet: glass
- Bent Dissecting Needle: stainless steel with plastic handle
- Straight Dissecting Needle: stainless steel with plastic handle
- Vinylite* Ruler: 6" (15cm)

08-855

Cat. No.	Each	Case of 12
08-855	42.62	437.10

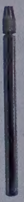
*Trademark. See Trademark Reference.

Prices subject to change.

*Fisherbrand** Metal Needle Holder

Has adjustable chuck to tighten or loosen steel needles

- Use with 08-960 Series Fisherbrand Dissecting Needles
- Overall length: 3⅛" (80mm)
- With one straight needle



08-955

Cat. No.	Each	Case of 12
08-955	13.46	129.09

*Fisherbrand** Dissecting Needles

- Steel
- Needles only
- With sharp points
- Length, 2" (50mm)
- Use with 08-955 Fisherbrand Metal Needle Holder

08-960A, 08-960B

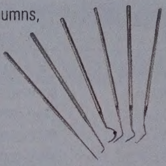
Type	Cat. No.	Pack of 36
Straight	08-960A	16.66
Curved	08-960B	19.13

*Fisherbrand** Microprobes

Six stainless-steel probes for electronics, dissecting, inspecting, soldering, gluing, and micromanipulation

Excellent for hooking small springs, packing columns, cleaning miniature parts, and soldering boards. Solder won't stick to probes.

- Tips are hand-honed for sharpness
- Precision-ground, highly polished, and tempered for long life



ORDERING INFORMATION:

Pack includes one each of six shapes shown in photo.

08-850

Length	Cat. No.	Pack
6" (152mm)	08-850	58.38

*Fisherbrand** Seeker with Bent End

Partly knurled to ensure firm grip

- Nickel-plated steel probe with round handle
- Curved point tapered and blunt at end
- Overall length: 6" (152mm)

08-995

Cat. No.	Each	Case of 25
08-995	16.84	336.89

*Fisherbrand** Shears

For cartilage and bone

- Strong, removable bar-spring makes shears self-opening
- Stainless steel as per ASTM* (F899-89) Standards
- Blade length: 1⅛" (30mm)
- Sterilizable by EtO/gamma radiation
- Rockwell Hardness: 50-55 HRC

08-990

COMPLIANCE:

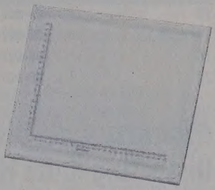
Produced under ISO 9001, GMP, cGMP guidelines; FDA-certified stainless material

Length	Cat. No.	Each	Case of 6
5½" (139.7mm)	08-990	78.96	419.23

Thermo Scientific* Richard-Allan Scientific* Dissecting Boards

White background with dimensional scales in centimeters allows quick sizing and serves as part of the permanent record (e.g., photographing specimens)

- White, high-density polyethylene boards make conventional cutting surfaces virtually obsolete
- Chemical and stain resistant
- Resist swelling, warping, or cracking
- Spill-containment border confines excess fluids
- Rubber feet prevent slippage on benchtops
- Feet and curved edges facilitate lifting and moving
- Fully washable



Dissecting board

L × W × H	Cat. No.	Each
⅝ × 13 × 11" (1.7 × 33 × 28cm)	09-002-12	75.77
⅝ × 23 × 16" (1.7 × 58 × 41cm)	09-002-16	157.01

Needles with Birch Handles

Sharp-pointed needles with attached holder

- Needle length: 1¾" (45mm)
- Overall length: 5¹¹⁄₁₆" (145mm)

08-965B, 08-965A

Type	Cat. No.	Pack of 12	Case of
Straight	08-965A	6.86	12 Pk./68.55
Curved	08-965B	----	144/37.07

SCALPELS

Fisherbrand* Metal Scalpels

All-metal nickel-plated scalpels

- Highly polished
- Easy to clean and sterilize
- Retain good cutting edge

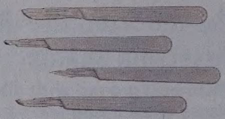
08-920A

Length of Cutting Edge	Cat. No.	Each	Case of 12
1" (2.5cm)	**08-920A**	11.46	114.56
1½" (3.8cm)	**08-920B**	13.37	137.09

Fisherbrand* Single-Use Scalpels

Surgical quality—also ideal for student or general lab use

- Stainless-steel blade attached to plastic handle
- Sterile, individually packaged
- Plastic guard protects cutting edge and prevents package puncture



08-927-5D, -5C, -5B, -5A

Includes Blade Size	Cat. No.	Pack of 20	Case of 50 Pk.
10	**08-927-5A**	52.53	2052.07
11	**08-927-5B**	50.16	1959.56
15	**08-927-5C**	52.15	2036.85
21	**08-927-5D**	52.15	2036.85

Fisherbrand* Disposable-Blade Dissecting Knife Handles

Smooth, tapered back end serves as blunt probe

08-913-5, 08-917-5, 08-914-5

Reusable handles in a choice of styles sold separately from interchangeable blades (see Fisherbrand Stainless-steel Blades below). Stainless-steel handles scientifically shaped and balanced for delicate dissecting and surgical use.

- Blades slide on smoothly and securely
- Passivated
- Fully autoclavable and sterilizable
- Snag-free
- Use blade sizes 10, 11, 12, 15 with handle sizes 3 and 7
- Use blade sizes 20, 21, 22, 23 with handle size 4

Size	Description	Length	Cat. No.	Each
3	Flat with patterned grip	4 7/8" (12.4cm)	**08-913-5**	13.58
4	Flat with patterned grip	5 9/32" (13.4cm)	**08-917-5**	15.95
7	Slender, contoured	6 5/16" (16cm)	**08-914-5**	25.70

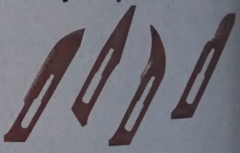
LOOKING FOR MORE DISSECTING TOOLS?

See the Scissors Section for dissecting scissors.

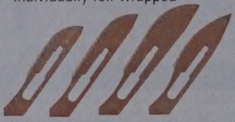
Fisherbrand* Stainless-Steel Blades

Exceptionally strong and uniformly sharp

- Surgical quality
- Sterile
- Individually foil-wrapped



08-916-5A, -5B, -5C, -5D



08-918-5A, -5B, -5C, -5D

Size	Length	Cat. No.	Pack of 100	Case of 100 Pk.
Blades for sizes 3, 5, 7 handles				
10	1 9/16" (4cm)	**08-916-5A**	160.22	13,133.61
11	1 9/16" (4cm)	**08-916-5B**	179.89	14,745.32
12	1 3/8" (3.5cm)	**08-916-5C**	238.88	19,580.38
15	1 3/8" (3.5cm)	**08-916-5D**	168.53	13,813.95
Blades for sizes 4, 6 handles				
20	1 9/16" (4cm)	**08-918-5A**	158.60	13,000.22
21	1 15/16" (5cm)	**08-918-5B**	152.83	12,527.27
22	2 3/16" (5.5cm)	**08-918-5C**	152.83	12,527.27
23	1 3/4" (4.5cm)	**08-918-5D**	206.01	16,885.72

BD* Carbon Steel Blade

Surgical carbon steel, ribbed for extra rigidity

- Convex cutting edge
- 2 3/8" long (6cm)
- Nonsterile
- Bard-Parker* brand
- Individually wrapped

08-918E

Size	Mfr. No.	Cat. No.	Case of 150
60	371340	**08-918E**	226.50

DISTILLATION

EQUIPMENT

Fisher Scientific* DU100 Distillation Unit

Semiautomatic distillation unit provides a simple and safe alternative for routine Kjeldahl nitrogen/protein, ammonia, TKN, and alkaline direct distillation

Standard Features

- Easy to use—semiautomatic distilling unit programmable for alkali addition and distillation cycle
- Accurate bellows pump for long-term stability in reagent delivery

Safety Features

- Patented SAfE* (Steam Addition for Equilibration) technology for safe distilling of tubes with acid/salt cake contents—provides better percent recovery than with conventional method
- Interconnected safety devices include sensors for tube in place, safety door, front hood, and level/overpressure sensors for steam generator

TCDU100

ORDERING INFORMATION:

Dimensions: 11¾L × 14⅛W × 31½"H (30 × 36 × 80cm). Net weight, 55 lb. (25kg).

INCLUDES:

Built-in steam generator, alkali tank, set of 10 receiver flasks, adapters for 100 and 250mL tubes

Electrical Reqts.	Cat. No.	Each
220V 50/60Hz	**TCDU100**	7210.23

ACCESSORIES

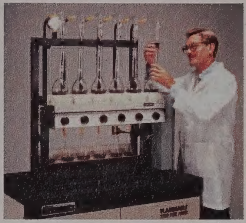
For Fisher Scientific* Model DU100 (above) and Foss* Tecator* Kjeltec* Model 2200 (see p. 596)

NOTE: Kjeltec Model 2200 is in the digestion section

Description	Cat. No.	Pack of
Rubber Adapters for 250mL Tubes	**TC1000-0056**	1/76.50
Rubber Adapters for 75 or 100mL Tubes	**TC1000-0487**	1/88.27
Direct Distillation Tubes, 750mL	**TC1000-0787**	6/460.47
Stand for 12 Direct Distillation Tubes	**TC1000-2049**	1/206.30

Labconco* Countertop Distillation Units

Two- or six-place models


21-131-14

- Manifold assembly holds two or six 500 or 800mL Kjeldahl flasks
- One-piece manifold assembly ensures optimum heat dissipation and uniform condensation
- Leak-resistant condensing tubes are seamless stainless steel for optimum heat transfer
- Heating system with continuously variable control regulates electrical input for each heater from 20 to 100% of electrical capacity
- Sturdy, epoxy-coated tubular steel frame; sits on a table or a cabinet

Six-Place Model Features:

- Counterflow heat exchange to control backpressure and provide uniform distillation rates
- Thermometer gauge that indicates temperature of distillation cooling water
- Remote-control flow valve that adjusts cooling water volume
- Molded epoxy resin base and terminal box for electrical connections

NOTE:

Two-place model comes with 8' long (2.4m) 3-wire cord and plug.

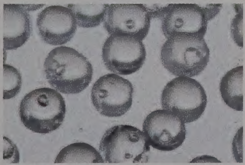
No. of Places	Dimensions (L × W × H)	Mfr. No.	Electrical Reqts.	Cat. No.	Each
2	18¼ × 10⅜ × 30⅛" (46 × 26 × 76cm)	2128501	115V 50/60Hz, 11A	**21-131-14**	3820.00
6	15 × 30⅞ × 41" (38 × 78 × 104cm)	2127602	230V 50/60Hz, 16A	**13-118-10**	9630.00

BEADS

Pyrex* Solid Glass Beads

Available in four sizes

- Spherical
- Useful as packing for distillation columns, mixing beads, and boiling stones


11-312 Series

ORDERING INFORMATION:

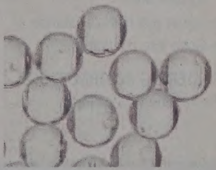
Pack size is 1 lb.

Approx. Diameter	Mfr. No.	Cat. No.	Each	Case of 4 Pack
3mm	7268 3	**11-312-10A**	290.87	849.85
4mm	7268 4	**11-312-10B**	246.09	719.01
5mm	7268 5	**11-312-10C**	190.31	555.94
6mm	7268 6	**11-312-10D**	205.16	599.32

Kimble* Solid Borosilicate Glass Beads

Resist attack by liquids or vapors

May be used as mixing beads, boiling stones, or packing


10-310 Series

ORDERING INFORMATION:

Packaged in 1 lb. boxes.

Approx. Diameter	Approx. No./lb.	Mfr. No.	Cat. No.	Each
3mm	12,000	13500 3	**10-310-1**	201.82
4mm	5200	13500 4	**10-310-2**	177.87
5mm	3000	13500 5	**10-310-3**	132.01
6mm	1800	13500 6	**10-310-4**	143.69

Chemware* PTFE Solid Balls

Minimize "bumping" in boiling

- For column packing and as mixing beads
- Inert to most liquids and vapors
- Usable to 220°C (428°F)

09-191 Series

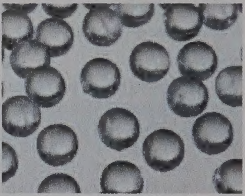
Approx. Diameter	Mfr. No.	Cat. No.	Pack of 100
3mm	D1069326	**09-191-30A**	22.37
6mm	D1069390	**09-191-30B**	49.93
9.5mm	D1069391	**09-191-30C**	88.35

Economical Solid Glass Beads

Used for mixing, boiling, or packing

- Spherical
- Soda-lime glass

ORDERING INFORMATION:
Packaged in 1 lb. packs



11-312 Series

Approx. Diameter	Approx. No./lb.	Cat. No.	Each
3mm	12,500	**11-312A**	20.65
4mm	5500	**11-312B**	20.65
5mm	2700	**11-312C**	18.51
6mm	1600	**11-312D**	18.51

Porcelain 6mm Berl Saddles

Ideal for vacuum distillation, absorption, extraction

- Relatively high usable contact surface area
- Lower gas flow resistance
- Good internal distribution

ORDERING INFORMATION:
Packaged in 200cc packs

09-191-5

No./Pack	Cat. No.	Each
250	**09-191-5**	35.01

APPARATUS

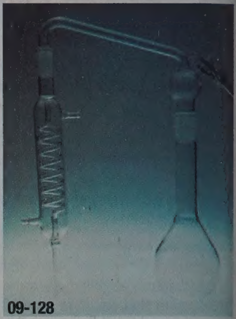
Pyrex* Distillation Assembly

Includes flask, condenser and inlet tube

- 500mL flask has ₮ 29/42 joint; condenser has ₮ 19/38 joint
- Specially designed Kjeldahl type flask performs both distillation and digestion steps in determining nitrogen in organic compounds

ORDERING INFORMATION:
Overall height: 41cm. For replacement condenser (07-729A) only.

REQUIRED ACCESSORIES:
Clamp (sold separately)



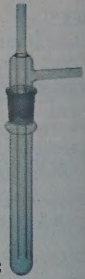
09-128

Description	Mfr. No.	Cat. No.	Each
Complete Apparatus	3340 500	**09-128**	301.33
Flask only	3340 FO	**09-128A**	93.58
Tube only	3340 TO	**09-128B**	142.98

Pyrex* Vacuum-Type Distillation Traps

Separable, with ₮ joints

- Full-length outer ₮ joint on the outer tube and an inner ₮ joint on the inner tube
- Top and side tubulations are the same O.D. as center tube and have a length of 3" (75mm)



11-184-1C

O.D.	₮ Joint Size	Mfr. No.	Cat. No.	Case of
28mm (1")	29/42	7729 28	**11-184-1A**	4/668.63
32mm (1¼")	34/45	7729 32	**11-184-1B**	4/762.25
38mm (1½")	40/50	7729 38	**11-184-1C**	2/340.70
42mm (1⅘")	45/50	7729 41	**11-184-1D**	2/377.57
48mm (1⅞")	50/50	7729 48	**11-184-1E**	1/228.03

Kontes* Distillation Apparatus

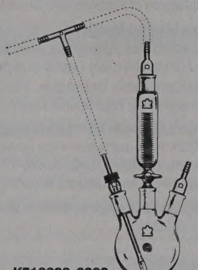
For acid-soluble, acid-insoluble, and extractable sulfides

INCLUDES:

Complete assembly includes: one 125mL funnel without stopper (K633531-0125); one 500mL flask (K606020-1024); two \$ 24/40 adapters (K182900-2440); one \$ 24/40 (5-8mm range) Bevel-Seal* adapter (K179700-0824); and one 12mm coarse fritted tube (K956500-0023). Components also available individually.

COMPLIANCE:

Meets criteria for U.S. EPA Methods 9030A and 9031 for SW-846



K513600-0000

Item	Cat. No.	Each
Complete Assembly	**K513600-0000**	361.70
Funnel w/o stopper, 125mL, \$ 24/40	**K633531-0125**	157.79
Flask, 500mL, \$ 24/40	**K606020-1024**	84.13
Adapter, \$ 24/40	**K182900-2440**	22.35
Adapter, \$ 24/40, (5-8mm range) Bevel-Seal	**K179700-0824**	27.84
Fritted tube, coarse, 12mm	**K956500-0023**	42.53

ACCESSORIES

Required Accessories for Kontes* Distillation Apparatus

For acid-soluble, acid-insoluble, and extractable sulfides

COMPLIANCE:

Meets criteria for U.S. EPA Methods 9030A and 9031 for SW-846

Item	Cat. No.	Each
Scrubbing bottles, 125mL (two required)	**K657250-1223**	153.37
Connector tube, T-shaped Tubing	**K893500-0022**	15.04

Distilling Heads for Solvent Repurification

For the distillation, reflux, storage, and delivery of solvents

Two grease-free 4mm lower PTFE valves permit the distilled solvent to be returned to a two-neck flask, stored in the graduated receiver, or taken off and delivered to a single neck.

- No. 2 hose connections
- Access ports have ½"-20 male threads

INCLUDES:

Head only **K547600-0125**

Capacity	\$ Joint	Graduations × Subdivisions (mL)	Cat. No.	Each
125mL	24/40	30 to 125 × 5	**K547600-0125**	345.70
500mL	24/40	50 to 500 × 25	**K547600-0500**	458.82

DROSOPHILA

INSECT CELL CULTURE MEDIA

Mediatech* Insectagro* Cell Culture Media

High-quality media and supplements for the growth and maintenance of various insect cell lines

Serum-free media feature low protein concentrations without hormones, growth or attachment factors.

MT-61-201-RM, MT-13-100-CV, MT-13-901-CI, and MT-61-161-RM

ORDERING INFORMATION:

Liquid and powdered media are packaged in PET with tamper-evident seals; shipped at ambient temperature. Certificates of Analysis for each lot are available from Mediatech upon request.

COMPLIANCE:

Liquid products are tested for sterility according to FDA Guidelines for the Manufacture of In Vitro Diagnostic Products (January 1994) for sterile labeling.

Description	Quantity	Cat. No.	Price
DS2 Serum-Free/Protein-Free Medium[1]			
w/o L-Glutamine; supports *Drosophila* S2 cells	6 × 500mL	**MT-13-402-CV**	Pk. of 6/276.56
FIVE* Serum-Free/Protein-Free Medium[1]			
w/L-Glutamine; supports High Five* cells	6 × 500mL	**MT-13-415-CV**	Pk. of 6/173.50
Sf9* Serum-Free/Protein-Free[1]			
w/L-Glutamine; supports Sf9 cells	6 × 500mL	**MT-13-410-CV**	Pk. of 6/166.81
Grace's Insect Basal Medium (Vaughn Med.), 1X[1]			
w/ L-Glutamine, w/o Insect Hemolymph	6 × 500mL	**MT-13-200-CV**	Pk. of 6/167.07
Hink's TNM-FH Medium (Mod.), 1X (also known as Supplemented Grace's Medium)[1]			
w/ L-Glutamine, LAH and Yeastolate; w/o Insect Hemolymph	6 × 500mL	**MT-13-100-CV**	Pk. of 6/140.34
Lactalbumin Hydrolysate (LAH)			
Powder[2]	1 × 500g	**MT-61-095-RO**	Ea./51.45
Pluronic* F-68 Polyol			
Powder[2]	1 × 100g	**MT-61-161-RM**	Ea./23.64
10% Solution (100X)[1]	6 × 100mL	**MT-13-901-CI**	Pk. of 6/66.80
Primatone*			
Powder[1]	1 × 100g	**MT-61-201-RM**	Ea./27.76

[1] Store media at 2° to 8°C (36° to 46°F).

[2] Store media at 15° to 30°C (59° to 86°F).

Lonza BioWhittaker* Insect Cell Culture Media

Chemically defined media optimized for specific cell types

COMPLIANCE:

Manufactured in accordance with cGMP regulations for insect cell lines; use formulations recommended by the Tissue Culture Association.

STORAGE CONDITIONS:

Store as detailed on label.

Description	Quantity	Cat. No.	Each
Insect-XPRESS* (1X) Protein-Free Media			
For Insect Cell Growth and Baculovirus Expression of Proteins; w/L-Glutamine	500mL 1L	**BW12-730F** **BW12-730Q**	32.15 46.00
Grace's Insect Medium			
w/Lactalbumin Hydrolysate, Yeastolate, and Gentamicin, w/o Fetal Bovine Serum	500mL	**BW04-649F**	29.96
w/o Lactalbumin Hydrolysate, Yeastolate, Gentamicin or Fetal Bovine Serum	500mL	**BW04-457F**	26.01
Grace's Complete Insect Medium (TNM-FH)			
w/10% Heat-Inactivated Fetal Bovine Serum, Yeastolate, Lactalbumin Hydrolysate and Gentamicin	1L	**BW04-501Q**	102.48
Schneider's Drosophila Medium (Modified)			
w/L-Glutamine	1L	**BW04-351Q**	76.16

VIALS AND CLOSURES

Applied Scientific Drosophila Vials and Closures

Shell Vials

Straight wall design minimizes the dislodging of food; provides more efficient racking, filling and plugging

Standard-Packed Glass Shell Vials

- Type 1, N-51A borosilicate glass
- Securely packed in cardboard trays with individual vial dividers

Bulk- and Tray-Packed Shell Vials

- Available in narrow- or wide-mouth styles
- Constructed from polystyrene, K-Resin*, or polypropylene
- K-Resin and polypropylene vials are virtually unbreakable, scratch and mar resistant; polystyrene and K-Resin vials have glass-like clarity
- Polypropylene vials are autoclavable; polystyrene and K-Resin are nonautoclavable

ORDERING INFORMATION:

Bulk-packed vials are layered 500 per case and oriented with all open ends facing one way. Tray-packed vials are shrink-wrapped in a 10 × 10 row configuration with dividers between vials.

Material	Style	O.D. × H	Cat. No.	Price
Standard Glass Vials				
Glass	Narrow	25 × 95mm	**AS-574**	Pk. of 144/105.60†
Bulk-Packed Vials				
Polystyrene	Narrow	25 × 95mm	**AS-515**	Cs. of 500/47.56
	Wide	28.5 × 95mm	**AS-519**	Cs. of 500/49.26
K-Resin	Narrow	25 × 95mm	**AS-509**	Cs. of 500/58.93
	Wide	28.5 × 95mm	**AS-511**	Cs. of 500/60.38
Polypropylene	Narrow	25 × 95mm	**AS-507**	Cs. of 500/44.38
	Wide	28.5 × 95mm	**AS-513**	Cs. of 500/46.26
Tray-Packed Vials				
Polystyrene	Narrow	25 × 95mm	**AS-516**	Cs. of 500/61.23
	Wide	28.5 × 95mm	**AS-520**	Cs. of 500/63.59
K-Resin	Narrow	25 × 95mm	**AS-508**	Cs. of 500/72.68
	Wide	28.5 × 95mm	**AS-510**	Cs. of 500/74.40
Polypropylene	Narrow	25 × 95mm	**AS-514**	Cs. of 500/56.93
	Wide	28.5 × 95mm	**AS-512**	Cs. of 500/58.84

† Also available in case of 4 Pk./308.32

Stock Bottles

Wide base/narrow top design prevents fly meal from falling out when bottle is turned upside down

- Safer and more economical than glass
- Feature uniform top opening with a pliable neck to accept a variety of closures

Round-Bottom Bottles

- Polypropylene
- Thin wall design for excellent visibility
- AS-117 features a unique indent 20mm from the bottom to secure food at bottom of bottle
- Single use or autoclave for reuse

Square-Bottom Bottles

- Available in polypropylene or polyethylene
- Polypropylene provides good transparency and can be autoclaved for reuse or disposed after single use
- Nonautoclavable polyethylene bottle has a thin wall design for good visibility

Description	Dimensions	Capacity	Cat. No.	Case of
Round-Bottom Bottles				
Standard bottle	64 dia. × 103mmH	6 oz. (177mL)	**AS-115**	500/98.58
Bottle with indentation	60 dia. × 130mmH	8 oz. (237mL)	**AS-117**	250/53.09
Square-Bottom Bottles				
Polypropylene	57L × 57W × 103mmH	6 oz. (177mL)	**AS-355**	500/98.41
Polyethylene	57L × 57W × 103mmH	6 oz. (177mL)	**AS-359**	500/101.71

Contd. on next page.

ACCESSORIES

Trays and Dividers

Accommodate narrow- or wide-diameter vials

- Cardboard trays have cell dividers
- 10 × 10-row configuration

For use with	Cat. No.	Case of 50
Narrow vials	**AS-260**	64.26
Wide vials	**AS-261**	70.03

*Trademark. See Trademark Reference.

Prices subject to change.

Applied Scientific Drosophila Vials and Closures, Contd.

Cotton and Rayon Balls

- For use with narrow-mouth vials

Description	Cat. No.	Case of 2000
Large Cotton Balls	**AS-212**	27.60
Large Rayon Balls	**AS-210**	29.90

BuzzPlugs* Vial and Bottle Closures

Nonshedding, dense weave of nontoxic cellulose acetate minimizes evaporation, keeps food fresh longer

- Superior barrier to mite infestation
- Exact fit with narrow (25mm) or wide (28.5mm) diameter plastic shell vials or standard (≈24mm diameter) glass vials or plastic stock bottles
- Stretches yet maintains tight fit after repeated removal and closing
- Flat surface accepts marking pen

For use with	Cat. No.	Case of 1000
Glass vials	**AS-271**	84.00
Narrow-diameter plastic vials	**AS-273**	96.80
Wide-diameter plastic vials	**AS-275**	72.65
Plastic stock bottles	**AS-277**	104.55

aper Lids for Bottles

escription	Cat. No.	Pack of 500	Case of 10 Pk.
ith staple and pull-tab, printed lid	**AS-119**	129.08	1103.24
ith staple and pull-tab, no printing on lid	**AS-119B**	318.57	2722.83
ithout staple and pull-tab, printed lid	**AS-121**	143.83	1229.33

harmaceutical Coil

ull apart or cut to any length to plug any ize/diameter vial opening or bottle

oil packed materials will absorb 22 times their weight in moisture.

ayon Rope

- Uniform, man-made fiber (cellulose)
- Recommended for cotton-tearing equipment

otton Coil

- Natural fiber
- Reoxygenates faster in bottle, resulting in a drier environment

escription	Quantity	Cat. No.	Case
ayon Rope	20 lb./case	**12-640-41**	92.05
otton Coil	17 lb./case	**12-640-43**	88.56

SUPPLIES

Applied Scientific Drosophila Products

Petri Dishes

Ideal for embryo collection and nematode research

- Use with the AS-225 Bottle Adapter Ring
- Engineered for optimum flatness and uniform thickness
- Packaged sterile in easy-to-open bags
- 20 per sleeve, 500 per case

AS-4051

Description	Dia. × H	Cat. No.	Case of 500
Vented Petri Dish	60 × 15mm	**AS-4050**	55.00
Nonvented Petri Dish	60 × 15mm	**AS-4051**	60.00

Fly Vial Filler

Fill 100 vials in under a second

- Fill six trays of vials (10–12mL) from a single full reservoir of fly food
- 1–20% fill variance from vial to vial
- Immersible and autoclavable

WARRANTY:
Includes a five-year warranty

AS-770Q

For use with	Cat. No.	Each
Narrow-diameter tray-packed vials	**AS-770Q**	1243.56
Wide-diameter tray-packed vials	**AS-780Q**	1389.39

Cheesecloth

Keeps particulates and wild flies out of vials and bottles while meal is cooling

- Made of 100% woven cotton

Grade	Quantity	Cat. No.	Each	Case of 10
50 (28 × 24 threads/square inch)	70 yards/box	**AS-240**	87.25	607.61

Jazz-Mix* Drosophila Food

Simply add water—conveniently packaged as a complete and quick-to-prepare mixture

- Consists of brown sugar, corn meal, yeast, agar, benzoic acid, methyl paraben and propionic acid

ORDERING INFORMATION:
Packaged in a heavy twist-tied plastic bag inside a durable corrugated box

AS-153

STORAGE CONDITIONS:
Store in a cool, dry place.

NOTE:
Product is not made for human consumption.

Weight	Cat. No.	Each
10 lb.	**AS-153**	75.00

JAZZ-MIX RATIO AND YIELD CHART†

Jazz-Mix	Water	No. of Vials‡	No. of Bottles††
8 oz.	1.2L	105	21
5 lb.	12L	1050	210
10 lb.	24L	2100	420
25 lb.	60L	5250	1050
40 lb.	96L	8400	1680

† *Yield may vary based on evaporation while boiling.*

‡ *At approximately 10mL per vial.*

†† *At approximately 50mL per bottle.*

DRYING TUBES

DRYING TUBES

Choice of U-shaped and straight-bodied soda lime glass tubes, or polyethylene for easy color-change observations. Find additional drying tubes—plus jars, racks and more—at our Web site (search on keyword "Drying").

09-235A

09-215C

09-242 Series

Description	Cat. No.	Each	Cs. of
Fisherbrand* Plain U-Shaped Tube			
½ I.D. × 4"H (1.3 × 10cm)	09-235A	12.62	12/129.42
Fisherbrand Straight-bodied Tubes with Bulb			
1 9⁄16" (4cm) stem, ¼" O.D. (0.6cm), 4" (5cm) total length	09-215A	12.61	12/129.30
1 9⁄16" (4cm) stem, ¼"O.D. (0.6cm), 6" (15.2cm) total length	09-215B	15.05	12/154.38
1 9⁄16" (4cm) stem, ¼" O.D. (0.6cm), 8" (20.3cm) total length	09-215C	18.02	12/184.79
Scienceware* Polyethylene Tubes			
Body, ⅝" I.D. (1.6cm), ¾" O.D. (1.9cm); Tube, 4" (5cm)	09-242A	----	12/15.75
Body, ⅝" I.D. (1.6cm), ¾" O.D. (1.9cm); Tube, 6" (15.2cm)	09-242B	----	12/17.00
Body, ⅝" I.D. (1.6cm), ¾" O.D. (1.9cm); Tube, 8" (20.3cm)	09-242C	----	12/21.75
Scienceware Tube Tips			
Length, ⅞" (2.2cm)	09-242-12	----	144/105.00

ELECTRICAL EQUIPMENT

*Fisherbrand** Surge Suppressor Strip

Responds in less than three nanoseconds to any surge

- Extruded metal housing
- Circuit breaker
- Lighted ON/OFF switch
- Transverse and common protection
- Operating temperature range: -40° to +85°C (-40° to +185°F)
- 240 J, 7000A maximum current pulse

09-520-5

ORDERING INFORMATION:

Use at 115V 50/60/415Hz

Cord, 6' (1.8m)

COMPLIANCE:

Functions in conditions as specified in ANSI* C 62.41, Categories A and B.

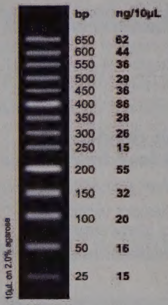
CERTIFICATIONS:

UL listed

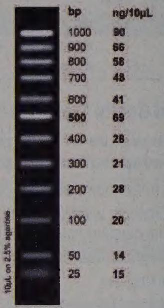
No. of Outlets	Cat. No.	Each
6	09-520-5	153.50

ELECTROPHORESIS

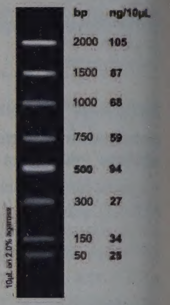
MOLECULAR WEIGHT MARKERS—DNA



BP2570-100



BP2571-100



BP2572-100

Fisher BioReagents* *exACTGene** DNA Ladders

Ready-to-use ladders are stable at room temperature—no need to thaw and refreeze

- Specially engineered to provide blunt-end DNA of precise length for better band quality than classic markers
- Ideal for size determination and quantitative determination of DNA mass
- Contain loading dye to reduce pipetting steps and save time
- Have two or three high intensity reference bands for better sizing
- Provided in sufficient quantity to load 100 lanes

STORAGE CONDITIONS:

Stable at room temperature for two years.

Marker (Base Pair Range)	No. of Bands	Application	Size	Cat. No.	Each
50 bp Mini Ladder (25–650)	14	PCR Size Confirmation	1000µL	BP2570-100	117.71
100 bp PCR DNA Ladder (25–1000)	12	PCR Size Confirmation	1000µL	BP2571-100	117.71
Low Range DNA Ladder (50–2000)	8	Quick Check of PCR or Digestion	1000µL	BP2572-100	117.71
100 bp DNA Ladder (100–1000)	10	General Purpose, Small Size DNA	1000µL	BP2573-100	117.71
Low Range Plus DNA Ladder (100–2000)	11	General Purpose, Small Size DNA	1000µL	BP2574-100	117.71
Cloning DNA Ladder (100–2686)	14	Clone Identification	1000µL	BP2575-100	117.71
Mid Range DNA Ladder (300–5000)	10	Large Size PCR or Cloning	1000µL	BP2576-100	117.71
Mid Range Plus DNA Ladder (100–5000)	16	Small and Large Cloning Applications	1000µL	BP2577-100	117.71
1kb DNA Ladder (300–10,000)	13	General Purpose, Large Digested DNA	1000µL	BP2578-100	117.71
1kb Plus DNA Ladder (100–10,000)	19	General Purpose, Wide Size Range	1000µL	BP2579-100	117.71
24kb Max DNA Ladder (300–24,000)	15	General Purpose, Extra Large Size	1000µL	BP2580-100	117.71

Fisher BioReagents* Molecular Weight Markers

Suitable for determining the size of DNA fragments

- Compatible with both conventional and pulsed field gel electrophoresis
- DNase-, RNase-, and protease-free

BP-2550 Series

Marker (Base Pair Range)	Format	Size	Cat. No.	Each
50 bp DNA Ladder (50 to 500 bp)	Liquid	200µg	**BP2550-100**	282.09
100 bp DNA Ladder (100 to 2000 bp)	Liquid	50µg	**BP2551-50**	159.59
250 bp DNA Ladder (250 to 2000 bp)	Liquid	200µg	**BP2552-100**	262.37
Kilobase DNA Marker (500 bp to 10.0kb)	Liquid	50µg	**BP2553-100**	143.06
λ DNA-*Hind* III/ΦX-174 RF DNA-*Hae* III Digest (72 to 23,130 bp)	Liquid	25µg	**BP2555-25**	125.39
λ DNA-*Hind* III/ΦX-174 RF DNA-*Hae* III Digest (72 to 23,130 bp)	Lyophilized powder	25µg	**BP2554-25**	145.32
λ DNA-*Hind* III Digest (125 to 23,130 bp)	Liquid	100µg	**BP2556-200**	97.89
ΦX-174 RF DNA-*Hinc* II Digest (72 to 1057 bp)	Liquid	10µg	**BP2557-10**	40.70
ΦX-174 RF DNA-*Hae* III Digest (72 to 1353 bp)	Liquid	10µg	**BP2558-10**	61.45
ΦX-174 RF DNA-*Hae* III Digest (72 to 23,130 bp)	Liquid	100µg	**BP2558-100**	312.58
Yeast DNA PFGE Markers (225kb-1.9Mb)	Liquid	5 blocks	**BP2659-40**	224.57
Oligonucleotide Sizing Markers (8–32 bases)	Liquid	25 reactions	**BP2660-25**	207.50

LOOKING FOR MORE?

For electrophoresis profucts not listed in this catalog, check out our online catalog.

Visit www.fishersci.com and search for Electrophoresis

Thermo Scientific* ABgene* Superladder DNA Size Markers

Derived from cloned and purified DNA fragment repeats

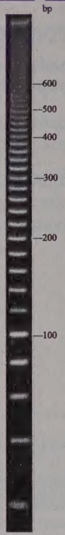
- Standard markers supplied in TE storage buffer with a separate vial of 6X Type II Gel Loading Buffer
- ReddyRun* markers supplied in ReddyRun Buffer with a separate vial of 10X ReddyRun Buffer to add to samples

Superladder Kits

- Perfect 50% GC content
- Contain separate tubes of two ladders that can be used alone as utility markers or combined to form an easy-to-read rule
- Ideal for accurate sizing
- Can also be used for quantitation of sample bands because of the consistency in band intensity

STORAGE CONDITIONS:

Store at 4°C for routine use, -20°C for long-term storage.



SLL-020

Marker (Base Pair Range)	No. of Bands	Conc.	Size	Cat. No.	Each
Superladder-Low 20 bp (20 to 1000 bp)	50	200µg/mL	40µg (80 runs)	**SLL-020**	185.82
Superladder-Low 20 bp, ReddyRun (20 to 1000 bp)	50	50µg/mL	40µg (80 runs)	**SLL-020LD**	185.82
Superladder-Low 100 bp (100 to 1000 bp)	10	100µg/mL	20µg (100 runs)	**SLL-100S**	81.73
			40µg (80 runs)	**SLL-100**	141.97
			150µg (300 runs)	**SLL-100L**	488.37
Superladder-Low 100 bp, ReddyRun (100 to 1000 bp)	10	50µg/mL	40µg (200 runs)	**SLL-100LD**	141.97
Superladder-Low Kit (20 to 1000 bp)[1]	50 + 10	50µg/mL	25µg each ladder (50 runs)	**SLL-101**	274.90
Superladder-Mid 100 bp (100 to 3000 bp)	30	200µg/mL	60µg (150 runs)	**SLM-100**	152.44
Superladder-Mid 200 bp (200 to 6000 bp)	30	200µg/mL	60µg (150 runs)	**SLM-200**	152.41
Superladder-Mid 500 bp (500 to 8000 bp)	16	200µg/mL	75µg (375 runs)	**SLM-500**	163.89
Superladder-Mid 1kb (1000 to 15,000 bp)	15	200µg/mL	100µg (250 runs)	**SLM-1**	233.86
Superladder-Mid 1 Kit (100 to 8000 bp)[2]	30 + 16	200µg/mL	40µg each ladder (130 runs)	**SLM-101**	324.89
Superladder-Mid 2 Kit (200 to 15,000 bp)[3]	30 + 15	200µg/mL	40µg each ladder (100 runs)	**SLM-201**	305.10

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[1] *Contains separate tubes of Superladder-Low 20 bp Ladder and Superladder-Low 100 bp Ladder*

[2] *Contains separate tubes of Superladder-Mid 100 bp Ladder and Superladder-Mid 500 bp Ladder*

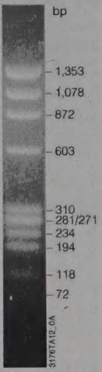
[3] *Contains separate tubes of Superladder-Mid 200 bp Ladder and Superladder-Mid 1kb Ladder*

Promega* BenchTop DNA Markers

Ready-to-load markers offer the convenience of room temperature storage

Supplied in a stabilizing solution of 1X Blue/Orange Loading Dye.

STORAGE CONDITIONS:
Stable for up to six months when stored at room temperature (22° to 25°C).



PR-G7511 2% agarose

Marker (Base Pair Range)	No. of Bands	Concentration	Recommended Loading	Size	Cat. No.	Each
BenchTop ΦX174/*Hae* III (72 to 1353)	11	0.2μg/μL	5μL/lane	250μL	**PR-G7511**	129.40
BenchTop pGEM DNA (36 to 2645)	15	0.2μg/μL	5μL/lane	250μL	**PR-G7521**	113.40
BenchTop PCR (50 to 1000)	6	6.1ng/μL	6μL/lane	300μL	**PR-G7531**	134.40
BenchTop 1kb DNA Ladder (250 to 10,000)	13	0.08μg/μL	6μL/lane	600μL	**PR-G7541**	119.40
BenchTop 100 bp DNA Ladder (100 to 1500)	11	108ng/μL	6μL/lane	300μL	**PR-G8291**	105.40

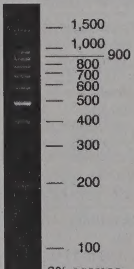
Promega* DNA Ladder Molecular Weight Markers

Ladders with defined sizes

Each ladder contains fragments present at increased intensity for easy identification.

INCLUDES:
6X Blue/Orange Loading Dye

NOTE:
Not intended for use in quantitative analysis



PR-G2101 2% agarose

Marker (Base Pair Range)	No. of Bands	Conc.	Recommended Loading	Size	Cat. No.	Each
100 bp DNA Ladder (100 to 1500)	11	0.13μg/μL	5μL/lane	250μL	**PR-G2101**	102.40
1kb DNA Ladder (250 to 10,000)	13	0.1μg/μL	5μL/lane	500μL	**PR-G5711**	108.40

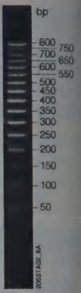
Promega* DNA Step Ladder Molecular Weight Markers

Ladders of defined sizes with exact incremental steps between bands

- Fragments can be stained with ethidium bromide
- Have high intensity fragment for easy identification; all other bands appear with equal intensity

INCLUDES:
6X Blue/Orange Loading Dye

NOTE:
Not intended for use in quantitative analysis



PR-G4521 2% agarose/TAE

Marker (Base Pair Range)	No. of Bands	Conc.	Recommended Loading	Size	Cat. No.	Each
10 bp DNA Step Ladder (10 to 100)	10	0.65μg/μL	1μL/lane	32.5μg	**PR-G4471**	103.40
25 bp DNA Step Ladder (25 to 300)	12	0.36μg/μL	5μL/lane	100μg	**PR-G4511**	103.40
50 bp DNA Step Ladder (50 to 800)	16	0.34μg/μL	5μL/lane	90μg	**PR-G4521**	118.40
100 bp DNA Step Ladder (100 to 4000)	40	1.0μg/μL	1μL/lane	100μg	**PR-G6951**	149.40
200 bp DNA Step Ladder (200 to 6600)	33	1μg/μL	1μL/lane	100μg	**PR-G6961**	118.40
1kb DNA Step Ladder (1000 to 10,000)	10	300ng/μL	1μL/lane	90μg	**PR-G6941**	88.20

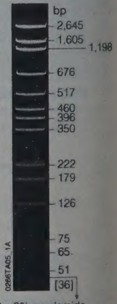
Promega* Conventional DNA Digest Molecular Weight Markers

Created by digesting either λ DNA, ΦX174 replicative form DNA, or plasmids to completion with one or more restriction enzymes

The enzymes are heat-inactivated and the resultant fragments are purified and resuspended in storage buffer.

INCLUDES:
6X Blue/Orange Loading Dye

NOTE:
Not intended for use in quantitative analysis



PR-G1741 8% acrylamide

Marker (Base Pair Range)	No. of Bands	Conc.	Recommended Loading	Size	Cat. No.	Each
λ DNA/*Hind* III (125 to 23,130)	8	0.5μg/μL	1μL/lane	100μg	**PR-G1711**	42.20
λ DNA/*Eco*R I (3530 to 21,226)	6	0.5μg/μL	1μL/lane	100μg	**PR-G1721**	42.20
λ DNA/*Eco*R I + *Hind* III (125 to 21,226)	13	0.5μg/μL	1μL/lane	100μg	**PR-G1731**	42.20
ΦX174 DNA/*Hae* III (72 to 1353)	11	1.0μg/μL	1μL/lane	50μg	**PR-G1761**	115.40
ΦX174 DNA/*Hinf* I (24 to 726)	20	1.0μg/μL	1μL/lane	50μg	**PR-G1751**	115.40
pGEM* DNA (36 to 2645)	15	1.0μg/μL	1μL/lane	50μg	**PR-G1741**	99.20

*Trademark. See Trademark Reference.

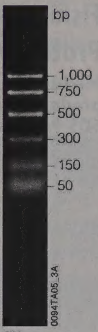
Prices subject to change.

Promega* PCR Markers

Fragments are combined in equal mass amounts

deal for sizing PCR products and estriction fragments.

NOTE:
Not intended for use in quantitative analysis



PR-G3161 2% agarose

Base Pair Range	No. of Bands	Conc.	Recommended Volume	Size	Cat. No.	Each
50 to 1000	6	≈0.06µg/µL	5µL/lane	250µL	**PR-G3161**	81.20

MOLECULAR WEIGHT MARKERS — RNA

Fisher BioReagents* RiboLadder* RNA Standards

For assessment of single-stranded RNA molecules on both native or denaturing agarose and polyacrylamide gels

- Genetically engineered for precise bands
- Well-spaced bands for easy identification and sizing of unknown RNA fragments and a higher intensity reference band for fast size comparison
- Packaged in two vials (25 loadings each) and lyophilized to decrease thawing-related degradation, to prolong shelf life, and to ensure consistent performance
- Purity level suitable for capillary electrophoresis and bioanalyzer applications
- Two size ranges suitable for most RNA applications
- Ideal for ethidium bromide and fluorescent staining

INCLUDES:
Loading buffer with bromophenol blue (tracking dye)

TORAGE CONDITIONS:
tore at -70°C.

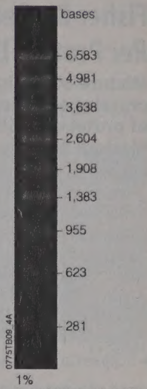
escription	Base Pair Range	No. of Bands	Size	Cat. No.	Each
00 bp Ladder	0.1-1kb	8	50 loadings	**BP2810-50**	119.00
kb Ladder	0.2-4kb	9	50 loadings	**BP2811-50**	121.00
X RNA Loading Buffer	----	----	500µL	**BP2812-500**	45.00
X Standard Loading uffer	----	----	500µL	**BP2813-500**	45.00

Promega* RNA Markers

Suitable for size estimation of single-stranded RNA from 0.28 to 6.58kb in glyoxal or formaldehyde agarose gels

- ▸ Consist of a ladder of nine RNA transcripts synthesized in vitro from specific templates
- ▸ Can be visualized by ethidium bromide staining

NOTE:
Not intended for use in quantitative analysis



PR-G3191 1% formaldehyde-agarose

Marker (Base Pair Range)	No. of Bands	Conc.	Recommended Loading	Size	Cat. No.	Each
RNA Marker (0.28 to 6.58kb)	9	1µg/µL	3µL/lane	50µL	**PR-G3191**	105.39

U.S. Patents 4,966,964; 5,019,556; and 5,266,687; which claim vectors encoding a portion of human placental ribonuclease inhibitor, are exclusively licensed to Promega Corporation.

MOLECULAR WEIGHT MARKERS — PROTEIN

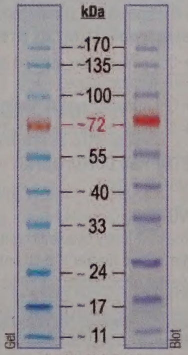
Fisher BioReagents* EZ-Run* Prestained *Rec* Protein Ladder

Comprised of 10 recombinant proteins covalently coupled to a blue chromophore plus a 72kDa reference band tagged with an orange dye[1]

- ▸ Ladder is ideal for monitoring protein separation during SDS-PAGE, verifying Western transfer efficiency, and approximating the molecular weight of blotted proteins
- ▸ Supplied in gel loading buffer

STORAGE CONDITIONS:
Store at -20°C.

NOTE:
The covalently coupled chromophore affects protein mobility; this prestained marker should only be used for approximating the molecular weight of separated proteins.



8-16% SDS-PAGE

BP3603 Series

Molecular Weight Range	No. of Bands	Size	Cat. No.	Each
10 to 170kDa	10	500µL (100 loadings)	**BP3603-500**	115.00
		2 × 500µL (200 loadings)	**BP3603-1**	170.00

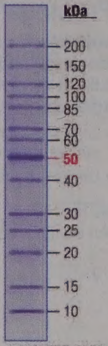
---

[1] *This product is manufactured under the license for Strep-tag* technology covered by U.S. Patent 5,506,121, U.K. Patent 2272698, and French Patent 93 13 066.*

Fisher BioReagents* EZ-Run* *Rec* Protein Ladder

Mixture of 14 highly purified recombinant proteins optimized for precise sizing of proteins by SDS-PAGE and Western blotting

- Ladder is ideal for precise molecular weight determination of polypeptides in denaturing PAGE and Western blots
- Each protein contains an integral Strep-tag* II sequence[1] and may be detected on Western blots using Strep-Tactin*-AP conjugate[2] or an antibody against Strep-tag II
- 50kDa protein band has greater intensity than other bands to serve as a reference
- Supplied in gel loading buffer



4-20% SDS-PAGE Coomassie Brilliant Blue R-250 stained

BP3602 series

STORAGE CONDITIONS:

Store at -20°C.

Molecular Weight Range	No. of Bands	Size	Cat. No.	Each
10 to 200kDa	14	500µL (100 loadings)	**BP3602-500**	110.00
		2 × 500µL (200 loadings)	**BP3602-1**	150.00

---

[1] Strep-tag technology for protein purification and detection is covered by U.S. Patent 5,506,121, U.K. Patent 2272698, and French Patent 93 13 006.

[2] Strep-Tactin is covered by U.S. Patent 6,103,493.

Fisher BioReagents* EZ-Run* Prestained Protein Marker

Ideal for monitoring protein separation during electrophoresis without staining and for verifying electroblotting of proteins onto membranes

- Comprised of six purified proteins covalently coupled to a blue chromophore
- Optimized to produce well-defined blue bands after SDS-PAGE
- Supplied in gel loading buffer

STORAGE CONDITIONS:

Store at -20°C.

NOTE:

The covalently coupled chromophore affects protein mobility; this prestained marker should only be used for approximating the molecular weight of separated proteins.

Molecular Weight Range	No. of Bands	Size	Cat. No.	Each
20 to 118kDa	6	500µL (100 loadings)	**BP3601-500**	100.00
		2 × 500µL (200 loadings)	**BP3601-1**	140.00

Fisher BioReagents* EZ-Run* Protein Marker

Mixture of seven purified proteins optimized to produce uniform, compact bands when analyzed by SDS-PAGE and stained with Coomassie* Blue

- Supplied in gel loading buffer for direct application to SDS-PAGE gels
- Ideal for molecular weight determination of polypeptides analyzed in various gel systems

STORAGE CONDITIONS:

Store at -20°C.

Molecular Weight Range	No. of Bands	Size	Cat. No.	Each
14.4 to 116.0kDa	7	500µL (100 loadings)	**BP3600-500**	80.00
		2 × 500µL (200 loadings)	**BP3600-1**	120.00

Thermo Scientific* Pierce* 2-D Protein Molecular Weight Marker Mix

Used to assess 2-D electrophoresis system performance and estimate the isoelectric point (pI) and molecular weight values of sample proteins

- Contains seven carefully selected proteins, some focus as tight spots while others focus as charge trains
- Can be used as an internal or external standard
- Can be stained with Coomasie* Blue, Silver or SYPRO* Ruby stains
- Does not require supporting paper work

STORAGE CONDITIONS:

Store at -20°C; avoid multiple freeze/thaw cycles.

Molecular Weight Range	pI Range	No. of Bands	Size	Cat. No.	Each
17 to 80kDa	4.5 to 8.7	7	500µL	**PI-26659**	169.63

This marker may contain potentially biohazardous human source material. (See Material Safety Data Sheet.) Results on Apo-Transferrin specific testing for infectious agents (HBsAg and HIV) are negative. Since no test method can offer absolute assurance that infectious agents are absent, handle this marker with the same safety precautions used when handling any potentially infectious material.

SPECIFICATIONS

2-D Marker Protein	M.W.	pI Value
Apo-Transferrin (human plasma)	80kDa	6.2
Glutamic Dehydrogenase (bovine liver)	56kDa	6.5, 6.7, 6.9
Actin (bovine muscle)	43kDa	5.2
Carbonic Anhydrase (bovine erythrocytes)	29kDa	6.3
Myokinase (chicken muscle)	22.5kDa	8.7
Trypsin Inhibitor (soybean)	20kDa	4.5
Myoglobin (equine skeletal muscle)	17kDa	7.0, 7.4

*Trademark. See Trademark Reference.

hermo Scientific* Pierce* BlueRanger* and TriChromRanger* Prestained Protein Molecular Weight Marker Mixes

With room-temperature stable, single-dose packaging

PI-26681

- Yield single bands of uniform intensity
- Suitable for use with 4% to 20% SDS-PAGE gels and a wide range of downstream applications
- Can be efficiently transferred onto both nitrocellulose and PVDF membranes
- Compatible with GelCode* Blue and GelCode E-Zinc* stains
- Contain sufficient material for loading 48 to 96 minigel lanes in each 6 × 8 tube, 48-well plate

STORAGE CONDITIONS:

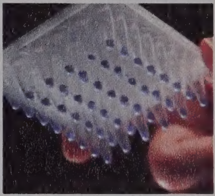
Can be stored at room temperature for six months.

Description	No. of Plates	Cat. No.	Pack of 48
BlueRanger Molecular Weight Marker Mix	1	**PI-26681**	94.47
	5	**PI-26685**	405.51
TriChromRanger Molecular Weight Marker Mix	1	**PI-26691**	120.45

	BlueRanger		TriChromRanger	
Protein	**Band Color**	**Mol. Weight**	**Band Color**	**Mol. Weight**
Myosin	Blue	210kDa	Blue	210K
Phosphorylase B	Blue	120kDa	Red	110K
Serum albumin	Blue	84kDa	Blue	80K
Ovalbumin	Blue	60kDa	Blue	47K
Carbonic anhydrase	Blue	39.2kDa	Blue	32K
Trypsin inhibitor	Blue	28kDa	Blue	25K
Lysozyme	Blue	18.3kDa	Purple	16.5K

Thermo Scientific* Pierce* Chemiluminescent BlueRanger* Marker Mix

Provides colorimetric and chemiluminescent detection options both on-membrane and in-gel



PI-26651

Each protein in this marker mix is prestained covalently with a blue dye to allow direct visualization on a gel or blot. The proteins are also chemically modified to impart self-contained peroxidase activity, enabling chemiluminescent detection without the use of an HRP-antibody conjugate.

- Eliminates variability due to animal source or antibody class associated with the use of HRP-antibody conjugates
- Transfers to membrane for Western blot detection
- Compatible with streptavidin-HRP conjugates
- Can be detected using the optimized Thermo Scientific Pierce UnBlot* Chemiluminescent Substrate (PI-33550)

ORDERING INFORMATION:

Lyophilized and packaged in single-dose aliquots

STORAGE CONDITIONS:

Store at room temperature.

NOTE:

The peroxidase activity of the marker is lost upon exposure to chelators (EDTA/EGTA), azide, or acidic membrane stains such as Ponceau S.

Molecular Weight Range	No. of Bands	Quantity	Cat. No.	Each
18 to 220kDa	7	1 × 48 microtube plate	**PI-26651**	237.89

hermo Scientific* Pierce* DyLight* Fluorescent Protein Molecular Weight Markers

llow direct visualization of protein molecular weight ranges in both Cy*3 and Cy5 dye spectra after SDS-polyacrylamide gel electrophoresis

- Proteins are dual-labeled with Thermo Scientific Pierce DyLight 547 and DyLight 647 Fluorescent Dyes
- Two excitation and emission maxima enable single or two-color fluorescent detection, eliminating the need for awkward marking or overlay procedures
- Fluorescent spectra are compatible with excitation and emission wavelengths of common instruments
- Bands may be detected in-gel and on membrane

uorescent Detection. Figure 1: Direct in-gel fluorescent detection. Marker oteins (5μL) were separated in 4-20% Tris-glycine gels. The gels were imaged ith the Kodak* Image Station 2000MM using a five min. exposure at f2.8 with e 535/600nm excitation/emission filter set (A) or 625/700nm excitation/ nission filter set (B). Figure 2. Fluorescent Western blot detection. Marker oteins (5μL) were separated in 4-20% Tris-glycine gels and transferred to trocellulose (A) or PVDF membrane (B). Blots were imaged with the Typhoon* 410 at 500V PMT using the Cy3 (A) or Cy5 (B) laser settings. Note: Proteins in e marker mix produce uniform fluorescent intensities in SDS-PAGE applications; however, variations in protein transfer efficiency affect fluorescent intensity Western blotting. For example, high molecular weight proteins, such as myosin 00kDa), typically transfer less efficiently than low molecular weight proteins. gure 3. Colorimetric in-gel detection. Marker proteins (10μL) were separated 4-20% Tris-glycine gels and stained with Imperial* Protein Stain (A) or silver ain (B).

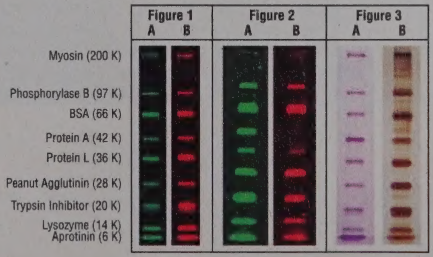
- Excitation/Emission Maxima: 557/570nm or 652/673nm
- Photostablility permits long exposure times for maximum sensitivity

STORAGE CONDITIONS:

Store at -20°C.

Molecular Weight Range	No. of Bands	Quantity	Cat. No.	Each
6 to 200kDa	9	250μL	**PI-26665**	205.76

Fluorescent and Colorimetric Detection of DyLight Fluorescent Protein Molecular Weight Markers



BUFFERS AND SOLUTIONS

Fisher BioReagents* EZ-Run* Protein Gel Solutions

NEW

Resolution equal to or better than gradient precast gels!

A ready-to-use premixed solution of acrylamide, bisacrylamide, buffer, and SDS that enables ultra-fine resolution of protein bands by denaturing PAGE. This novel formulation provides the resolution of a gradient gel with less preparative work than a standard discontinuous gel system.

- Ready-to-pour EZ-Run Protein Gel Solution for 1D or 2D PAGE— just add APS and TEMED
- Wide separation range—from 3kDa to 200kDa on same mini-gel
- Continuous gel system—no stacking gel necessary
- Proprietary (patent-pending) gel chemistry

APPLICATIONS:

Compatible with post-electrophoresis applications such as Western blotting, MALDI analysis, and protein sequencing. Suitable for all commonly used gel staining methods including Coomassie* blue, silver staining and fluorescent dyes.

STORAGE CONDITIONS:

Store at room temperature.

NOTE:

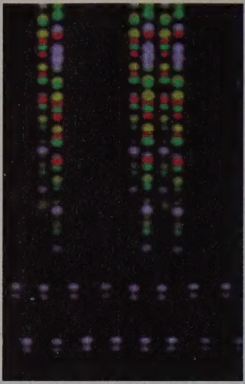
EZ-Run Protein Gel Solution comes with an optimized proprietary running buffer; other traditional SDS-PAGE buffers should not be used with the EZ-Run gel solution.

Description	Quantity	Cat. No.	Each
10% EZ-Run Protein Gel Solution with buffer	30mL	**BP7710-30**	11.23
	100mL	**BP7710-100**	28.33
	500mL	**BP7710-500**	97.02
12.5% EZ-Run Protein Gel Solution with buffer	30mL	**BP7712-30**	11.23
	100mL	**BP7712-100**	28.33
	500mL	**BP7712-500**	97.02
15% EZ-Run Protein Gel Solution with buffer	100mL	**BP7715-100**	28.33
	500mL	**BP7715-500**	97.02
Running Buffer for EZ-Run Protein Gel Solution	500mL	**BP7700-500**	72.52

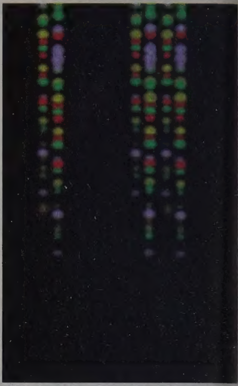
DON'T SEE THE RIGHT PRODUCT?

For the complete range of Agaroses, Acrylamides, and other gel components from Fisher BioReagents*, please see the Bioreagents section in the back of the catalog.

Commonwealth Biotechnologies *AccuTrac** Fluorescent DNA Sequencing Loading Buffer



With *AccuTrac*, the number and location of each lane is apparent.



Without a tracking dye, empty lanes are difficult to identify.

Provides a marking tool for sample tracking in automated DNA sequencing applications

- Utilizes a fluorescent dye label to mark the beginning of each lane into which sample was loaded
- Eliminates the need for manual review and lane assignment
- Detected by automated sequencers without interfering with data generation
- Ensures that automated sequencers accurately apply data to the appropriate sample
- For use with dye-terminator chemistry only

Quantity	No. of Loadings	Cat. No.	Each
3mL	600	**CBI-AT3**	123.85

Lonza SSCP Stop Solution

Ideal for maintaining PCR products in single-stranded conformations for SSCP analysis

Consists of 95% formamide, 10mM NaOH, bromophenol blue, and xylene cyanol.

STORAGE CONDITIONS:

Store at room temperature.

Quantity	Cat. No.	Each
5 × 1mL	**BW50653**	39.00

Lonza Formaldehyde Sample Buffer

Ideal when samples are to be recovered from agarose gels

- For denaturation of RNA samples for RNA electrophoresis
- Ready to use
- Contains formaldehyde, formamide, and tracking dyes in MOPS buffer

STORAGE CONDITIONS:

Store at -20°C.

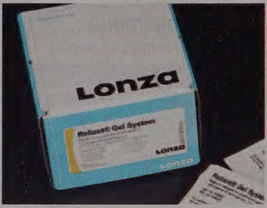
Quantity	Cat. No.	Each
5 × 1mL	**BW50571**	37.00

PRECAST GELS — DNA

Lonza Reliant* Precast Gels

For rapid and reproducible resolution of DNA sizes from 8 bp to ≥10kb

- Manufactured with high-quality SeaKem* and NuSieve* Brand Agaroses
- Easy to handle
- Fit most common mini, medium, and large submerged electrophoresis systems
- Available with 0.5µg/mL of ethidium bromide for ease of visualizing DNA bands during and after the run



BMA54801

Gel Type	Format, Buffer	DNA Size Range	Cat. No.	Pack of 20
With Ethidium Bromide				
1% SeaKem Gold	8-well, 1X TBE	300 bp to ≥8kb	**BMA54903**	125.34
	8-well, 1X TAE	400 bp to ≥10kb	**BMA54803**	125.34
	20-well, 1X TBE	300 bp to ≥8kb	**BMA54907**	125.34
	24-well, 1X TBE	300 bp to ≥8kb	**BMA54905**	125.34
2% SeaKem Gold	20-well, 1X TBE	100 bp to ≥2kb	**BMA54939**	125.34
4% NuSieve 3:1 Plus	8-well, 1X TBE	8 bp to ≥1kb	**BMA54927**	125.34
	8-well, 1X TAE	20 bp to ≥1kb	**BMA54925**	125.34
	20-well, 1X TBE	8 bp to ≥1kb	**BMA54928**	125.34
	24-well, 1X TBE	8 bp to ≥1kb	**BMA54929**	125.34
Without Ethidium Bromide				
1% SeaKem Gold	8-well, 1X TAE	400 bp to ≥10kb	**BMA54801**	125.34
2% SeaKem Gold	20-well, 1X TBE	100 bp to ≥2kb	**BMA54938**	125.34
4% NuSieve 3:1 Plus	20-well, 1X TBE	8 bp to ≥1kb	**BMA54944**	125.34

SPECIFICATIONS

Gel Dimensions	6.0 × 9.5cm
Gel Thickness	5.5mm
Tray Dimensions	6.8 × 10.2cm
Well Volume	≤15µL
Configuration	8 wells (1 × 8, portrait); 20 wells (1 × 20, landscape); 24 wells (2 × 12, portrait)

WARNING

Ethidium bromide is a powerful mutagen. Gloves should be worn when opening pouches and handling gel solutions containing ethidium bromide.

Lonza Reliant* FastLane* Gel System

Accurately resolves DNA fragments from 10 bp to 10kb in as little as 15 minutes

- Combines precast gels with a premixed, premeasured, DNase- and RNase-free separation buffer
- Provides sharp bands and low background fluorescence
- Packaged in UV-transparent trays for easy handling
- Specifically designed for use in the FastLane Gel Chamber
- Prestained with ethidium bromide

INCLUDES:

Precast gels, 100mL packs of 1X TAE or TBE buffer

STORAGE CONDITIONS:

Store at room temperature for up to nine months.

Gel Type	Format, Buffer	DNA Size Range	Cat. No.	Pack of 10
1% SeaKem* Agarose	12-well, 1X TBE	300 bp to 8kb	**BMA57010**	76.00
1% SeaKem Agarose	12-well, 1X TAE	400 bp to 10kb	**BMA57012**	76.00
1% SeaKem Agarose	2 × 12-well, 1X TBE	300 bp to 8kb	**BMA57011**	76.00
2.5% SeaKem Agarose	12-well, 1X TBE	10 bp to 1kb	**BMA57013**	76.00
2.5% SeaKem Agarose	2 × 12-well, 1X TBE	10 bp to 1kb	**BMA57014**	76.00

SPECIFICATIONS

Gel Dimensions	6.0 × 9.5cm
Gel Thickness	5.5mm
Tray Dimensions	6.8 × 10.2cm
Well Volume	≤15µL

PRECAST GELS — RNA

Lonza Reliant* RNA Analysis Kits

Contain all of the components for running 20 RNA gels in one package

INCLUDES:

Reliant Precast RNA Gels (BMA54922 or BW54948), Formaldehyde or glyoxal sample buffer, RNA Marker (BMA50575), AccuGENE* 10X MOPS Buffer, GelStar* Nucleic Acid Stain (BMA50535)

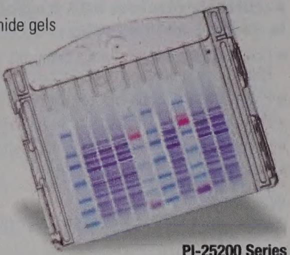
SPECIFICATIONS AND ORDERING INFORMATION

Gel	8-well, Pack of 20	20-well, Pack of 20	8-well, Pack of 20	20-well, Pack of 20
Sample Buffer	Formaldehyde, 5mL	Formaldehyde, 5mL	Glyoxal, 1.7mL	Glyoxal, 4mL
RNA Marker	50µg	50µg	50µg	50µg
10X MOPS Buffer	1L	1L	1L	1L
Gel Stain	500µL	500µL	500µL	500µL
Cat. No.	**BW54975**	**BW54976**	**BW54977**	**BW54978**
Each	412.35	412.35	412.35	412.35

Thermo Scientific* Pierce* Precise* Protein Gels

45-minute run time provides quick results

Ready-to-use precast polyacrylamide gels in a neutral pH buffer permit proteins to stain quickly and with high sensitivity using Coomassie* and silver stains.



PI-25200 Series

- Can be transferred to nitrocellulose and PVDF membranes for Western blotting in just 90 minutes
- Utilize Tris-HEPES-SDS running buffer, available premixed (PI-28398), to produce excellent separation and high-resolution bands
- Compatible with samples loaded in Laemmli sample buffer
- Supplied in durable plastic cassettes that are easy to load and easy to open
- Suitable for use with standard minigel tanks
- Gel Dimensions: 8 × 5.8 × 0.1cm
- Cassette Dimensions: 10 × 8.5 × 0.45cm

ORDERING INFORMATION:
Individually packaged in plastic pouches

STORAGE CONDITIONS:
Store at 4°C for up to 12 months.

Format	Gel Conc.	Separation Range	Well Volume	Cat. No.	Pack of 10
10–well	8%	45–205kDa	50µL	**PI-25200**	99.00
	10%	24–205kDa	50µL	**PI-25201**	99.00
	12%	14–205kDa	50µL	**PI-25202**	99.00
	8–16%	14–205kDa	50µL	**PI-25203**	99.00
	4–20%	6.5–205kDa	50µL	**PI-25204**	102.00
12–well	8%	45–205kDa	30µL	**PI-25220**	99.00
	10%	24–205kDa	30µL	**PI-25221**	99.00
	12%	14–205kDa	30µL	**PI-25222**	99.00
	8–16%	14–205kDa	30µL	**PI-25223**	99.00
	4–20%	6.5–205kDa	30µL	**PI-25224**	102.00
15–well	8%	45–205kDa	25µL	**PI-25240**	99.00
	10%	24–205kDa	25µL	**PI-25241**	99.00
	12%	14–205kDa	25µL	**PI-25242**	99.00
	8–16%	14–205kDa	25µL	**PI-25243**	99.00
	4–20%	6.5–205kDa	25µL	**PI-25244**	99.00

PAGEgel* Cassette Gels

Superior separations and a long shelf life

Precast gels use a special polymer and polymerization technology to make high-resolution, cross-linked polyacrylamide gels combined with a small amount of agarose. This polymer reduces shrinking and swelling 10- to 20-fold, allowing a full range of gel percentages to be made using the same gel and running buffer system.

CK01012

- Approximately 10 times stronger than the equivalent polyacrylamide gel without agarose
- Can be handled, stained, and dried without tearing or cracking
- Will not stick to membrane during blotting
- Use a neutral pH gel buffer for a longer shelf life
- Utilize well "fingers" that project above the top of the cassette to prevent sample carryover between lanes
- Save time—no comb or tape to remove
- Supplied in plastic cassettes without coating
- Gel Dimensions: 8 × 8.5 × 0.1cm
- Cassette Dimensions: 10 × 10cm

STORAGE CONDITIONS:
Store at 4°C for two years from the date of manufacture; may be stored at room temperature (up to 25°C) for three months after receipt.

Format	Gel Conc.	Well Volume	Cat. No.	Each	Pack of 10
For SDS-PAGE					
12-well	8%	35µL	**CK00812**	11.06	100.50
	10%	35µL	**CK01012**	11.06	100.50
	12%	35µL	**CK01212**	11.06	100.50
	16%	35µL	**CK01612**	11.06	100.50
	4–8%	35µL	**CK40812**	11.06	100.50
	4–12%	35µL	**CK41212**	11.06	100.50
	4–20%	35µL	**CK42012**	11.06	100.50
	10–20%	35µL	**CK82012**	11.06	100.50
17-well	8%	17µL	**CK00827**	11.06	100.50
	10%	17µL	**CK01027**	11.06	100.50
	12%	17µL	**CK01227**	11.06	100.50
	16%	17µL	**CK01627**	11.06	100.50
	4–8%	17µL	**CK40827**	11.06	100.50
	4–12%	17µL	**CK41227**	11.06	100.50
	4–20%	17µL	**CK42027**	11.06	100.50
	10–20%	17µL	**CK82027**	11.06	100.50
2D-well	4–20%	300µL	**CK42002**	11.06	100.50
For DNA and Native Protein PAGE					
12-well	10%	35µL	**DN01012**	11.06	100.50
	2–8%	35µL	**DN20812**	11.06	100.50
	3–20%	35µL	**DN32012**	11.06	100.50
17-well	10%	17µL	**DN01027**	11.06	100.50
	2–8%	17µL	**DN20827**	11.06	100.50
	3–20%	17µL	**DN32027**	11.06	100.50

ACCESSORIES

PAGEgel* Standard Running Buffers

Choose standard SDS buffer, which is suitable for almost all applications, or DNA/Native buffer

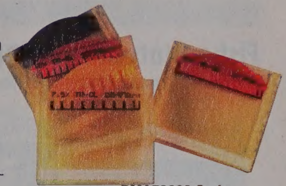
Description	Quantity	Cat. No.	Each
Standard SDS Run Buffer, 20X	500mL	**CB60500**	55.41
Standard SDS Run Buffer, 20X	5L	**CB60525**	450.84
DNA/Native Run Buffer, 20X	500mL	**DB61500**	55.41

*Trademark. See Trademark Reference.

Lonza PAGEr* Gold Precast Gels

Maximize resolution and provide optimum protein transfer efficiencies for Western blotting applications

- Polyacrylamide minigels in tris-glycine buffer cast with a 4% stacking gel for vertical protein electrophoresis
- Provide easy, accurate separation of biomolecules over a wide molecular-weight range
- Produce crisp, razor-sharp bands
- Packaged in a unique easy-to-open gold plastic cassette
- Fit most vertical minigel boxes
- Available with a variety of polyacrylamide concentrations and well configurations
- Manufactured with ISO-9001:2000-certified processes



BMA58000 Series

			10 well			12 well			16 well		
Gel Conc.	**Separation Range**	**Size (L × W)†**	**Well Volume**	**Cat. No.**	**Pack of 10**	**Well Volume**	**Cat. No.**	**Pack of 10**	**Well Volume**	**Cat. No.**	**Pack of 10**
Single Concentration Gels											
7.5%	50–200kDa	9 × 10cm	32µL	**BMA58507**	109.47	20µL	**BMA58501**	109.47	14µL	**BMA58513**	109.47
	50–200kDa	10 × 10cm	32µL	**BMA59507**	109.47	20µL	**BMA59501**	109.47	14µL	**BMA59513**	109.47
10%	25–200kDa	9 × 10cm	32µL	**BMA58508**	109.47	20µL	**BMA58502**	109.47	14µL	**BMA58514**	109.47
	25–200kDa	10 × 10cm	32µL	**BMA59508**	109.47	20µL	**BMA59502**	109.47	14µL	**BMA59514**	109.47
12%	20–100kDa	9 × 10cm	32µL	**BMA58509**	109.47	20µL	**BMA58503**	109.47	14µL	**BMA58515**	109.47
	20–100kDa	10 × 10cm	32µL	**BMA59509**	109.47	20µL	**BMA59503**	109.47	14µL	**BMA59515**	109.47
15%	10–50kDa	9 × 10cm	32µL	**BMA58510**	109.47	20µL	**BMA58504**	109.47	14µL	**BMA58516**	109.47
	10–50kDa	10 × 10cm	32µL	**BMA59510**	109.47	20µL	**BMA59504**	109.47	14µL	**BMA59516**	109.47
Gradient Gels											
4–12%	25–250kDa	9 × 10cm	32µL	**BMA58520**	109.47	20µL	**BMA58522**	109.47	14µL	**BMA58524**	109.47
	25–250kDa	10 × 10cm	32µL	**BMA59520**	109.47	20µL	**BMA59522**	109.47	14µL	**BMA59524**	109.47
4–20%	5–200kDa	9 × 10cm	32µL	**BMA58511**	109.47	20µL	**BMA58505**	109.47	14µL	**BMA58517**	109.47
	5–200kDa	10 × 10cm	32µL	**BMA59511**	109.47	20µL	**BMA59505**	109.47	14µL	**BMA59517**	109.47
8–16%	15–200kDa	9 × 10cm	32µL	**BMA58519**	109.47	20µL	**BMA58521**	109.47	14µL	**BMA58523**	109.47
	15–200kDa	10 × 10cm	32µL	**BMA59519**	109.47	20µL	**BMA59521**	109.47	14µL	**BMA59523**	109.47
10–20%	5–150kDa	9 × 10cm	32µL	**BMA58512**	109.47	20µL	**BMA58506**	109.47	14µL	**BMA58518**	109.47
	5–150kDa	10 × 10cm	32µL	**BMA59512**	109.47	20µL	**BMA59506**	109.47	14µL	**BMA59518**	109.47

Cassette Dimensions: 9 × 10 × 0.49cm = Gel Dimensions: 7.1 × 8.3 × 0.1cm; Cassette Dimensions: 10 × 10 × 0.55cm = 8.1 × 8.3 × 0.1cm.

LOOKING FOR MORE LONZA PAGEr* GOLD PRECAST GELS?

PAGEr Gold Precast Gels are also available with 17-, 8+1-, and 2D-well configurations.

Visit www.fishersci.com and search for PAGEr Gold

SEQUENCING SYSTEMS

isherBiotech* DNA Sequencing System

un samples in all gel lanes /ithout loss of data or uestionable interpretation f the banding pattern

- Integral anodized aluminum backplate distributes heat evenly across the entire gel surface to minimize band "smiling"
- Screw clamps are mounted directly on the unit to ensure leakproof seal between gel sandwich and upper buffer chamber
- Removable waste bottle allows for easy buffer disposal
- Interlocking lids on upper and lower chambers provide safety

FB-SEQ-3545

INCLUDES:

Main chamber with aluminum backplate, clamps, removable lower buffer chamber, two notched glass plates, two blank glass plates, two shark-tooth combs, one well comb, two spacer sets

REQUIRED ACCESSORIES:

Requires high-voltage power supply.

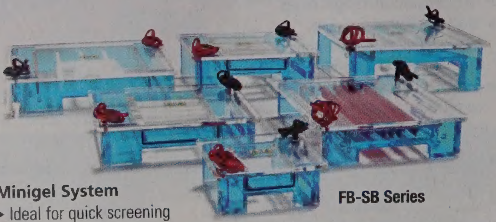
Gel W × L	Glass Plate W × L	Buffer Volume	Overall L × W × H	Cat. No.	Each
18 × 42cm	20 × 45cm	450mL	23 × 27 × 50cm	**FB-SEQ-2045**	1140.83
33 × 42cm	35 × 45cm	800mL	23 × 44 × 50cm	**FB-SEQ-3545**	1455.00

DON'T SEE THE RIGHT PRODUCT?

For DNA Sequencing Services, see the Custom Services section.

HORIZONTAL SYSTEMS

FisherBiotech* Horizontal Electrophoresis Systems



FB-SB Series

Minigel System

- Ideal for quick screening
- Uses 7 × 10cm gel tray with two comb positions
- Runs up to 16 samples on one gel with combs supplied
- Can run up to 24 samples on a gel with accessory combs
- Provides easy, leak-free casting without tape, grease, or seals

Midigel Systems

- Available with patented buffer recirculation method which prevents buffer's ionic depletion on long gel runs, keeps ionic gradients from distorting results when multiple sample series are run simultaneously, and prevents pH changes that can cause problems in RNA gels
- Provide leak-free gel casting in 13 × 16cm gel tray with two comb positions
- Run up to 32 samples on one gel with combs supplied
- Can run up to 48 samples on a gel with accessory combs

Large Gel Systems

- Improve resolution in Northern and Southern blotting of large gels and multiple samples
- Available with same self-contained buffer recirculation method as Midigel System (FB-SBR-1316)
- Provide leak-free casting in a 20 × 25cm gel tray with six comb positions
- Run up to 36 samples per comb position with supplied combs
- Permit up to four sets of samples to be run equal distances on the same gel
- Allow shorter gels to be poured when used with accessory wall comb
- May also be used with programmable power inverter for field inversion electrophoresis
- Include a three-point leveling platform

Wide-Format System

- Permits leak-free casting in an 18 × 23cm gel tray
- Runs 25 to 250 samples simultaneously on one gel
- Produces clear, tight banding patterns with no "smiling"
- May be used with included microwell-format combs and a multichannel pipetter to load samples directly from a 96-well plate for faster loading and reduced error

System	Gel Size	Buffer Volume	L × W × H	Type	Cat. No.	Each
Minigel	7 × 10cm	400mL	6¼ × 3¾ × 3⅛" (16 × 9.5 × 8cm)	Standard	**FB-SB-710**	379.72
Midigel	13 × 16cm	800mL	9⅝ × 7 × 3⅛" (24.5 × 18 × 8cm)	Standard	**FB-SB-1316**	525.00
		1000mL	10 × 7 × 4¾" (25 × 18 × 12cm)	Recirculating	**FB-SBR-1316**	620.00
Large Gel	20 × 25cm	2.3L	14¾ × 11 × 4" (37.5 × 28 × 10cm)	Standard	**FB-SB-2025**	630.00
		2.0L	15 × 10¼ × 5⅛" (38 × 26 × 13cm)	Recirculating	**FB-SBR-2025**	875.00
Wide Format	18 × 23cm	1.2L	13 × 11 × 5" (33 × 27 ×13cm)	Standard	**FB-SB-2318**	660.00

SYSTEM COMPONENTS

System	Minigel	Midigel	Large Gel	Wide Format
Buffer Chamber	Yes	Yes	Yes	Yes
Safety Lid with attached power supply leads	Yes	Yes	Yes	Yes
UV Transparent Gel Tray	Yes	Yes	Yes	Yes
Nonskid Rubber Feet	Yes	Yes	Yes	Yes
Three-Point Leveling System	No	No	Yes	No
Combs	Two 1.5mm thick combs (6- and 10-well)	Two 1.5mm thick combs (12- and 20-well)	Three 1.5mm combs (16-, 24-, 36-well)	Five microwell format combs

Thermo Scientific* Owl* D3-14 Horizontal Electrophoresis System

Ideal for screening PCR samples

System screens up to 200 samples on a single agarose gel in less than 30 minutes. With special microwell-format combs and a multichannel pipetter, samples can be loaded directly (8 or 12 at a time) from a 96-well plate.

- High-capacity, minigel format provides fast, error-free sample loading
- Unique electrode placement increases rate of gel runs without compromising resolution
- Produces clear, tight banding patterns with no "smiling"
- Used with one comb, tray provides ample separation length for samples consisting of many fragments
- Used with many combs, tray allows quick screening of up to 200 samples simultaneously
- With EasyCast* system, each side of gel tray is fitted with a gasket, allowing it to fit snugly into casting chamber
- Bubble level ensures casting of flat, uniformly thick gels

Thermo
D3-14

09-528-128

APPLICATIONS:
Ideal for screening PCR products, plasmid preps, restriction mapping, and cloning

INCLUDES:
Buffer chamber, lid with attached power cords, 14 × 23cm UVT gel tray, casting chamber, four combs (50 well, 1.5mm thick)

Gel Size	Buffer Volume	L × W × H	Cat. No.	Eac
23 × 14cm	800mL	11¼ × 10⅛ × 3⅛" (29 × 26 × 8cm)	**09-528-128**	645.7

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* Owl* Horizontal Gel System

Large format systems handle high throughput with consistent, reliable results

09-528-100

- Leakproof casting system allows a gel to be cast and run in the same chamber with no tape or additional parts required
- Comb slots allow two, three, or four sample sets of equal lengths to be run on the same gel
- Three-point leveling system ensures a flat casting surface for uniform gel thickness
- Gel tray is UV transparent, which allows the gel to be viewed on a transilluminator while on the tray, eliminating the risk of gel breakage
- Optional built-in buffer exchange ports to circulate buffer for extended running times

NCLUDES:

uffer chamber with three-point leveling base, SuperSafe* lid with ttached power supply leads that eliminate the risk of accidental shock, VT gel tray, gasketed end gates, three 1.5mm thick combs

VARRANTY:

ll systems come with a three-year warranty.

el Size	Combs Included	Buffer Volume	Cat. No.	Each
Vithout Buffer Ports				
3 × 25cm	12, 16, 20 wells	1600mL	**09-528-100**	634.38
0 × 25cm	16, 24, 36 wells	2300mL	**09-528-101**	624.23
Vith Buffer Ports				
3 × 25cm	12, 16, 20 wells	1600mL	**09-528-100A**	699.59
0 × 25cm	16, 24, 36 wells	2300mL	**09-528-102**	765.00

hermo Scientific* Owl* D2 Wide-Gel lectrophoresis System

orizontal gel system can run from 10 to 80 samples n one gel

09-528-165

Vide gel size allows you to load 15 r 30 samples per row with multi- hannel pipetter. Using special combs nd a multichannel pipetter, samples ay be loaded directly from a 96-well ate, 8 or 12 at a time.

- Excellent for screening PCR samples or routine DNA fragment analysis
- Small footprint saves space on lab bench
- Incorporates EasyCast* casting design with external caster
- UVT gel tray is fitted with gasket, allowing tray to fit snugly into external gel caster; provides leakproof seal without tape
- Sample loading with multichannel pipetter speeds up transfer
- Unique electrode placement allows gel to be run quickly without compromising resolution

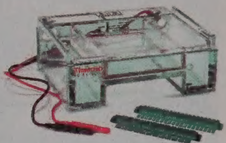
ICLUDES:

uffer chamber, SuperSafe* lid with attached power supply leads, UVT l tray, external multiple gel caster, four combs (two 30-well and two -well, 1.5mm thick)

l Size	Buffer Volume	L × W × H	Cat. No.	Each
.4 × 10.2cm	600mL	7⅜ × 7¾ × 4" (19 × 20 × 10cm)	**09-528-165**	495.59

Thermo Scientific* Owl* EasyCast* Horizontal Minigel System

Designed for simple use with high performance results



- Feature leakproof casting that allows a gel to be cast and run in the same chamber with no tape or additional parts required
- Supplied with a UV transmissible gel tray with a silk-screened ruler that fluoresces under UV light
- Randomly available in yellow, orange, and green

INCLUDES:

Main chamber, SuperSafe* lid with attached power supply leads, UVT gel tray, two double-sided combs

WARRANTY:

Three years

Gel Size	Combs Included	Buffer Volume	Cat. No.	Each
7 × 8cm	6 and 10 wells	400mL	**09-528-110**	348.15
9 × 11cm	10 and 14 wells	600mL	**09-528-178**	380.00
12 × 14cm	12 and 20 wells	800mL	**09-528-110B**	441.53

Hoefer* HE 33 Mini Submarine Electrophoresis Unit

Designed for very fast separations of DNA restriction fragments in agarose gels

03-500-130

- The clear molded base acts as a heat-sink—simply fill the base with coolant and seal
- Cooling the unit prior to a run allows higher voltages to be applied without generating band distortions or damaging the gel and unit
- No taping required for casting
- Electrical safety locks in lid

INCLUDES:

Buffer chamber, lid with cables, UV-transparent gel running tray, gel casting tray, four foam gaskets, bubble level. Complete System (03-500-130) also includes 1.5mm thick 8-well comb and comb back.

System	Gel Size	Buffer Volume	L × W × H	Mfr. No.	Cat. No.	Each
Complete	7 × 10cm	220mL	9½ × 5⅛ × 2¾" (24 × 13 × 7cm)	HE33-8-1.5	**03-500-130**	346.00
Basic	7 × 10cm	220mL	9½ × 5⅛ × 2¾" (24 × 13 × 7cm)	HE33B	**03-500-131**	321.00

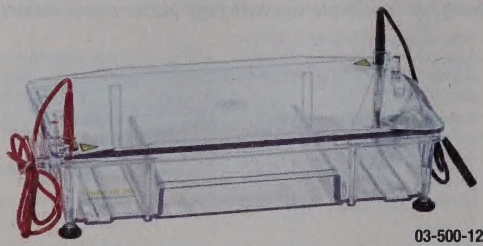
LOOKING FOR COMBS?

All of the gel combs and other accessories that you need for your electrophoresis system can be found on our Web site.

Visit www.fishersci.com and search for Gel Combs

Hoefer* HE99X Max Submarine Electrophoresis Unit

Offers no-mess gel casting without tape or dams



03-500-120

- Unit accommodates a variety of gel lengths for maximum resolution of DNA fragments
- Agarose bridges are also accommodated, so gels can be run in nonsubmarine fashion
- Rugged design provides reliability and safety

INCLUDES:
Buffer chamber with electrodes and leveling feet, safety lid with leads, bubble level. Complete system (03-500-121) also includes 15 × 20cm gel casting tray and UV-transparent running tray; 1.5mm thick, 15-well comb; adjustable comb back that permits control of the depth of the sample wells.

System	Gel Size	Buffer Volume	L × W × H	Mfr. No.	Cat. No.	Each
HE99X Max Complete	15 × 10-20cm	1.2L	14¼ × 7¼ × 5½" (36 × 18.2 × 14cm)	HE99X-15-1.5	**03-500-121**	597.00
HE99X Max Basic	15 × 10-20cm	1.2L	14¼ × 7¼ × 5½" (36 × 18.2 × 14cm)	HE99X	**03-500-120**	417.00

Lonza FastLane* Gel Chamber

Specifically engineered for use with Reliant* FastLane Gels

Provides a compact format to rapidly separate and identify DNA and RNA fragments, PCR products, and oligonucleotides.

INCLUDES:
Acrylic chamber, acrylic safety cover with attached power supply leads

NOTE:
Casting accessories are not available for this unit.

Gel Size	Buffer Volume	L × W × H	Cat. No.	Each
6 × 9.5cm	100mL	3⅛ × 7⅛ × 3½" (8 × 18.2 × 9cm)	**BMA57000**	265.00

LOOKING FOR THE LAB AUTOMATION SECTION?
It has moved and is now called Microplate Instrumentation.

LOOKING FOR THE TISSUE CULTURE SECTION?
It has moved and is now called Cell Culture.

LOOKING FOR THE MICROARRAYS SECTION
It has moved and is now called Array Analysis.

Lonza Reliant* FastLane* Gel System Starter Kit

A simple, economical way to get started with PCR product analysis

sourcebook
Reliant* FastLane Gel System

BMA57009

- Enables analysis of DNA fragments from 10 bp to 10kb in as little as 15 minutes
- Combines the components needed to start using the Reliant* FastLane Gel System

INCLUDES:
FastLane Gel Chamber, one each; Reliant FastLane 1% TBE/SeaKem* Agarose 12-well gels, two each; Reliant FastLane 1% TBE/SeaKem Agarose 2 × 12-well gels, two each; Reliant FastLane 2.5% TBE/SeaKem Agarose 12-well gels, 2 each; Reliant FastLane 2.5% TBE/SeaKem Agarose 2 × 12-well gels, two each; Reliant FastLane 1% TAE/SeaKem Agarose 12-well gels, two each; 1X TBE buffer, 8 × 100mL; 1X TAE buffer, 2 × 100mL; SimplyLoad* Tandem Ladder, 500µL; "The Sourcebook, A Handbook for Gel Electrophoresis"

Cat. No.	Each
BMA57009	295.37

*Trademark. See Trademark Reference.

Prices subject to change.

VERTICAL SYSTEMS

FisherBiotech* Vertical Minigel Wedge Electrophoresis System

Unique wedge design holds gel in place without clamps or knobs

- Runs one or two gels with no additional cooling
- Compatible with most precast or self-cast protein gels
- Durable, fabricated, acrylic construction

INCLUDES:

Upper and lower buffer chambers, power supply leads and cords, two sets of wedges, adapter plate for 10 × 8cm gels, blocking plate

WARRANTY:

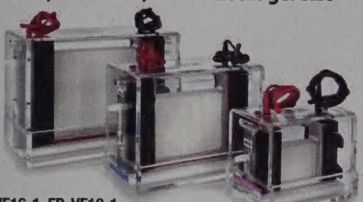
Three years

FB-VE121

Gel Size	L × W × H	Cat. No.	Each
10 × 8cm or 10 × 10cm	4¾ × 5⅞ × 6¾" (12 × 15 × 17cm)	**FB-VE121**	550.25

FisherBiotech* Vertical Electrophoresis Systems

Choice of 10 × 10cm, 16 × 14cm, or 20 × 20cm gel size



FB-VE20-1, FB-VE16-1, FB-VE10-1

Gel Size	Buffer Volume	L × W × H	Cat. No.	Each
10 × 10cm	300mL	4¼ × 6¾ × 6" (12 × 17 × 15cm)	**FB-VE10-1**	765.00
16 × 14cm	550mL	5½ × 9½ × 8¼" (14 × 24 × 21cm)	**FB-VE16-1**	1233.00
20 × 20cm	1150mL	6½ × 12 × 9½" (16.5 × 31 × 24cm)	**FB-VE20-1**	1200.00

Key Features

- Systems are double-sided—run two protein gels simultaneously
- Agarose plug method allows gel casting of one or two gels in the same system
- Gel assemblies do not need to be moved after the gel is set
- Sliding clamp assemblies make system assembly a snap and prevent leaks
- Electrode configuration reduces run times
- Increased electrode surface area provides exceptional field uniformity

afety Features

- Asymmetrical shape prevents mismatching of electrodes
- Interlocking safety lid with attached power cords protects against electric shock

SYSTEM COMPONENTS

	FB-VE10-1	FB-VE16-1	FB-VE20-1
Upper Buffer Chamber with Cooling Chamber	Yes	Yes	Yes
Lower Buffer Chamber	Yes	Yes	Yes
Safety Lid (with Attached Power Supply Leads)	Yes	Yes	Yes
Gaskets	Yes	Yes	Yes
Clamp Assemblies	Four	Four	Four
Gel Caster	Yes	Yes	No
Plates	Four blank and two notched glass plates, two notched alumina plates	Four blank and four notched glass plates	Four blank and four notched glass plates
Combs	Two 10-well, 0.8mm thick	Two 10-well and two 15-well, 1.5mm thick	Two 15-well and two 20-well, 1.5mm thick
Side Spacers	Four, 0.8mm thick	Eight, 1.5mm thick	Eight, 1.5mm thick

Thermo Scientific* Owl* Vertical Electrophoresis Systems

Eliminate the mess and inconvenience of conventional acrylamide gel casting

OWP8DS-2

Easy-to-use systems utilize an agarose plug technique to permit slab gels to be cast and run in one unit. Simply secure the glass cassettes, pour the agarose plug in the specially designed trough, cast acrylamide solution in the cassettes, load samples, and run the gel.

- Central cooling core provides even cooling across the gel surface for outstanding resolution and clear banding
- Cooling is achieved by circulating fluid through the core with an external circulator or cool tap water

APPLICATIONS:

Ideal for SDS electrophoresis, the second dimension of two-dimensional (2-D) electrophoresis, agarose electrophoresis, and native electrophoresis

WARRANTY:

Three years

Gel Size	Buffer Volume	L × W × H	Cat. No.	Each
10 × 8–10cm	300mL	5⅛ × 6¾ × 5½" (13 × 17 × 14cm)	**OWP8DS-2**	620.00
16 × 14–16cm	600mL	5⅛ × 9⅞ × 7⅝" (13 × 25 × 19.5cm)	**OWP9DS-2**	1021.00
20 × 20cm	1150mL	6½ × 12 × 9" (16.5 × 30.5 × 23cm)	**OWP10DS-2**	1100.00

SYSTEM COMPONENTS

	OWP8DS-2	OWP9DS-2	OWP10DS-2
Buffer Chamber with Internal Cooling Core	Yes	Yes	Yes
Lower Buffer Chamber	Yes	Yes	Yes
SuperSafe* Lid (with attached power supply leads)	Yes	Yes	Yes
Blocking Plate for single gel operation	Yes	Yes	Yes
Plates	4 blank and 2 notched glass plates; two notched alumina plates	4 blank and 4 notched glass plates	4 blank and 4 notched glass plates
Combs	Two 10-well 0.8mm thick combs	Two 10-well 1.5mm thick combs; two 15-well 1.5mm thick combs	Two 15-well 1.5mm thick combs; two 20-well 1.5mm thick combs
Spacers	0.8mm thick spacer set and spacer placer	1.5mm thick spacer set and spacer placer	1.5mm thick spacer set and spacer placer

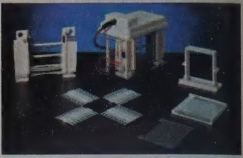
LOOKING FOR ACCESSORIES FOR YOUR ELECTROPHORESIS SYSTEM?

The full line of electrophoresis system accessories can be found on our Web site.

Visit www.fishersci.com and search for Electrophoresis Accessories

Thermo Scientific* Mini Vertical Gel Systems

Simplify protein and nucleic acid techniques performed in a minigel format



FB-EC120-4

- Model 120-2 casts and runs one or two gels and can be converted to a four-gel system with the addition of a second running frame
- Model 120-4 runs up to four gels
- Leak-free casting is made easy by self-adhering spacers that hold glass plates together
- Assembly is easy with no complicated mechanisms, cams or screws
- May be used with many precast gels

Model	Gel Capacity	Gel Size	L × W × H	Cat. No.	Each
120-2	2 gels	8 × 7cm	8 × 4⅞ × 6⅜" (20 × 12.3 × 16.1cm)	**FB-EC120-2**	612.85
120-4	4 gels	8 × 7cm	8 × 4⅞ × 6⅜" (20 × 12.3 × 16.1cm)	**FB-EC120-4**	1068.43

SYSTEM COMPONENTS

	Model 120-2 Includes	Model 120-4 Includes
Outer Tank	1	1
Safety Cover w/Leads	1	1
Two-Place Running Frame	1	2
Two-Gel Casting Aid	1	2
Spacer Alignment Tool	1	1
Spacer, 0.75mm thick	4	8
Glass Plate Set	2 sets	4 sets
Comb, 0.75mm thick, 10 & 15 well	2	4
Blank Plate	1	1
Clamps	2	4

ACCESSORIES

Plates for Thermo Scientific* Mini Vertical Gel Systems

Description	Mfr. No.	Cat. No.	Price
Glass plates, notched	131BECA	**FB-EC131B**	Pk. of 5/110.00
Glass plates, rectangular	131CECA	**FB-EC131C**	Pk. of 5/96.50
Blank plastic plates, 8 × 10cm	136AECA	**FB-EC136A**	Ea./23.06
Blank plastic plates, 10 × 10cm	136BECA	**FB-EC136B**	Ea./23.06

PAGEgel* Dual Run and Blot Cell

Patent pending blotting system allows for complete, uniform transfers of all proteins

CA00002

Blotting takes place using the electrodes at the bottom of the core (Patent Pending) inside blotting cassettes, an asymmetrical arrangement which produces a voltage gradient that diminishes from bottom to top of the tank. Gels are placed in the blotting cassettes with the high molecular weight end down, so the proteins and polynucleotides receive a voltage inversely proportional to the rate they moved in the gel and are, therefore, transferred uniformly.

- System runs or blots one or two minigels
- The unit is compatible with precast gels in 6mm thick cassettes made by Lonza, Invitrogen*, and PAGEgel; blots gels up to 1.5mm thick
- Gels or blotting cassettes are inserted quickly and without leakage—no screws or external clamps are required
- Samples are loaded easily under running buffer, because the core can be assembled with gels and buffer outside the tank
- Both gels run at the same speed and temperature, as the gels sit symmetrically in the cell with an equal amount of running buffer on each side
- Blotting may be performed on the bench top because the integrated cooling blocks, combined with internal stirring from the tank bottom, cool the blot

INCLUDES:

Lower tank, lid with safety-interlock cables, buffer core assembly, two blotting cassettes, two cooling blocks, buffer dam used when running or blotting one gel, and six foam pads

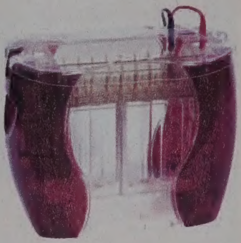
CERTIFICATIONS:

EN61010-1-1993 (IEC1010-1)

Gel Size	Buffer Volume	L × W × H	Cat. No.	Each
9.0 × 9.0	1L	5 × 7 × 8" (13 × 17 × 20cm)	**CA00002**	495.62

Hoefer* SE600 Series Vertical Electrophoresis Systems

Built-in heat exchanger maintains temperature between 1° and 45°C (33.8° and 113°F) for faster runs with superior quality results



03-500-100

- Run one gel or two gels simultaneously, four with optional divider plates
- Produce straight lanes and sharp, well-defined bands—no "smiling"
- Provide two mechanisms to dissipate heat

Available in three models

- SE600 Chroma has two built-in side handles and rounded contours that ease handling, lifting, introducing sample, and disassembling
- SE600 Complete offers durable construction for proven decades of performance
- SE660 Basic is identical in design to the SE600 Complete, but is taller to accommodate gels up to 24cm in length

APPLICATIONS:

Suitable for denaturing and native polyacrylamide, 2-D, isoelectric focusing, and agarose gel electrophoresis.

CERTIFICATIONS:

UL3101-1, CSA C22.2 1010.1, CE Certified, EN61010-1

System	Gel Size	Buffer Volume	L × W × H	Mfr. No.	Cat. No.	Each
SE600 Chroma	18 × 16cm or 18 × 8cm	5L	12½ × 5½ × 11½" (32 × 14 × 29cm)	SE600X-15-1.5	**03-500-100**	1446.00
SE600 Complete	18 × 16cm or 18 × 8cm	5L	12½ × 5½ × 11½" (32 × 14 × 29cm)	SE600-15-1.5	**03-500-101**	1125.00
SE660 Basic	18 × 24cm, 18 × 16cm, or 18 × 8cm	6.6L	12½ × 5½ × 14½" (32 × 14 × 37cm)	SE660	**03-500-212**	1844.00

SYSTEM COMPONENTS

	SE600 Chroma†	SE600 Complete	SE660 Basic
Lower Buffer Chamber	Yes	Yes	Yes
Safety Lid with Leads	Yes	Yes	Yes
Upper Buffer Chamber with Cathode	Yes	Yes	Yes
Heat-exchanger with Anode	Yes	Yes	Yes
Dual-gel Casting Stand with Leveling Base and Level	Yes	Yes	Yes
Buffer Dam	Yes	Yes	Yes
Spacer-Mate Alignment Template	Yes	Yes	Yes
Wonder Wedge Plate Separation Tool	Yes	Yes	Yes
Gel Seal	Yes	Yes	Yes
Glass Plates	Three sets (18 × 16cm)	Three sets (18 × 16cm)	Three sets (18 × 24cm)
Clamp Assemblies	Four (16cm)	Four (16cm)	Four (8cm), Four (16cm)
Cams	Six	Six	Six
Combs	Two 15-well	Two 15-well	----
Spacers	Two sets (1.5mm thick, 2cm wide)	Two sets (1.5mm thick, 2cm wide)	----

† *Includes built-in side handles and rounded contours.*

ACCESSORIES

Gel Casters for SE600 and SE400 Series Vertical Electrophoresis Systems

Cast multiple gels

SE6015 Dual-Gel Caster

- Easy-to-handle
- Leak-free
- Suitable for one or two gels

SE675 Four-Gel Caster and SE615 Multiple-Gel Caster

- Include space-saver plate and filler sheets to permit fewer than the maximum number of gels to be cast
- Suitable for casting uniform or gradient gels

Model	Plate Size	Max. No. of Gels	Mfr. No.	Cat. No.	Each
SE6015 Dual-Gel Caster	18cm wide	2	SE6015	**03-500-247**	294.00
SE675 Four-Gel Caster	18 × 16cm	4	SE675	**03-500-268**	767.00
SE615 Multiple-Gel Caster	18 × 16cm	10	SE615	**03-500-260**	818.00

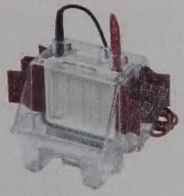
COMPONENTS

	SE6015 Dual-Gel Caster	SE675 Four-Gel Caster	SE615 Multiple-Gel Caster
Stand with two gaskets	Yes	----	----
Caster Body with Gasket, Face Plate, and Clamps	----	Yes	Yes
Spacer-Mate Alignment Plate	----	Yes	Yes
Filler Plugs	----	Yes	----
Glass Plates	----	8	20
Space-saver Plates	----	3	1
Filler Sheets	----	5	5
Wax Paper Sheets	----	100	100

Hoefer* Mighty Small* Vertical Electrophoresis Systems

Combine the advantages of a small format and efficient cooling for rapid screening of protein and nucleic acids

- Run two gels at once
- Produce high-resolution separations in as little as 45 minutes with no band "smiling"
- Use alumina plates for efficient cooling


03-500-111

APPLICATIONS:
Ideal for uniform and gradient acrylamide, agarose, IEF, field inversion agarose, and 2-D electrophoresis.

INCLUDES:
Upper buffer chamber, lower buffer chamber, interlocking safety lid with leads, ten glass plates, two notched alumina plates, four clamps, Gel Seal, well locating decal, Spacer Mate, SE245 Dual Gel Caster, two 0.75mm thick 10-well combs, two pairs 0.75mm thick spacers

CERTIFICATIONS:
CE marked, CSA C22.2 1010.1, EN61010-1, UL3101-1

Model	Gel Size	Buffer Volume	L × W × H	Mfr. No.	Cat. No.	Each
SE250 Complete	10 × 8cm	300mL	6¼ × 6½ × 6¼" (16 × 16.5 × 16cm)	SE250-10A-.75	**03-500-110**	704.00
SE260 Complete	10 × 10.5cm	300mL	6¼ × 6½ × 7⅛" (16 × 16.5 × 18cm)	SE260-10A-.75	**03-500-111**	727.00

Hoefer* MiniVE Mini Vertical Electrophoresis Unit

Accepts gels up to 10 × 10.5cm, increasing separation length by more than 30% over conventional 10 × 8cm gels

- Gel module is simultaneously a casting stand and an upper buffer chamber
- Cooling system assures the temperature uniformity required for straight lanes and flat bands
- Optional blot module (03-500-109) permits gels to be cast, run, and blot in one instrument

03-500-108

INCLUDES:
Tank with lid, three 10 × 10.5cm rectangular glass plates, three 10 × 10.5cm notched glass plates, two gel modules, two 1mm thick 10-well combs, two 1mm thick spacer sets

Gel Size	Buffer Volume	L × W × H	Mfr. No.	Cat. No.	Each
10 × 10.5cm or 10 × 8cm	1.4L	7⅜ × 7⅝ × 6¾" (18.8 × 19.2 × 17.2cm)	SE300-10A-1.0	**03-500-108**	729.00

ACCESSORIES

Blot Module for MiniVE Mini Vertical Electrophoresis Unit

Can be used to transfer two minigels inside the MiniVE tank

MiniVE tank can accommodate two blot modules simultaneously, so four gels can be transferred in 45 min. with only 300mL buffer.

03-500-109

INCLUDES:
Blot module, three ¼" (6mm) thick Dacron* sponges, 25 sheets of blotter paper

Gel Size	Mfr. No.	Cat. No.	Each
10 × 10.5cm or 10 × 8cm	SE302	**03-500-109**	402.00

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

Gel Casters for Mini Vertical Electrophoresis Systems

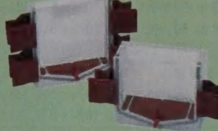
Easy-to-use casters

SE245 Dual-Gel Caster

- For use with SE250, SE260, or MiniVE Vertical Electrophoresis Systems

SE235 4-Gel Caster and SE215 10-Gel Caster

- Suitable for single concentration and gradient gels
- SE235 4-Gel Caster is for use with SE260 or MiniVE Electrophoresis Systems
- SE215 10-Gel Caster is for use with SE250 Electrophoresis System



03-500-115, 03-500-116

Model	Plate Size	No. of Gels	Mfr. No.	Cat. No.	Each
SE245 Dual-Gel	10 × 8 or 10 × 10.5cm	1-2	SE245	**03-500-114**	222.00
SE235 4-Gel	10 × 10.5cm	1-4	SE235	**03-500-115**	357.00
SE215 10-Gel	10 × 8cm	4-10	SE215	**03-500-116**	517.00

COMPONENTS

	SE245 Dual-Gel Caster	SE235 4-Gel Caster	SE215 10-Gel Caster
Casting Cradle w/Clamp Assemblies, Gaskets, and Cams	Yes	----	----
Casting Chamber w/Gasket	----	Yes	Yes
Face Plate	----	Yes	Yes
Space Saver Plate and Filler Sheets	----	Yes	Yes
Cap and Filler Plugs	----	Yes	Yes
Glass Plates	----	5 (10 × 10.5cm)	20 (10 × 8cm)
Notched Alumina Plates	----	4	10
Wax Paper Sheets	----	100	100
Clamps	----	4	2

POWER SUPPLIES

FisherBiotech* Power Supplies

Easy-to-use power supplies are designed for safety

Key Features

- Choice of operating modes—constant voltage or constant current output modes with automatic crossover between modes; programmable models add a constant power mode
- Automatic shutoff (at run's end) saves time, energy, and reduces errors
- Automatic recovery (after power failure) eliminates the need to restart the unit

Additional Features

- Backlit LED display, mode indicator lights, internal timer, and multiple output jacks
- Soft-touch keypad controls allow user to select modes and output levels, set timer, and start/stop operation
- Power-off memory retains settings after shutdown
- Lightweight, stackable design allows use of multiple units while saving space on the benchtop
- Locking kickstand permits positioning the unit at an angle for better viewing
- Standard safety features include no-load and failure notification, arc and ground leak detection, overvoltage protection, and jacks that are set away from controls
- Nonskid rubber feet provide stability

Compact Model FB300Q

- Runs up to three gels at once at either constant current or constant voltage
- Uses less surface area than a sheet of paper
- Utilizes UP/DOWN arrow controls
- Ideal for SDS-PAGE, DGGE/CDGE, and DNA/RNA submarine electrophoresis

High-Current Model FB200Q

- Uses a numeric keypad

Stackable FisherBiotech Power Supplies: FB300Q (top) and Programmable FB1000Q

High-Current Model FB200Q

- Perfect for high-current electroblotting (Western tank and semi-dry, Southern and Northern) and SDS-PAGE applications

Programmable Models FB1000Q and FB3000Q

- Enhanced features include a third, constant power mode and remote temperature probe
- Both models have a numeric keypad
- Nine-program memory with "list program" function for quick recall makes these units ideal for multi-user labs or multiple repetitive operations
- FB1000Q is designed for isoelectric focusing, SDS-PAGE, and native SDS-PAGE
- FB3000Q is ideal for DNA sequencing and high-voltage electrophoresis applications

WARRANTY:
12 months

COMPLIANCE:
CSA approved

NOTE:
All outputs run with the same settings.

Specifications and Ordering Information on next page.

FisherBioTech* Power Supplies, Contd.

Type	Maximum Voltage	Maximum Current	Maximum Power	No. of Jacks	Modes	Timer	L × W × H	Cat. No.	Each
120V									
Compact	300V	400mA	75w	3	Voltage or current	0–999 min.	10¼ × 5½ × 5¼" (26 × 14 × 13.3cm)	**FB300Q**	437.13
High Current	200V	2.0A	200w	4	Voltage or current	99 hr. 59 min.	12 × 10¾ × 5¼" (31 × 27 × 13.3cm)	**FB200Q**	880.66
Programmable	1000V	500mA	250w	4	Voltage, current or power	99 hr. 59 min.	12 × 10¾ × 5¼" (31 × 27 × 13.3cm)	**FB1000Q**	1166.16
Programmable	3000V	400mA	400w	4	Voltage, current or power	99 hr. 59 min.	12 × 10¾ × 5¼" (31 × 27 × 13.3cm)	**FB3000Q**	2005.73
240V									
Compact	300V	400mA	75w	3	Voltage or current	0–999 min.	10¼ × 5½ × 5¼" (26 × 14 × 13.3cm)	**FB300-1Q**	526.98
Programmable	1000V	500mA	250w	4	Voltage, current or power	99 hr. 59 min.	12 × 10¾ × 5¼" (31 × 27 × 13.3cm)	**FB1000-1Q**	1271.31
Programmable	3000V	400mA	400w	4	Voltage, current or power	99 hr. 59 min.	12 × 10¾ × 5¼" (31 × 27 × 13.3cm)	**FB3000-1Q**	2246.92

Thermo Scientific* Power Supplies

Suitable for a wide range of applications

FB-105

- Designed for safety with no-load and failure notification, overvoltage protection, and jacks that are set away from controls

Constant Voltage Power Supply, Model EC 105

- Ultra-compact unit is easy to operate with only one switch and one adjustment knob to control the unit's voltage output
- LED display toggles between output voltage or output current
- Ideal for submarine gels, mini SDS-PAGE, mini tank (wet) electroblotting, and pulsed-field electrophoresis (requires pulse controller)
- For 110V 50/60Hz

Dual Mode Power Supplies

- Automatic power shutoff at end of run
- Automatic recovery after power failure
- Backlit LED display, mode indicator lights, timer, and multiple output jacks
- Soft-touch keypad controls
- Memory retains settings after shutdown
- Stackable design allows use of multiple units in less space
- Locking kickstand permits positioning the unit at an angle for better viewing
- Nonskid rubber feet provide stability
- For 120V 50/60Hz

Compact Model EC 300 XL

- Uses UP/DOWN arrow controls
- Suitable for SDS-PAGE, DGGE/CDGE, and DNA/RNA submarine electrophoresis

High-Current Model EC 200 XL

- Utilizes a numeric keypad
- Suitable for high-current electroblotting (Western tank and semi-dry, Southern and Northern) and SDS-PAGE applications

Programmable Power Supplies

- Additional features include a third, constant power mode, remote temperature probe, and nine-program memory
- Both models have a numeric keypad
- **Model EC 1000 XL** is suitable for isoelectric focusing, SDS-PAGE, and native SDS-PAGE
- **Model EC 3000 XL** is suitable for DNA sequencing and high-voltage electrophoresis applications

WARRANTY:

Model EC 105: Four-year warranty. All other models: 12-month warranty.

Model	Maximum Voltage	Maximum Current	Maximum Power	No. of Jacks	Modes	Timer	L × W × H	Cat. No.	Each
EC 105	250V	300mA at 150-250V, 500mA below 150V	75w	2	Voltage	—	6 × 8 × 4½" (15 × 20 × 11cm)	**FB-105**	569.57
EC 300 XL	300V	300V	75w	3	Voltage or current	0-999 min.	10¼ × 5½ × 5¼" (26 × 14 × 13.3cm)	**FB-EC300XL**	503.00
EC 200 XL	200V	200V	200w	4	Voltage or current	99 hr. 59 min.	12 × 10¾ × 5¼" (31 × 27 × 13.3cm)	**FB-EC200XL**	1383.00
EC 1000 XL	1000V	1000V	250w	4	Voltage, current or power	99 hr. 59 min.	12 × 10¾ × 5¼" (31 × 27 × 13.3cm)	**FB-EC1000XL**	1341.00
EC 3000 XL	3000V	3000V	400w	4	Voltage, current or power	99 hr. 59 min.	12 × 10¾ × 5¼" (31 × 27 × 13.3cm)	**FB-EC3000XL**	2307.00

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

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*Trademark. See Trademark Reference.

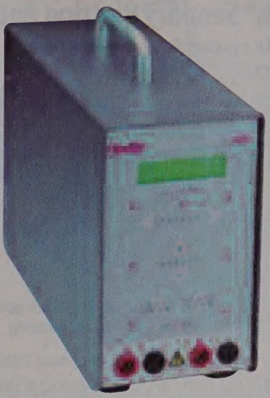
Hoefer* Power Supply PS 2A200

High current power supply ideal for all types of electrophoresis blotting and short electrophoresis runs

- Can be run with constant voltage, constant current, and constant power with automatic crossover
- Automatically continues a run after power failure
- Stores up to three protocols
- Offers four timer options: continuous run, set time run, set time run followed by hold at 5V, or set volt-hour run
- Permits a log of run parameters via RS-232 port
- Provides compact design
- Offers overload/short circuit detection and no-load detection

CERTIFICATIONS:

CE89/336/EEC (EMC Directive), CE73/23/EEC (LV Directive), CSA22.2 1010-1, EN-61010-1 (IEC1010-1), UL 3101-1



03-500-112

Output Voltage	Output Current	Output Power	No. of Jacks	Timer	L × W × H	Electrical Requirements	Mfr. No.	Cat. No.	Each
200V in 1V steps	2000mA in 1mA steps	200w in 1w steps	2	0-999 min.	10⅝ × 4⅜ × 8⅝" (27 × 11 × 22cm)	90-265VAC 47-63Hz	PS2A200	**03-500-112**	1465.00

BLOTTING

FisherBiotech* Electrophoresis Bundle

Combines the convenience of a one-step vertical electrophoresis system with a mini tank electroblotter for rapid, efficient transfers

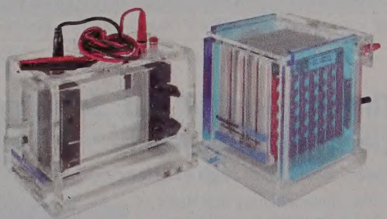
Cast and run gels in one device, then perform uniform, reproducible protein transfers over a wide molecular range.

Vertical Electrophoresis System

- Agarose plug method makes casting gels quick and easy
- Gel assemblies don't have to be moved once set up
- Simple clamping mechanism makes it easy to load glass cassettes and most precast gels
- Central cooling core is composed of thermally conductive alumina plates and a unique fluid circulation path which provides even cooling over the entire gel for outstanding resolution and clear banding
- Ideal for mobility shift assays, second dimension protocols of 2-D electrophoresis, SDS and agarose gels
- Gel Size: 10 × 8-10cm
- Dimensions: 5L × 21W × 18cmH
- Buffer Volume: 300mL

Mini Tank Electroblotting System

- Simultaneously transfers up to four polyacrylamide mini protein gels
- Integrated cooling base allows for temperature-controlled runs
- Buffer chamber features platinum wire electrode panels
- Optional stir bars may be added to bottom of buffer chamber for increased circulation and heat exchange
- Includes safety interlocking lid with attached power supply leads
- Transfer Area: 9 × 9cm
- Dimensions: 18L × 13W × 16.5cmH
- Buffer Volume: 1.4L



FB250

INCLUDES:

Four blank and four notched glass plates, two 10-well 1.5mm thick combs, two 15-well 1.5mm thick combs, 1.5mm thick spacer set and spacer placer

WARRANTY:

Three years on electrophoresis system

Description	Cat. No.	Each
Vertical System plus Mini Tank Electroblotter	**FB250**	865.00

DON'T SEE THE RIGHT PRODUCT?

For blotting membranes, see the Membranes section.

FisherBiotech* Semidry Blotting Apparatus

Sleek, low-profile system for fast, efficient Western transfers

Transfers minigels in 15 to 30 minutes; full-sized gels in 30 to 60 minutes, with efficiencies of nearly 90%.

- Multiple gels can be transferred by stacking gel/membrane/filter paper "sandwiches"
- Because plate electrodes are in direct contact with "sandwich," a homogeneous electric field is created, ensuring even transfers
- System requires only minimal amounts of buffer (about 250mL)
- Low voltage—requires less than 1mA/cm² of current; no external cooling is necessary
- Features 20 × 20cm platinum-coated titanium anode and stainless-steel cathode

FB-SDB-2020 with power supply (available separately)

APPLICATIONS:

Transfers proteins from polyacrylamide electrophoresis gels onto hybridization membranes (Western transfers). Ideal for membrane-based, solid-phase protein assays such as HIV testing, where viral antigens are assayed with patient antibodies. Use to detect trace proteins in complex mixtures and study protein interaction with other molecules (i.e., DNA).

INCLUDES:

Lid with anode, base with cathode, connecting knobs and power cords

Transfer Area	L × W × H	Cat. No.	Each
20 × 20cm	9¾ × 9¾ × 2" (25 × 25 × 5cm)	**FB-SDB-2020**	865.00

Thermo Scientific* Owl* Semi Dry Electroblotting System

Faster blots with high efficiency

- Fast, efficient transfer of proteins and nucleic acids to membranes
- Buffer contained within blotting paper is sufficient for efficient transfer of molecules
- Base contains stainless-steel cathode plate; lid has platinum/titanium anode plate
- Transfers may be done in as little as 15 minutes
- Ideal for proteins less than 150kDa

OWHEP3

INCLUDES:

Base, lid, power supply leads, heavy-duty knobs

Accommodates	L × W × H	Cat. No.	Each
4 minigels or up to a total of 20 × 20cm	9⅞ × 9⅞ × 2" (25 × 25 × 5cm)	**OWHEP1**	865.00
8 minigels or up to a total of 35 × 45cm	19⅞ × 15⅝ × 2" (51 × 40 × 5cm)	**OWHEP3**	2078.00

Hoefer* TE70X and TE77X Semi-Dry Blotting Systems

Perform uniform transfers of proteins and nucleic acids from polyacrylamide and agarose gels in less than one hour

03-500-610

- Transfer up to three polyacrylamide gels in a stack
- Use minimal buffer
- Do not generate the excessive heat that can distort bands or denature protein
- Utilize durable platinum-titanium and stainless-steel electrodes to assure uniform, contamination-free transfers
- Offer automatic transfer-stopping feature to prevent overheating when buffer is depleted
- Available with built-in power supply to save space and simplify transfer

INCLUDES:

Molded base with platinum/titanium anode, top assembly with stainless-steel cathode, power cables, 25 sheets of blotting paper, 50 sheets of cellophane (03-500-610, 03-500-612 only), two solid Mylar* masks

CERTIFICATIONS:

CE marked, CSA C22.2 1010.1, EN61010-1, UL3101-1

Model	Accommodates	L × W × H	Mfr. No.	Cat. No.	Each
Standard models					
TE70X	14 × 16cm gels or two minigels side-by-side	18⅞ × 15 × 4" (48 × 38 × 10cm)	TE70X	**03-500-610**	980.00
TE77X	21 × 26cm gels or 4 minigels side-by-side	18⅞ × 15 × 4" (48 × 38 × 10cm)	TE77X	**03-500-611**	1325.00
Models with built-in power supply					
TE70XP	14 × 16cm gels or two minigels side-by-side	18⅞ × 15 × 4" (48 × 38 × 10cm)	TE70XP	**03-500-612**	1318.00
TE77XP	21 × 26cm gels or 4 minigels side-by-side	18⅞ × 15 × 4" (48 × 38 × 10cm)	TE77XP	**03-500-613**	1674.00

Hoefer* TE22 Mini Tank Blotting Unit

Safe, economical unit requires minimal current and only about 1L of buffer

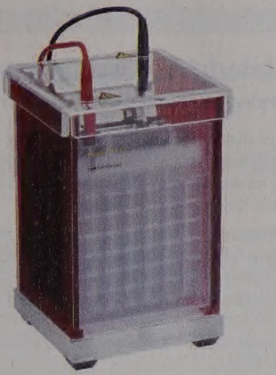
- Built-in alumina heat exchanger permits efficient transfers in less than one hour
- Platinum electrode ensures uniform electrical field for complete and even transfers
- Hinged, color-coded cassettes enable simple loading and easy orientation of gel sandwich
- Alumina-covered serpentine channel in base provides excellent temperature control with no more than 5°C rise during a normal run

INCLUDES:

Buffer chamber, lid with leads, two electrode panels, four gel cassettes, eight ⅛" thick foam sponges, four ¼" thick foam sponges, 25 sheets blotting paper

CERTIFICATIONS:

CE marked, CSA C22.2 1010.1, EN61010-1, UL3101-1



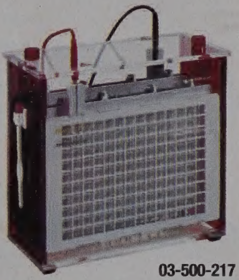
03-500-216

Accommodates	L × W × H	Mfr. No.	Cat. No.	Each
Four small gels up to 9 × 10cm	6½ × 5½ × 9½" (16.5 × 14 × 24cm)	TE22	**03-500-216**	954.00

Hoefer* TE42 and TE62 Tank Blotting Units

Perform high-intensity protein transfers in one hour

- Over 1.5m of platinum wire per electrode provides uniform field strength for efficient transfers
- Hinged, color-coded cassettes enable simple loading and easy orientation of gel sandwich
- Buffer volumes of 4 to 5L required, depending on number of cassettes processed
- Model TE42 can be used with optional heat exchanger (Cat. No. 03-500-296), see our Web site for details.
- Model TE62 offers a built-in heat exchanger in the base of the unit



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CERTIFICATIONS:

CE marked, CSA C22.2 1010.1, EN61010-1, UL3101-1

Model	Accommodates	L × W × H	Mfr. No.	Cat. No.	Each
Standard Model					
TE42	Four 15 × 21cm gels or 16 minigels	6½ × 5½ × 9½" (16.5 × 14 × 24cm)	TE42	**03-500-217**	1208.00
Model with Built-in Heat Exchanger					
TE62	Four 15 × 21cm gels or 16 minigels	6½ × 5½ × 9½" (16.5 × 14 × 24cm)	TE62	**03-500-218**	1273.00

COMPONENTS

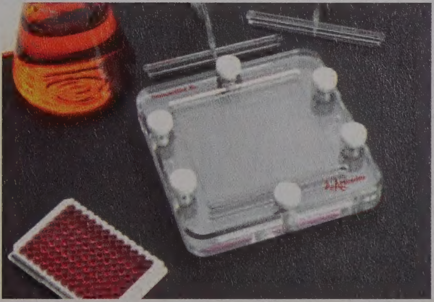
	Model TE42	Model TE62
Buffer Chamber	Standard	With built-in heat exchanger
Electrode Panels	Two	Two
Gel Cassettes	Two	Four
⅛" Thick Foam Sponges	Four	Eight
¼" Thick Foam Sponges	Two	Four
Blotting Paper	25 sheets	25 sheets

Hoefer* ImmunoBlot and ImmunoBlot XL Immunoblotting Units

For antigen-antibody interaction and DNA hybridization studies

- Permit the screening of multiple antibodies on a single blot
- Eliminate the need to cut membranes into strips
- Enable side-by-side comparisons of blotting profiles

Description	Blotting Area	No. of Samples	Sample Volume	Mfr. No.	Cat. No.	Each
ImmunoBlot Unit	13 × 13cm	25	250µL	PR625	**03-500-219**	1231.00
ImmunoBlot XL Unit	13 × 13cm	45	140µL	PR645	**03-500-220**	1282.00



03-500-220

GEL DRYING

FisherBiotech* Gel Drying System

Fast gel drying—without distortion or cracking

Integrates a gel dryer and vacuum system to provide a simple, effective, and reliable way to dry electrophoresis gels, while eliminating the hassles of dry ice and refrigerated traps. Dried gels are suitable for autoradiography, densitometry, or notebook storage.

Gel Dryer Features

- Large drying surface accommodates all sizes of gels, from DNA sequencing down to multiple smaller gels
- PTFE-resin-coated aluminum casting of gel dryer distributes heat uniformly, assuring quick drying without local hot spots that can crack gels
- The 720w heater has variable temperature adjustment between ambient and 80°C (176°F)
- Built-in five-hour timer can be set on HOLD for continuous operation
- CSA approved

Vacuum System Features

- Dual pumping action works with the heat from the gel dryer to dry gels fast
- Hot vapors from the gel dryer are condensed and isolated from the rest of the system by a room-temperature vapor pump
- A compact, high-efficiency dry vacuum pump provides the deep vacuum needed to get the last liquid out of the gel
- The two-pump system works as quickly as a two-stage vacuum pump and cold trap, and faster than a conventional stand-alone diaphragm pump or water jet pump
- The trapping medium doesn't mix with the condensate, so it can be reused
- System is easy to use and maintain

INCLUDES:

Gel Dryer with 5' (1.5m) of PVC vacuum tubing, inline stopcock, hose clamps, 1L of trapping medium; Vacuum System with plastic support mesh, porous support pad, silicone rubber sealing sheet

WARRANTY:

12 months

DON'T SEE THE RIGHT PRODUCT?

For UV Crosslinkers, see the Crosslinkers section.

FB-GD-X1

Electrical Requirements	Cat. No.	Each
115V 60Hz	FB-GD-X1	3459.21

SPECIFICATIONS

FisherBiotech Gel Dryer	
Drying Surface	14½ × 18½" (37 × 47cm)
Temperature Control	Variable adjustment from ambient to 80°C (176°F)
Timer	Built-in; 0–5 hr.; HOLD function for continuous operation
Vacuum Connection	For ¼, ⅜, or ½ I.D. tubing
L × W × H	17¾ × 25¾ × 3⅞" (45.1 × 65.5 × 9.8cm)
Net Weight	25½ lb. (11.6kg)
FisherBiotech Vacuum System	
Condensed Vapor Capacity	1.5L
L × W × H	15½ × 11¼ × 14" (39.4 × 28.6 × 35.6cm)
Inlet Port	Accepts ⅜" I.D. hose (9.5mm I.D. hose nipple)
Cooling Fan	218cfm
Net Weight	33½ lb. (15.2kg)

FISHERBIOTECH* GEL DRYING SYSTEM COMPONENTS

FisherBiotech Gel Dryers and Vacuum Systems are also available separately.

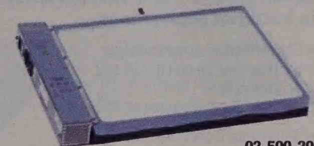
Visit www.fishersci.com and search for FisherBiotech Gel Dryers

DON'T SEE THE RIGHT PRODUCT?

To browse through our photodocumentation systems, autoradiography cassettes, and film, please turn to the Photodocumentation section.

Hoefer* GD 2000 Gel Dryer System

Dries gels rapidly, evenly and safely using a dry-heat vacuum method


03-500-305

Gel Dryer Features

- Drying surface accommodates acrylamide and agarose gels up to 33 × 44cm
- Heat and vacuum are applied beneath the gel through a heavy aluminum platen, providing even heat and even vacuum distribution
- Thermostat is adjustable from 40° to 80°C, ±2°C
- Timers for heat and for vacuum can be set independently
- Clear silicone cover sheet allows user to view the gel during drying

Pump Features

- Quiet, oil-free diaphragm pump maintains the low vacuum necessary for rapid gel drying
- No trap required

INCLUDES:

GD 2000 Gel Dryer, VP 200 Vacuum Pump, and VT 3 Vacuum Tubing

CERTIFICATIONS:

CE marked, UL listed, CSA approved

Electrical Requirements	Mfr. No.	Cat. No.	Each
115VAC	GD2000-115V	**03-500-305**	3895.00

SPECIFICATIONS

Gel Dryer	
Drying Surface	13 × 17¼"(33 × 44cm)
Temperature Control	40° to 80°C (104° to 176°F)
Timer	Built-in; 0 to 9 hr. 59 min.; run function for continuous operation
Vacuum Connection	For ⅜" (9mm) I.D. tubing
L × W × H	17 × 21⅝ × 3⅜" (43.5 × 55.0 × 8.5cm)
Net Weight	17⅝ lb. (8kg)
Pump	
L × W × H	9½ × 12¼ × 11⅝" (24.0 × 31.0 × 29.5cm)
Inlet	⅜" (9mm) I.D. tubing
Net Weight	29¾ lb. (13.5kg)

ELECTROPORATORS

Thermo Scientific* CelljecT Pro Electroporator

Advanced set-up and programming capabilities enable precise methods optimization for all cell types

- Three pulse types improve transformation effectiveness: Single Pulse; Double Pulse to counteract the negative effects of electromagnetic repulsion; and OptiPulse with fast discharge to prevent pore re–sealing
- Safety features include pre-arc detection, visual and audible alarms for incorrect parameters
- Pre-pulse impedance measurement is linked to a fully enclosed electroporation chamber
- Fully microprocessor controlled via benchtop remote control unit
- Stores up to eight programs internally, plus an additional eight per Smart Card reader/recorder to support constantly changing conditions

CelljecT Pro
EPEJ002

INCLUDES:

Control circuitry and capacitance bank; separate keypad; printer with RS-232 serial port; two Smart Cards; electroporation chamber; cuvets (two 2mm yellow and ten 4mm purple); power supply; instruction manual; and optimization guide

Description	Cat. No.	Each
CelljecT Pro	**EPEJ002**	8003.10
Additional Smart Card	**EPES001**	79.40

SPECIFICATIONS

Waveform	Decaying exponential with R/C time constant, dependent upon capacitor and sample
Output Voltage	100–3500 Volts, 50v steps (high voltage mode); 20–450 Volts, 2v steps (low voltage mode)
Capacitance Range	0.5/25µf (high voltage); 150–3000µf (low voltage)
Pulse Time	10µsec. to 7 sec.
Dimensions (L × W × H)	Main Unit: 8⅔ × 16¾ × 20" (22 × 42.5 × 51cm) Chamber: 2⅔ × 10¼ × 3⅔" (6.7 × 26 × 9.2cm)

Thermo Scientific* CelljecT Duo Electroporator

Efficiently electroporates embryo, mammalian, plant, yeast, and bacterial cells

- User friendly; program by cell type or pre-optimized parameter value
- Accommodates 1, 2, 4, or 10mm cuvets
- Compact footprint minimizes benchtop space
- Safety features include lid interlock plus pre– and post–monitoring system to prevent incorrect programming
- External remote keypad with integral cuvet chamber enables external programming

CelljecT Duo
EPEJ003

Contd. on next page.

Thermo Scientific* CelljecT Duo Electroporator, Contd.

INCLUDES:
Remote keypad, instruction manual, optimization guide, and 10 cuvets (five 2mm yellow and five 4mm purple)

Description	Cat. No.	Each
CelljecT Duo	EPEJ003	5844.00
Replacement keypad	EPES900	727.00

SPECIFICATIONS

Waveform	Decaying exponential
Output Voltage	20–2500 volts in two–volt steps
Capacitance Range	5–1500µf in 75µf steps after 75µf
Pulse Time	1.5msec. to 7 seconds (auto)
Dimensions (L × W × H)	7 × 6½ × 11" (18 × 16.5 × 28.3cm)

ACCESSORIES

Precision Universal Cuvets

Compatible with most common electroporators

- Superior cap design improves aseptic handling and reduces aerosol contamination; color coded for size
- "V" form in the base enables easy sample pickup and reduces the amount of sample needed by 50%
- Materials have been tested to optimize transformation efficiency
- Aluminum electrodes are physically and chemically cleaned to provide a uniform surface
- Cuvets are available with or without specially designed disposable, plastic pipets which can be used to further improve aseptic procedures
- Cuvets and pipets are supplied individually wrapped and gamma sterilized

Description	Cat. No.	Pack of
Cuvets Only		
1mm	EPECU101	25/122.46
2mm	EPECU102	25/122.46
4mm	EPECU104	25/122.46
Cuvets plus Pipets		
1mm	EPECU201	25/83.42
2mm	EPECU202	25/83.42
4mm	EPECU204	25/83.42
Accessories		
Disposable Pipets, 50/Pk.	EPECU300	50/23.01

SPECIFICATIONS

Cuvet Size	Color	Application
1mm	Black	Bacteria requiring a high electric field (e.g., gram positive bacteria)
2mm	Yellow	Bacteria, yeast, fungi
4mm	Purple	Mammalian cells

Thermo Scientific* CelljecT Uno Electroporator

Small, easy-to-use model produces optimum efficiencies in bacterial applications

- Cost-effective; accommodates bacterial and yeast cells in 1, 2, or 4mm cuvets
- Dual voltage output
- Safety interlocking lid

CelljecT Uno

EPEJ004

INCLUDES:
Instruction manual, optimization guide, and 10 cuvets (five 2mm yellow and five 4mm purple)

Cat. No.	Each
EPEJ004	2220.00

SPECIFICATIONS

Output Voltage	1800 or 2500 Volts
Input Voltage	90 or 250 Volts
Pulse Time	5msec.

BTX*-Harvard Apparatus HT 96-/25-Well Electroporation Systems

High-throughput systems increases cell yields and viability

Quickly and efficiently optimize the electrical and biological parameters associated with electroporation. Fast, precise pulsing for efficient molecular delivery using BTX patented HT 96-well electroporation plates.

- Perform multiple experiments in either 5 × 5, 25–well plates or 8 × 12, 96–well plates
- Research 96 experimental parameters in minutes
- Choice of ECM generators: ECM 830 square pulse for mammalian cell transfer; or ECM 630, exponential decay wave, for molecular biology applications
- Adapter enables use of 25-well plates in the HT-100 plate handler

BTXHT100

BTXHTP252 (small), BTXHTP962 (large)

Plate Handler

- HT 96-well plate handlers (HT-100) accommodate both 25- and 96-well plates
- Feature integrated pulse switching technology and gold-plated contacts to mate with electroporation plates
- Designed for use in small spaces, such as laminar flow hoods
- HT-200 plate handler operates with the ECM830 generator and features Autotrack switching which automatically progresses column to column through the MOS plates within seconds—ideal for busy laboratories running many samples
- HT-100 handler operates with the ECM630 and uses manual track switching, ideal for laboratories doing bacterial and yeast transformations

Contd. on next page.

BTX* Harvard Apparatus Ht 96-/25-Well Electroporation Systems, Contd.

APPLICATIONS:

Transfection of mammalian cells; transformation of bacteria and yeast; cDNA library screening; drug screening; siRNA

INCLUDES:

Two HT 25 or HT 96 disposable well plates, HT–100 Plate Handler with connectors for standard pulse generators, ECM generator as specified in ordering table.

Description	Cat. No.	Price
ECM 830 Electroporation Systems		
MOS 25/100–830	**BTX45-0410**	Ea./9197.00
MOS 25/200–830	**BTX45-0411**	Ea./10,712.00
MOS 96/200–830	**BTX45-0421**	Ea./10,712.00
ECM 630 Electroporation Systems		
MOS 25/100–630	**BTX45-0412**	Ea./7518.00
MOS 96/100–630	**BTX45-0422**	Ea./7518.00
MOS 96/200–630	**BTX45-0423**	Ea./9548.00
Electroporation Plate Handlers		
HT-100	**BTXHT100**	Ea./2570.00
MOS 25 Adapter for Plate Handler	**BTX45-0465**	Ea./113.00
Electroporation Plates		
25–well, 2mm gap	**BTXHTP252**	Ea./54.00
25–well, 4mm gap	**BTX45-0462**	Ea./54.00
	BTX45-0463	Pk. of 6/318.00
96-Well; 4mm gap	**BTX45-0452**	Ea./160.00
96–well, 2mm gap	**BTXHTP962**	Ea./160.00

BTX*-Harvard Apparatus ECM* 2001 Electro Cell Manipulation System

Generate a proprietary AC wave form for dielectrophoretic alignment of cells

BTX2001EM

Switch-over time between AC and DC of only 50µsec enables efficient fusion; post-fusion AC keeps cells together for the rounding-off process. DC square pulse section can stand alone with a wide range of voltages and pulse lengths; capable of operating into low impedance loads.

- Include microprocessor-controlled precision, automatic or manually controlled sequence, and one to nine sequence repeats
- Can operate into a 20ohm load; short circuit and arc proof
- Includes the Electro Cell Manipulator 2001, also available separately
- ECM 2001 Embryo Manipulation System, includes ten 20µL, 0.5mm gap microslides; ten 40µL, 1mm gap microslides; one 0.65mL, 3.2mm gap slide; and micrograbber cables

ORDERING INFORMATION:

Printer outlet option available

Description	Cat. No.	Each
ECM 2001 Embryo Manipulation System	**BTX2001EM**	14,635.00
ECM 2001 Electroporation System	**BTX2001EP**	14,182.00
ECM 2001 Electro Cell Manipulator	**BTXECM2001**	13,658.00

BTX* Harvard Apparatus ECM* 2001 Electro Cell Manipulation System, Contd.

SPECIFICATIONS

Model	ECM 2001
Waveform	AC Sinusoidal/DC Square Wave
Low Voltage (LV) Mode	
Voltage Range	AC: 0–10V; DC: 0–500V
Pulse Length Range	DC: 0.01–0.99msec, 1–99msec
High Voltage (HV) Mode	
Voltage Range	DC: 10–3000V
Pulse Length Range	DC: 1–99msec
Pulse Interval	DC: 1sec
Pulse Number	1–9

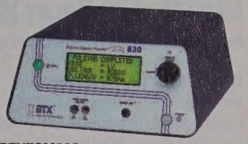
Looking for more ECM* 2001 Models?

Fisher Scientific carries additional options for electroporation online.

Visit www.fishersci.com and search for ECM 2001

BTX*-Harvard Apparatus ECM* 830 Square Wave Electroporator

Designed for in vitro, in vivo, and in ovo electroporation applications



BTXECM830

- BTX Power Platform technology with digital user interface
- Arc Quencher* arc recognition and elimination
- Single rotary dial with push-button toggle between parameter settings
- Monitoring of voltage, pulse length, pulse interval, and pulse number
- Also offers multiple pulsing capability and precise parameter control

APPLICATIONS:

Embryo manipulation techniques, vivo gene therapy electroporation, in vitro embryo gene delivery, plant protoplast transformation, in ovo gene delivery, siRNA transfections, zebrafish electroporation

INCLUDES:

ECM 830 Square Wave Pulse Generator; 30 sterile, disposable cuvets (1, 2, and 4mm gap sizes); cuvet safety stand; 20-position numbered cuvet rack

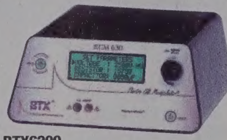
Description	Cat. No.	Each
ECM 830 Electroporation System	**BTX8300**	6978.00
ECM 830 Square Wave Pulse	**BTXECM830**	6452.00

SPECIFICATIONS

Model	ECM 830
Waveform	Square Wave
Low Voltage (LV) Mode	
Voltage Range (Res.)	5–500V (1V)
Pulse Length Range	10–999µsec; 1msec–10sec
High Voltage (HV) Mode	
Voltage Range (Res.)	30–3000V (5V)
Pulse Length Range	10µsec–600µsec
Pulse Interval	100msec–10sec
Pulse Number	1–99

BTX*-Harvard Apparatus ECM* 630 Exponential Decay Wave Electroporator

Broad capacitance and resistance range supports a wide variety of in vitro and in vivo applications


BTX6300

Ideal for gram positive and gram negative bacteria, yeast, fungi, and other microorganism transformation in HV mode; optimized for a broad range of mammalian cell lines such as ES cells, fibroblasts, and epithelial cells in the LV mode. Novel applications include transdermal drug/gene delivery and intact plant gene delivery.

- ▸ Delivers a maximum of 6000A in low-voltage mode; Precision Pulse* System provides the user with excellent control of the time constant
- ▸ Features BTX Power Platform technology, digital user interface, built-in monitoring of voltage and pulse length, automatic charge and pulse sequence, single rotary encoder, programming options, online menu, and protocol storage
- ▸ Duplicates over 200 ECM 600 protocols; the additional ECM 630 resistor selection NONE allows researchers to reproduce protocols from competitive systems lacking resistor settings or reporting unlimited resistance

APPLICATIONS:
Ideal for bacterial, yeast, fungal, and other microorganism transformation in HV mode. Optimized for a broad range of mammalian cell lines such as ES cells, fibroblasts, and epithelial cells in the LV mode. Novel applications include transdermal drug/gene delivery and intact plant gene delivery.

INCLUDES:
ECM 630 Exponential Decay Pulse Generator; 30 sterile, disposable cuvets (1, 2, and 4mm gap sizes); cuvet safety stand; 20-position numbered cuvet rack

Description	Cat. No.	Each
ECM 630 Electroporation System	**BTX6300**	5783.00
ECM 830 System w/ECM 630 Generator	**BTX450061**	12,300.00

SPECIFICATIONS

Model	ECM 630
Waveform	Exponential Decay
Low Voltage (LV) Mode	
Voltage Range (Res.)	10–500V (1V)
Capacitance Range	1, 25–3275μF
Pulse Length Range	25μsec–5sec (buffer dependent)
High Voltage (HV) Mode	
Voltage Range (Res.)	500–2500V (5V)
Capacitance Range	25, 50μF
Pulse Length Range	625μsec–78msec (buffer dependent)
Resistance Range	25–1575ohms

BTX*-Harvard Apparatus ECM* 399 Exponential Decay Wave Electroporator

Portable, user-friendly system

READY LV 250V
BTX
PEP
ECM 399
BTX399S

Produce the precise field strengths and pulse lengths required for the transformation of bacterial and yeast cells. Utilizes the BTX Power Platform Technology design with digital user interface. In low voltage mode the ECM 399 can be used for limited transfections of mammalian cells.

- ▸ Single-dial control
- ▸ Low and high voltage
- ▸ 16-character LCD readout
- ▸ Feedback of pulse length and peak voltage

APPLICATIONS:
Transformation of bacteria and yeast; limited transfection of mammalian cells

INCLUDES:
ECM 399 Electroporation System; ECM 399 Exponential Decay Pulse Generator with built-in power supply; one PEP* (Personal Electroporation Pak) for electroporation of disposable cuvets; 20 sterile disposable cuvets in 1, 2 and 4mm gap sizes; one 20-position numbered cuvet rack

Description	Cat. No.	Each
ECM 399 Electroporation System	**BTX399S**	2364.00
ECM 399 Generator only	**BTXECM399**	2158.00
ECM 399/ECM 830 Combination Package	**BTX450060**	9121.00

SPECIFICATIONS

Model	ECM 399
Waveform	Exponential Decay
Low Voltage (LV) Mode	
Voltage Range (Res.)	2–500V (2V)
Capacitance Range	1050μF
Pulse Length Range	26msec
High Voltage (HV) Mode	
Voltage Range (Res.)	10–2500V (10V)
Capacitance Range	36μF
Pulse Length Range	5msec
Resistance Range	150ohms

ACCESSORIES

Cuvettes Plus* Electroporation Cuvets

Field strengths up to 25kV/cm are possible when these cuvets are used with BTX generators

BTX600 Series

- ▸ With imbedded aluminum electrodes and round, color-coded caps
- ▸ Gamma irradiated for sterility

ORDERING INFORMATION:
Each package of 50 individually wrapped cuvets includes a sterile transfer pipet for removing the sample after electroporation.

Description	Cat. No.	Pack of 50
1mm gap, 90μL	**BTX610**	134.00
2mm gap, 400μL	**BTX620**	134.00
4mm gap, 800μL	**BTX640**	134.00

*Trademark. See Trademark Reference.

ACCESSORIES

*Fisherbrand** Electroporation Cuvettes Plus*

Disposable, color-coded cuvets fit most electroporators

- Clear, medical grade polycarbonate for high visibility
- Polished aluminum lowers arcing frequency
- Round cap allows single-handed removal
- Sterilized by gamma irradiation and supplied individually wrapped

FB101

Description	Cap Color	Cat. No.	Pack of 50
1mm gap, 90µL	Purple	**FB101**	126.63
2mm gap, 400µL	Blue	**FB102**	126.63
4mm gap, 800µL	Yellow	**FB104**	126.63

Eppendorf* Multiporator* Electroporation System

Pulse times in the micro-second (µsec.) range minimize damage to eukaryotic cells

Hypo-osmolar buffer system increases transfection efficiency; enables electro-deformation of the cells for membrane permeation at specific locations. Soft Pulse* Technology produces exceptionally high survival rates and greater transfection efficiency.

E4308 000 015

- Patented electronics[1] ensure accurate performance of pulse parameters, independent of the sample resistance
- Microprocessor-controlled discharge provides high reproducibility
- Built-in keypad and display screen allow the user to easily set and monitor operating parameters

ORDERING INFORMATION:
Eppendorf electroporation cuvets are available separately.

INCLUDES:
RS-232 interface

Description	Mfr. No.	Cat. No.	Each
Multiporator	940 00 050-5	**E4308-000-015**	5240.00

SPECIFICATIONS

	Multiporator
Application	Mammalian and plant cells
Pulse Voltage	20–1200V
Time Constant	15–500µsec., in 5µsec. increments
Multiple Pulsing	1–99, with 1 min. time interval
Buffers	Hypo-osmolar and iso-osmolar
Pulse Form	Exponentially diminishing
Cuvets	Aluminum, gap widths: 1mm, 2mm, 4mm

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[1] *U.S. Patent 6,008,038.*

ACCESSORIES

Electroporation Cuvets

Frosted window for labeling

- Gamma irradiated to ensure sterility

ORDERING INFORMATION:
Individually packaged

Size	Gap Width	Mfr. No.	Cat. No.	Pack of 50
100µL	1mm	940 00 100-5	**E4307 000 569**	162.00
400µL	2mm	940 00 101-3	**E4307 000 593**	162.00
800µL	4mm	940 00 102-1	**E4307 000 623**	162.00

Eppendorf* Electroporator 2510

Compact unit transforms bacteria and yeast quickly and efficiently

Features an exponential decay pulse with a fixed time constant of five milliseconds—ideal for *E. coli* transformation

- Simple one-button triggering
- Portable—fits almost anywhere in the lab
- The two most common settings (1800 and 2500V) can be readied without scrolling through the entire range

E4307 000 640

APPLICATIONS:
Ideal for *E. coli* transformation

ORDERING INFORMATION:
Additional cuvets and other standard gap widths are available separately.

INCLUDES:
Ten 1mm electrode gap sample cuvets

WARRANTY:
One-year

COMPLIANCE:
Conforms to CSA and IEC 1010 safety standards.

CERTIFICATIONS:
UL listed

Electrical Requirements	Mfr. No.	Cat. No.	Each
115V 60Hz	940 00 000-9	**E4307 000 640**	1635.00

SPECIFICATIONS

Input Voltage	115V RMS 60Hz or 230V RMS 50Hz†
Input Current	<0.5 amp
Maximum Output	2500 peak into >3.3kilohm load
Output Waveform	Decaying exponential waveform with RC time constant of 5msec., assuming loads of 3.3kilohm
Output Voltage	Range of 200–2500V
Charging Time	<8 seconds at 2500V
Dimensions (L × W × H)	10¾ × 8⅞ × 4" (29.6 × 22 × 10cm)
Weight	6 3/16 lb. (2.8kg)

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† *International model*

BEFORE YOU BUY EVAPORATORS

The R-210/215 series of rotary evaporators are designed to provide a complete and modular solution for laboratory solvent evaporation processes. R-215 units feature an additional digital display of the vapor temperature and rotation speed. Ease-of-use, flexibility and maintenance-free operation are the hallmarks of this evaporator series!

IMPORTANT TERMS TO KNOW

Simple Distillation—A process in which all hot vapors produced are immediately channeled into condenser which cools and condenses the vapors.

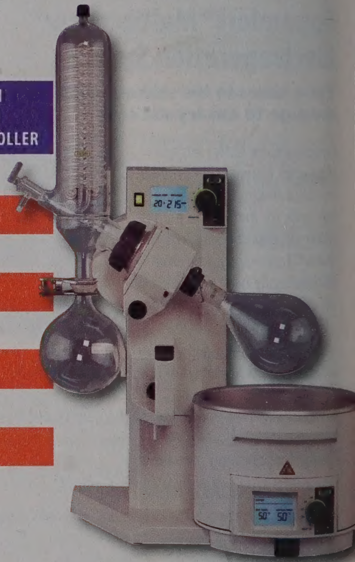
Fractional Distillation—The separation of a mixture into its component parts, or fractions. A goo example is separating chemical compounds by their boiling point by heating them to a temperature which several fractions of the compound will evaporate.

Vacuum Distillation—This technique is very useful for compounds which boil beyond their decomposition temperature at atmospheric pressure. Lowering the pressure to distill temperatur sensitive compounds, lowers the temperature at which the compounds vaporize.

Bumping—Sudden uncontrolled boiling, which can result in loss of some portion of the substance intended to be retained. Bumping can be prevented by regulating the streng the vacuum with a vacuum controller, by reducing the temperature of the water bath by using boiling chips.

Cold Trap—A device that condenses all vapors into a liquid or solid. The most common objective is to prevent vapors from contaminating a vacuum pump o vacuum line.

	BASIC	ADVANCED	PROFESSIONAL	ADVANCED WITH VALVE UNIT FOR VACUUM CONTROLLER
R-210 A-Condenser	23022A100 05-401-897	23022A110 05-401-899	23022A120 05-401-902	23022A112 05-401-901
R-210 V-Condenser	23022V100 05-402-209	23022V110 05-402-211	23022V120 05-402-214	23022V112 05-402-213
R-210 C-Condenser	23022C100 05-402-201	23022C110 05-402-203	23022C120 05-402-206	23022C112 05-402-205
R-210 S-Condenser	23022S100 05-024-20	23022S110 05-024-24	23022S120 05-024-28	23022S112 05-024-36
R-215 A-Condenser	23022A100 05-403-540	23022A110 05-403-931	23022A120 05-401-934	23022A112 05-403-933
R-215 V-Condenser	23022V100 05-402-257	23022V110 05-402-259	23022V120 05-402-262	23022V112 05-402-261
R-215 C-Condenser	23022C100 05-402-249	23022C110 05-402-251	23022C120 05-402-254	23022C112 05-402-253
R-215 S-Condenser	23022S100 05-024-22	23022S110 05-402-316	23022S120 05-024-30	23022S112 05-024-38



sponsored by:

BÜCHI

FEATURES TO LOOK FOR

Flexibility—Modular systems allow individual components to be combined as needed – a clear advantag laboratories or where many different applications are involved.

Vacuum Control—Pressure is a crucial parameter in every evaporation process. Only a defined and regul vacuum provides the controlled conditions necessary for a quick, reliable evaporation process. These conditi produce markedly lower solvent emissions, less bumping and foaming, and ensure reproducible process pa Some vacuum controllers even allow for completely automated distillation!

Ease of Use—Simple controls will allow you to focus on your evaporating tasks, not on reading operating

Safety:
Plastic Coated Glass—To protect against splintering in case of breakage.
Fault Protection—Systems should offer a "Safe Mode" to protect your critical samples in the event that a following occur: power failure, overheating, jamming, or deviations from set temperature, speed and rotati
User Protection—Users should be protected against contact with any hot surface and splashing from the evaporating flask

For a full selection of Büchi® Evaporators, see p. 649–651, 661, 663.

EVAPORATORS

ROTARY

Büchi* RotaVapor* R-210 Rotary Evaporation Systems

NEW

Complete, compact systems provide optimal performance, reliability and safety in a variety of configurations

Versatile, expandable operation

- Modular systems for distillation of all solvents
- Perfect for hard-to-handle materials that bump and foam
- Available with integrated vacuum controllers to automate distillation and handle time-pressure gradients
- Choice of seven condenser assemblies for numerous applications
- Optional plastic safety coating on all glassware resists solvents; protects you and your sample against breakage hazards
- Handle flask sizes from 50 to 4000mL
- Chemical-resistant PTFE sealing system is practically maintenance-free
- Optional water/oil heating bath has a 1300w heating capacity; can also be used as a stand-alone bath; has a temperature range from 20° to 180°C; digital display of both the set and actual temperatures
- Motorized quick-action jack raises and lowers evaporator; automatic release to top position in case of power failure
- Electronically controlled, variable-speed, sparkless motor provides high, constant torque from 20 to 280rpm

R-210 Basic Models feature:

- Rotary evaporator with rotation control knob
- Quick-action jack
- Glassware

R-210 Advanced Models offer R-210 Basic features, plus:

- Vacuum Controller V-850 for vacuum regulation to a specified setpoint
- Data transfer via USB interface
- Timer function for process interruption after a set time
- Library of 43 predetermined solvents
- Quick-configuration wizard

R-210 Professional Models offer R-210 Advanced features, with:

- Upgraded Vacuum Controller V-855 for automatic process control based on vapor pressure detection (when used with V-700 or V-710 Vacuum Pump)
- Automatic distillation with unique stage probe (when used with a V- or S-Condenser assembly)
- Special programming functions for pressure gradients up to 20 steps
- Storage of up to 15 process profiles with programmable gradients
- Repeat function for reproducible repetition of a distillation

ORDERING INFORMATION:

Operate on 120V 50/60Hz, 1360w

Dimensions: 16⅝L × 21$\frac{11}{16}$W × 22⅝"H (415 × 550 × 575mm)

Include one of three glassware assemblies:

Assembly A. Diagonal, tap-water-cooled condenser, ideal for areas with a limited height.

Assembly CR. Two-piece, cold trap condenser with a reflux valve. Inlet feed tube permits continuous feed of volumes.

Assembly S. Vertical, tap-water-cooled condenser with a reflux valve. Inlet feed tube permits continuous feed of volumes.

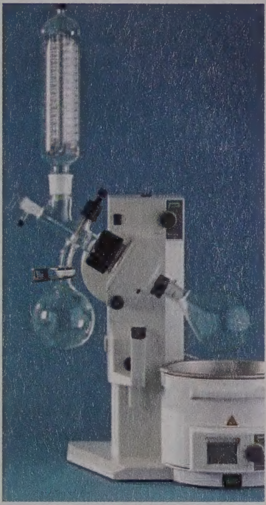
Additional configurations are available, including models for 220/240V, four additional glassware assembly styles (BY, C, E, V), models without heating bath or jack, and models with standard glassware. For details, see our Web site.

INCLUDES:

Rotary evaporator assembly with lift and rotation control; B-491 heating bath: plastic-coated glassware, including specified condenser, 1L receiving flask; standard glass 1L evaporating flask; Combi-Clip to secure flask during operation; other components as specified in ordering table.

REQUIRED ACCESSORIES:

Vacuum pump or system and associated connections



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COMPLIANCE: CE marked. UL listed. CSA approved.

CERTIFICATIONS: UL, CSA

Glass Assembly	₮ No.	Valve Unit †	Mfr. No.	Cat. No.	Each
R-210 Basic					
A	24/40	None	23022A100	**05-401-897**	4801.00
CR	24/40	None	23022R100	**05-024-21**	5895.13
S	24/40	None	23022S100	**05-024-20**	5549.88
R-210 Advanced					
A	24/40	None	23022A110	**05-401-899**	6807.00
A	24/40	W	23022A111	**05-401-900**	6989.00
A	24/40	V	23022A112	**05-401-901**	7380.00
CR	24/40	None	23022R110	**05-024-25**	7901.43
CR	24/40	W	23022R111	**05-024-33**	8083.81
CR	24/40	V	23022R112	**05-024-37**	8474.65
S	24/40	None	23022S110	**05-024-24**	7556.19
S	24/40	W	23022S111	**05-024-32**	7738.57
S	24/40	V	23022S112	**05-024-36**	8129.40
R-210 Professional					
A	24/40	None	23022A120	**05-401-902**	7602.00
CR	24/40	None	23022R12	**05-024-29**	8696.13
S	24/40	None	23022S120	**05-024-28**	8546.30

† W: Woulff bottle condensate trap. V: Valve unit with Woulff bottle condensate trap and nonreturn valve for attachment to Rotavapor (not necessary with V-700 vacuum pump in standalone system).

WARNING

Direct exposure of plastic-coated glassware to chlorinated solvents and aggressive reagents should be avoided. After extensive use, coating on glassware may wear and loosen from surface, increasing risk of injury.

Büchi* Rotavapor* R-215 Rotary Evaporation Systems

NEW

Compact, modular systems with digital display of vapor temperature and rotation speed

Versatile, expandable operation

- Modular systems for distillation of all solvents
- Perfect for hard-to-handle materials that bump and foam
- Available with integrated vacuum controllers to automate distillation and handle time-pressure gradients
- Choice of seven condenser assemblies for numerous applications
- Handle flask sizes from 50 to 4000mL
- Optional plastic safety coating on glassware resists solvents; protects you and your sample against breakage hazards
- Chemical-resistant PTFE sealing system is practically maintenance-free
- Optional water/oil heating bath has a 1300w heating capacity; can also be used as a stand-alone bath; has a temperature range from 20° to 180°C; digital display of both the set and actual temperatures
- Motorized quick-action jack raises and lowers evaporator; automatic release to top position in case of power failure
- Electronically controlled variable-speed sparkless motor provides high, constant torque from 20 to 280rpm

R-215 Basic Models feature:

- Digital LCD readout of vapor temperature and rotation speed
- Rotary evaporator with rotation control knob
- Quick-action jack
- Glassware

R-215 Advanced Models offer R-210 Basic features, plus:

- Vacuum Controller V-850 for vacuum regulation to a specified setpoint
- Data transfer via USB interface
- Timer function for process interruption after a set time
- Library of 43 predetermined solvents,
- Quick-configuration wizard

R-215 Professional Models offer R-210 Advanced features, with:

- Upgraded Vacuum Controller V-855 for automatic process control based on vapor pressure detection (when used with V-700 or V-710 Vacuum Pump)
- Automatic distillation with unique stage probe (when used with a V- or S-Condenser assembly)
- Special programming functions for pressure gradients up to 20 steps
- Storage of up to 15 process profiles with programmable gradients
- Repeat function for reproducible repetition of a distillation

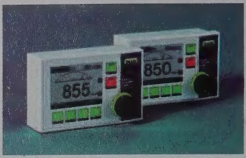
ORDERING INFORMATION:

Operate on 120V 50/60Hz, 1360w; dimensions:
16⅝L × 21 11⁄16W × 22⅝"H (415 × 550 × 575mm)
Additional configurations are available, including models for 220/240V, two additional glassware assembly styles (BY, E), models without heating bath or jack, and models with standard glassware. For details, see our Web site.

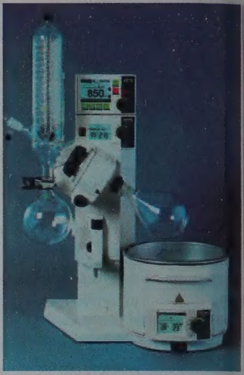
Include one of three glassware assemblies:

Assembly A. Diagonal, tap-water-cooled condenser, ideal for areas with a limited-height.

Assembly C. Two-piece cold trap condenser uses dry ice/acetone or liquid nitrogen as coolant. Ideal for distillation of low-boiling solvents. Eliminates tap water consumption and maximizes solvent recovery to minimize environmental contamination. Inlet feed tube permits continuous feed of volumes.



Vacuum Controllers V-855 (Professional Models), V-850 (Advanced Models)



05-401-259

Assembly CR. Two-piece, cold trap condenser with a reflux valve. Inlet feed tube permits continuous feed of volumes.

Assembly S. Vertical, tap-water-cooled condenser with a reflux valve. Inlet feed tube permits continuous feed of volumes.

Assembly V. Vertical tap-water-cooled condenser for distillation of high-boiling solvents. Inlet feed tube permits continuous feed of volumes.

INCLUDES:

Rotary evaporator assembly with digital display, heating bath, lift and rotation control; plastic-coated glassware, including specified condenser, 1L receiving flask standard-glass 1L evaporating flask; Combi-Clip to secure flask during operation; other components as specified in ordering table

REQUIRED ACCESSORIES:

Vacuum pump or system and associated connections

WARRANTY:

Three years

COMPLIANCE:

CE marked

CERTIFICATIONS:

UL listed, CSA approved

Ordering Information on next page.

WARNING

Direct exposure of plastic-coated glassware to chlorinated solvents and aggressive reagents should be avoided. After extensive use, coating on glassware may wear and loosen from surface, increasing risk of injury.

Büchi* Rotavapor* R-215 Rotary Evaporation Systems, Contd.

Glass Assembly	$ No.	Valve Unit†	Mfr. No.	Cat. No.	Each
R-215 Basic					
A	24/40	None	23122A100	**05-403-540**	5347.95
C	29/32	None	23121C100	**05-402-233**	5777.88
CR	24/40	None	23122R100	**05-024-23**	6442.30
S	24/40	None	23122S100	**05-024-22**	6214.30
V	24/40	None	23122V100	**05-402-257**	5601.99
R-215 Advanced					
A	24/40	None	23122A110	**05-401-931**	7354.00
A	24/40	W	23122A111	**05-401-932**	7537.00
A	24/40	V	23122A112	**05-401-933**	7927.00
C	24/40	None	23122C110	**05-402-251**	7784.16
C	24/40	W	23122C111	**05-402-252**	7966.57
C	24/40	V	23122C112	**05-402-253**	8357.40
CR	24/40	None	23122R110	**05-024-27**	8448.58
CR	24/40	W	23122R111	**05-024-35**	8630.99
CR	24/40	V	23122R112	**05-024-39**	9021.83
S	24/40	None	23122S110	**05-402-316**	8221.00
S	24/40	W	23122S111	**05-024-34**	8402.99
S	24/40	V	23122S112	**05-024-38**	8793.83
V	24/40	None	23122V110	**05-402-259**	7608.29
V	24/40	W	23122V111	**05-402-260**	7790.68
V	24/40	V	23122V112	**05-402-261**	8181.51
R-215 Professional					
A	24/40	None	23122A120	**05-401-934**	8149.00
C	24/40	None	23122C120	**05-402-238**	8578.86
CR	24/40	None	23122R120	**05-024-31**	9243.28
S	24/40	None	23122S120	**05-024-30**	9210.73
V	24/40	None	23122V120	**05-402-262**	8598.41

† W: Woulff bottle condensate trap. V: Valve unit with Woulff bottle condensate trap and non-return valve for attachment to Rotavapor (not necessary with V-700 vacuum pump in stand alone system).

Büchi* RotaVapor* RII Evaporation Systems

NEW

For quick, gentle and economical evaporation procedures without cutting corners

Rotavapor RII delivers the same performance as other Buchi Rotavapors, with just the features you need. Rotating flask produces effective heat transfer while ensuring thorough mixing and avoiding overheating of contents.

05-402-287

Modular design, versatile operation

- Choice of three condenser assemblies and two $ joint options; for 1 to 3L flasks
- Handle evaporating flask sizes from 50 to 4000mL; receiving flasks from 500 to 3000mL
- Optional plastic safety coating on glassware resists solvents; protects you and your sample against breakage hazards
- Chemical-resistant PTFE sealing system is practically maintenance-free
- Manual quick-action jack raises and lowers evaporator
- Heating bath has 1300w heating capacity, analog temperature control from 20° to 95°C
- Electronically controlled, variable-speed, sparkless motor provides a high, constant torque from 20 to 280rpm

ORDERING INFORMATION:
Operate on 120V 50/60Hz, 1360w; dimensions: 21 11⁄16L × 16 5⁄8W × 22 5⁄8"H (415 × 550 × 575mm)

Include one of three glassware assemblies:

Assembly A: Diagonal, tap-water-cooled condenser, ideal for areas with a limited height.

Assembly C: Two-piece cold trap condenser uses dry ice/acetone or liquid nitrogen as the coolant. Ideal for distillation of low-boiling solvents. Eliminates tap water consumption and maximizes solvent recovery to minimize environmental contamination. Inlet feed tube permits continuous feed of volumes.

Assembly V: Vertical, tap-water-cooled condenser, ideal for high-boiling solvents. Inlet feed tube permits continuous feed of volumes.

Additional configurations are available. For details, see our Web site.

INCLUDES:
Rotary evaporator assembly with manual lift and rotation control; $ 24/40 standard or plastic-coated glassware with specified condenser and 1L receiving flask; 1L $ glass evaporating flask; Combi-Clip to secure flask during operation; heating bath with handles and quick-release electrical connection for easy mobility

OPTIONAL ACCESSORIES INCLUDE: Transparent safety faceshield; Büchi Chiller B-741; Vacuum Controller V-850 or V-855; Vacuum Pump V-700. Contact your Fisher Scientific Customer Service Representative.

REQUIRED ACCESSORIES:
Vacuum pump or system and associated connections

COMPLIANCE:
CE marked

CERTIFICATIONS:
UL listed, CSA approved

Glass Assembly	$ No.	Mfr. No.	Cat. No.	Each
A Standard	24/40	2422A0	**05-401-953**	4000.00
A Plastic Coated	24/40	2422A1	**05-401-954**	4149.00
C Standard	24/40	2422C0	**05-403-616**	4416.45
C Plastic Coated	29/32	2421C1	**05-402-282**	4566.28
C Plastic Coated	24/40	2422C1	**05-402-285**	4566.28
V Standard	24/40	2422A0	**05-403-617**	4136.37
V Plastic Coated	29/32	2421V1	**05-402-284**	4286.17
V Plastic Coated	24/40	2422V1	**05-402-287**	4286.17

WARNING

Direct exposure of plastic-coated glassware to chlorinated solvents and aggressive reagents should be avoided. After extensive use, coating on glassware may wear and loosen from surface, increasing risk of injury.

Brinkmann*/Heidolph* Collegiate* Series Rotary Evaporators

Analog Control Rotary Evaporators with manual lift for all standard distillations in the educational and university research environment

Designed with the cost-conscious researcher in mind

13-876-300

- Comes with all the basic features required for routine and common distillations
- Delivers the best value in benchtop rotary evaporation
- Modular design lets you upgrade easily and add an optional vacuum valve and Woulff bottle for more precise and accurate vacuum control
- Manual lift raises and lowers evaporation flask from heating bath
- Convenient large-dial control adjusts rotation speed from 20 to 270rpm, and heating bath temperature from 20° to 100°C
- Stainless-steel water bath with diameter of 240mm, total working volume of 4.3L
- Bath features non-slip handles for safe and easy transport, insulated double wall for protection against burns

ORDERING INFORMATION:

Available with choice of condenser sets:

G1. Diagonal Condenser: for standard distillations

G3. Vertical Condenser: for standard distillations and space saving requirements

G5. Cold Trap: for low-boiling solvent distillations

Glassware set includes one 1000mL evaporating flask (₮24/40) and one 1000mL receiving flask. All glassware sets are available with optional plastic safety coating. Operate on 115V or 230V, 50/60Hz.

Model	Condenser Assembly	Glassware Type	Voltage	Cat. No.	Each
With Standard Glassware					
WB/G1	G1 diagonal	Standard	115V 50/60Hz	**13-876-300**	3800.80
			230V 50/60Hz	**13-876-301**	3650.00
WB/G3	G3 vertical	Standard	115V 50/60Hz	**13-876-302**	3895.00
			230V 50/60Hz	**13-876-303**	3895.00
WB/G5	G5 cold trap	Standard	115V 50/60Hz	**13-876-304**	4362.79
			230V 50/60Hz	**13-876-305**	4195.00
With Plastic-Coated Glassware					
WB/G1B	G1 diagonal	Plastic Safety-Coated	115V 50/60Hz	**13-876-306**	3894.79
			230V 50/60Hz	**13-876-307**	3745.00
WB/G3B	G3 vertical	Plastic Safety-Coated	115V 50/60Hz	**13-876-308**	4157.79
			230V 50/60Hz	**13-876-309**	3995.00
WB/G5B	G5 cold trap	Plastic Safety-Coated	115V 50/60Hz	**13-876-310**	4295.00
			230V 50/60Hz	**13-876-311**	4295.00

Brinkmann* Heidolph* Vacuum Pump and Accessories

Description	Mfr. No.	Cat. No.	Each
Rotavac Vacuum Pump	036302830	**13-876-312**	2067.00
Vacuum Controller	036302870	**13-876-313**	1795.00
Vacuum Valve Unit	036302930	**13-876-314**	395.00

Brinkmann*/Heidolph* VV Micro Rotary Evaporator

For small and microscale distillations

Small size, big performance

- Compact design fits into most leading lab hoods and glove boxes
- Provides high-capacity distillation with evaporation rates for pure water at 250mL/hr.
- Individual analog dial controls for rotation speed and bath temperature
- One condenser for both standard and reflux distillations, simple changeover
- Handles flask sizes from 50 to 250mL
- Water bath has 0.7L capacity, 500w heating capacity, 30° to 100°C range ±-5°C
- Silicon sheeting surrounds bath for user protection
- Variable-speed motor provides 80–200rpm rotation
- Manufactured with ISO 9001:2000-certified processes

VV Micro setup for reflux distillations 13-878-400

ORDERING INFORMATION:

Operates on 115V 50/60Hz, 530w. Dimensions: 6½L × 9⅜W × 14¼"H (167 × 23 × 360mm). Weight without glassware: 15¼ lb. (6.9kg).

VV Micro setup for standard microdistillations 13-878-400

INCLUDES:

Rotary evaporator, heating bath, glassware, with three sets of evaporation and receiving flasks (50, 100, 250mL), adapter for use with standard 14/20 evaporating flasks

REQUIRED ACCESSORIES:

Vacuum pump or system and associated connections

WARRANTY:

Three years

Model	Mfr. No.	Cat. No.	Each
VV-Micro with Glassware and Bath, 115V	036000010	**13-878-400**	2995.00

LOOKING FOR MORE ACCESSORIES?

For additional accessories; including evaporating flasks, plastic-coated glassware, and recirculating water aspirator,

Visit www.fishersci.com and search for Brinkman Evaporator Accessories

*Trademark. See Trademark Reference.

Prices subject to change.

Brinkmann*/Heidolph* Laborota 4000 Series Rotary Evaporation Systems

NEW

Modular, expandable design, with all components designed to function together

Expandability, safety, convenience

- High efficiency in a limited space, even with low boiling solvents
- Available with integrated vacuum controllers to automate distillation
- Choice of five condenser assemblies for numerous applications handle flask sizes from 50 to 3000mL
- Optional plastic safety coating on glassware resists solvents; protects you and your sample against breakage hazards
- Long life graphite-filled PTFE vacuum seal
- Nonsticking quick release vapor tube
- Drip shield over display protects user and control panel from spills
- Individual power switches for control panel and heating bath
- Water/oil heating baths have 4.3L capacity, 1300w heating capacity, 20° to 180°C range ±0.1°C; digital display of set temperature
- Choice of manual or motorized jack to adjust height of evaporator flask
- Electronically controlled variable-speed motor provides high torque from 20 to 270rpm
- Manufactured with ISO 9001:2000-certified processes

4000 and 4001 Efficient Models feature:

- Rotary evaporator with large analog rotation control knob
- Manual or motorized lift
- Glassware
- Attachment for optional vacuum valve or Woulff Bottle

4010 and 4011 Digital Models offer 4000/4001 features, plus:

- Digital display of rotation speed, vapor temperature and bath temperature
- Dial on bath sets overtemperature protection

4002 and 4003 Control Models offer 4010/4011 features, plus:

- Built-in vacuum controller for automatic process control based on vapor pressure and temperature detection
- Programmability of up to nine of your most common applications
- Process timer allows for unattended operation
- T Function to stop distillation at your set minimum pressure
- P Function to hold vacuum setting constant throughout entire distillation
- Allows for setting of pressure ramps for gradient distillation of binary/tertiary solvent mixtures
- Safety bath temperature backup system with additional control

ORDERING INFORMATION:

Operate on 115V 50/60Hz, 1430w

Dimensions: 15$\frac{9}{16}$L × 17$\frac{5}{16}$W × 14⅜"H (396 × 440 × 360mm). Weight without glassware: 37½ to 41⅞ lb. (17 to 19kg), depending on configuration.

Additional configurations are available, including models for 230V, two additional glasssware assemblies (G4, G6), models with \$ 29/32 and with standard glassware. For details, see our Web site.

Include one of three glassware assemblies:

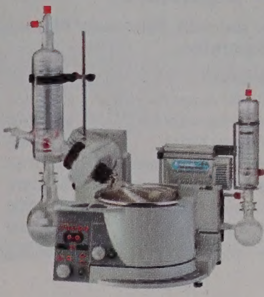
Assembly G1. Diagonal condenser for all standard distillations, the alternative with the most affordable price

Assembly G3. Vertical condenser for all standard distillations, the alternative with the smallest space requirement

Assembly G5. Condensate trap for low-boiling solvents; cooling by dry ice

INCLUDES:

Rotary evaporator assembly, heating bath with digital display, manual or automatic lift, rotation control; plastic-coated glassware \$29/32, including specified condenser, 1L receiving flask, standard-glass 1L evaporating flask; other components as specified in ordering table



13-878-874

REQUIRED ACCESSORIES:

Vacuum pump or system and associated connections.
4010 and 4011 models require Vapor Temperature sensor 13-878-672;
4002 and 4003 models for use with the Valve Control pump or a house vacuum source require VAC Sensor T (13-878-742) and Vacuum Valve (13-876-314).

WARRANTY: Three years

Glass Assembly	Lift	Vacuum Controller	Mfr. No.	Cat. No.	Each
4000 Efficient Models					
G1 Plastic Coated	Manual	No	036000250	**13-878-412**	4040.00
G3 Plastic Coated	Manual	No	036000270	**13-878-414**	4450.00
G5 Plastic Coated	Manual	No	036000310	**13-878-418**	4695.00
4001 Efficient Models					
G1 Plastic Coated	Motor	No	036000450	**13-878-432**	4340.00
G3 Plastic Coated	Motor	No	036000470	**13-878-434**	4595.00
G5 Plastic Coated	Motor	No	036000510	**13-878-438**	4852.06
4010 Digital Models					
G1 Plastic Coated	Manual	No	036000650	**13-878-452**	4800.00
G3 Plastic Coated	Manual	No	036000670	**13-878-454**	5250.00
G5 Plastic Coated	Manual	No	036000710	**13-878-458**	5830.00
4011 Digital Models					
G1 Plastic Coated	Motor	No	036000850	**13-878-472**	5020.00
G3 Plastic Coated	Motor	No	036000870	**13-878-474**	5450.00
G5 Plastic Coated	Motor	No	036000910	**13-878-478**	6020.00
4002 Control Models					
G1 Plastic Coated	Manual	Yes	036001050	**13-878-492**	5570.00
G3 Plastic Coated	Manual	Yes	036001070	**13-878-494**	6000.00
G5 Plastic Coated	Manual	Yes	036001110	**13-878-498**	6600.00
4003 Control Models					
G1 Plastic Coated	Motor	Yes	036001250	**13-878-512**	6650.00
G3 Plastic Coated	Motor	Yes	036001270	**13-878-514**	7130.00
G5 Plastic Coated	Motor	Yes	036001310	**13-878-518**	7840.00

WARNING

Direct exposure of plastic-coated glassware to chlorinated solvents and aggressive reagents should be avoided. After extensive use, coating on glassware may wear and loosen from surface, increasing risk of injury.

ACCESSORIES

For use with Brinkman*/Heidolph* Laborota 4000 Evaporators.

Description	Mfr. No.	Cat. No.	Each
ROTAVAC Vacuum Pump, 115V	036302850	**13-878-740**	6020.00
Temperature Sensor T	036302160	**13-878-673**	255.48
VAC Sensor T, 115V	036302890	**13-878-742**	1046.00
Vapor Temperature Sensor	036302160	**13-878-673**	200.38
Guard Hood	036302070	**13-878-664**	305.57
Vacuum Valve Unit	036302930	**13-876-314**	395.00
PTFE Seal - 26	036210030	**13-878-754**	67.20

Pyrex* Evaporator Traps

Used when foam is likely to be created and drawn into the condenser of rotary evaporator

- Round body with upper and lower stems
- Lower stem, with Ŧ inner joint at bottom, extends upward inside the body
- Closed top of lower stem has two side openings
- Upper stem has Ŧ 24/40 outer joint

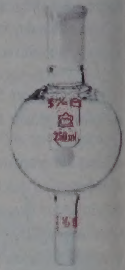
09-549-3A

Capacity	Lower Inner Ŧ Joint	Mfr. No.	Cat. No.	Each
100mL	14/20	4000 10014	**09-549-1A**	106.36
100mL	19/22	4000 10019	**09-549-2A**	102.56
100mL	24/40	4000 10024	**09-549-3A**	110.63
250mL	14/20	4000 25014	**09-549-1B**	106.69
250mL	19/22	4000 25019	**09-549-2B**	106.69
250mL	24/40	4000 25024	**09-549-3B**	110.63
500mL	14/20	4000 50014	**09-549-1C**	106.69
500mL	24/40	4000 50024	**09-549-3C**	115.34
1000mL	24/40	4000 1L24	**09-549-3D**	114.12

Kontes* Rotary Evaporator Traps With Inner Vapor Tube at Top

Design allows expanded volume for mixtures that have a tendency to foam excessively

- Inner vapor tube is ring-sealed at top of flask to prevent entry of organic mixtures into the condenser
- Flask has Ŧ 24/40 outer ground joint at top



K570210-2524

Capacity	Lower Inner Ŧ Joint	Cat. No.	Each
100mL	14/20	**K570210-0114**	95.05
100mL	19/22	**K570210-0119**	95.05
100mL	24/40	**K570210-0124**	96.95
250mL	14/20	**K570210-2514**	96.95
250mL	19/22	**K570210-2519**	96.95
250mL	24/40	**K570210-2524**	98.56
500mL	14/20	**K570210-5014**	98.56
500mL	24/40	**K570210-5024**	100.48
1000mL	24/40	**K570210-1024**	103.54

Kontes* Rotary Evaporator Traps With Inner Vapor Tube at Bottom

Ideal when foam may be drawn into the condenser

- Flask has a Ŧ 24/40 outer ground joint at the top

Capacity	Lower Inner Ŧ Joint	Cat. No.	Each
100mL	14/20	**K570200-0114**	90.56
100mL	19/22	**K570200-0119**	90.56
100mL	24/40	**K570200-0124**	91.56
250mL	14/20	**K570200-2514**	91.56
250mL	19/22	**K570200-2519**	91.56
250mL	24/40	**K570200-2524**	93.47
500mL	14/20	**K570200-5014**	93.47
500mL	24/40	**K570200-5024**	95.05

Contd. on next page.

CENTRIFUGAL

Thermo Scientific* Savant DNA SpeedVac Concentrators

Compact, fully-integrated systems designed specifically for DNA and RNA applications

Support the rapid and efficient concentration and drying of DNA/RNA samples, nucleic acids, PCR preps, and synthetic oligos. Choice of three models to handle low-volume sample preps as well as higher-volume processing requirements. Units are easy to use and install with no additional tubing or pumps required.

Operating Features

- Consistent performance: designed to ensure consistent drying times and reproducible results
- Simplicity: a single program supports all DNA/RNA applications
- User-friendly interface with temperature/time settings
- Three drying rates: (ambient, ~43°C, ~65°C)
- Dual digital timers for independent control of heat/run times
- Manufactured under ISO 9001: 2000 Certified processes

Sample Protection

- Ensured with both drying at ambient temperatures or very low heat to avoid sample denaturing
- Oil-free diaphragm pump provides gentle transition from atmosphere to ultimate vacuum setting with no bumping

Safety Features

- PTFE-coated chamber resists chemicals and cleans easily
- Latched lid ensures user safety during operation
- Unit and pump are virtually maintenance-free
- Optional chemical traps and cartridges trap radioactivity and ammonia

High-capacity ISS110 DNA SpeedVac Concentrator

- With a built-in 4L cold trap
- Ideal for processing large batches of DNA/RNA samples up to 4L
- Capacity: 120 × 1.5/2.0mL tubes, 4 × 100mL flasks, or two microplates

Thermo SCIENTIFIC
ISS 110

20-548-134

- Plug-and-play design: integrated concentrator, cold trap, and pump
- Chamber can be preheated to accelerate evaporation

Small Volume DNA 120 SpeedVac Concentrator

- Offers rapid and efficient drying of small volume DNA/RNA samples
- Handle aqueous and alcohol solvents
- Compact, space-saving design

Oligo SpeedVac Concentrator DNA1200P

- All the features of the DNA 120 plus external post trap to neutralize ammonium hydroxide
- Chemically resistant glass cover to contain solvents

APPLICATIONS:

Biotechnology, pharmaceutical research, hospital and clinical labs, forensic labs, and general R&D.

INCLUDES:

Rotor (see Specifications Chart for specific model information)

CERTIFICATIONS:

CE marked, CSA approved

Model	Electrical Requirements	Mfr. No.	Cat. No.	Each
ISS110	115V 60Hz	ISS110-115	**20-548-134**	8615.00
ISS110	230V 50Hz	ISS110-230	**20-548-135**	8615.00
DNA120	115V 60Hz	DNA120-115	**20-548-130**	5550.00
DNA120	230V 50Hz	DNA120-230	**20-548-131**	5776.00
DNA1200P	115V 60Hz	DNA1200P-115	**20-548-132**	6555.00
DNA1200P	230V 50Hz	NA1200P-230	**20-548-133**	6715.00

SPECIFICATIONS

Model	ISS110	DNA120	DNA1200P
Display	Real-time LED for time	Real-time LED for time	Real-time LED for time
Rotor Speed	1600rpm at 60Hz; 1300rpm at 50Hz	1600rpm at 60Hz; 1300rpm at 50Hz	1600rpm at 60Hz; 1300rpm at 50Hz
Concentrator Volume	400mL	0.5/2.0mL	0.5/2.0mL
Pump Capacity	36L/min. at 60Hz; 30L/min. at 50Hz	36L/min. at 60Hz; 30L/min. at 50Hz	36L/min. at 60Hz; 30L/min. at 50Hz
Ultimate Vacuum	<10 Torr (13mbar, 1.3 kPa)	<10 Torr (13mbar, 1.3 kPa)	<10 Torr (13mbar, 1.3 kPa)
Chamber	PTFE-coated aluminum	PTFE-coated aluminum	PTFE-coated aluminum
Cover	Acrylic lid with safety interlock	Glass lid with safety interlock	Glass lid with safety interlock
Cold Trap Capacity/Operating Temp.	4L, -50°C	N/A	N/A
Chemical Compatibility	Aqueous and alcohol solvents	Aqueous and alcohol solvents	Aqueous and alcohol solvents, ammonium hydroxide
Includes	ISS110 DNA SpeedVac System, one RH64-11 rotor and two GCF400 glass condensation flasks	DNA120 SpeedVac System, one RD36 rotor	DNA1200P SpeedVac System for Oligos, one RD36 rotor, one ANT100 post-trap assembly, and four ANS121 bottles of ammonia neutralizing solution
Dimensions (L × W × H)	26 × 25 × 15" (66 × 62 × 38cm)	25 × 11½ × 13" (63 × 29 × 33cm)	25 × 11½ × 13" (63 × 29 × 33cm)
Net Weight	135 lb. (65kg)	80 lb. (36kg)	80 lb. (36kg)

ACCESSORIES

Rotors

For use with Thermo Scientific* Savant DNA SpeedVac Concentrators as shown in the table.

Rotor Type	Max. No. of Vessels	Vessel Size	Mfr. No.	Cat. No.	Each
For Use With DNA120/1200P Concentrators					
Microtubes	24	1.5/2.0mL	RD24	**20-548-103**	423.00
Microtubes	36	1.5/2.0mL	RD36[†]	**20-548-104**	513.00
PCR Tubes	48	0.5mL (8 × 29mm)	RD48	**20-548-105**	428.54
PCR Tubes	72	0.5mL (8 × 29mm)	RD72	**20-548-106**	546.00
Microplates	2	Multiwell	RD2MP	**20-548-128**	862.00
For Use With ISS110 Concentrators					
Microtubes	40	1.5/2.0mL	RH40-11	**20-548-100**	423.00
Microtubes	64	1.5/2.0mL	RH64-11[‡]	**20-548-101**	579.00
Microtubes	120	1.5/2.0mL	RH120-11	**20-548-102**	788.00
PCR Tubes	100	0.5mL (8 × 29mm)	RH100-8	**20-548-107**	597.00
Glass and Plastic Tubes	100	0.4mL (6 × 50mm)	RH100-6	**20-548-108**	597.00
Glass and Plastic Tubes	40	0.4mL (6 × 50mm)	RH40-6	**20-548-109**	467.58
Glass and Plastic Tubes	20	12 × 75mm	RH20-12	**20-548-110**	490.61
Glass and Plastic Tubes	40	1.5/2.0mL (12 × 75mm)	RH40-12	**20-548-111**	597.00
Glass and Plastic Tubes	32	13 × 100mm	RH32-13	**20-548-112**	765.00
Glass and Plastic Tubes	72	12 × 75mm	RH72-12	**20-548-113**	760.00
Glass and Plastic Tubes	8	17.5 × 102mm, 15mL Corex*	RH8-17.5	**20-548-114**	597.00
Glass and Plastic Tubes	8	18 × 100mm, 17 × 95mm, 16 × 100mm	RH8-18	**20-548-115**	479.55
Glass and Plastic Tubes	4	18 × 150mm	RH4-18-150	**20-548-116**	670.00
Glass and Plastic Tubes	6	24 × 105mm, 30mL Kimble* Kontes	RH6-25	**20-548-117**	597.00
Centrifuge Tubes	10	15mL conical (16 × 120mm)	RH10-15	**20-548-118**	765.00
Centrifuge Tubes	6	50mL conical (28 × 115mm)	RH6-50	**20-548-119**	760.00
Flasks	8	50mL pear-shaped	RH8-50	**20-548-120**	1188.00
Flasks	4	100mL pear-shaped	RH4-100	**20-548-121**	1188.00
Vials	60	12 × 32/40mm	RH60-12-40	**20-548-122**	597.00
Vials	12	20 × 47mm	RH12-20	**20-548-123**	597.00
Vials	24	1 dram (15 × 45mm), 4mL	RH24-15	**20-548-124**	597.00
Vials	24	18 × 52mm mini-scintillation	RH24-18	**20-548-125**	597.00
Vials	12	28 × 60mm scintillation	RH12-28	**20-548-126**	597.00

[†] Standard rotor with DNA120/1200P.
[‡] Standard rotor with ISS110.

Miscellaneous Accessories

For use with Thermo Scientific* Savant DNA SpeedVac Concentrators as indicated in the table.

Description	For Use with	Mfr. No.	Cat. No.	Each
Acid Neutralizing Compound (acetic acid))	All SpeedVac units	ANC100	**20-548-148**	44.75
Acid Neutralizing Solution	All SpeedVac units	NSA300TF	**20-548-147**	58.44
Ammonia Neutralizing Solution (Oligo Prep)	All SpeedVac units	ANS121	**20-548-145**	46.77
Cart (Deluxe)	All SpeedVac units	CC120/DX	**20-548-139**	909.00
Cart (Large)	All SpeedVac units	CC160/DX	**20-548-140**	1369.00
Chemical Trap (order cartridges separately)	All SpeedVac units	SCT120	**20-548-141**	372.47
Chemical Trap Kit for Radioactivity	All SpeedVac units	DTK120R	**20-548-142**	545.00
Disposable Cartridge (acid neutralization)	All SpeedVac units	DC120	**20-548-143**	115.43
Disposable Cartridge (trapping volatile radioactivity)	All SpeedVac units	DC120A	**20-548-144**	121.45
CryoCool Heat Transfer Fluid, 1L	ISS110 only	SCC1	**20-548-146**	120.67
Flask Cover for GCF400 Flask	ISS110 only	FC400	**20-548-138**	96.48
Glass Condensation Flask	ISS110 only	CGF400	**20-548-137**	353.44
Post Trap Assembly (for Oligo Prep; supplied with DNA1200P)	DNA1200P only	ANT100	**20-548-136**	240.35

*Trademark. See Trademark Reference.

Eppendorf* Vacufuge* Concentrator

Three aeration modes to concentrate DNA/RNA, proteins, and other samples quickly

For gentle concentration of DNA, RNA, nucleotides, proteins, and samples for gel electrophoresis. Combines centrifugal force and vacuum.

- Available as a basic instrument for use with existing pumps (with minimum vacuum pressure of 20mbar) or as a complete system with a maintenance-free PTFE vacuum pump (40L/min.) and vapor trap
- Three aeration modes (aqueous, alcohol, and off) maximize evaporation efficiency, prolong pump life span, and reduce processing time by up to 20%
- Corrosion-resistant stainless-steel chamber withstands chemical exposure
- Brake function brings rotor to a faster stop
- Maximum speed/force: 1400rpm/240×G
- Space-saving design with low noise level of ≤60 dBA for the compact laboratory
- Choice of four heating levels (ambient, 30°, 45° and 60°C) provides optimal evaporation speed for your samples

07-748-15

ORDERING INFORMATION:
Concentrator is supplied with a stackable 48-place fixed-angle rotor for 1.5–2.0mL microcentrifuge tubes. Additional rotors are available separately. Nonstackable rotors for 96-well plates, 15mL conical tubes, and vials are also available.

Model	Max. Speed	Max. Force	Dimensions (L × W × H)	Mfr. No.	Electrical Requirements	Cat. No.	Each
Basic Unit	1400rpm	240×G	14½ × 12⅝ × 9" (37 × 32 × 23cm)	22 82 000 1	115V 50/60Hz	**07-748-13**	3950.00
Complete System, w/ PTFE vacuum pump	1400rpm	240×G	21 × 12⅝ × 11¾" (53 × 32 × 30cm)	22 82 010 9	115V 50/60Hz	**07-748-15**	7625.00
				22 82 012 5	220V 50/60Hz	**07-748-16**	7625.00

Labconco* CentriVap* Concentration Systems

Use centrifugal force, vacuum and heat to evaporate solvents rapidly from multiple biological or analytical samples

Components available separately or in application-specific packages. Choose systems for DNA samples; aqueous-, acid- or solvent-based applications; multiple small samples containing harsh chemicals; samples requiring temperature control from -4°C to +100°C; Mobile Systems; Gel-Dryer Systems for application sharing of accessory vacuum pump.

Benchtop Concentrator

- Eliminates bumping and foaming, maximizes trace solute recovery
- Microprocessor-controlled 300w heater covers ambient to 100°C in 1° increments
- Optional Heat Boost* surrounds chamber with extra controlled heat at programmed temperature, in closer proximity to sample
- Electrical receptacle included for an accessory vacuum pump (available separately)
- Vacuum delay prevents bumping by allowing rotor to achieve speed before applying vacuum
- Quick-Start* button starts rotor, heater, timers and pump
- Quick-Stop* system stops pump, opens vacuum release valve and stops rotor in seconds after time expires or RUN/STOP button is pressed
- Memory stores nine user programs (temperature/heat time/run time); LCD shows operating parameters and programs
- Compact, low-profile design
- Choice of removable acrylic lid with large, durable lid seal, or glass lid for use with solvents that attack acrylics
- Safety latch locks lid when rotor is turning, prevents start-up when lid is open
- Corrosion-resistant sample chamber has epoxy finish for easy cleaning and decontamination
- Microprocessor-controlled brushless motor runs at up to 1725rpm; stacks on top of cold trap to save space
- With ½" O.D. vacuum tube fitting

16-108-354

Cold Trap

- Included in Aqueous, Acid, Acid-Resistant, Refrigerated, Solvent, Gel-dryer and Mobile Systems; available as separate component
- ¼ hp compressor lowers cold trap temperature to -55°C in <15 minutes
- Environment-friendly, CFC-free refrigerant
- Stainless-steel condenser collects 4L of liquid, accepts optional glass insert (16-315-61) for corrosives
- Corrosion-resistant drain speeds cleanup
- READY light illuminates at -40°C, indicating concentration conditions are right
- **Ultralow Cold Trap** reaches -100°C; protects pump from low freezing point

ORDERING INFORMATION:
Also available for operation on 230V; contact your Fisher Scientific Customer Service Representative for details.

COMPLIANCE:
Concentrators and cold traps are ETL, ETL-C, and CE listed.

Contd. on next page.

Labconco* CentriVap* Concentration Systems, Contd.

Electrical Requirements	Mfr. No.	Cat. No.	Each
Benchtop Concentrator			
115V 50/60Hz, 3.1A	7810010	**16-108-334**	4155.00
Benchtop Concentrator with Heat Booster			
115V 50/60Hz, 5.1A	7810012	**16-108-336**	4505.00
Benchtop Concentrator with Glass Lid			
115V 50/60Hz, 3.1A	7810014	**16-108-338**	4675.00
Cold Trap			
115V 60Hz, 5.4A	7811020	**16-108-348**	3325.00
Ultralow Cold Trap			
115V 60Hz, 12A	7460020	**16-108-351**	5150.00

Aqueous, Acid and Solvent Systems

With clear canister and acid, moisture, or solvent insert to provide additional vacuum pump protection

Rotor holds forty 1.5–2.0mL microcentrifuge tubes or up to one hundred 12–13mm dia. tubes.

ORDERING INFORMATION:
For 115V 60Hz, 8.5A. Also available for operation on 230V; contact your Fisher Scientific Customer Service Representative for details.

INCLUDES:
Benchtop concentrator, cold trap, vacuum tubing, clamps, 12–13mm rotor; acid system also includes glass trap to protect cold trap reservoir and lid from corrosives.

REQUIRED ACCESSORIES:
Vacuum pump is required for all systems; see Fisher Scientific Maxima C-line Pumps in the Pumps section.

Electrical Reqts.	Mfr. No.	Cat. No.	Each
Aqueous System			
115V 60Hz, 8.5A	7982010	**16-108-354**	8380.00
Acid System			
115V 60Hz, 8.5A	7983010	**16-108-357**	8868.30
Solvent System			
115V 60Hz, 8.5A	7984010	**16-108-360**	8900.00

Refrigerated Vacuum Concentrators

Unique instruments use a refrigeration system and heater to achieve selected setpoint temperature from -4°C to +100°C

NEW

Centrifugal force and vacuum rapidly concentrate multiple small samples, such as RNA and proteins. Microprocessor-controlled cooling and heating systems protect delicate samples from heat during processing.

- Programming holds two temperatures and times
- Setpoints for first and second temperatures and run times are selected separately
- PREHEAT/COOL button activates the refrigeration system and heater to reach setpoint temperature
- Set temperatures and times can be altered while a program is in process
- Memory stores up to nine user-defined programs
- Choose removable acrylic lid or solvent-resistant glass lid, each with large phenol-free lid gasket

REQUIRED ACCESSORIES:
Rotor, cold trap and vacuum pump

COMPLIANCE:
115V models are ETL and ETL-C compliant; 230V 50Hz models are CE marked.

Electrical Requirements	Mfr. No.	Cat. No.	Each
Glass Lid			
115V 60Hz, 8A	7310021	**16-108-443**	7495.00
230V 50Hz, 5A	7310031	**16-108-445**	7495.00
230V 60Hz, 5A	7310041	**16-108-447**	7495.00
Acrylic Lid			
115V 60Hz, 8A	7310020	**16-108-442**	6705.00
230V 50Hz, 5A	7310030	**16-108-444**	6705.00
230V 60Hz, 5A	7310040	**16-108-446**	6705.00

Acid-Resistant Vacuum Concentrators

Rapidly concentrates multiple small samples containing harsh chemicals

NEW

- Durable, acid-resistant components throughout the vapor path
- Can be used with samples containing 0.1 to 1%TFA, hydrochloric acid, acetic acid, hydrobromic acid, ammonium hydroxide, and sodium hydroxide
- PTFE-coated aluminum chamber with glass lid and large phenol-free lid gasket

REQUIRED ACCESSORIES:
Rotor, cold trap and vacuum pump

COMPLIANCE:
115V model is ETL and ETL-C compliant; 230V model is CE marked

Electrical Requirements	Mfr. No.	Cat. No.	Each
110/115V 50/60Hz, 3.1A	7810016	**16-108-440**	6375.00
230V 50/60Hz, 1.6A	7810017	**16-108-441**	6375.00

Contd. on next page.

Labconco CentriVap* Concentration Systems, Contd.

DNA Systems

For processing DNA samples or minute quantities of solvents

- Centrifugal force and vacuum rapidly evaporate solvents from multiple small samples
- DNA rotor holds seventy-two 0.5mL sample tubes or sixty 1.5 or 2.0mL sample tubes
- Corrosion-resistant diaphragm pump achieves vacuum of 29.6"Hg; has pumping capacity of 34L/min
- All wetted parts are PTFE or PTFE-coated
- Pump is easily removed for service

16-108-346

ORDERING INFORMATION:
For 115V 60Hz, 15A. Also available for operation on 230V; contact your Fisher Scientific Customer Service Representative for details.

INCLUDES:
CentriVap* Benchtop Concentrator, Integral vacuum pump, DNA rotor, Inlet and outlet glass traps to protect pump and environment.

Electrical Reqts. †	Mfr. No.	Cat. No.	Each
115V 60Hz, 15A	7970010	**16-108-346**	8045.00

† Electrical requirements including vacuum pump.

Gel-Dryer Systems

Allow accessory pump to be shared between applications

- Rotor holds forty 1.5–2.0mL microcentrifuge tubes or up to one hundred 12–13mm dia. tubes
- Three-way valve allows accessory pump to be shared among applications

ORDERING INFORMATION:
For 115V 60Hz, 15.5A. Also available for operation on 230V; contact your Fisher Scientific Customer Service Representative for details.

INCLUDES:
Benchtop concentrator, cold trap, gel dryer, 12–13mm rotor, three-way valve, vacuum tubing and clamps

REQUIRED ACCESSORIES:
Vacuum pump required; order separately.

Electrical Requirements	Mfr. No.	Cat. No.	Each
115V 60Hz, 15.5A	7475010	**16-108-363**	9665.00

Mobile Systems

Combines concentrator and cold trap in space-saving mobile console

16-108-340

Concentrator Features:

- 300w ambient to 100°C heater; selectable heater shutdown before end of run; run times from 1 to 999 min.
- Automatic vacuum release when rotor stops (to prevent sample loss)
- Microprocessor-controlled brushless 1725rpm motor
- Large corrosion-resistant sample chamber with epoxy finish
- Removable acrylic lid with durable seal; safety sensor locks lid when rotor is turning, prevents startup when lid is open
- Removable front panel gives access to accessory vacuum pump
- Pump plugs into receptacle, activates from control panel
- Automatic vacuum delay applies vacuum only after rotor achieves set speed to prevent bumping

Cold Trap Features:

- ¼hp compressor lowers cold trap temperature to -55°C in 5 minutes and accelerates startup procedures; uses CFC-free refrigerant
- READY light illuminates when condenser reaches -40°C to indicate start conditions
- Stainless-steel condenser collects up to 4L of liquid
- Condenser drain with nylon valve and stainless-steel plumbing speeds cleaning
- Built-in chemical trap canister accommodates inserts to trap moisture, acids, solvents and radiochemicals to protect vacuum pump

INCLUDES:
Benchtop Concentrator (16-316-1 or 16-317-56 with Heat Boost*) and Cold Trap (16-316-2) in a compact console, mounted on 2" dia. (5cm) hard-rubber casters for portability; 12–13mm rotor that holds forty 1.5–2.0mL microcentrifuge tubes or up to one hundred 12–13mm dia. tubes; one solvent trap insert

REQUIRED ACCESSORIES:
Vacuum pump required; order separately

Electrical Requirements	Mfr. No.	Cat. No.	Each
Mobile System			
115V 60Hz, 8.5A	7812010	**16-108-340**	9755.00
230V 50Hz, 4.0A	7812011	**16-108-341**	9755.00
230V 60Hz, 4.0A	7812012	**16-108-342**	9755.00
Mobile System with Heat Boost			
115V 60Hz, 10.5A	7812013	**16-108-343**	10,095.00
230V 50Hz, 5.0A	7812014	**16-108-344**	10,095.00
230V 60Hz, 5.0A	7812015	**16-108-345**	10,095.00

Accessories contd. on next page.

Labconco* CentriVap* Concentration Systems, Contd.

ACCESSORIES

Rotors

For use with Labconco* CentriVap* Systems

- Anodized aluminum rotors hold tubes at angle to maximize surface area
- Two hole sizes on rotors 16-317-54 and 16-317-62 to -64 accommodate tubes with different O.D.
- Maximum tube capacity for a given O.D. may vary with overall tube height
- CentriVap DNA Systems come with DNA Rotor (16-317-54); all others with 12–13mm Rotor (16-317-62)

NOTE:
To prevent loss of sample during centrifugation, fill tubes only ⅓ to ½ full.

Rotor Tube	Mfr. No.	Cat. No.	Each
DNA	7462900	**16-317-54**	209.79
Hexagonal	7450700	**16-317-50**	201.76
12–13mm	7455100	**16-317-62**	800.00
12–17mm	7455000	**16-317-64**	845.00
28mm	7455200	**16-317-63**	750.00
Microtiter Plate	7461900	**16-317-53**	660.00

ROTOR TUBE/PLATE CAPACITY CHART

Rotor Type	Tube/Plate Type†	Volume	Holds
DNA	Microcentrifuge	0.5mL	72 tubes
	Microcentrifuge	1.5–2.0mL	60 tubes
Hexagonal	Microcentrifuge	1.5–2.0mL	132 tubes
12–13mm	Microcentrifuge	1.5–2.0mL	40 tubes
	12 × 55mm	3mL	16 tubes
	13 × 75mm	5–6mL	100 tubes
	13 × 100mm	5–10mL	64 tubes
12–17mm	13 × 51mm	2–5mL	52 tubes
	12 × 55mm	3mL	44 tubes
	13 × 100mm	5–10mL	36 tubes
	16 × 100mm	11–15mL	24 tubes
	17 × 120mm	12–15mL	18 tubes
	16 × 125mm	15–19mL	18 tubes
28mm	Microcentrifuge	1.5–2.0mL	32 tubes
	28 × 140mm	40–50mL	12 tubes
Microtiter Plate	Standard	96-well	4 plates
	Deep-well	96-well	2 plates

† Maximum O.D. × H held by rotor where applicable. Rotors may not hold all tubes/plates described at the same time.

Secondary Trap Canister and Inserts

Help to provide secondary protection to vacuum pumps in evaporation systems

- Clear polypropylene canister with mounting bracket, 17" (43cm) PVC tubing, and two clamps
- Canister accommodates trap inserts listed in the table

Description	Mfr. No.	Cat. No.	Each
Secondary Trap Canister	7460900	**16-317-52**	292.00
Acid Trap Insert	7814800	**16-316-8**	82.16
Moisture Trap Insert	7814900	**16-316-9**	82.15
Radioisotope Trap Insert	7815000	**16-316-10**	40.74
Solvent Trap Insert	7815200	**16-316-11**	82.16

VORTEX

Labconco* RapidVap* Vacuum Evaporation System

Alternative to traditional centrifugal evaporation methods uses vortex motion, heat and vacuum

- Processes up to 110 samples at once
- Interchangeable aluminum sample blocks coated with PTFE* fluorocarbon resin
- Blocks tubes from 12mm O.D. to 600mL

Advanced vacuum function

- Microprocessor controls vacuum at preset level
- Automatic vacuum release if power fails
- LCD shows vacuum level from 0 to 999mbar
- Rear-mounted vacuum connections: vacuum port, tubing clamps, lid heater receptacle, 30"L (76cm) ½" I.D. tubing for connection to accessory vacuum pump

Safety features

- Lexan* shield on clear glass lid protects against glass implosion
- Dual lid clamps hold lid securely in place for vacuum-tight seal
- Phenol-free gasket provides complete sealing under vacuum

Optional lid heater

- 40w heater plugs into electrical receptacle on rear
- Eliminates fogging, increases visibility when evaporating water or other high-boiling-point solvents

ORDERING INFORMATION:
Includes 6½' (2.0m) 3-wire cord with plug. Dimensions (lid closed): 18⅜L × 20¾W × 13½"H (46.7 × 52.6 × 34.3cm).

230V models available; contact your Fisher Scientific Customer Service Representative for details.

REQUIRED ACCESSORIES:
Vacuum pump. Select vacuum pump based on solvent type and possible temperature limitations.

With RS-232 Port	Electrical Reqts. †	Mfr. No.	Cat. No.	Each
Without Lid Heater				
No	115V 50/60Hz, 7A	7900000	**16-317-1**	9360.00
With Lid Heater				
No	115V 50/60Hz, 8.6A	7900002	**16-317-19**	10,350.00
Yes	115V 50/60Hz, 8.6A	7900012	**16-108-239**	10,850.00

† Excludes vacuum pump.

LOOKING FOR ROTORS FOR CENTRIVAP* ACID-RESISTANT CONCENTRATORS?

For PTFE-coated, hexagonal, round, microtiter, and DNA rotors,

Visit www.fishersci.com and search for Acid-Resistant CentriVap

*Trademark. See Trademark Reference.

Prices subject to change.

Labconco* RapidVap* N_2 Evaporation System

Evaporates using vortex motion, heat and nitrogen blowdown

Efficient alternative to Kuderna-Danish and rotary evaporators.

- Nitrogen manifold lets operator introduce nitrogen to selected samples
- Processes up to eight samples at once; maximum individual volume capacity, 450mL

Choice of two end-of-run signals:

- Timed signal: electric timer pauses system, alerts user when set time has elapsed
- Temperature signal: system monitors temperature difference between sample block and heater caused by evaporative cooling; when evaporation is nearly complete, the two temperatures equalize, causing alarm to sound and PREHEAT/END ALARM light to flash

ORDERING INFORMATION:

With side-mounted 2" dia. (5cm) exhaust port with built-in blower; 6' (1.8m) of exhaust tubing to vent toxic solvent vapors into fume hood; nitrogen inlet port with 1/4 NPT male thread; eight polyethylene glassware caps; PTFE-coated aluminum sample block that holds eight 600mL tubes; phenol-free gasket; 6½' (2.0m) 3-wire cord and plug. Dimensions (lid closed): 19L × 21¾W × 13½"H (48.3 × 55.1 × 34.3cm). 230V models available; contact your Fisher Scientific Customer Service Representative for details.

REQUIRED ACCESSORIES:

- Nitrogen with maximum flowrate of 0.6cfm and a gas pressure regulator
- Pressure of 5–10psi is typical

With RS-232 Port	Electrical Reqts. †	Mfr. No.	Cat. No.	Each
No	115V 50/60Hz, 9A	7910000	**16-317-40**	11,530.00

† Excludes vacuum pump.

PARALLEL SYNTHESIS

Büchi* Syncore* System for Parallel Synthesis and Evaporation

NEW

Modular system for parallel synthesis, evaporation and sample concentration

Comprises three instruments, based on a single platform, suitable for all aspects of multiple sample processing. The Polyvap unit performs as a parallel evaporator, instantly convertible into the Analyst parallel concentrator or the Reactor parallel reaction station. (For Reactor models, see our Web site.) The field of applications includes fast parallel evaporation of multiple samples, the smooth concentration to predefined residual volumes and parallel synthesis.

The Syncore Platform provides basic functions

- Horizontal orbital movement of 0 to 10mm, with maximum rotational speed of 600 rpm, produces a strong vortex in the sample tube to prevent bumping during operation
- Heating from ambient to 150°C
- Cooling to -20°C with optional cooling plate, to -7°C with optional circulators (sold separately)
- Manually controlled temperatures, or preprogrammed temperature profiles in nine timed stages to 9 hr. 59 min. each

Polyvap: for evaporation to drynesss

- Unique parallel evaporator allows fast, safe, automatic evaporation of multiple samples
- Evaporation of high-boiling solvents like DMSO and DMF, with optional High Temperature Insulation Kit
- Interchangeable racks for 4, 6, 12, 24, 48 and 96 samples from 0.5 to 500mL
- Each rack has its own PFA-coated aluminum vacuum cover with individual vacuum connections
- Vacuum cover is heatable to 70°C to prevent condensation
- Use of inert materials–including glass, PFA-coated aluminum and PTFE–offers high chemical resistance, prevents cross-contamination
- Automatic distillations are achieved with optional Vacuum Controller V-855
- Environmentally sound operation (ISO 14000)
- Fully transparent racks in format 4 and 6

Applications

Evaporation of chromatography samples; evaporation after parallel extractions; gravimetric analyses in quality control; evaporation after parallel reactions

Analyst: for concentration to residual volumes

- Concentrate solutions in parallel to a cooled residual volume
- Racks for 4, 6 and 12 vessels
- Locally cooled appendix stops evaporation process as solvent level reaches top of cooling zone
- Sample is concentrated in a small, cooled residual volume, preventing thermal decomposition
- Achieves high recovery rates with smooth sample processing
- Vacuum covers are interchangeable with Polyvap models
- For higher recovery rates, an optional Flushback Module is available

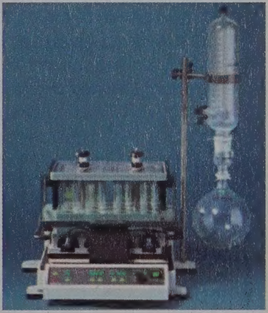
Applications

Food, feed and environmental analysis, quality control; evaporation of temperature-sensitive compounds; procedures requiring a concentration step

ORDERING INFORMATION:

Additional models are available with dry-ice condenser and with rack formats other than those listed here. All models operate on 120V 50/60Hz, 1500w. Connections: TTL for external on/off signal; 24VDC temperature-controlled valve; 24VDC cooling water valve (0.5°C hysteresis).

05-402-348



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Büchi* Syncore* System for Parallel Synthesis and Evaporation, Contd.

Dimensions (L x W x H): 19 x 19 x 14 in. (48.3 x 48.3 x 35.6cm).
Weight: 66 lb. (29.9kg).

Optional accessories include condensers, 1L and 2L flasks, additional rack sizes and vacuum covers, high- and low-temperature insulation kits, flushback module, vacuum controller, pumps, and chillers. Go to our Web site for details.

INCLUDES:
Polyvap Models come with S condenser for tapwater cooling, choice of racks and tubes as follows: 6-position rack with 6 tubes for 50–250mL samples; 12-position rack with 12 tubes for 5–120mL samples; 24-position rack with 50 tubes for 2–30mL samples; 48-position rack with 100 test tubes for 1–20mL samples.

Analyst Models come with S condenser for tapwater cooling, choice of racks and graduated tubes as follows: 4-position rack for 50–500mL samples; 6-position rack for 25–250mL samples; 12-position rack for 5–120mL samples.

Receiving Flask	Rack	Residual Volume	Graduated Level Indication	Mfr. No.	Cat. No.	Each
Polyvap Models: with S condenser; for 120V 50/60Hz						
2L	R-6	----	----	1P2S22000	**05-402-353**	17,545.36
2L	R-12	----	----	1P2S23000	**05-402-354**	17,492.89
1L	R-24	----	----	1P2S14000	**05-402-348**	17,049.18
1L	R-487	----	----	1P2S18000	**05-402-172**	17,850.27
Analyst Models: with S condenser; for 120V 50/60Hz						
2L	R-4	1.0mL	Yes	1A2S211Y0	**05-402-950**	17,938.80
2L	R-6	1.0mL	Yes	1A2S221Y0	**05-402-951**	18,654.64
2L	R-12	1.0mL	Yes	1A2S231Y0	**05-402-952**	21,634.98
2L	R-12	2.0mL	Yes	1A2S232Y0	**05-402-953**	21,634.98

Brinkmann*/Heidolph* Synthesis 1 Parallel Evaporation Systems

NEW

Flexible, modular, highly efficient parallel liquid and solid phase synthesis

- Solid/liquid phase synthesis and multiple evaporation with one base unit
- Exceptional visual control of reaction with circular-design reaction block
- Easy access and dismantling of interchangeable, revolving reaction blocks
- Four heating zones with individual heat control allow for different temperatures
- 1000w heater for temperatures to 160°C, 1°C; optional external chiller for cooling to -80°C
- Digital temperature display; precise temperature control sensor positioned in reaction vessel
- Additional condensation zone for refluxing of solvents
- Programmable automated temperature ramping
- Vibration frequency of 100–1000rpm, 3mm orbit
- Built-in process timer for unattended operation from 0 to 999 min.
- Electronic overtemperature protection
- Vessel design ensures optimal septa fixing
- PTFE coating of septa resists acid
- RS-232 interface for monitoring and controlling temperature, vibration frequency and pressure (with optional vacuum controller)

Synthesis 1 for Solid-Phase Synthesis

- Valved reaction vessels eliminate the use of needles
- Transparent PFA/PTFE reaction vessels are visible at all times
- Screw fittings allow access for cleaning and filter replacement
- Washing and recovery of product by vacuum filtration
- Vessels have bottom valves for draining washing solvent and product collection
- Central connection and distributor for vacuum and inert atmosphere
- Waste cube with approx. 1000mL capacity

Synthesis 1 for Liquid-Phase Synthesis

- Separate caps on reaction vessels—no counter-contamination
- Glass vessels with PTFE caps
- Easy handling of conventional glass reaction vessels with standard threads
- Base unit can be upgraded to a multiple evaporator
- Central connection and distributor for vacuum and inert atmosphere

Synthesis 1 for Multiple Evaporations

- Highest distillation rates possible due to quick heat-up time
- Reproducible results due to temperature sensor positioned in reaction vesselfor precise sample temperature reading and control
- Guard hood to ensure constant sample temperature and for added safety
- Glass vessels with PTFE caps

ORDERING INFORMATION:
Dimensions: $12\frac{3}{16}$L × $19\frac{11}{16}$"H (310 × 500mm). For 115V or 230V, 50/60Hz, 1120w. Weight, $60\frac{5}{8}$ to 63 lb. (27.5 or 28.5kg) (depending on configuration).

INCLUDES:
Base unit, reaction block and vessels as indicated in Ordering Table

REQUIRED ACCESSORIES:
Vacuum pump; Rotavac Valve Control 13-876-312; vacuum controller (Brinkmann No. 036300320); vacuum valve 13-876-314

Ordering Table on next page.

13-879-102

13-879-136

13-879-156

*Trademark. See Trademark Reference.

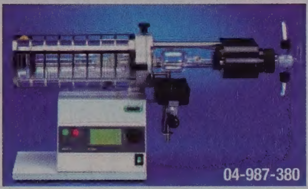
Brinkmann*/Heidolph* Synthesis 1 Parallel Evaporation Systems, Contd.

	115V 50/60Hz Models			230V 50/60Hz Models		
No. of Vessels	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each
Synthesis 1 Solid-Phase Synthesis						
16 x 42mL	036190000	**13-879-100**	21,265.00	036190010	**13-879-101**	21,265.00
20 x 25mL	036190020	**13-879-102**	21,470.00	036190030	**13-879-103**	21,470.00
24 x 8mL	036190040	**13-879-104**	21,660.00	036190050	**13-879-105**	21,660.00
Synthesis 1 Liquid-Phase Synthesis						
12 x 50mL	036190120	**13-879-134**	18,460.00	036190130	**13-879-135**	18,460.00
16 x 25mL	036190140	**13-879-136**	18,695.00	036190150	**13-879-137**	18,695.00
24 x 10mL	036190160	**13-879-138**	18,897.00	036190170	**13-879-139**	18,897.00
Synthesis 1 Multiple Evaporator						
12 x 50mL	036190240	**13-879-154**	20,075.00	036190250	**13-879-155**	20,075.00
16 x 25mL	036190260	**13-879-156**	20,310.00	036190270	**13-879-157**	20,310.00
24 x 10mL	036190280	**13-879-158**	20,510.00	036190290	**13-879-159**	20,510.00

DISTILLATION OVEN

Büchi* Kugelrohr B-585 Distillation Oven

Ideal for drying, distilling, and sublimation of small-volume samples under vacuum up to 300°C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- Fast drying, safety, and versatility
- 10 programmable distillation profiles
- Transparent heating vessel for easy sample observation
- For small-scale distillation from 10mL to 250mL
- Small-scale evaporation vessel eliminates cross-contamination and improves reproducibility
- Stainless-steel sleeve protects glassware
- Interchangeable glassware configurations are available for specific applications
- Rotation speeds up to 50rpm for quick and careful drying
- Closed system for working under a vacuum or inert conditions
- Precise temperature regulation from 40°C to 300°C
- Reaches -70°C for freeze-drying and sublimation with accessory circulator

ORDERING INFORMATION:

Dimensions (L x W x H): $25\frac{5}{8}$ x $11\frac{13}{16}$ x $11\frac{13}{16}$" (65 x 30 x 30cm)
Optional accessories include: Conversion Kit for converting Kugelrohr to drying oven; sublimation glass tube; freeze drying tube; cold trap; condenser; cooling dish. Contact your Fisher Scientific Customer Service Representative for details.

REQUIRED ACCESSORIES:

Drying and Kugelrohr applications require vacuum pump, controller and recirculating chiller; order all separately.

Model	Mfr. No.	Cat. No.	Each
Kugelrohr B-585	46601	**04-987-380**	6830.52

EXTRACTION

SOLVENT EXTRACTION SYSTEMS

Foss* Soxtec* 2055 Manual Fat Extraction System

Handles six samples at a time with typical 80% solvent recovery

TC2055-002

For safe and fast determination of soluble material in food, feed, soil, polymers, textiles, paper, pulp, and pharmaceuticals. System combines the Soxhlet extraction technique with integral solvent handling.

- Maximum user convenience with minimum system handling—six samples at a time
- One handle moves all samples simultaneously
- Four-step extraction procedure: boiling, rinsing, recovery, pre-drying
- Separate timer functions for each extraction step make programming and procedure conveniently repeatable
- Capacity per batch, six samples
- Thimble size, 33 x 80mm, 65mL
- Maximum solvent volume per thimble, 70–90mL
- Reproducibility, ±1%
- 2L/min. tap water flow for cooling

ORDERING INFORMATION:

Electrical requirements, 115V 60Hz

INCLUDES:

System consists of extraction unit, control unit, and accessories kit containing: 18 extraction cups, cup holder, cup stand, tongs for extraction cups; 25 thimbles plus thimble support, holder, adapters, handler and stand; Viton* and butyl seals; solvent addition kit and emptying tube; manual and application notes.

COMPLIANCE:

Methods are approved by AOAC (meat) and EPA (soil)

Cat. No.	Each
TC2055-002	21,000.00

ACCESSORIES

33mm Cellulose Thimbles

For use with Soxtec* 2055 System

Description	Cat. No.	Pack of 25
Replacements; single thickness	**TC1522-0045**	99.00
Double thickness	**TC1522-0030**	203.50
For environmental applications (e.g., PCB extraction)	**TC1522-0035**	169.71

Contd. on next page.

ACCESSORIES

Cups, Thimbles, Seals and Adapters

For use with Soxtec* 2055 system and discontinued systems

Description	For Soxtec Unit	Cat. No.	Pack of
Extraction Cups			
Glass	HT 6, HT 12, 2043	**TC1000-1820**	6/450.00
Glass	HT 2, HT 4, 2045	**TC1000-2291**	2/190.29
Glass	2055, 2050	**TC1000-7673**	6/562.22
Aluminum	HT 6, HT 12, 2043	**TC1000-1462**	6/225.00
Aluminum	HT 2, HT 4, 2045	**TC1000-2290**	2/105.00
Aluminum	2055, 2050	**TC1000-7510**	6/250.94
Thimbles			
26mm	HT 6, HT 12, 2043, 2045, 2055	**TC1522-0018**	25/101.00
26mm†	HT 6, HT 12, 2043, 2045, 2055	**TC1522-0034**	25/140.00
Seals			
Viton Condenser Seal	HT 6, HT 12, 2043	**TC1000-2516**	6/89.00
Viton Seal, Green	HT 2, HT 4, 2045	**TC1000-2705**	2/65.71
Butyl Seal, Black	HT 6, HT 12, 2043	**TC1000-2517**	6/87.75
Thimble Adapters			
26, Standard	HT 6, HT 12	**TC1000-1466**	6/268.00
26, PTFE coated	HT 6, HT 12	**TC1000-2460**	6/396.90
33, Standard	HT 2, HT 4, 2045	**TC1000-2462**	2/145.29
33, Standard	2055, 2050	**TC1000-7524**	6/235.88

† For environmental applications, such as PCB extraction.

Crude Fiber Apparatus

Six 350w heaters for 600mL beakers

09-681B

Benchtop unit for determining crude fiber in feed, food and other agricultural products as outlined in AOAC methods. Amount of crude fiber is determined by subjecting sample to simulated digestive action. Samples are boiled in acid, washed, boiled in alkali and washed again. Loss upon ignition is defined as crude fiber.

- Compression spring holds beaker rigidly between heater and condenser during digestion
- Tight seal keeps acid and alkali at constant volumes during boiling
- Complete for six samples
- Requires connection to water source

ORDERING INFORMATION:

Dimensions: 9L × $35\frac{11}{16}$W × $27\frac{3}{16}$"H (23 × 91 × 69cm). Shipping weight: 137 lb. (62kg). Base cabinet not included. For 115V 50/60Hz, 2100w. Must be wired directly to line (line cord not supplied).

INCLUDES:

Six 350w heaters; six infinite heat controls; 12 tall-form 600mL borosilicate glass beakers—six for test and six spares; six stainless-steel condensers.

Mfr. No.	Cat. No.	Each
3000100	**09-681B**	9380.00

Foss* Soxtec* 2045 Fat Extraction System

Designed for rapid, safe and economical extraction of solid and semisolid materials

TC2045-00

Two-place solvent extraction system for fast and safe determinations of soluble material in food, feed, soil, polymers, paper pulp, textiles. Consumes only 15mL solvent per sample (uses 60mL). Typical solvent recovery: 75%.

- Separate timer functions for each extraction step make programming and procedure conveniently repeatable
- Batch handling tools eliminate sample touching, mixing; prevent handling of hot cups or thimbles
- Designed to work with all common solvents
- Adjustable overtemperature setting ensures that ignition point never is reached for any solvent
- 65mL thimble size extends application range

INCLUDES:

2045 Extraction Unit, 2046 Control Unit, one Food/Agri routine accessories kit comprising extraction cups (1 set of 2), cup holder, thimbles (set of 25), thimble adapters (1 set of 6), thimble stand, seals in Viton* and butyl; manual and Application Note AN 301.

COMPLIANCE:

Meets requirements for AOAC 991.36 (meat), AOAC 2003.05, 2003.06 (feed), SCAN-CM 49:93 (paper/pulp), EPA method 3541 (PAH in soil).

CERTIFICATIONS:

CE marked

Model	Soxtec 2045
Thimble Size	65mL, 33 × 80mm; 0.5–15g, depending on sample
Solvent Volume	60mL
Extraction Time	40–60 min.
Capacity	2/batch, 10-12/day
Measuring Range	0.1–100% fat
Repeatability	±1% rel. or better at 5–100% fat
Heatup Time	From 20° to 285°C in 10 min.
L x W x H, Extraction Unit	10⅝ × 13⅜ × 22⅞" (27 × 34 × 58cm)
L x W x H, Control Unit	9 × 11 × 7½" (23 × 28 × 19cm)
Shipping Weight	46 lb. (21kg)
Electrical Requirements	230V 50/60Hz, 600w
Cat. No.	**TC2045-002**
Each	12,500.00

WARNING

Extraction unit must be installed in a well ventilated fume hood (airflow 0.5 m/s). Use of diethyl ether not recommended due to explosion risk.

LOOKING FOR FUME HOODS?

For a selection of bench-type and free-standing models offering personal and/or sample protection, see the Fume Hoods and Enclosures section.

Foss SoxCap* 2047 Hydrolysis Unit

Performs hydrolysis, filtration, and washing of food and feed samples without any sample transfer

TC2047-002

A simple, economical, reliable method for acid hydrolysis of food and feed samples, prior to the solvent extraction step of total fat analysis. Used in tandem with the Soxtec* 2045, 2050, or 2055 extraction system to provide results in agreement with official procedures.

Sample is weighed into a SoxCap glass capsule and kept there throughout the hydrolysis/filtration/washing process. After hydrolysis, the capsule is turned upside down, fitted with a cellulose thimble, and placed in a Soxtec for the solvent extraction step. The unique design of the SoxCap filter holds the fat present in the sample during hydrolysis and releases it during solvent extraction.

- Sample size: 0.5–3g
- Measuring range: 0.1–100%
- Capacity: six samples simultaneously, up to 36 analyses/day
- No pre-extraction step required
- Minimum manual handling using batch handling tools
- ID numbers ensure no mixing up of samples
- Fast filtration and washing of samples
- Improved measurement precision and faster analysis
- No contact with hot acid during hydrolysis, filtration, and washing
- Fumes removed automatically during hydrolysis
- Compact system requires only a small bench space
- Minimum use of Celite* with liquid samples

ORDERING INFORMATION: Dimensions: 4¼L × 7⅜W × 11¾"H (11 × 19 × 30cm). For 115V 50/60Hz.

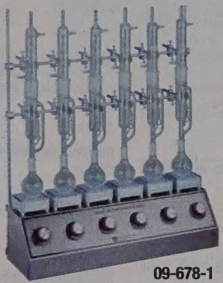
INCLUDES:
Ceramic Hotplate 2022, condenser holder with valve plate, condenser, hydrolysis beaker, beaker, boiling stand, capsule tray (set of 2), drying stand, glass capsules (2 sets of 6), filters (set of 100), thimbles (set of 25), adapters (set of 6), cotton, water aspirator, user manual

NOTE:
Two water taps are needed.

Model	Cat. No.	Each
2047	**TC2047-002**	5000.00

Thermo Scientific* Lab-Line* Multi-Unit Extraction Heater

Ideal for extractions, distillations, and digestions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- Temperature range from 40° to 300°C
- Six individual, independent heating controls
- Allows heating of samples at different temperatures simultaneously
- Individual pilot lights indicate when heaters are in operation
- Aluminum hotplates are 4½L × 4½"W with 300w heating elements
- Heaters are elevated on a perforated support for ventilation
- Inclined control panel mounted on stainless-steel housing

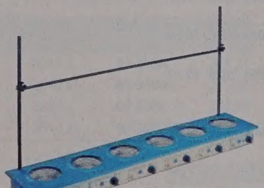
ORDERING INFORMATION:
Dimensions: 30L × 11D × 9"H (76 × 28 × 23cm). Shipping weight: 40 lb. (18kg). 120V; unit must be hardwired to power source.

INCLUDES:
Built-in sample-holding extraction rack, two 30" (76cm) horizontal rods, and two 36" (91cm) vertical frame rods. Equipped with 12 extraction clamps and clamp holders.

Mfr. No.	Cat. No.	Each
5000	**09-678-1**	3248.00

Thermo Scientific* Electrothermal* Individually Controlled Soxhlet Apparatus Heaters

Individual heating of up to three or six samples


09-682-11

Allow liquids with different boiling points to be heated side-by-side. Choice of three- or six-place models with capacities to 1000mL. Set temperature for each sample using individual solid-state controller in front of each heating recess; calibrate with thermometer (not supplied).

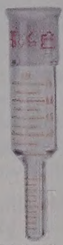
- Stainless-steel safety screen in each recess, grounded directly to supply cable—protects against electrical shock if flasks break or liquids spill
- Clear indicator light shows "Power On"
- Individual amber lights indicate "Heater On"
- External surfaces are PTFE-coated and chemical resistant
- Fitted with brackets to accept support rods ½" (13mm) in diameter

INCLUDES:
Three vertical rods supplied with three-place models; one horizontal and two vertical rods supplied with six-place models.

Flask Capacity	Wattage	L × W × H	Electrical Reqts.	Cat. No.	Each
Three-flask Heaters					
100mL	180w	3½ × 25 × 10¼" (9 × 63 × 26cm)	120V 50/60Hz	**09-682**	1456.00
250mL	450w	3½ × 25 × 10¼" (9 × 63 × 26cm)	120V 50/60Hz	**09-682-1**	1526.00
500mL	600w	4 × 29½ × 11" (10 × 75 × 28cm)	120V 50/60Hz	**09-682-2**	1600.00
1000mL	900w	4 × 29½ × 11" (10 × 75 × 28cm)	120V 50/60Hz	**09-682-3**	1745.00
Six-flask Heaters					
250mL	900w	3½ × 47¼ × 10¼" (9 × 120 × 26cm)	120V 50/60Hz	**09-682-11**	2500.00
500mL	1200w	4 × 56½ × 11" (10 × 144 × 28cm)	120V 50/60Hz	**09-682-12**	2723.00
1000mL	1800w	4 × 56½ × 11" (10 × 144 × 28cm)	230V 50Hz (Intl)	**09-682-13**	2876.00

CONCENTRATOR TUBES

Kontes* Concentrator Tubes for Evaporative Concentrators


K570050 -1025

K570060-0519

K569812-0002

K570071-1025

Used with Kontes Evaporative Concentrators	Tube Capac.	₸ Jt	Grad. Ranges/ Subdiv.	Cat. No.	Each
Tubes with Hooks for Spring Attachment					
569300-0000	12mL	14/20	0–2mL/0.1mL, 2–12mL/0.2mL	**K288250-0000**	27.21
570000-0250	10mL	19/22	----	**K570002-0250**	23.01
569000-0119, 569000-0219, 569000-0319, 569250-0319	4mL	19/22	0.2mL/0.1mL, and at 3, 4mL	**K570050-0425**	37.96
569350-0000, 570025-0250, 570025-0500	10mL	19/22	0–1mL/0.1mL, 2–10mL/1.0mL	**K570050-1025**	38.87
569250-0324	10mL	24/25	0–1mL/0.1mL, 2–10mL/1.0mL	**K570050-1026**	40.38
	25mL	24/25	0–1mL/0.1mL, 2–10mL/1.0mL, 10–25mL/2.0mL	**K570050-2525**	45.12
569355-0000, 570025-1000	25mL	24/25	0–1mL/0.1mL, 2–10mL/1.0mL, 10–25mL/2. 0mL	**K570050-2526**	46.64
Optional for Kuderna-Danish, other concentrators	10mL	19/22	0–10mL/0.5mL	**K570060-0519**	36.81
Tubes without Hooks for Clamp Attachment					
569310-0000	12mL	14/20	0–2mL/0.1mL, 2–12mL/0.2mL	**K288251-0000**	24.99
569810-0025	2mL	10/18	0–0.3mL/0.01mL, 0.3–2mL/0.1mL	**K569812-0002**	32.58
570010-0125	5mL	14/20	----	**K570012-0125**	22.25
570010-0250	10mL	19/22	----	**K570012-0250**	23.01
570010-0500	15mL	19/22	----	**K570012-0500**	23.01
569010-0214, 569010-0314, 569260-0314, 570035-0125	1mL	14/20	0–1mL/0.1mL	**K570051-0124**	32.48
569010-0119, 569260-0319	4mL	19/22	0–2mL/0.1mL, and at 3, 4mL	**K570051-0425**	37.96
569010-0219, 569010-0319, 569360-0000, 570035-0250, 570035-0500	10mL	19/22	0–1mL/0.1mL, 2–10mL/1.0mL	**K570050-1025**	38.87
569260-0324	10mL	24/25	0–1mL/0.1mL, 2–10mL/1.0mL	**K570051-1026**	40.38
	25mL	19/22	0–1mL/0.1mL, 2–10mL/1.0mL, 10–25mL/2.0mL	**K570051-2525**	45.12
Optional for Kuderna-Danish, other concentrators	10mL	19/22	0–10mL/0.5mL	**K570061-0519**	36.81
Slow-Dry* Concentrator Tubes					
570010-0250, 570035-0250, 570035-0500, 570035-0503, 569010-0219, 569010-0319, 569360-0000	10mL	19/22	0–1mL/0.1mL, 2–10mL/1mL	**K570071-1025**	48.17
569260-0324, 569250-0324	10mL	24/25	0–1mL/0.1mL, 2–10mL/1mL	**K570071-1026**	49.63
570040-0500, 570010-0250, 570040-0250, 570040-0503	15mL	19/22	0–1mL/0.1mL, 2–15mL/1mL	**K570071-1525**	50.49
569350-0000, 569250-0319, 570039-0050, 570000-0500, 570010-0500	25mL	19/22	0–1mL/0.1mL, 2–25mL/1mL	**K570071-2525**	52.01
569365-0000, 570035-1000, 569355-0000	25mL	24/25	0–1mL/0.1mL, 2–25mL/1mL	**K570051-2526**	46.64

Kontes* Concentrators with Graduated Tubes

Graduated concentrator tubes in hooked models (with formed hooks on glassware for attachment via supplied springs) and hookless versions (for attachment using the polyacetal clamps included).

- ₸ 19/22 joints
- Graduations from 0 to 1mL in 0.1mL divisions and from 2 to 10mL in 1mL divisions
- All have three-chamber column
- Flasks have ₸ 24/40 top, bottom taper to fit concentrator tube supplied
- Tube capacity, 10mL

INCLUDES:

250 or 500mL flask

K570035-0500

Flask Size	Cat. No.	Each
Hooked Models with Springs		
250mL	**K570025-0250**	178.93
500mL	**K570025-0500**	167.43
Hookless Models with Polyacetal Clamps†		
250mL	**K570035-0250**	178.93
500mL	**K570035-0500**	185.31

† Polyacetal clamps are recommended for safety.

WARNING

If solvent is allowed to escape, the entire assembly should be set up in a hood. Alternatively, a Solvent Recovery Apparatus may be added for use without a hood.

*Trademark. See Trademark Reference.

Prices subject to change.

CONDENSERS

ontes* Distilling Columns

sed with Kontes Evaporative Concentrators

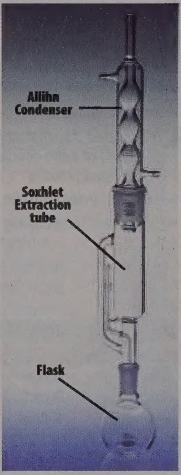
or Kontes Evaporative oncentrators	Special Features	₸ Joint	No. of Chambers	Cat. No.	Each
olumns with Hooks for Spring Attachment					
69000-0119	Improved Snyder type speeds evaporation, reduces holdup within column	19/22	1	**K569001-0119**	90.42
69000-0219		19/22	2	**K569001-0219**	105.78
69000-0319		19/22	3	**K569001-0319**	131.65
olumns without Hooks for Clamp Attachment					
70010	Snyder type, floating ball valves, 455mmH	24/40	6	**K503000-0122**	154.65
70025	Improved Snyder type, 200mmH	24/40	2	**K503100-0002**	99.70
70035	Improved Snyder type, 250mmH	24/40	3	**K503100-0003**	107.68
69010-0219	Improved Snyder type speeds evaporation, reduces holdup within column	19/22	2	**K569011-0219**	105.78
69010-0319		19/22	3	**K569011-0319**	131.65
69260-0319, 569360-000, 569810-0025	Designed to prevent flooding, yet retain residual material	19/22	3	**K569261-0319**	55.46
69010-0314	Improved Snyder type speeds evaporation, reduces holdup within column	14/20	3	**K569011-0314**	130.37

K503100-0003

yrex* Soxhlet Apparatus ith Allihn Condenser

omplete unit

- Consists of 09-557 Series Allihn condenser, 09-558 Series Soxhlet extraction tube, and flat-bottom boiling flask
- All connected by interchangeable ground joints
- Condenser has 10mm tubulation
- 09-557 Series Condensers are available online (09-557A, 09-557B, 09-557C, 09-557D)



09-556A

₸ Joint op of Tube	Approx. Height	Flask Capacity	Mfr. No.	Cat. No.	Each
4/45	655mm	125mL	3840 S	**09-556A**	278.21
5/50	711mm	250mL	3840 M	**09-556B**	310.31
5/50	803mm	500mL	3840 L	**09-556C**	348.95
1/60	880mm	1000mL	3840 XL	**09-556D**	612.43

xtraction tube only

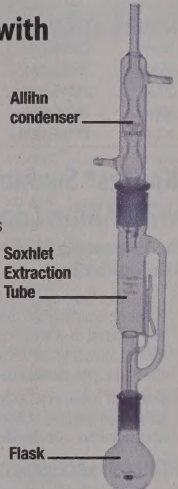
- Pyrex* Soxhlet, ₸ 24/40 joint at bottom
- Tube 09-558D has ₸ 29/42 joint at bottom

₸ Joint Top	Mfr. No.	Cat. No.	Each	Case of 2
4/45	3740 S	**09-558A**	194.56	277.77
5/50	3740 M	**09-558B**	236.59	337.69
5/50	3740 L	**09-558C**	266.57	380.45
1/60	3740 XL	**09-558D**	----	604.60

Kimax* Soxhlet Apparatus with Allihn Condenser

Designed from Fed. Spec. NNN-F-240

- Complete assembly includes 09-551-10 Series Allihn condenser, 09-553 Series Soxhlet extraction tube with ₸ 24/40 joint at bottom, 09-552 Series flask
- All connected by interchangeable ground joints
- Hose connections on condenser accept 5⁄16" I.D. (8mm) flexible tubing



09-551A

Complete unit

₸ Joint Top	For Paper Thimbles (Dia. × H)	Flask Capacity	Mfr. No.	Cat. No.	Each
34/45	25 × 80mm	125mL	24005 30	**09-551A**	268.37
45/50	33 × 80mm	250mL	24005 40	**09-551B**	287.92
55/50	43 × 123mm	500mL	24005 50	**09-551C**	324.17

Condenser Only

- Allihn condenser with bulbs
- Connect using interchangeable ground joints
- Hose connections on condenser accept 5⁄16" I.D. (8mm) flexible tubing

₸ Joint	Mfr. No.	Cat. No.	Each
34/45	24027 30	**09-551-10A**	114.57
45/50	24027 40	**09-551-10B**	127.07
55/50	24027 50	**09-551-10C**	150.20

Contd. on next page.

Kimax* Soxhlet Apparatus with Allihn Condenser, Contd.

Soxhlet Extraction Tube Only

- With $ 24/40 joint at bottom
- Connect by interchangeable ground joints

$ Joint Top	Mfr. No.	Cat. No.	Each
34/45	24071 30	**09-553A**	138.90
45/50	24071 40	**09-553B**	167.25
55/50	24071 50	**09-553C**	188.42

Flask Only

- Freestanding flasks with $ 24/40 joints
- Designed from ASTM* E 1403, Type I, Class 4 requirements

09-552C

Capacity	Mfr. No.	Approx. Height	Cat. No.	Each	Case of 12
125mL	25055 125	115mm	**09-552A**	30.18	264.36
250mL	25055 250	133mm	**09-552B**	29.88	261.72
300mL	25055 300	155mm	**09-552D**	45.42	397.92
500mL	25055 500	135mm	**09-552C**	33.26	291.36
1000mL	25055 1000	182mm	**09-552E**	35.86	314.16

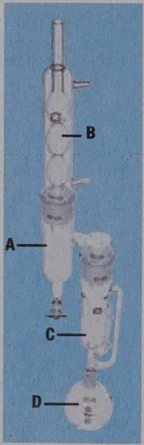
Kontes* Soxhlet/Dean-Stark Apparatus with Allihn Condenser

Avoid analyte loss and sample contamination

- Combines Soxhlet extraction and Dean-Stark azeotropic distillation into a single process for the removal of water, chlorinated dibenzo-p-dioxins (CDDs), and chlorinated dibenzofurans (CDFs) from the same wet particulate sample
- Does not require desiccation prior to Soxhlet extraction, so loss of analytes and sample contamination are avoided

REQUIRED ACCESSORIES:

Complete assembly requires Cat. No. K586500-0023 or -0233 fritted glass extraction thimble (order separately online).



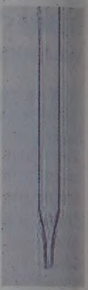
K585150-0023

Item	Cat. No.	Each
Complete Apparatus	**K585150-0023**	535.52
Component Parts		
Dean-Stark Receiver, $ 55/50 top and side, 35mL **(A in photo)**	**K585151-0035**	196.82
Allihn Condenser, $ 55/50 **(B)**	**K456000-0023**	135.99
Soxhlet Extractor, $ 55/50 top and $ 24/40 bottom **(C)**	**K586000-0023**	168.72
Round-bottom Flask, 500mL, $ 24/40 **(D)**	**K601000-0624**	25.51

Pyrex* Disposable Cleanup/Drying Columns

Reduce sample contamination risk and cleanup time

- Disposable, ready-to-use glass
- Designed for alumina, silica gel, and Florisil* cleanup of sample extracts or sodium sulfate sample drying



05-722-14

Capacity	Mfr. No.	Cat. No.	Case of
10mL	2142 10	**05-722-13**	200/114.06
25mL	2142 25	**05-722-14**	100/133.96
50mL	2142 50	**05-722-15**	50/117.21

SAMPLE HANDLING ACCESSORIES

Pyrex* Glass Extraction Thimbles

Resist attack by most chemicals

- Borosilicate glass
- With fritted disc of coarse (nominal max. pore size, 40-60µm) or extra-coarse (nominal max. pore size, 170-220µm) porosity
- Fit into standard Soxhlet extraction tubes
- Convenient for weighing extracted materials

09-653A

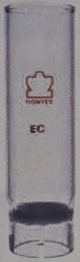
Body Diameter	Overall Height	Mfr. No.	Cat. No.	Each	Case of
Coarse Porosity					
25mm	85mm	33950 SC	**09-653A**	58.63	9/358.52
35mm	90mm	33950 MC	**09-653B**	64.43	6/267.41
45mm	130mm	33950 LC	**09-653C**	442.95	----
Extra-coarse Porosity					
45mm	130mm	33950 LEC	**09-653D**	64.54	----

*Trademark. See Trademark Reference.

Prices subject to change.

Kontes* Extraction Thimbles

- Glass construction
- Allows visual examination during extraction operation
- Supplied with either coarse (nominal max. pore size, (40-60µm) or extra-coarse (nominal max. pore size, 170-220µm) sealed-in glass fritted disc



K586500-0222

Capacity	Body Diameter	Overall Height	Cat. No.	Each
Coarse Porosity				
2.5mL	11mm	55mm	**K292100-0000**	34.33
25mL	25mm	85mm	**K586500-0211**	45.52
55mL	35mm	90mm	**K586500-0222**	48.21
150mL	45mm	130mm	**K586500-0233**	55.74
275mL	57mm	150mm	**K586500-0244**	70.97
850mL	90mm	175mm	**K586500-0255**	342.94
Extra-coarse Porosity				
25mL	25mm	85mm	**K586500-0021**	42.67
55mL	35mm	90mm	**K586500-0022**	45.52
150mL	45mm	130mm	**K586500-0023**	59.34
275mL	57mm	150mm	**K586500-0024**	70.97
850mL	90mm	175mm	**K586500-0025**	342.94

Saint-Gobain Alundum* Extraction Thimbles

Wash, ignite, and use repeatedly

- Used for all kinds of extractions except strong alkalis
- Alundum AN889 thimbles (Series 09-660) have medium porosity, retain particles approximately 5µm and larger
- Alundum AN485 thimbles (Series 09-661) have coarse porosity for faster extraction, less retentivity; retain particles approximately 20µm and larger
- 34 and 45mm diameter thimbles in each series have round bottoms; all other sizes have flat bottoms

09-660A

Diameter	Height	Mfr. No.	Cat. No.	Price
Alundum AN889 (medium porosity)				
22mm	80mm	AN889 7902	**09-660A**	Ea./59.81
25mm	70mm	5163 AN889	**09-660B**	Ea./64.88
30mm	80mm	AN889 5811	**09-660C**	Ea./51.77
34mm	100mm	AN889 6406	**09-660D**†	Ea./84.93
45mm	127mm	6945 AN889	**09-660E**†	Cs. of 6/449.23
Alundum AN485 (coarse porosity)				
22mm	80mm	7902 AN485	**09-661A**	Cs. of 12/473.45
25mm	70mm	5163 AN485	**09-661B**	Cs. of 12/493.77
30mm	80mm	AN485 5811	**09-661C**	Cs. of 12/534.02
34mm	100mm	AN485 6406	**09-661E**†	Ea./57.41
45mm	127mm	6945 AN485	**09-661F**†	Ea./80.39

†With round bottoms.

Whatman* Extraction Thimbles

For use in Soxhlet extraction units

Pure Cellulose Thimbles

- Made from pure cotton cellulose under controlled conditions
- For extraction of pesticides from environmental samples, fat analysis in the food industry and supercritical fluid extraction (SFE)
- Single-thickness thimbles have wall thickness of approximately 1mm
- Double-thickness thimbles have 2mm walls

Borosilicate Glass Thimbles

- For high-temperature extractions up to 550°C (1022°F)
- Also for using solvents incompatible with cellulose thimbles

Whatman Thimbles Assortment

I.D.	Height	Mfr. No.	Cat. No.	Pack of 25
Pure cellulose, 1mm single thickness				
10mm	50mm	2800-105	**20-653**	81.57
16mm	60mm	2800-166	**09-656S**	79.19
19mm	90mm	2800-199	**09-656K**	81.57
22mm	65mm	2800-226	**09-656A**	81.57
22mm	80mm	2800-228	**09-656B**	86.44
25mm	80mm	2800-258	**09-656C**	86.44
25mm	90mm	2800-259	**09-656M**	87.94
25mm	100mm	2800-250	**09-656L**	86.44
26mm	60mm	2800-266	**09-656D**	92.26
30mm	77mm	2800-307	**09-656E**	92.26
30mm	80mm	2800-308	**09-656P**	92.26
30mm	100mm	2800-300	**09-656N**	92.26
33mm	80mm	2800-338	**09-656F**	105.96
33mm	94mm	2800-339	**09-656G**	108.00
33mm	118mm	2800-331	**09-656Q**	105.96
43mm	123mm	2800-432	**09-656H**	142.63
60mm	180mm	2800-608	**09-656J**	183.65
Pure cellulose, 2mm double thickness				
16mm	60mm	2810-166	**09-657K**	114.59
22mm	80mm	2810-228	**09-657A**	113.11
25mm	80mm	2810-258	**09-657C**	113.11
26mm	60mm	2810-266	**09-657P**	122.12
33mm	80mm	2810-338	**09-657B**	149.88
33mm	94mm	2810-339	**09-657D**	149.88
43mm	123mm	2810-432	**09-657H**	196.08
Borosilicate glass				
19mm	90mm	2814-199	**09-657-1A**	142.49
30mm	100mm	2814-300	**09-657-1C**	142.49
43mm	123mm	2814-432	**09-657-1B**	269.86

New Brunswick BioFlo* 110 Fermentor/Bioreactor

Compact, flexible modular systems for fermentation and cell culture applications

Available as ready-to-use kits or as individual components. Can be assembled with desired features only, then expanded as application needs change.

Components

- **Primary Control Unit (PCU)**, an easy-to-use, 32-loop controller with a bright display, supports from one to four vessels and provides the interface for all control functions; readouts in English, French, German or Spanish
- **Power Controller** supports temperature and agitation control and has five controlled power outlets for optional pumps
- **Vessel Assemblies** are available either nonjacketed or water jacketed
- Choice of fermentation or cell-culture kits, preconfigured with the most commonly required components for growing cultures

Advanced Fermentation Kits

- **With nonjacketed vessel and heater blanket**
  - Include PCU, power controller, immersed cooling coil and one complete nonjacketed fermentation vessel assembly
  - Also includes components for foam, pH, and DO control
  - Accessories (most sold separately) include pH/DO controller; pH/DO probes; levels/foam controller; foam probe kit; four-pump module; 25' (7.6m) silicone tubing; triport adapter; septum kit; exhaust condenser; sterile sampling kit; nutrient addition tube; cooling water tubing; acid base and antifoam addition bottles; cables; and adapters
- **With water-jacketed vessel**
  - Include everything supplied in the nonjacketed vessel kit except nonjacketed vessel, heater blanket, cooling coil, and cooling water tubing
  - Also includes water-jacketed vessel with dished base and water-jacketed temperature controller

Basic Fermentation Kits

- Include PCU, power controller, immersed cooling coil, and one complete nonjacketed fermentation vessel assembly

Advanced Cell Culture Kits

- **With water-jacketed vessel**
  - Include all components as supplied in the nonjacketed vessel kit, except nonjacketed vessel, heater blanket, cooling coil, and cooling water tubing
  - Also include water-jacketed vessel and water-jacketed temperature controller
  - Available with 30–300rpm magnetic or direct-drive agitation systems

ORDERING INFORMATION:

Electrical requirements for all kits: 100 to 120V; individual components available separately online.

INCLUDES:

Various controllers, one vessel, probes, accessories (for details, see individual descriptions)

Water-jacketed vessel with heater and two additional reagent bottles with tubes.

Typical fermentor control stack (middle) includes (top to bottom) PCU, levels/foam controller, pH/DO controller, and power controller. Shown with water-jacketed vessel (left) and nonjacketed vessel (right).

Vessel Volume (Total)	Working Volume	Motor	Mfr. No.	Cat. No.	Each
Advanced Fermentation Kits with nonjacketed vessel and heater blanket					
1.3L	0.4 to 1L	N/A	M1273 1121	**14-285-604**	20,265.00
3L	0.8 to 2.2L	N/A	M1273 1122	**14-285-605**	20,390.00
7.5L	2 to 5.6L	N/A	M1273 1125	**14-285-606**	20,910.00
14L	4 to 10.5L	N/A	M1273 1130	**14-285-607**	22,275.00
Advanced Fermentation Kis with water-jacketed vessel					
3L	0.8 to 2.2L	N/A	M1273 1112	**14-285-609**	22,055.00
7.5L	2 to 5.6L	N/A	M1273 1115	**14-285-610**	22,570.00
14L	4 to 10.5L	N/A	M1273 1120	**14-285-611**	23,940.00
Basic Fermentation Kits					
1.3L	0.4 to 1L	N/A	M1273 1101	**14-285-600**	11,805.00
7.5L	2 to 5.6L	N/A	M1273 1105	**14-285-602**	12,295.00
14L	4 to 10.5L	N/A	M1273 1110	**14-285-603**	13,115.00
Advanced Cell Culture Kits with water-jacketed vessel					
1.3L	0.4 to 1L	Magnetic drive	M1273 1211	**14-285-624**	23,900.00
3L	0.8 to 2.2L	Magnetic drive	M1273 1212	**14-285-625**	24,015.00

Contd. on next page.

New Brunswick BioFlo* 110 Fermentor/Bioreactor, Contd.

ACCESSORIES

Controllers and Pump Module

Description	Mfr. No.	Cat. No.	Each
Power Controller	M1273-3100	**14-285-653**	2315.00
Levels/Foam Controller	M1273-3103	**14-285-654**	1255.00
Four-Gas Controller	M1273-3104	**14-285-655**	1415.00
Four-Pump Module	M1273-3106	**14-285-660**	1670.00

pH/DO Control Kits

For Vessel Volume (Total)	Mfr. No.	Cat. No.	Each
1.3L	M1273-9850	**14-285-656**	3690.00
3L	M1273-9851	**14-285-657**	3690.00
14.5L	M1273-9853	**14-285-659**	3690.00

BioFlo* 110 Fermentor Accessories and Replacement Parts

Description	For Vessel Volume	Mfr. No.	Cat. No.	Each
Foam Level Probe Kits include probe, cable, and headplate fitting	1.3L	M1273 9947	**14-285-665**	290.36
	3L	M1273 9951	**14-285-666**	290.36
	7.5 and 14L	M1273 9960	**14-285-667**	339.43
Exhaust Gas Condensers	1.3, 3, 7.5L	M1273 9945	**14-285-668**	668.00
	14L	M1273 9957	**14-285-669**	788.00
Triport Adapter	----	M1273 9961	**14-285-670**	218.82
Probe Adapter (compression, 12mm)	----	M1273 5040	**14-285-671**	146.55
Sterile Sampling Kits with removable glass vial, stainless-steel cap, tubing, filter, and 50mL syringe	3L	M1273 9949	**14-285-674**	654.00
	14L	M1273 9956	**14-285-676**	654.00
Angled Autoclave Rack	7.5 and 14L	M1273 9266	**14-285-678**	381.48
Water Filter/Regulator Kit	----	M1117 2040	**14-285-679**	669.00
Air Filter/Regulator Rack	----	M1230 3030	**14-285-680**	435.54

FILTRATION

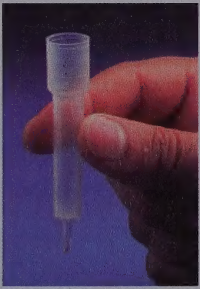
BOTTLE-TOP AND FILTER UNITS

*Fisherbrand** Disposable Filter Columns

Disposable polypropylene columns effectively filter out interfering materials from blood serum or urine

For SMA* Systems

- Save time and money
- Help eliminate inaccurate readings
- To use, just hold screening column over sample cup
- Decant directly through the column into sample cups—no pipetting
- Filters 200 to 300µm
- When filtration is complete, discard column
- Sample is ready for analysis
- Columns are graduated in 0.5mL divisions



11-387-50

For SMAC*, SMA Systems

- Serum filter column for final filtration directly into sample cups for Technicon* 6/60*, 12/60*, and SMAC analyzers
- Large flow channel and less capillarity let all the sample through
- Filters particles as small as 40 to 50µm
- Helps reduce line clogging

Cat. No.	Case of
11-387-50	1000/194.66

Millipore* Stericup* Sterile Vacuum Filter Units

No-tip design for improved stability during filtration—ideal for laminar flow hood use

From left to right: front, SCGP-U05-RE, SCVP-U02-RE, SCGP-U01-RE; back, SCGP-U11-RE, SCGP-U10-RE

- NEW — Stem Cell Tested 0.22µm pore size
- Gamma radiation sterilized
- Tapered flasks are easy to grip; with recessed bottom for easy stacking and storage of capped flasks
- Filter with 0.10µm membrane (SCVP U02 RE) is ideal for removing mycoplasma
- Small tab secures prefilter in place during filtration (order prefilters separately.)
- Millipore Express* Plus polyethersulfone (PES) for fast-flow, low protein binding sterilization of aqueous solutions
- Durapore polyvinylidene fluoride (PVDF) for lowest protein binding sterilization/clarification of biological solutions

ORDERING INFORMATION:

Filter diameter: 73mm.

INCLUDES:

Steritop* bottle-top filter unit with a graduated, polystyrene receiving flask for storing volumes of 150, 250, 500 and 1000mL.

Contd. on next page.

Millipore* Stericup* Sterile Vacuum Filter Units, Contd.

Pore Size	Membrane	Cat. No.	Pack of 12
150mL Funnel, 150mL Receiver			
0.22µm	PES	**SCGP U01 RE**	64.00
0.22µm	PVDF	**SCGV U01 RE**	60.00
0.45µm	PVDF	**SCHV U01 RE**	63.00
250mL Funnel, 250mL Receiver			
0.10µm	PES	**SCVP U02 RE**	95.00
0.22µm	PES	**SCGP U02 RE**	85.00
0.22µm	PVDF	**SCGV U02 RE**	78.00
0.45µm	PVDF	**SCHV U02 RE**	81.00
500mL Funnel, 500mL Receiver			
0.22µm	PES	**SCGP U05 RE**	135.00
0.22µm	PVDF	**SCGV U05 RE**	129.00
0.45µm	PVDF	**SCHV U05 RE**	132.00
500mL Funnel, 1000mL Receiver			
0.22µm	PES	**SCGP U10 RE**	190.00
0.22µm	PVDF	**SCGV U10 RE**	187.00
0.45µm	PVDF	**SCHV U10 RE**	187.00
1000mL Funnel, 1000mL Receiver			
0.10µm	PES	**SCVP U11 RE**	218.00
0.22µm	PES	**SCGP U11 RE**	190.00
0.22µm	PVDF	**SCGV U11 RE**	187.00
0.45µm	PVDF	**SCHV U11 RE**	187.00

ACCESSORIES

Replacement Receiver Flasks for Stericup* Filter Units

45mm neck with screw-top lid.

Size	Cat. No.	Pack of 12
250mL	**SC00 B02 RE**	36.22
500mL	**SC00 B05 RE**	45.27
1000mL	**SC00 B10 RE**	70.00

Millipore* Steritop* Sterile Vacuum Bottle-Top Filters

With large 73mm diameter filter for faster filtration

SCGV-T10-RE, SCGP-S01-RE, -S02-RE

- NEW — Stem Cell Tested 0.22µm pore size
- Graduated polystyrene funnels available in 150, 250, 500 and 1000mL capacities to fit 33 and 45mm glass bottle neck sizes
- Recessed funnel threads maintain sterility
- Gamma radiation sterilized
- Without receiver bottles
- Millipore Express* Plus polyethersulfone (PES) membrane for fast flow and low protein binding (0.1µm PES membrane is also useful for removing mycoplasma)
- Durapore* polyvinylidene fluoride (PVDF) membrane for lowest protein binding

Pore Size	Membrane	For Neck Size	Cat. No.	Pack of 12
With 150mL Funnel				
0.22µm	PES	33mm	**SCGP S01 RE**	59.00
0.22µm	PES	45mm	**SCGP T01 RE**	59.00
0.22µm	PVDF	33mm	**SCGV S01 RE**	56.00
With 250mL Funnel				
0.22µm	PES	33mm	**SCGP S02 RE**	71.00
0.22µm	PES	45mm	**SCGP T02 RE**	71.00
0.22µm	PVDF	33mm	**SCGV S02 RE**	70.00
With 500mL Funnel				
0.22µm	PES	33mm	**SCGP S05 RE**	83.00
0.22µm	PES	45mm	**SCGP T05 RE**	83.00
0.22µm	PVDF	33mm	**SCGV S05 RE**	77.00
0.22µm	PVDF	45mm	**SCGV T05 RE**	77.00
With 1000mL Funnel				
0.22µm	PVDF	45mm	**SCGV T10 RE**	126.00

Millipore* Steriflip* Sterile Disposable Vacuum Filter Units

Performance and convenience all in one

SCGP 005 25

Attach the Steriflip unit to a 50mL centrifuge tube containing the sample, flip it over, apply vacuum, then collect filtrate in the supplied 50mL centrifuge (filtrate) tube.

- Gamma radiation sterilized
- Choose from PES, PVDF, or nylon membranes with a variety of pore sizes
- Millipore Express* polyethersulfone (PES) membrane provides fast flow and low protein binding
- Durapore* (PVDF) membrane, with very low protein binding, is used for filtration of buffers with DMSO, and retrovirus filtration
- Nylon net filter is used for cell suspension and cell separation
- Use the 0.1 or 0.22µm membranes to sterilize tissue culture media, microbiological media, and other biological solutions

ORDERING INFORMATION:

Filter diameter: 40mm

INCLUDES:

Filter, graduated 50mL centrifuge tube, tube cap, and stand

Pore Size	Membrane Material	Cat. No.	Pack of 25
0.1µm	PES	**SE1M 005 M00**	135.00
0.22µm	PES	**SCGP 005 25**	123.00
0.22µm	PVDF	**SE1M 179 M6**	133.00
0.45µm	PVDF	**SE1M 003 M00**	130.00
100µm	Nylon	**SE1M 002 M8**	139.00

Millipore* Stericap* Sterile Bottle-Top Filter Unit

Dual-mode (vacuum/pressure) unit can filter up to 2000mL into your receiver bottle or flask

Disposable system sterilizes hard-to-filter tissue culture media and other biological solutions into any type of container.

- Easy to set up and convenient to use
- Compact design saves storage space
- Uses Millipore Express* polyethersulfone (PES) 0.22µm membrane for fast flow and low protein binding
- Gamma radiation-sterilized

SVGP V10 24

- Inlet: female Luer-Lok* with upstream vent
- Universal bottle-top outlet fits all bottles; held by suction
- Can be used with peristaltic pump or vacuum source
- Membrane is housed in Eastar* polyester; universal adapter/base is ABS plastic; vacuum port adapter is polyethylene

ORDERING INFORMATION:

Filter is a 10cm² rectangle.

INCLUDES:

24 individually wrapped sterile filter units and two tube sets.

Pore Size	Membrane	Cat. No.	Pack of 24
0.22µm	PES	**SVGP V10 24**	182.68

Millipore* Stericap* PLUS Sterile Bottle-Top Filter Device

For ultrafast, aseptic sterilization of 5 to 10L using vacuum filtration

SCGP CAP RE

Millipore Express* PLUS polyethersulfone (PES) membrane is fast flowing, high throughput and low protein binding.

- Noncytotoxic, nonpyrogenic
- Provides fast filtration of even viscous solutions without the need for a prefilter
- Fits wide range of containers
- Can be used to fill any vacuum-rated bottle or other container with inner neck diameter of 20 to 67mm
- Fluid is drawn directly from feed container, eliminating need to keep pouring into a funnel
- Fluid is filtered directly into desired container, eliminating transfer steps and minimizing risk of contamination
- Compact design saves lab space

APPLICATIONS: Ideal for sterilization of tissue culture media, serum, buffers, or other biological solutions.

Pore Size	Membrane	Cat. No.	Pack of 10
0.22µm	PES	**SCGP CAP RE**	133.50

SPECIFICATIONS

Filtration Capacity	5-10L (of typical cell culture media)
Filtration Area	40cm²
Sterilization	Gamma irradiated
Storage Temperature	-30 to +45°C (-22 to +113°F)
Max. Operating Vacuum	25" Hg
Membrane	Millipore Express PLUS, polyethersulfone, 0.22µm
Materials	Dome: clear styrene Tube: silicone Vacuum adapter: high-density polyethylene

ACCESSORIES

Replacement Receiver Flasks. 45mm neck with screw-top lid.

Description	Cat. No.	Pack of
1L Sterile Receiver Flask	**SC00 B10 RE**	12/70.00

Millipore* Sterifil* 47mm Aseptic Vacuum Filter System and Holder

Closed unit for particulate or biological contamination analysis

- Protects sample and filtrate from environmental contamination
- Capacity: 250mL (funnel and receiver flask)
- Holder and funnel available separately (without receiver flask and cover) to use with standard 1L vacuum filtering flask or multiple-place manifold
- Polysulfone funnel, funnel cover, receiver flask and cover
- Polypropylene holder base and filter support screen
- Silicone stopper and O-ring

XX11 047 00

Description	Cat. No.	Each
Sterifil Aseptic System	**XX11 047 00**	85.43

ACCESSORIES

Replacement Parts

Description	Cat. No.	Price
Holder, 47mm	**XX11 047 10**	Ea./56.00
Funnel, 250mL	**XX11 047 04**	Ea./16.00
Receiver flask, 250mL	**XX11 047 05**	Ea./22.00
47mm Filter O-rings	**XX11 047 07**	Pk. of 10/30.18

Millipore* Sterivex* Sterile Pressure-Driven Devices

Sterile filtration and clarification of solutions with volumes of 100 to 2000mL

Minimize contamination risk to filtered solution by direct-dispensing design.

- Driven by syringe, peristaltic pump, or pressure vessel
- Self-venting prevents air locking that slows filtration
- Ready-to-use units filter solutions with volumes 100 to 2000mL
- Housings made of Eastar* co-polyester
- Units are 100% integrity tested, individually packaged, and radiation sterilized
- With female Luer-Lok* inlet and male nipple, male Luer-Lok, or filling bell outlet
- **Millipore Express* PES (polyethersulfone) membrane**—for fast flow, low protein binding sterilization of aqueous solutions
- **Durapore* PVDF membrane**—for lowest protein binding sterilization/clarification of biological solutions
- **MF-Millipore* MCE (mixed cellulose) membrane**—for sterilization/clarification of water, buffers, and salt solutions

SVGP-B10-10

Pore Size	Fitting Outlet	Cat. No.	Pack of
PES membrane			
0.22µm	Filling bell	**SVGP B10 10**	10/60.00
	Male nipple	**SVGP 010 15**	15/80.00
	Male nipple	**SVGP 010 50**	50/177.00
	Male Luer-Lok	**SVGP L10 RC**	15/93.00
PVDF membrane			
0.22µm	Filling bell	**SVGV B10 10**	10/60.00
	Male nipple	**SVGV 010 15**	15/80.00
	Male nipple	**SVGV 010 RS**	50/177.00
	Male Luer-Lok	**SVGV L10 RC**	15/93.00
0.45µm	Filling bell	**SVHV B10 10**	10/60.00
	Male nipple	**SVHV 010 15**	15/80.00
	Male nipple	**SVHV 010 RS**	50/177.00
	Male Luer-Lok	**SVHV L10 RC**	15/93.00
MCE membrane			
0.22µm	Filling bell	**SVGS B10 10**	10/58.00
	Male nipple	**SVGS 010 RS**	50/177.00

TYPICAL CHARACTERISTICS

Volume	100–2000mL
Effective Filtration Area	10cm²
Filter Hold-up Volume (after Air Purge)	≤200µL
Pressure Limit	45psi
Temperature Limit	45°C (113°F)

Millipore* Millex*-GP 50mm Sterile Filter Unit

Fast filtration with low protein binding

Filter up to 4L of tissue culture media and additives, protein solutions, virus suspensions, DNA and other aqueous solutions.

- Pore size: 0.22µm
- Effective filtration area of 19.6cm²
- Hold-up volume after air purge ≤1000µL
- Pressure limit is 3.5 bar (50psi) and temperature limit is 45°C (113°F)
- Pyrogenicity ≤0.5EU/mL
- Millipore Express* PLUS PES (surface-modified polyethersulfone) membrane filters quickly and reliably with low protein binding

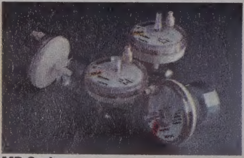
Outlet Type	Cat. No.	Pack of 10
Filling bell	**SLGP B50 10**	122.46
Stepped hose barb with female Luer slip interior	**SLGP 050 10**	99.50

SLGP 050 10

Millipore* Millipak* Disposable Filter Units

Pump-driven filter units designed for the removal of particles and microorganisms from liquids and gases

Unique, stacked-disc design allows minimal hold-up volume and eliminates the particle-generating, woven, downstream support found in pleated cartridges.


MP Series

- Sterile filtration of parenterals, diagnostics, buffers, media, and biologicals
- Point-of-use filter for high-purity water
- Ideally suited for high value-added applications
- Durapore* PVDF membranes provide high flowrates and throughputs, low extractables, broad chemical compatibility, and the lowest protein binding of any membrane available
- Three different stack sizes allow optimum flexibility for easy scale-up and system sizing
- Presterilized units are gamma irradiated
- Autoclavable up to three times
- Each unit is labeled with catalog number, lot number, pore size and serial number
- 100% integrity tested to guarantee integrity

Filter	**Millipak**
Medium	Durapore PVDF
Applications	Removal of particles and microorganisms from liquids and gases
Filter Area	100, 200, and 300cm²
Pore Size	0.1, 0.22, and 0.45µm
Housing	Polycarbonate
Max. Inlet Pressure	5.2 bar (75psig) at 25°C
Max. Differential Pressure	Forward: 4.1 bar (60psid) at 25°C; 1.7 (25) at 80°C; 0.35 (5) at 123°C. Reverse: 0.7 bar (10psid) at 25°C.
Bacterial Retention (0.1, 0.22µm)	Quantitative retention of *Brevundimonas diminuta* (ATCC* 19146) following ASTM* F838-83 methodology at a minimum challenge level of 10^7 CFU/cm²

Contd. on next page.

Millipore* Millipak* Disposable Filter Units, Contd.

Pore Size	Filter Area	Connections	Cat. No.	Pack of
Millipak 20, Presterilized				
0.1µm	100cm²	¼" stepped hose barb inlet and outlet with bell	**MPVL 02G H2**	2/83.00
0.22µm	100cm²	¼" stepped hose barb inlet and outlet with bell	**MPGL 02G H2**	2/76.00
0.22µm	100cm²	¾" sanitary flange inlet and outlet	**MPGL 02G F2**	2/71.00
0.45µm	100cm²	¾" sanitary flange inlet and outlet	**MPHL 02G F2**	2/71.00
0.45µm	100cm²	¼" stepped hose barb inlet and outlet with bell	**MPHL 02G H2**	2/76.00
Millipak 40, Presterilized				
0.1µm	200cm²	¼" stepped hose barb inlet and outlet with bell	**MPVL 04G H2**	2/107.00
0.22µm	200cm²	¼" stepped hose barb inlet and outlet with bell	**MPGL 04G H2**	2/100.00
0.22µm	200cm²	¾" sanitary flange inlet and outlet	**MPGL 04G F2**	2/98.00
0.45µm	200cm²	¾" sanitary flange inlet and outlet	**MPHL 04G F2**	2/92.00
0.45µm	200cm²	¼" stepped hose barb inlet and outlet with bell	**MPHL 04G H2**	2/95.00
Millipak 60, Presterilized				
0.1µm	300cm²	¼" stepped hose barb inlet and outlet with bell	**MPVL 06G H2**	2/124.00
0.22µm	300cm²	¼" stepped hose barb inlet and outlet with bell	**MPGL 06G H2**	2/116.00
0.22µm	300cm²	¾" sanitary flange inlet and outlet	**MPGL 06G F2**	2/113.00
0.45µm	300cm²	¼" stepped hose barb inlet and outlet with bell	**MPHL 06G H2**	2/112.00
0.45µm	300cm²	¾" sanitary flange inlet and outlet	**MPHL 06G F2**	2/110.00
Millipak 60, Nonsterile				
0.22µm	300cm²	¼" NPTM inlet; ¼" stepped hose barb outlet	**MPGL 06C B1**	1/51.00
0.22µm	300cm²	1½" sanitary flange inlet; ¼" stepped hose barb outlet	**MPGL 06C L1**	1/51.00
5.0µm, nominal	300cm²	¼" NPTM inlet; ¼" stepped hose barb outlet	**MPSL 06C B1**	1/44.00
5.0µm, nominal	300cm²	1½" sanitary flange inlet; ¼" stepped hose barb outlet	**MPSL 06C L1**	1/44.00

Millipore* Sterivac* Sterile Vacuum-Driven Filter Units

Fast flow without protein loss

Filter up to 20L of tissue culture media, additives or other aqueous solutions directly into receiver flasks at rates as high as 1.6L/min. without loss of protein.

SKVP-M20-RJ

- Start/stop filtration valve for easy bottle transfers
- Vent valve prevents air locking
- Universal cap fits all bottle sizes
- High speed and throughput into any vacuum-rated receiver flask
- Millipore Express* PES membranes feature high flow, low protein binding
- Pyrogenicity ≤0.5EU/mL
- Filtration areas: 83cm² (10L unit) and 166cm² (20L unit)
- Polyethylene housing
- Inlet is ¼" tube adapter for vacuum, sample feed
- Operable over temperature range of 4° to 50°C (39° to 122°F)
- Sterilized by gamma radiation

Volume	Pore Size	Cat. No.	Pack of 5
<15L	0.10µm	**SKVP M20 RJ**	231.00
<10L	0.22µm	**SKGP M10 RJ**	162.00
<20L	0.22µm	**SKGP M20 RJ**	208.00

Millipore* Steripak*-GP Sterile Filter Unit

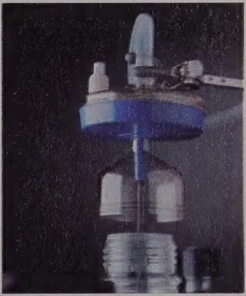
Fast flow and high throughput

Disposable bottle-top filter units designed for larger-scale, pressure-driven filtration of tissue culture media with or without serum.

- Easily connect to vacuum pump or pressure vessel
- Utilize low protein binding, fast-flow Millipore Express* polyethersulfone (PES) membranes
- Filter up to 20L
- Sterile

INCLUDES:

6mm (¼") stepped hose barb inlet, 6mm (¼") stepped hose barb outlet and filling bell.



SPGP M10 RJ

Volume	Pore Size	Cat. No.	Pack of 3
<10L	0.22µm	**SPGP M10 RJ**	96.00
<20L	0.22µm	**SPGP M20 RJ**	135.00

Corning* Disposable Sterile Filter Systems

Secure handling, easy-grip sides, stable profile minimize risk of tipping

09-761 Series

The receiver easily unscrews from unit, and can be sealed with a plug cap (supplied sterile and individually packaged) for filtrate storage.

- Radiation sterilized and certified nonpyrogenic
- Angled hose connector simplifies vacuum line attachment
- Receiver bottles feature easy-grip sides for improved handling
- Units are color coded by membrane type and labeled with both membrane material and pore size
- All membrane types are tissue culture compatible, and heat-sealed to the support grid to maximize flowrate, and reduce foaming and protein denaturization
- NYL, CN and PES membranes are detergent-free
- Ideal for filtration of tissue culture media and components, biological fluids, other solutions
- Models with 150 or 250mL funnel contain 50mm diameter filters; 500mL funnel contains 70mm filters; 1000mL funnel contains 90mm filters

Membrane Types

- Cellulose acetate (CA)—For low protein binding
- Nylon (NYL)—For low extractables
- Cellulose nitrate (CN)—For general-purpose filtration
- Polyethersulfone (PES)—For fast flowrates and low protein binding

INCLUDES:

Membrane filter, graduated funnel and receiver of clear polystyrene; polyethylene neck adapter

NOTE:

Not for parenteral use.

Pore Size	Membrane	Mfr. No.	Cat. No.	Case of 12
150mL Funnel, 150mL Receiver				
0.22µm	CA	431154	**09-761-119**	72.89
0.22µm	PES	431153	**09-761-118**	70.77
0.45µm	CA	431155	**09-761-120**	72.89
250mL Funnel, 250mL Receiver				
0.20µm	NYL	430771	**09-761-2**	82.80
0.22µm	CA	430767	**09-761-1**	79.08
0.22µm	CN	430756	**09-761-100**	76.60
0.22µm	PES	431096	**09-761-106**	79.18
0.45µm	CA	430768	**09-761-3**	79.08
500mL Funnel, 500mL Receiver				
0.20µm	NYL	430773	**09-761-8**	142.11
0.22µm	CA	430769	**09-761-5**	134.69
0.22µm	CN	430758	**09-761-102**	133.45
0.22µm	PES	431097	**09-761-107**	130.77
0.45µm	CA	430770	**09-761-7**	134.69
500mL Funnel, 1000mL Receiver				
0.22µm	CA	431205	**09-761-141**	178.50
0.45µm	CA	431206	**09-761-142**	178.50
1000mL Funnel, 1000mL Receiver				
0.20µm	NYL	430515	**09-761-42**	208.84
0.22µm	CA	430517	**09-761-40**	198.94
0.22µm	CN	430186	**09-761-104**	196.46
0.22µm	PES	431098	**09-761-108**	194.34
0.45µm	CA	430516	**09-761-41**	198.94

Corning* Disposable Sterile Bottle-Top Filters

Vacuum filtration units fit standard threaded bottle tops

09-761 Series Funnels

Designed for use on glass or polystyrene media bottles.

- Attach to most popular 33 and 45mm diameter bottles with standard GPI threads
- Systems are individually packaged, gamma radiation sterilized and certified nonpyrogenic
- Color coded by membrane type and labeled as to both membrane material and pore size
- Choice of membrane media: Cellulose acetate (CA) for low protein binding; Nylon (NYL) for low extractables; or polyethersulfone (PES) for fast flowrates and low protein binding
- Tissue culture compatible
- Heat-sealed to the support grid to maximize flowrate and reduce foaming and protein denaturization

APPLICATIONS:

Ideal for filtration of tissue culture media and components, biological fluids, other solutions.

ORDERING INFORMATION:

Units with 150mL funnels contain 50mm diameter filters; 500mL funnels contain 70mm filters; 1000mL funnels contain 90mm filters.

INCLUDES:

Membrane filter, graduated funnel of clear polystyrene with polyethylene neck adapter, and tubing adapter that fits most vacuum hoses

NOTE:

Not for parenteral use.

Pore Size	Membrane	Thread Size	Mfr. No.	Cat. No.	Case of
150mL Funnel					
0.22µm	CA	33mm	430624	**09-761-49**	48/228.79
0.22µm	CA	45mm	430626	**09-761-56**	48/228.79
0.22µm	PES	33mm	431160	**09-761-125**	48/223.31
0.22µm	PES	45mm	431161	**09-761-126**	48/223.31
0.45µm	CA	33mm	430625	**09-761-55**	48/228.79
0.45µm	CA	45mm	430627	**09-761-57**	48/228.79
500mL Funnel					
0.20µm	NYL	45mm	430049	**09-761-147**	12/91.75
0.22µm	CA	33mm	430521	**09-761-50**	12/81.97
0.22µm	CA	45mm	430513	**09-761-52**	12/81.97
0.22µm	PES	33mm	431117	**09-761-111**	12/79.58
0.22µm	PES	45mm	431118	**09-761-112**	12/79.58
0.45µm	CA	33mm	430512	**09-761-51**	12/81.97
0.45µm	CA	45mm	430514	**09-761-53**	12/81.97
1000mL Funnel					
0.22µm	CA	45mm	430015	**09-761-38**	12/132.14
0.22µm	PES	45mm	431174	**09-761-139**	12/128.29

*Trademark. See Trademark Reference.

Corning* Disposable Sterile Bottles

Use as replacement receivers for Corning Disposable Sterile Filter Systems or as storage bottles

- Durable polystyrene bottles
- Neck size: 45mm
- Easy-to-read graduations
- With sterile caps
- Can also be used as receivers for Corning Disposable Bottle-top Filters

09-761-4, -140, -11, -10

Capacity	Grad. Range/Interval	Mfr. No.	Cat. No.	Case of 24
150mL	25 to 150mL/25mL	431175	**09-761-140**	63.31
250mL	50 to 250mL/25mL	430281	**09-761-4**	65.80
500mL	100 to 500mL/50mL	430282	**09-761-10**	92.41
1000mL	100 to 1000mL/50mL	430518	**09-761-11**	130.40

Costar* Disposable Sterile Storage Bottles

Ideal for storing media, buffers, and other aqueous solutions

Medical-grade polystyrene bottles available in 125, 250, 500, and 1000mL volumes.

- With 45mm neck
- Nonpyrogenic
- Individually wrapped with phenolic cap

07-200-420, -450, -446, -448

Capacity	Mfr. No.	Cat. No.	Case of
125mL	8388	**07-200-420**	24/65.31
250mL	8390	**07-200-446**	12/41.82
500mL	8393	**07-200-448**	12/48.33
1000mL	8396	**07-200-450**	12/67.93

ACCESSORIES

Corning* Fiberglass Prefilters

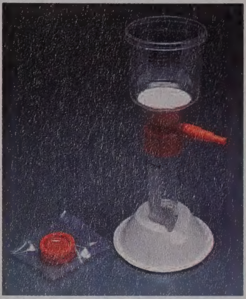
For use in Corning* bottle top and vacuum filtration systems.

For	Diameter	Cat. No.	Pack of
150 and 250mL filter funnels	50mm	**07-200-862**	96/54.87
500mL filter funnels	70mm	**07-200-861**	96/64.75
1000mL filter funnels	90mm	**07-200-860**	96/82.31

Corning* Mini-Miser Sterile Filter-Top Tube

Viewing slot in base lets you measure volumes as small as 5mL

Saves time and minimizes costs and error by letting you filter samples directly into a centrifuge tube.



09-761-34

- 150mL Funnel with filter membrane attached to a 50mL centrifuge tube
- Eliminates open-air liquid transfer step and extra storage vessels
- Smaller volumes mean less media waste
- Funnel is made of clear polystyrene
- Centrifuge tube is polypropylene, with easy-to-read graduations
- Filter membranes are low protein binding cellulose acetate
- Side arm tubulation fitting permits use with differential pressure of 5 to 10psi

INCLUDES:

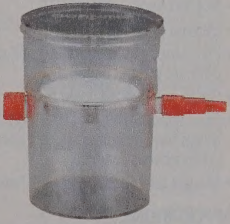
Sterile plug-seal cap to maintain sterility after filtering and two reusable stands with each case, to keep the tube stable and minimize mess.

Pore Size	Mfr. No.	Cat. No.	Case of 12
0.22µm	430320	**09-761-34**	63.28
0.45µm	430314	**09-761-35**	63.28

Corning* Disposable 115mL Sterile Vacuum Filter Unit

Features low center of gravity and wide base for stability

- No-mess pour spout saves time and makes sample transfer easier
- Eliminates need to detach tubing to empty filtered media, decreasing chance of sample contamination
- Porosity is clearly labeled on each unit
- Certified nonpyrogenic
- Cellulose acetate (CA) membrane for low protein binding
- Available in 0.22 (for sterilizing) or 0.45µm (for clarifying) pore sizes



09-761-94B

INCLUDES:

60mm diameter membrane

Pore Size	Membrane	Mfr. No.	Cat. No.	Case of 24
0.22µm	CA	430944	**09-761-94B**	129.04
0.45µm	CA	430945	**09-761-95B**	129.04

Nalgene* 50mL Sterile Conical Tube Filter Unit

Offers fast flowrate and low protein binding

Conical tube filter unit with Pall* Supor* machV PES membrane. Excellent choice for small-volume tissue culture work. Perfect for fast, clean, convenient filtration of 20 to 50mL of media or buffers.

- Fast flowrate membrane
- Low protein binding
- Noncytotoxic, nonpyrogenic
- Radiation sterilized
- Unit comes assembled with sterile closure

INCLUDES:
Two reusable stands

CERTIFICATIONS:
Nalgene certified.

NEW

09-741-88

Pore Size	Mfr. No.	Cat. No.	Case of
0.2µm	564-0020	**09-741-88**	12/60.20

Nalgene* MF75* Series Disposable Sterilization Filter Units

Triton*-free membranes to avoid cytotoxic effects, allow excellent flowrates

Graduated upper chamber with nonfiber-plugged side arm and quick-disconnect tubing adapter separate from graduated receiver for easy access to filtrate.

- White 50 and 75mm diameter cellulose nitrate (CN) membranes
- CN general-purpose membrane
- Ergonomic shape
- All-in-one filter
- 75mm diameter membranes yield faster flows
- Top and bottom chambers made of clear polystyrene
- Nonpyrogenic
- Gamma radiation sterilized
- Pore size, membrane type, catalog number, lot number and expiration date are printed on units
- Green color-coded collar (except 115mL sizes)
- Filter units 09-740, 09-740-5, and -10 feature a porous support plate; all others have a padless support plate to minimize foaming of proteinaceous solutions
- Models 09-740-36K and -36L have low-profile design for extra stability

09-740-1A

APPLICATIONS:
Ideal for vacuum filtration and single-use biological work requiring sterile filtration, prefiltration or clarification of aqueous solutions in the lab or field.

ORDERING INFORMATION:
Individually wrapped. Side arm is on receiver of 115mL size. All units have a five-year sterile shelf life.

INCLUDES:
50 or 75mm diameter membrane, polyethylene adapter, and quick-disconnect tubing adapter. Each pack of 500 and 1000mL units includes 12 glass fiber prefilters. All sizes except 115mL supplied with sterile polyethylene leakproof closure that lets you use the receiver for filtrate storage (See definition of "leakproof" on next page).

Membrane					
Pore Size	**Type**	**Mfr. No.**	**Cat. No.**	**Pack of 12**	**Case of 6**
115mL capacity with 50mm dia. membrane					
0.2µm	Plain	121-0020	**09-740-36K†, ‡**	93.63	374.50
0.2µm	Plain	120-0020	**09-740†**	104.26	417.00
0.45µm	Green Grid	121-0045	**09-740-36L†, ‡**	93.63	374.50
0.45µm	Green Grid	245-0045	**09-740-5†**	104.26	417.00
0.8µm	Black Grid	380-0080	**09-740-10†**	104.31	417.25
150mL capacity with 50mm dia. membrane					
0.2µm	Plain	125-0020	**09-740-1A**	74.90	----
0.45µm	Green Grid	125-0045	**09-740-1B**	74.90	----
0.8µm	Black Grid	125-0080	**09-740-1C**	74.90	----
250mL capacity with 50mm dia. membrane					
0.2µm	Plain	126-0020	**09-740-2A**	83.11	----
0.45µm	Green Grid	126-0045	**09-740-2B**	83.11	----
0.8µm	Black Grid	126-0080	**09-740-2C**	83.11	----
500mL capacity with 75mm dia. membrane					
0.2µm	Plain	450-0020	**09-740-25A**	136.25	----
0.45µm	Green Grid	450-0045	**09-740-25B**	136.25	----
0.8µm	Black Grid	450-0080	**09-740-25AA**	136.25	----
1000mL capacity with 75mm dia. membrane					
0.2µm	Plain	127-0020	**09-740-3A**	184.25	----
0.45µm	Green Grid	127-0045	**09-740-3B**	184.25	----
0.8µm	Black Grid	127-0080	**09-740-3C**	184.25	----

† Membrane support plate is green on 09-740, 09-740-5 and -10; clear on 09-740-36K and -36L
‡ 09-740-36K and -36L have low-profile design to impede tip-over.

Nalgene* MF75* Series Sterile Disposable Tissue Culture Filter Units

All-in-one units specially designed for cell tissue culture work

09-740-32

- Filters are available in three different membranes, each in 50, 75 and 90mm sizes
- Upper chamber separates from receiver for easy access to filtrate
- 1½-turn sterile polyethylene leakproof[†] screw closure eliminates pH shift in receiver
- Receiver is an ideal filtrate storage vessel
- Upper chamber of filter units is clearly marked with pore size, membrane type, catalog number, lot number and expiration date (except 115mL size)
- Padless membrane support minimizes foaming of proteinaceous samples
- Nonpyrogenic
- Units are color coded: with PES membrane, blue; with SFCA membrane, yellow; with nylon membrane, red
- Gamma radiation sterilized
- Individually wrapped for a five-year sterile shelf life

Polyethersulfone (PES) Membrane

- Offers fast flowrate and lowest protein binding
- Naturally hydrophilic
- Low extractables and better chemical resistance than acetate or nitrate membranes
- 0.2µm units feature the new Supor* mach V (aPES) membranes

Surfactant-free Cellulose Acetate (SFCA) Membrane

- Offers low protein binding
- Has no wetting agents that might affect sensitive cell culture lines
- Cleaner than an ordinary CA membrane for tissue culture use

Nylon (NYL) Membrane

- Low extractables and naturally hydrophilic
- Contains no wetting agents and is alcohol resistant

115mL Sizes

- Graduated upper chamber only (no collar)
- Expiration date printed in the color code on the side of each unit
- Padless membrane supports not included

INCLUDES:

Polystyrene cover; graduated upper chamber and receiver (except 115mL size); integral membrane filter; cellulosic-plugged side arm; quick-disconnect tubing adapter; color-coded collar. Each case of 500 and 1000mL units includes 12 glass fiber prefilters.

Pore Size	Membrane	Mfr. No.	Cat. No.	Case of
115mL capacity, 50mm membrane				
0.2µm	aPES	524-0020	**09-741-00**	72/337.00
0.2µm	SFCA	122-0020	**09-740-36M**	12/93.62
0.45µm	PES	124-0045	**09-740-65B**	12/84.25
0.45µm	SFCA	122-0045	**09-740-36N**	12/93.62
150mL capacity, 50mm membrane				
0.2µm	aPES	565-0020	**09-741-01**	12/62.40
0.2µm	SFCA	155-0020	**09-740-28E**	12/74.90
0.2µm	NYL	150-0020	**09-740-31F**	12/87.40
0.45µm	PES	165-0045	**09-740-63A**	12/62.40
0.45µm	SFCA	155-0045	**09-740-28F**	12/74.90
0.45µm	NYL	150-0045	**09-740-31G**	12/87.40
250mL capacity, 50mm membrane				
0.2µm	aPES	568-0020	**09-741-04**	12/81.20
0.2µm	SFCA	157-0020	**09-740-39A**	12/82.26
0.2µm	NYL	153-0020	**09-740-24A**	12/99.90
0.45µm	PES	168-0045	**09-740-63D**	12/81.65
0.45µm	SFCA	157-0045	**09-740-39B**	12/82.26
0.45µm	NYL	153-0045	**09-740-24B**	12/99.90
500mL capacity, 75mm membrane				
0.2µm	aPES	566-0020	**09-741-02**	12/136.25
0.2µm	SFCA	156-4020	**09-740-28C**	12/136.25
0.2µm	NYL	151-4020	**09-740-32**	12/156.00
0.45µm	PES	166-0045	**09-740-63B**	12/136.25
0.45µm	SFCA	156-4045	**09-740-28D**	12/136.25
0.45µm	NYL	151-4045	**09-740-32B**	12/156.00
500mL capacity, 90mm membrane				
0.2µm	aPES	569-0020	**09-741-05**	12/147.35
0.2µm	SFCA	162-0020	**09-740-44A**	12/165.50
0.2µm	NYL	163-0020	**09-740-45**	12/200.75
0.45µm	PES	169-0045	**09-740-63E**	12/154.41
0.45µm	SFCA	162-0045	**09-740-44B**	12/165.50
1000mL capacity, 75mm membrane				
0.2µm	SFCA	158-0020	**09-740-40A**[‡]	12/184.25
0.2µm	NYL	154-0020	**09-740-26A**[‡]	12/190.50
0.45µm	SFCA	158-0045	**09-740-40B**[‡]	12/184.25
0.45µm	NYL	154-0045	**09-740-26B**[‡]	12/190.50
1000mL capacity, 90mm membrane				
0.2µm	aPES	567-0020	**09-741-03**	12/184.25
0.2µm	SFCA	161-0020	**09-740-43A**	12/201.75
0.2µm	NYL	164-0020	**09-740-46**	12/231.25
0.45µm	PES	167-0045	**09-740-63C**	12/188.37
0.45µm	SFCA	161-0045	**09-740-43B**	12/201.75

[†] *Except 115mL sizes. For definition of "leakproof," see below*

[‡] *Upper chamber capacity, 500mL*

[†] Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

Nalgene* MF75* Series Sterile Disposable Bottle-Top Filters

Presterilized, disposable tissue culture filters

Fit standard media bottles; allow vacuum filtration directly into sterile bottles.

- All filters are marked with catalog number, membrane type and pore size, lot number and expiration date
- Gamma radiation sterilized
- Individually wrapped for five-year sterile shelf life
- Noncytotoxic and nonpyrogenic
- Easy-open bag minimizes possibility of accidental contamination before use

Clockwise from top: 09-740-47C, 09-741-06, 09-740-22F, 09-740-22K.

Polyethersulfone (PES) membranes

- High flowrates, lower protein binding and lower extractables than cellulosic and nylon membranes
- Blue collar
- Come in 150, 500 and 1000mL funnel sizes
- 0.2µm units feature the new Supor* mach V (aPES) membranes

Surfactant-free cellulose acetate membranes (SFCA)

- Low protein binding, excellent flowrates, little or no loss of specific proteins
- No wetting agents to affect sensitive cell culture lines
- Yellow collar
- Come in 150, 500 and 1000mL funnel capacities

INCLUDES:

Polystyrene graduated chamber; color-coded collar with cellulosic vent plug side arm and quick-disconnect tubing adapter; 50, 75, or 90mm diameter membranes; bottom screw threads for attachment to bottles with 33-430 or 45mm neck sizes.

Pore Size	Membrane	Thread Size	Mfr. No.	Cat. No.	Case of 12
150mL capacity, 50mm membrane					
0.2µm	aPES	33-430	596-3320	**09-741-08**	59.60
0.2µm	aPES	45mm	596-4520	**09-741-09**	59.60
0.2µm	SFCA	33-430	290-3320	**09-740-22D**	59.30
0.2µm	SFCA	45mm	290-4520	**09-740-22F**	59.30
0.45µm	PES	33-430	296-3345	**09-740-62C**	59.30
0.45µm	PES	45mm	296-4545	**09-740-62D**	59.30
0.45µm	SFCA	33-430	290-3345	**09-740-22E**	59.30
0.45µm	SFCA	45mm	290-4545	**09-740-22G**	59.30
500mL capacity, 75mm membrane					
0.2µm	aPES	33-430	595-3320	**09-741-06**	83.00
0.2µm	aPES	45mm	595-4520	**09-741-07**	83.00
0.2µm	SFCA	33-430	291-3320	**09-740-22H**	83.00
0.2µm	SFCA	45mm	291-4520	**09-740-22K**	83.00
0.45µm	PES	33-430	295-3345	**09-740-64A**	83.00
0.45µm	PES	45mm	295-4545	**09-740-64B**	83.00
0.45µm	SFCA	33-430	291-3345	**09-740-22J**	83.00
0.45µm	SFCA	45mm	291-4545	**09-740-22L**	83.00
1000mL capacity, 90mm membrane					
0.2µm	aPES	33-430	597-3320	**09-741-10**	133.50
0.2µm	aPES	45mm	597-4520	**09-741-11**	133.50
0.2µm	SFCA	33-430	292-3320	**09-740-47A**	133.00
0.2µm	SFCA	45mm	292-4520	**09-740-47C**	133.00

Nalgene* MF75* Series Sterile Filter Unit Receivers

Guaranteed leakproof† closure system

Use as receivers for Nalgene Bottle-Top Filters, or as replacements or extra receptacles for Nalgene Tissue Culture and Sterilization Filter Units.

- Headspace allows for extra serum or other additives to be added to the filtrate
- Can also be used as handy sterile single-use storage containers
- Polystyrene with 1½-turn polyethylene leakproof† screw closures to eliminate pH shift in receiver
- Units feature an easy-to-use, ergonomic shape and are nontoxic
- Sterilized by gamma radiation
- Nonpyrogenic
- Five-year sterile shelf life

Clockwise from top: 09-740-25F, -25E, -25D, -25C.

Receiver Capacity	Mfr. No.	Cat. No.	Case of
150mL	455-0150	**09-740-25D**	24/62.10
250mL	455-0250	**09-740-25E**	24/69.60
500mL	455-0500	**09-740-25C**	12/44.80
1000mL	455-1000	**09-740-25F**	12/68.40

† For definition of "leakproof," see below.

†Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

LOOKING FOR SYRINGE FILTERS?

Fisher Scientific carries a wide variety of syringe filters. Find the entire selection online.

09-719D

Visit www.fishersci.com and search for Syringe Filters

Nalgene* Reusable Nonsterile Filter Holders

Versatile system is ideal for field work

Left to right: 09-740-23E, -23A, -23D

Made of durable, transparent polysulfone, these versatile filter holders eliminate the need for a manifold or breakable glass vacuum flask.

- Graduated receiver
- Two side arms allow connection to vacuum line
- Accept ¼ to 5⁄16" I.D. (6.4 to 8mm) vacuum tubing
- Also accept syringe filters
- Fully autoclavable, with or without membranes in place
- Upper chamber is designed for pressure or vacuum filtration
- Independent locking rings seal upper chamber to receiver without damaging membrane
- Chamber accommodates 47mm membrane (not included) and has three ports for venting (with or without syringe filters) and aseptic addition of samples
- Ports also can be attached to a pressure source
- Upper chamber is supplied with two membrane support plates: a sterilization plate and an analytical plate

Sterilization plate (one-piece, clear)

- Provides maximum flowrate and throughput
- Suitable for cold sterilization or clarification of culture media, reagents or solvents that are compatible with holder and membrane materials
- Nominal filter area, 13.3cm^2

Analytical plate (two-piece, white)

- Provides optimal membrane support and keeps membrane flat to facilitate analytical procedures
- Suitable for analysis of particulates and biological contaminants, or any microbiological analyses using the membrane filter technique
- Nominal filter area, 11.3cm^2

INCLUDES:

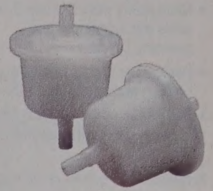
Complete upper chamber, receiver, polypropylene cover and TPE port caps. (Membranes not included.)

Capacity					
Upper Chamber	Receiver	Mfr. No.	Cat. No.	Each	Case of 4
250mL	250mL	300-4000	**09-740-23A**	127.78	340.75
500mL	500mL	300-4050	**09-740-23D**	189.56	505.50
500mL	1000mL	300-4100	**09-740-23E**	247.22	659.25

CAPSULES/INLINE FILTERS

Millipore* Groundwater Sampling Capsules

Large surface area and high-throughput membrane



GWSC 045 01 and GWSC 100 01

Ensures that the capsules filter faster, more efficiently, and require fewer change-outs than other filters

- Disposable collection filters for sampling groundwater prior to dissolved metals analysis
- Low-extractable materials minimize background in sample analysis
- Ready to use with membrane filter in place—there is nothing to assemble or clean up
- 600cm^2 pleated membrane filter
- Unique pore structure enhances the filter's flow mechanics

Choose from three pore sizes:

- 0.45µm samples relatively clean water
- 1.0µm samples normal particulate loads
- 5.0µm samples water with very high particulate levels

INCLUDES:

Certificate showing lowest detectable level (LDL) analyses for a broad range of metals.

COMPLIANCE:

Certified for 67 metals and two anions; meet U.S. EPA filtration requirements for 0.45µm filtration.

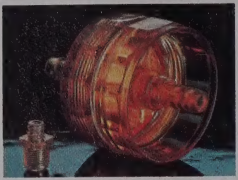
Pore Size	Cat. No.	Pack of
0.45µm	**GWSC 045 01**	1/27.00
0.45µm	**GWSC 045 10**	10/240.00
0.45µm	**GWSC 045 50**	50/1051.00
1.0µm	**GWSC 100 01**	1/26.00
1.0µm	**GWSC 100 10**	10/231.00
5.0µm	**GWSC 500 01**	1/26.00

SPECIFICATIONS

Effective Filtration Area	600cm^2
Inlet/Outlet Connections	⅛" NPTM with ⅜" stepped hose adapter
Maximum Inlet Pressure	60psi
Sterilization	Nonsterile
Autoclavable	Yes

Nalgene* Reusable Inline Filter Holder

For 47 or 50mm diameter filters



09-748

- Made of tough, transparent polysulfone
- Biologically inert silicone O-ring seals the membrane and prevents bypass
- Removable tubing connectors on both ends fit ⅜" I.D. tubing
- Bell-shaped base protects filtrate from outside contamination during flow
- Holder can be used as an aseptic filling bell
- Length (including tubing connector) × diameter: 3⅞ × 2⅝" (10 × 6.5cm)
- Autoclavable

APPLICATIONS:

Designed for inline filtration of liquids or gases and for sampling to detect microbial contamination in production lines

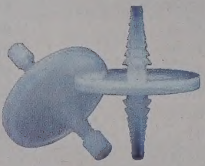
INCLUDES:

Attachable locking Luer fitting for use with syringe.

Mfr. No.	Cat. No.	Each
DS0330-4000	**09-748**	91.20

Millipore* Millex* Vacuum Line Protection and Tank/Bioreactor Venting Filter Units

Protect vacuum sources from contamination and moisture damage



SLFG 850 10 and SLFG 025 LS

- With hydrophobic PTFE membranes
- Polypropylene housing (except for SLFG-025-LS and -50, which have PVC housing)
- Variety of inlet/outlet combinations, including stepped hose barb and ⅛ NPT
- Sterilize ambient air entering fermenters
- Filter incubator gas to protect against contamination
- Filter nitrogen and air used to dry liquid samples
- Nonsterile, autoclavable, bidirectional

Pore Size	Diameter	Cat. No.	Pack of
Inlet and outlet: Stepped hose barb with female Luer slip interior. For latex tubing.			
0.22µm	50mm	**SLFG 050 10**	10/96.00
0.22µm	50mm	**SLFG 050 00**	100/643.00
0.45µm	50mm	**SLFH 050 10**	10/96.00
0.45µm	50mm	**SLFH 050 00**	100/643.00
1.0µm	50mm	**SLFA 050 10**	10/98.00
1.0µm	50mm	**SLFA 050 00**	100/662.00
Inlet and outlet: Stepped hose barb with female Luer slip interior. For silicone tubing.			
0.2µm	50mm	**SLFG 850 10**	10/96.00
0.2µm	50mm	**SLFG 850 00**	100/643.00
Inlet: Stepped hose barb with female Luer slip interior. Outlet: 1/8 NPT.			
0.2µm	50mm	**SLFG 650 10**	10/96.00
Inlet and outlet: 1/8 NPT.			
0.2µm	50mm	**SLFG 750 10**	10/96.00
Inlet: Female Luer-Lok. Outlet: Male Luer Slip.			
0.22µm	25mm	**SLFG 025 LS**†	50/138.00
0.22µm	25mm	**SLFG 025 50**	50/150.00

† *Sterile pack.*

Millipore* Aervent-50 Disposable Filters

Sterilizing-grade filters designed for critical small-scale gas line and air venting applications

MTGR Series

With hydrophobic Aervent membrane. Ideal for sterile venting of vessels and carboys, low-volume filtration of nonaqueous fluids, and small fermenter inlet and exhaust gas filtration. Also used for autoclave vacuum break lines.

- 50mm PTFE membrane
  - Hydrophobic
  - High flowrates and throughput, low extractables, low particle shedding
  - Broad chemical compatibility
- Bidirectionally supported polypropylene casing
- Marked with catalog and lot numbers for traceability and easy identification
- Integrity tested
- Autoclavable

Connections, Inlet/Outlet	Length	Cat. No.	Pack of 10	Cat. No.	Pack of 100
Both sides: hose connection for 4 to 9.5mm I.D. latex tubing and female Luer slip.	7.1cm	**MTGR 05010**	91.00	**MTGR 05000**	793.00
Both sides: ¾" sanitary flange (TC).	5.5cm	**MTGR 15010**	94.00	**MTGR 15000**	793.00
One side: ¾" sanitary flange (TC). Other side: hose connection for 4 to 9.5mm I.D. latex tubing and female Luer slip.	6.3cm	----	----	**MTGR 25000**	793.00
Both sides: ⅛" NPTM connection.	5.7cm	**MTGR 75010**	91.00	----	----
Both sides: hose connection for 6.5 to 9.5mm I.D. silicone tubing.	7.2cm	**MTGR 85010**	91.00	**MTGR 85000**	773.00

TYPICAL CHARACTERISTICS

Filter	Aervent-50
Medium	PTFE: hydrophobic, bidirectional
Applications	For critical small-scale gas line and air venting.
Diameter	62mm
Filter Area	19.6cm^2
Pore Size	0.2µm
Housing	Polypropylene
Pressure Limit	4.1 bar (60psig) at 25°C
Bacterial Retention	Quantitative retention of *Brevundimonas diminuta* (ATCC* 19146) following ASTM* F838-83 methodol-ogy at a minimum challenge level of 10^7 CFU/cm^2

Whatman* Polycap* GW High-Capacity Capsules

Filter ground water samples before dissolved metal analysis

Provides excellent sample filtration for ground water analysis.

05-714-036

- Membrane is encapsulated in a durable polypropylene housing
- Pre-assembled—no need to replace the filter or decontaminate the capsule
- Filtration area: 600cm^2
- Flowrate: 60L/min. at 1.0 bar (14.5psi)
- All housing components are thermally fused
- Stepped hose barb fittings allow connection with various size tubings
- Drain screen, core, end caps and backpressure screens are made of durable polypropylene
- Sterile

COMPLIANCE:

Certified for low metal extractables. Suitable for the EPA Method 3005 for groundwater analysis.

Pore Size	Filtration Area	Mfr. No.	Cat. No.	Price
PES Membrane				
0.45µm	600cm^2	6714-6004	**05-714-036**	Ea./28.89
0.45µm	600cm^2	6724-6004	**05-714-037**	Pk. of 100/2060.82
PP Membrane				
1µm	600cm^2	6703-6010	**05-714-038**	Ea./28.89
5µm	600cm^2	6703-6050	**05-714-040**	Ea./28.89

Whatman* Polycap* TC High-Capacity Capsules

Developed for safe, efficient filtration of critical biological and tissue culture solutions

Contain two layers of polyethersulfone membrane—inherently hydrophilic, low in extractables, excellent flowrates. Low protein-binding characteristics make capsules ideal for use with biologically sensitive solutions.

05-713-751, -752, -750

- Pore size 0.8/0.2µm
- Filtration area: 440, 930, or 1900cm^2
- Vent evacuates any air for fast filtration
- Outlet is protected to prevent touch contamination during setup
- Standard hose barb connections
- Durable polypropylene filter housing can withstand maximum operating pressure of 60psi (4.1 bar)
- Presterilized
- ISO-driven cleanroom manufacturing ensures product consistency
- Stamped lot numbers ensure traceability of all critical components

APPLICATIONS:

Suitable for pharmaceutical aqueous solutions, tissue culture media, reagent preparation, virus suspensions, particle counting solutions, cleaning and rinsing solutions

COMPLIANCE:

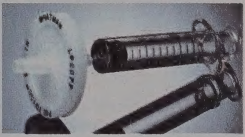
Pass HIMA Challenge Test for Sterilizing Grade Filters to retain >10^{7}CFU/cm^2 *Brevundimonas diminuta* per ASTM* 838-83 and FDA guidelines; microbial retention correlated to 100% integrity testing during manufacturing.

Filtration Area	Inlet Connection	Outlet Connection	Mfr. No.	Cat. No.	Each
440cm^2	¼ to ⅛" stepped barb	¼ to ⅛" stepped barb	6715-3682	**05-713-750**	62.82
930cm^2	¼ to ⅛" stepped barb	¼ to ⅛" stepped barb	6715-7582	**05-713-751**	74.76
1900cm^2	⅜ to ½" stepped barb	¼ to ⅜" stepped barb	6718-9582	**05-713-752**	108.43

Whatman* Polydisc* Inline Filters

Versatile, cost-effective filters designed for larger volume sample filtration

Filter up to 1L with one device. Can be used in conjunction with a syringe or connected inline (6-10mm ID hose) via stepped hose barbs. High-purity polypropylene housing maintains sample purity. 50mm filter devices. Autoclavable. Lightweight (11.5g).



09-744-66

Polydisc AS (Aqueous Solution)

- For tissue culture media, reagent preparation, particle counting solutions, pharmaceutical preparations
- High-throughput polyethersulfone membrane (low protein binding and no surfactants)
- Glass microfiber prefilter extends membrane life and effectively filters heavily contaminated samples
- Sterility cap on outlet (optional)
- No EtO residuals
- Barbed hose connections fit multiple tubing sizes
- Integrity testable (bubble point method)
- Sealed in its own "medical grade" clear blister pack and secured in a protective shelf pack

Polydisc TF

- Use in vents, inline, exhausts for growth environments, clean or sterile gases, solvents, reagents, drying gases, photoresists
- Hydrophobic PTFE membrane ideal for chemically aggressive solutions, reagents and organic solvents
- Chemical-resistant housing
- Integrity testable (bubble point or water breakthrough pressure *in situ* methods)
- Biosafe

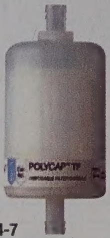
Description	Filter Membrane	Pore Size	Mfr. No.	Cat. No.	Pack of
Polydisc AS	PES	0.45µm	6724-5145	**09-733-06**	50/391.91
Polydisc TF	PTFE	0.2µm	6720-5002	**09-744-66**	10/121.17
Polydisc TF	PTFE	1.0µm	6721-5010	**09-744-72**	10/122.29

Whatman* Polycap* Disposable Capsules

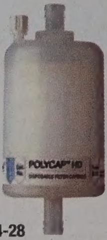
Choose from five filter types for a wide variety of filtration applications

- Autoclavable
- Polypropylene housing
- All bonds are fused: no glues, adhesives, metals, epoxies used
- Contain no mold release agents or surfactants
- Manufactured in cleanrooms
- Pass USP Class VI tests
- Max. housing pressure: 4.1 bar (60psi)

09-744-47



09-744-7



09-744-28

Whatman
Polycap

09-747-2

Capsule	Polycap 36 AS, 75 AS	Polycap 36 TF, 75 TF	Polycap 36 HD, 75 HD	Polycap 36 SPF, 75 SPF	Polycap 36 TC, 75 TC, 150 TC
Applications	Filtration of aqueous solutions (such as cell culture media, serum enzymes and water) and removal of bacteria and debris.	Filtration of organic solutions, aggressive solutions, air and gas; also can be used as vent.	Filtration of high-debris solutions and prefiltration of aggressive chemical solutions. Offer broad capacity between gross paper filters and microporous membranes.	For serum prefiltration. Handle tissue culture media, nutrients, immunologicals, enzymes, diagnostic standards/controls, biologicals, buffers, virus suspensions.	Sterile filtration of biological and tissue culture solutions. Principally for aqueous solutions.
Features	Sterile and nonpyrogenic. Integrity testable. With inlet vent. Unidirectional flow; bidirectionally supported membrane.	Integrity testable. Bidirectional flow: certain applications may require orientation.	Integrity testable. With inlet vent. Bidirectional flow: certain applications may require orientation.	Three-layer filter permits filtration of larger volumes. Integrity testable. With inlet vent. Unidirectional flow.	Two-layer filter for long life, high efficiency. Sterile, nonpyrogenic. 0.2µm meets HIMA standards. Non-protein-binding membrane. Hydrophilic; low extractables. With inlet vent.
Filter Media	Low-extractable, hydrophilic nylon membrane and glass microfiber prefilter	Hydrophobic PTFE membrane; 1.0µm models have polypropylene prefilter	Monofilament anisotropic polypropylene (MAPP) filter	Three layers: fine glass microfiber/ultrafine glass microfiber/1.0µm polysulfone	Two layers polyethersulfone (PES)
Presterilized	Yes	No	No	No	Yes
Housing Dia. × L	36 AS: 66 × 48mm 75 AS: 66 × 96mm	36 TF: 66 × 48mm 75 TF: 66 × 96mm	36 HD: 66 × 48mm 75 HD: 66 × 96mm	36 SPF: 66 × 48mm 75 SPF: 66 × 96mm	36 TC: 66 × 48mm 75 TC: 66 × 96mm 150 TC: 66 × 192mm

Polycap 36 AS and 75 AS Aqueous Solution Capsules

- With hydrophilic nylon membrane and polypropylene housing, drain screen, core, end caps, and back-pressure support
- Retention (with air purge), <2mL
- Filling bell model (09-744-61) minimizes contamination when filtering into bottle or flask

Capsule No.	Pore Size	Filtration Area	Capacity Range	Inlet Connection	Outlet Connection	Mfr. No.	Cat. No.	Each
36 AS	0.2µm	400cm²	1 to 10L	¼-⅜" hose barb†	¼-⅜" hose barb†	6705-3602	**09-744-47**	49.15
36 AS	0.2µm	400cm²	1 to 10L	¼-⅜" hose barb†	¼-⅜" hose barb†	6706-3602	**09-744-61‡**	54.32
36 AS	0.2µm	400cm²	1 to 10L	⅜-½" hose barb	⅜-½" hose barb	6708-3602	**09-743-90**	49.15
36 AS	0.2µm	400cm²	1 to 10L	1/4 NPT	¼-⅜" hose barb†	6709-3602	**09-743-94**	49.34
36 AS	0.45µm	400cm²	1 to 10L	¼-⅜" hose barb†	¼-⅜" hose barb†	6705-3604	**09-744-48**	49.15
36 AS	0.45µm	400cm²	1 to 10L	⅜-½" hose barb	⅜-½" hose barb	6708-3604	**09-743-91**	25.87
36 AS	1.0µm	400cm²	1 to 10L	¼-⅜" hose barb†	¼-⅜" hose barb†	6705-3610	**09-744-50**	49.15
75 AS	0.2µm	820cm²	5 to 25L	¼-⅜" hose barb†	¼-⅜" hose barb†	6705-7502	**09-744-55**	69.02
75 AS	0.2µm	820cm²	5 to 25L	¼-⅜" hose barb†	¼-⅜" hose barb†	6706-7502	**09-744-62**	75.18
75 AS	0.2µm	820cm²	5 to 25L	⅜-½" hose barb	⅜-½" hose barb	6708-7502	**09-743-92**	69.02
75 AS	0.2µm	820cm²	5 to 25L	1/4 NPT	⅜-½" hose barb	6709-7502	**09-743-96**	69.02
75 AS	0.45µm	820cm²	5 to 25L	¼-⅜" hose barb†	†	6705-7504	**09-744-57**	69.02
75 AS	0.45µm	820cm²	5 to 25L	⅜-½" hose barb	⅜-½" hose barb	6708-7504	**09-744-100**	69.02
75 AS	1.0µm	820cm²	5 to 25L	⅜-½" hose barb	⅜-½" hose barb	6705-7510	**09-744-60**	69.02

† *Inner taper accepts male Luer.*
‡ *With filling bell.*

Contd. on next page.

Whatman* Polycap* Disposable Capsules, Contd.

Polycap* 36 TF and 75 TF Solvent Filtration Capsules

- Retention (with air purge), <2mL

Capsule No.	Pore Size	Filtration Area	Capacity Range	Inlet Connection	Outlet Connection	Mfr. No.	Cat. No.	Each
36 TF	0.1µm	500cm²	1 to 10L	1/4 NPT	¼-⅜" hose barb[†]	6711-3601	**09-743-102**	77.54
36 TF	0.2µm	500cm²	1 to 10L	¼-⅜" hose barb[†]	¼-⅜" hose barb[†]	6700-3602	**09-744-1**	77.54
36 TF	0.2µm	500cm²	1 to 10L	1⁄4 NPT	¼-⅜" hose barb[†]	6711-3602	**09-743-103**	77.54
36 TF	0.45µm	500cm²	1 to 10L	1⁄4 NPT	¼-⅜" hose barb[†]	6711 3604	**09-743-104**	77.92
36 TF	1.0µm	500cm²	1 to 10L	¼-⅜" hose barb[†]	¼-⅜" hose barb[†]	6700-3610	**09-744-4**	77.54
75 TF	0.1µm	1000cm²	5 to 25L	¼-⅜" hose barb[†]	¼-⅜" hose barb[†]	6700-7501	**09-744-7**	101.59
75 TF	0.2µm	1000cm²	5 to 25L	¼-⅜" hose barb[†]	¼-⅜" hose barb[†]	6700-7502	**09-744-8**	101.59
75 TF	0.2µm	1000cm²	5 to 25L	⅜-½" hose barb	⅜-½" hose barb	6710-7502	**09-743-100**	102.08
75 TF	0.2µm	1000cm²	5 to 25L	1⁄4 NPT	¼-⅜" hose barb[†]	6711-7502	**09-743-106**	102.08
75 TF	0.45µm	1000cm²	5 to 25L	¼-⅜" hose barb[†]	¼-⅜" hose barb[†]	6700-7504	**09-744-9**	102.08
75 TF	0.45µm	1000cm²	5 to 25L	¼ NPT	¼-⅜" hose barb[†]	6711-7504	**09-743-107**	102.08
75 TF	1.0µm	1000cm²	5 to 25L	⅜" hose barb	½" hose barb	6701-7510	**09-744-10**	101.59

[†] Inner taper accepts male Luer.

Polycap* 36 HD and 75 HD Heavy-Duty Capsules

- Retention (with air purge), <2mL

Capsule No.	Pore Size	Filtration Area	Capacity Range	Inlet Connection	Outlet Connection	Mfr. No.	Cat. No.	Each
36 HD	1.0µm	385cm²	1 to 10L	¼-⅜" hose barb[†]	¼-⅜" hose barb[†]	6703-3610	**09-744-18**	47.57
36 HD	5.0µm	385cm²	1 to 10L	¼-⅜" hose barb[†]	¼-⅜" hose barb[†]	6703-3650	**09-744-25**	47.57
36 HD	10.0µm	385cm²	1 to 10L	¼-⅜" hose barb[†]	¼-⅜" hose barb[†]	6703-3611	**09-744-19**	47.57
36 HD	20.0µm	385cm²	1 to 10L	¼-⅜" hose barb[†]	¼-⅜" hose barb[†]	6703-3621	**09-744-22**	47.57
75 HD	1.0µm	805cm²	5 to 25L	⅜" hose barb	⅜" hose barb	6703-7510	**09-744-28**	67.44
75 HD	5.0µm	805cm²	5 to 25L	⅜" hose barb	⅜" hose barb	6703-7550	**09-744-34**	67.44
75 HD	10.0µm	805cm²	5 to 25L	⅜" hose barb	⅜" hose barb	6703-7511	**09-744-29**	67.44
75 HD	20.00µm	805cm²	5 to 25L	⅜" hose barb	⅜" hose barb	6703-7521	**09-744-30**	67.44

[†] Inner taper accepts male Luer.

Polycap* 36 SPF and 75 SPF Serum Prefilter Capsules

- Retention (with air purge), <2mL

Capsule No.	Pore Size	Filtration Area	Capacity Range	Inlet Connection	Outlet Connection	Mfr. No.	Cat. No.	Each
36 SPF	1.0µm	260cm²	1 to 10L	¼-⅜" hose barb[†]	¼-⅜" hose barb[†]	6705-3600	**09-744-45**	58.70
75 SPF	1.0µm	535cm²	5 to 25L	¼-⅜" hose barb[†]	¼-⅜" hose barb[†]	6705-7500	**09-744-53**	77.50

[†] Inner taper accepts male Luer.

Polycap* 36 TC, 75 TC, and 150 TC Sterilizing Grade Filtration Capsules

- 0.2µm capsules meet HIMA sterilization standards

Capsule No.	Pore Size	Filtration Area	Inlet Connection	Outlet Connection	Mfr. No.	Cat. No.	Each
36 TC	0.1µm	550cm²	¼-⅜" hose barb[†]	¼-⅜" hose barb	6715 3601	**09-747-8[‡]**	72.95
36 TC	0.2µm	550cm²	¼-⅜" hose barb[†]	¼-⅜" hose barb	6714 3602	**09-747-2**	69.44
36 TC	0.2µm	550cm²	¼-⅜" hose barb[†]	¼-⅜" hose barb	6715 3602	**09-747-9[‡]**	72.59
36 TC	0.45µm	550cm²	¼-⅜" hose barb[†]	¼-⅜" hose barb	6714 3604	**09-747-3**	69.44
36 TC	0.45µm	550cm²	¼-⅜" hose barb[†]	¼-⅜" hose barb	6715 3604	**09-747-10[‡]**	72.59
75 TC	0.1µm	1100cm²	¼-⅜" hose barb[†]	¼-⅜" hose barb	6714 7501	**09-747-5**	109.06
75 TC	0.2µm	1100cm²	¼-⅜" hose barb[†]	¼-⅜" hose barb	6715 7502	**09-747-12[‡]**	111.34
75 TC	0.45µm	1100cm²	¼-⅜" hose barb[†]	¼-⅜" hose barb	6714 7504	**09-747-7**	109.06
75 TC	0.45µm	1100cm²	⅜-½" hose barb	⅜-½" hose barb	6717 7504	**09-747-15**	109.52
75 TC	1.0µm	1100cm²	⅜-½" hose barb	⅜-½" hose barb	6717 7510	**09-747-16**	109.06
150 TC	0.2µm	2200cm²	⅜-½" hose barb	⅜-½" hose barb	6717 9502	**09-747-18**	138.31
150 TC	0.2µm	2200cm²	⅜-½" hose barb	¼-⅜" hose barb	6718 9502	**09-747-22[‡]**	141.45
150 TC	0.45µm	2200cm²	⅜-½" hose barb	⅜-½" hose barb	6717 9504	**09-747-19**	138.31

[†] Inner taper accepts male Luer.
[‡] With filling bell.

Whatman* PolyVent* Vessel Venting Filters

Unique integral, inline filters designed specifically for venting of vessels

Single standardized set of materials—polypropylene and PTFE—simplifies the task of approving materials for housing and membrane.

- Hydrophobic, 0.2µm PTFE membrane
- **PolyVent 4** is for smaller bottles and jars with capacity of less than 1L
- **PolyVent 16** accommodates vessels from 5 gal. to 19L
- **PolyVent 500** works with bulk tanks that store food products, biological products, or deionized water—allowing only sterile, microfiltered air to replace the liquid drawn off for use. Safely vent off reaction gases without contaminating either the environment or the tank contents.
- **PolyVent 1000** is used for larger process tanks

Specifications

- Maximum pressure: 2 bar (29psi); for PolyVent 40, 1 bar (14.5psi)
- Supplied nonsterile; autoclavable at 121°C (250°F) for 20 minutes

APPLICATIONS:

- Sterile venting of filling, mixing, holding, autoclave, fermentation, shipping, and dispensing vessels
- For isolation[†] of incubators, autoclaves, lyophilizers, EtO sterilizers, and fermenters
- For biotech, pharmaceutical and diagnostics, and food and beverage applications

COMPLIANCE:

Biosafe—all materials meet USP Class VI requirements. Manufactured in GMP-controlled cleanroom facilities.

09-745-1 Serie

Capsule No.	Type	Filter Area	Housing Dia. × L	Inlet/Outlet Connections	Airflow Rate[‡]	Mfr. No.	Cat. No.	Pack of
4	Disc	4.2cm^2	28 × 23mm (1⅛ × ⅞")	FLL/ML,[††] ⅛" I.D. tube	10 SLPM	6713-0425	**09-745-1A**	50/153.73
16	Disc	16cm^2	53 × 46mm (2⅛ × 1⅞")	¼-⅜" stepped hose barb	50 SLPM	6713-1650	**09-745-1B**	10/141.23
500	Capsule (vented)	500cm^2	66 × 48mm (2⅝ × 1⅞")	¼-⅜" stepped hose barb	163 SLPM	6713-5036	**09-745-1D**	1/72.95
1000	Capsule (vented)	1000cm^2	66 × 96mm (2⅝ × 3⅞")	⅜-½" stepped hose barb	540 SLPM	6713-1075	**09-745-1E**	1/96.28

[†] Gases pass; liquids and aerosols are stopped.

[‡] Typical values at 1 bar (14psi).

[††] Indicates female Luer lock/male Luer.

Whatman* Carbon-Cap* Disposable Activated Carbon Capsules

Wide chemical compatibility of activated carbon available in a sturdy polypropylene housing

- Remove odor organics, color, and colloids from reagent-grade water, chemicals, and air
- Activated carbon plus a pleated HEPA filter media retains 99.97% of all particles ≥0.3µm
- Maximum housing pressure: 4.1 bar (60psi)

Carbon-Cap 75

- Offers 26,000m^2 activated carbon surface area
- Housing dia. × L: 66 × 96mm (2⅝ × 3⅝")

Carbon-Cap 150

- Offers 82,000m^2 filter area equivalent
- Housing dia. × L: 66 × 183mm (2⅝ × 7⅕")

APPLICATIONS:

For vacuum pump outlet removal of smoke and oil.

09-744-40

Capsule No.	Filtration Area Equivalent	Inlet/Outlet Connections	Mfr. No.	Cat. No.	Each
75	26,000m^2	½" hose barb	6704-7500	**09-744-40**	67.78
150	82,000m^2	⅜-½" stepped hose barb	6704-1500	**09-744-37**	90.37

Whatman* HEPA-Cap* Disposable Air Filtration Capsules

Assure sterile, clean air for mixing, filling, storing, fermenting, and transporting

Polyester-laminated glass microfiber filter removes 99.97% of 0.3µm particles from air and gas stream.[†]

- Filter instrument air and maintain particle-free air to environmental chambers
- Bidirectional flow
- Polypropylene housing
- Autoclavable
- Maximum housing pressure: 4.1 bar (60psi)
- Housing dia. × L:
  - HEPA-Cap 36: 66 × 48mm (2⅝ × 1⅞")
  - HEPA-Cap 75: 66 × 96mm (2⅝ × $3\frac{13}{16}$")

09-744-12

Capsule No.	Filtration Area	Inlet/Outlet Connections	Mfr. No.	Cat. No.	Each
36	625cm^2	¼-⅜" stepped hose barb	6702-3600	**09-744-12**	54.63
75	1300cm^2	⅜-½" stepped hose barb	6702-7500	**09-744-15**	71.16

[†] Rated by DOP aerosol test.

*Trademark. See Trademark Reference.

Whatman* HEPA-Vent* Filter

Assures sterile air for mixing, filling, storing, fermenting, and transporting

- Glass fiber filter is treated to be mildly hydrophobic
- Repels moisture, prevents bacterial growth
- 0.3µm particle retention unaffected by autoclaving
- Bidirectional flow
- Filter area: 16cm²

HEPA-VENT™
WHATMAN
INLET

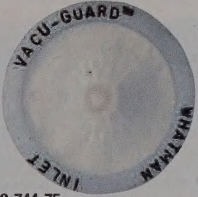
09-744-79

Inlet/Outlet	Mfr. No.	Cat. No.	Pack of 10
¼-⅜" tapered hose barb	6723-5000	**09-744-79**	80.13

Whatman* Vacu-Guard* Filter

PTFE membrane retains 99.9% of air/gas particles ≥0.1µm

- Installed inline
- Isolate and confine infectious materials
- Prevent fluid and aerosol contamination of vacuum pumps or aspiration suction systems
- Eliminate hazardous exhaust
- Disposable
- Filter area: 16cm²



09-744-75

Inlet/Outlet	Mfr. No.	Cat. No.	Pack of 10
¼-⅜" tapered hose barb	6722-5000	**09-744-75**	143.00
⅜-½" tapered hose barb	6722-5001	**09-744-76**	141.97

Whatman* Vacu-Guard* 150 Vacuum Protection Filter

Hydrophobic PTFE membrane in a pleated cartridge with choice of three chemical traps

- Especially protective for vacuum pumps and exhaust air
- Permanently fuse bonded inside base of capsule
- Stops 99.99% of particulates ≥0.1µm in air/gas and aqueous solutions
- Housing: Polypropylene
- Inlet: ½" hose barb
- Outlet: ⅜–½" stepped hose barb
- Filter dia. × L: 66 × 236mm (2⅝ × 9⁵⁄₁₆")

Activated carbon

- Produced from lignite and acid washed after steam activation
- Surface area: 82,000m²
- Flowrates at 0.1 bar (1.45psi) and 0.5 bar (7.25psi): 210 and 450L/min.

Desiccant

- Anhydrous calcium sulfate impregnated with calcium chloride
- High drying capacity
- Flowrates at 0.1 bar (1.45psi) and 0.5 bar (7.25psi): 280 and 600L/min.

09-746A

Molecular Sieve

- Type A
- Absorbs molecules less than 4Å; excludes larger
- Flowrates at 0.1 bar (1.45psi) and 0.5 bar (7.25psi): 250 and 570L/min.

Vacu-Guard 150 with Trap	Mesh Size	Mfr. No.	Cat. No.	Each
Activated Carbon	12 × 20	6722-1001	**09-746A**	103.57
Desiccant	8	6722-1002	**09-746B**	103.57
Molecular Sieve	8 × 12	6722-1003	**09-746C**	103.57

WARNING
Care should be taken to determine safety and usefulness of products prior to routine use. For example, molecular sieve rapidly heats up when exposed to water.

domnick hunter* Demicap* Filter Capsules

A compact, cost-effective, and efficient method of filtration for small-scale applications and batch filtration where clarification, stabilization, and sterilization are required

Capsule design minimizes hold-up volumes while providing high flowrates without the need for cartridge housings.

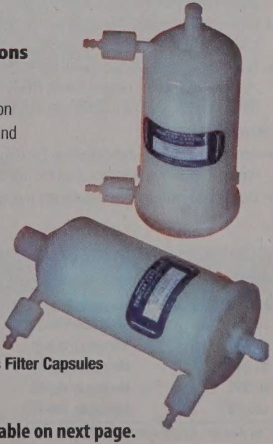
- Nylon or polypropylene, depending on filtration media
- Maximum operating conditions, in direction of flow (outside to in): 72.5psi at 104°F for liquid filtration; and 58psi for air/gas
- Propor PES capsules have been fully validated by bacterial challenge (10^7 organisms/cm² minimum challenge) in accordance with ASTM* F838-83

Propor PES Membrane

- Polyethersulfone membrane
- Low chemical and protein binding characteristics
- Microbially retentive membrane is fully validated to ASTM* F838-83 standards
- Naturally hydrophilic and easy to integrity test

- Autoclavable by steam sterilization
- Available with a variety of inlet and outlet connections
- Sterile or nonsterile

COMPLIANCE:
All materials conform to current USP Plastics Class VI (121°C) specifications.



14-950 Series Filter Capsules

Ordering Table on next page.

domnick hunter* Demicap* Filter Capsules, Contd.

Pore Size	Filtration Area	Nominal Length	Inlet Connection	Outlet Connection	Material	Sterile	Cat. No.	Pack of 3
0.2µm	0.11m²	5½" (140mm)	1" Tri-Clamp	1" Tri-Clamp	Nylon	No	**14-950-152**	250.99
0.2µm	0.11m²	5½" (140mm)	Stepped Hosebarb	Stepped Hosebarb	Nylon	No	**14-950-154**	248.25
0.2µm	0.11m²	5½" (140mm)	1" Tri-Clamp	1" Tri-Clamp	Polypropylene	No	**14-950-155**	250.99
0.2µm	0.11m²	5½" (140mm)	1" Tri-Clamp	1" Tri-Clamp	Nylon	Yes	**14-950-158**	250.99
0.2µm	0.11m²	5½" (140mm)	½" Hosebarb	½" Hosebarb	Nylon	Yes	**14-950-159**	249.34
0.2µm	0.11m²	5½" (140mm)	1" Tri-Clamp	1" Tri-Clamp	Polypropylene	Yes	**14-950-161**	247.79
0.2µm	0.11m²	5½" (140mm)	½" Hosebarb	½" Hosebarb	Polypropylene	Yes	**14-950-162**	247.79
0.2µm	0.11m²	5½" (140mm)	Stepped Hosebarb	Stepped Hosebarb	Polypropylene	Yes	**14-950-163**	249.34
0.2µm	0.11m²	5½" (140mm)	½" Hosebarb	½" Hosebarb	Nylon	Yes	**14-950-164†**	267.82
0.2µm	0.11m²	5½" (140mm)	½" Hosebarb	½" Hosebarb	Polypropylene	Yes	**14-950-166†**	267.82
0.2µm	0.11m²	5½" (140mm)	Stepped Hosebarb	Stepped Hosebarb	Polypropylene	Yes	**14-950-167†**	271.46
0.2µm	0.05m²	4⅜" (113mm)	1" Tri-Clamp	1" Tri-Clamp	Nylon	No	**14-950-200**	211.35
0.2µm	0.05m²	4⅜" (113mm)	½" Hosebarb	½" Hosebarb	Nylon	No	**14-950-201**	209.04
0.2µm	0.05m²	4⅜" (113mm)	1/4NPT Male	Stepped Hosebarb	Nylon	No	**14-950-203**	209.97
0.2µm	0.05m²	4⅜" (113mm)	1" Tri-Clamp	1" Tri-Clamp	Polypropylene	No	**14-950-204**	211.35
0.2µm	0.05m²	4⅜" (113mm)	1" Tri-Clamp	1" Tri-Clamp	Nylon	Yes	**14-950-207**	211.35
0.2µm	0.05m²	4⅜" (113mm)	½" Hosebarb	½" Hosebarb	Nylon	Yes	**14-950-208**	209.97
0.2µm	0.05m²	4⅜" (113mm)	1" Tri-Clamp	1" Tri-Clamp	Polypropylene	Yes	**14-950-210**	208.66
0.2µm	0.05m²	4⅜" (113mm)	Stepped Hosebarb	Stepped Hosebarb	Polypropylene	Yes	**14-950-212**	209.97
0.2µm	0.05m²	4⅜" (113mm)	½" Hosebarb	½" Hosebarb	Nylon	Yes	**14-950-213†**	240.37
0.2µm	0.05m²	4⅜" (113mm)	Stepped Hosebarb	Stepped Hosebarb	Nylon	Yes	**14-950-214†**	237.31
0.2µm	0.05m²	4⅜" (113mm)	Stepped Hosebarb	Stepped Hosebarb	Polypropylene	Yes	**14-950-216†**	243.24

† With filling bell.

WARNING

Propor PES capsules using polypropylene components for encapsulation require the use of 60:40 IPA/Water for integrity testing.

LOOKING FOR MORE?

Demicap* filter capsules are available in five different media types including: Tetpor*, Peplyn* Plus, Prepor GF*, Prepor PES*, and Propor PES*.

Visit www.fishersci.com and search for Demicap Capsules

CENTRIFUGAL DEVICES

Millipore* Microcon* Centrifugal Concentrators†

Provide fast, convenient, high-recovery alternatives to dialysis and ethanol precipitation

- Amicon* low-binding YM regenerated cellulose ultrafiltration membrane; polypropylene centrifuge tube housing
- Inverted spin method combines two spin stages for high sample recovery
- Color-coded devices are available with nominal molecular weight limits (NMWL) of 3000; 10,000; 30,000; 50,000; or 100,000

424 Series

Microcon

- For concentrating and desalting proteins, nucleic acids, and antibodies as well as removing primers, linkers, labeled amino acids, and nucleotides
- Deadstop feature helps eliminate risk of running samples to dryness
- Use Microcon for samples up to 0.5mL; Centricon, to 2mL
- Devices include filter unit, filtrate vial and collection vial

SPECIFICATIONS

Centrifugal Device	**Microcon**
Max. Volume Capacity	0.5mL
Min. Final Concentrate Volume	5µL
Max Centrifugal Force	14,000×G (Microcon-3, -10, -30, -50, -100); 3,000×G (Microcon-100); 500×G (for DNA/RNA with Microcon-100)
Active Membrane Surface Area	0.34cm²
Hold-up Volume of Membrane	10µL
Diameter × Length	½ × 1¾" (12.3× 45mm)
Rotor	Fixed angle

			Pack of 8		Pack of 24		Pack of 100		Pack of 500	
NMWL	**Concentrator**	**Color**	**Cat. No.**	**Each**	**Cat. No.**	**Each**	**Cat. No.**	**Each**	**Cat. No.**	**Each**
0.5mL volume capacity (maximum)										
3000	Microcon YM-3	Yellow	**42420**	30.00	**42403**	80.00	**42404**	267.00	----	----
10,000	Microcon YM-10	Green	**42421**	30.00	**42406**	80.00	**42407**	267.00	**42408**	1136.00
30,000	Microcon YM-30	Clear	**42422**	30.00	**42409**	80.00	**42410**	267.00	**42411**	1136.00
50,000	Microcon YM-50	Rose	**42423**	30.00	**42415**	80.00	**42416**	267.00	----	----
100,000	Microcon YM-100	Blue	**42424**	30.00	**42412**	80.00	**42413**	267.00	**42414**	1136.00

† An Amicon Bioseparations product.*

Millipore* Centricon* Plus-70 Centrifugal Filter Units

Compatible with swinging-bucket rotor (250mL) with maximum rotation of 3500×G

Device consists of a polypropylene filtrate collection cup, sample filter cup, concentrate/retentate cup and cap.

- Low hold-up volume
- >90% typical recovery
- 50X to 200X concentration
- Polypropylene housing minimizes binding
- Deadstop prevents spinning to dryness
- Ready to use; nothing to assemble

UFC 710008

APPLICATIONS:

Concentrating and desalting chromatography column eluates; concentrating monoclonal antibodies; concentrating proteins or viruses from culture supernatants; clarifying tissue homogenates and cell lysates; buffer exchange or diafiltration

Description	Pore Size	Cat. No.	Pack of 8
Biomax*	5000	**UFC7 005 08**	150.00
Ultracel*	10,000	**UFC7 010 08**	150.00
Ultracel	30,000	**UFC7 030 08**	150.00
Ultracel	100,000	**UFC7 100 08**	150.00

Millipore* Ultrafree* -0.5 Centrifugal Filter Devices[†]

Rapid concentration, desalting and purification in as little as 10 minutes

Combine the design of a centrifugal filter device with a vertically oriented membrane, for quick and efficient sample processing.

- Polycarbonate reservoir
- Concentrate, purify and prepare biological samples for volumes up to 0.5mL
- High-flow, Biomax* ultrafiltration membrane available in NMWL cutoffs
- Recover processed sample from concentrate pocket after a single spin
- Depending on sample type, concentration factors range from 50x to 200x
- Can be used with any fixed-angle or swinging bucket centrifuge with standard rotors which accept standard receiver tubes

UFV5 Series

NMWL	Cat. No.	Pack of
5000	**UFV5 BCC 25**	25/78.00
5000	**UFV5 BCC 00**	100/252.00
10,000	**UFV5 BGC 25**	25/78.00
10,000	**UFV5 BGC 00**	100/252.00
30,000	**UFV5 BTK 25**	25/78.00
30,000	**UFV5 BTK 00**	100/252.00
50,000	**UFV5 BQK 25**	25/78.00
50,000	**UFV5 BQK 00**	100/252.00
100,000	**UFV5 BHK 25**	25/78.00
100,000	**UFV5 BHK 00**	100/252.00

Ultrafree-0.5	
Max. Volume Capacity	0.5mL
Minimum Final Concentrate Volume	5µL
Max. Centrifugal Force	12,000×G (10,000×G for Biomax-100)
Active Membrane Surface Area	0.48cm^2
Hold-Up Volume of Membrane	<8µL
Dia. × Length	$\frac{7}{16}$ × 2" (10.7 × 50mm)
Rotor	Fixed angle or swinging bucket

[†] *An Amicon* Bioseparations product.*

Millipore* Amicon* Ultra-4 and Amicon Ultra-15 Centrifugal Filter Units

Provide both high sample recovery and fast sample processing

- High-recovery Ultracel*-PL regenerated cellulose membrane
- Vertical membrane reduces polarization for ultrafast spin times (as little as 10-15 minutes)
- Heat-sealed membrane eliminates possibility of downstream extractables
- Housing is constructed of co-polymer styrene/butadiene
- Centrifuge tube is polypropylene; tube cap and liner are polyethylene
- Universal rotor compatibility
- High retentate recovery of >90%
- High concentration factors of 80-100 fold
- Easy sample monitoring, due to translucent housing and volume gradations
- Direct pipetter sample access eliminates processing step to recover concentrate

APPLICATIONS:

For concentration of biological samples containing antigens, antibodies, enzymes, nucleic acids, or microorganisms; purification of macromolecular components found in tissue culture extracts or cell lysates ; concentration of dilute or prepurified proteins from column eluents; desalting and buffer exchange

INCLUDES:

Assembled with centrifuge tubes and caps

SPECIFICATIONS

Type	Ultra-4	Ultra-15
Max. Volume Capacity	Swinging bucket: 4mL Fixed angle: 3.5mL (23°), 4mL (35 and 45°)	Swinging bucket: 15mL Fixed angle: 12mL (35°)
Typical Final Concentrate Volume	50µL	200µL
Max. Centrifugal Force	Swinging bucket: 4000×G Fixed angle: 7500×G	Swinging bucket: 4000×G Fixed angle: 5000×G
Active Membrane Surface Area	3cm²	7.6cm²
Dia. × Length	22.7 × 124mm	35 × 121mm
Rotor	Fixed angle or swinging bucket	Fixed angle or swinging bucket

UFC8 005 08

UFC9 005 08

NMWL	Cat. No.	Pack of
Amicon Ultra-4		
5000	UFC8 005 08	8/36.00
5000	UFC8 005 24	24/99.00
5000	UFC8 005 96	96/341.00
10,000	UFC8 010 08	8/36.00
10,000	UFC8 010 24	24/99.00
10,000	UFC8 010 96	96/341.00
30,000	UFC8 030 08	8/36.00
30,000	UFC8 030 24	24/99.00
30,000	UFC8 030 96	96/341.00
50,000	UFC8 050 08	8/36.00
50,000	UFC8 050 24	24/99.00
50,000	UFC8 050 96	96/341.00
100,000	UFC8 100 08	8/36.00
100,000	UFC8 100 24	24/99.00
100,000	UFC8 100 96	96/341.00
Amicon Ultra-15		
5000	UFC9 005 08	8/68.00
5000	UFC9 005 24	24/187.00
5000	UFC9 005 96	96/711.00
10,000	UFC9 010 08	8/68.00
10,000	UFC9 010 24	24/187.00
10,000	UFC9 010 96	96/711.00
30,000	UFC9 030 08	8/68.0
30,000	UFC9 030 24	24/187.0
30,000	UFC9 030 96	96/711.0
50,000	UFC9 050 08	8/68.0
50,000	UFC9 050 24	24/187.0
50,000	UFC9 050 96	96/711.0
100,000	UFC9 100 08	8/68.0
100,000	UFC9 100 24	24/187.0
100,000	UFC9 100 96	96/711.0

Millipore* Ultrafree*-MC Centrifugal Filter Devices†

Fast, convenient sample preparation; very low hold-up volumes (10µL)

- Achieve maximum recovery with a high degree of purity for volumes up to 0.5mL with Ultrafree-MC devices
- Minimize sample handling to avoid significant losses of valuable material
- Low hold-up volume of sample allows highest recoveries

UFC3 ODV 25

- Color coded to indicate membrane type and pore size
- Polypropylene components
- Silicone O-rings
- No adhesives used in assembly

With PTFE Membrane

Pore Size	Color	Sterile	Cat. No.	Pack
Ultrafree-MC (0.4mL max. volume capacity)				
0.22µm	Yellow Ring	No	UFC3 OLG 25	25/65.3

† An Amicon Bioseparations product.*

Contd. on next pag

*Trademark. See Trademark Reference.

Prices subject to change.

Millipore* Ultrafree*-MC Centrifugal Filter Devices, Contd.

SPECIFICATIONS

Centrifugal Device	Ultrafree-MC	Ultrafree-CL
Maximum Volume Capacity	500µL‡	2.0mL
Maximum Centrifugal Force	12,000×G	5000×G
Active Membrane Surface Area	0.2cm²	0.8cm²
Diameter × Length	7⁄16 × 1¾" (10.6 × 45mm)	⅝ × 3 1⁄32" (16.3 × 77mm)
Rotor	Fixed Angle	Fixed Angle

‡ 400µL with ultrafiltration membrane.

With Durapore* (PVDF) membranes

- Low protein binding
- Ideal for particle removal and purification
- Filter insert fits standard 0.5mL microcentrifuge tubes

Pore Size	Color	Sterile	Cat. No.	Pack of
Ultrafree-MC (0.5mL max. volume capacity)				
0.1µm	Orange	No	**UFC3 0VV 25**	25/62.00
0.1µm	Orange	No	**UFC3 0VV 00**	100/209.00
0.1µm	Orange	No	**UFC3 0VV NB**	250/406.00
0.22µm	Yellow	No	**UFC3 0GV 25**	25/62.00
0.22µm	Yellow	No	**UFC3 0GV 00**	100/209.00
0.22µm	Yellow	No	**UFC3 0GV NB**	250/406.00
0.22µm	Yellow	Yes	**UFC3 0GV 0S**	50/115.00
0.45µm	Red	No	**UFC3 0HV 25**	25/62.00
0.45µm	Red	No	**UFC3 0HV 00**	100/209.00
0.45µm	Red	No	**UFC3 0HV NB**	250/406.00
0.45µm	Red	Yes	**UFC3 0HV 0S**	50/113.00
0.65µm	Purple	No	**UFC3 0DV 25**	25/62.00
0.65µm	Purple	No	**UFC3 0DV 00**	100/209.00
0.65µm	Purple	No	**UFC3 0DV NB**	250/406.00
0.65µm	Purple	Yes	**UFC3 0DV 0S**	50/115.00
5.0µm	Dark Green	No	**UFC3 0SV 00**	100/209.00
Ultrafree-CL (2mL max. volume capacity)				
0.1µm	Orange	No	**UFC4 0VV 25**	25/82.00
0.1µm	Orange	No	**UFC4 0VV 00**	100/279.00
0.22µm	Yellow	No	**UFC4 0GV 25**	25/82.00
0.22µm	Yellow	No	**UFC4 0GV 00**	100/279.00
0.22µm	Yellow	Yes	**UFC4 0GV 0S**	50/183.00
0.45µm	Red	No	**UFC4 0HV 25**	25/82.00
0.45µm	Red	No	**UFC4 0HV 00**	100/279.00
0.45µm	Red	Yes	**UFC4 0HV 0S**	50/183.00
0.65µm	Purple	No	**UFC4 0DV 25**	25/82.00
5.0µm	Dark Green	No	**UFC4 0SV 25**	25/82.00

Millipore* Centriprep* Centrifugal Filter Units

For processing high-solute samples

- Fast sample processing
- High-recovery, Ultracel*-YM membrane
- Ideal for concentrating and purifying particle-laden solutions or high concentrations
- Separate low MW solutes from fermentation broths, cell culture media, and cell lysates
- Unique inverse flow mode with large deadstop
- Use in 50mL tube swinging-bucket or fixed-angle rotor

4321

SPECIFICATIONS

Max. Volume Capacity	12 to 15mL
Typical Final Concentrate Volume (one spin)	3mL†
Centrifugal Force	3000xG max. for Centriprep YM-3, -10 1500xG maximum for Centriprep YM-30, -50
Rotor	Swinging bucket or fixed-angle (50mL)
Materials	
Membrane	Ultracel-YM regenerated cellulose
Sample Reservoir and Filtrate Collector	Polycarbonate
Twist-Lock Cap	Nylon
Air-Seal Cap	Polypropylene
Active Membrane Surface Area	2.84cm²
Diameter	36.5mm (twist-lock cap), 28.1mm (sample container)
Length	135mm

NMWL	Cat. No.	Pack of
Yellow		
3,000	**4320**	8/83.00
3,000	**4302**	24/233.00
3,000	**4303**	96/824.00
Green		
10,000	**4321**	8/83.00
10,000	**4304**	24/233.00
10,000	**4305**	96/824.00
Clear		
30,000	**4322**	8/83.00
30,000	**4306**	24/233.00
30,000	**4307**	96/824.00
Rose		
50,000	**4323**	8/83.00
50,000	**4310**	24/233.00
50,000	**4311**	96/824.00

† Sample can be reduced to 0.7mL with decanting and additional spins.

FILTER PAPER—QUALITATIVE

*Fisherbrand** Qualitative Grade Circles and Sheets

Ideal for clarifying and removing particles of 1µm and larger, and in applications that do not require a low-ash or ashless paper

- Cellulose fiber papers
- Good wet strength
- Suitable for gravity and low-suction filtration and for use in vacuum filtration systems
- Use with fluted circles (sold separately) for easy use with conical funnels
- Available as circular, rectangular, and square sheets

NOTE:
Not suitable for nitrogen analysis.

09-802-1B

09-795B

	Grade P8		Grade P5		Grade P4		Grade P2	
Dia. (circles) or L × W (sheets)	Cat. No.	Pack of	Cat. No.	Pack of	Cat. No.	Pack of	Cat. No.	Pack of
2.5cm dia.	**09-795AA**	100/4.75	**09-801AA**	100/5.28	----	----	----	----
3.5cm dia.	**09-795BB**	100/5.20	**09-801BB**	100/5.02	----	----	----	----
4.25cm dia.	----	----	**09-801J**	100/6.33	**09-803-6A**	100/6.71	----	----
5.5cm dia.	**09-795A**	100/5.02	**09-801K**	100/5.28	**09-803-6B**	100/6.71	**09-803-5A**	100/5.70
7cm dia.	**09-795B**	100/5.81	**09-801A**	100/6.33	**09-803-6C**	100/7.76	**09-803-5B**	100/7.92
9cm dia.	**09-795C**	100/6.86	**09-801B**	100/7.13	**09-803-6D**	100/12.41	**09-803-5C**	100/10.00
11cm dia.	**09-795D**	100/8.19	**09-801C**	100/7.49	**09-803-6E**	100/15.84	**09-803-5D**	100/16.07
12.5cm dia.	**09-795E**	100/8.45	**09-801D**	100/12.14	**09-803-6F**	100/16.89	**09-803-5E**	100/14.46
15cm dia.	**09-795F**	100/11.35	**09-801E**	100/20.59	**09-803-6G**	100/24.81	**09-803-5F**	100/19.55
18.5cm dia.	**09-795G**	100/15.58	----	----	**09-803-6H**	100/31.22	**09-803-5G**	100/31.76
19cm dia.	**09-804**	100/20.42	**09-801F**	100/20.06	----	----	----	----
20.5cm dia.	**09-795H**	100/23.75	----	----	**09-803-6J**	100/48.52	**09-803-5H**	100/54.78
24cm dia.	**09-795J**	100/24.81	**09-801G**	100/35.37	**09-803-6K**	100/54.84	**09-803-5J**	100/54.84
33cm dia.	**09-795K**	100/47.51	**09-801H**	100/70.13	**09-803-6L**	100/112.57	**09-803-5K**	100/96.54
46 × 57cm	**09-802-1B**	100/102.69	**09-802-1A**	100/125.47	----	----	----	----
50 × 50cm	**09-800**	500/237.41	**09-802**	500/250.58	----	----	----	----

Fisherbrand Grade	P8	P5	P4	P2
Particle Retention	20–25µm	5–10µm	4–8µm	1–5µm
Porosity	Coarse	Medium	Medium-Fine	Fine
Filtration Speed[1]	Herzberg, 55 seconds	Herzberg, 230 seconds	Herzberg, 730 seconds	Herzberg, 1400 seconds
Flowrate[2]	Fast—160mL/min.	Slow—60mL/min.	Slow—25mL/min.	Slow—5mL/min.
Surface	Smooth, open texture	Smooth	Smooth	Smooth, dense texture
Applications	Suitable for coarse and gelatinous precipitates. Retains $Fe(OH)_3$, $Al(OH)_3$, metallic sulfides, iron ores. For clarifying solutions, oils. For zinc analysis (Fe ppt removal). Size 19cm (09-804) widely used for sugar analysis.	General lab uses: clinical and spot testing, clarifying pharmaceuticals.	General purpose: slightly slower, more retentive than P5. Retains $MgNH_4PO_4$, silver sulfide, cadmium sulfide. In air monitors, collects particulates and chromic acid mist.	Excellent retention. Suitable for finest particles or precipitates. Used for boiler water testing, pigment studies, analysis of zinc and titanium.

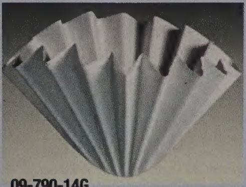
[1] *Time for 100mL to pass through 10cm² filter paper with 10cm constant head pressure of water.*
[2] *Rate of flow for distilled water through a 5cm diameter filter with constant 5cm head of water.*

*Trademark. See Trademark Reference.

*Fisherbrand** Fluted Qualitative Circles

Cellulose fiber papers

- For use with conical funnels
- High wet strength†



09-790-14G

Diameter	Cat. No.	Pack of 100
12.5cm	**09-790-14D**	51.73
15cm	**09-790-14E**	56.22
18.5cm	**09-790-14F**	61.23
24cm	**09-790-14G**	64.40

† Wet-strengthened papers should not be used for Kjeldahl analyses.

Fisherbrand Grade	P8—Fluted
Particle Retention	25µm
Porosity	Coarse
Flowrate	Fast
Surface	Smooth
Applications	Fluting provides more filter area, faster flowrate in conical funnel; reduces likelihood of tearing. Suitable for coarse, gelatinous precipitates.

*Fisherbrand** Wet-Strengthened Qualitative Circles

Coarse cellulose fiber papers remove particles >25µm

- Creped surface
- Fast flowrate
- Suitable for vacuum filtration

NOTE:
Not for nitrogen analysis.

09-790-12C

Diameter	Cat. No.	Pack of 100
9cm	**09-790-12C**	7.92
11cm	**09-790-12D**	9.50
12.5cm	**09-790-12E**	13.20
15cm	**09-790-12F**	15.84
18.5cm	**09-790-12G**	22.17

Fisherbrand Grade	P8
Particle Retention	>25µm
Porosity	Coarse
Flowrate	Fast
Surface	Creped
Applications	Suitable for coarse, gelatinous precipitates. Wet strengthened.†

† Wet-strengthened papers should not be used for Kjeldahl analyses.

Whatman* Wet-Strengthened Qualitative Circles

Coarse porosity paper with creped or smooth surface

FILTER PAPERS
114

09-833F

Diameter	Mfr. No.	Cat. No.	Pack of 100	Mfr. No.	Cat. No.	Pack of 100
9cm	1113-090	**09-853A**	14.03	1114-090	**09-833D**	9.53
11cm	1113-110	**09-853B**	15.61	----	----	----
12.5cm	1113-125	**09-853C**	20.57	1114-125	**09-833F**	17.61
15cm	1113-150	**09-853D**	29.01	1114-150	**09-833G**	22.02
18.5cm	1113-185	**09-853E**	44.40	1114-185	**09-833H**	33.08
24cm	1113-240	**09-853F**	68.07	1114-240	**09-833J**	54.16
32cm	1113-320	**09-853H**	123.05	----	----	----
40cm	----	----	----	1114-400	**09-833M**	162.49
50cm	1113-500	**09-853K**	288.91	----	----	----

Whatman Grade	Whatman 113	Whatman 114
Particle Retention	>30µm	>25µm
Porosity	Coarse	Coarse
Filtration Speed[1]	ASTM*, 8 seconds; Herzberg, 28 seconds	ASTM, 12 seconds; Herzberg, 38 seconds
Surface	Creped	Smooth
Applications[2]	Ideal for coarse particles and gelatinous precipitates. Thickest Whatman filter paper (0.42mm). Very high loading; high wet strength.	Half as thick as Grade 113. Use for coarse particles and gelatinous precipitates. Smooth surface makes precipitate recovery easy. Normal loading: high wet strength.

[1] Filtration speed conditions: ASTM, time for 100mL of prefiltered water to pass through 15cm quadrant-folded paper; Herzberg, time for 100mL to pass through 10cm² filter paper with 10cm constant head pressure of water.

[2] Wet-strengthened papers should not be used for Kjeldahl analyses.

Whatman* SG Student Grade (Grade 93) Qualitative Circles

Medium porosity

- Contains 50 envelopes of 25 circles each (1250 circles) in handy dispenser box
- Flowrate and retention fall between those for Whatman Grades 1 and 4

Diameter	Mfr. No.	Cat. No.	Pack of 1250
11cm	1093-111	**09-805-10A**	87.63
12.5cm	1093-126	**09-805-10B**	95.86

Whatman* Qualitative Grade Circles and Sheets

Maximum ash, 0.06%

Whatman Grade	**Grade 1**	**Grade 2**	**Grade 3**
Particle Retention	>11µm	>8µm	>6µm
Porosity	Medium	Medium Fine	Medium Fine
Filtration Speed†	ASTM*, 40 seconds; Herzberg, 150 seconds	ASTM, 55 seconds; Herzberg, 240 seconds	ASTM, 90 seconds; Herzberg, 325 seconds
Surface	Smooth	Smooth	Smooth, grained
Applications	For general-purpose use, air pollution monitoring and soil chemical analysis.	Slightly thicker and more retentive and absorbent than Whatman Grade 1.	Doubles the thickness of Whatman Grade 1 (0.4mm) for high precipitate capacity and increased wet strength. Suitable for suction filtration. Slightly grained surface. Highly absorbent.

Diameter (circles) or L × W (sheets)	**Mfr. No.**	**Cat. No.**	**Pack of**	**Mfr. No.**	**Cat. No.**	**Pack of**	**Mfr. No.**	**Cat. No.**	**Pack of**
1.0cm dia.	1001 6508	**09-805-1A**	500/27.88	----	----	----	----	----	----
1.5cm dia.	1001-0155	**09-805-1B**	500/27.88	----	----	----	----	----	----
2.3cm dia.	----	----	----	----	----	----	1003-323	**09-820AA**	100/8.25
2.5cm dia.	1001-325	**09-805-1G**	100/5.76	----	----	----	----	----	----
3.0cm dia.	1001-329	**09-805P**	100/6.06	----	----	----	----	----	----
3.2cm dia.	1001-032	**09-805**	100/6.18						
4.25cm dia.	1001-042	**09-805A**	100/6.09	1002-042	**09-810A**	100/7.98	----	----	----
5.5cm dia.	1001-055	**09-805B**	100/6.50	1002-055	**09-810B**	100/8.25	1003-055	**09-820H**	100/9.77
7.0cm dia.	1001-070	**09-805C**	100/6.61	1002-070	**09-810C**	100/9.20	1003-070	**09-820J**	100/11.78
9.0cm dia.	1001-090	**09-805D**	100/8.29	1002-090	**09-810D**	100/11.32	1003-090	**09-820A**	100/14.66
11.0cm dia.	1001-110	**09-805E**	100/10.06	1002-110	**09-810E**	100/11.18	1003-110	**09-820B**	100/18.15
12.5cm dia.	1001-125	**09-805F**	100/10.76	1002-125	**09-810F**	100/14.13	1003-125	**09-820C**	100/21.93
15.0cm dia.	1001-150	**09-805G**	100/15.67	1002-150	**09-810G**	100/20.00	1003-150	**09-820D**	100/32.38
18.5cm dia.	1001-185	**09-805H**	100/22.46	1002-185	**09-810H**	100/27.03	1003-185	**09-820E**	100/42.51
24.0cm dia.	1001-240	**09-805J**	100/35.93	1002-240	**09-810J**	100/44.54	1003-240	**09-820F**	100/72.81
27.0cm dia.	1001-270	**09-805K**	100/44.60	1002-270	**09-810K**	100/58.85	----	----	----
32.0cm dia.	1001-320	**09-805L**	100/60.86	1002-320	**09-810L**	100/90.68	1003-320	**09-820L**	----
38.5cm dia.	1001-385	**09-805-1C**	100/100.92	1002-385	**09-810M**	100/121.80	----	----	----
40.0cm dia.	1001-400	**09-805-1D**	100/100.92	----	----	----	----	----	----
50.0cm dia.	1001-500	**09-805-1E**	100/146.65	1002-500	**09-810P**	100/219.54	----	----	----
46 × 57cm (L × W)	1001-917	**09-806A**	100/138.21	1002-917	**09-810Q**	100/208.08	1003-917	**09-820P**	100/333.22
46 × 57cm (L × W)	1001-918	**09-805-1F**	500/608.33	----	----	----	----	----	----
58 × 68cm (L × W)	----	----	----	1002-931	**09-815A**	100/257.98	----	----	----

Whatman Grade	**Grade 4**	**Grade 5**	**Grade 6**
Particle Retention	>20-25µm	>2.5µm	>3µm
Porosity	Coarse	Fine	Fine
Filtration Speed†	ASTM*, 12 sec.; Herzberg, 37 sec.	ASTM, 250 sec.; Herzberg, 1420 sec.	ASTM, 175 sec.; Herzberg, 715 sec.
Surface	Smooth	Smooth, dense	Smooth
Applications	Used in air-pollution monitoring and routine cleanup of biological fluids. Retains coarse particles, gelatinous precipitates.	Most retentive grade of the series. Useful for clarifying cloudy suspensions, water analysis, Büchner funnel filtrations.	Twice as fast as Whatman Grade 5. Often specified for boiler water analyses.

Diameter (circles) or L × W (sheets)	**Mfr. No.**	**Cat. No.**	**Pack of 100**	**Mfr. No.**	**Cat. No.**	**Pack of 100**	**Mfr. No.**	**Cat. No.**	**Pack of 100**
4.25cm dia.	1004-042	**09-825J**	6.22	1005-042	**09-830G**	6.48	1006-042	**09-831A**	6.68
5.5cm dia.	1004-055	**09-825K**	7.40	1005-055	**09-830H**	7.71	----	----	----
7.0cm dia.	1004-070	**09-825A**	7.71	1005-070	**09-830K**	9.15	----	----	----
9.0cm dia.	1004-090	**09-825B**	9.56	1005-090	**09-830A**	12.60	1006-090	**09-831D**	11.47
11.0cm dia.	1004-110	**09-825C**	11.98	1005-110	**09-830B**	16.28	1006-110	**09-831E**	15.45
12.5cm dia.	1004-125	**09-825D**	15.87	1005-125	**09-830C**	20.07	1006-125	**09-831F**	18.53
15.0cm dia.	1004-150	**09-825E**	20.07	1005-150	**09-830D**	30.00	1006-150	**09-831G**	28.77
18.5cm dia.	1004-185	**09-825F**	30.31	1005-185	**09-830E**	43.83	----	----	----
24.0cm dia.	1004-240	**09-825G**	52.02	1005-240	**09-830F**	72.73	1006-240	**09-831J**	72.25
27.0cm dia.	1004-270	**09-825L**	69.16	----	----	----	----	----	----
32.0cm dia.	1004-320	**09-825H**	100.11	1005-320	**09-830M**	125.31	----	----	----
40.0cm dia.	1004-400	**09-825M**	148.26	----	----	----	----	----	----
46 × 57cm (L × W)	1004-917	**09-825P**	192.36	----	----	----	----	----	----

† Filtration speed conditions. ASTM, time for 100mL of prefiltered water to pass through 15cm quadrant-folded paper; Herzberg, time for 100mL to pass through 10cm² filter paper with 10cm constant head of water.

*Trademark. See Trademark Reference.

Prices subject to change.

hatman* Prepleated Qualitative Circles

ve time required to fit circles into conical funnels

refolded

ostpone normal slowdown of filtration speed due to particulate loading

ncrease total loading capacity

2V
QUALITATIVE
100 CIRCLES

09-832D

atman de	Whatman 2V	Whatman 113V	Whatman 114V
ticle ention	>8µm	>30µm	>25µm
osity	Medium-Fine	Coarse	Coarse
ration eed[1]	ASTM*, 55 seconds; Herzberg, 240 seconds	ASTM, 8 seconds; Herzberg, 28 seconds	ASTM, 12 seconds; Herzberg, 38 seconds
face	Smooth	Creped	Smooth
plications	Certified for cereal analysis methods. Normal loading capacity; limited wet strength.[2]	Ideal for coarse particles and gelatinous precipitates. Fastest flowrate of any qualitative grade. Very high loading capacity. High wet strength.[3]	Ideal for coarse particles and gelatinous precipitates. Fast flowrate. Normal loading; high wet strength.[3]

meter	Mfr. No.	Cat. No.	Pack of 100	Mfr. No.	Cat. No.	Pack of 100	Mfr. No.	Cat. No.	Pack of 100
5cm	1202-125	**09-832A**	45.81	1213-125	**09-832K**	53.61	1214-125	**09-834A**	51.02
cm	1202-150	**09-832B**	50.71	1213-150	**09-832L**	61.63	1214-150	**09-834B**	56.12
5cm	1202-185	**09-832C**	56.65	----	----	----	1214-185	**09-834C**	66.93
cm	1202-240	**09-832D**	77.43	----	----	----	1214-240	**09-834D**	85.84
cm	----	----	----	1213-270	**09-832P**	140.95	----	----	----
cm	1202-320	**09-832E**	122.05	----	----	----	1214-320	**09-834F**	141.34
5cm	1202-385	**09-832F**	181.47	----	----	----	----	----	----
cm	1202-400	**09-832H**	203.03	----	----	----	----	----	----
cm	1202-500	**09-832G**	237.25	----	----	----	----	----	----

ration speed conditions. *ASTM, time for 100mL of prefiltered water to pass through 15cm quadrant-folded paper; Herzberg, time for 100mL to pass through 10cm² filter paper with 10cm nstant head of water.*

itable for gravity or low-suction filtration; should be used with care to avoid rupturing.

et-strengthened papers should not be used for Kjeldahl analyses.

hatman* Reeve Angel* 802 Prepleated ualitative Circles

arse porosity

- olded for fast filtration f coarse particles and elatinous precipitates
- ualitative Grade; 15µm retention; 0-35µm pore size; 0.26mm thick
- leating and creped surface ncrease effective area, improving oth filtering speed and extending ilter life
- Vet strengthened

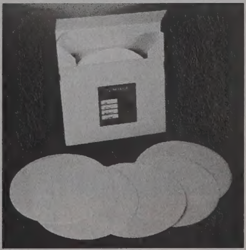
09-901C

meter	Mfr. No.	Cat. No.	Pack of 100
.5cm	5802-125	**09-901A**	22.96
cm	5802-150	**09-901B**	59.05
.5cm	5802-185	**09-901C**	27.88
cm	5802-240	**09-901D**	63.55
cm	5802-320	**09-901E**	73.44
.5cm	5802-385	**09-805-18F**	95.27

Whatman* Reeve Angel* 230 Creped Qualitative Circles

Coarse porosity

- Strong and thick
- Creped surface for fast filtration of coarse particles
- Qualitative Grade
- 30µm retention, 0.41mm thick (16.1mil)
- Ideal for use in oil chemistry
- Provide reliable performance for a wide range of industrial and student lab applications



09-803D

Diameter	Mfr. No.	Cat. No.	Pack of 50
9cm	5230-090	**09-803A**	4.98
15cm	5230-150	**09-803D**	10.40

Whatman* Qualitative Grade Paper for IS Measurement

Specifically developed for measuring the Ignition Strength (IS) of Cigarettes

- Certified Grade 2 (for IS testing)
- Each lot is guaranteed to meet the ASTM* E2187-04 specifications
- Simplifies testing process by eliminating lot suitability testing
- Just condition and use

FILTER PAPERS
2
Whatman
NEW

09-940-100

COMPLIANCE:

Tested according to the procedure detailed in ASTM E2187-04 Sections 9.3.1 and 9.3.2. Meets both the conditioned (26.1 ±0.5g, SD ≤0.3g) and dried (24.7 ±0.5g, SD ≤0.3g) weight requirements. Lot-specific certificate can be downloaded from Whatman website.

Diameter	Mfr. No.	Cat. No.	Pack of 100
15cm	1002-147	**09-940-100**	22.70

Whatman* Shark Skin Filter Paper

High wet strength allows use under pressure

- General use filter paper is white, with crepe surface
- Unique paper is almost as strong wet as it is dry
- Used for qualitative work, exceptional filtering properties
- Speed of filtering is comparable to common qualitative papers
- Acid and alkali resistance allows for wide range of process operations
- Particle retention: 8-12µm

09-924-39

APPLICATIONS:

Great for industrial work, because its high wet strength allows use under pressure or suction.

Diameter	Mfr. No.	Cat. No.	Pack of 100
12.5cm	10347511	**09-924-390**	35.46
15cm	10347513	**09-924-392**	28.93

FILTER PAPER—QUANTITATIVE

*Fisherbrand** Quantitative Grade Circles

Manufactured to reduce silicon dioxide, calcium oxide and ferric oxide levels

- Made from high-quality alpha cotton cellulose, washed in hydrochloric acid and neutralized in an ultrapure water rinse
- Leave no more than 0.01% ash when burned
- Limited wet strength, suitable for gravity or low-suction filtration; should be used with care to avoid rupturing

09-790G

ORDERING INFORMATION:

Packed 100 circles to a box and shrink-wrapped for purity and cleanliness.

COMPLIANCE:

All papers listed in chart meet ASTM* requirements for "ash content per circle."

Fisherbrand Grade	Q8	Q5	Q2
Particle Retention	20–25µm	5–10µm	1–5µm
Porosity	Coarse	Medium	Fine
Filtration Speed	Fast	Medium	Slow
Surface	Smooth, open texture	Smooth	Smooth, dense texture
Applications†	Suitable for coarse and gelatinous precipitates requiring thorough washing on paper. Used in metallurgical labs for filtering iron and aluminum hydroxides, metallic aerosols and for determining silica in steel. Also used in environmental monitoring. Limited wet strength.	Widely used for general gravimetric analysis. Retains medium-sized particles such as lead sulfate, calcium oxalate and magnesium ammonium sulfate. Limited wet strength.	Excellent retention. Suitable for finest precipitates such as metastannic acid, barium sulfate, mercuric chromate, strontium sulfate. Used primarily for gravimetric and inorganic analyses, collecting precipitates that tend toward colloidal dispersions. Limited wet strength.

Diameter	Cat. No.	Pack of 100	Cat. No.	Pack of 100	Cat. No.	Pack of 100
5.5cm	**09-790A**	12.34	**09-790-2A**	12.23	**09-790-4A**	13.12
7cm	**09-790B**	14.85	**09-790-2B**	14.85	**09-790-4B**	16.58
9cm	**09-790C**	20.72	**09-790-2C**	21.33	**09-790-4C**	21.27
11cm	**09-790D**	26.39	**09-790-2D**	26.39	**09-790-4D**	26.63
12.5cm	**09-790E**	33.78	**09-790-2E**	31.67	**09-790-4E**	29.93
15cm	**09-790F**	40.12	**09-790-2F**	39.37	**09-790-4F**	40.12
18.5cm	**09-790G**	60.97	**09-790-2G**	58.97	**09-790-4G**	59.14

† Suitable for gravity or low suction filtration; should be used with care to avoid rupturing.

Whatman* Quantitative-Grade Papers

Hardened Low Ash Circles and Sheets

Maximum ash of 0.015%

- High wet strength, high chemical resistance, hard smooth surface
- Ideal for Büchner funnel filtration
- Ash content is between qualitative and ashless grades

Top: 09-866;
Bottom: 09-868, 09-865.

Whatman Grade	Whatman 50	Whatman 52	Whatman 54
Particle Retention	>2.7µm	>7µm	>20–25µm
Porosity	Fine	Medium	Coarse
Filtration Speed[1]	ASTM*, 250 seconds; Herzberg, 2685 seconds	ASTM, 55 seconds; Herzberg, 235 seconds	ASTM, 10 seconds; Herzberg, 39 seconds
Surface	Smooth, hard	Smooth, hard	Smooth, hard
Applications	Highly glazed surface, free of loose fibers. Retains fine crystalline precipitates. Normal loading; high wet strength.	General-purpose filtration. Normal loading characteristics; high wet strength.[2]	For gelatinous precipitates and coarse particles. Normal loading characteristics; high wet strength.

	Whatman Grade 50			**Whatman Grade 52**			**Whatman Grade 54**		
Diameter (circles) or L × W (sheets)	**Mfr. No.**	**Cat. No.**	**Pack of 100**	**Mfr. No.**	**Cat. No.**	**Pack of 100**	**Mfr. No.**	**Cat. No.**	**Pack of 100**
4.25cm dia.	1450-042	**09-865J**	15.55	----	----	----	----	----	----
5.5cm dia.	1450-055	**09-865A**	17.49	----	----	----	1454-055	**09-868F**	17.49
7cm dia.	1450-070	**09-865B**	19.81	----	----	----	1454-070	**09-868G**	19.81
9cm dia.	1450-090	**09-865C**	26.18	1452-090	**09-866D**	28.40	1454-090	**09-868A**	28.40
11cm dia.	1450-110	**09-865D**	34.57	1452-110	**09-866E**	34.57	1454-110	**09-868B**	34.57
12.5cm dia.	1450-125	**09-865E**	39.83	1452-125	**09-866F**	39.83	1454-125	**09-868C**	39.83
15cm dia.	1450-150	**09-865F**	46.80	1452-150	**09-866G**	46.80	1454-150	**09-868D**	46.80
18.5cm dia.	1450-185	**09-865G**	58.82	----	----	----	1454-185	**09-868H**	58.93
24cm dia.	1450-240	**09-865H**	104.84	1452-240	**09-866J**	109.16	1454-240	**09-868J**	104.84
32cm dia.	1450-320	**09-865L**	190.41	----	----	----	1454-320	**09-868L**	188.16
40cm dia.	1450-400	**09-865M**	350.79	----	----	----	----	----	----
50cm dia.	----	----	----	----	----	----	1454-500	**09-868N**	404.91
46 × 57cm (L × W)	----	----	----	----	----	----	1454-917	**09-868P**	519.19

Hardened Ashless Circles

Maximum ash of 0.006%

- Acid hardened, which reduces ash to an extremely low level
- Tough, hard surface; suitable for critical analytical filtrations

Whatman Grade	Whatman 540	Whatman 541	Whatman 542
Particle Retention	>8µm	>20–25µm	>2.7µm
Porosity	Medium	Coarse	Fine
Filtration Speed[1]	ASTM*, 55 seconds; Herzberg, 200 seconds	ASTM, 12 seconds; Herzberg, 34 seconds	ASTM, 250 seconds; Herzberg, 2510 seconds
Surface	Smooth, hard	Smooth, hard	Smooth, hard
Applications[2]	Gravimetric analysis of metals in acid/alkali solutions. Collecting hydroxides after precipitation by strong alkalis. Normal loading; high wet strength.	Tough, smooth surface. Coarse gelatinous precipitates. Useful for intermediate stages of gravimetric analysis	Gravimetric metal determinations. Retains fine particles under demanding conditions. Normal loading; high wet strength.

	Whatman Grade 540			**Whatman Grade 541**			**Whatman Grade 542**		
Diameter (circles) or L × W (sheets)	**Mfr. No.**	**Cat. No.**	**Pack of 100**	**Mfr. No.**	**Cat. No.**	**Pack of 100**	**Mfr. No.**	**Cat. No.**	**Pack of 100**
2.1cm dia.	1540-321	**09-869B**	15.63	----	----	----	----	----	----
2.4cm dia.	1540-324	**09-869C**	15.63	----	----	----	----	----	----
4.25cm dia.	1540-042	**09-869A**	15.91	1541-042	**09-851G**	15.63	----	----	----
4.7cm dia.	----	----	----	1541-047	**09-851H**	17.27	----	----	----
5.5cm dia.	1540-055	**09-869D**	17.38	1541-055	**09-851J**	18.01	1542-055	**09-852D**	18.01
7cm dia.	1540-070	**09-869E**	21.86	1541-070	**09-851A**	21.86	1542-070	**09-852E**	21.86
9cm dia.	1540-090	**09-869F**	29.25	1541-090	**09-851B**	29.25	1542-090	**09-852F**	29.25
11cm dia.	1540-110	**09-869G**	35.61	1541-110	**09-851C**	33.73	1542-110	**09-852G**	35.61
12.5cm dia.	1540-125	**09-869H**	41.02	1541-125	**09-851D**	40.29	1542-125	**09-852H**	41.02
15cm dia.	1540-150	**09-869J**	57.47	1541-150	**09-851E**	57.57	1542-150	**09-852J**	57.47
18.5cm dia.	----	----	----	1541-185	**09-851K**	85.85	1542-185	**09-852K**	85.85
24cm dia.	1540-240	**09-869L**	135.43	1541-240	**09-851L**	135.63	----	----	----
32cm dia.	----	----	----	1541-320	**09-851N**	277.55	----	----	----
40cm dia.	----	----	---	1541-400	**09-851P**	372.19	----	----	----

Filtration Speed conditions: ASTM, time for 100mL of prefiltered water to pass through 15cm quadrant-folded paper; Herzberg, time for 100mL to pass through 10cm^2 filter paper with 10cm constant head pressure of water.

[2] *Wet strengthened papers should not be used for Kjeldahl analyses.*

Whatman* Quantitative-Grade Papers, Contd.

FILTER PAPERS
41
Ashless
Circles
Whatman*

09-850E

Ashless Circles and Sheets

Suitable for gravity or low-suction filtration

- Acid washed: Ash content not exceeding 0.007%
- Meet ASTM* "ash content per circle" requirements
- Manufactured with demineralized water for high purity
- Limited wet strength, use care to avoid rupturing

Whatman Grade	Whatman 40	Whatman 41
Particle Retention	>8µm	>20–25µm
Porosity	Medium	Coarse
Filtration Speed[1]	ASTM, 75 seconds; Herzberg, 340 seconds	ASTM, 12 seconds; Herzberg, 54 seconds
Surface	Smooth	Smooth, open texture
Applications[2]	Widely used, general-purpose gravimetric grade. Medium crystalline precipitates: calcium oxalate, well-digested barium. Normal loading; limited wet strength.	Gelatinous precipitates and coarse particles. Metallurgy: iron and aluminum hydroxides. Air pollution monitoring. Normal loading; limited wet strength.

	Whatman Grade 40			Whatman Grade 41		
Diameter (circles) or L × W (sheets)	Mfr. No.	Cat. No.	Pack of 100	Mfr. No.	Cat. No.	Pack of 10
3cm dia.	1440-329	**09-845J**	14.71	----	----	---
4.25cm dia.	1440-042	**09-845H**	17.39	1441-042	**09-850G**	14.61
4.7cm dia.	----	----	----	1441-047	**09-850H**	16.0
5.5cm dia.	1440-055	**09-845A**	19.90	1441-055	**09-850J**	15.6
7cm dia.	1440-070	**09-845B**	20.22	1441-070	**09-850A**	19.81
9cm dia.	1440-090	**09-845C**	28.00	1441-090	**09-850B**	26.0
11cm dia.	1440-110	**09-845D**	33.26	1441-110	**09-850C**	31.6
12.5cm dia.	1440-125	**09-845E**	38.41	1441-125	**09-850D**	37.3
15cm dia.	1440-150	**09-845F**	50.54	1441-150	**09-850E**	52.0
18.5cm dia.	1440-185	**09-845G**	75.17	1441-185	**09-850L**	75.1
24cm dia.	1440-240	**09-845K**	118.80	1441-240	**09-850M**	118.8
32cm dia.	1440-320	**09-845M**	243.63	1441-320	**09-850P**	243.3
46 × 57cm (L × W)	1440-917	**09-845P**	508.56	----	----	---
8 × 10"	----	----	----	1441-866	**09-850Q**	147.3

Whatman Grade	Whatman 42	Whatman 43	Whatman 44
Particle Retention	>2.5µm	>16µm	>3µm
Porosity	Medium	Medium	Fine
Filtration Speed[1]	ASTM, 240 seconds; Herzberg, 1870 seconds	ASTM, 40 seconds; Herzberg, 155 seconds	ASTM, 175 seconds; Herzberg, 995 seconds
Surface	Smooth, dense texture	Smooth	Smooth, dense texture
Applications[2]	Highly retentive, for very fine precipitates. Normal loading; limited wet strength. Laboratory standard for critical gravimetric analysis.	Foodstuff and soil analyses, particle collection in air pollution monitoring for XRF analysis. Normal loading; limited wet strength.	Retains fine particles, but somewhat thinner and faster than Grade 42. Normal loading; limited wet strength.

	Whatman Grade 42			Whatman Grade 43			Whatman Grade 44		
Diameter	Mfr. No.	Cat. No.	Pack of 100	Mfr. No.	Cat. No.	Pack of 100	Mfr. No.	Cat. No.	Pack of 10
4.25cm	1442-042	**09-856A**	15.55	----	----	----	----	----	---
5.5cm	1442-055	**09-855AA**	17.49	----	----	----	----	----	---
7cm	1442-070	**09-855A**	21.23	----	----	----	1444-070	**09-860A**	21.1
9cm	1442-090	**09-855B**	28.40	1443-090	**09-856J**	28.40	1444-090	**09-860B**	28.4
11cm	1442-110	**09-855C**	34.57	1443-110	**09-856K**	34.57	1444-110	**09-860C**	34.5
12.5cm	1442-125	**09-855D**	39.83	1443-125	**09-856L**	39.83	1444-125	**09-860D**	39.8
15cm	1442-150	**09-855E**	50.54	1443-150	**09-856M**	50.54	1444-150	**09-860E**	50.5
18.5cm	1442-185	**09-855F**	75.17	1443-185	**09-856N**	75.17	1444 185	**09-860G**	75.1
24cm	1442-240	**09-856B**	120.83	----	----	----	1444-240	**09-860H**	123.2
32cm	1442-320	**09-856D**	243.63	----	----	----	----	----	---

[1] *Filtration Speed conditions: ASTM, time for 100mL of prefiltered water to pass through 15cm quadrant-folded paper; Herzberg, time for 100mL to pass through 10cm² filter paper with 10cm constant head pressure of water.*

[2] *Suitable for gravity or low-suction filtration; should be used with care to avoid rupturing.*

*Trademark. See Trademark Reference.

Prices subject to change.

GLASS FIBER FILTERS AND PREFILTERS

Fisherbrand* Glass Fiber Circles

Faster flow, higher retention than cellulose filters

- Ideal as prefilters and for gravimetric analyses
- Low hygroscopicity
- Chemically and biologically inert, with no organic binders
- Suitable for many corrosive applications
- Offer higher retention efficiency of fine particles (<3µm in size)
- Resist clogging for greater loading capacity than cellulose paper filters
- Autoclavable and usable to 500°C (932°F)
- Filters should be used flat: folding will break the glass fibers

09-804-90A

Fisherbrand Grade	G8	G6	G4	G2
Particle Retention	2.5µm	1.6µm	1.2µm	1.0µm
Flowrate	Fast	Fast	Fast	Fast
Thickness	0.69mm	1.6µm	0.28mm	0.66mm
Weight	121g/m²	57g/m²	51g/m²	140g/m²
Applications	General purpose. Clinical specimen filtration. Recommended prefilter for 0.45µm pore size or smaller membrane filters.	General purpose. Air pollution monitoring. Biochemical biological filtration cells, precipitated proteins. Scintillation counting. Radioimmunoassays.	Water/wastewater analysis of suspended solids. Biochemical filtration. Microorganism retention. Harvesting lymphocytes, other cells. Scintillation counting.	Biological fluids, serum, blood fractions. Biochemical polymers, precipitated proteins. Industrial waste analysis. Prefilter for membranes.

Diameter	Cat. No.	Pack of 100	Cat. No.	Pack of 100	Cat. No.	Pack of 100	Cat. No.	Pack of 100
21mm	**09-804-21D**	20.67	**09-804-21A**	17.77	**09-804-21C**	34.73	**09-804-21B**	34.23
24mm	----	----	**09-804-24A**	19.00	**09-804-24C**	37.22	----	----
25mm	**09-804-25D**	22.17	----	----	----	----	----	----
42.5mm	**09-804-42D**	26.75	**09-804-42A**	22.97	**09-804-42C**	44.87	**09-804-42B**	45.34
55mm	**09-804-55D**	38.01	**09-804-55A**	25.34	**09-804-55C**	56.75	**09-804-55B**	59.69
70mm	**09-804-70D**	49.98	**09-804-70A**	30.09	**09-804-70C**	73.54	----	----
90mm	----	----	**09-804-90A**	48.56	**09-804-90C**	103.20	----	----
110mm	----	----	**09-804-110A**	76.01	----	----	----	----
125mm	----	----	**09-804-125A**	84.73	----	----	----	----
150mm	----	----	**09-804-150A**	85.32	----	----	----	----

Fisherbrand* Filters for TCLP

Binder-free, borosilicate glass fiber filters have 0.7 micron pore size

09-804-142H

- 47mm size recommended for use with 09-753-1A Filter Holder in filtering highly granular samples or those with <10% solids
- 90mm size recommended for use with 09-753-2 Filter Holder with highly granular samples
- 142mm size provides four times the filtration area of 47mm filters (ideal for samples with >10% solids); recommended for use with 09-753-25J Filter Holder with reservoir

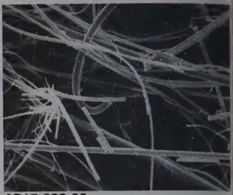
COMPLIANCE:

Meet U.S. EPA requirements for Toxicity Characteristic Leaching Procedure (TCLP).

Diameter	Recommended Filter Holder	Cat. No.	Pack of 100
47mm	09-753-1A	**09-804-142H**	24.92
90mm	09-753-2	**09-804-142J**	56.04
142mm	09-753-25J	**09-804-142G**	105.91

Millipore* Glass Fiber Filters

For prefiltration and contamination analysis


AP15 022 00

Disc diameters to fit either O-ring I.D. or filter O.D. Available in three grades.

- AP15, 20, and 25 Series filters are made of borosilicate microfiber glass with acrylic binder resin
- Filters retain structural integrity without weight loss when ignited to 550°C (1022°F) after sample filtration
- Autoclavable

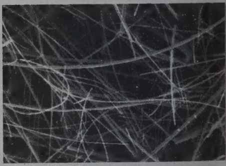
	Glass Fiber Filters			Glass Fiber Filters Without Binders
Series	**AP15**	**AP20**	**AP25**	**AP40**
Thickness	0.790mm	0.38mm	1.2mm	0.475mm
Flowrate	3–3.5 sec./100mL	1–2 sec./100mL	1–2 sec./100mL	274–456 sec./100mL
Max. Temp.	----	----	----	550°C
Weight	50g/m²	59g/m²	140g/m²	72g/m²
Applications	Prefiltration for 0.2–0.6µm filters.	Prefiltration for 0.8–8.0µm filters. Upstream protection of AP15 filters.	Prefiltration for 0.8–8.0µm filters. Suited for proteinaceous and heavily contaminated liquids. For upstream protection of AP15 filters.	Determination of volatile suspende matter in wastewater and industrial effluents. Also for use in aerosol monitoring, and TCLP analysis.

	AP15		**AP20**		**AP25**		**AP40**	
Diameter	**Cat. No.**	**Pack of**	**Cat. No.**	**Pack of**	**Cat. No.**	**Pack of**	**Cat. No.**	**Pack o**
10mm	----	----	**AP20 010 00**	100/33.00	**AP25 010 00**	100/33.00	**AP40 010 00**	100/33.0
13mm	----	----	**AP20 013 00**	100/33.00	**AP25 013 00**	100/33.00	----	---
22mm	**AP15 022 00**	100/33.00	**AP20 022 00**	100/33.00	**AP25 022 00**	100/33.00	----	---
24mm	----	----	----	----	----	----	**AP40 024 05**	500/124.0
25mm	**AP15 025 00**	100/33.00	**AP20 025 00**	100/33.00	**AP25 025 00**	100/33.00	----	---
37mm	----	----	----	----	----	----	**AP40 037 05**	500/152.0
42mm	**AP15 042 00**	100/48.00	**AP20 042 00**	100/48.00	**AP25 042 00**	100/48.00	----	---
47mm	**AP15 047 00**	100/51.00	**AP20 047 00**	100/51.00	**AP25 047 00**	100/51.00	**AP40 047 00**†	100/40.0
75mm	**AP15 075 00**	100/73.00	**AP20 075 00**	100/73.00	**AP25 075 00**	100/64.00	----	---
90mm	**AP15 090 00**	100/85.00	**AP20 090 00**	100/85.00	**AP25 090 00**	100/85.00	**AP40 090 00**	100/80.0
124mm	**AP15 124 50**	50/109.00	**AP20 124 50**	50/109.00	**AP25 124 50**	50/109.00	----	---
142mm	**AP15 142 50**	50/132.00	**AP20 142 50**	50/132.00	**AP25 142 50**	50/132.00	**AP40 142 50**	50/103.0

† Also available 500/pk. (AP40 047 05).

Glass Fiber Filters without Binders

Filters made of borosilicate microfiber glass without binders


APFA 025 00

- For environmental, gravimetric, and biochemical applications
- AP40 Series (above) are used for contamination analysis only
- Can be rendered transparent by immersing in benzene, ethyl alcohol, or other solvents with Refractive Index of 1.5097
- Autoclavable

	Glass Fiber Filters Without Binders				
Series	**APFA**	**APFB**	**APFC**	**APFD**	**APFF**
Particle Retention	1.6µm	1.0µm	1.2µm	2.7µm	0.7µm
Thickness	0.5–0.63mm	0.87–0.94mm	0.32–0.36mm	0.98–1.04mm	0.59–0.63mm
Flowrate	30–64 sec./100mL	102–140 sec./100mL	70–100 sec./100mL	12–28 sec./100mL	274–456 sec./100mL
Max. Temp.	500°C	500°C	500°C	500°C	500°C
Weight	53g/m²	143g/m²	53g/m²	120g/m²	75g/m²
Applications	Wastewater monitoring. Collection of suspended particles in grease. Cell collection. Filtration of protein and nucleic acid precipitates.	Liquid clarification. Quantification of solids in suspensions of fine particles. Scintillation counting.	Determination of total suspended solids in drinking water. Filtration of proteins of nucleic acid TCA precipitates. Collection of cells and microorganisms.	Clarification of suspensions with particles >1µm. Collection of cells and microorganisms.	Filtration of extremely fine precipitates such as proteins, nucleic acids and serum precipitates.

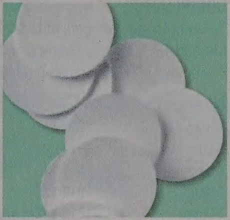
	APFA		**APFB**		**APFC**		**APFD**		**APFF**	
Diameter	**Cat. No.**	**Pack of**	**Cat. No.**	**Pack of**	**Cat. No.**	**Pack of**	**Cat. No.**	**Pack of**	**Cat. No.**	**Pack**
25mm	**APFA 025 00**	100/22.00	**APFB 025 00**	100/42.00	**APFC 025 00**	100/42.00	**APFD 025 00**	100/22.00	**APFF 025 00**	100/66.
47mm	**APFA 047 00**	100/33.00	**APFB 047 00**	100/51.00	**APFC 047 00**	100/51.00	**APFD 047 00**	100/33.00	**APFF 047 00**	100/79.
90mm	**APFA 090 50**	50/42.00	----	----	**APFC 090 50**	50/57.00	**APFD 090 50**	50/42.00	**APFF 090 50**	50/94.

*Trademark. See Trademark Reference.

Prices subject to change.

Millipore* Quartz Fiber Filters

Perfect for measuring heavy metal concentrations and small amounts of particles



AQFA 037 00

- Suitable for use in U.S. EPA PM10 ambient air monitoring method
- Pure quartz composition prevents the filters from reacting with acidic gases
- Exhibit good weight and form stability
- Can be sterilized by EtO, gamma, or autoclave (121°C at 1 bar)

iameter	Cat. No.	Pack of
32mm	**AQFA 032 00**	100/84.00
37mm	**AQFA 037 00**	100/92.00
47mm	**AQFA 047 00**	100/106.00
55mm	**AQFA 055 00**	100/117.00
90mm	**AQFA 090 50**	50/111.00
110mm	**AQFA 110 50**	50/133.00

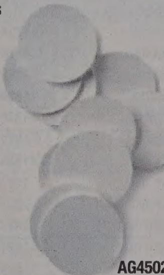
YPICAL CHARACTERISTICS:

hickness	500µm
lowrate	1.6mL/min./cm²
ax. Filtration Temp.	550°C (1022°F)
eight	75g/m²
terilization	Autoclavable

Millipore* Silver Membrane Filters

Excellent chemical and temperature resistance

trong, homogenous structure allows resterilization ultiple times without changing characteristics r loss of performance.



AG4502550

- Pure metallic silver
- Ideal for collecting airborne contaminants
- Constructed of 99.97% pure metallic silver
- Designed to withstand extreme chemical and thermal stress
- Ideal for applications involving aggressive fluids and/or high temperatures
- Referenced by NIOSH for collecting airborne contaminants†
- Filter surface: plain

PPLICATIONS: Used for air monitoring of carbon black, coal tar products, oke oven emissions, and silica. Ideal for crystalline silica analysis by X-ray iffraction techniques.

eries	Diameter	Cat. No.	Pack of 50
AG45	25mm	**AG4502550**	362.00
AG80	37mm	**AG8003750**	677.60

U.S. National Institute of Safety and Health, Manual of Analytical Methods, April 1977 and August 1978.

YPICAL CHARACTERISTICS:

illipore Series	**AG45**	**AG80**
article Retention	0.45µm	0.8µm
hickness	55µm	55µm
lowrate	25mL/min./cm²	120mL/min./cm²
ax. Filtration Temp.	550°C	550°C
terilization	Autoclavable	Autoclavable

Millipore* Reinforced Membrane Filters

Contain no asbestos or fiberglass

Made of homogenous microporous polymers of cellulose esters formed around a polyester web. Available in three grades.

RW03 047 00

- RW03 filters offer the highest retention efficiency in submicron clarification; can also serve as prefilters for 0.2 to 0.45µm filters
- RW06 and RW19 filters provide lower retention efficiencies than the RW03 Series in submicron clarification
- RW06 filters can also serve as prefilters for 0.45 to 0.8µm filters
- RW19 filters are suitable as prefilters for 0.8 to 1.2µm filters

Diameter	Cat. No.	Pack of
RW03 Series		
47mm	**RW03 047 00**	100/49.00
90mm	**RW03 090 00**	100/92.00
142mm	**RW03 142 50**	50/106.00
RW06 Series		
47mm	**RW06 047 00**	100/49.00
90mm	**RW06 090 00**	100/92.00
142mm	**RW06 142 50**	50/106.00
RW19 Series		
47mm	**RW19 047 00**	100/49.00
90mm	**RW19 090 00**	100/92.00
142mm	**RW19 142 50**	50/106.00

Typical Characteristics

Millipore Series	**RW03**	**RW06**	**RW19**
Particle Retention	0.45µm	0.8µm	1.2µm
Thickness	0.15–0.27mm	0.15–0.27mm	0.15–0.27mm
Flowrate	45–85 sec./ 500mL	16–28 sec./ 500mL	8–15 sec./ 500mL
Max. Filtration Temperature	75°C (167°F)	75°C (167°F)	75°C (167°F)
Sterilization	Autoclavable	Autoclavable	Autoclavable
Applications	Submicron clarification. Prefiltration for 0.2–0.45µm filters.	Prefiltration for 0.45–0.8µm filters.	Prefiltration for 0.8–1.2µm filters.

Fisherbrand* Filter Forceps

Easy, effortless handling of membranes and glass fiber filters

- Made of Type 304 stainless steel
- Broad unserrated tips to prevent damage to filters
- Serrated grip area on blades lets you hold forceps securely and correctly, without slippage
- Sterilize by autoclave or by dipping tips in alcohol and "flaming"
- Won't corrode in acids or acidic atmospheres

ORDERING INFORMATION:

Length: 4½" (11.4cm).

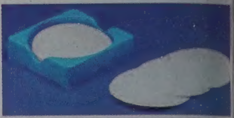
Cat. No.	Each
09-753-50	13.66

Whatman* Acid-Treated Low-Metal TCLP Filters

Contain no binders to interfere with samples

Made of acid-treated microfibers of borosilicate glass in a unique formulation with inherently low levels of barium and zinc.

- Resistant to acids and bases
- Nominal 0.7µm pore size
- Superior lot-to-lot consistency, with the high loading capacity demanded by TCLP samples
- Available in six diameters, including sizes to fit Büchner funnels and zero-headspace extraction units
- Pretreatment with acid eliminates need to acid-wash filters in your lab, for reduced analysis time and reagent costs



09-921-8

COMPLIANCE:

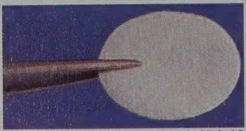
Conform to requirements of U.S. EPA Method 1311 Toxicity Characteristic Leaching Procedure (TCLP), including 0.6 to 0.8µm particle retention requirement.

Diameter	Mfr. No.	Cat. No.	Pack of
47mm	1810-047	**09-921-7**	100/94.55
90mm	1810-090	**09-921-8**	50/75.64
110mm	1810-110	**09-921-9**	50/110.61
125mm	1810-125	**09-922-0**	50/162.99
142mm	1810-142	**09-922-1**	50/198.21
150mm	1810-150	**09-922-2**	50/216.16

Whatman* Binder-Free Glass Microfiber Filters

Type GF/A

- General purpose, high efficiency
- High flowrate
- Extra thick for greater retention



09-874-16

APPLICATIONS:

- Water pollution effluent monitoring
- Filtering water, algae, bacterial cultures
- Foodstuff analyses
- Protein filtration
- Radioimmunoassay of weak β-emitters
- Gravimetric determination of airborne particulates, stack sampling and absorption methods of air pollution monitoring

Dia. (circles) or L × W (sheets)	Mfr. No.	Cat. No.	Pack of
2.1cm dia.	1820-021	**09-874-10**	100/22.68
2.4cm dia.	1820-024	**09-874-12**	100/22.78
2.5cm dia.	1820-025	**09-874-12A**	100/22.78
3.0cm dia.	1820-030	**09-915**	100/30.21
3.7cm dia.	1820-037	**09-874-12B**	100/26.30
4.25cm dia.	1820-042	**09-874-14**	100/27.94
4.7cm dia.	1820-047	**09-874-14A**	100/31.13
5.5cm dia.	1820-055	**09-874-16**	100/33.09
7.0cm dia.	1820-070	**09-874-16A**	100/39.90
9.0cm dia.	1820-090	**09-874-16B**	100/60.01
11.0cm dia.	1820-110	**09-874-16C**	100/92.93
12.5cm dia.	1820-125	**09-874-16D**	100/121.31
15.0cm dia.	1820-150	**09-874-16E**	100/205.28
46 × 57cm (L × W)	1820-915	**09-874-16G**	25/456.43

Whatman Grade	**GF/A**
Particle Retention[1]	1.6µm
Flowrate[2]	13.0 sec./100mL
Thickness	0.26mm
Weight	53g/m²
Max. Temp.	500°C (932°F)
Water Absorption[3]	275mL/m²
Sterilization	Autoclavable

[1] 2% initial penetration values using solid particulates dispersed in water. (Represents complete retention in normal laboratory analysis.)

[2] Vacuum filtration of prefiltered water through 2¹⁄₁₆" (5.5cm) flat filter at 100mmHg (1.9psi).

[3] Equilibrium volume of water absorbed by filter.

Type GF/B Filters

Extra thick for greater retention

- High wet strength
- High loading capacity

Whatman
GF/B

09-874-24

APPLICATIONS:

Particularly useful when liquid or solids quantification is required for heavily loaded fine particulate suspensions; Can be used as a finely retentive membrane filter; Used in LSC techniques where high loading capacity is required

Dia. (circles) or L × W (sheets)	Mfr. No.	Cat. No.	Pack of
2.1cm dia.	1821-021	**09-874-20**	100/42.13
2.4cm dia.	1821-024	**09-874-22**	100/43.57
2.5cm dia.	1821-025	**09-874-22A**	100/55.67
3.7cm dia.	1821-037	**09-874-22B**	100/54.33
4.25cm dia.	1821-042	**09-874-24**	100/59.25
4.7cm dia.	1821-047	**09-874-24A**	100/70.32
5.5cm dia.	1821-055	**09-874-26**	100/76.16
7.0cm dia.	1821-070	**09-874-26A**	100/101.89
9.0cm dia.	1821-090	**09-874-26B**	25/37.38
11.0cm dia.	1821-110	**09-874-26C**	25/51.82
12.5cm dia.	1821-125	**09-874-26D**	25/66.10
15.0cm dia.	1821-150	**09-874-26E**	25/99.25
46 × 57cm (L × W)	1821-914	**09-874-28**	5/255.20
46 × 57cm (L × W)	1821-915	**09-874-28A**	25/1005.40

Whatman Grade	**GF/B**
Particle Retention[1]	1.0µm
Flowrate[2]	5.5 sec./100mL
Thickness	0.68mm
Weight	143g/m²
Max. Temp	500°C (932°F)
Water Absorption[3]	675mL/m²
Sterilization	Autoclavable

[1] 2% initial penetration values using solid particulates dispersed in water. (Represents complete retention in normal laboratory analysis.)

[2] Vacuum filtration of prefiltered water through 2 ¹⁄₁₆" (5.5cm) flat filter at 100mmHg (1.9ps

[3] Equilibrium volume of water absorbed by filter.

Contd. on next pag

Vhatman* Binder-Free Glass Microfiber Filters, Contd.

ype GF/C Filters

09-874-34

PPLICATIONS:

ir monitoring; collection of suspended solids in potable water, natural and ndustrial wastes; clarification of aqueous liquids containing low to medium evels of fine particulates; cell harvesting; liquid scintillation counting; narine chemistry and biochemistry; radioimmunoassay procedures

ia. (circles) or . × W (sheets)	Mfr. No.	Cat. No.	Pack of
.1cm dia.	1822-021	**09-874-30**	100/46.63
.4cm dia.	1822-024	**09-874-32**	100/47.41
.5cm dia.	1822-025	**09-874-32A**	100/47.41
.7cm dia.	1822-037	**09-874-32B**	100/53.98
.25cm dia.	1822-042	**09-874-34**	100/53.98
.7cm dia.	1822-047	**09-874-35**	100/73.94
.5cm dia.	1822-055	**09-874-36**	100/85.77
.0cm dia.	1822-070	**09-874-38**	100/92.93
.0cm dia.	1822-090	**09-874-39**	100/129.87
1.0cm dia.	1822-110	**09-874-36A**	100/206.38
2.5cm dia.	1822-125	**09-874-37**	100/227.95
5.0cm dia.	1822-150	**09-874-37A**	100/395.89
6 × 57cm (L × W)	1822-915	**09-874-40A**	25/708.90

Vhatman Grade	GF/C
article Retention[1]	1.2µm
lowrate[2]	10.5 sec./100mL
hickness	0.26mm
Veight	53g/m²
lax. Temp.	500°C (932°F)
Vater Absorption[3]	250mL/m²
terilization	Autoclavable

2% initial penetration values using solid particulates dispersed in water. (Represents complete retention in normal laboratory analysis.)

Vacuum filtration of prefiltered water through 2 1⁄16" (5.5cm) flat filter at 100mmHg (1.9psi).

Equilibrium volume of water absorbed by filter.

Type GF/D Filters

For general purpose, routine, solvent filtrations

09-874-44

- Extra thick; very high speed
- Effective prefilter for membranes
- Prefilter to extend life of membrane filters
- Very high loading capacity, high wet strength
- Can be used with GF/B filters to provide efficient graded prefilter protection for membranes

Dia. (circles)	Mfr. No.	Cat. No.	Pack of
1.0cm dia.	1823-010	**09-874-40B**	100/27.16
2.1cm dia.	1823-021	**09-874-41**	100/27.16
2.4cm dia.	1823-024	**09-874-42A**	100/27.16
2.5cm dia.	1823-025	**09-874-44**	100/27.16
4.25cm dia.	1823-042	**09-874-46B**	100/35.23
4.7cm dia.	1823-047	**09-874-48**	100/41.06
5.5cm dia.	1823-055	**09-874-46C**	100/47.20
7.0cm dia.	1823-070	**09-874-47**	100/65.56
9.0cm dia.	1823-090	**09-874-47A**	25/26.78
11.0cm dia.	1823-110	**09-874-47B**	25/36.05
12.5cm dia.	1823-125	**09-874-47C**	25/48.30
14.2cm dia.	1823-142	**09-874-47H**	25/76.86
15.0cm dia.	1823-150	**09-874-47D**	25/82.01
25.7cm dia.	1823-257	**09-874-47E**	25/106.09

Whatman Grade	GF/D
Particle Retention[1]	2.7µm
Flowrate[2]	16.5 sec./100mL
Thickness	0.68mm
Weight	120g/m²
Max. Temp.	500°C (932°F)
Water Absorption[3]	900mL/m²
Sterilization	Autoclavable

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[1] 2% initial penetration values using solid particulates dispersed in water. (Represents complete retention in normal laboratory analysis.)

[2] Vacuum filtration of prefiltered water through 2 1⁄16" (5.5cm) flat filter at 100mmHg (1.9psi).

[3] Equilibrium volume of water absorbed by filter.

Whatman* Binder-Free Glass Microfiber Filters, Contd.

Type 934-AH Filters

Specified in official methods for testing suspended solids in water pollution monitoring

- Very high loading capacity
- High retention efficiency at high flowrate
- Standard for water analysis
- Autoclavable, usable to 500°C

09-873G

APPLICATIONS:

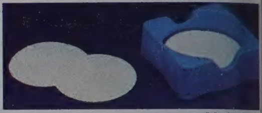
Water pollution monitoring of suspended solids; cell harvesting; liquid scintillation counting; air pollution monitoring

Dia. (circles) or L × W (sheets)	Mfr. No.	Cat. No.	Pack of
2.1cm dia.	1827-021	**09-873A**	100/18.39
2.4cm dia.	1827-024	**09-873B**	100/22.00
2.5cm dia.	1827-025	**09-870A**	100/20.57
3.0cm dia.	1827-030	**09-870C**	100/22.45
3.2cm dia.	1827-032	**09-873BB**	100/24.12
3.5cm dia.	1827-035	**09-870D**	100/26.71
3.7cm dia.	1827-037	**09-873C**	100/26.71
4.25cm dia.	1827-042	**09-873D**	100/29.20
4.7cm dia.	1827-047	**09-873DD**	100/37.00
5.5cm dia.	1827-055	**09-873E**	100/40.00
7.0cm dia.	1827-070	**09-873F**	100/48.22
8.26cm dia.	1827-082	**09-874**	1/71.07
9.0cm dia.	1827-090	**09-873G**	100/81.00
10.5cm dia.	1827-105	**09-870F**	100/91.74
11.0cm dia.	1827-110	**09-873H**	100/92.00
12.5cm dia.	1827-125	**09-873J**	100/112.00
15.0cm dia.	1827-150	**09-873K**	100/143.76
18.5cm dia.	1827-185	**09-870H**	100/216.58
24.0cm dia.	1827-240	**09-870J**	100/366.06
32.0cm dia.	1827-320	**09-870K**	100/613.78
5 × 31cm L × W	1827-808	**09-874-65**	100/88.42
20 × 25cm L × W	1827-866	**09-870Q**	100/278.00
30 × 38cm L × W	1827-889	**09-870S**	100/557.02

Whatman Grade	934/AH
Particle Retention	1.5µm
Filtration Speed (Herzberg)	4.7 sec./100mL
Thickness	0.33mm
Weight	64g/m²
Max. Temp.	500°C (932°F)
Sterilization	Autoclavable

Type GF/F Filters

- Binder-free borosilicate glass
- Retain fine particles down to 0.7µm
- Very rapid flowrate, extremely high loading capacity
- Autoclavable, usable to 500°C
- Effective in filtering finely precipitated proteins
- Can be used with type GF/D as a prefilter for clarification of extremely "difficult" biochemical solutions and nucleic acids



09-874-6

COMPLIANCE:

Meet requirements of EPA Toxicity Characteristic Leaching Procedure (TCLP).

Diameter	Mfr. No.	Cat. No.	Pack of
2.1cm	1825-021	**09-874-60**	100/71.53
2.4cm	1825-024	**09-874-62**	100/74.86
2.5cm	1825-025	**09-874-64**	100/80.00
3.7cm	1825-037	**09-874-70**	100/91.98
4.25cm	1825-042	**09-874-66**	100/100.15
4.7cm	1825-047	**09-874-71**	100/108.00
5.5cm	1825-055	**09-874-68**	100/126.71
7.0cm	1825-070	**09-874-72**	100/147.42
9.0cm	1825-090	**09-874-73**	25/51.66
11.0cm	1825-110	**09-874-74**	25/76.57
12.5cm	1825-125	**09-874-75**	25/90.88
14.2cm	1825-142	**09-874-80**	25/120.68
15.0cm	1825-150	**09-874-76**	76/140.28
29.3cm	1825-293	**09-874-78**	25/550.60

Whatman Grade	GF/F
Particle Retention†	0.7µm
Flowrate‡	6.0 sec./100mL
Thickness	0.42mm
Weight	75g/m²
Max. Temperature	500°C (932°F)
Water Absorption††	400mL/m²
Sterilization	Autoclavable

† 2% initial penetration values using solid particulates dispersed in water. (Represents complete retention in normal laboratory analysis.)

‡ Vacuum filtration of prefiltered water through 2⅛" (5.5cm) flat filter at 1.9psi (100mmHg).

†† Equilibrium volume of water absorbed by filter.

LOOKING FOR WATER-TESTING MEMBRANE FILTERS?

Fisherbrand* Water-Testing Membrane Filters are gridded to aid in counting and colony differentiation. They're designed for determining bacterial levels, including coliforms, in water, sewage, foods, and filterable beverages. A Certificate of Analysis supplied with each filter pack. For more information, see Microbiological Analysis later in this section.

GE* Glass Prefilters

With or without binders

G40 Binder-free Filters

- High solvent resistance
- Higher dirt-handling capacity than glass filters with binders
- Made of borosilicate glass fibers woven into a porous matrix
- Ideal for gravimetric analyses and particulate testing

G25 and G15 Glass Filters with Binders

- Borosilicate glass fiber matrix bonded by acrylic resin
- G25 filters are extra thick for increased throughput
- High wet strength for long aqueous filtrations and reduced media migration

G20 Glass Prefilters with Binders

- Surface capture of particles
- Average retention efficiency
- Higher dirt-handling capacity

G40WP03705

GE Grade	G40—Glass Fiber without Binder	G25—Glass Fiber with Binders	G15—Glass Fiber with Binders	G20—Glass Fiber Prefilters with Binders
Particle Retention	1.0µm nominal	1.0µm nominal	0.5µm nominal	1.0µm nominal
Thickness	0.38mm	0.89mm	0.28mm	0.54mm
Max. Temp.	510°C (950°F)	125°C (257°F)	125°C (257°F)	125°C (257°F)
Sterilization	Autoclavable	Autoclavable	Autoclavable	Autoclavable
Applications	General purpose. Routine filtrations. Solvent filtrations. Contamination analysis of wastewater, industrial effluents and particulate matter in air, fluids, and solids. Cell collection and harvesting. Determining volatile and nonvolatile matter.	For filtering proteinaceous materials and liquids with heavy contaminant loads. Can be used in serial filtration stacks for upstream protection of G15 depth filters. Biologically inert, highly resistant to weak acids and bases.	For upstream protection of membrane filters with 0.2 to 0.8µm pore size or larger. Biologically inert, highly resistant to weak acids and bases.	Protection of 0.8µm final filters and larger pore sizes.

Diameter	Cat. No.	Pack of	Cat. No.	Pack of	Cat. No.	Pack of	Cat. No.	Pack of
10mm	----	----	**G25WP01000**	100/38.78	----	----	----	----
13mm	----	----	**G25WP01300**	100/40.17	----	----	**G20WP01300**	100/44.02
22mm	----	----	**G25WP02200**	100/44.29	**G15WP02200**	100/49.57	----	----
25mm	----	----	**G25WP02500**	100/41.20	**G15WP02500**	100/49.57	**G20WP02500**	100/44.02
37mm	**G40WP03705**	500/134.97	----	----	----	----	----	----
42mm	----	----	----	----	**G15WP04200**	100/54.63	**G20WP04200**	100/52.79
47mm	**G40WP04705**	500/168.02	**G25WP04700**	100/52.79	**G15WP04700**	100/66.63	**G20WP04700**	100/52.79
75mm	----	----	----	----	**G15WP07525**	25/74.88	----	----
90mm	----	----	**G25WP09025**	25/38.78	**G15WP09025**	25/82.48	**G20WP09025**	25/41.20
124mm	----	----	**G25WP12425**	25/59.99	**G15WP12425**	25/82.48	**G20WP12425**	25/60.32
142mm	----	----	**G25WP14225**	25/69.70	**G15WP14225**	25/84.62	----	----

LOOKING FOR MEMBRANE FILTERS?

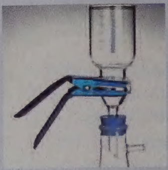
Fisherbrand* General Filtration Membrane Filters are ideal for most filter applications. These plain, white membrane filters are a pure, biologically inert mixture of cellulose acetate and cellulose nitrate (MCE). They're compatible with dilute acids and bases, aliphatic and aromatic hydrocarbons, and nonpolar liquids. Fisherbrand filters wet readily with water and other fluids, and they contain no fibers or particles to contaminate filtrate.

For more information, and a complete selection of membrane filters, check out the Membranes section.

*Fisherbrand** Glass Microanalysis Vacuum Filter Holders

09-753C

09-753G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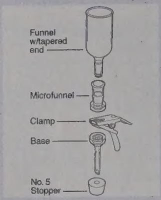
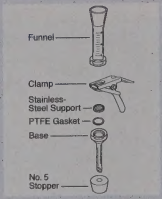
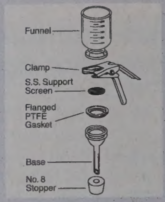
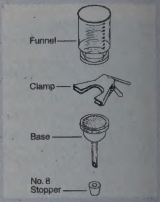








Filter Type	**Glass Microanalysis, 13mm**		**Glass Microanalysis, 25mm**		**Glass Microanalysis, 47mm**				**Glass Microanalysis, 90mm**
Applications	Filtering small liquid volumes in RNA/DNA hybridizations, collecting biological cells and other materials, preparing small volumes of sterile filtrate.		Filtering small volumes of fluids in biological or particulate contamination studies, gravimetric analyses, radiochemical determinations, biological tests.		Analyzing liquids for particulate or biological contamination; water/wastewater analysis, pharmaceutical QC, yeast and mold detection, preparing ultraclean or sterile filtrates and organic solvent purification.				Filtering bioburden/heavy particle load samples; ultracleaning or filtering photoresists, viscous fluids when high flowrate is required; colony hybridization studies.
Filter Size	25mm		25mm		47mm				90mm (82mm, microbiology)
Prefilter Size	Not recommended		16mm		35mm				70mm
Filtration Area	1.1cm²		2.1cm²		9.6cm²				38.5cm²
Max. Capacity	100mL		25mL		1000mL	300mL	300mL	300mL	1000mL
Grad. Volume	----		15mL		----	250mL	250mL	250mL	——
Connection	No. 5 silicone stopper for 125mL flasks.†		No. 5 silicone stopper for 125mL flasks.†		$ 40/35 for 1L flask or manifold.	No. 8 silicone stopper for 1L flask or manifold.	No. 8 silicone stopper for 1L flask or manifold.	No. 8 silicone stopper for 1L flask or manifold.	No. 8 silicone stopper for 1L flask or manifold.
Sterilization‡	Autoclavable		Autoclavable		Autoclavable				Autoclavable
Features	Use 25mm membranes, concentrate sample into 1.1cm² area (13mm diameter). Two models: 1) with 100mL borosilicate funnel; 2) with 13mL microfunnel for small volumes, 100mL funnel with tapered ground glass connector that fits inside microfunnel, increases capacity.		Use 25mm membranes, concentrate sample into 2.1cm² area. Available with integral fritted glass support to retain sample, or removable stainless-steel mesh support screen and PTFE gasket for ultraclean filtrate, proteinaceous solutions, optimizing flow.		Use 47mm membranes. Available with integral glass support for organic (fritted only), biological, or general applications; with stainless-steel support for ultraclean filtrate or proteinaceous solutions; or with stainless-steel support plus PTFE gasket, PTFE-coated sealing flange, to prevent membrane from sticking to the base after autoclaving.				Integral fritted glass support assures that filter sits flat on support base for uniform distribution of sample. Filtration area is four times larger than on 47mm holders. (After filtration, 90mm membrane will fit into 150mm dish; 82mm will fit 100mm Petri dish.)
Components	Ungraduated borosilicate glass funnel(s), base, fritted glass support; anodized aluminum spring clamp; No. 5 stopper.		Flare-top 15mL borosilicate glass funnel (graduated 5 to 15mL in 1mL increments) and base; anodized aluminum spring clamp; No. 5 stopper.		Borosilicate glass funnel (graduated 100 to 300 in 25mL increments) and base; anodized aluminum clamp; No. 8 stopper. 09-753-102 comes with borosilicate glass funnel (graduated 300 to 1000mL in 50mL increments), base, fritted glass support; anodized aluminum clamp; $ 40/35 connection.				Borosilicate glass funnel (graduated 100 to 300mL in 50mL increments), base, fritted glass support; anodized aluminum clamp; No. 8 stopper.
Holder With	**100mL Funnel**	**13mL/100mL Funnels**	**Fritted Glass Support**	**Stainless-Steel Support**	**Fritted Glass Support**	**Fritted Glass Support**	**Steel Support (100 mesh)**	**PTFE Gasket and Flange**	**Fritted Glass Support**
Cat. No.	**09-753A**	**09-753C**	**09-753E**	**09-753G**	**09-753-102**	**09-753-1A**	**09-753-1C**	**09-753-1E**	**09-753-2**
Each	205.05	226.59	188.05	216.70	315.01	206.98	225.25	330.10	556.12

† A No. 8B stopper (09-753-9) is required to adapt holders to manifold systems.
‡ With or without membrane, at 121°C (250°F) for 20 minutes.

Contd. on next page.

Replacements and Accessories for *Fisherbrand** Vacuum Filter Holders

Description	For Holder	Cat. No.	Each
Borosilicate Glass Funnels			
100mL	09-753A	**09-753-3**	67.42
100mL	09-753C	**09-753-7**	81.15
13mL	09-753C	**09-753-8**	49.62
15mL graduated	09-753E, 09-753G	**09-753-13**	59.84
150mL†	09-753E, 09-753G	**09-753-19**	127.41
300mL graduated†	09-753E, 09-753G	**09-753-20**	127.75
300mL graduated	09-753-1A, 09-753-1C, 09-753-1G, 09-753-102	**09-753-26A**	68.12
300mL graduated	09-753-1E	**09-753-26C**	98.18
100mL graduated, straight wall†	09-753-1A, 09-753-1C	**09-753-34A**	99.24
500mL graduated, beveled†	09-753-1A, 09-753-1C	**09-753-34B**	125.89
1L graduated	09-753-2	**09-753-26B**	241.05
Anodized Aluminum Clamps			
For 13mm, 25mm models	09-753A, 09-753C, 09-753E, 09-753G	**09-753-4**	34.74
For 47mm models	09-753-1A, 09-753-1C, 09-753-1E, 09-753-1G	**09-753-31A**	28.73
For 90mm model	09-753-2	**09-753-31B**	109.43
Filtration Flasks			
125mL	09-753A, 09-753C, 09-753E, 09-753G	**09-753-100**	27.68
1000mL	09-753-1A, 09-753-1C, 09-753-1E, 09-753-1G, 09-753-1J, 09-753-2	**09-753-101**	49.35
1000mL	09-753-102	**09-753-104**	107.48
Stainless-Steel Support Screens			
25mm	09-753G	**09-753-15**	93.24
47 mm	09-753-1J, 09-753-1C, 09-753-1E	**09-753-29A**	57.27
PTFE Gaskets			
25mm	09-753G	**09-753-18**	3.35
47mm	09-753-1J, 09-753-1C	**09-753-30A**	3.44
47mm	09-753-1E	**09-753-30B**	38.47
Borosilicate Glass Bases			
25mm w/fritted support (09-753A)	09-753E, 09-753A, 09-753C	**09-753-14**	103.90
25mm stainless steel support	09-753G	**09-753-17**	83.77
47mm w/fritted support	09-753-1A	**09-753-27A**	97.70
47mm stainless steel support	09-753-1C	**09-753-28A**	89.51
47mm PTFE gasket/flange	09-753-1E	**09-753-28C**	136.86
47mm, $ 40/35 w/fritted support	09-753-102	**09-753-103**	171.37
90mm w/fritted support	09-753-2	**09-753-27B**	378.37
Silicone Rubber Stoppers			
No. 5, perforated	09-753A, 09-753C, 09-753E, 09-753G	**09-753-6**	8.20
No. 8, perforated	09-753-1J, 09-753-1A, 09-753-1C, 09-753-1E, 09-753-1G, 09-753-2	**09-753-32A**	7.67
No. 8B; adapts stem to standard manifold	09-753A, 09-753C, 09-753E, 09-753G	**09-753-9**	25.76

† Accessory funnels.

*Fisherbrand** Airejector* Aspirator Pump

Tapered serrated hose connection on side arm and water outlet

- Typical free air capacity of 0.05 cu. ft./min. (1.4L/min.) with water at gauge pressure of 40psig (276kPa)
- Nickel-plated brass, ¼ NPT female thread at top
- Accommodates ¼ to 5⁄16" (6.4 to 7.9mm) rubber tubing
- Diameter of serrated tips, ⅜" (9.5mm)
- Overall length, 5½" (14cm)

11-474-208

APPLICATIONS:

Urea nitrogen test by aerator method; cleaning pipets and sedimentation tubes; drawing up spilled liquids

WARRANTY:

12 months

Connections	Cat. No.	Each
3/8 NPT male thread	**11-474-208**	58.50
1/4 NPT male thread	**11-474-213**	59.74

*Fisherbrand** Splashgon* Cylinder

Eliminates splashing

09-959Q

Rubberized cylinder with neck fits outlet of 11-474-208 and -213 Airejector* Aspirators (above).

- Brass device inside cylinder eliminates entrained air, spreads water stream, decreases water speed to 1⁄14 of original speed
- Max. dia., 1¼" (3.2cm)

Cat. No.	Each
09-959Q	27.39

Nalgene* Aspirator Vacuum Pump

Attaches directly to sink faucets for pumping

- Polypropylene vacuum pump
- Operates with water at gauge pressures as low as 7.5psig (52kPa)
- Water consumption rate: 1.7 gal./min. (6.5L/min.)
- Ultimate vacuum: 28.5"Hg (96kPa) below ambient pressure
- Capacity: 0.4 cu. ft./min. (11.5L/min.)

09-960-2

INCLUDES:

Integral check valve, ⅜ NPT connecting thread, 4¾" (12cm) of tubing

Mfr. No.	Cat. No.	Each	Case of 24
6140 0010	**09-960-2**	16.93	270.84

Millipore* 13mm Analytical Stainless-Steel Vacuum Filter Holder

Vacuum filter small volumes for precise particulate contamination analysis

- Stainless-steel funnel capacity: approx. 40mL
- PTFE gasket
- Filtration area: 0.7cm^2
- Male slip Luer outlet for use with stopper and flask
- Vacuum only

XX30 012 40

Cat. No.	Each
XX30 012 40	324.41

ACCESSORIES

Replacement Parts for Stainless-Steel 13 and 25mm Filter Holders

Swinnex* parts kit contains two PTFE gaskets, two O-rings, and two support screens.

Description	Cat. No.	Each
13mm Swinnex Replacement Parts Kit	XX30 012 RK	100.50
25mm Microsyringe Replacement Parts Kit	XX30 025 RK	111.42
13mm Swinnex Luer-Lok inlet	XX30 012 00	74.37
25mm Microsyringe Luer-Lok inlet	XX30 025 00	155.58

Millipore* 25mm Stainless-Steel Filter Holder

For 25mm disc filters

XX45 025 00

- Autoclavable
- Fitting inlet and outlet: ⅛ NPTF
- Filter diameter, 25mm; prefilter, 18mm (thick depth)
- Maximum inlet pressure: 350 bar (5000psi)
- Differential pressure: 10-70 bar (150-1000psi), depends on filter type used
- Filtration area: 2.2cm^2
- Housing is constructed of 316 stainless steel; seal material is Buna-N
- For filtration of gases or liquids at inlet pressures of 20 to 700 bar

ORDERING INFORMATION:

Replacement Parts Kit includes three stainless-steel hex-cap screws, three LCR-treated Buna-N O-rings, one stainless-steel support screen, and one Allen wrench

Description	Cat. No.	Each
Filter Holder	XX45 025 00	327.00
Replacement Parts Kit	XX45 025 RK	226.00

Millipore* 25mm Glass Microanalysis Vacuum Filter Holder and Support

Vacuum filter small volumes for particulate or biological contamination analysis

- Funnel capacity: 15mL
- Filtration area: 2.5cm^2
- Not autoclavable with filter in place

INCLUDES:

Borosilicate glass funnel and base; fritted glass or removable stainless-steel filter support; anodized aluminum spring clamp; No. 5 stopper

XX10 025 00

Description	Cat. No.	Each
With Fritted Glass Support	XX10 025 00	192.72
With Stainless-steel Support	XX10 025 30	212.80

ACCESSORIES

Accessory and Replacement Parts for Millipore* 25mm Glass Microanalysis Vacuum Filter

Description	Cat. No.	Price
Filtering flask, 125mL glass	XX10 025 05	Ea./44.26
Glass funnel, 15mL	XX10 025 14	Ea./78.39
Fritted glass base with stopper	XX10 025 02	Ea./151.57
Base, stopper and stainless-steel screen	XX10 025 32	Ea./183.69
Stainless-steel support screen (for XX10 025 30)	XX50 025 01	Ea./56.28
PTFE support screen gasket	XX10 025 35	Pk. of 10/71.36
Base with screen, gasket and stopper	XX10 025 42	Ea./202.76

Millipore* 25mm Analytical Vacuum Filter Holder

Vacuum filter small volumes for precise particulate contamination analysis

- Electropolished finish minimizes potential particulate "hang-up" on funnel sides
- Filtration area: 2.8cm^2
- Funnel capacity: 50mL (internally scribed at 25 and 50mL)

INCLUDES:

Stainless-steel funnel; filter support screen; borosilicate glass base; anodized aluminum spring clamp; PTFE resin gasket; neoprene stopper

XX10 025 40

Cat. No.	Each
XX10 025 40	551.00

ACCESSORIES

Replacement Parts for Millipore* 25mm Analytical Vacuum Filter

Description	Cat. No.	Price
PTFE support screen gasket	XX10 025 35	Pk. of 10/71.36
Base with screen, gasket and stopper	XX10 025 42	Ea./202.76

illipore* 47mm Glass Vacuum ilter Holders

or vacuum only

XX10 047 00

- Sanitize with sulfuric acid or hydrochloric acid
- Sterilize with UV sterilizer (2 to 3 min.) or autoclave (20 min. at 121°C)
- Capacity: 300mL

lass Filter Holder

- For bacteriological analysis of water (with Millipore membrane filters HAWG 047 S1) and for analysis of suspended solids in water (using Millipore depth filters AP40 047 05 or AP20 047 00)
- Includes borosilicate glass funnel and base, coarse-frit glass filter support, anodized aluminum spring clamp, and neoprene stopper

lass Filter Holder with PTFE-Coated Sealing Surfaces

- Useful for bacteriological analysis applications where filter holder must be autoclaved with membrane in place
- Coated sealing surfaces prevent membrane adhesion and filter damage during autoclaving
- Includes borosilicate glass, PTFE-faced funnel and base, anodized aluminum spring clamp, and neoprene stopper

lass Filter Holder with Stainless-Steel Support

- For use in particulate contamination analysis of oils and hydraulic fluids by gravimetric or particulate counting methods
- Also suitable for use in exfoliative cytology applications
- Includes borosilicate glass funnel and base with stainless-steel screen filter support, anodized aluminum spring clamp, and neoprene stopper

escription	Cat. No.	Each
lass Filter Holder	XX10 047 00	154.58
TFE-faced Glass Filter Holder	XX10 047 20	224.84
tainless-steel Screen Glass Filter Holder: ncludes funnel, base, stopper, clamp	XX10 047 30	224.84

ALERT

Glass (Cat. No. XX10 047 00) and stainless-steel screen (Cat. No. XX10 047 30) holders not recommended for use with flammable liquids.

ACCESSORIES

For Millipore 1225 Sampling Vacuum Manifold

Description	Cat. No.	Pack of
Sample cup extension barrel	XX27 025 55	12/104.39
Chamber replacement kit: includes 3 each of chamber inner O-rings, chamber outer O-rings, and drain plugs	XX27 025 52	1/115.43
Filter sealing silicone O-rings	XX27 025 09	30/179.67

Millipore* 1225 Sampling Vacuum Manifold

Compact cell harvester for individual sample collection in 15mL tubes

- Filter up to 12 samples, using 25mm discs in numbered filter plate
- Acid and base resistant, including TCA
- Solvent resistant below 80°C (176°F)
- Not recommended for use with strong oxidizing acids
- Major components can be autoclaved at least 20 times; screens and O-rings not autoclavable

XX27 025 50

ORDERING INFORMATION:

Extension barrels are available to handle 50mL sample volumes (see XX27 025 55, sold separately below)

INCLUDES:

Sealing stoppers for analyzing fewer than 12 samples

Cat. No.	Each
XX27 025 50	924.00

Millipore* 47mm All-Glass Vacuum Filter Holder

Vacuum filter aqueous, organic, or corrosive liquids for particulate contamination analysis

XX15 047 00

- Borosilicate glass parts with ground glass sealing surfaces
- Vacuum connection to integral base and flask cap is above filtrate exit level
- Avoids drawing filtrate droplets into vacuum tubing
- Funnel capacity: 300mL
- Flask capacity: 1L

APPLICATIONS:

Recommended for HPLC solvent filtration

ALERT:

Not recommended for use with flammable liquids

Description	Cat. No.	Each
With Fritted Glass Support	XX15 047 00	382.48
With Stainless-steel Screen	XX15 047 30	378.47

ACCESSORIES

Replacement Parts for Millipore* 47mm All-Glass Vacuum Filter Holder

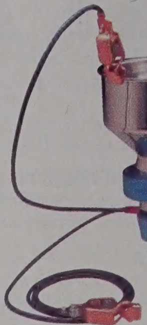
Description	Cat. No.	Price
Funnel, 300mL, ground glass seal	XX10 047 04	Ea./85.43
Ground glass base and tubulated cap	XX15 047 02	Ea./184.69
Stainless-steel support screen	XX20 047 08	Ea./133.50
PTFE gasket for stainless-steel support screen	XX20 047 03	Pk. of 25/75.38

Millipore* 47mm Hydrosol Stainless-Steel Vacuum Filter Holder

For particulate or biological contamination analysis via vacuum filtration

- For prefilter, use Millipore 35mm Type AP depth prefilter or 47mm Type AW prefilter
- Stopper fits standard 1L flask or filter manifold
- Not autoclavable with filter in place
- Funnel capacity: 650mL

INCLUDES:
Grounding set for use with flammable liquids; stainless-steel funnel, base, and filter support screen; anodized aluminum locking ring; nylon lockwheels; PTFE resin gaskets; silicone stopper.



XX20 047 20

Cat. No.	Each
XX20 047 20	737.00

ACCESSORIES

Replacement Parts for Millipore* 47mm Hydrosol Stainless-Steel Vacuum Filter

INCLUDES:
Lockwheels, wrench set, locking ring, PTFE gasket

Description	Cat. No.	Each
Replacement parts kit	**XX20 047 RK**	189.71

Millipore* 90mm Glass Vacuum Filter Holder

Vacuum filter aqueous, organic, or corrosive liquids for particulate contamination analysis

- Ground glass sealing surfaces
- Vacuum connection to integral base and flask cap is above filtrate exit level
- Prevents the drawing of filtrate into vacuum tubing
- Fittings: ¼" (6mm) O.D. tubulated-cap sidearm to vacuum
- Filter dia.: 90mm
- Funnel capacity: 1L

APPLICATIONS:
Recommended for HPLC solvent fltration

XX10 090 20

INCLUDES:
Borosilicate glass funnel, base, and tubulated cap; PTFE-coated, stainless-steel support screen; anodized aluminum spring clamp

NOTE:
Do not use with flammable liquids

Cat. No.	Each
XX10 090 20	659.00

ACCESSORIES

Accessories for Millipore* 90mm Glass Filter Holder

Description	Cat. No.	Each
Ground joint flask, 1L	**XX15 047 05**	133.50
Vacuum Flask, 2L, glass, conical bottom	**XX16 047 05**	326.41
3⁄16" ID. Silicone Tubing, 1.4m long	**XX71 000 04**	32.19
Membrane Filter Forceps	**XX62 000 06**	12.07

Replacement Parts for Millipore* 90mm Glass Filter Holder

Description	Cat. No.	Each
Funnel, 1L, ground glass seal	**XX10 090 00**	161.60
Support screen, stainless steel	**XX10 090 02**	153.57
Gasket, PTFE	**XX10 090 10**	79.40

Millipore* Chemical Duty Vacuum Pressure Pump

With a chemically resistant head and diaphragm for use with corrosive chemicals and solvents

- Cast aluminum pump head, housing, and regulator
- 813mbar (24"Hg) maximum vacuum
- 2.45bar (35 psig) maximum pressure
- 37L/min. (1.3 CFM) maximum flow rate
- Weight: 4.1kg (9.0 lb.)
- Dimensions: 8L × 7W × 7"H (20.3 × 17.8 × 17.8cm)
- ¼" stepped hose barb connections

WP6111560

INCLUDES:
70cm of ¼" dia. tubing; Millex* FA50 filter for in-line moisture protection

CERTIFICATIONS:
UL listed and CE marked

Electrical Reqts.	Cat. No.	Each
115V 60Hz	**WP6111560**	653.00
220V 50Hz	**WP6122050**	653.00

Millipore* Stainless-Steel 13 and 25mm Filter Holders

Ultraclean or sterilize small volumes dispensed by syringe

- Stainless-steel housing
- PTFE gaskets (13, 25mm) and O-ring (13mm)
- Autoclavable with filter in place
- Filtration area: 13mm Swinnex* style, 0.8cm^2; 25mm Microsyringe style, 3.9cm^2

XX30 012 00

XX 30 025 0

Description	Cat. No.	Each
13mm Swinnex Luer-Lok* inlet	**XX30 012 00**	74.37
25mm Microsyringe Luer-Lok inlet	**XX30 025 00**	155.58

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

Replacement Parts for Millipore Stainless-Steel 13 and 25mm Filter Holders

Description	Cat. No.	Each
13mm Swinnex* Replacement Parts Kit	**XX30 012 RK**	100.50
25mm Microsyringe Replacement Parts Kit	**XX30 025 RK**	111.42

Millipore* Swinnex* Filter Holders

Ultraclean or sterilize small volumes of liquids dispensed by syringe

- 13, 25 and 47mm holders
- Connect Swinnex 47 with tubing to pressurized reservoir or automatic filling machine for filtering larger volumes
- 13 and 25mm: polypropylene with silicone gasket
- 47mm: polypropylene with silicone O-rings
- Sterilize with a filter in place

Left to right: SX00 047 00, SX00 025 00, SX00 013 00

Description	Cat. No.	Pack of
13mm Swinnex	**SX00 013 00**	10/61.00
25mm Swinnex	**SX00 025 00**	12/124.00
47mm Swinnex	**SX00 047 00**	8/322.00

ACCESSORIES

Replacement Parts for Swinnex* Filter Holders

Description	Cat. No.	Pack of
13mm Silicone Gaskets	**SX00 013 01**	100/37.22
25mm Silicone Gaskets	**SX00 025 01**	100/74.37
25mm Support Screens	**XX27 025 10**	30/115.43
47mm Filter O-rings	**XX11 047 07**	10/30.18
47mm Base O-rings	**SX00 047 01**	5/34.20

Millipore* Ultraviolet Sterilizer

Rapidly decontaminate 47mm Millipore filter holders between successive sample filtrations

- Prevents organism carryover on funnels
- Economical autoclaving alternative
- Holds up to three 47mm funnels and bases
- Sterilizes by exposing organisms to four germicidal UV lamps
- L × W × H: 13¼ × 17 × 9½" (337 × 432 × 241mm)
- Shipping weight: 21.6 lb. (9.8kg)
- 115V 60Hz

XX6370000

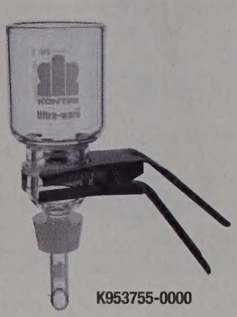
INCLUDES:

Sylvania No. G8T5, 2537Å germicidal lamps; anodized aluminum reflectors, holder panel; fiberglass case; rubber feet.

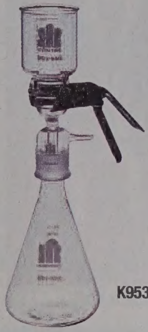
Cat. No.	Each
XX6370000	1871.00

Kontes* Ultra-Ware* 25, 47, and 90mm Microfiltration Assemblies

Vacuum filtration assemblies



K953755-0000



K953825-0000

25, 47 and 90mm Filter Holders

- Use with either flasks or manifolds
- Include silicone stoppers (No. 5 for 25mm models, No. 8 for 47 and 90mm models)

Models with Flasks

- Integral No. 2 vacuum connection in filter support base
- Designed to prevent contamination of vacuum line by filtrate droplets
- $ 40/35 joint connection to flasks
- Glass models eliminate phthalate contamination from silicone and neoprene stoppers, as well as metal contaminate extraction by acid-preserved samples; ideal for use with Empore* extraction discs

Models with Bottles

- Borosilicate glass adapter designed to fit media bottles directly
- Fritted glass support base connects directly to funnel assembly and to the bottle with special PBT caps and PTFE-faced silicone sealing rings
- Model K953800-5347 adds a removable Type 316 stainless-steel support screen for viscous or proteinaceous solutions
- Adapter has: GL-45 thread to 1L vacuum- and pressure-rated media-style bottle; polypropylene tubing adapter with size 108 Viton* O-ring

Filter Holders (Support Bases)

- **Glass**-coarse fritted glass support; for analysis of particulate or microbiological contamination
- **Replaceable Glass**-exchangeable if clogged or if sample-to-sample cross-contamination is a concern
- **Type 316 Stainless-steel**-metal support screen with glass support base; for viscous or proteinaceous solutions or to produce ultraclean filtrate
- **PTFE**-PTFE coating on fritted glass support and on funnel prevent membrane from adhering to ground glass surface; only these models permit autoclaving with membrane in place

INCLUDES:

Graduated glass funnel, anodized aluminum clamp, filter support base

REQUIRED ACCESSORIES:

25, 47 and 90mm filter holders with silicone stoppers require flask or manifold with vacuum connection

Contd. on next page.

Kontes* Ultra-Ware* 25, 47, and 90mm Microfiltration Assemblies, Contd.

K953750-5347

K953710-0000

Support Material	Approximate H × W	Funnel Capacity	Flask Capacity	Cat. No.	Each
25mm Filter Holders for Flasks or Manifolds					
Glass	6 × 1" (15.2 × 2.5cm)	15mL	----	**K953705-0000**	127.23
47mm Filter Holders for Flasks or Manifolds					
Glass	9 × 3" (22.9 × 7.6cm)	300mL	----	**K953755-0000**	128.58
PTFE	9 × 3" (22.9 × 7.6cm)	300mL	----	**K953780-0000**	194.91
316 SS	9 × 3" (22.9 × 7.6cm)	300mL	----	**K953805-0000**	159.72
90mm Filter Holders for Flasks or Manifolds					
Glass	6 5⁄16 × 13¾" (16.0 × 35.0cm)	1000mL	----	**K953755-0090**	448.05
316 SS	6 5⁄16 × 13¾" (16.0 × 35.0cm)	1000mL	----	**K953805-0090**	503.54
47mm Filter Holders with Flasks					
Glass	17 × 5⅜" (43.0 × 11.7cm)	300mL	1000mL	**K953825-0000**	308.63
Glass	20¼ × 6½" (51.5 × 16.5cm)	500mL	2000mL	**K953835-0000**	400.68
Glass	23 11⁄16 × 8 1⁄16" (60.0 × 20.5cm)	1000mL	4000mL	**K953845-0000**	431.81
316 SS	17 × 5⅜" (43.0 × 11.7cm)	300mL	1000mL	**K953855-1047**	274.79
90mm Filter Holders with Flasks					
Glass	20¼ × 6½" (51.5 × 16.5cm)	1000mL	1000mL	**K953825-0090**	703.86
Glass	23 11⁄16 × 8 1⁄16" (60.0 × 20.5cm)	1000mL	2000mL	**K953835-0090**	747.19
Rep. Glass	23 11⁄16 × 8 1⁄16" (60.0 × 20.5cm)	1000mL	2000mL	**K953840-2090**	855.48
Rep. Glass	27 × 8 1⁄16" (68.5 × 20.5cm)	1000mL	4000mL	**K953840-4090**	874.43
316 SS	20¼ × 6¼" (51.5 × 16.5cm)	1000mL	1000mL	**K953855-1090**	889.32
47mm Holders with Bottles					
Glass	14½ × 4" (36.8 × 10.2cm)	300mL	1000mL	**K953750-5347**	280.20
316 SS	14½ × 4" (36.8 × 10.2cm)	300mL	1000mL	**K953800-5347**	304.55

ACCESSORIES

Accessories and Replacement Parts for Kontes* Microfiltration Assemblies

Description	Accessory/Replacement for	Cat. No.	Price
Flasks with side arm, No. 2 hose connection			
125mL	K953705-0000, K953730-0000	**K953710-0000**	Ea./27.23
1000mL	K953755-0000, K953780-0000, K953805-0000, K953755-0090, K953770-0090, K953805-0090	**K953760-0000**	Ea./48.60
2000mL	K953755-0000, K953780-0000, K953805-0000, K953755-0090, K953770-0090, K953805-0090	**K953760-2000**	Ea./82.98
4000mL	K953755-0000, K953780-0000, K953805-0000, K953755-0090, K953770-0090, K953805-0090	**K953760-4000**	Ea./120.59
Safety-coated Flasks with side arm, No. 2 hose connection			
125mL	K953705-0000, K953730-0000	**K953760-0122**	Ea./54.42
1000mL	K953755-0000, K953780-0000, K953805-0000, K953755-0090, K953770-0090, K953805-0090	**K953760-1002**	Ea./93.54
2000mL	K953755-0000, K953780-0000, K953805-0000, K953755-0090, K953770-0090, K953805-0090	**K953760-2002**	Ea./135.88
4000mL	K953755-0000, K953780-0000, K953805-0000, K953755-0090, K953770-0090, K953805-0090	**K953760-4002**	Ea./165.75
Flasks with $ Inner Joint 40/35, for 90mm all-glass assemblies			
1000mL	K953755-0090, K953825-0090	**K953827-0000**	Ea./105.25
2000mL	K953755-0090, K953835-0090	**K953828-0000**	Ea./171.89
4000mL	K953755-0090	**K953829-0000**	Ea./197.00
Borosilicate Glass Funnels for 47mm assemblies			
100mL	K953755-0000, K953805-0000, K953855-1047, K953825-0000, K953835-0000, K953845-0000	**K953761-0000**	Ea./50.34
500mL	K953755-0000, K953805-0000, K953835-0000, K953855-1047, K953750-5347, K953800-5347	**K953771-0000**	Ea./89.46
1000mL	K953755-0000, K953805-0000, K953845-0000, K953855-1047, K953750-5347, K953800-5347	**K953781-0000**	Ea./107.69
Silicone Stoppers; steam autoclavable			
No. 5, ⅜" hole	K953705-0000, K953730-0000	**K953715-0501**	Ea./11.44
No. 8, ⅜" hole	K953705-0000, K953730-0000	**K953715-0801**	Ea./14.23
No. 8, 9⁄16" hole	K953755-0000, K953780-0000, K953805-0000, K953755-0090, K953770-0090, K953805-0090	**K953763-0801**	Ea./14.31
Fritted Glass Support	K953750-5347	**K953752-5047**	Ea./114.80
Glass Support	K953800-5347	**K953801-5047**	Ea./73.80
PTFE Gasket, 47mm	K953800-5347, K953805-0000, K953855-1047	**K953811-4701**	Ea./2.32
PTFE Joint Sleeve	K953825-0000, K953835-0000, K953845-0000, K953855-1047, K953825-0090, K953835-0090, K953845-0090, K953840-1090, K953890-2090, K953840-4090, K953855-1090	**K676001-4035**	Pk. of 6/72.89

*Trademark. See Trademark Reference.

Prices subject to change.

Nalge* Vacuum Filter Holder

For use in microbial and particulate analysis

09-747

- Tight fit prevents bypass even after autoclaving
- Reservoir graduated from 100 to 250mL in 25mL increments
- Aluminum clamp allows one-handed operation and easy membrane replacement
- Autoclavable

NCLUDES:

ugged polysulfone funnel; olypropylene copolymer cover with hree ports, three friction-fit TPE caps; upport plate for 47mm membrane; ilicone gasket; No. 8 stopper 9⁄16" hole); aluminum clamp

Mfr. No.	Cat. No.	Each
DS0315-0047	**09-747**	140.78

Whatman* Vacuum Filter Holders

recision-ground, 100% borosilicate glass faces

- Ensure secure clamping and integral sealing at membrane edge
- 47mm models have clearly printed graduation scales
- 90mm size has 1L capacity funnel for rapid filtration of viscous or heavily contaminated liquids, is useful for biological fluid filtration (except serum), and for industrial liquid filtration

Left to right: 09-907-2, -4, -6

APPLICATIONS:

ravimetric analysis filtration; ultraclean filtration; bacteriological control of ood, drink, pharmaceuticals, cosmetics; removal of particulates in solution; ucleic acid and protein analysis; HPLC solvent filtration

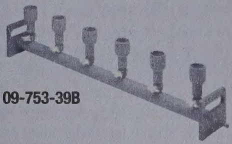
NCLUDES:

orosilicate glass funnel and base; anodized aluminum clamp; support creen (sintered glass or Type 304 stainless steel); rubber stopper No. 5 for 25mm diameter filters to fit 125mL flask or No. 8 for all others o fit 1000mL flask).

ilter Dia.	Filter Surface Area	Reservoir Capacity	Prefilter Dia.	Support Screen	Mfr. No.	Cat. No.	Each
25mm	1.1cm²	50mL	13mm	Glass	1960-032	**09-907-4**	275.38
47mm	9.6cm²	300mL	35mm	Glass	1960-004	**09-907-2**	271.78
47mm	9.6cm²	300mL	35mm	SS	1960-054	**09-907-6**	282.43
90mm	38.5cm²	1000mL	70mm	Glass	1960-009	**09-907-3**	766.32

*Fisherbrand** PVC Vacuum Manifolds

For testing multiple samples by vacuum filtration


09-753-39B

- Accommodate vacuum filter holders and funnels using a No. 8 stopper
- Lightweight design efficiently uses lab space
- Each holder has two-way valve made of Type 316 stainless steel with Viton* seals
- Manifold body and funnel holders made of polyvinylchloride
- 1/4 NPTM connections to vacuum
- Not autoclavable; sanitize using ethanol or formaldehyde
- Maximum operating temperature: 55°C (130°F)

Type	Overall L × W × H	Cat. No.	Each
3 Place	17¾ × 4½ × 4½" (45.1 × 11.4 × 11.4cm)	**09-753-39A**	779.00
6 Place	34½ × 4¾ × 6¾" (87.6 × 12 × 17cm)	**09-753-39B**	1058.40

*Fisherbrand** Stainless-Steel Hydrolab Manifolds

For routine microbiological filtrations

- Support microanalysis funnels when multiple samples are run from one vacuum line
- Made from polished Type 304 stainless steel
- Anodized aluminum handles on both ends for positioning on benchtop
- Sturdy units have low center of gravity to avoid tipping
- Each branch is operated by three-way valve to permit attachment of vent filter
- Accept vacuum funnel using a No. 8 stopper
- Autoclavable
- Serrated vacuum hose connection accepts ⅜" (9.5mm) tubing from an appropriate vacuum source

09-753-36A

INCLUDES:

Manifold with hose connector and pipe plug; manifold handles; three-way valve assemblies with Type 316 stainless-steel bodies; Viton* rubber O-rings; funnel holders

Type	Overall L × W × H	Cat. No.	Each
3 Place	17¾ × 6 × 6" (45.1 × 15.2 × 15.2cm)	**09-753-36A**	1468.04

Millipore* Filter Holder Vacuum Manifolds

Provide vacuum support for simultaneous filtration of either three or six test samples

XX26-047-35, XX25-047-35, XX25-047-00

- Use Millipore glass, plastic or stainless-steel filter holders fitted with standard No. 8 perforated stoppers over the holder outlets
- Manifolds connect to single vacuum source and use separate control valves at each station for independent operation
- Use vent ports on each stainless-steel manifold station to attach Swinnex* filter holders or Millex* filter units to maintain sterility on the test filter's downstream side

Stainless-steel Manifolds

- Stainless-steel body, three-way valves, filter holder supports; anodized aluminum handles; stainless-steel hose connector, pipe plug
- Units are autoclavable at 121°C (250°F)

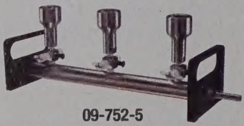
PVC Manifold

- Polyvinylchloride body; stainless-steel two-way valve; polypropylene hose adapters and handles
- Not autoclavable

Description	Cat. No.	Each
Stainless-steel Manifold, six-place	XX25 047 00	1904.00
Stainless-steel Manifold, three-place	XX25 047 35	1412.00
PVC Manifold, three-place	XX26 047 35	691.00

Nalgene* Vacuum Manifold

Widely spaced outlets permit easy funnel manipulation



09-752-5

- Filter funnel stems fit into No. 8 stoppers without interference
- PTFE stopcock on each valve shuts off flow when fewer than three outlets are used
- Simultaneous vacuum filtrations with increased filtrate volume in particulate and microbial analyses
- Use with Nalgene Analytical Filter Funnel 09-740-30B, or most filter funnels adaptable to No. 8 stopper
- Stainless-steel body with left and right handles

INCLUDES:

Three vacuum outlets, each with two-way valve and vent port; hose barb vacuum connector for ⅜" (9.5mm) I.D. tubing

Mfr. No.	Cat. No.	Each
DS0345-0001	09-752-5	1096.00

GE* Analytical Funnel

Two-piece design with no clamps or locking devices to manipulate

PFC000470

- Unique gravity-sealing design permits one-handed operation with no danger of filter bypass or sample leakage
- Solid, stable, easy to use, with no costly replacement parts
- Access points in the base are large, for easy insertion of forceps to seat or remove membrane
- Funnel and base are chemical-resistant polysulfone
- Graduated to 350mL in 50mL intervals
- Uses 47mm filter membranes
- Autoclavable

INCLUDES:

No. 8 stopper

Description	Cat. No.	Price
Complete unit	PFC0004701	Ea./137.74
Complete unit	PFC0004703	Pk. of 3/284.77

Manufactured by GE Infrastructure Water & Process Technologies.

Millipore* Stainless-Steel Pressure Filter Holders

Ultraclean or sterilize liquids or gases by pressure filtration

YY30 142 36 YY30 090 00

- Autoclavable with MF (mixed cellulose esters) filter in place
- Type 316 stainless steel
- Anodized aluminum legs
- PTFE O-rings

90mm Filter

- ¼ NPTF inlet
- Outlet with connections supplied for ⅜" I.D. (9.5mm) hose
- ⅛ NPTF upstream port for vent/relief valve

142mm Filter

- 1⅛ NPTF TC flange with clamps and adapters supplied for 9⁄16" I.D. (14mm) hose
- ⅛ NPTF upstream port for vent/relief

NOTE:

Other O-ring materials are available, as well as accessory cylinders to convert holders into pressure cells without separate reservoirs. Contact your Fisher Scientific Customer Service Representative for details.

For Filter Size	Dia. × Height[†]	Cat. No.	Each
90mm diameter	4¾ × 6¾" (121 × 171mm)	YY30 090 00	816.00
142mm diameter	7¼ × 10⅝" (184 × 270mm)	YY30 142 36	1696.00

[†] *Not including inlet connector.*

ACCESSORIES

Replacement PTFE O-rings for Millipore* Stainless-Steel Pressure Filter Holders

For Holder	Cat. No.	Price
90mm	YY30 090 53	Pk. of 4/81.00
142mm	YY22 142 53	Ea./34.00

*Trademark. See Trademark Reference.

Millipore* Zero-Headspace Extractor Hazardous Waste Pressure Filter System

Cannot pressurize unless completely assembled, assuring safe operation

YT30 090 HW

Pressure-filter without introducing air—preventing loss of volatiles—thanks to ZHE system's movable piston.

- Manual or automatic venting modes
- Type 316 stainless-steel body
- Molded polypropylene handwheels
- Viton*-A O-rings
- Max. pressure: 3.5 bar (50psi)
- Filter size: 90mm

Connections

- Top plate—⅛ NPTF upstream port for two-way SST valve with ⅛ NPTF for Luer fitting
- Bottom plate—¼ NPTF port for ¼" (6.4mm) elbow or ¼ × ⅛ NPT T-fitting, ¼ NPTF port for pressure-relief valve

COMPLIANCE:

Designated by the U.S. EPA as a suitable apparatus for TCLP

Cat. No.	Each
YT30 090 HW	1637.00

ACCESSORIES

Replacement Parts for Millipore* Zero-Headspace Extractor Hazardous Waste Pressure Filter System

Description	Cat. No.	Pack of
Top and bottom plate O-rings	**YY22 090 68**	6/103.39
Cylinder O-rings	**XX67 000 10**	3/105.39
Piston O-rings and wiper seal	**YT30 090 03**	1/58.29

Millipore* 142mm Hazardous Waste Pressure Filter System

Separates solid and liquid phases of waste samples

YT30 142 HW

Use for U.S. EPA Toxicity Test and Toxicity Characteristic Leaching Procedure (TCLP).

- Interior coating of PTFE resin prevents heavy metal contamination
- Wide entry port and removable top plate make introducing bulky samples easy
- Disassembles for easy cleaning
- Type 316 stainless steel; aluminum legs; molded polypropylene handwheels; seal of PTFE resin
- Dimensions: 7¼ dia. × 16⅝"H (184 × 422mm), plus inlet connector

Connections

- 1⅛ NPTF TC flange with clamps and adapters supplied for 9⁄16" I.D. (14mm) hose
- ⅛ NPTF upstream port for vent relief

Cat. No.	Each
YT30 142 HW	2000.00

LOOKING FOR MORE HARDWARE?

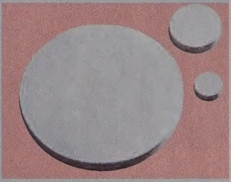
The **Environmental Express* ZHE+ Zero-Headspace Extractor** allows initial liquid/solid separation, extraction, and final extraction filtration of volatiles—without opening the unit. For more information,

Visit www.fishersci.com and search for ZHE Zero-Headspace

MEMBRANES

***Fisher**brand** General Filtration Membrane Filters

Useful for most filter applications



Left to Right: 09-719-2F, -2B (top), -2G

- Plain, white membrane filters
- Pure, biologically inert mixture of cellulose acetate and cellulose nitrate (MCE)
- Compatible with dilute acids and bases, aliphatic and aromatic hydrocarbons, and nonpolar liquids
- Filters wet readily with water and other fluids
- Contain no fibers or particles to contaminate filtrate
- Autoclavable

APPLICATIONS:

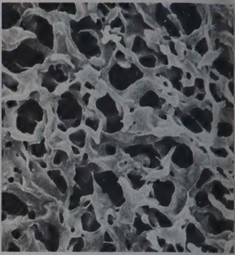
For all analytical, ultracleaning, and sterilizing applications at temperatures below 75°C (167°F)—except those involving esters, ether-alcohols, ketones, nitroparaffins or strong acids and bases.

Pore Size	Diameter	Cat. No.	Pack of
0.2µm	25mm	**09-719-2A**	100/60.25
0.2µm	47mm	**09-719-2B**	100/91.80
0.45µm	25mm	**09-719-2D**	100/48.85
0.45µm	47mm	**09-719-2E**	100/90.35
0.45µm	142mm	**09-719-2F**	50/222.26
0.8µm	25mm	**09-719-2G**	100/60.33
0.8µm	47mm	**09-719-2H**	100/104.55

Millipore* Durapore* PVDF Membrane Filters

Recommended when maximum recovery is important

- Mean thickness: 125µm
- Typical refractive index: 1.42
- Autoclavable
- Hydrophilic form is made from modified polyvinylidene fluoride (PVDF); lower protein binding than nitrocellulose, nylon, or PTFE



VVLP 013 00

APPLICATIONS

Hydrophilic: clarification of air and other gases; sterilizing filtration of protein solutions, tissue culture media, additives, antibiotics, and alcohols; particulate removal; biological assays (receptor binding studies, TCA precipitates)

Hydrophobic: clarification of air/gases; sterilizing filtration of gases

TYPICAL CHARACTERISTICS

		Typical Flowrates		
Filter	**Mean Pore Size**	**Liquid[1]**	**Air[2]**	**Min. Bubble Point[3]**
VVLP	0.10µm	2.5	----	70psi
GVWP	0.22µm	6.9	----	50psi
GVHP	0.22µm	15	3	17psi
HVLP	0.45µm	29	----	22psi
HVHP	0.45µm	35	6	8psi
DVPP	0.65µm	69	----	14psi
SVLP	5.0µm	288	----	3psi

[1] *mL/min./cm² of filtration area at 20°C with differential pressure of 10psi. (Flowrates for hydrophilic types are based on water flow; for hydrophobic types, on methanol.)*

[2] *L/min./cm² of filtration area at 20°C with differential pressure of 10psi and exit pressure of 14.7psi.*

[3] *Differential pressure required to force air through the pores of a water-wet filter (methanol-wet for hydrophobic Durapore filters).*

Hydrophobic Durapore Membranes

Diameter	Type	Cat. No.	Pack of
0.22µm Pore Size, White			
13mm	Plain	**GVHP 013 00**	100/99.00
25mm	Plain	**GVHP 025 00**	100/111.00
47mm	Plain	**GVHP 047 00**	100/149.00
90mm	Plain	**GVHP 090 50**	50/223.00
142mm	Plain	**GVHP 142 50**	50/347.00
0.45µm Pore Size, White			
13mm	Plain	**HVHP 013 00**	100/99.00
25mm	Plain	**HVHP 025 00**	100/111.00
47mm	Plain	**HVHP 047 00**	100/149.00
90mm	Plain	**HVHP 090 50**	50/223.00
142mm	Plain	**HVHP 142 50**	50/347.00

Hydrophilic Durapore Membranes

Diameter	Type	Cat. No.	Pack of
0.10µm Pore Size, White			
13mm	Plain	**VVLP 013 00**	100/68.00
25mm	Plain	**VVLP 025 00**	100/81.00
47mm	Plain	**VVLP 047 00**	100/107.00
90mm	Plain	**VVLP 090 50**	50/149.00
142mm	Plain	**VVLP 142 50**	50/267.00
0.22µm Pore Size, White			
13mm	Plain	**GVWP 013 00**	100/68.00
25mm	Plain	**GVWP 025 00**	100/81.00
47mm	Plain	**GVWP 047 00**	100/107.00
90mm	Plain	**GVWP 090 50**	50/149.00
142mm	Plain	**GVWP 142 50**	50/267.00
0.45µm Pore Size, White			
13mm	Plain	**HVLP 013 00**	100/68.00
25mm	Plain	**HVLP 025 00**	100/81.00
47mm	Plain	**HVLP 047 00**	100/107.00
90mm	Plain	**HVLP 090 50**	50/149.00
142mm	Plain	**HVLP 142 50**	50/267.00
0.65µm Pore Size, White			
13mm	Plain	**DVPP 013 00**	100/68.00
25mm	Plain	**DVPP 025 00**	100/81.00
47mm	Plain	**DVPP 047 00**	100/107.00
90mm	Plain	**DVPP 090 50**	50/149.00
142mm	Plain	**DVPP 142 50**	50/267.00
5.0µm Pore Size, White			
13mm	Plain	**SVLP 013 00**	100/68.00
25mm	Plain	**SVLP 025 00**	100/81.00
47mm	Plain	**SVLP 047 00**	100/118.00
47mm	Grid	**SVWG 047 00**	100/141.00

MF-Millipore* Mixed Cellulose Ester Membrane Filters

Composed of mixed cellulose esters (nitrate and acetate)

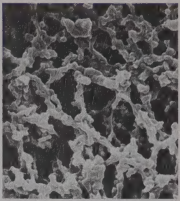
- Mean thickness varies from 105 to 180µm
- Typical refractive index varies from 1.495 to 1.512, depending on filter type
- Autoclavable at 121°C, except AA black and HA black series
- Biologically inert

Triton*-free MF-Millipore Filters

- For critical applications involving sensitive biological solutions, cell contact, or very small volumes
- Contain minimal amounts of wetting agent
- Lower water extractable table content than standard MF-Millipore filters

APPLICATIONS:

Clarification of fluids; sterilizing filtration of tissue culture media, additives, antibiotics; air monitoring; particulate analysis; particulate removal; biological assays (receptor binding studies, TCA precipitates, etc.)



VSWP 013 00

TYPICAL CHARACTERISTICS

Filter	Mean Pore Size	Typical Flowrates		Minimum Bubble Point[3]
		Water[1]	Air[2]	
VS	0.025µ	0.15	0.15	300psi
VM	0.05µ	0.74	0.2	250psi
VC	0.10µ	1.5	0.4	200psi
GS	0.22µ	18	2	50psi
PH	0.30µ	32	3	35psi
HA (black)	0.45µ	60	4	33psi
HA	0.45µ	60	4	30psi
DA	0.65µ	140	9	17psi
AA (black)	0.80µ	190	16	16psi
AA	0.80µ	190	16	14psi
RA	1.2µ	270	30	11psi
SS	3.0µ	320	30	10psi
SM	5.0µ	580	32	6psi
SC	8.0µ	620	65	6psi

[1] mL/min./cm^2. of filtration area at 20°C with a differential pressure of 10psi.

[2] L/min./cm^2 of filtration area at 20°C with a differential pressure of 10psi and exit pressure of 14.7psi.

[3] Differential pressure required to force air through the pores of a water-wet filter.

Diameter	Type	Cat. No.	Pack of
0.025µm Pore Size, White			
13mm	Plain	**VSWP 013 00**	100/145.00
25mm	Plain	**VSWP 025 00**	100/178.00
47mm	Plain	**VSWP 047 00**	100/241.00
90mm	Plain	**VSWP 090 25**	25/158.00
142mm	Plain	**VSWP 142 50**	50/383.00
0.05µm Pore Size, White			
13mm	Plain	**VMWP 013 00**	100/145.54
25mm	Plain	**VMWP 025 00**	100/178.67
47mm	Plain	**VMWP 047 00**	100/241.90
90mm	Plain	**VMWP 090 25**	25/158.59
0.10µm Pore Size, White			
13mm	Plain	**VCWP 013 00**	100/145.00
25mm	Plain	**VCWP 025 00**	100/178.00
47mm	Plain	**VCWP 047 00**	100/241.00
90mm	Plain	**VCWP 090 25**	25/158.00
0.22µm Pore Size, White			
13mm	Plain	**GSWP 013 00**	100/61.00
24mm	Plain	**GSWP 024 00**	100/67.00
25mm	Plain	**GSWP 025 00**	100/68.00
37mm	Plain	**GSWP 037 00**	100/113.00
47mm	Plain	**GSWP 047 00**	100/99.00
90mm	Plain	**GSWP 090 00**	100/244.00
142mm	Plain	**GSWP 142 50**	50/232.00

Diameter	Type	Cat. No.	Pack of
0.30µm Pore Size, White			
25mm	Plain	**PHWP 025 00**	100/77.00
47mm	Plain	**PHWP 047 00**	100/127.00
90mm	Plain	**PHWP 090 25**	25/102.38
142mm	Plain	**PHWP 142 50**	50/254.00
0.45µm Pore Size, White			
13mm	Plain	**HAWP 013 00**	100/61.00
13mm	Grid	**HAWG 013 00**	100/81.00
24mm	Plain	**HAWP 024 00**	100/67.00
25mm	Plain	**HAWP 025 00**	100/68.00
25mm	Grid	**HAWG 025 00**	100/90.00
37mm	Grid	**HAWG 037 00**	100/120.51
47mm	Plain	**HAWP 047 00**	100/99.00
47mm	Grid	**HAWG 047 00**	100/131.00
90mm	Plain	**HAWP 090 00**	100/244.00
142mm	Plain	**HAWP 142 50**	50/232.00
0.45µm Pore Size, Black			
13mm	Grid	**HABG 013 00**	100/108.00
25mm	Plain	**HABP 025 00**	100/116.00
25mm	Grid	**HABG 025 00**	100/118.00
47mm	Plain	**HABP 047 00**	100/167.00
47mm	Grid	**HABG 047 00**	100/173.00
47mm	Grid	**HABG 047 CS†**	100/58.00
0.65µm Pore Size, White			
13mm	Plain	**DAWP 013 00**	100/67.00
25mm	Plain	**DAWP 025 00**	100/80.00
47mm	Plain	**DAWP 047 00**	100/109.00
90mm	Plain	**DAWP 090 25**	25/67.00
142mm	Plain	**DAWP 142 50**	50/253.00

Diameter	Type	Cat. No.	Pack of
0.80µm Pore Size, White			
13mm	Plain	**AAWP 013 00**	100/61.00
13mm	Grid	**AAWG 013 00**	100/81.41
25mm	Plain	**AAWP 025 00**	100/68.00
25mm	Grid	**AAWG 025 00**	100/90.00
37mm	Plain	**AAWP 037 00**	100/97.00
37mm	Grid	**AAWG 037 00**	100/134.00
47mm	Plain	**AAWP 047 00**	100/99.00
47mm	Plain	**AAWP0470M**	50/431.00
47mm	Grid	**AAWG 047 00**	100/131.00
90mm	Plain	**AAWP 090 00**	100/244.00
142mm	Plain	**AAWP 142 50**	50/232.00
0.80µm Pore Size, Black			
13mm	Grid	**AABG 013 00**	100/108.00
25mm	Plain	**AABP 025 00**	100/116.00
25mm	Grid	**AABG 025 00**	100/118.00
37mm	Grid	**AABG 037 00**	100/144.54
47mm	Plain	**AABP 047 00**	100/167.00
47mm	Grid	**AABG 047 00**	100/173.00
1.2µm Pore Size, White			
25mm	Grid	**RAWG 025 00**	100/103.00
47mm	Grid	**RAWG 047 00**	100/140.00
13mm	Plain	**RAWP 013 00**	100/67.00
25mm	Plain	**RAWP 025 00**	100/80.00
47mm	Plain	**RAWP 047 00**	100/109.00
90mm	Plain	**RAWP 090 25**	25/88.00
142mm	Plain	**RAWP 142 50**	50/253.00
3.0µm Pore Size, White			
13mm	Plain	**SSWP 013 00**	100/67.00
25mm	Plain	**SSWP 025 00**	100/80.00
47mm	Plain	**SSWP 047 00**	100/109.00
90mm	Plain	**SSWP 090 25**	25/67.00
142mm	Plain	**SSWP 142 50**	50/253.00
5.0µm Pore Size, White			
13mm	Plain	**SMWP 013 00**	100/67.00
24mm	Plain	**SMWP 024 00**	100/78.00
25mm	Plain	**SMWP 025 00**	100/80.00
47mm	Plain	**SMWP 047 00**	100/109.00
90mm	Plain	**SMWP 090 25**	25/88.00
142mm	Plain	**SMWP 142 50**	50/253.00
19 × 42mm††	Plain	**SMWP 019 0R**	100/128.00
8.0µm Pore Size, White			
13mm	Plain	**SCWP 013 00**	100/66.00
25mm	Plain	**SCWP 025 00**	100/80.00
47mm	Plain	**SCWP 047 00**	100/109.00
90mm	Plain	**SCWP 090 25**	25/67.00
142mm	Plain	**SCWP 142 50**	100/253.32

† Qty./pack is 50 pr. (matched-weight pair).

†† L × W.

Contd. on next page.

MF-Millipore* Mixed Cellulose Ester Membranes, Contd.

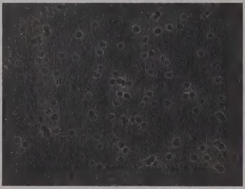
Triton*-free MF-Millipore* Membranes

Diameter	Type	Cat. No.	Pack of
0.22µm Pore Size, White			
13mm	Plain	**GSTF 013 00**	100/67.00
25mm	Plain	**GSTF 025 00**	100/80.00
47mm	Plain	**GSTF 047 00**	100/109.00
142mm	Plain	**GSTF 142 50**	50/253.00
0.45µm Pore Size, White			
13mm	Plain	**HATF 013 00**	100/67.00
25mm	Plain	**HATF 025 00**	100/80.00
47mm	Plain	**HATF 047 00**	100/109.00
82mm	Plain	**HATF 082 50**	50/119.00
85mm	Plain	**HATF 085 50**	50/119.00
90mm	Plain	**HATF 090 25**	25/67.00
132mm	Plain	**HATF 132 50**	50/228.00
137mm	Plain	**HATF 137 50**	50/244.00
142mm	Plain	**HATF 142 50**	50/253.00
1.2µm Pore Size, White			
47mm	Plain	**RATF 047 00**	100/212.00
142mm	Plain	**RATF 142 50**	50/383.00

Millipore* Isopore* Polycarbonate Membrane Filters

Smooth glass-like surface—clearer sample observation

- Hydrophilic and nonhygroscopic
- No clearing is needed for most transmitted-light microscopy
- Water vapor equilibration not necessary
- Low, consistent ash and tare weights
- Nonreactive to most stains
- Mean thickness varies from 9 to 11µm
- Typical refractive index is 1.6
- Autoclavable at 121°C (250°F)



GTBP 013 00

APPLICATIONS:

Air analysis, cell biology, cell culture, bioassays, cytology, environmental analysis, epifluorescence

TYPICAL CHARACTERISTICS

Filter	Mean Pore Size	Typical Flowrates		Minimum Bubble Point[3]
		Water[1]	Air[2]	
VC	0.1µm	0.5	1.5	101psi
GT	0.2µm	6	1	50psi
HT	0.4µm	18	10	29psi
DT	0.6µm	25	10	8.5psi
AT	0.8µm	40	20	8.5psi
RT	1.2µm	110	20	8.5psi
TT	2.0µm	350	22	4.0psi
TS	3.0µm	1500	50	0.7psi
TM	5.0µm	2000	50	N/A
TC	10.0µm	250	69	N/A

[1] *mL/min./cm^2 of filtration area at 20°C with a differential pressure of 10psi.*

[2] *L/min./cm^2 of filtration area at 20°C with a differential pressure of 10psi and exit pressure of 14.7psi.*

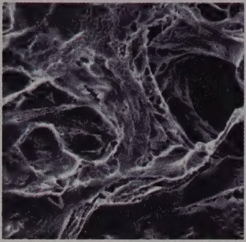
[3] *Differential pressure required to force air through the pores of a water-wet filter.*

Diameter	Type	Cat. No.	Pack of
0.1µm Pore Size, White			
13mm	Plain	**VCTP 013 00**	100/73.00
25mm	Plain	**VCTP 025 00**	100/78.00
47mm	Plain	**VCTP 047 00**	100/150.00
142mm	Plain	**VCTP 142 50**	50/371.00
0.2µm Pore Size, White			
13mm	Plain	**GTTP 013 00**	100/45.00
25mm	Plain	**GTTP 025 00**	100/52.00
37mm	Plain	**GTTP 037 00**	100/72.00
47mm	Plain	**GTTP 047 00**	100/81.00
142mm	Plain	**GTTP 142 50**	50/216.00
0.2µm Pore Size, Black			
13mm	Plain	**GTBP 013 00**	100/61.00
25mm	Plain	**GTBP 025 00**	100/132.00
47mm	Plain	**GTBP 047 00**	100/303.00
0.4µm Pore Size, White			
13mm	Plain	**HTTP 013 00**	100/45.00
25mm	Plain	**HTTP 025 00**	100/52.00
37mm	Plain	**HTTP 037 00**	100/72.00
47mm	Plain	**HTTP 047 00**	100/89.00
90mm	Plain	**HTTP 090 30**	30/76.00
142mm	Plain	**HTTP 142 50**	50/216.00
0.4µm Pore Size, Black			
13mm	Plain	**HTBP 013 00**	100/61.00
25mm	Plain	**HTBP 025 00**	100/138.00
47mm	Plain	**HTBP 047 00**	100/329.00
0.5µm Pore Size, White			
25mm	Plain	**VMTP 025 00**	100/78.00
0.6µm Pore Size, White			
13mm	Plain	**DTTP 013 00**	100/50.00
25mm	Plain	**DTTP 025 00**	100/54.00
47mm	Plain	**DTTP 047 00**	100/84.00
0.8µm Pore Size, White			
13mm	Plain	**ATTP 013 00**	100/50.00
25mm	Plain	**ATTP 025 00**	100/54.00
37mm	Plain	**ATTP 037 00**	100/73.00
47mm	Plain	**ATTP 047 00**	100/84.00
142mm	Plain	**ATTP 142 50**	50/233.00
1.2µm Pore Size, White			
13mm	Plain	**RTTP 013 00**	100/50.00
25mm	Plain	**RTTP 025 00**	100/54.00
47mm	Plain	**RTTP 047 00**	100/84.00
142mm	Plain	**RTTP 142 50**	50/233.00
2.0µm Pore Size, White			
13mm	Plain	**TTTP 013 00**	100/50.00
25mm	Plain	**TTTP 025 00**	100/54.00
47mm	Plain	**TTTP 047 00**	100/84.00
3.0µm Pore Size, White			
13mm	Plain	**TSTP 013 00**	100/50.00
25mm	Plain	**TSTP 025 00**	100/54.00
47mm	Plain	**TSTP 047 00**	100/84.00
142mm	Plain	**TSTP 142 50**	50/233.00
5.0µm Pore Size, White			
13mm	Plain	**TMTP 013 00**	100/50.00
25mm	Plain	**TMTP 025 00**	100/54.00
47mm	Plain	**TMTP 047 00**	100/84.00
90mm	Plain	**TMTP 090 30**	30/79.00
142mm	Plain	**TMTP 142 50**	50/233.00
10.0µm Pore Size, White			
13mm	Plain	**TCTP 013 00**	100/50.00
25mm	Plain	**TCTP 025 00**	100/54.00
47mm	Plain	**TCTP 047 00**	100/84.00
142mm	Plain	**TCTP 142 50**	50/233.00

Millipore* Mitex* PTFE Membrane Filters

Jnlaminated for extreme chemical or temperature :onditions

- Membranes have no backing
- Mean thickness is 125µm
- Autoclavable at 121°C (250°F)



LSWP 013 00

APPLICATIONS:

larification of acids, bases and ryogenic fluids; clarification of ropellants; analysis of hydraulic luids; RNA isolation

YPICAL CHARACTERISTICS

ilter	Mean Pore Size	Typical Flowrates		Minimum Bubble Point[3]
		Methanol[1]	Air[2]	
S	5.0m	51.9	9	0.9psi
C	10.0m	126	14	0.5psi

mL/min./cm² of filtration area at 20°C with a differential pressure of 10psi.

L/min./cm² of filtration area at 20°C with a differential pressure of 10psi and exit pressure of 14.7psi.

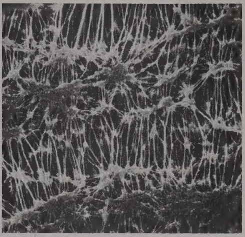
Differential pressure required to force air through the pores of a methanol-wet filter.

iameter	Type	Cat. No.	Pack of
.0µm Pore Size, White			
3mm	Plain	**LSWP 013 00**	100/173.00
5mm	Plain	**LSWP 025 00**	100/217.00
5mm	Grid	**LSWG 025 00**	100/252.00
7mm	Plain	**LSWP 037 00**	100/294.00
7mm	Plain	**LSWP 047 00**	100/308.00
7mm	Grid	**LSWG 047 00**	100/348.00
0mm	Plain	**LSWP 090 25**	25/265.00
42mm	Plain	**LSWP 142 50**	50/570.00
0.0µm Pore Size, White			
3mm	Plain	**LCWP 013 00**	100/173.00
5mm	Plain	**LCWP 025 00**	100/217.00
7mm	Plain	**LCWP 047 00**	100/306.00
7mm	Grid	**LCWG 047 00**	100/348.00
0mm	Plain	**LCWP 090 25**	25/265.00
42mm	Plain	**LCWP 142 50**	50/570.00

Millipore* Fluoropore* PTFE Membrane Filters

Hydrophobic membrane with laminated backing for easier handling

- Made from polytetrafluoroethylene bonded to high-density polyethylene
- Wetting with methanol or another low-surface-tension fluid renders the membrane hydrophilic
- Mean thickness varies from 145 to 200µm, depending upon filter type
- Autoclavable at 121°C (250°F)



FGLP 013 00

APPLICATIONS:

Clarification of acids, bases and solvents; clarification of alcohol solutions; UV spectroscopy

TYPICAL CHARACTERISTICS

Filter	Mean Pore Size	Typical Flowrates		Minimum Bubble Point[3]
		Methanol[1]	Air[2]	
FG	0.2µm	15	3	13psi
FH	0.5µm	40	8	7psi
FA	1.0µm	90	16	3psi
FS	3.0µm	286	20	0.7psi
FM	5.0µm	286	20	0.48psi

[1] mL/min./cm² of filtration area at 20°C with a differential pressure of 10psi.

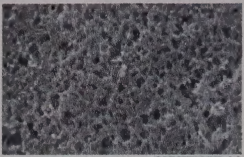
[2] L/min./cm² of filtration area at 20°C with a differential pressure of 10psi and exit pressure of 14.7psi.

[3] Differential pressure required to force air through the pores of a methanol-wet filter.

Diameter	Type	Cat. No.	Pack of
0.2µm Pore Size, White			
13mm	Plain	**FGLP 013 00**	100/178.00
25mm	Plain	**FGLP 025 00**	100/223.00
47mm	Plain	**FGLP 047 00**	100/298.00
90mm	Plain	**FGLP 090 50**	50/476.00
142mm	Plain	**FGLP 142 50**	50/587.00
0.5µm Pore Size, White			
13mm	Plain	**FHLP 013 00**	100/178.00
25mm	Plain	**FHLP 025 00**	100/223.00
37mm	Plain	**FHLP 037 00**	100/274.00
47mm	Plain	**FHLP 047 00**	100/298.00
90mm	Plain	**FHLP 090 50**	50/476.00
142mm	Plain	**FHLP 142 50**	50/587.00
0.5µm Pore Size, White, Unlaminated			
47mm	Plain	**FHUP 047 00**	100/413.00
1.0µm Pore Size, White			
13mm	Plain	**FALP 013 00**	100/178.00
25mm	Plain	**FALP 025 00**	100/223.00
47mm	Plain	**FALP 047 00**	100/298.00
90mm	Plain	**FALP 090 50**	50/476.00
142mm	Plain	**FALP 142 50**	50/587.00
3.0µm Pore Size, White			
47mm	Plain	**FSLW 047 00**	100/298.00
90mm	Plain	**FSLW 090 25**	25/253.00
142mm	Plain	**FSLW 142 00**	10/127.00
5µm Pore Size, Black			
47mm	Plain	**FMLB04700**	100/431.00

Millipore* Nylon Hydrophilic Membrane Filters

Filtration of aqueous or organic solutions



GNWP 025 00

- Resist most commonly used HPLC solvents
- Hydrophilic discs made of noncharged, unreinforced Nylon 66 in 0.2 and 0.45µm pore sizes
- Won't contaminate a sample with extractables
- Autoclaved or sterilized by EtO
- Thermal compatibility: ≤135°C (275°F)
- Absorbance: <0.002 absorbance units or 2mV, after 2 min. of column volume

APPLICATIONS:

Used in clarifying aqueous or organic solutions prior to HPLC analysis. Can be used with all common HPLC solvents.

TYPICAL CHARACTERISTICS

Filter	Mean Pore Size	Typical Flowrate Water[1]	Minimum Bubble Point[2]
GN	0.2µm	200	40psi
HN	0.45µm	250	35.5psi

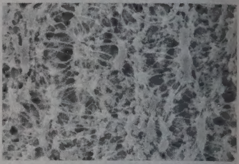
[1] *mL/min./cm² of filtration area at 20°C with a differential pressure of 10psi.*

[2] *Differential pressure required to force through the pores of a water-wet filter.*

Diameter	Type	Cat. No.	Pack of 100
0.2µm Pore Size			
25mm	Plain	**GNWP 025 00**	75.00
47mm	Plain	**GNWP 047 00**	104.00
0.45µm Pore Size			
25mm	Plain	**HNWP 025 00**	75.00
47mm	Plain	**HNWP 047 00**	109.00

Millipore* LCR Hydrophilized PTFE Membrane Filters

Filtration of aqueous fluids with no wetting



FHLC 013 00

- Made of unlaminated PTFE resin
- White, hydrophilic cut discs for removal of particles larger than 0.5µm
- Used with all common HPLC solvents
- Will not contaminate a sample with extractables
- Wetting time: <5 seconds
- Thickness: 5.5mil (0.14mm) max.

APPLICATIONS:

Clarification of acids, bases, and cryogenic fluids, clarification of propellants, analysis of hydraulic fluids, RNA isolation, clarification of aqueous or organic solutions prior to chromatographic analysis

TYPICAL CHARACTERISTICS

Filter	Mean Pore Size	Initial Flowrate Water[1]	Bubble Point[2]
FHLC	0.5µm	>110 sec./500mL	9–13.2psi

[1] *Maximum, at 27" Hg across 47mm disc.*

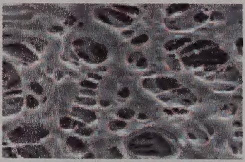
[2] *Differential pressure required to force through the pores of a water-wet filter.*

Diameter	Type	Cat. No.	Pack of 100
13mm	Plain	**FHLC 013 00**	178.00
25mm	Plain	**FHLC 025 00**	223.00
47mm	Plain	**FHLC 047 00**	298.00

Millipore* Express* PLUS Membrane Filters

NEW

Plain white polyethersulfone membranes provide ultrafast filtration for a variety of applications



- Hydrophilic, high-throughput, low-protein-binding
- Thickness: ≥150µm and ≤200µm
- Sterilization: by autoclave (121°C at 1 bar), EtO or gamma
- Bacterial endotoxins: 0.5 EU/mL
- Gravimetric extractables: <1.5%
- Flowrate: 40mL/min cm² at 2 bar, 25°C

APPLICATIONS:

Provide ultrafast filtration of tissue culture media, additives, buffers and other aqueous solutions. This membrane is also used in many ready-to-use sterile filtration devices.

Diameter	Type	Cat. No.	Pack of
0.22µm Pore Size			
13mm	Plain	**GPWP 013 00**	100/66.00
25mm	Plain	**GPWP 025 00**	100/69.00
47mm	Plain	**GPWP 047 00**	100/108.00
90mm	Plain	**GPWP 090 50**	50/123.00
142mm	Plain	**GPWP 142 50**	50/280.00
0.45µm Pore Size			
13mm	Plain	**HPWP 013 00**	100/63.00
25mm	Plain	**HPWP 025 00**	100/86.00
47mm	Plain	**HPWP 047 00**	100/110.41
90mm	Plain	**HPWP 090 50**	50/126.00
142mm	Plain	**HPWP 142 50**	50/267.00

Whatman* Anodisc* Filter Membranes

Compatible with a wide range of solvents and aqueous solutions

09-926 Series

- Consist of Anopore* inorganic membranes, with or without annular polypropylene support ring
- High-purity alumina matrix with a precise nondeformable honeycomb pore structure
- Unique capillary pore structure, uniform pore size and flat surface capture virtually 100% of particulates larger than rated pore size
- Porosity over 50% by volume and low surface adsorption, resulting in high flowrate
- Contain no monomers, plasticizers, adhesives, surfactants or wetting agents, for minimal sample interference
- Transparent when wet for minimal optical interference

APPLICATIONS:

In biochemical applications, membranes exhibit extremely low protein binding, immune to UV and gamma radiation, and stable to 400°C (752°F). In microscopic analysis, they provide more precise bacterial counts, easier focusing, low background fluorescence. Suitable for epifluorescent light, electron, direct/incident light, phase contrast, and differential interference microscopy.

Diameter	With Annular Ring	Mfr. No.	Cat. No.	Pack of
0.02µm Pore Size				
13mm	No	6809 7003	**09-926-31**	100/172.92
25mm	Yes	6809 6002	**09-926-34**	50/121.81
47mm	Yes	6809 5002	**09-926-37**	50/182.70
0.1µm Pore Size				
13mm	No	6809 7013	**09-926-30**	100/152.74
25mm	Yes	6809 6012	**09-926-33**	50/123.00
47mm	Yes	6809 5012	**09-926-36**	50/181.68
0.2µm Pore Size				
13mm	No	6809 7023	**09-926-29**	100/145.32
25mm	Yes	6809 6022	**09-926-32**	50/122.40
47mm	Yes	6809 5022	**09-926-35**	50/151.23

Whatman* Type WTP PTFE Membranes

Chemically stable and inert to handle most aggressive solvents, acids and alkalis

09-900-7, -2

- PTFE stretched film, laminated to a nonwoven polypropylene support web
- Naturally hydrophobic
- 1.0µm size is generally used for sample prefiltering in HPLC analyses to protect columns against solid particles
- 0.2µm size is used in sterile venting of vacuum manifolds and sterile filtrate tanks and containers

APPLICATIONS:

Clarification of corrosives, solvents, and aggressive fluids; collecting moist dusts for subsequent analysis (0.5 and 1.0µm pore sizes); air and gas sterilization (0.2 and 0.5µm pore sizes)

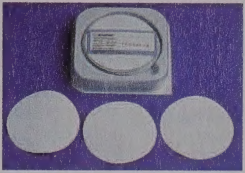
NOTE:

Use up to 120°C (248°F); higher temperatures will cause laminate to soften.

Diameter	Mfr. No.	Cat. No.	Pack of 100
0.2µm Pore Size			
25mm	7582-002	**09-900-2**	262.74
47mm	7582-004	**09-900-3**	361.64
0.5µm Pore Size			
47mm	7585-004	**09-900-7**	354.32
1.0µm Pore Size			
47mm	7590-004	**09-900-11**	361.64

Whatman* Nylon Membranes

Flexible and durable for easier handling



09-902-3

- Pure nylon membranes
- Tear-resistant
- Filters most organic solvents
- Naturally hydrophilic, eliminating need for wetting agents and prewetting when filtering aqueous solutions
- Autoclavable; withstand temperatures to 135°C (275°F)

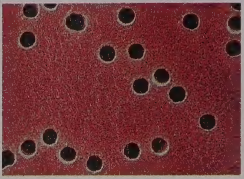
APPLICATIONS:

- Biotechnology applications include filtration of tissue culture media, microbiological media, buffers and solutions
- Used in chromatography to filter samples, aqueous and organic mobile phases, vacuum degassing

Diameter	Mfr. No.	Cat. No.	Pack of 100
0.2µm Pore Size			
13mm	7402-001	**09-902-3**	66.30
47mm	7402-004	**09-902-5**	104.28
0.45µm Pore Size			
13mm	7404-001	**09-902-8**	66.62
25mm	7404-002	**09-902-9**	75.63
47mm	7404-004	**09-902-10**	109.37
0.8µm Pore Size			
47mm	7408-004	**09-902-13**	115.49

Whatman* Nuclepore* Polycarbonate Track-Etched Membranes

Lowest extractables of any membrane for environmental analysis



09-300-58

- High-grade polycarbonate film created using track-etch technology
- Precise pore size for accurate fractionation of particulates
- Smooth, flat surface for excellent surface capture
- High particulate visibility
- Low protein binding membranes
- Biologically inert
- Excellent chemical and thermal resistance
- Low, consistent ash and tare weights
- No shedding of particulates into filtrate
- High tensile strength

APPLICATIONS:

Common applications: general filtration, sample preparation, epifluorescence, clinical, and food and beverage testing. Other applications include environmental and air analysis, chemotaxis, cell biology, HPLC, liposome extrusion, environmental and fuel testing, pharmaceuticals, water microbiology, bioassays, and parasitology. Ideal for any study which views the collected sample on the membrane including optical, scanning electron (SEM) and transmission electron (TEM) microscopy, particulate analysis, and diagnostic cytology.

Diameter	Mfr. No.	Cat. No.	Pack of 100
0.05µm Pore Size			
25mm	110603	**09-300-58**	103.92
47mm	111103	**09-300-67**	179.98
0.1µm Pore Size			
13mm	110405	**09-300-51**	79.56
25mm	110605	**09-300-59**	101.38
47mm	111105	**09-300-68**	175.59
0.2µm Pore Size			
13mm	110406	**09-300-52**	54.16
25mm	110606	**09-300-61**	60.59
47mm	111106	**09-300-69**	105.37
0.4µm Pore Size			
13mm	110407	**09-300-53**	52.84
25mm	110607	**09-300-62**	60.59
47mm	111107	**09-300-71**	105.37
0.8µm Pore Size			
13mm	110409	**09-300-54**	52.84
25mm	110609	**09-300-63**	60.59
47mm	111109	**09-300-72**	105.37
1.0µm Pore Size			
13mm	110410	**09-300-55**	52.84
25mm	110610	**09-300-64**	60.59
47mm	111110	**09-300-73**	105.37
5.0µm Pore Size			
13mm	110413	**09-300-56**	53.14
25mm	110613	**09-300-65**	60.59
47mm	111113	**09-300-74**	105.37
8.0µm Pore Size			
13mm	110414	**09-300-57**	54.16
25mm	110614	**09-300-66**	60.59
47mm	111114	**09-300-75**	105.37

Whatman* Type WCN Cellulose Nitrate Membranes

Manufactured under strictly controlled conditions for improved performance

09-905-15, -18

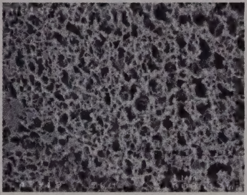
- For most routine applications; can replace other general-purpose membranes without significant changes in technique
- Among the strongest of their type with noticeably improved flexibility and tolerating abuse without sacrificing integrity
- Low level of extractables—generally below that of other similar membranes
- Advanced manufacturing ensures narrow pore size distribution and minimal batch-to-batch variation
- Autoclavable at 121°C (250°F), with low shrinkage
- Overheating to 130°C (266°F) can be tolerated without damage
- May be autoclaved two or three times without major changes in physical properties
- Gridded circles available (Cat. No. 09-529-710 series)

Diameter	Mfr. No.	Cat. No.	Pack of
0.1µm Pore Size			
47mm	7181-004	**09-905-2**	100/280.43
0.2µm Pore Size			
25mm	7182-002	**09-905-5**	100/92.08
47mm	7182-004	**09-905-6**	100/133.95
0.45µm Pore Size			
13mm	7184-001	**09-905-14**	100/71.07
25mm	7184-002	**09-905-15**	100/66.09
47mm	7184-004	**09-905-17**	100/108.52
82mm	7184-008	**09-905-18**	25/76.50
90mm	7184-009	**09-905-19**	25/84.23
142mm	7184-014	**09-905-21**	25/161.05
0.8µm Pore Size			
47mm	7188-004	**09-905-39**	100/122.66
1.0µm Pore Size			
47mm	7190-004	**09-905-45**	100/136.59
90mm	7190-009	**09-905-46**	25/113.37
3.0µm Pore Size			
25mm	7193-002	**09-905-49**	100/93.50
47mm	7193-004	**09-905-50**	100/134.38
5.0µm Pore Size			
25mm	7195-002	**09-905-55**	100/90.06
47mm	7195-004	**09-905-56**	100/136.59
90mm	7195-009	**09-905-57**	25/118.86

GE* Magna* Nylon Membrane Filters

Plain white nylon membranes offer low extractables, high uniformity

- Won't crack, tear, or distort in handling or creasing
- Resist heat, sterilization, and most organic solvents
- Hydrophilic, no wetting agents; extractable level <0.0015mg/cm
- Heatable, autoclavable up to 180°C (356°F)
- Broad chemical compatibility



R01SP01300

APPLICATIONS:

Permit use for aqueous filtration without wetting and organic solvent filtrations such as HPLC; for microbiological work, use 47mm/0.45µm size with grid

NOTE:

Not compatible with strong acids or bases

TYPICAL CHARACTERISTICS

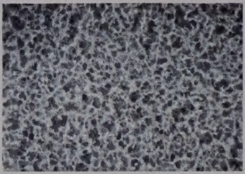
Pore Size	Flowrates		Bubble Point[3]
	Water[1]	Air[2]	
0.10µm	5.2	0.6	70psi
0.22µm	13.5	1.7	46psi
0.45µm	32	3.2	29psi
0.65µm	80	4.5	16psi
0.8µm	120	14	14psi
1.2µm	190	18	10psi
5.0µm	360	34	5psi
10.0µm	500	—	2psi
20.0µm	640	—	1psi

[1] In mL/min./cm^2 of filtration area, measured at 520mmHg (10psi), 20°C (68°F).
[2] In L/min./cm^2 of filtration area, measured at 520mmHg (10psi), 20°C (68°F).
[3] Pressure at which air is first forced through the pores of a methanol-wet membrane.

Diameter	Cat. No.	Pack of
0.10µm Pore Size		
13mm	**R01SP01300**	100/72.60
25mm	**R01SP02500**	100/93.05
47mm	**R01SP04700**	100/118.45
90mm	**R01SP09025**	25/109.99
0.22µm Pore Size		
13mm	**R02SP01300**	100/63.40
25mm	**R02SP02500**	100/78.73
47mm	**R02SP04700**	100/106.34
90mm	**R02SP09025**	25/61.35
142mm	**R02SP14225**	25/140.65
293mm	**R02SP29325**	25/237.95
0.45µm Pore Size		
13mm	**R04SP01300**	100/63.40
25mm	**R04SP02500**	100/78.73
47mm	**R04SP04700**	100/106.34
47mm	**R04SG04700**†	100/109.99
90mm	**R04SP09025**	25/63.40
142mm	**R04SP14225**	25/125.08
0.65µm Pore Size		
47mm	**R06SP04700**	100/117.96
142mm	**R06SP14225**	25/155.46
0.80µm Pore Size		
25mm	**R08SP02500**	100/78.73
47mm	**R08SP04700**	100/117.96
90mm	**R08SP09025**	25/93.05
142mm	**R08SP14225**	25/125.08
1.2µm Pore Size		
13mm	**R12SP01300**	100/64.48
25mm	**R12SP02500**	100/78.73
47mm	**R12SP04700**	100/117.96
90mm	**R12SP09025**	25/98.16
142mm	**R12SP14225**	25/104.74
293mm	**R12SP29325**	25/238.97
5.0µm Pore Size		
13mm	**R50SP01300**	100/63.40
25mm	**R50SP02500**	100/78.73
47mm	**R50SP04700**	100/117.96
90mm	**R50SP09025**	25/98.16
142mm	**R50SP14225**	25/114.91
10.0µm Pore Size		
13mm	**R99SP01300**	100/74.44
25mm	**R99SP02500**	100/78.73
47mm	**R99SP04700**	100/117.96
142mm	**R99SP14225**	25/125.08
20.0µm Pore Size		
13mm	**R22SP01300**	100/63.40
25mm	**R22SP02500**	100/78.73
47mm	**R22SP04700**	100/117.96
90mm	**R22SP09025**	25/98.16
142mm	**R22SP14225**	25/124.06

† Grid-style membranes.

GE* Nitrocellulose-Mixed Esters of Cellulose Membrane Filters


E01WP02500

- Cellulose nitrate/cellulose acetate polymers offer fast flow, high throughput, no contaminating fibers
- No cytotoxic wetting agents
- Hydrophilic; extractables <4%; biologically inert; <0.05% ash
- Gridded types for particle counting
- Thickness, 150μm (except 0.10μm membranes, 130μm)
- 0.22 and 0.45μm sizes are tested for microbial recovery, bacteria retention
- White membranes autoclavable at 121°C (250°F) for 20 minutes
- Black membranes provide dark background for particle analyses; not autoclavable

APPLICATIONS:

Microbiological determinations; industrial hygiene procedures; clarifying aqueous solutions; determination of lead, chromium, cadmium, beryllium, arsenic, airborne asbestos and other particulates

ORDERING INFORMATION:

In dispenser packs of 25 or 100. Magna Nitrocellulose 47mm membrane filters in 0.22 and 0.45μm thickness are also available in presterilized packs, as well as autoclavable packs suitable for onsite presterilization. Order online or contact your Fisher Scientific Customer Service Representative.

TYPICAL CHARACTERISTICS

	Flowrates		
Pore Size	**Water[1]**	**Air[2]**	**Bubble Point[3]**
0.10μm	6.5	0.8	100psi
0.22μm	18.5	2	50psi
0.45μm	50	4	30psi
0.65μm	125	9	17psi
0.80μm	195	17	15psi
1.2μm	290	20	12psi
5.0μm	550	34	7psi

[1] In mL/min./cm^2 of filtration area, measured at 520mmHg (10psi), 20°C (68°F).
[2] In L/min./cm^2 of filtration area, measured at 520mmHg (10psi), 20°C (68°F).
[3] Pressure at which air is first forced through the pores of water-wet membrane.
Manufactured by GE Infrastructure Water & Process Technology.

Diameter	Type	Cat. No.	Pack of
0.10μm Pore Size, White			
25mm	Plain	**E01WP02500**	100/175.46
47mm	Plain	**E01WP04700**	100/224.38
0.22μm Pore Size, White			
13mm	Plain	**E02WP01300**	100/62.13
25mm	Plain	**E02WP02500**	100/72.84
47mm	Plain	**E02WP04700**	100/101.76
90mm	Plain	**E02WP09025**	25/58.28
142mm	Plain	**E02WP14225**	25/116.94
0.45μm Pore Size, White			
13mm	Plain	**E04WP01300**	100/62.73
25mm	Plain	**E04WP02500**	100/72.84
47mm	Plain	**E04WP04700**	100/94.27
47mm	Grid	**E04WG04700**	100/104.98
90mm	Plain	**E04WP09025**	25/59.99
142mm	Plain	**E04WP14225**	25/118.04
0.45μm Pore Size, Black			
25mm	Plain	**E04BP02500**	100/109.53
25mm	Grid	**E04BG02500**	100/135.05
47mm	Grid	**E04BG04700**	100/130.80
0.65μm Pore Size, White			
25mm	Plain	**E06WP02500**	100/73.55
47mm	Plain	**E06WP04700**	100/109.82
0.80μm Pore Size, White			
25mm	Plain	**E08WP02500**	100/72.60
37mm	Plain	**E08WP03700**	100/98.55
47mm	Plain	**E08WP04700**	100/109.82
47mm	Grid	**E08WG04700**	100/135.05
90mm	Plain	**E08WP09025**	25/118.04
142mm	Plain	**E08WP14225**	25/118.04
0.80μm Pore Size, Black			
25mm	Plain	**E08BP02500**	100/109.53
47mm	Plain	**E08BP04700**	100/130.80
47mm	Grid	**E08BG04700**	100/131.76
1.2μm Pore Size, White			
13mm	Plain	**E12WP01300**	100/62.13
25mm	Plain	**E12WP02500**	100/72.84
47mm	Plain	**E12WP04700**	100/112.87
47mm	Grid	**E12WG04700**	100/114.91
90mm	Plain	**E12WP09025**	25/92.12
142mm	Plain	**E12WP14225**	25/118.45
5.0μm Pore Size, White			
13mm	Plain	**E50WP01300**	100/62.73
25mm	Plain	**E50WP02500**	100/72.84
47mm	Plain	**E50WP04700**	100/112.87
90mm	Plain	**E50WP09025**	25/93.02
142mm	Plain	**E50WP14225**	25/118.04

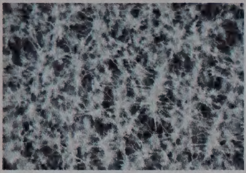
*Trademark. See Trademark Reference.

Prices subject to change.

GE* Magna* PTFE Membranes

Naturally hydrophobic, plain white membranes

- Biologically inert, chemical resistant
- Easy to handle


F02LP01300

APPLICATIONS:

Laminated membranes are ideal for vent filtration, phase separation, aerosol sampling. Prewet with solvent to filter aqueous solutions. Pure PTFE types are useful for solvent, acid, and gas filtrations.

TYPICAL CHARACTERISTICS

Pore Size	Flowrates		Bubble Point[3]
	Water[1]	Air[2]	
Laminated PTFE Membranes			
0.22µm	NA	2.5	19psi
0.45µm	NA	4.8	9psi
1.0µm	NA	9	6psi
Pure PTFE Membranes			
5.0µm	70	9	7psi
10.0µm	126	14	0.5psi

[1] *In mL/min./cm^2 of filtration area, measured at 520mmHg (10psi), 20°C (68°F).*
[2] *In L/min./cm^2 of filtration area, measured at 520mmHg (10psi), 20°C (68°F).*
[3] *Pressure at which air is first forced through the pores of a methanol-wet membrane.*

Laminated Membranes

- PTFE laminated to polypropylene woven support for extra durability
- Chemically compatible with most solvents, acids, alcohols, hydrocarbons, alkalis
- Thickness: 130µm
- Autoclavable up to 130°C (265°F)

Diameter	Cat. No.	Pack of
0.20µm Pore Size		
13mm	**F02LP01300**	100/196.62
25mm	**F02LP02500**	100/224.62
47mm	**F02LP04700**	100/310.93
90mm	**F02LP09025**	25/270.68
142mm	**F02LP14225**	25/336.09
0.45µm Pore Size		
13mm	**F05LP01300**	100/198.79
25mm	**F05LP02500**	100/224.62
47mm	**F05LP04700**	100/310.93
142mm	**F05LP14225**	25/336.09
1.0µm Pore Size		
13mm	**F10LP01300**	100/87.62
25mm	**F10LP02500**	100/224.62
47mm	**F10LP04700**	100/310.93
90mm	**F10LP09025**	25/270.68

Pure PTFE Membranes

- Without support structure
- Chemically and biologically inert
- Resist most fluids, concentrated acids and bases
- Thickness: 260µm
- Autoclavable; stable to 260°C (500°F)

Diameter	Cat. No.	Pack of
5.0µm Pore Size		
37mm	**Z50WP03750**	50/192.47
47mm	**Z50WP04750**	50/195.67
90mm	**Z50WP09010**	10/143.64
142mm	**Z50WP14210**	10/179.30
10.0µm Pore Size		
25mm	**Z99WP02550**	50/131.86
37mm	**Z99WP03750**	50/193.89
47mm	**Z99WP04750**	50/195.67
90mm	**Z99WP09010**	10/144.62
142mm	**Z99WP14210**	10/179.30

GE* PCTE Filter Membranes

Smooth, flat surface for even distribution in a single plane

PCTE Polycarbonate Track-Etched membranes are manufactured under Class 100 conditions to be exceptionally contaminant free. Exhibit negligible adsorption/absorption of filtrate, precise pore size, narrow pore distribution, low tare weights, low trace element level.

- Created with pore density and size precisely controlled
- Biologically inert
- Optically translucent (actually transparent in most pore sizes)
- Not stained by most solutions
- Nonhygroscopic
- Superior strength, chemical resistance, thermal stability
- Autoclavable

Typical Characteristics

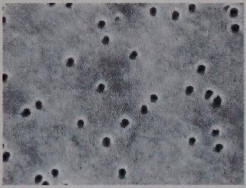
- Thickness: 6 to 10µm
- Tare weight: 1.0mg/cm^2
- Tensile strength: >3000psi
- Residual ash: 0.92mg/cm^2
- Specific gravity: 0.94 to 0.97
- Minimum burst strength: 10psi
- Max. use temperature: 140°C (284°F)

PCTE Plain Hydrophilic Membranes

- Can be made hydrophobic

APPLICATIONS:

Recommended for viewing sample on filter surface: observation of sample with optical or electron microscopes; cold sterilization, tissue culture, fractionation, blood studies, virology, general separations.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Ordering Information, on next page.

GE* PCTE Filter Membranes, Contd.

PCTE Plain Hydrophilic Membranes

Diameter	Cat. No.	Pack of 100
0.1µm Pore Size		
13mm	**09-732**	82.48
25mm	**09-732-16**	93.19
47mm	**09-732-34**	142.50
0.2µm Pore Size		
13mm	**09-732-1**	51.72
25mm	**09-732-17**	58.28
47mm	**09-732-35**	95.34
0.4µm Pore Size		
13mm	**09-732-3**	51.72
25mm	**09-732-19**	58.28
37mm	**09-732-32**	77.13
47mm	**09-732-37**	95.34
0.6µm Pore Size		
25mm	**09-732-21**	57.85
1.0µm Pore Size		
47mm	**09-732-41**	103.91
2.0µm Pore Size		
13mm	**09-732-7**	58.92
25mm	**09-732-23**	68.56
3.0µm Pore Size		
13mm	**09-732-9**	58.92
25mm	**09-732-25**	66.46
47mm	**09-732-42**	103.91
5.0µm Pore Size		
13mm	**09-732-11**	58.92
25mm	**09-732-27**	68.56
47mm	**09-732-43**	103.91
8.0µm Pore Size		
13mm	**09-731-89**	58.92
47mm	**09-732-44**	103.91

PCTE Plain Black Membranes

For epifluorescence microscopy

- Treated to appear dark gray—ideal for epifluorescence microscopy

Pore Size	Diameter	Cat. No.	Pack of 100
0.1µm	25mm	**09-732-15**	68.68
0.2µm	13mm	**09-732-2**	59.45
0.2µm	25mm	**09-732-18**	68.68
0.4µm	25mm	**09-732-20**	68.68

MICROBIOLOGICAL ANALYSIS

*Fisherbrand** Water-Testing Membrane Filters

Nitrocellulose membrane filters

- Gridded to aid in counting and colony differentiation
- 0.45µm pore size with 47mm diameter
- Fit standard 2" (5cm) Petri dishes

09-719-555

APPLICATIONS:
Designed for determining bacterial levels, including coliforms, in water, sewage, foods, and filterable beverages

ORDERING INFORMATION:
Individually wrapped packs feature filters individually sealed in peel-back envelopes without absorbent pads. Bulk packages contain ten resealable envelopes, each containing ten filters and ten absorbent pads.

INCLUDES:
Certificate of Analysis supplied with each filter pack

COMPLIANCE:
Comply with applicable EPA standard methods and ASTM* specifications for drinking water analysis. Certified to meet stated specifications for physical, chemical, and biological properties including extractables and recovery and retention of indicator organisms.

NOTE:
Autoclave nonsterile packs before opening

Pore Size	Packaging	Cat. No.	Pack of
0.45µm	Individually Wrapped, Sterile	**09-719-555**	600/247.92
0.45µm	Bulk Packed, Nonsterile	**09-719-1C**	100/56.80

LOOKING FOR ENVIRONMENTAL TESTING MATERIALS?

Fisher Scientific offers a large selection of materials for environmental and wastewater testing. See the Water/Wastewater section.

Millipore* Microbiological Analysis Membrane Filters

Optimized for MF method microbiological analysis of water or other liquids

- MF-Type (mixed cellulose esters) filter membranes
- 0.45µm (Type HA) designed to give complete retention and maximum recovery of total coliforms and fecal coliform bacteria
- 0.7µm (Type HC) ideal for fecal coliform analyses
- Use 0.22µm membranes where 0.45µm pore size is not sufficient
- For beverage analysis, choose membranes with 0.8µm pore size

COMPLIANCE:

Certified to meet *Standard Methods for the Examination of Water and Wastewater* requirements

Diameter	Color/Surface	Packaging Code	Cat. No.	Pack of
0.22µm Pore Size				
25mm	White/Plain	I	**GSWP 025 S0**	100/103.00
47mm	White/Plain	C	**GSWP 047 S0**	100/94.00
47mm	White/Gridded	S	**GSWG 047 S6**	600/260.33
0.45µm Pore Size				
47mm	White/Gridded	S	**HAWG 047 S6**	600/225.00
47mm	Black/Gridded	S	**HABG 047 S6**	600/284.36
47mm	White/Gridded	B	**HAWG 047 A0**	100/77.00
47mm	White/Plain	B	**HAWP 047 A0**	100/88.00
47mm	White/Plain	P	**HAWP 047 S0**	100/94.00
47mm	White/Gridded	P	**HAWG 047 S0**	100/92.00
47mm	Black/Gridded	P	**HABG 047 S0**	100/107.00
0.7µm Pore Size				
47mm	White/Gridded	S	**HCWG 047 S6**	600/257.32
47mm	White/Gridded	S	**HCWG 047 S1**	1000/442.00
0.8µm Pore Size				
47mm	White/Plain	C	**AAWP 047 S0**	100/107.00
47mm	White/Gridded	C	**AAWG 047 S0**	100/97.00
47mm	White/Gridded	S	**AAWG 047 S6**	600/278.35
47mm	Black/Gridded	C	**AABG 047 S0**	100/109.41
47mm	Black/Gridded	S	**AABG 047 S6**	600/278.35

PACKAGING SPECIFICATIONS

Code	Sterile	Absorbent Pad	Separator Paper	Individually Sealed
B	No[1]	Yes	No	No[2]
C	Yes	Yes	No	No[2]
I	Yes	No	No	Yes
P	Yes	Yes	No	Yes
S[3]	Yes	No	Yes	Yes

---

[1] *Can be autoclaved prior to use.*

[2] *Available in 10 resealable envelopes for autoclaving prior to use.*

[3] *S-Pak* filters are sterile, individually wrapped with blue separator paper.*

Millipore* EZ-Pak* Membranes and Dispenser

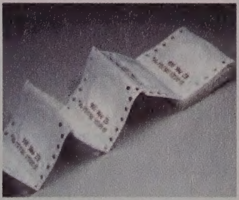
Sterile, ready-to-use membranes eliminate contamination risk, save time

Press lever to uncover half of membrane surface for easy retrieval with forceps; otherhalf remains in protective packaging. Unused membranes remain safely packed in pleated band.

09-719-9 Dispenser with EZHAWG474 membranes.

Dispenser

- Stainless-steel casing with epoxy-based paint finish and Ultem* rollers; cast-aluminum
- Eliminates contamination risk of opening and detaching peel-back envelopes of sterile membranes
- Membranes load easily
- Dispenser dimensions: 9¼L × 6⅜W × 9½"H (23.5 × 16 × 24cm); weight: 5½ lb. (2.4kg)



Pleated band carries 150 individually sealed EZ-Pak membranes.

EZ-Pak Membranes

- Mixed ester cellulose membranes are 47mm in diameter with 0.45 or 0.8µm pore sizes
- White membranes ideal for particle counting
- Black membranes facilitate colony counting by improving contrast of lactic bacteria colonies in beer and wine analysis and yeast colonies in soft drink testing
- Suitable for testing according to international standards for drinking, bottled, and mineral water analysis
- No special precautions needed, even for extended times between uses
- Used packaging film and paper are collected on spool for easy discarding

ORDERING INFORMATION:

Membranes are individually wrapped and come in pleated-band formatted cartridges of 150. Each pack includes four cartridges (600 membranes in all). Membrane catalog number, lot number, sterilization date, pore size, and sequential number from 1 to 150 for each membrane cartridge are printed on clear, protective cover.

COMPLIANCE:

Meet guidelines for *Standard Methods for the Examination of Water and Wastewater*

Description	Type	Cat. No.	Price
Membrane Dispenser	----	**09-719-9**	Ea./1099.00
Membranes			
0.45µm	White gridded	**EZHAWG474**	Pk. of 600/264.00
0.45µm	Black gridded	**MSP0 008 14**	Pk. of 600/277.00
0.45µm	Green gridded	**EZHA GG4 74**	Pk. of 600/317.00
0.22µm	White gridded	**EZGSWG474**	Pk. of 600/317.00
0.7µm (asymm.)	White gridded	**EZHCWG474**	Pk. of 600/301.00
0.8µm	White gridded	**EZAAWG474**	Pk. of 600/313.00
0.8µm	Black	**EZAABG474**	Pk. of 600/313.00

Millipore* Microfil* Filtration System

Convenient filtration system uses presterilized funnels and membranes on lever-action filtration support

MIAC 01P 01 (left) and MIAC 03P 01

- Disposable, stackable, recyclable polypropylene 100mL or 250mL funnels
- Eliminates autoclaving and minimizes waste
- Manifold-mounted supports for laboratory use or stand-alone supports for onsite filtration
- "Push-fit" funnels seal tightly to manifold supports without clamps or O-rings
- Leak-free operation and uniform microorganism recoveries
- Faster than all-glass filter apparatus
- Lever breaks vacuum and lifts membrane for removal with forceps

Membrane Filters

- 0.22µm pore size for specific test regulations
- 0.45µm for general microbiological analysis
- 0.7µm for chlorinated effluents
- 0.8µm for yeast or molds applications
- 100mL funnels are available with convenient accessory dispensers

INCLUDES:

47mm gridded MCE membrane filters or EZ-Pak* membrane cartridge

COMPLIANCE:

CEN, *Standard Methods for the Examination of Water and Wastewater,* WHO guidelines

Vacuum Manifold and Accessories

Description	Cat. No.	Each
Three-Position Vacuum Manifold with supports	**MIAC 03P 01**	2038.00
Funnel Dispenser for 100mL funnels	**MIAC FD1 01**	534.00
Vacuum Support (stand-alone for single station)	**MIAC 01P 01†**	600.00
Hand Vacuum Pump (for use with Vacuum Support)	**MIAC HVP 01**	158.59

†Can also be used for field testing.

Microfil Funnels

Filter Pore Size	Filter Color	Cat. No.	Pack of
100mL Funnels with MCE Membranes			
0.22µm	White	**MIGS WG0 72**	72/78.00
0.45µm	Black	**MIHA BG0 72**	72/75.00
0.45µm	White	**MIHA WG0 72**	72/69.00
0.8µm	Black	**MIAA BG0 72**	72/78.39
1.2µm	White	**MIRA WG0 72**	72/75.00
100mL Funnels with EZ-Pak Membrane Cartridges			
0.45µm	White	**MZHA WG1 01**	150/192.00
250mL Funnels with MCE Membranes			
0.22µm	White	**MIGS WG0 90**	90/117.00
0.45µm	Black	**MIHA BG0 90**	90/117.00
0.45µm	White	**MIHA WG0 90**	90/108.00
250mL Funnels with EZ-Pak Membrane Cartridges			
0.45µm	White	**MZHA WG2 51**	150/233.87
0.45µm	Black	**MZHA BG2 51**	150/240.00

Millipore* Microfil* V Filtration Device

Faster and easier than conventional filter holders used to test drinking water

MVHA WG1 24

Uniform microorganism recovery is promoted by unique "push-fit" seal; smooth, hydrophobic funnel surface reduces aqueous sample residues sticking to funnel walls; and support's convex shape eliminates membrane distortion, thus maintaining uniform contact between membrane and medium surface.

- No need to assemble filter holders, clean funnels, or sterilize filter support after each filtration
- Microfil V filtration device snaps off the carrying tray and onto a standard No. 8 stopper or a vacuum syringe with Luer connection
- Funnels attach with "push-fit" seal to prevent sample bypass without clamps or O-rings
- Filter support has a curved edge to easily remove membrane after filtration while vacuum is still applied

ORDERING INFORMATION:

Sold in three trays of eight

INCLUDES:

Filtration device; 100mL polypropylene funnel; white, gridded sterile 47mm MCE membrane with 0.22 or 0.45µm pore size

COMPLIANCE:

Conforms to international standards for testing drinking water, *Standard Methods for the Examination of Water and Wastewater,* and WHO *Guidelines for Drinking Water Quality*

CERTIFICATIONS:

Membrane is certified in accordance with *Standard Methods for Coliform Analysis*

Filter Pore Size	Cat. No.	Pack of
0.22µm	**MVGS WG 124**	24/91.00
0.45µm	**MVHA WG 1 24**	24/83.00

Millipore* Pad Dispenser

Reduces contamination risks

AP10 045 S1

- Rapidly dispenses large numbers of absorbent pads without individual forceps handling
- Plastic dispenser comes with tube that holds pads
- Sterile pads are absorbent and conform with requirements of *Standard Methods for the Examination of Water and Wastewater*

Description	Cat. No.	Price
Pad Dispenser with 200 Sterile Pads	**AP10 045 S1**	Ea./54.00
Sterile Pads	**AP10 045 S0**	Pk. of 1000/128.00

*Trademark. See Trademark Reference.

Prices subject to change.

Millipore* Microfil* S Filtration Devices

Fast, dependable alternative to conventional multi-step methods

Devices consist of a funnel, protective lid, and filtration support so routine microbiological testing is fast and easy.

MVHA WGS 24

- Ensure consistent recovery of microorganisms
- Smooth, hydrophobic funnel surface repels aqueous sample residues to ensure that microorganisms are collected on the membrane, not on funnel walls
- Convex support shape eliminates pleating and distortion of membrane due to expansion
- Three membrane selections offer versatility for your specific application

Benefits

- Presterilized, individually packaged
- No membrane handling prior to filtering
- No filter holders, funnels and attachments to assemble and sterilize
- No sterilizing the filter support after each filtration
- Protective lid reduces external contamination risk
- Pre-assembled to speed sampling and shorten preparation
- Easy-to-remove funnel and membrane reduce test time

COMPLIANCE:

Comply with USP/EP Guidelines. Certificate of Quality demonstrates that the device has been quality-control tested with Pharmacopoeia organisms and demonstrates acceptable growth.

Filter Material	Pore Size	Cat. No.	Pack of 24
Mixed Cellulose Esters	0.45µm	**MVHAWGS24**	84.00
Hydrophilic PVDF	0.45µm	**MVHVWPS24**	128.00
Mixed Cellulose Esters	0.22µm	**MVGSWGS24**	84.00

Millipore* Hydrophobic Edge Membranes

Nonwetting edge prevents solution intrusion under holder sealing rings

HAEP 047 A0

- Hydrophobic edge membranes are standard MF-Type (mixed cellulose ester) filters
- 47mm diameter

APPLICATIONS

For microbiological and sterility testing of antibiotics and bacteriostatic drugs, as well as for filling machine operations

Hydrophobic 3mm Edge Membranes

Pore Size	Color/Surface	Cat. No.	Pack of 100
Autoclave-packed			
0.45µm	White/Plain	**HAEP 047 A0**	135.00
0.45µm	White/Gridded	**HAEG 047 A0**	135.51
Sterile-packed			
0.22µm	White/Plain	**GSEP 047 S0**	143.00
0.45µm	White/Plain	**HAEP 047 S0**	135.00

Hydrophobic 6mm Edge Membranes

Pore Size	Color/Surface	Cat. No.	Pack of 100
Nonsterile			
0.22µm	White/Plain	**GSEP 047 0W**	135.00
0.45µm	White/Plain	**HAEP 047 0W**	135.00
Autoclave-packed			
0.45µm	White/Plain	**HAEP 047 AW**	135.00
Sterile-packed			
0.45µm	White/Plain	**HAEP 047 SW**	135.00

Millipore* PetriSlide* Containers

Use in place of Petri dishes

Sterilized polystyrene storage and examination containers for culturing microorganisms.

PDMA 047 00

- Hold 47mm filter securely in place
- Transparent cover allows microscopic examination without removal
- Rectangular base has rounded corners for mounting on microscopic stage
- Stored in cartons or standard slide cases
- Use pure cellulose pads for microbiological analysis
- Use without pads for contamination analysis

Description	Cat. No.	Pack of 100
With pads	**PDMA 047 00**	37.00
Without pads	**PD15 047 00**	52.00

Nalgene* Analytical Test Filter Funnels

Low-cost, disposable, sterile filter funnels for microbiological analysis testing

Graduated, polypropylene funnel separates easily for access to membrane.

- High-impact polystyrene collars
- Preassembled and sterile
- Adapters accommodate No. 8 stoppers for use with ½" hole in vacuum manifolds or filter flasks
- Designed for single use only
- 47mm diameter cellulose nitrate membrane
- 250mL size is useful when testing beverages that may foam

APPLICATIONS:

Test water quality, foods, beverages, pharmaceutical quality control and raw material, as well as sterility testing and finished product QC

INCLUDES:

Six funnel adapters with each case

COMPLIANCE:

0.45µm model is certified to meet requirements of APHA *Standard Methods* for water quality work.

09-740 Series

Pore Size	Membrane Color	Mfr. No.	Cat. No.	Case of 50
100mL Funnel Capacity				
0.2µm	White	145-0020	**09-740-30G**	173.50
0.45µm	White with gray grid	145-0045	**09-740-30D**	173.50
0.45µm	Gray with white grid	147-0045	**09-740-29**	185.75
250mL Funnel Capacity				
0.2µm	White	145-2020	**09-740-30J**	191.50
0.45µm	White with gray grid	145-2045	**09-740-30K**	191.50

Nalgene* Sterile Analytical Filter Units

Disposable, preassembled, presterilized units with removable membranes

- Upper chamber snaps away from receiver for retrieval of membrane with sterile forceps
- EtO-sterilized, individually wrapped
- Provide superior recovery and growth of microorganisms
- Receiver is graduated from 20 to 115mL
- 0.2µm size is ideal for sterility tests
- 0.45µm size has gray grid

Lower left: 09-740-308; right: 09-740-21A

APPLICATIONS:

Culturing; membrane analysis, such as water quality testing; and cold sterilization in field work

INCLUDES:

Polystyrene cover; upper chamber with reference mark at 100mL and receiver; removable, 47mm Triton*-free cellulose nitrate (CN) membranes; cellulosic support pad; cellulosic vent plug side arm; quick-disconnect tubing adapter; and color-coded blue support plate.

COMPLIANCE:

0.45µm size conforms to Specification 909A, B and C of APHA *Standard Methods*, 16th ed.; EPA certification sheets included.

Membrane	Pore Size	Mfr. No.	Cat. No.	Pack of 12	Case of 6 Pack
CN	0.2µm	130-4020	**09-740-21A**	102.50	410.00
CN	0.45µm	130-4045	**09-740-21B**	102.50	410.00

Filter Funnel

Safer, easier to use than cumbersome glass and metal funnels

- Disposable, presterilized funnel
- Removable 47mm diameter membrane for use with filtering flasks and manifolds
- 0.45µm Triton*-free cellulose nitrate membrane with gray grid
- EtO-sterilized, individually sealed in plastic bag

INCLUDES:

115mL upper chamber with reference mark at 100mL; polystyrene cover; membrane; support pad; polystyrene support plate/funnel that fits a stopper or adapter with 9⁄16" hole; quick-disconnect adapter for ¼ or 5⁄16" tubing. Each pack of 12 funnels includes one vacuum gasket that replaces stopper or adapter with 9⁄16" or larger opening.

COMPLIANCE:

Membrane conforms to APHA *Standard Methods*, 16th ed., Section 909A, B, C. Meets EPA requirements for water quality work.

Membrane Dia.	Pore Size	Mfr. No.	Cat. No.	Pack of 12	Case of 6 Pk.
47mm	0.45µm	140-4045	**09-740-30B**	109.94	439.75

Millipore* Filter Forceps

Handle membrane filters without damage

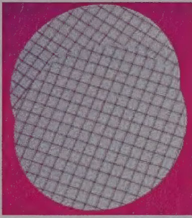
- Made from highly polished stainless steel with beveled, unserrated tips
- Sterilize by autoclaving or flaming

XX62 000 06

Cat. No.	Each
XX62 000 06	12.07

Whatman* Type WCN Gridded Cellulose Nitrate Membranes

White cellulose nitrate membranes, recommended for the majority of routine applications


09-529-710

- Improved strength and flexibility to tolerate abuse without sacrificing integrity
- Low extractable levels—approximately 2%
- Autoclavable at 121°C (250°F), with low shrinkage
- Can be heated to 130°C (266°F) without damage
- Can be autoclaved two or three times without major changes in physical properties
- Gridded surface (3.1mm intervals) make filters ideal for colony counting after incubation
- Special nontoxic ink used is completely free from bacterial growth inhibitors
- Manufactured under strictly controlled cleanroom conditions
- Pore size: 0.45µm

ORDERING INFORMATION:

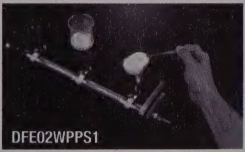
Autoclavable pack has 10 envelopes of 10 filters/pads for sterilization in the microbiological laboratory

Diameter	Type	Mfr. No.	Cat. No.	Pack of
47mm	Gridded	7141-004	**09-529-710**	100/123.48
Autoclave Pack				
47mm	Gridded	7141-204	**09-529-714**	100/81.50
Sterile, with absorbent pad				
47mm	Gridded	7141-104	**09-529-711**	100/63.12
47mm	Plain	7140-104	**09-529-707**	100/99.03
Sterile, without absorbent pad				
47mm	Gridded	7141-114	**09-529-712**	100/63.54
47mm	Gridded	7141-124	**09-529-713**	200/122.02
47mm	Gridded	7141-154	**09-300-79**	1000/344.81

GE* Disposable Sterile Analytical Filter Funnels

Preassembled, sealed, sterile units for aqueous samples

- GE Nitrocellulose-Mixed Esters cellulosic membranes have 14.4cm^2 (2.23 sq. in.) filtration area
- Tape-seal design allows clean removal of membrane from the funnel after filtering



APPLICATIONS:

Quality control, microbiological, and water/wastewater testing; patch testing of hydraulic and boiler fluids; sample clarification

INCLUDES:

115mL funnel, base, polystyrene cover, 47mm white membrane with polypropylene support pad tape-sealed into funnel base, extender for adapting the unit for side arm flask filtrations

Pore Size	Flowrate† (mL/min./cm^2)	Type	Cat. No.	Pack of
0.22µm	18.5	Plain	**DFE02WPPS1**	12/69.36
0.45µm	50	Plain	**DFE04WPPS1**	12/69.36
0.45µm	50	Grid	**DFE04WGPS1**	12/69.36
0.45µm	50	Grid	**DFE04WGPSB**	200/956.00

GE* Presterilized 47mm Membranes in 1+ PACs

Consistent porosity plus high strength

E04WG047S2

Gamma radiation sterilized—no ethylene oxide residue to contaminate solutions.

- Naturally hydrophilic
- Biologically inert
- Exceptional strength
- 47mm diameter fit standard 2" (5cm) Petri dish
- Gridded surface

Magna Nitrocellulose Mixed Esters

- White membranes are mixed esters of cellulose

Magna Nylon

- White membranes made by impregnating nylon onto an inert nonwoven polyester support
- Dimensionally stable—won't tear, crack, break or distort

APPLICATIONS:

For effective retention and recovery of *E. coli* bacteria, stressed organism recovery, sterility and bioburden testing in QC/QA laboratories

ORDERING INFORMATION:

Membranes are individually wrapped in peel-open pouches, with or without absorbent nutrient pads. Each pack contains certificate guaranteeing specifications in *Standard Methods for the Examination of Water and Wastewater.*

CERTIFICATIONS:

Certified to meet APHA standards

Description	Pore Size	Cat. No.	Pack of
Magna Nitrocellulose-Mixed Esters			
With Pads	0.45µm	**E04WG047S2**	100/51.42
With Pads	0.45µm	**E04WG047S5**	1000/417.55
With Pads	0.70µm	**E07WG047S2**	200/61.20
Without Pads	0.45µm	**E04WG047S1**	200/111.25
Without Pads	0.45µm	**E04WG047S4**	1000/389.30
Without Pads	0.70µm	**E07WG047S1**	200/114.70
Magna Nylon			
Without Pads	0.45µm	**R04SG047S1**	200/174.58

TYPICAL CHARACTERISTICS

Pore Size	Flowrates		Bubble Point[3]
	Water[1]	Air[2]	
0.10µm[4]	7	1	80psi
0.22µm	19	2	52psi
0.45µm	50	4	30psi
0.65µm	128	9	14psi
0.80µm	198	17	9psi
1.2µm	265	20	9psi
5.0µm	650	34	6psi

[1] In mL/min./cm^2 of filtration area, measured at 520mmHg (10psi, 20°C (68°F).
[2] In L/min./cm^2 of filtration area, measured at 520mmHg (10psi, 20°C (68°F).
[3] Pressure at which air is first forced through the pores of water-wet membrane.
[4] 0.10µm membranes are 130µm thick; all others, 150µm thick.
Manufactured by GE Water & Process Technologies.

BEFORE YOU BUY SYRINGE FILTERS

TECHNICAL TIP:
Never reuse a syringe filter, even if it looks perfectly clean. Whatman products filter out extremely fine particulate that may not be visible to the naked eye.

Ensure the consistency of your results by discarding filters after a single use.

HOW CAN FILTRATION HELP YOU?

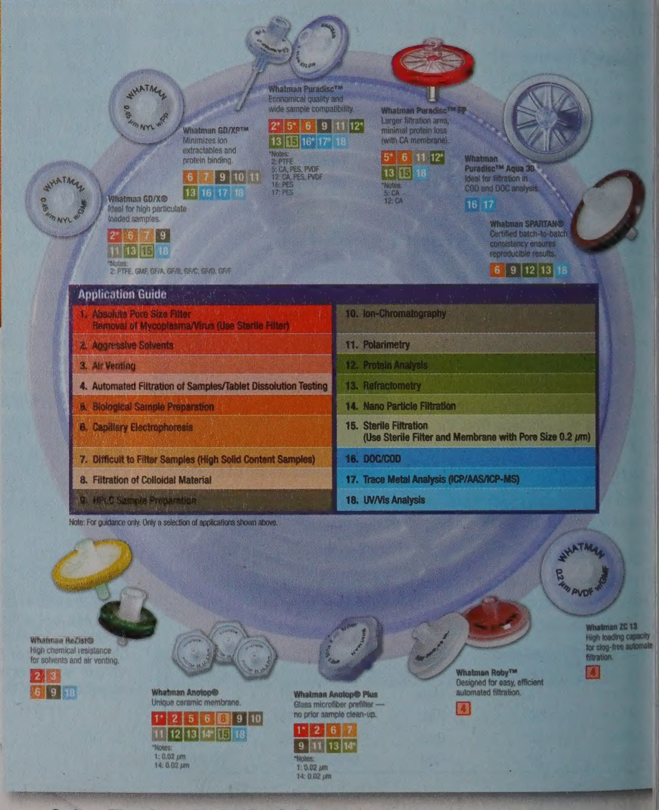
Syringe filters are a cost-effective way to improve the quality of HPLC analysis, improve consistenc column life, and reduce maintenance. By removing particulates before the sample enters the colu Whatman syringe filters allow unimpeded flow. Without particulates to create obstructions, your will work more efficiently and last longer.

In addition to HPLC, syringe filters have a multitude of other applications. A syringe filter adds a fe and a minimal expense to your testing process, but you will see a big return on your investment.

WHAT TO CONSIDER WHEN CHOOSING A SYRINGE FILTER:

- **Sample Type**—Choose a membrane compatible with the sample—e.g., some mem bind proteins
- **Solvent Type**—Consider solvent compatibility of filtration membrane
- **Particle Retention**—Choose appropriate pore size for application
- **Application/Analysis Type**—e.g., HPLC-certified filters for HPLC applic
- **Sample Volume**—Choose appropriate diameter filter
- **Amount of Particulates in Sample**—High particulate loaded sam require a syringe filter with a prefilter
- **Automated or Manual Filtration**—Some filter designs are opt automation
- **Sterility**—Must the syringe filter be sterile?

25mm GD/X



Whatman Puradisc™
Economical quality and wide sample compatibility.
2* 5* 6 9 11 12* 13 15 16* 17* 18
*Notes:
2: PTFE
5: CA, PES, PVDF
12: CA, PES, PVDF
16: PES
17: PES

Whatman GD/XP™
Minimizes ion extractables and protein binding.
6 7 9 10 11 13 16 17 18

Whatman GD/X®
Ideal for high particulate loaded samples.
2* 6 7 9 11 13 15 18
*Notes:
2: PTFE, GMF, GF/A, GF/B, GF/C, GF/D, GF/F

Whatman Puradisc™ FP
Larger filtration area, minimal protein loss (with CA membrane).
5* 6 11 12* 13 15 18
*Notes:
5: CA
12: CA

Whatman Puradisc™ Aqua 30
Ideal for filtration in COD and DOC analysis.
16 17

Whatman SPARTAN®
Certified batch-to-batch consistency ensures reproducible results.
6 9 12 13 18

Application Guide

1. Absolute Pore Size Filter
   Removal of Mycoplasma/Virus (Use Sterile Filter)
2. Aggressive Solvents
3. Air Venting
4. Automated Filtration of Samples/Tablet Dissolution Testing
5. Biological Sample Preparation
6. Capillary Electrophoresis
7. Difficult to Filter Samples (High Solid Content Samples)
8. Filtration of Colloidal Material
9. HPLC Sample Preparation
10. Ion-Chromatography
11. Polarimetry
12. Protein Analysis
13. Refractometry
14. Nano Particle Filtration
15. Sterile Filtration
    (Use Sterile Filter and Membrane with Pore Size 0.2 µm)
16. DOC/COD
17. Trace Metal Analysis (ICP/AAS/ICP-MS)
18. UV/Vis Analysis

Note: For guidance only. Only a selection of applications shown above.

Whatman ReZist®
High chemical resistance for solvents and air venting.
2 3 6 9 18

Whatman Anotop®
Unique ceramic membrane.
1* 2 5 6 8 9 10 11 12 13 14* 15 18
*Notes:
1: 0.02 µm
14: 0.02 µm

Whatman Anotop® Plus
Glass microfiber prefilter — no prior sample clean-up.
1* 2 6 7 9 11 13 14*
*Notes:
1: 0.02 µm
14: 0.02 µm

Whatman Roby™
Designed for easy, efficient automated filtration.
4

Whatman ZC 13
High loading capacity for clog-free automate filtration.
4

Syringe Filter Quick Application Guide

sponsored by:

Whatman

SYRINGE FILTERS

*Fisherbrand** Nonsterile Wall-Mount Dispenser with 25mm Syringe Filters

Handy 150–filter dispenser box

- Mounts on wall or cabinet, freeing up counters and valuable drawer space
- Attaches simply with Velcro* fastening strips
- Reclosable tip-out drawer puts filters within easy reach for one-at-a-time use

Nylon Membrane

- Excellent chemical resistance and low protein binding
- Ideal for aqueous/organic/HPLC applications
- Hydrophilic

PTFE Membrane

- Hydrophobic PTFE membrane has low protein binding and great temperature resistance
- Ideal for degassing/clarifying aqueous and solvent samples

PVDF Membrane

- Hydrophilic membrane binds far less protein than nitrocellulose, nylon or PTFE
- Ideal for filtration of protein-containing aqueous, mild organic solutions and other biological/biotech solutions

09-730-25

ORDERING INFORMATION:

Available with filters having 0.2, 0.22, and 0.45µm pore sizes and four membrane types

Membrane Type	Pore Size	Cat. No.	Pack of 150
Nylon	0.2µm	**09-730-16**	322.85
	0.45µm	**09-730-17**	324.85
PTFE	0.2µm	**09-730-19**	318.00
	0.45µm	**09-730-21**	331.81
PVDF	0.22µm	**09-730-25**	315.00
	0.45µm	**09-730-27**	314.00

*Fisherbrand** Syringe Filters

Low hold-up volume—recover virtually all of your sample after filtering

Tested for 100% membrane and housing integrity, eliminating concerns about fluid loss.

09-719D

PVDF* Membrane

- Hydrophilic membrane binds far less protein than nitrocellulose, nylon or PTFE
- Ideal for filtration of protein-containing aqueous, mild organic solutions and other pharmaceutical/biological/biotech solutions
- Sterilized by gamma radiation

Nylon Membrane

- Excellent chemical resistance and low protein binding
- Ideal for aqueous/biological (filters sterilized by gamma radiation) and aqueous/organic/HPLC (nonsterile filters) applications
- Hydrophilic

PTFE Membrane

- Hydrophobic PTFE membrane has great temperature resistance
- Nonsterile
- Ideal for degassing/clarifying aqueous and solvent samples

Mixed Cellulose Ester (MCE) Membrane

- Hydrophilic membrane has fair chemical and temperature resistance
- EtO sterilized
- Use for clarifying or sterilizing aqueous solutions

ORDERING INFORMATION:

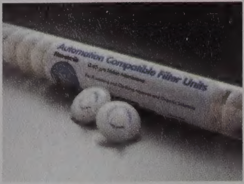
Available in 0.22 and 0.45µm pore sizes

Membrane	Pore Size	Diameter	Cat. No.	Pack of
Sterile				
PVDF	0.22µm	13mm	**09-720-3**	100/210.00
PVDF	0.45µm	13mm	**09-720-4**	100/282.00
Nylon	0.22µm	33mm	**09-719C**	50/230.00
Nylon	0.45µm	33mm	**09-719D**	50/227.00
MCE	0.22µm	33mm	**09-719A**	50/154.00
MCE	0.45µm	33mm	**09-719B**	50/143.00
Nonsterile				
Nylon	0.22µm	13mm	**09-720-5**	100/160.00
Nylon	0.22µm	25mm	**09-719E**	50/200.00
Nylon	0.45µm	13mm	**09-720-6**	100/160.00
Nylon	0.45µm	25mm	**09-719F**	50/155.01
Nylon	0.45µm	25mm	**09-719-5**	1000/2000.00
PTFE	0.22µm	13mm	**09-720-7**	100/175.27
PTFE	0.22µm	25mm	**09-719G**	50/189.38
PTFE	0.45µm	13mm	**09-720-8**	100/175.27
PTFE	0.45µm	25mm	**09-719H**	50/175.00
PTFE	0.45µm	25mm	**09-719-7**	1000/1750.00

Millipore* Automation Compatible Filters

Trouble-free performance on a variety of automated systems

Use with Zymark* BenchMate*, TPW* II, and MultiDose* workstations, as well as Zymate* stations that use filtration.



SLHN DZ5 NZ

- Pressure-resistant, high-density polyethylene housing prevents instrument stoppage
- Some membranes also include a borosilicate glass fiber prefilter to process solutions containing high particle levels
- Nonsterile
- Hydrophilic Durapore* PVDF membrane: For lowest protein binding sterilization/clarification of aqueous and mild organic solutions
- Hydrophilic PTFE membrane: Low protein binding, LCR membrane for processing and clarifying aqueous and organic solutions
- Nylon membrane: Broad chemical compatibility for processing and clarifying aqueous and organic solutions
- Glass Fiber B Prefilter: For processing and clarifying aqueous and organic solutions containing high particle levels

ORDERING INFORMATION:

Filter units come in packs of 200 (8 tubes containing 25 filter units that load directly onto the system) or in bulk packs of 1000 (without tubes)

Membrane	Pore Size	Cat. No.	Pack of
Hydrophilic PVDF	0.45µm	**SLHV DZ5 NZ**	200/420.00
	0.45µm	**SLHV DZ5 NK**	1000/1499.00
Hydrophilic PVDF with 1.0µm GF B Prefilter	0.45µm	**SLHV BZ5 NZ**	200/480.00
	0.45µm	**SLHV BZ5 NK**	1000/1800.00
Hydrophilic PTFE	0.45µm	**SLCR DZ5 NZ**	200/420.00
	0.45µm	**SLCR DZ5 NK**	1000/1499.00
Hydrophilic PTFE with 1.0µm GF B Prefilter	0.45µm	**SLCR BZ5 NZ**	200/480.00
	0.45µm	**SLCR BZ5 NK**	1000/1800.00
Nylon	0.45µm	**SLHN DZ5 NZ**	200/420.00
	0.45µm	**SLHN DZ5 NK**	1000/1499.00
Nylon with 1.0µm GF B Prefilter	0.45µm	**SLHN BZ5 NZ**	200/480.00
Glass Fiber B Prefilter	1.0µm	**SLPB DZ5 NZ**	200/420.00
	1.0µm	**SLPB DZ5 NK**	1000/1499.00

TYPICAL CHARACTERISTICS

Diameter	25mm
Volume	<100mL
Effective Filtration Area	3.9cm²
Filter Hold-up Volume (after Air Purge)	<100µL (for units with membrane only) <200µL (for units with membrane and prefilter)
Pressure Limit	100psi
Temperature Limit	45°C (113°F)

Millipore* HPF Millex* Nonsterile Syringe Filters

Up to 50% greater throughput and easier filtration than traditional syringe filters

SLHVM25NS

- Choice of two different media for better performance
- Graduated glass fiber prefilter (10.0 to 0.7µm) to remove larger particles
- 0.45µm membrane filter for fine filtration
- Low-extractable polypropylene housing

PVDF Membrane

- Hydrophilic, Durapore* low-protein-binding membrane
- Recommended for filtering proteinaceous solutions

Nylon Membrane

- Provides broad chemical compatibility
- Recommended for filtering solvents

NOTE:

Filters SLHVM25NZ and SLHNMZ5NZ are Automation Certified* by Zymark* for use with their workstations

Membrane	Pore Size	Cat. No.	Pack of
HPF Millex-HV			
PVDF, with graduated glass fiber prefilter	0.45µm	**SLHVM25NS**	50/130.00
	0.45µm	**SLHVMZ5NZ**	100/520.00
	0.45µm	**SLHVM25NK**	1000/1584.00
HPF Millex-HN			
Nylon, with graduated glass fiber prefilter	0.45µm	**SLHNM25NS**	50/134.00
	0.45µm	**SLHNMZ5NZ**	100/520.00
	0.45µm	**SLHNM25NK**	1000/1632.00

Millipore* Millex* Nonsterile Syringe Prefilters

Use to prefilter contaminated solutions

With Type AP 20 glass fiber (2.0µm nominal pore size) in polyvinyl chloride (PVC) or polypropylene (PP) housings.

- SLAP 025 50 has female Luer-Lok* inlet and male slip Luer outlet
- SLAP 050 10 has stepped hose barb/female slip Luer interior inlet and outlet

Membrane/Housing	Pore Size	Diameter	Cat. No.	Pack of
AP 20 Glass Fiber/PVC	2.0µm	25mm	**SLAP 025 50**	50/78.00
AP 20 Glass Fiber/PP	2.0µm	50mm	**SLAP 050 10**	10/47.00

Millex Selection Guide

This guide will help you decide which Millex unit fits your requirements.

SL Series

Determine the Application	
For Particle Removal:	**Choose Unit with Pore Size**
Fine	0.2µm
Medium	0.45 to 0.8µm
Coarse	2.0 to 5.0µm
Determine the Solution	
For Solution:	**Choose Unit with Membrane/Housing**
Aqueous Solutions	Durapore PVDF, hydrophilic PTFE, nylon
Organic Solutions	Fluoropore hydrophobic PTFE, hydrophilic PTFE
Aqueous/Organic Solutions	Durapore PVDF, hydrophilic PTFE, nylon
Determine the Volume	
For Volume:	**Choose Unit with Filter Diameter**
<1mL	4mm
1–10mL	13mm
10–100mL	25mm

Millipore* Millex* Sterile Syringe Filters

Ready-to-use syringe-driven units, designed for sterilizing and clarifying sterile solutions

- 100% integrity tested, individually packaged, and sterilized
- Female Luer-Lok* inlet and male Luer slip outlet
- Manufactured in a controlled environment using an automated process
- Human hands never touch the filter during assembly
- Color-coded band clearly indicates which membrane is inside
- 0.2µm filters are sterilizing grade
- Larger pore sizes are for clarification and prefiltration
- Include a Certificate of Quality

SLGP 003 RS

Millipore Express* (PES) membrane

- Provides a unique combination of speed and six times less protein binding than competitive polyethersulfone membranes
- Recommended for sterile filtering protein solutions, tissue culture media, and additives
- Gamma irradiation sterilized

MF-Millipore* (MCE) membrane

- Mixed cellulose ester provides reliable, general purpose filtration
- Use for sterilization/clarification of water, buffers, and salt solutions
- EtO sterilized

Durapore* (PVDF) membrane

- Lowest protein binding sterilization/clarification of biological solutions
- Made of polyvinylidene fluoride
- Gamma irradiation sterilized

COMPLIANCE:

Meet USP Class VI Biological tests for plastics. All 33mm filters are CE-marked and suitable for both medical and laboratory applications outside the U.S.

TYPICAL CHARACTERISTICS

Diameter	**4mm**	**13mm**	**33mm**	**50mm**
Process Volume	<1mL	<10mL	<200mL	<4000mL
Filtration Area	0.1cm²	0.65cm²	4.5cm²	19.6cm²
Filter Hold-up Volume (after Air Purge)	<10µL	<25µL	<100µL	<1000µL
Pressure Limit	200psi	100psi	145psi	50psi
Temperature Limit	45°C (113°F)	45°C (113°F)	45°C (113°F)	45°C (113°F)

Housing	**Pore Size**	**Dia.**	**Cat. No.**	**Pack of**
Millipore Express (PES) Membrane, Green				
Modified Acrylic	0.22µm	33mm	**SLGP 033 RS**	50/123.00
Modified Acrylic	0.22µm	33mm	**SLGP 033 RB**	250/503.00
Modified Acrylic	0.22µm†	33mm	**SLGP M33 RS**	50/123.00
	0.22µm	33mm	**SLGP033RK**	1000/1258.00
MF-Millipore (MCE) Membrane, Blue				
Modified Acrylic	0.22µm	33mm	**SLGS 033 SS**	50/122.00
Modified Acrylic	0.22µm	33mm	**SLGS 033 SB**	250/447.00
PVC	0.22µm	25mm	**SLGL 025 0S‡**	50/145.00
Modified Acrylic	0.22µm†	33mm	**SLGS M33 SS**	50/117.00
Modified Acrylic	0.45µm	33mm	**SLHA 033 SS**	50/123.00
Modified Acrylic	0.45µm	33mm	**SLHA 033 SB**	250/436.00
Modified Acrylic	0.45µm†	33mm	**SLHA M33 SS**	50/117.00
Modified Acrylic	0.8µm	33mm	**SLAA 033 SS**	50/121.00
Modified Acrylic	0.8µm	33mm	**SLAA 033 SB**	250/441.00
Modified Acrylic	0.8µm†	33mm	**SLAA M33 SS**	50/115.00
Durapore (PVDF) Membrane, Yellow				
PE	0.22µm	4mm	**SLGV 004 SL**	100/185.00
PE	0.22µm	13mm	**SLGV 013 SL**	100/207.00
PE	0.45µm	4mm	**SLHV 004 SL**	100/185.00
PE	0.45µm	13mm	**SLHV 013 SL**	100/224.00
PVC	5.0µm	25mm	**SLSV 025 LS**	50/131.00
Modified Acrylic	0.1µm	33mm	**SLVV 033 RS**	50/123.00
Modified Acrylic	0.1µm†	33mm	**SLVV M33 RS**	50/118.00
Modified Acrylic	0.22µm	33mm	**SLGV 033 RS**	50/123.00
Modified Acrylic	0.22µm	33mm	**SLGV 033 RB**	250/503.00
Modified Acrylic	0.22µm	33mm	**SLGV 033 RK**	1000/1258.00
Modified Acrylic	0.22µm†	33mm	**SLGV M33 RS**	50/118.00
Modified Acrylic	0.45µm	33mm	**SLHV 033 RS**	50/123.00
Modified Acrylic	0.45µm	33mm	**SLHV 033 RB**	250/523.00
Modified Acrylic	0.45µm	33mm	**SLHV 033 RK**	1000/1258.00
Modified Acrylic	0.45µm†	33mm	**SLHV M33 RS**	50/118.00

† Medical filter unit, should only be used in the U.S. for direct patient care and hospital pharmacy applications

‡ With male Luer-Lok outlet.

Millipore* IC Millex* Nonsterile Filter Units

LH Filter Units

Low-extractable filter specifically designed for this product ion chromatography

Low binding membrane, low IC extractables (chloride and nitrate <0.20µg/mL, sulfate <0.50µg/mL). Clarifies both aqueous and mild organic solutions.

SLLG C13 NL

- Remove particulates from aqueous and mild organic solutions
- High-density polyethylene housing and low binding hydrophilic polytetrafluoroethylene (PTFE) membrane are both low in extractables
- 13mm units are recommended for filtering volumes from 1 to 10mL
- 25mm units are recommended for filtering volumes from 10 to 100mL
- Certified for reliable performance
- Lot release criteria include: bubble point, flowrate, housing pressure, downstream particles, and IC levels

ORDERING INFORMATION:

Each unit individually packaged to minimize risk of extraneous ionic contamination

INCLUDES:

Certificate of quality with complete specifications

TYPICAL CHARACTERISTICS

Diameter	13mm	25mm
Volume	1–10mL	10–100mL
Filtration Area	0.65cm²	3.9cm²
Flowrate at 25°C	3mL/min. at 0.7bar (10psi)	55mL/min. at 0.7bar (10psi)
Hold-up Volume (after air purge)	≤25µL	≤100µL
Pressure Limit	100psi	100psi
Temperature Limit	45°C	45°C

Diameter	Pore Size	Flowrate	Cat. No.	Pack of
13mm	0.45µm	3mL/min. at 0.7bar (10psi)	**SLLHC13NL**	100/167.00
25mm	0.45µm	55mL/min. at 0.7bar (10psi)	**SLLHC25NS**	50/140.00

LG Filter Units

For clarification of both aqueous and mild organic solutions

13 and 25mm low-extractable filters designed specifically for ion chromatography. Hydrophilic PTFE membrane is low-binding, low-extractable polytetrafluoroethylene; removes particulates larger than 0.2µm from aqueous and mild organic solvents for cleaner IC spectra.

- Low-extractable HDPE housing
- Inlet connection: female Luer-Lok*
- Outlet: male Luer slip
- Tested to ensure compliance with strict quality control standards

ORDERING INFORMATION:

Each unit is individually packaged to minimize risk of extraneous ionic contamination

INCLUDES:

Certificate of quality with complete specifications

TYPICAL CHARACTERISTICS

Diameter	13mm	25mm
Volume	1-10mL	10-100mL
Filtration Area	0.65cm²	3.9cm²
Flowrate	30mL/min.	125mL/min.
Hold-up Volume (after air purge)	≤25µL	≤100µL
Pressure Limit (at 25°C)	100psi	100psi
Temperature Limit	45°C	45°C

Membrane/Housing	Pore Size	Diameter	Cat. No.	Pack of
PTFE/HDPE	0.2µm	13mm	**SLLG C13 NL**	100/169.00
PTFE/HDPE	0.2µm	25mm	**SLLG C25 NS**	50/144.00

Millipore* Millex* Nonsterile Syringe Filters for Sample Preparation

Remove particulates, reduce signal-to-noise ratios, maintain flat baselines

Choose from a variety of membrane types, diameters and pore sizes. Available with tube outlets for autosampler vials and cuvets. Polyethylene (PE) housings or polyvinyl chloride housings (next page).

SLHA 025 NB

Millipore Express* Plus PES Membrane

- Polyethersulfone membrane provides low protein binding and ultrafast filtration of tissue culture media, additives, buffers, and other aqueous solutions

Durapore* PVDF Membrane

- Lowest protein binding
- Use for aqueous and mild organic solutions

Durapore Hydrophobic PTFE Membrane

- Compatible with more aggressive organic solutions
- Can also be used to filter aqueous solutions

Nylon and Hydrophilic PTFE Membranes

- Broad chemical compatibility
- Choose for filtering aqueous and organic solutions
- Hydrophilic PTFE is low protein binding

MF-Millipore* MCE Membrane (see next page)

- Mixed cellulose ester membrane for sterilization/clarification of water, buffers, and salt solutions

Filter units with PE housing

All have female Luer-Lok* inlet and male Luer slip outlet except as noted in table.

TYPICAL CHARACTERISTICS

Diameter	4mm	13mm	25mm	33mm
Volume	<1mL	<10mL	<100mL	<100mL
Effective Filtration Area	0.1cm^2	0.65cm^2	3.9cm^2	4.5cm^2
Filter Hold-up Volume (after air purge)	<10µL	<25µL	<100µL	<80µL
Pressure Limit	200psi	100psi	100psi	125psi
Temperature Limit	45°C (113°F)	45°C (113°F)	45°C (113°F)	45°C (113°F)

Pore Size	Diameter	Cat. No.	Pack of
Millipore Express PLUS (PES) Membrane			
0.22µm	33mm	**SLGP 033 NS**	50/145.54
0.22µm	33mm	**SLGP 033 NB**	250/512.00
0.22µm	33mm	**SLGP 033 NK**	1000/1293.00
0.45µm	33mm	**SLHP 033 NS**	50/145.54
0.45µm	33mm	**SLHP 033 NB**	250/512.00
0.45µm	33mm	**SLHP 033 NK**	1000/1293.00

Pore Size	Diameter	Cat. No.	Pack of
PVDF Membranes			
0.22µm	4mm	**SLGV R04 NK**	1000/1142.00
0.22µm	4mm	**SLGV R04 NL**	100/122.00
0.22µm	13mm	**SLGV 013 NL**	100/178.00
0.22µm	13mm	**SLGV T13 NL**[†]	100/187.00
0.22µm	13mm	**SLGV 013 NK**	1000/1153.00
0.22µm	33mm	**SLGV 033 NS**	50/134.50
0.22µm	33mm	**SLGV033NB**	250/474.59
0.22µm	33mm	**SLGV033NK**	1000/1197.00
0.45µm	4mm	**SLHV R04 NL**	100/122.00
0.45µm	4mm	**SLHV R04 NK**	1000/1142.00
0.45µm	13mm	**SLHV 013 NL**	100/178.00
0.45µm	13mm	**SLHV T13 NL**[†]	100/187.00
0.45µm	13mm	**SLHV 013 NK**	1000/1142.00
0.45µm	25mm	**SLHV 025 NB**	250/512.00
0.45µm	25mm	**SLHV 025 NK**	1000/1290.00
0.45µm	25mm	**SLHV 025 NS**	50/144.00
0.45µm	33mm	**SLHV 033 NS**	50/134.50
0.45µm	33mm	**SLHV033NB**	250/474.59
0.45µm	33mm	**SLHV033NK**	1000/1197.00

Pore Size	Diameter	Cat. No.	Pack of
Hydrophobic PTFE Membranes			
0.20µm	4mm	**SLFG R04 NL**	100/124.00
0.20µm	13mm	**SLFG 013 NL**	100/174.00
0.20µm	13mm	**SLFG 013 NK**	1000/1231.00
0.20µm	25mm	**SLFG 025 NS**	50/160.00
0.20µm	25mm	**SLFG 025 NB**	250/546.00
0.20µm	25mm	**SLFG 025 NK**	1000/1247.00
0.45µm	4mm	**SLFH R04 NL**	100/124.00
0.45µm	13mm	**SLFH 013 NK**	1000/1176.00
0.45µm	13mm	**SLFH 013 NL**	100/174.00
0.45µm	13mm	**SLFH T13 NL**[†]	100/191.00
0.45µm	25mm	**SLFH 025 NB**	250/546.00
0.45µm	25mm	**SLFH 025 NK**	1000/1281.00
0.45µm	25mm	**SLFH 025 NS**	50/148.00

Pore Size	Diameter	Cat. No.	Pack of
Hydrophilic PTFE Membrane			
0.20µm	4mm	**SLLG R04 NL**	100/122.00
0.45µm	4mm	**SLLH R04 NK**	1000/1165.00
0.45µm	4mm	**SLLH R04 NL**	100/120.00
0.45µm	13mm	**SLCR 013 NL**	100/185.00
0.45µm	13mm	**SLCR 013 NK**	1000/1281.00
0.45µm	13mm	**SLCR T13 NL**[†]	100/204.00
0.45µm	25mm	**SLCR 025 NB**	250/563.00
0.45µm	25mm	**SLCR 025 NK**	1000/1314.00
0.45µm	25mm	**SLCR 025 NS**	50/158.00

Pore Size	Diameter	Cat. No.	Pack of
Nylon Membranes			
0.20µm	13mm	**SLGN 013 NK**	1000/1160.00
0.20µm	13mm	**SLGN 013 NL**	100/167.00
0.20µm	13mm	**SLGN T13 NL**[†]	100/171.00
0.20µm	33mm	**SLGN 033 NS**	50/142.00
0.20µm	33mm	**SLGN 033 NB**	250/527.00
0.20µm	33mm	**SLGN 033 NK**	1000/1239.00
0.45µm	4mm	**SLHN R04 NK**	1000/1142.00
0.45µm	13mm	**SLHN 013 NK**	1000/1136.00
0.45µm	13mm	**SLHN 013 NL**	100/167.00
0.45µm	13mm	**SLHN T13 NL**[†]	100/175.00
0.45µm	33mm	**SLHN 033 NS**	50/142.00
0.45µm	33mm	**SLHN 033 NB**	250/527.00
0.45µm	33mm	**SLHN 033 NK**	1000/1239.00

[†] *Units extended by tube outlet; have male Luer slip for filtration directly into small receiving vessels.*

Contd. on next page.

Millipore* Millex* Nonsterile Syringe Filters for Sample Preparation, Contd.

Filter units with PVC housing

With female Luer-Lok* inlet and male Luer slip outlet.

TYPICAL CHARACTERISTICS

Diameter	4mm	13mm	25mm
Volume	<1mL	<10mL	<100mL
Effective Filtration Area	0.1cm²	0.65cm²	3.9cm²
Filter Hold-up Volume (after air purge)	<10µL	<25µL	<100µL
Pressure Limit	200psi	100psi	100psi
Temperature Limit	45°C (113°F)	45°C (113°F)	45°C (113°F)

Membrane	Pore Size	Diameter	Cat. No.	Pack of
PVDF	0.22µm	25mm	**SLGV 025 NB**	250/504.00
	0.22µm	25mm	**MSP0 008 42**	1000/1199.00
	5.0µm	25mm	**SLSV 025 NB**	250/486.00
MCE	0.22µm	25mm	**SLGS 025 NB**	250/467.00
	0.45µm	25mm	**SLHA 025 NB**	250/467.00
	0.45µm	25mm	**SLHA 025 10**	100/1510.00
	0.8µm	25mm	**SLAA 025 NB**	250/459.00
	0.8µm	25mm	**SLAA 025 NK**	1000/1072.00

Nalgene* Nonsterile Syringe Filters

Nontoxic Triton*-free membranes integrally sealed within housing to eliminate bypass, minimize fluid loss

Choice of 4mm diameter (for volumes to 1mL), 13mm (for volumes from 2 to 10mL), or 25mm (for volumes from 10 to 50mL). Use with both slip-fit and locking-type Luer syringes; accept standard hypodermic needles. 25mm membranes are supported on both sides, for vacuum or pressure filtration.

Surfactant-free Cellulose Acetate (SFCA)

- Low protein binding
- Good chemical resistance to alcohols and various hydrocarbons
- Have no wetting agents
- 25mm diameter membrane
- With modified acrylic housings
- Membrane of choice for sterilization

Cellulose Acetate (CA)

- Low protein binding
- Ideal for sterilization and clarification of biological/immunological samples, cell culture media components, biological fluids, most other aqueous solutions and reagents
- 4 or 25mm diameter membranes
- With polypropylene or modified acrylic housings

Nylon

- Naturally hydrophilic, low extractables
- Useful for sterilizing cryoprotectants such as DMSO and with aqueous/biological and nonaqueous/HPLC/GC applications
- 4 or 25mm diameter membranes in polypropylene housings

4mm Diameter Filters

- Excellent for small-volume assays such as EIA and ELISA.
- Sample volume size: 0.5 to 1.0mL.
- Housings are color coded.

NOTE:
All 4mm filters are also available in case quantities. Contact your Fisher Scientific Customer Service Representative for details.

09-740 Series

PTFE

- Naturally hydrophobic
- Ideal for sterile venting of air or other gases during filtration
- 13 or 25mm diameter membrane in polypropylene housing that is resistant to corrosive acids and bases, organic solvents
- Excellent for HPLC/GC solvent filtration

Polyethersulfone (PES)

- Higher flowrates, lower protein binding and lower extractables than cellulosic membranes
- Naturally hydrophilic; contains no wetting agents
- 13 or 25mm diameter filters in modified acrylic housings

Membrane	Pore Size	Sterile	Color Code	Mfr. No.	Cat. No.	Pack of 100
Polypropylene housing						
CA	0.2µm	No	Blue	171 0020	**09-740-34A**[†]	214.47
CA	0.45µm	No	Green	171 0045	**09-740-34B**[†]	214.47
Nylon	0.2µm	No	Red	176 0020	**09-740-34C**[†]	214.47
Nylon	0.45µm	No	Yellow	176 0045	**09-740-34D**[†]	214.47

[†] *Autoclavable.*

13mm Diameter Filters

For sample volumes from 2 to 10mL

Membrane	Pore Size	Sterile	Mfr. No.	Cat. No.	Case of
Acrylic housing					
PES	0.2µm	Yes	180 1320	**09-740-50**	50/114.00
Polypropylene housing					
PTFE	0.2µm	No	187 1320	**09-740-52A**[†]	100/186.00
PTFE	0.45µm	No	187-1345	**09-740-52B**[†]	100/186.70

[†] *Autoclavable.*

Contd. on next page

Nalgene* Nonsterile Syringe Filters, contd.

25mm Diameter Filters

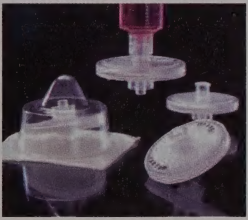
For sample volumes of 10 to 50mL

Membrane	Pore Size	Sterile	Mfr. No.	Cat. No.	Pack of	Case of
Acrylic housing						
SFCA	0.2µm	Yes	190 2520	**09-740-35A**	50/120.18	----
SFCA	0.2µm	Yes	190 9920	**09-740-37F**	125/279.50	----
SFCA	0.2µm	No	191 2020	**09-740-35D**†	50/163.06	6 Pk./652.25
SFCA	0.45µm	Yes	190 2545	**09-740-35B**	50/120.18	----
SFCA	0.45µm	Yes	190 9945	**09-740-37G**	125/279.50	----
SFCA	0.45µm	No	191 2045	**09-740-35E**†	50/163.06	6 Pk./652.25
CA	0.8µm	Yes	190 2580	**09-740-35C**	50/120.18	----
CA	0.8µm	No	191 2080	**09-740-35F**†	50/163.06	6 Pk./652.25
PES	0.2µm	Yes	194 2520	**09-740-61A**†	50/122.68	----
PES	0.45µm	Yes	194 2545	**09-740-61B**†	50/122.68	----
Polypropylene housing						
Nylon	0.2µm	Yes	195 2520	**09-740-35J**	50/140.75	----
Nylon	0.2µm	No	196 2020	**09-740-35P**‡	50/181.00	6 Pk./723.99
Nylon	0.45µm	Yes	195 2545	**09-740-35K**	50/140.75	----
Nylon	0.45µm	No	196 2045	**09-740-35Q**‡	50/181.00	6 Pk./723.99
PTFE	0.2µm	No	199 2020	**09-740-38A**‡	50/194.06	6 Pk./776.25
PTFE	0.45µm	No	199 2045	**09-740-38B**‡	50/194.06	6 Pk./776.25

† *Autoclavable.*
‡ *Nonautoclavable.*

Nalgene* Syringe Prefilter and Prefilter Plus

Clarify small volumes of highly viscous solutions, remove large particulates from suspensions



Use with standard and Luer-Lok* syringes; also accepts hypodermic needles. For serial filtration, Luer-Lok outlet provides positive-locking connection to downstream syringe filter.

Syringe Prefilter

- Disposable 25mm prefilter
- Prevents clogging of final filter
- Increases sample recovery
- One-piece modified acrylic housing provides leak-resistant seal, eliminating bypass and minimizing fluid loss
- Glass fiber medium
- Contains no adhesives that can affect results

Syringe Prefilter Plus

- Filter and prefilter in one disposable unit
- 25mm filter with cellulose acetate membrane and integral glass fiber prefilter
- Provides two-stage filtration for sterilization of highly viscous solutions or solutions with high particulate loads
- Prefilter increases sample yield by preventing larger particles from clogging downstream membranes
- Pore size: 0.2µm
- Certified noncytotoxic and nonpyrogenic

Description	Sterile	Mfr. No.	Cat. No.	Case of 50
Syringe Prefilter	No	189 2000	**09-740-48C**	108.75
Syringe Prefilter Plus	Yes	192 2520	**09-740-48D**	156.59

Corning* Syringe Filters

High burst strength for assured performance

For tissue culture and HPLC applications.

Diameters

- 4, 15, 25, or 26mm diameters handle volumes ranging from 0.5 to 100mL
- 50mm diameter PTFE syringe filter is ideal for protecting vacuum lines and pumps
- 26mm PES and SFCA filters feature effective filtration areas that are 25 to 45% larger than other brands; with modified acrylic housing for very low protein binding and minimal loss of valuable proteins

Pore Sizes

- 0.2µm filter for very fine particulate removal
- 0.45µm pore size for most clarification applications
- 0.2µm SFCA filter available with or without built-in prefilter that extends filter life when using viscous, proteinaceous or high-particulate samples

ORDERING INFORMATION:

Pore size and membrane type is printed on every syringe filter. Sterile filters are individually blister-wrapped in cases of 50, nonsterile in cases of 50. The 50mm PTFE syringe filter is supplied in case of 12.

COMPLIANCE:

Manufactured to ISO 9002 and GMP standards, and 100% integrity tested. HPLC-certified filters (RC, NY, and PTFE) undergo extensive testing to ensure no extraneous peaks in UV range.

NOTE:

PTFE, RC and NY membranes are certified not to cause extraneous peaks in the UV region in HPLC applications. RC, PES and SFCA are certified noncytotoxic and nonpyrogenic.

Material	Pore Size	Diameter	Mfr. No.	Cat. No.	Case of
Polypropylene Housing					
RC	0.2µm	4mm	431212	**09-754-3**	50/64.80
RC	0.2µm	15mm	431215	**09-754-6**	50/81.82
RC	0.2µm	25mm	431222	**09-754-23**	50/113.28
NY	0.2µm	25mm	431224	**09-754-25**	50/113.28
NY	0.45µm	25mm	431225	**09-754-26**	50/113.28
PTFE	0.2µm	50mm	431227	**09-754-28**	12/106.99
PTFE	0.45µm	25mm	431231	**09-754-38**†	50/113.28
Acrylic Housing					
PES	0.2µm	26mm	431229	**09-754-29**	50/106.99
SFCA	0.2µm	26mm	431219	**09-754-13**	50/113.28
SFCA	0.2µm	26mm	431218	**09-754-12**‡	50/132.15
SFCA	0.45µm	26mm	431220	**09-754-21**	50/113.28
SFCA	0.8µm	26mm	431221	**09-754-22**	50/113.28

† *Nonsterile.*
‡ *With prefilter.*

Typical Characteristics Table is found on next page.

Corning* Syringe Filters, Contd.

TYPICAL CHARACTERISTICS

Filter	RC	PES	SFCA	NY	PTFE
Medium	Regenerated cellulose. HPLC certified and sterile.†	Polyethersulfone, sterile.	Surfactant-free cellulose acetate, sterile.	Nylon. HPLC certified and sterile.	Teflon fluorocarbon resin. HPLC certified and nonsterile.‡
Applications	Tissue culture and HPLC. Compatible with DMSO; extra chemical compatibility, low protein binding. Choose 0.2µm pore size for sterile filtration and ultra cleaning; 0.45µm for particle removal/clarification.	Tissue culture. High throughput/flowrate. Low protein binding. Choose 0.2µm pore size for sterile filtration and ultra cleaning; 0.45µm for particle removal/ clarification.	Tissue culture. Lowest protein binding. Choose 0.2µm pore size for sterile filtration and ultra cleaning; 0.45µm for particle removal and clarification; and 0.8µm for coarse particle removal.	Tissue culture and HPLC. Low extractables, naturally hydrophilic. Ideal for aqueous and most organic samples. Choose 0.2µm pore size for sterile filtration and ultra cleaning; 0.45µm for particle removal/clarification.	HPLC. For gases or aggressive organic solvents. Choose 0.2µm pore size for sterile filtration and ultra cleaning; 0.45µm for particle removal/clarification.
Diameter	4mm 15mm 25mm	26mm	26mm	25mm	4mm 15mm 25mm 50mm
Filter Area	0.07cm² 1.7cm² 4.8cm²	5.3cm²	5.3cm²	4.8cm²	0.07cm² 1.7cm² 4.8cm² 20cm²
Pore Size	0.2, 0.45µm	0.2µm	0.2, 0.45, 0.8µm	0.2, 0.45µm	0.2, 0.45µm
Hold-up Volume	5µL 10µL 150µL	100µL	100µL	150µL	5µL 10µL 100µL 500µL
Housing	Polypropylene	Acrylic	Acrylic	Polypropylene	Polypropylene
Temp. Limit	127°C (260.6°F)	50°C (122°F)	50°C (122°F)	127° C (260.6°F)	127° C (260.6°F)
Pressure Limit	87psi 87psi 87psi	87psi	87psi	87psi	87psi 87psi 87psi 58psi
Connections	Inlet: female locking Luer Outlet: male slip Luer	Inlet: female locking Luer Outlet: male slip Luer	Inlet: female locking Luer Outlet: male slip Luer	Inlet: female locking Luer Outlet: male slip Luer	Inlet: hose barb Outlet: hose barb

† Except 09-754-3, which is nonsterile.

‡ Except 09-754-28, which is not HPLC certified and is sterile.

Whatman* GD/X 13 and 25mm Disposable Nonsterile Syringe Filters

Designed for easy filtration of hard-to-filter samples

Use 13mm diameter filters for samples ≤10mL, 25mm for samples >10mL.

- Polypropylene housing
- Female Luer-Lok* inlet
- Male slip Luer outlet
- Autoclavable at 121°C (250°F) at 15psi for 20 min.
- Maximum temperature: 131°C (267°F)
- Filtration area: 13mm - 1.3cm²; 25mm - 4.6cm²
- Pressure limit: 13mm - 100psi; 25mm - 75psi
- **Nylon (NYL)**—hydrophilic, good resistance to most common HPLC solvents; limited resistance to acids, bases, halogenated hydrocarbons, aldehydes and strong oxidizing agents

WHATMAN
0.45µm NYL
WHATMAN
0.45 µm NYL

09-927-26D

- **Polyvinylidene Fluoride (PVDF)**—suitable for most HPLC sample prep applications; slightly hydrophobic with low water breakthrough values; good chemical resistance to common HPLC solvents, low protein binding and negligible extractables
- **Polytetrafluoroethylene (PTFE)**—hydrophobic, does not allow water to pass without high pressures; aqueous solutions can be filtered if the membrane is initially "wetted" with alcohol or another appropriate solvent
- **Polyethersulfone (PES)**—meets special filtration requirements of durability, high temperature resistance, good chemical compatibility, and low protein adsorption; for filtration of protein-containing solutions where minimal adsorptive protein loss is desired
- **Polysulfone (PSU)**— low protein binding membrane for samples in aqueous solutions
- **Polypropylene (PP)**—provides high flow with both solvent and aqueou compatibility; broad range of solvent/chemical resistance
- **Cellulose Acetate (CA)**—surfactant-free; minimizes risk of filtrant contamination from aqueous-based extractables; for biological solutions where high loading capacity and low protein binding are important concern
- **Glass Fiber (GF)**—all are borosilicate glass microfibers
  - **GF/A:** for fine particle retention, high flowrate, good loading capacity; no binders; used for filtration of precipitated proteins; attains high counting efficiencies in radioassays of weak B-emitter
  - **GF/B:** provides higher wet strength and significantly increased loading capacity; combines fine particle retention with good flowrat
  - **GF/C:** fine retention of particles and microorganisms, good flowrate, high loading capacity; ideal for collecting suspended particles in potable water, natural and industrial wastes
  - **GF/D:** for high loading capacity and wet strength, extremely high speed; ideal for repetitive routine filtrations
  - **GF/F:** meets requirements of U.S. EPA Toxicity Characteristic Leaching Procedure (TCLP); very rapid flowrate and extremely high loading capacity; effective in filtering finely precipitated proteins
- **934-AH*** —specified in official methods for testing suspended solids in water pollution monitoring; borosilicate glass microfiber membrane for high loading capacity and high retention efficiency at high flowrate
- **GMF**—resistant to weakening or disruption of the fibrous matrix by inorganic or organic solutions and has a broad chemical compatibility; made of borosilicate glass microfibers

ORDERING INFORMATION:

PVDF, PES, CA, and GMF filters are available sterile

INCLUDES: Stack of Whatman Multigrade GMF 150 (10:1µm) and Grade GF/F 0.7µm prefilters

COMPLIANCE: All materials are biosafe—pass USP Class VI requirements

Contd. on next page

*Trademark. See Trademark Reference.

Whatman* GD/X 13 and 25mm Disposable Nonsterile Syringes, Contd.

Pore Size	Diameter	Mfr. No.	Cat. No.	Pack of
Nylon				
0.2µm	13mm	6870-1302	**09-927-26A**	150/314.65
0.2µm	13mm	6871-1302	**09-927-27A**	1500/2155.57
0.2µm	25mm	6870-2502	**09-927-26C**	150/404.32
0.2µm	25mm	6871-2502	**09-927-27C**	1500/2409.75
0.45µm	13mm	6870-1304	**09-927-26B**	150/314.65
0.45µm	13mm	6871-1304	**09-927-27B**	1500/2155.57
0.45µm	25mm	6870-2504	**09-927-26D**	150/400.00
0.45µm	25mm	6871-2504	**09-927-27D**	1500/2450.00
5.0µm	25mm	6870 2550	**09-927-48**	150/406.08

Pore Size	Diameter	Mfr. No.	Cat. No.	Pack of
Polyvinylidene Fluoride (PVDF)				
0.2µm	13mm	6872-1302	**09-927-28A**	150/319.48
0.2µm	25mm	6872-2502	**09-927-28C**	150/404.47
0.2µm	25mm	6873-2502	**09-927-29C**	1500/2570.40
0.2µm	25mm	6900-2502	**09-927-54A**†	50/134.47
0.45µm	13mm	6872-1304	**09-927-28B**	150/319.37
0.45µm	13mm	6873-1304	**05-713-722**	1500/2155.57
0.45µm	25mm	6872-2504	**09-927-28D**	150/400.00
0.45µm	25mm	6873-2504	**09-927-29D**	1500/2409.75
0.45µm	25mm	6900-2504	**09-927-54B**†	50/137.23

† Sterile.

Pore Size	Diameter	Mfr. No.	Cat. No.	Pack of
Polytetrafluoroethylene (PTFE)				
0.2µm	13mm	6874-1302	**09-927-30A**	150/319.37
0.2µm	25mm	6874-2502	**09-927-30C**	150/404.47
0.2µm	25mm	6875-2502	**09-927-31C**	1500/2570.40
0.45µm	13mm	6874-1304	**09-927-30B**	150/319.37
0.45µm	13mm	6875-1304	**09-927-31B**	1500/2293.91
0.45µm	25mm	6874-2504	**09-927-30D**	150/400.00
0.45µm	25mm	6875-2504	**09-927-31D**	1500/2409.75

Pore Size	Diameter	Mfr. No.	Cat. No.	Pack of
Polyethersulfone (PES)				
0.2µm	25mm	6896-2502	**09-927-43A**†	50/133.97
0.2µm	25mm	6897-2502	**09-927-44A**†	500/1141.10
0.45µm	13mm	6876-1304	**09-927-32B**	150/315.63
0.45µm	25mm	6896-2504	**09-927-43B**†	50/133.97
0.45µm	25mm	6897-2504	**09-927-44B**†	500/1141.10

† Sterile

Pore Size	Diameter	Mfr. No.	Cat. No.	Pack of
Polysulfone (PSU)				
0.2µm	13mm	6876-1302	**09-927-32A**	150/315.63
0.2µm	25mm	6876-2502	**09-927-32C**	150/399.59

Pore Size	Diameter	Mfr. No.	Cat. No.	Pack of
Polypropylene (PP)				
0.2µm	13mm	6878-1302	**09-927-33A**	150/315.63
0.2µm	25mm	6878-2502	**09-927-33C**	150/399.59
0.45µm	13mm	6878-1304	**09-927-33B**	150/315.63
0.45µm	25mm	6878-2504	**09-927-33D**	150/399.59

Pore Size	Diameter	Mfr. No.	Cat. No.	Pack of
Cellulose Acetate (CA)				
0.2µm	13mm	6880-1302	**09-927-34A**	150/316.02
0.2µm	25mm	6880-2502	**09-927-34C**	150/400.09
0.2µm	25mm	6901-2502	**09-927-55A**†	50/137.23
0.45µm	13mm	6880-1304	**09-927-34B**	150/316.02
0.45µm	25mm	6880-2504	**09-927-34D**	150/406.08
0.45µm	25mm	6901-2504	**09-927-55B**†	50/136.48

† Sterile.

Pore Size	Diameter	Mfr. No.	Cat. No.	Pack of
GF/A				
1.6µm	13mm	6882-1316	**09-927-35A**	150/315.63
1.6µm	25mm	6882-2516	**09-927-35B**	150/399.59
GF/B				
1.0µm	13mm	6884-1310	**09-927-36A**	150/315.63
1.0µm	25mm	6884-2510	**09-927-36B**	150/399.59
GF/C				
1.2µm	13mm	6886-1312	**09-927-37A**	150/316.02
1.2µm	25mm	6886-2512	**09-927-37B**	150/399.59
GF/D				
2.7µm	13mm	6888-1327	**09-927-38A**	150/315.63
2.7µm	25mm	6888-2527	**09-927-38B**	150/399.59
GF/F				
0.7µm	13mm	6890-1307	**09-927-39A**	150/315.63
0.7µm	25mm	6890-2507	**09-910-29**	150/399.59
0.7µm	25mm	6891-2507	**05-713-170**	1500/2409.75

Pore Size	Diameter	Mfr. No.	Cat. No.	Pack of
934-AH				
1.5µm	25mm	6892-2515	**09-927-40B**	150/400.08

Pore Size	Diameter	Mfr. No.	Cat. No.	Case of
GMF				
0.45µm	13mm	6894-1304	**09-927-41A**	150/315.63
0.45µm	13mm	6818-1304	**09-914-34**	500/839.83
0.45µm	25mm	6894-2504	**09-927-41B**	150/399.59
0.45µm	25mm	6895-2504	**09-927-42B**	1500/2409.75
0.45µm	25mm	6902-2504	**09-927-56**†	50/137.23

†Sterile

Whatman* GD/XP* Nonsterile Syringe Filters

Ideal for trace metal analysis

09-930-26

Designed to prepare and enhance inorganic ion analysis of hard-to-filter samples >10mL. Suitable for a variety of applications.

- Polypropylene housing
- **25mm** diameter with **0.45µm** pore size
- Contain a unique prefiltration stack of proprietary polypropylene prefilters
- Inlet is female Luer-Lok*, outlet is male slip Luer
- Choice of nylon (NYL), polyvinylidene fluoride (PVDF), polytetrafluoroethylene (PTFE), polypropylene (PP), depth filter polypropylene (DpPP) and polyethersulfone (PES) membranes

Membrane	Mfr. No.	Cat. No.	Pack o
Nylon	6970-2504	**09-930-20**	150/418.6
Nylon	6971-2504	**09-930-21**	1500/2570.4
PVDF	6972-2504	**09-930-22**	150/418.6
PVDF	6973-2504	**09-930-23**	1500/2570.4
PTFE	6974-2504	**09-930-24**	150/418.6
PP	6978-2504	**09-930-26**	150/418.6
DpPP	6993-2504	**09-930-29**	1500/2570.4
PES	6994-2504	**09-930-30**	150/416.8
PES	6995-2504	**09-930-31**	1500/2570.4

LOOKING FOR MORE SYRINGE FILTERS FOR AUTOMATION?

Whatman* Roby 25 Filters for robot systems have been specially developed for automatic sample preparation for the clarification of samples. A wide range of these ready-to-use filter holders fitted with various membrane filters is available. For more information,

Visit www.fishersci.com and search for Whatman Roby

Whatman* Puradisc* 25mm Syringe Filters

Low hold-up volume—less than 0.1mL with air purge

05-713-386

Disposable syringe filters for purifying aqueous and organic solutions. All six filter types have polypropylene housings, female Luer-Lok* inlet and male slip Luer outlet.

Puradisc PES

- Polyethersulfone (PES) membrane for filtering aqueous solutions
- Low protein binding
- Nonsterile packages or radiation-sterilized "medical grade" blister packs

Puradisc GD

- Graded-density membrane, very high loading capacity
- Designed for HPLC, TLC or GC applications requiring 1µm particle retention
- Use for filtering high debris, hard-to-filter solutions
- Made of multilayered glass microfiber
- Nonsterile

Puradisc GF/F

- High loading capacity for air/gas filtration, HPLC, TLC, and GC sampling
- Membrane made of binder-free glass microfiber
- Nonsterile

Puradisc NYL

- For filtering aqueous or solvent-based solutions, HPLC, TLC, and GC sampling
- Membrane made of nylon
- Nonsterile

Puradisc TF

- For filtering solvents, chemicals and nonaqueous solutions
- Typical applications include HPLC, TLC, and GC sample clarification; HPLC solvent filtration
- Made of hydrophobic polytetrafluoroethylene (PTFE)
- Nonsterile, autoclavable

Puradisc PP

- Polypropylene media designed for aqueous and organic solutions containing high debris levels and for hard-to-filter solutions
- Nonsterile, autoclavable
- Biosafe (USP Class V)

Membrane	Pore Size	Mfr. No.	Cat. No.	Pack o
Sterile				
PES	0.2µm	6780-2502	**05-713-386**	50/86.4
PES	0.45µm	6780-2504	**05-713-387**	50/87.0
PES	1.0µm	6780-2510	**05-713-388**	50/87.1
Nonsterile				
PES	0.45µm	6794-2504	**05-713-384**	1000/1228.4
PES	0.2µm	6781-2502	**05-713-389**	200/467.6
PES	0.45µm	6781-2504	**05-713-390**	200/467.0
PES	1.0µm	6781-2510	**05-713-391**	200/468.4
GD	1.0µm	6783-2510	**05-713-393**	100/259.6
GF/F	0.7µm	6825-2527	**05-713-383**	200/467.6
NYL	0.2µm	6750-2502	**05-710A**	50/143.6
NYL	0.2µm	6751-2502	**05-710-1A**	200/465.7
NYL	0.2µm	6753-2502	**05-710-3A**	1000/1228.4
NYL	0.45µm	6750-2504	**05-710B**	50/143.6
NYL	0.45µm	6751-2504	**05-710-1B**	200/465.7
NYL	0.45µm	6752-2504	**05-710-2B**	500/830.9
NYL	0.45µm	6753-2504	**05-710-3B**	1000/1235.0
NYL	1.0µm	6750-2510	**05-710C**	50/143.6
NYL	1.0µm	6751-2510	**05-710-1C**	200/465.7
NYL	1.0µm	6753-2510	**05-710-3C**	1000/1228.4
TF	0.1µm	6784-2501	**05-713-395**	50/145.3
TF	0.2µm	6784-2502	**05-713-396**	50/145.3
TF	0.2µm	6785-2502	**05-713-399**	200/467.0
TF	0.45µm	6784-2504	**05-713-397**	50/145.3
TF	0.45µm	6785-2504	**05-713-400**	200/467.0
TF	1.0µm	6784-2510	**05-713-398**	50/145.3
PP	0.2µm	6786-2502	**05-713-401**	50/146.1
PP	0.2µm	6788-2502	**05-713-403**	200/467.6
PP (Depth Filter)	0.45µm	6786-2504	**05-713-402**	50/146.1
PP (Depth Filter)	0.45µm	6788-2504	**05-713-404**	200/467.0
PP (Depth Filter)	0.45µm	6790-2504	**05-713-404A**	1000/1235.0

Whatman* Puradisc* 4mm and 13mm Nylon Syringe Filters

Nylon Membrane

For aqueous or aqueous-organic samples

- Polypropylene-housed filters
- Nonsterile or presterilized by gamma radiation
- Good resistance to methanol; limited resistance to acetonitrile
- Inlet is a female Luer-Lok*; outlet has male slip Luer

ATMAN
0.45µm NYL

09-913-7

4mm dia. Filters

- For samples ≤2mL
- Filter area 0.2cm²
- Hold-up volume with air purge <10µL

13mm dia. Filters

- Handle samples up to 10mL
- Filter area 1.3cm²
- Hold-up volume with air purge ≤25µL

COMPLIANCE:

Polypropylene-housed filters pass USP Class VI requirements for biosafety

Pore Size	Diameter	Mfr. No.	Cat. No.	Pack of
Sterile				
0.1µm	13mm	6786-1301	**09-913-3**	50/133.56
0.2µm	4mm	6786-0402	**09-913-2**	50/102.57
0.2µm	13mm	6786-1302	**09-913-4**	50/133.56
Nonsterile				
0.1µm	13mm	6789-1301	**09-913-8**	100/196.40
0.2µm	4mm	6789-0402	**09-913-6**	100/151.46
0.2µm	4mm	6790-0402	**09-913-11**	500/652.49
0.2µm	13mm	6789-1302	**09-913-9**	100/195.68
0.2µm	13mm	6790-1302	**09-913-13**	500/827.42
0.45µm	4mm	6789-0404	**09-913-7**	100/151.46
0.45µm	4mm	6790-0404	**09-754-36**	500/652.49
0.45µm	13mm	6789-1304	**09-913-10**	100/195.68
0.45µm	13mm	6790-1304	**09-913-14**	500/839.83

PTFE Membrane

Nonsterile, with hydrophobic membrane for use with organic samples

Excellent resistance to all organic solvents.

- Polypropylene-housed filters
- Inlet is female Luer-Lok*; outlet is male slip Luer
- Autoclavable

4mm Filters

- For samples up to 2mL
- Filter area of 0.02cm²
- Hold-up volume (with air purge) of <10µL

13mm Filters

- For samples to 10mL
- Filter area of 1.3cm²
- Hold-up volume (with air purge) of ≤25µL

COMPLIANCE:

Pass USP Class VI requirements for biosafety

NOTE:

Not recommended for aqueous samples

Pore Size	Diameter	Mfr. No.	Cat. No.	Pack of
0.1µm	13mm	6784-1301	**09-911-1**	100/195.68
0.2µm	4mm	6784-0402	**09-911-5**	100/152.87
0.2µm	4mm	6783-0402	**09-911-3**	500/652.49
0.2µm	13mm	6783-1302	**09-911-4**	500/992.91
0.2µm	13mm	6784-1302	**09-911-6**	100/196.39
0.45µm	4mm	6783-0404	**09-911-7**	500/652.49
0.45µm	13mm	6784-1304	**09-911-2**	100/195.68
0.45µm	13mm	6783-1304	**09-911-8**	500/992.91
0.45µm	13mm	6766-1304	**09-754-46**	2000/2341.10
1.0µm	13mm	6784-1310	**09-911-11**	100/197.48

Polypropylene Membrane

Nonsterile, alternative to PVDF membrane filters

For aqueous or organic applications and high debris removal.

- Polypropylene housing
- Inlet is a female Luer-Lok*; outlet is a male slip Luer
- Autoclavable; nonsterile

09-912-7

4mm dia. Filters

- Handle samples up to 2mL
- Filter area 0.2cm²
- Hold-up volume with air purge <10µL

13mm dia. Filters

- Handle samples up to 10mL
- Filter area 1.3cm²
- Hold-up volume with air purge ≤25µL

COMPLIANCE:

Filters pass USP Class VI requirements for biosafety

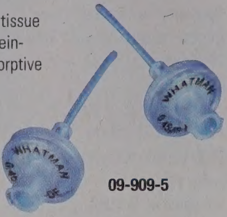
Pore Size	Diameter	Mfr. No.	Cat. No.	Pack of
0.2µm	13mm	6788-1302	**09-912-7**	100/199.34
0.2µm	13mm	6785-1302	**09-912-3**	500/827.42
0.45µm	13mm	6788-1304	**09-912-8**	100/196.39
0.45µm	13mm	6785-1304	**09-912-4**	500/827.42

Contd. on next page.

Whatman* Puradisc* Syringe Filters, Contd.

Polysulfone Membrane

For minimal adsorptive protein loss



09-909-5

Suitable for filtering serum, plasma and tissue culture solutions—as well as other protein-containing solutions where minimal adsorptive protein loss is required.

- Polypropylene housing
- Autoclavable
- Female Luer-Lok* on inlet side; male slip Luer on outlet side

4mm dia. Filters

- For samples up to 2mL
- Filter area 0.2cm^2
- Hold-up volume (with air purge) ≤7.5µL

13mm dia. Filters

- For samples ≤10mL
- Filter area 1.3cm^2
- Hold-up volume (after air purge) ≤25µL

COMPLIANCE:

Pass USP Class VI requirements for biosafety

Pore Size	Diameter	Mfr. No.	Cat. No.	Pack of
Sterile				
0.2µm	13mm	6780-1302	**09-909-4**	50/134.05
0.45µm	13mm	6780-1304	**09-909-5**	50/134.04
Nonsterile				
0.2µm	4mm	6782-0402	**09-909-11**	100/152.02
0.2µm	13mm	6782-1302	**09-909-13**	100/196.40
0.45µm	13mm	6782-1304	**09-909-14**	100/196.40
0.45µm	13mm	6781-1304	**09-909-10**	500/992.91

PVDF Syringe Filters

With inherently hydrophilic membrane for filtering aqueous or organic samples

WHATMAN
PVDF
WHATMAN
0.45 µm PVDF
09-926-40

- Good resistance to organic solvents
- Nonsterile or gamma radiation-sterilized
- Polypropylene housing
- Autoclavable
- Available with tube-tip outlet that allows direct filtration into microvial inserts, or with male slip Luer outlet
- Inlet is female Luer-Lok* type

4mm dia. Filters

- Filter area 0.07cm^2
- Sample and hold-up volumes ≤2mL and ≤7.5µL

13mm dia. Filters

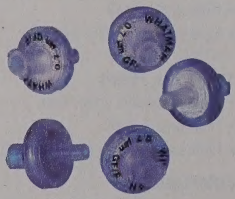
- Filter area 1.3cm^2
- Sample and hold-up volumes ≤10mL and ≤25µL

Pore Size	Diameter	With Tube Tip	Mfr. No.	Cat. No.	Pack of
Sterile					
0.2µm	4mm	No	6791-0402	**09-910-15**	50/129.06
0.2µm	13mm	Yes	6778-1302	**09-910-8**	50/170.31
0.2µm	13mm	No	6791-1302	**09-910-18**	50/143.41
0.45µm	13mm	No	6791-1304	**09-910-19**	50/143.41
Nonsterile					
0.2µm	4mm	Yes	6777-0402	**09-910-1**	50/129.06
0.2µm	4mm	No	6779-0402	**09-910-11**	100/141.87
0.2µm	13mm	Yes	6777-1302	**09-910-2**	50/134.78
0.2µm	13mm	No	6779-1302	**09-910-13**	100/196.39
0.2µm	13mm	No	6792-1302	**09-910-22**	500/827.42
0.45µm	4mm	Yes	6777-0404	**09-926-40**	50/129.06
0.45µm	4mm	No	6779-0404	**09-910-12**	100/179.27
0.45µm	4mm	No	6792-0404	**09-926-38**	500/775.00
0.45µm	13mm	Yes	6777-1304	**09-910-3**	50/134.78
0.45µm	13mm	No	6779-1304	**09-910-14**	100/196.39
0.45µm	13mm	No	6792-1304	**09-910-23**	500/839.83
0.45µm	13mm	No	6765 1304	**05-713-409**	2000/2376.22

Whatman* Puradisc* 13mm Nonsterile Glass Microfiber Syringe Filters

For aqueous or organic samples up to 10mL

- Good chemical resistance and high sample throughput
- Hold-up volume ≤25µL
- Filter area 1.3cm^2
- Polypropylene housing
- Autoclavable at 121°C (131°C maximum) for 20 minutes
- Outlet, female Luer-Lok*; inlet, male slip Luer



09-914-5

Microfiber	Pore Size	Mfr. No.	Cat. No.	Pack of 100
GF/F	0.7µm	6825-1307	**09-914-5**	199.35
GF/B	1.0µm	6821-1310	**09-914-2**	199.35
GF/C	1.2µm	6822-1312	**09-914-3**	199.35
934-AH	1.5µm	6827-1315	**09-914-6**	199.35
GF/A	1.6µm	6820-1316	**09-914-1**	199.35
GF/D	2.7µm	6823-1327	**09-914-4**	199.35

*Trademark. See Trademark Reference.

Whatman* Anotop* Disposable Syringe Filters

Remove virtually 100% of particulates larger than pore size

09-926 Series

Compatible with aqueous suspensions and a wide range of organic solvents. Handle volumes up to 5mL (10mm diameter filter) or 100mL (25mm diameter filter).

- Nondeformable, honeycombed Anopore* membrane
- Inherently hydrophilic membrane is free of adhesives and surfactants; noncytotoxic
- Low protein binding, low fluid retention for maximum sample recovery
- Unidirectional flow

ORDERING INFORMATION:

Hexagonal, thermal-welded polypropylene housing is free of adhesives and binders. Sterile units are individually packaged to avoid contamination.

Pore Size	Diameter	Mfr. No.	Cat. No.	Pack of
Sterile				
0.02µm	10mm	6809-1102	**09-926-6**	50/155.50
0.02µm	25mm	6809-2102	**09-926-13**	50/207.89
0.1µm	10mm	6809-1112	**09-926-5**	50/137.59
0.1µm	25mm	6809-2112	**09-926-12**	50/225.33
0.2µm	10mm	6809-1122	**09-926-4**	50/132.10
0.2µm	25mm	6809-2122	**09-926-11**	50/225.34
Nonsterile				
0.02µm	10mm	6809-1002	**09-926-3**	50/144.84
0.02µm	25mm	6809-2002	**09-926-9**	50/192.98
0.1µm	10mm	6809-1012	**09-926-2**	50/126.31
0.1µm	25mm	6809-2012	**09-926-8**	50/174.45
0.2µm	10mm	6809-1022	**09-926-1**	50/120.82
0.2µm	25mm	6809-2022	**09-926-7**	50/166.99
0.2µm	25mm	6809-2024	**09-926**	200/572.53

TYPICAL CHARACTERISTICS

Filter	Anotop 10	Anotop 25
Medium	Anopore inorganic membrane (alumina matrix)	
Applications	HPLC aqueous/organic sample preparation, cold sterilization of growth media, solvent filtration for spectroanalysis, phage and virus filtration, liposome extrusion, removal of high molecular weight proteins or polymers, colloid removal from deionized water.	
Diameter	10mm	25mm
Filter Area	0.55cm²	2.45cm²
Pore Size	0.02, 0.1, 0.2µm	0.02, 0.1, 0.2µm
Hold-up Volume	<20µL	<150µL
Housing	Polypropylene	Polypropylene
Temperature Limit	45°C (113°F)	45°C (113°F)
Pressure Limit	7kg/cm² (100psi)	5.2kg/cm² (75psi)
Connections	Inlet: female Luer-Lok*. Outlet: male slip Luer.	

Whatman* Anotop* Plus 10 and 25mm Syringe Filters

Include glass microfiber prefilter

09-926-21, -22, -23

Similar to Anotop filters, but include binder-free, glass microfiber prefilter with Anopore* inorganic membrane in a polypropylene housing.

Glass Microfiber Prefilter

- Prevents blockage; increases throughput
- Maintains membrane performance
- Reduces need for centrifuging before filtering, sequential filtering, or refiltering
- Permits use of 0.1µm pore size Anotop Plus filters to remove mycoplasma contaminants from tissue culture

Characteristics

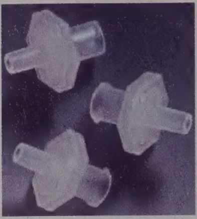
- Hold-up volume: <30µL (10mm size), <200µL (25mm)
- Pressure limit, 7kg/cm² (100psi)

Pore Size	Diameter	Mfr. No.	Cat. No.	Pack of
Sterile				
0.7/0.02µm	10mm	6809-3102	**09-926-19**	50/185.49
0.7/0.02µm	25mm	6809-4102	**09-926-26**	50/268.98
0.7/0.1µm	10mm	6809-3112	**09-926-18**	50/166.26
0.7/0.1µm	25mm	6809-4112	**09-926-25**	50/243.60
0.7/0.2µm	10mm	6809-3122	**09-926-17**	50/156.53
0.7/0.2µm	25mm	6809-4122	**09-926-24**	50/228.38
Nonsterile				
0.7/0.02µm	10mm	6809-3002	**09-926-16**	50/168.18
0.7/0.02µm	25mm	6809-4002	**09-926-22**	50/228.08
0.7/0.1µm	10mm	6809-3012	**09-926-15**	50/155.50
0.7/0.1µm	25mm	6809-4012	**09-926-21**	50/210.01
0.7/0.2µm	10mm	6809-3022	**09-926-14**	50/149.29
0.7/0.2µm	25mm	6809-4022	**09-926-20**	50/202.09
0.7/0.2µm	25mm	6809-4024	**09-926-23**	200/691.87

Whatman* Anotop* 10mm IC Syringe Filter

Ultraclean IC sample preparation

- 10mm diameter, 0.2μm pore size filter
- Provides extremely low anion leaching levels and hold-up volume
- Highly efficient retention of particles larger than stated pore size
- Anopore* inorganic membrane in polypropylene housing
- Nonsterile, disposable



09-926-28

Mfr. No.	Cat. No.	Pack of 250
6809-9235	09-926-28	657.19

TYPICAL CHARACTERISTICS

Filter	Anotop IC
Medium	Anopore inorganic (alumina matrix)
Applications	Sample preparation for ion chromatography. Typical anion leaching levels:[1] fluoride, <10ppb; chloride, <15ppb; bromide, <20ppb; sulfate, nitrite or nitrate, <30ppb; phosphate, <75ppb.
Diameter	10mm
Filter Area	0.78cm^2
Pore Size	0.2μm
Hold-up Volume	<20μL
Housing	Polypropylene
Temperature Limit	45°C (113°F)
Pressure Limit	7kg/cm^2 (100psi)
Connections	Inlet: female Luer-Lok*. Outlet: male slip Luer.

[1] *In 18megohm H_2O at 20°C (68°F).*

GE* Nylon Syringe Filters

Compatible with acetone, methylene chloride, acetonitrile and other organic solvents

- Disposable
- Inherently hydrophilic Magna* Nylon membranes contain no wetting agents
- Yield exceptionally low extractable levels ($<0.0015\text{mg/cm}^2$)
- Autoclavable
- Available in nonsterile or sterilized packaging

3mm dia. (3R) Filters

- For direct injection of aqueous and organic samples of 1mL or less into sample loop systems
- Virgin Nylon 66 housing resists heat, common aggressive solvents

17mm dia. (17R) Filters

- Designed to filter aqueous and organic samples of 12mL or less directly injected into HPLC loop systems or other small sample preparation
- Polypropylene housing

25mm dia. (25RS) Filters

- Sterile
- For aqueous samples including biological fluids, buffer solutions, tissue culture media
- Modified acrylic housing supports membrane bidirectionally for injection or aspiration
- 100% integrity tested

30mm dia. (30R) Filters

- Designed for sterilization or clarification of aqueous and solvent samples up to 120mL in a wide array of analytical and research applications
- Allow direct injection of sample into HPLC loop systems
- Polypropylene housing

TYPICAL CHARACTERISTICS

Filter	3R	17R	25RS	30R
Medium	Magna Nylon	Magna Nylon	Magna Nylon	Magna Nylon
Diameter	3mm	17mm	25mm	30mm
Filter Area	0.1cm^2	1.4cm^2	4.1cm^2	4.8cm^2
Pore Sizes	0.22, 0.45, 5.0μm	0.22, 0.45μm	0.10, 0.22, 0.45, 1.2, 5.0μm	0.10, 0.22, 0.45, 1.2, 5.0μm
Cartridge Vol.	<1mL	<12mL	<100mL	<120mL
Hold-up Vol.	<3μL	<15μL	<60μL	<60μL
Housing	Virgin Nylon 66	Polypropylene	Mod. Acrylic	Polypropylene
Temp. Limit	180°C (356°F)	180°C (356°F)	55°C (131°F)	180°C (356°F)
Presterilized	No	No	Yes	No
Pressure Limit	75psi	130psi	75psi	130psi
Connections	Inlet: female Luer-Lok*/slip Luer. Outlet: male slip Luer.			

0.45 NYLON
Cameo
0.45 NYLON
Cameo

DDR04025SM

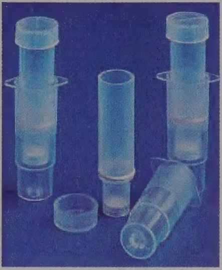
DDR01025SM

Filter	Pore Size	Diameter	Cat. No.	Pack of
3R	0.22μm	3mm	**DDR0200300**	100/133.21
	0.22μm	3mm	**DDR02003NB**	500/593.00
	0.45μm	3mm	**DDR0400300**	100/133.21
	0.45μm	3mm	**DDR04003NB**	500/593.00
	5.0μm	3mm	**DDR5000300**	100/133.21
	5.0μm	3mm	**DDR50003NB**	500/593.00
17R	0.22μm	17mm	**DDR02T1750**	50/86.91
	0.22μm	17mm	**DDR02T17NM**	200/291.79
	0.22μm	17mm	**DDR02T17NB**	500/636.48
	0.45μm	17mm	**DDR04T1750**	50/86.91
	0.45μm	17mm	**DDR04T17NM**	200/291.79
	0.45μm	17mm	**DDR04T17NB**	500/636.48
25RS (Sterile)	0.10μm	25mm	**DDR01025SM**	200/452.86
	0.22μm	25mm	**DDR02025SM**	200/452.86
	0.45μm	25mm	**DDR04025SM**	200/452.86
	0.45μm	25mm	**DDR04025SB**	500/1006.00
	1.2μm	25mm	**DDR12025SM**	200/452.86
	1.2μm	25mm	**DDR12025SB**	500/1006.00
	5.0μm	25mm	**DDR50025SM**	200/452.86
30R	0.10μm	30mm	**DDR01T3050**	50/131.18
	0.10μm	30mm	**DDR01T30NM**	200/452.86
	0.10μm	30mm	**DDR01T30NB**	500/1008.00
	0.22μm	30mm	**DDR02T3050**	50/131.18
	0.22μm	30mm	**DDR02T30NM**	200/452.86
	0.22μm	30mm	**DDR02T30NB**	500/1008.00
	0.45μm	30mm	**DDR04T3050**	50/131.18
	0.45μm	30mm	**DDR04T30NM**	200/452.86
	0.45μm	30mm	**DDR04T30NB**	500/1008.00
	1.2μm	30mm	**DDR12T3050**	50/131.18
	1.2μm	30mm	**DDR12T30NM**	200/452.86
	5.0μm	30mm	**DDR50T3050**	50/131.18
	5.0μm	30mm	**DDR50T30NM**	200/452.86
	5.0μm	30mm	**DDR50T30NB**	500/1008.00

SYRINGELESS FILTERS

Whatman* UniPrep* Syringeless Filters

Process samples in one-third the time of conventional syringe filters


09-923 Series

Single, disposable units replace syringe-coupled filtration devices. Self-contained, preassembled filtration devices for removing particulates from samples are ideal for HPLC sample preparation.

- Consists of external sample test tube, plunger (which incorporates membrane filter and prefilter), removable cap
- Medical-grade polypropylene
- Diameter 17mm
- Filtration area 0.28cm²
- Holdup volume 50µL
- Safe, efficient—prefilter and membrane can't pop off
- Air purge unnecessary—inserting plunger into tube provides a positive pressure purge of sample through filter
- Sealed glass microfiber prefilter traps larger particles before they can clog the membrane

Benefits

- Increase lab productivity and efficiency
- Generate less waste
- Realize greater overall cost savings per test

Membrane	Pore Size	Mfr. No.	Cat. No.	Pack of
GMF	0.45µm	UN113UGMF	**09-923-10**	50/171.41
NYL	0.2µm	UN113ENYL	**09-923-8**	50/171.41
NYL	0.45µm	UN113UNYL	**09-923-7**	50/171.41
PTFE	0.2µm	UN113EORG	**09-923-5**	50/171.41
PTFE	0.45µm	UN113UORG	**09-923-4**	50/171.41
PTFE	0.45µm	UN513UORG	**09-923-11**	1000/2628.35
PVDF	0.2µm	UN113EAQU	**09-923-2**	50/171.41
PVDF	0.45µm	UN113UAQU	**09-923-1**	50/171.41

Whatman* Autovial* Syringeless Filters

Faster sample handling, up to 5 or 12mL in volume

09-921-4C

Replace syringe-coupled devices with single filter units for one-time use. Ideal for removing particulates from potentially hazardous samples. Pour or pipet sample into filter barrel, insert plunger and compress to filter into autosampler vial. Or fit a needle to its outlet for direct injection.

- Preassembled units consist of a filter barrel and a plunger
- Built-in air purge minimizes holdup
- Integrated construction eliminates filter pop-off
- Support stand protects slip-Luer tip, recessed to reduce chance of contamination

Autovial 5 Filters

- Remove particulates from samples up to 5mL in volume
- Diameter of filter 13mm
- Filtration area 1.7cm²

Autovial 12 Filters

- Handle samples up to 12mL in volume
- All have an integral 25mm diameter filter in barrel (graduated in 1mL intervals) with polyethylene plunger
- Filtration area 3.3cm²
- Glass microfiber prefilter ensures higher flow with less clogging
- Units with NYL, PTFE, and PVDF membranes are available sterile

Membranes

- Cellulose Acetate (CA): Low nonspecific protein binding, high loading capacity; for biologicals
- Glass Microfiber (GMF): High loading capacity, binder-free, fast flow rates; for clarifying aqueous or organic solutions, pH 3 to 8
- Nylon (NYL): Inherently hydrophilic; for clarifying aqueous and organic samples, pH 3 to 10
- Polypropylene (PP): For aqueous and organic solutions; ideal for aggressive samples and high debris
- Polytetrafluoroethylene (PTFE): Hydrophobic; for samples >50% organic solvents
- Polyvinylidene Fluoride (PVDF): Low protein binding; for aqueous samples, samples ≤60% organic solvents

Membrane Type	Pore Size	Mfr. No.	Cat. No.	Pack of
Autovial 5 Syringeless Filters				
GMF	0.45µm	AV115UGMF	**09-921-20**	50/125.50
NYL	0.45µm	AV115NPUNYL	**09-921-17**	50/125.50
PTFE	0.2µm	AV115NPEORG	**09-921-13**	50/125.50
PTFE	0.45µm	AV115NPUORG	**09-921-18**	50/125.50
PVDF	0.45µm	AV115NPUAQU	**09-921-15**	50/126.89
Autovial 12 Syringeless Filters				
CA	0.45µm	AV125UCA	**09-921-4C**	50/188.73
GMF	0.45µm	AV125UGMF	**09-919**	50/188.73
NYL	0.2µm	AV125SNAO	**09-917C**†	40/206.39
NYL	0.2µm	AV125ENAO	**09-917B**	50/188.73
NYL	0.45µm	AV125UNAO	**09-917A**	50/188.73
PP	0.2µm	AV125EPP	**09-921-6A**‡	50/188.73
PP	0.45µm	AV125UPP	**09-921-6B**‡	50/188.73
PTFE	0.2µm	AV125SORG	**09-918C**†	40/206.39
PTFE	0.2µm	AV125EORG	**09-918B**	50/188.73
PTFE	0.45µm	AV125UORG	**09-918A**	50/190.00
PTFE	0.45µm	AV525UORG	**22-042-627**	1000/3250.56
PVDF	0.2µm	AV125SAQU	**09-916C**†	40/206.39
PVDF	0.2µm	AV125EAQU	**09-916B**	50/188.73
PVDF	0.45µm	AV125UAQU	**09-916A**	50/188.73
PVDF	0.45µm	AV525UAQU	**05-713-720**	1000/2790.06

† Sterile.
‡ PP Prefilter.

Whatman* Mini-UniPrep* Syringeless Filters

Quick and easy to use—process sample load in one-third the time

Self-contained, preassembled filtration devices for removing particulates from smaller sample volumes. These single, disposable units replace syringe-coupled filtration devices for less lab waste and greater overall cost savings per test.

- Available with amber colorant for light-sensitive samples
- Increase lab productivity and efficiency by processing samples in onethird the time of conventional syringe filters
- Consists of a 0.5mL capacity chamber and plunger with filtration membrane at one end and a preattached cap/septum at the other
- Can be used either manually or with compressor†
- Designed to fit into any autosampler that accommodates 12 × 32mm vials, or pierce septum with needle to draw sample off for manual injection into an analyzer

Membranes in 0.2 and 0.45µm pore sizes

- Glass Microfiber (GMF): High loading capacity, binder-free, fast flowrates; for clarifying aqueous or organic solutions, pH 3 to 8
- Nylon (NYL): Inherently hydrophilic; for clarifying aqueous and organic samples, pH 3 to 10
- Polyethersulfone (PES): For fast flow, low protein binding sterilization of aqueous solutions
- Polypropylene (PP): For aqueous and organic solutions; ideal for aggressive samples and high debris
- Polypropylene (dpPP): Depth filter polypropylene; high loading capacity and high flowrate; for aqueous and organic solutions; rated at 90% retention efficiency for 0.45µm particles; broad chemical compatibility
- Polytetrafluoroethylene (PTFE): Hydrophobic; for samples >50% organic solvents
- Polyvinylidene Fluoride (PVDF): Low protein binding; for aqueous samples, samples ≤60% organic solvents

APPLICATIONS

Routine analysis, composite assays, content uniformity, protein precipitation, solubility studies, light sensitive samples, and ion chromatography

NOTE:

Do not overfill filter unit or compress the device at an angle before the air-tight seal is made. Liquid could escape from air vent hole, resulting in sample loss or personal injury.

ORDERING INFORMATION

Filters are also available with a flared cap to enable trouble-free operation with Shimadzu* autosamplers. (Contact your Fisher Customer Service Representative.)

† Multi-sample compressor can process up to six samples at one time, further improving sample processing time.

Standard Mini-UniPrep Filters

Pore size: 0.45µm

Membrane Type	Mfr. No.	Cat. No.	Pack of
GMF	UN203NPUGMF	**09-923-27**	100/242.96
GMF	UN503NPUGMF	**09-923-34**	1000/1946.70
NYL	UN203NPUNYL	**09-923-29**	100/242.96
NYL	UN503NPUNYL	**09-923-36**	1000/1946.70
PES	UN203NPUPES	**09-923-30**	100/242.96
PP	UN203NPUPP	**09-923-31**	100/242.96
PP	UN503NPUPP	**09-923-38**	1000/1946.70
dpPP	UN203NPUDPP	**09-923-26**	100/242.96
dpPP	UN503NPUDPP	**09-923-33**	1000/1946.70
PTFE	UN203NPUORG	**09-923-28**	100/242.96
PTFE	UN503NPUORG	**09-923-35**	1000/1946.70
PVDF	UN203NPUAQU	**09-923-25**	100/242.96
PVDF	UN503NPUAQU	**09-923-32**	1000/1946.70

Amber Mini-UniPrep for Light-Sensitive Samples

Produced with the same colorant used in pharmaceutical containers. Provide all-in-one filtration without photodegradation of light sensitive samples. Compared to darker amber vials, they also provide superior "see through" clarity to enable visual inspection. Meet USP specifications for light resistance.

Membrane Type	Pore Size	Mfr. No.	Cat. No.	Pack of 100
PVDF	0.2µ L	UN203APEAQU	**09-923-248**	271.73
PVDF	0.45µL	UN203APUAQU	**09-923-253**	271.73
NYL	0.45µL	UN203APUNYL	**09-923-255**	271.73
PTFE	0.2µL	UN203APEORG	**09-923-250**	272.58
PTFE	0.45µL	UN203APUORG	**09-923-256**	271.73
PES	0.2µL	UN203APEPES	**09-923-251**	271.73

Mini-UniPrep with Preslit Septa for Automated Sampling

Eliminate coring problems associated with repeated automated sampling. Available in standard translucent.

Membrane Type	Pore Size	Mfr. No.	Cat. No.	Pack of 100
PVDF	0.2µL	US203NPEAQU	**09-923-110**	298.95
PVDF	0.45µL	US203NPUAQU	**09-923-115**	298.95
NYL	0.2µL	US203NPENYL	**09-923-111**	299.88
NYL	0.45µL	US203NPUNYL	**09-923-118**	298.95
PTFE	0.2µL	US203NPEORG	**09-923-112**	298.95
PTFE	0.45µL	US203NPUORG	**09-923-119**	298.95

LOOKING FOR COMPRESSORS?

Single- and multi-sample compressors are available for use with Mini-UniPrep* filter units. Especially helpful with viscous or particle-laden samples, these handheld devices aid in the compression of Mini-UniPrep filter units. For more information,

Visit www.fishersci.com and search for Mini-Uniprep Compressors

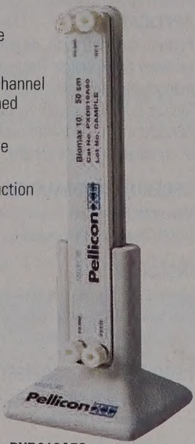
TANGENTIAL FLOW

Millipore* Pellicon* XL Devices

Small-volume tangential flow filter device

Designed for process development and sample preparation, with an optimal processing volume range of 50 to 1000mL.

- True linear scalability with same flow path, channel length, and channel height as other established Pellicon products
- Can operate with peristaltic pump or Labscale TFF system
- Robust thermoplastic (polypropylene) construction
- Controlled channel height
- Choice of Biomax* PES (polyethersulfone) or Ultracel* PLC (composite regenerated cellulose) membranes



PXB010A50

APPLICATIONS:

Concentration and desalting of proteins, buffer exchange, depyrogenation, clarification, and preparation of material for clinical trials

ORDERING INFORMATION:

Packaged one per box

INCLUDES:

Operating instructions, Certificate of Quality, and accessory kit (four Luer barb fittings, four tubing clamps, one retentate clamp, and 4' (1.2m) of LFL Tygon* tubing)

Membrane	NMWL	Cat. No.	Each
Biomax-5	5000	**PXB005A50**	192.00
Biomax-8	8000	**PXB008A50**	192.00
Biomax-10	10,000	**PXB010A50**	192.00
Biomax-30	30,000	**PXB030A50**	192.00
Biomax-50	50,000	**PXB050A50**	192.00
Biomax-100	100,000	**PXB100C50**	192.00
Biomax-300	300,000	**PXB300C50**	192.00
Biomax-500	500,000	**PXB500C50**	192.00
Biomax-1000	1,000,000	**PXB01MC50**	192.00
Ultracel-5 PLCCC	5000	**PXC005C50**	192.00
Ultracel-10 PLCGC	10,000	**PXC010C50**	192.00
Ultracel-30 PLCTK	30,000	**PXC030C50**	192.00
Ultracel-300 PLCMK	300,000	**PXC300C50**	192.00
Ultracel-1000 PLCXK	1,000,000	**PXC01MC50**	192.00

SPECIFICATIONS

Filtration Area	50cm² (0.05 ft.²)
L × W	7⅜ × 1¼"(18.8 × 30cm)
Fittings	Female Luer
Hold-up Volume (typical)	3.2mL
Max. Operating Pressure	80psig (5.6 bar)
Max. Forward Transmembrane Pressure for Optimum Scaling Performance	(feed to permeate) 40psig (2.7 bar) up to 45°C (113°F)
Optimum Tangential Flowrate for Polarized Solutions	30–50mL/min.
pH Compatibility	1–14 (Biomax PES); 2–12 (Ultracel PLC)
Extractables	Gravimetric extractables level ≤7.5mg/device after RO water flush. USP oxidizables test negative after RO water flush.
Prefiltration Requirements	Prefiltration of sample using 100μm nominal pore size filter is recommended.

ACCESSORIES

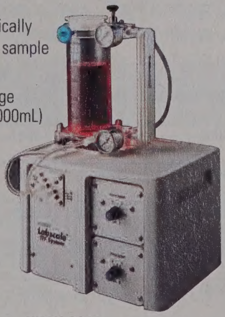
- **100mL Reservoir and Stand:** Used with the Pellicon* XL Device for simple separations of small volumes; stand mounts reservoir on Labscale system
- **Analog Pressure Gauge Kit (0-60psi):** Can be used with the Pellicon XL Device for accurate scaling studies; includes one pressure gauge and connection fittings
- **Multimanifold:** Mounts directly onto either Labscale system reservoir or standard peristaltic pump to allow simultaneous use of three Pellicon XL Devices
- **Pellicon XL Device Stand:** Supports one Pellicon XL Device

Description	Cat. No.	Each
Reservoir, 100mL	**XX42RES05**	199.75
Reservoir Stand	**XXRES05ST**	109.41
Gauge Kit	**XXPXLGAGE**	215.81
Multimanifold	**XXMULTIMN**	199.75
Pellicon XL Stand	**XXPXLSTND**	97.49

Labscale TFF System

Complete linear, scalable solution for small-volume processing designed specifically to use the Pellicon* XL Device for simple sample prep and more complex scale-up work.

- Use to concentrate, desalt, and exchange buffers (typical starting volumes, 50–1000mL)
- Easy to use for sample preparation
- Provides necessary controls for process development and scale-up work
- Can be operated in concentration or continuous diafiltration modes
- 500mL reservoir accepts direct docking of the Pellicon XL Device, eliminating need for tubing connections
- With diaphragm pump assembly, allows final working volume of <15mL, depending on starting volume



XX42LSS11

ORDERING INFORMATION:

Individual components are also available for a custom small-volume TFF system

INCLUDES:

Graduated 500mL acrylic reservoir with retentate backpressure valve, feed and retentate pressure indicators; stirrer assembly; diaphragm pump assembly with tubing and power supply

Description	Cat. No.	Each
Labscale TFF System Kit, 115V	**XX42LSS11**	4817.00
Components		
Reservoir, 500mL	**XX42RES01**	2476.00
Peristaltic Pump Drive, 115V, Variable speed, 60–600rpm	**XX8200115**	927.00

SPECIFICATIONS

Max. Pump Outlet Pressure	85psig (5.86 bar)
Feed Flowrate	10–100mL/min.
Min. Recirculation Volume	15mL
Operating Temp. Range	4° to 45°C (39.2° to 113°F)
L × W × H	8½ × 11 × 18" (21.6 × 27.9 × 45.7cm)
Net Weight	13 lb. (5.9kg)
Electrical Reqts.	115V 60Hz

ULTRAFILTRATION/STIRRED CELLS

Millipore* Stirred Cells†

Concentrate, desalt, and purify aqueous biological solutions

Process from 3 up to 400mL of biological solutions using either concentration or diafiltration operating modes.

- Sturdy construction; autoclavable
- Consists of clear pressurized vessel with integral magnetic stirring bar, nylon cap and tube fitting assembly, polysulfone body and membrane holder, acetal/polysulfone stirrer, silicone O-rings, and black aluminum stand

Concentration Mode

- Gas pressure is applied directly to ultrafiltration cell
- Solutes above membrane molecular weight cutoff are retained in cell, while water and solutes below cutoff pass into filtrate

Diafiltration Mode

- Ultrafiltration cell is connected to auxiliary reservoir containing diafiltrate solution; reservoir is then gas pressurized
- Fluid volume and macrosolute concentration remain constant as filtrate is replaced by diafiltrate solution
- Provides a simple means for rapid microsolute exchange
- Typically used as a substitute for dialysis

APPLICATIONS:
Perform concentration, desalting, recovery or exclusion. Recover monoclonal antibodies and growth factors from tissue culture supernatants. Concentration and buffer exchange of chromatography fractions.

ORDERING INFORMATION:
Use with Millipore Ultrafiltration Membranes

INCLUDES:
Connection for ¼" dia. (6.4mm) pressure tubing; max. operating pressure, 75psi (5.3 bar)

REQUIRED ACCESSORIES:
Magnetic stirrer required for operation

5123

Cell Model No.	Filter Dia.	Concentration[1] Minimum Initial	Maximum Final	Process Volume Minimum[2]	Maximum[3]	Filtrate Holdup Volume[4]	Membrane Filtration Area[5]	Housing L × W × H	Cat. No.	Each
8003	25mm	0.05g%	10g%	0.075mL	3mL	70µL	0.9cm^2	2⅜ × 2⅜ × 3" (6 × 6 × 7.7cm)	**5125**	603.00
8010	25mm	0.05g%	10g%	1.0mL	10mL	200µL	4.1cm^2	2⅜ × 2⅜ × 3" (6 × 6 × 7.7cm)	**5121**	603.00
8050	44.5mm[6]	0.05g%	10g%	2.5mL	50mL	500µL	13.4cm^2	2¾ × 2¾ × 3⅞" (7 × 7 × 9.8cm)	**5122**	665.00
8200	63.5mm[7]	0.05g%	10g%	5.0mL	200mL	1200µL	28.7cm^2	3½ × 3½ × 5" (9 × 9 × 12.8cm)	**5123**	834.00
8400	76mm	0.05g%	10g%	10.0mL	400mL	1500µL	41.8cm^2	4⅓ × 4⅓ × 6" (11 × 11 × 15.5cm)	**5124**	1117.00

† An Amicon Bioseparations product.*

[1] Practical limits; concentration limits can be extended in certain instances.

[2] Operation beyond this volume limit is not recommended.

[3] Practical limits; dependent on additional reservoir capacity and application.

[4] Volume with 2" (5cm) of tubing on outlet.

[5] At 1 cps, maximum transmembrane pressure and maximum differential pressure. Approximate value.

[6] 43mm nominal diameter.

[7] 62mm nominal diameter.

LOOKING FOR THE LAB AUTOMATION SECTION?
It has moved and is now called Microplate Instrumentation.

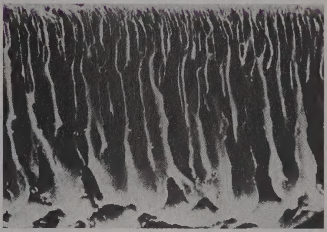
LOOKING FOR TISSUE CULTURE SECTION?
It has moved and is now called Cell Culture.

LOOKING FOR THE MICROARRAYS SECTION?
It has moved and is now called Array Analysis.

Millipore* Ultrafiltration Membranes

High-recovery or high-flow membranes

For stirred cells. Available in a variety of membrane types: Amicon* YM for high recovery; Biomax* PB and Amicon PM for high flow. Choose from several diameters (14 to 150mm) and a range of Nominal Molecular Weight Limits (1000 to 500,000 NMWL).



40424

Ultracel Amicon YM

- High-recovery, regenerated cellulose membranes
- For concentration of hydrophobic samples or to desalt extremely dilute solutions
- Hydrophilic, tight microstructure assures high retention with low adsorption of protein, DNA, or other macromolecules

Biomax PB and Amicon PM

- High-flow, polyethersulfone (PES) membranes
- Use to concentrate faster or to concentrate and desalt more concentrated samples
- Open microstructure provides extremely fast separation capability
- Recommended for serum, plasma, or conditioned tissue culture media samples

Membrane Filter Disc		Amicon YM1		Amicon YM10		Amicon YM30		Amicon YM100	
NMWL		1000		10,000		30,000		100,000	
Diameter	Membrane Area	Cat. No.	Pack of	Cat. No.	Pack of	Cat. No.	Pack of	Cat. No.	Pack of
14mm	0.92cm^2	**40422**	100/227.00	**40424**	100/227.00	**40428**	100/227.00	----	----
25mm	4.1cm^2	**13312**	10/84.00	**13612**	10/84.00	**13712**	10/84.00	**14412**	10/84.00
44.5mm[†]	13.4cm^2	**13322**	10/148.00	**13622**	10/148.00	**13722**	10/148.00	**14422AM**	10/148.00
63.5mm[‡]	28.7cm^2	**13332**	10/179.00	**13632**	10/179.00	**13732**	10/179.00	**14432**	10/179.00
76mm	41.8cm^2	**13342**	10/191.00	**13642**	10/191.00	**13742**	10/191.00	**14442AM**	10/191.00
90mm	63cm^2	----	----	**13651**	5/148.00	**13751**	5/148.00	----	----
150mm	144cm^2	**13361**	5/247.00	**13661AM**	5/247.00	**13761**	5/247.00	**14461**	5/247.00

Membrane Filter Disc		Biomax PBCC		Biomax PBGC		Biomax PBTK		Biomax PBQK	
NMWL		5000		10,000		30,000		50,000	
Diameter	Membrane Area	Cat. No.	Pack of	Cat. No.	Pack of	Cat. No.	Pack of	Cat. No.	Pack of
25mm	4.1cm^2	**PBCC 025 10**	10/84.00	**PBGC 025 10**	10/84.00	**PBTK 025 10**	10/63.00	**PBQK 025 10**	10/84.00
44.5mm[†]	13.4cm^2	**PBCC 043 10**	10/148.00	**PBGC 043 10**	10/148.00	**PBTK 043 10**	10/148.00	**PBQK 043 10**	10/148.00
47mm	15cm^2	**PBCC 047 10**	10/156.00	**PBGC 047 10**	10/156.00	**PBTK 047 10**	10/133.00	----	----
63.5mm[‡]	28.7cm^2	**PBCC 062 10**	10/179.00	**PBGC 062 10**	10/179.00	**PBTK 062 10**	10/179.00	**PBQK 062 10**	10/179.00
76mm	41.8cm^2	**PBCC 076 10**	10/191.00	**PBGC 076 10**	10/191.00	**PBTK 076 10**	10/191.00	**PBQK 076 10**	10/191.00
150mm	144cm^2	----	----	**PBGC 150 05**	5/194.00	----	----	**PBQK 150 05**	5/194.00

Membrane Filter Disc		Biomax PBHK		Biomax PBMK		Biomax PBVK		Amicon PM30	
NMWL		100,000		300,000		500,000		30,000	
Diameter	Membrane Area	Cat. No.	Pack of	Cat. No.	Pack of	Cat. No.	Pack of	Cat. No.	Pack of
25mm	4.1cm^2	**PBHK 025 10**	10/84.42	**PBMK 025 10**	10/84.42	**PBVK 025 10**	10/63.32	----	----
44.5mm[†]	13.4cm^2	**PBHK 043 10**	10/148.56	**PBMK 043 10**	10/148.56	**PBVK 043 10**	10/126.47	**13222**	10/148.56
63.5mm[‡]	28.7cm^2	**PBHK 062 10**	10/179.67	**PBMK 062 10**	10/155.58	**PBVK 062 10**	10/155.58	**13232**	10/179.67
76mm	41.8cm^2	**PBHK 076 10**	10/191.72	**PBMK 076 10**	10/167.63	**PBVK 076 10**	10/167.63	**13242**	10/191.72
150mm	144cm^2	----	----	**PBMK 150 05**	5/194.73	----	----	----	----

[†] *43mm nominal diameter.*

[‡] *62mm nominal diameter.*

UNIQUE APPLICATIONS

ProWeigh* Preweighed Filters for Gravimetric Analysis

Eliminate filter washing, drying, desiccating and preweighing

Glass fiber filters meet all preparation requirements in *Standard Methods* for procedures 2540D and 2540E. Use in Total Suspended Solids and other gravimetric analyses.

09-735 Series

- Only routine blank testing is required; no equivalency testing necessary
- After washing, drying and desiccation, filters are weighed to the nearest 0.1mg on certified electronic analytical balances
- Weights are printed on heat-resistant Mylar* labels affixed to convenient aluminum pans

Choose from Three Filter Types

- 8% of all ProWeigh filters are redried and reweighed to ensure weight stability
- DoubleWeigh* filters are 100% tested to ensure weight stability to within 0.5mg
- ProWeigh filters for Volatile Solids (09-735-57) are recommended when measuring fixed or volatile solids—they're heated to 550°C (1022°F) in a muffle furnace to drive off volatiles, then desiccated and weighed

Description	Diameter	Cat. No.	Pack of 100
ProWeigh Filters for TSS	47mm	**09-735-56**	127.17
ProWeigh Filters for TSS	76mm	**09-735-105**	181.17
DoubleWeigh Filters for TSS	47mm	**09-735-68**	163.51
ProWeigh Filters for Volatile Solids	47mm	**09-735-57**	144.41

Whatman* 1PS Disposable Phase Separating Paper

High-purity paper impregnated with stable silicone

- Hydrophobic
- Passes immiscible organic solvent phases lighter or heavier than water but retains water phase
- Use folded in conical funnel
- Disposable
- Eliminates need for washing and drying separatory funnels, cross-contamination

09-874-50

ORDERING INFORMATION:

In 9 to 27cm diameter circles

Diameter	Mfr. No.	Cat. No.	Pack of 100
9.0cm	2200-090	**09-874-50**	33.33
11.0cm	2200-110	**09-874-52**	41.56
12.5cm	2200-125	**09-874-54**	51.20
15.0cm	2200-150	**09-874-56**	70.48
18.5cm	2200-185	**09-874-91**	105.97
24.0cm	2200-240	**09-874-92**	186.94

Spectrum Spectra/Mesh* Woven Polymer Macrofiltration Squares

Ideal for macrofiltration

Ideal for straining, filtering and screening solutions or suspensions containing high-molecular-weight molecules or particles.

08-670-20

- Woven synthetic polymer squares, $11\frac{13}{16} \times 11\frac{13}{16}$" (30 × 30cm)
- Choice of three materials: nylon, polypropylene or fluorocarbon
- Precise mesh openings (from 10 to 1000µm) and mesh counts per inch
- All except Type F can be heat welded into tubular or cellular forms

Spectra/Mesh N (Nylon)

Nonabsorbent Combines high tensile strength with flexibility.

Mesh Size	Cat. No.	Pack of	Mesh Size	Cat. No.	Pack of
10µm	**08-670-205**	3/222.38	53µm	**08-670-201**	3/222.38
20µm	**08-670-204**	3/222.38	60µm	**08-670-200**	3/216.14
30µm	**08-670-203**	3/222.38	70µm	**08-670-199**	3/222.38
41µm	**08-670-202**	3/222.38	100µm	**08-670-252H**	3/216.14
41µm	**08-801-17**	10/132.20	300µm	**08-670-252F**	3/216.14

Spectra/Mesh PP (Polypropylene)

Highly resistant to most acids and alkalis

Autoclavable.

Mesh Size	Cat. No.	Pack of 3	Mesh Size	Cat. No.	Pack of 3
105µm	**08-670-190**	135.67	350µm	**08-670-186**	135.00
149µm	----	----	500µm	**08-670-185**	135.00
210µm	**08-670-188**	135.00	----	----	----
297µm	**08-670-187**	135.00	1000µm	**08-670-183**	135.00

Spectra/Mesh F (Fluorocarbon)

Chemically inert

- Withstands temperatures to 275°C (527°F)
- Easy to clean

Mesh Size	Cat. No.	Pack of 3	Mesh Size	Cat. No.	Pack of 3
70µm	**08-670-198**	305.28	500µm	**08-670-192**	296.72
105µm	**08-670-197**	296.72	1000µm	**08-670-191**	296.72
210µm	**08-670-195**	296.72	----	----	----

*Trademark. See Trademark Reference.

FLASH POINT TESTING

Koehler* Pensky-Martens Closed Tester

Determines the flash point of liquids, or liquids with suspended solids

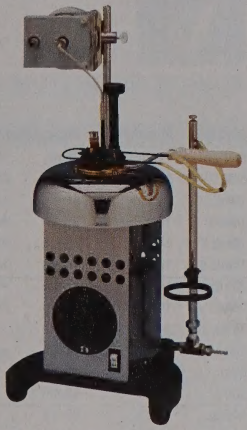
Provides stepless electric heat for variable temperature settings up to 371°C (700°F).

ORDERING INFORMATION:
For 115V 60Hz

INCLUDES:
Complete assembly: Cover assembly, cast-iron air bath mounted on tripod base, 750w electric heater, and brass flashpoint cup with handle (KL-K16020), stirrer assembly with motor drive coupling.

REQUIRED ACCESSORIES:
Stirring motor (KL-K16220) and thermometer (13-500 or 13-505)

COMPLIANCE:
Meets ASTM* D 93, AASHTO T-73-811 and all related specifications



KL-K16200 Closed Tester with KL-K16220 Electric Stirring Motor.

Mfr. No.	Cat. No.	Each
K16200	**KL-K16200**	1698.51

ACCESSORIES

Electric Stirring Motor

Mixes samples in KL-K16200 tester.

- Dual speed (115 or 250rpm)
- With steel rod and clamp for mounting onto base of tester

ORDERING INFORMATION:
For 115V 60Hz

Mfr. No.	Cat. No.	Each
K16220	**KL-K16220**	529.92

Replacement Cover Assembly

Mfr. No.	Cat. No.	Each
K16010	**KL-K16010**	784.35

Replacement Flash Point Cup

- Brass cup
- Heat-resistant handle
- Meets ASTM* specifications

Mfr. No.	Cat. No.	Each
K16020	**KL-K16020**	207.93

FLASKS

BOILING—ROUND BOTTOM

Pyrex* Flasks with \$ Joints, Short Necks, Round Bottom

Excellent chemical durability for contamination-free results

- Full length outer joints, both with shorter necks
- Carefully controlled wall thicknesses provide the proper balance between thermal expansion and mechanical strength
- Adapter Nos. 8800, 8820 and 8825 are used to connect flasks with different size joints
- Manufactured from No. 7740 borosilicate glass
- Normal working temperature, 230°C

10-067E

Capacity	\$ Joint No.	Mfr. No.	Cat. No.	Pack of	Case of
25mL	14/20	4321A 25	**10-060-4A**	1/22.74	----
25mL	19/22	4320B 25	**10-067AA**	1/22.74	----
50mL	14/20	4321A 50	**10-060-4B**	1/25.20	----
50mL	19/22	4320B 50	**10-067BB**	1/25.41	----
50mL	19/38	4320 50	**10-067A**	----	12/406.83
50mL	24/40	4320A 50	**10-067B**	1/32.79	12/252.58
100mL	14/20	4321A 100	**10-060-4C**	----	12/293.95
100mL	19/22	4320B 100	**10-067CC**	----	12/270.53
100mL	24/40	4320 100	**10-067C**	2/54.63	6 Pk./241.12
100mL	29/42	4321 100	**10-067R**	1/30.17	----
250mL	14/20	4321A 250	**10-060-4D**	1/36.48	----
250mL	19/22	4320B 250	**10-067DD**	1/31.10	----
250mL	24/40	4320 250	**10-067E**	2/57.91	6 Pk./252.58
250mL	29/42	4321 250	**10-067S**	1/31.96	----
500mL	14/20	4321A 500	**10-060-4E**	----	----
500mL	19/22	4320B 500	**10-067FF**	1/34.43	----
500mL	24/40	4320 500	**10-067G**	2/61.36	6 Pk./278.17
500mL	29/42	4321 500	**10-067T**	1/34.46	----
1000mL	24/40	4320 1L	**10-067H**	1/38.25	12/315.98
1000mL	29/42	4321 1L	**10-067J**	1/36.18	----
2000mL	24/40	4320 2L	**10-067K**	1/65.56	6/271.43
2000mL	29/42	4321 2L	**10-067L**	1/67.58	----
3000mL	24/40	4320-3L	**11-850-13**	----	6/515.66
5000mL	45/50	4320 5L	**10-067P**	----	4/710.06
12,000mL	55/50	4320 12L	**10-067Q**	1/245.85	----

Pyrex* Flasks with Short Ring Necks

Sometimes called "balloon flasks"

- Round bottoms
- Without rubber stopper

10-065B

Capacity	Stopper No.	Mfr. No.	Cat. No.	Each	Case of
250mL	5	4260 250	**10-065A**	14.67	----
500mL	6	4260 500	**10-065B**	18.60	----
1000mL	8	4260 1L	**10-065C**	----	12/217.63
2000mL	10	4260 2L	**10-065D**	51.86	18/638.02
3000mL	10	4260 3L	**10-065E**	45.34	----
5000mL	11	4260 5L	**10-065F**	108.67	6/501.55
12,000mL	11	4260 12L	**10-065G**	171.02	----
22,000mL	14	4260 22L	**10-065H**	310.72	----

Pyrex* Vista* Round Bottom Boiling Flask

Designed for great shock resistance

- Full length ₸ outer joints
- Short necks
- Manufactured from No. 7740 borosilicate glass
- Wall thicknesses provide balance between thermal expansion and mechanical strength

07-250-082

COMPLIANCE:

Designed to ASTM* E-1403

Capacity	Mfr. No.	Cat. No.	Pack of	Case of 2 Pk.
50mL	70320A-50	**07-250-086**	2/49.32	72.00
100mL	70320-100	**07-250-081**	2/37.56	54.83
250mL	70320-250	**07-250-082**	2/39.33	57.41
500mL	70320-500	**07-250-083**	2/43.32	63.23
1000mL	70320-1L	**07-250-084**	1/24.63	35.95
2000mL	70320-2L	**07-250-085**	1/42.27	61.71

Kontes* Flasks with ₸ Necks

- Single neck
- Round bottom

K601000-0524

Capacity	₸ Joint No.	Approximate Diameter	Cat. No.	Each
5mL	14/20	25mm	**K294000-0005**	17.82
5mL	19/22	25mm	**K294010-0005**	17.92
10mL	14/20	31mm	**K294000-0010**	23.35
10mL	19/22	31mm	**K294010-0010**	17.92
15mL	14/20	35mm	**K294000-0015**	20.69
15mL	19/22	35mm	**K294010-0015**	17.92
25mL	14/20	42mm	**K294000-0025**	17.82
25mL	19/22	42mm	**K294010-0025**	20.25
35mL	14/20	45mm	**K294000-0035**	17.82
50mL	14/20	48mm	**K294000-0050**	20.15
50mL	19/22	48mm	**K294010-0050**	17.92
50mL	24/40	48mm	**K601000-0124**	18.18
100mL	14/20	60mm	**K294000-0100**	17.82
100mL	19/22	60mm	**K294010-0100**	17.92
100mL	24/40	60mm	**K601000-0224**	18.18
100mL	29/42	60mm	**K601000-0229**	22.58
250mL	14/20	83mm	**K294000-0250**	23.85
250mL	19/22	83mm	**K294010-0250**	25.40
250mL	24/40	83mm	**K601000-0424**	24.52
250mL	29/42	83mm	**K601000-0429**	26.75
300mL	24/40	87mm	**K601000-0524**	25.27
500mL	14/20	102mm	**K294000-0500**	24.99
500mL	19/22	102mm	**K294010-0500**	25.39
500mL	24/40	102mm	**K601000-0624**	25.51
1000mL	24/40	130mm	**K601000-0724**	31.61
2000mL	24/40	161mm	**K601000-0824**	59.72
3000mL	24/40	185mm	**K601000-0924**	70.21
3000mL	45/50	185mm	**K601000-0945**	93.70
5000mL	24/40	221mm	**K601000-1024**	98.71

Kimble* Kimax* Flasks with ₸ Joints

- Short Necks
- Round bottoms

COMPLIANCE:

Designed from ASTM* E 1403, Type II, Class 3 requirements

11-301-54C

Capacity	₸ Joint No.	Mfr. No.	Cat. No.	Pack of	Case of 6 Pk.
50mL	24/40	25285 50	**10-067-2AA**	2/58.06	254.28
100mL	14/20	25276 100	**10-060-100E**	2/67.38	295.08
100mL	19/22	25277 100	**11-301-54C**	2/61.98	271.44
100mL	24/40	25285 100	**10-067-2B**	2/55.51	243.12
200mL	24/40	25285 200	**10-067-2C**	2/80.45	352.32
250mL	14/20	25276 250	**10-060-100F**	2/109.02	477.48
250mL	19/22	25277 250	**11-301-54D**	2/82.40	360.84
250mL	24/40	25285 250	**10-067-2D**	2/58.06	254.28
300mL	24/40	25285 300	**10-067-2E**	2/82.01	359.16
500mL	19/22	25277 500	**11-301-54E**	2/102.80	450.24
500mL	24/40	25285 500	**10-067-2F**	2/63.95	280.08
1000mL	24/40	25285 1000	**10-067-2G**	2/72.61	318.00
2000mL	24/40	25285 2000	**10-067-2H**	1/69.42	293.94
3000mL	24/40	25285 3000	**10-067-2J**	1/121.43	514.74

*Trademark. See Trademark Reference.

Prices subject to change.

BOILING — PEAR SHAPED

Pyrex* Pear-Shaped Flasks

With a single ₮ outer joint

10-060-11C

Capacity	Mfr. No.	Cat. No.	Pack of 2	Case of
₮ Joint 14/20				
5mL	4315 5	**10-060-5A**	----	1/27.24
6mL	4315 6	**10-060-5F**	----	1/22.36
10mL	4315 10	**10-060-5B**	63.54	6 Pk./279.67
15mL	4315 15	**10-060-5G**	----	1/26.98
20mL	4315 20	**10-060-5H**	----	1/26.03
25mL	4315 25	**10-060-5C**	65.71	6 Pk./290.49
50mL	4315 50	**10-060-5D**	73.41	324.27
65mL	4315 65	**10-060-5K**	----	1/26.03
100mL	4315 100	**10-060-5E**	----	1/39.69
₮ Joint 14/22				
25mL	4316 25	**10-060-9A**	----	1/26.03
₮ Joint 24/40				
50mL	4318 50	**10-060-11A**	----	1/31.31
100mL	4318 100	**10-060-11B**	----	1/34.57
150mL	4318 150	**10-060-11C**	----	1/37.52
200mL	4318 200	**10-060-11D**	----	1/40.90
250mL	4318 250	**10-060-11E**	----	1/42.05

Kontes* Pear-Shaped Flasks

Single-neck flasks with ₮ outer joints

K294260-0100

Capacity	₮ Joint No.	Cat. No.	Each
5mL	14/20	**K294250-0005**	23.36
5mL	19/22	**K294260-0005**	23.73
10mL	14/20	**K294250-0010**	23.36
10mL	19/22	**K294260-0010**	23.73
15mL	14/20	**K294250-0015**	23.36
15mL	19/22	**K294260-0015**	23.73
25mL	14/20	**K294250-0025**	23.36
25mL	19/22	**K294260-0025**	23.73
35mL	14/20	**K294250-0035**	23.36
35mL	19/22	**K294260-0035**	23.87
50mL	14/20	**K294250-0050**	23.36
50mL	19/22	**K294260-0050**	23.73
50mL	24/40	**K608700-0124**	28.80
75mL	14/20	**K294250-0075**	23.36
75mL	19/22	**K294260-0075**	23.73
100mL	14/20	**K294250-0100**	39.95
100mL	19/22	**K294260-0100**	24.63
100mL	24/40	**K608700-0224**	30.72
200mL	24/40	**K608700-0424**	36.29
300mL	24/40	**K608700-0524**	38.97
500mL	24/40	**K608700-0624**	41.77

BOILING — FLAT BOTTOM

Pyrex* Flat-Bottom Flasks with ₮ Joints

Long Necks

Full-length outer ₮ 24/40 joints.

10-044A

Capacity	Mfr. No.	Cat. No.	Case of 12
250mL	4080 250	**10-044A**	378.24
500mL	4080 500	**10-044B**	420.40

Pyrex* Flat Bottom Flasks with Long Necks

Usual globe-shaped Florence boiling flasks

- Tooled mouths
- Covers for 500, 1000 and 2000mL sizes
- 12,000mL size has a short neck

10-035E

Capacity	Stopper No.	Mfr. No.	Cat. No.	Price
50mL	1	4060 50	**10-035A**	Ea./8.51
125mL	2	4060 125	**10-035B**	Cs. of 24/163.51
250mL	5	4060 250	**10-035C**	Cs. of 24/175.34
500mL	6	4060 500	**10-035E**	Cs. of 24/253.75
1000mL	8	4060 1L	**10-035F**	Cs. of 6/79.19
2000mL	8	4060 2L	**10-035G**	Ea./35.45
6000mL	11	4060 6L	**10-035J**	Ea//82.74
12,000mL	11	4060 12L	**10-035K**	Ea./177.07

Pyrex* Flat-Bottom Flasks with ₮ Joint

Short Necks

Full-length outer ₮ 24/40 joints.

09-559B

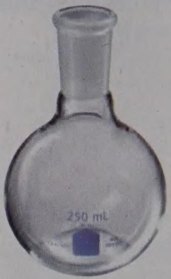
Capacity	O.D. × H	Mfr. No.	Cat. No.	Price	Case of
50mL	50 × 98mm	4100 50	**09-559F**	Ea./27.83	----
125mL	69 × 120mm	4100 125	**09-559A**	Ea./32.78	12/262.38
250mL	82 × 135mm	4100 250	**09-559B**	Pk. of 6/174.87	2 Pk./260.09
500mL	103 × 155mm	4100 500	**09-559D**	Pk. of 6/194.52	2 Pk./289.24
1000mL	132 × 185mm	4100 1L	**09-559E**	Ea./38.25	12/313.31

Pyrex* Vista* Flat Bottom Boiling Flask

Designed for great shock resistance

- Full length $ 24/40 outer joints
- Short necks
- Wall thicknesses provide balance between thermal expansion and mechanical strength

COMPLIANCE:
Designed to ASTM* E-1403



07-250-078

Capacity	Mfr. No.	Cat. No.	Pack of	Case of
125mL	70100-125	**07-250-077**	----	12/178.75
250mL	70100-250	**07-250-078**	6/121.37	2 Pk./177.18
500mL	70100-500	**07-250-079**	6/134.98	2 Pk./197.06
1000mL	70100-1L	**07-250-080**	1/24.42	2/35.65

Kontes* Guth* Kool-Grip* Flasks

With cork-covered necks

- Long necks, flat bottoms, protected lips
- Cork jacket protects neck from breakage
- Provides heat-insulating barrier between flask and hand
- Borosilicate glass

10-037B

Capacity	Mfr. No.	Cat. No.	Each
500mL	3011 500	**10-037A**	37.40
1000mL	3011 1000	**10-037B**	45.57

BOILING FLASKS — ACCESSORIES

*Fisher*brand* Cork Supports

Durable, compressed cork lab rings

Concave recesses support dishes and round-bottom flasks.

250 ml
PYREX

07-835A

For Flask Size	I.D. × O.D.	Cat. No.	Each	Pack of 12
10 to 100mL	30 × 80mm	**07-835AA**	8.59	75.24
200 to 500mL	60 × 110mm	**07-835A**	8.78	78.02
1000 to 3000mL	90 × 140mm	**07-835B**	14.01	122.75
5000mL	120 × 170mm	**07-835C**	25.85	226.45
12,000mL	150 × 210mm	**07-835D**	40.76	357.02

*Fisher*brand* Polypropylene Stand

Stackable to save bench space or add height

- Concave, ribbed surface supports round-bottom flasks up to 10L
- Autoclavable
- Excellent chemical resistance

10-115

For Flask Size	Dia. × H.	Cat. No.	Pack of 5
Up to 10L	6¾ × 2" (17 × 5.1cm)	**10-115**	74.50

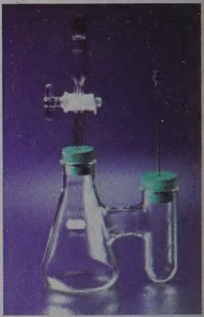
CULTURE FLASKS

Corning* Biometer Culture Flasks

Minimize the need for commonly used gas trains

Measure production of carbon dioxide produced by microorganisms grown on a variety of culture media over longer periods of time.

INCLUDES:
Delivery funnel, V6 rubber stopper in the flask neck, V7 rubber stopper in the side tube, 16-gauge needle



11-850-15

Description	Mfr. No.	Cat. No.	Each
Complete Flask, 250mL	4443-250	**11-850-15**	113.26
Flask Only, 250mL	4443-250FO	**11-850-16**	65.82
Delivery Funnel with Stopcock and Cap	4443-NO	**11-850-17**	14.87
Needle Only	4443-TO	**11-850-18**	63.36

Corning* Disposable Polycarbonate Erlenmeyer Flasks

Break resistant—perfect for shaker cultures

10-041-18

- Can be used for cultures or storing media
- Graduated, wide mouth
- Individually wrapped; sterile
- Standard two-position polypropylene screw caps or vented caps with 0.2μm hydrophobic membrane
- Autoclavable according to furnished instructions

Capacity	Mfr. No.	Cat. No.	Case of
Standard Screw Cap			
125mL	430421	**10-041-8**	50/399.08
250mL	430183	**10-041-18**	50/434.57
500mL	430422	**10-041-8B**	25/325.93
1L	431146	**07-200-671**	25/492.42
Vented Cap			
125mL	431143	**07-200-670**	50/424.83
250mL	431144	**07-200-668**	50/473.75
500mL	431145	**07-200-669**	25/361.76
1L	431147	**07-200-672**	25/518.69

Two- and Three-Liter Flasks

Include both a flat cap and a vented cap with 0.2μm filter

Front: 10-126-43 (left), 10-126-40 (right); Back: 10-126-38 (left), 10-126-42 (right)

Capacity	Bottom Style	Mfr. No.	Cat. No.	Case of
2L	Nonbaffled	431255	**10-126-42**	6/161.22
2L	Baffled	431256	**10-126-43**	6/168.03
3L	Nonbaffled	431252	**10-126-38**	4/186.48
3L	Baffled	431253	**10-126-40**	4/197.83

ACCESSORIES

Polypropylene Screw Caps

NEW

07-202-529

07-200-866

As supplied with Pyrex* Media/Solution bottles. Choose orange caps for temperatures to 140°C (284°F), red caps for temperatures to 180°C (356°F).

- Vented caps with 0.2μm pore nonwettable (hydrophobic) membranes which allow gas exchange while minimizing risk of contamination
- Polyethylene
- Sterilized by gamma radiation

Thread Size	For Use with	Mfr. No.	Cat. No.	Case of 24
Vented				
48mm	2L Plastic Flask	431339	**07-202-529**	110.36
70mm	3L Plastic Flask	431340	**07-202-530**	143.30
Nonvented				
48mm	2L Plastic Flask	431364	**07-200-866**	103.82
70mm	3L Plastic Flask	431363	**07-200-865**	125.14

Corning* Baffled Polycarbonate Flasks with Caps

NEW

Ideal for shaker culture applications

13-700-432

Baffles provide better agitation at lower speed resulting in gentler, more efficient aeration.

- Increased aeration provides better cell growth, especially for bacteria and insect cell lines
- Erlenmeyer style
- Made from optically clear polycarbonate
- Graduated at 50mL intervals
- Sterilized by gamma radiation and certified nonpyrogenic
- Available with vent caps for applications requiring sterile gas exchange
- Two-position polypropylene plug seal cap (U.S. Patent No. 4,763,804) can be opened for gas exchange or closed for a liquid-tight seal

Capacity	Mfr. No.	Cat. No.	Case of
Vented Screw Cap			
125mL	431405	**13-700-429**	50/439.48
250mL	431407	**13-700-431**	50/490.09
500mL	431401	**13-700-425**	25/374.23
1L	431403	**13-700-427**	25/536.57
Plug Seal Cap			
125mL	431404	**13-700-428**	50/412.84
250mL	431406	**13-700-430**	50/449.56
500mL	431408	**13-700-432**	25/337.17
1L	431402	**13-700-426**	25/509.40

Pyrex* Baffled Culture Flasks

Usable with shakers—three baffles provide optimal and consistent agitation

- Erlenmeyer style
- Heavy tooled rims for maximum durability

10-041-5D

Capacity	Stopper Size	Mfr. No.	Cat. No.	Case of
125mL	5	4450 125	**10-041-5A**	6/134.79
250mL	6	4450 250	**10-041-5B**	6/151.70
500mL	7	4450 500	**10-041-5C**	6/161.09
1000mL	8½	4450 1L	**10-041-5D**	1/38.74

LOOKING FOR COATED FLASKS?

For additional coated flasks and culture chambers, see Specialty Surface Flasks in the Cell Culture section.

DON'T SEE THE RIGHT PRODUCT?

Fisher carries several trypsinizing flasks with deep baffles for extra agitation.

Visit www.fishersci.com and search for Trypsinizing Flasks

Pyrex* Culture Media Flasks

Suitable for mixing and storing culture media

- Impact-resistant caps have cemented-in, inert, rubber liners which are resistant to steam sterilization
- Graduated scale
- Marking area

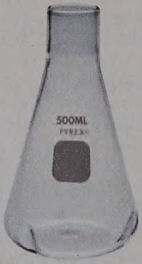
10-093-10C

Capacity	GPI Thread Finish	Mfr. No.	Cat. No.	Pack of	Case of
50mL	24-410	4985 50	**10-093-10A**	12/281.01	2 Pk./410.49
125mL	24-410	4985 125	**10-093-10B**	12/277.56	2 Pk./405.47
250mL	38-430M	4985 250	**10-093-10C**	6/143.93	4 Pk./420.52
500mL	38-430M	4985 500	**10-093-10D**	6/147.59	4 Pk./431.06
1000mL	38-430M	4985 1L	**10-093-10E**	6/174.00	2 Pk./254.17

Pyrex* Delong Culture Flasks

Heavy, fire-polished, long necks reduce splashing

- Three baffles provide greater agitation of solutions and improved oxygen or gas transfer when used with rotary or reciprocating shakers
- Necks accept two-position polypropylene closures (available separately; see Closures 14-957-85E, -85G, -85H and -85J)


10-041-4C

Capacity	Neck O.D.	Mfr. No.	Cat. No.	Case of
125mL	25mm	4444 125	**10-041-4A**	6/97.02
250mL	38mm	4444 250	**10-041-4B**	6/112.67
500mL	38mm	4444 500	**10-041-4C**	6/122.30
1000mL	38mm	4444 1L	**10-041-4D**	6/204.65
2000mL	38mm	4444 2L	**10-041-4E**	1/53.72
4000mL	38mm	4444 4L	**10-041-4F**	1/118.44

Pyrex* Low Form Culture Flask

For culturing organisms requiring a large surface area-to-volume ratio

- Narrow mouth
- Neck O.D., 38mm

10-092A

Capacity	Approx. O.D. × H	Mfr. No.	Cat. No.	Each
2500mL	254 × 197mm	4422 2XL	**10-092A**	135.19

Pyrex* Shaker Flasks with Extra-Deep Baffles

Long neck reduces splashing

- Delong style
- Extra-deep baffles provide greater agitation and improved gas transfer when used with rotary or reciprocating shakers
- Two-position polypropylene closures are available separately (14-957-85E, -85G, -85H and -85J)

09-552-36

Capacity	Approx. Neck O.D.	Mfr. No.	Cat. No.	Case of
50mL	18mm	4446 50	**09-552-32**	12/205.96
125mL	25mm	4446 125	**09-552-33**	12/201.50
250mL	38mm	4446 250	**09-552-34**	12/205.96
300mL	38mm	4446 300	**09-552-35**	12/208.45
500mL	38mm	4446 500	**09-552-36**	12/223.64
1000mL	38mm	4446 1L	**09-552-69**	6/163.31
2000mL	38mm	4446 2L	**09-552-70**	3/132.91
3000mL	38mm	4446 3L	**09-552-37**	2/252.19
4000mL	38mm	4446 4L	**09-552-38**	2/343.15

ACCESSORIES

Closures

- Fit 10-041-4 Series Delong Flasks
- Fit 09-552 Series Shaker Flasks with Extra-Deep Baffles

Fits Neck O.D.	Color	Mfr. No.	Cat. No.	Case of 100
25mm	Natural	26795 25	**14-957-85E**	69.46
25mm	Orange	26794 25	**14-957-85G**	69.46
38mm	Natural	26797 38	**14-957-85J**	129.19
38mm	Orange	26796 38	**14-957-85H**	129.19
40mm	Natural	26798 40	**14-957-85F**	151.41
40mm	Orange	26799 40	**14-957-85K**	151.41

WARNING

Do not use standard flask on a heat source smaller than the base of the flask; uneven heating could cause breakage. Do not place baffled flasks on a direct heat source.

*Trademark. See Trademark Reference.

Pyrex* Fernbach Flasks

Wide surface area is ideal for growth of organisms requiring a large surface area-to-volume ratio

- Neck designs: plain, wide-mouth, beaded, or with screw cap
- Capacity: 2800mL

10-092

Description	Approx. O.D. × H	Mfr. No.	Cat. No.	Each	Case of
Standard					
Wide Mouth	205 × 230mm	4420 2XL	**10-092**	83.16	6/344.17
With GL100 screw cap	200 × 230mm	4426 2XL	**09-552-72**	179.44	----
Baffled					
Plain	200 × 260mm	4424 2XL	**09-552-40**	----	3/286.90
Beaded	200 × 230mm	4423 2XL	**09-552-39**	----	3/285.19
With GL45 screw cap	200 × 230mm	4425 2XL	**09-552-41**	----	3/356.72
With GL100 screw cap	200 × 230mm	4427 2XL	**09-552-73**	221.88	----

Nalgene* Polycarbonate Baffled Culture Flasks

Feature growth curves equivalent to glass flasks for *E. coli* and *S. cerevisiae*

- Clear and break-resistant with molded-in graduations
- Bottom baffles provide increased mixing, aeration, and gas exchange
- Useful for fermentation, cell culture growth and cultivation, and genetic engineering procedures
- Autoclavable

10-042-5K

Capacity	Mfr. No.	Cat. No.	Pack of	Case of
250mL	4110-0250	**10-042-5K**	4/61.55	3 Pk./123.11
500mL	4110-0500	**10-042-5L**	4/91.71	3 Pk./183.44
1000mL	4110-1000	**10-042-5M**	2/73.13	3 Pk./146.26
2000mL	4110-2000	**10-042-5N**	2/92.26	2 Pk./123.02

WARNING

Repeated autoclaving may result in some loss of mechanical strength.

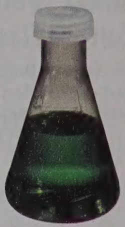
DON'T SEE THE RIGHT PRODUCT?

Fisher Scientific carries a full line of coated and specialty flasks for tissue culture work. For a complete lising, see Flasks—Specialty Surfaces in the Cell Culture section.

Nalgene* Polycarbonate Erlenmeyer Flasks

For preparing and storing culture media

- Narrow mouth
- Graduated
- Break-resistant
- Autoclavable
- Noncontaminating, tight-sealing, linerless polypropylene screw closures



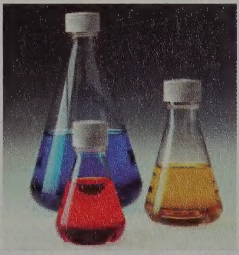
10-041-17D

Capacity	Closure Size	Mfr. No.	Cat. No.	Pack of	Case of
50mL	24mm	4108-0050	**10-041-17B**	6/60.60	4/161.60
125mL	33mm	4108-0125	**10-041-17C**	6/75.28	4/200.75
250mL	38mm	4108-0250	**10-041-17D**	4/67.51	3/135.00
500mL	43mm	4108-0500	**10-041-17E**	4/99.62	3/199.24
1000mL	53mm	4108-1000	**10-041-17F**	2/72.14	3/144.29

Nalgene* Sterile Disposable Flasks with Caps

For shaker and suspension cell culture, media preparation, or storage

- Clear polyethylene terephthalate G copolymer (PETG)
- Available with plain or baffled bottom
- Leakproof polyethylene[†] screw closures open to vent with a ¼ turn
- Graduated
- Individually packaged



10-041-2 and 10-346 Series

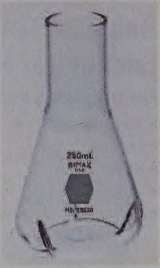
Capacity	Mfr. No.	Cat. No.	Case of
Plain			
125mL	4112-0125	**10-041-20**	24/112.50
250mL	4112-0250	**10-346-7A**	12/68.70
500mL	4112-0500	**10-346-7B**	12/87.40
1000mL	4112-1000	**10-041-21**	6/60.90
2000mL	4112-2000	**10-346-7C**	4/51.00
Baffled			
125mL	4113-0125	**10-041-23**	24/118.00
250mL	4113-0250	**10-346-8A**	12/74.23
500mL	4113-0500	**10-346-8B**	12/91.80
1000mL	4113-1000	**10-041-24**	6/63.90
2000mL	4113-2000	**10-346-8C**	4/53.60

[†] Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

Kimax* Baffled Culture Flasks

For fermentation, cell culture growth and cultivation, and genetic engineering procedures

- Erlenmeyer flask with thick-walled tubing neck
- Bottom baffles provide increased mixing, aeration, and gas exchange
- Neck O.D.: 25mm (1") for 125mL size; all others are Neck O.D.: 38mm (1½")



10-140-6A

Capacity	Approx. Height Without Cap	Mfr. No.	Cat. No.	Case of 6
125mL	125mm	25630 125	**10-140-6**	94.08
250mL	140mm	25630 250	**10-140-6A**	108.66
500mL	183mm	25630 500	**10-140-6B**	118.14
1000mL	230mm	25630 1000	**10-140-6C**	198.48
2000mL	288mm	25630 2000	**10-140-6D**	312.66

Kimax* Culture Media Flasks

Screw-thread finish

INCLUDES:
Cap and white rubber liner

COMPLIANCE:
Designed from ASTM* E 1404, Type III requirements

10-093C

Capacity	GPI Thread Finish	Mfr. No.	Cat. No.	Pack of	Case of
50mL	24mm-410	26505 50	**10-093AA**	6/136.69	4 Pk./399.12
125mL	24mm-410	26505 125	**10-093A**	6/133.90	4 Pk./390.96
250mL	28mm-410	26505 250	**10-093B**	6/138.92	4 Pk./405.60
500mL	38mm-430	26505 500	**10-093C**	6/142.29	4 Pk./415.44
1000mL	38mm-430	26505 1000	**10-093D**	6/164.73	2 Pk./240.48
2000mL	38mm-430	26505 2000	**10-093E**	2/97.36	4 Pk./284.24

Kimax* Long, Straight-Neck Flask with Capacity Scale

Neck accepts metal or plastic cap or cotton plug

- Thick-walled tubing neck and plain fire-polished finish sealed to an Erlenmeyer-shaped body
- Graduated to capacity
- Durable white ceramic enamel scale

COMPLIANCE:
Designed from ASTM* E 1404, Type IV, Class 1 requirements

10-140-1B

Capacity	Neck O.D.	Mfr. No.	Cat. No.	Price	Case of
125mL	25mm	25615 125	**10-140-1**	Pk. of 6/79.75	4 Pk./232.71
250mL	38mm	25615 250	**10-140-1A**	Pk. of 6/87.42	4 Pk./254.48
500mL	38mm	25615 500	**10-140-1B**	Pk. of 6/120.46	4 Pk./351.08
1000mL	38mm	25615 1000	**10-140-1C**	Pk. of 6/201.91	4 Pk./587.76
2000mL	38mm	25615 2000	**10-140-4E**	Ea./60.35	12/528.40

DEWAR

*Fisherbrand** Metal-Cased Cylindrical Dewar Flasks

Borosilicate glass with silvered double walls

- For use with liquefied gases
- Space between walls evacuated and sealed
- Metal casing surrounds glass to protect user from accidental breakage
- Special vented polyethylene stopper minimizes evaporation

10-196-11

Capacity	With Handle	O.D.	I.D.	Height	Cat. No.	Each
¾ qt. (0.6L)	No	8.6cm	7cm	24.1cm	**10-195A**	97.72
1⅛ qt. (1L)	No	8.6cm	7cm	33.7cm	**10-195B**	102.02
1⅛ qt. (1L)	Yes	8.6cm	7cm	33.7cm	**10-196-11**	138.62
2 qt. (1.9L)	No	15cm	12cm	25.2cm	**10-195C**	246.71
2 qt. (1.9L)	Yes	15cm	12cm	25.2cm	**10-196-9**	287.60
4½ qt. (4.3L)	No	17.8cm	14.3cm	36.5cm	**10-195D**	314.17
4½ qt. (4.3L)	Yes	17.8cm	14.3cm	36.5cm	**10-196-10**	361.64

*Fisherbrand** Low-Form Dewar Flasks

Slightly curved bottom increases coolant capacity

- Cylindrical style
- For use with liquefied gases
- Vacuum tip-off tubulation is offset to minimize space between the bottom and magnetic stirrer
- Protective aluminum base extends to full height of the Dewar

10-196-6

Capacity	I.D.	Inside Height	Cat. No.	Each
11$\frac{13}{16}$ oz. (350mL)	80mm	75mm	**10-196-6**	208.59
28$\frac{11}{16}$ oz. (850mL)	130mm	75mm	**10-196-7**	238.90
84 oz. (2500mL)	170mm	135mm	**10-196-8**	428.32

Nalgene* Polyethylene Dewar Flasks

Can be used for dry ice solvent and hot baths

10-194-100 Series

- Break- and chemical-resistant, withstand temperatures from -196° to +100°C (-321° to +212°F)
- High-density polyethylene Dewar flasks with HDPE covers are well suited for cryogenic work
- Handy for storing frozen biological samples
- Double walls
- Annulus is filled with CFC-free foamed urethane to minimize heat leakage
- All flasks (except 10½ qt. size) have polyethylene-coated steel handle
- Built-in spout, finger grip on bottom, and ribbed sides for safer handling

Capacity	Height	I.D. at Mouth	Mfr. No.	Cat. No.	Each	Case of
1⅛ qt. (1L)	23cm	9.5cm	4150 1000	**10-194-100A**	213.84	4/570.25
2 qt. (2L)	26cm	12cm	4150 2000	**10-194-100B**	226.03	2/301.38
4¼ qt. (4L)	32cm	15cm	4150 4000	**10-194-100C**	245.93	2/327.91
10½ qt. (10L)	46cm	20cm	4150 9000	**10-194-100D**	306.63	----

Thermo Scientific* Thermolyne* Flasks*

Durable, corrosion-resistant, stainless-steel Dewar flasks

11-670-4 Series

- Borosilicate-glass inner vessels provide maximum coolant and extended temperature retention for samples stored in liquid nitrogen or solid CO_2
- For transporting liquid nitrogen; benchtop use storing crushed ice, dry ice, and alcohol; or as a hot-liquid container
- Carrying handles
- Rubber-cushioned bases
- Vented lids secured by toggle clamps

WARRANTY:
Two years

Capacity	O.D.	I.D.	Height	Mfr. No.	Cat. No.	Each
1⅛ qt. (1.0L)	11.6cm	8.5cm	22.9cm	2122	**11-670-25C**	253.95
2⅛ qt. (2.0L)	13.9cm	10.8cm	26.7cm	2123	**11-670-4B**	295.00
4¾ qt. (4.5L)	18.4cm	15.2cm	34.9cm	2124	**11-670-4C**	423.00

*Fisherbrand** Dewar Flasks

Fully silvered borosilicate glass liner with a blue enameled steel casing

03-692-15 Series

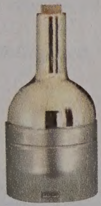
- For storing and transporting liquid gases including liquid nitrogen and solid CO_2
- Vented for automatic pressure release
- Polyethylene-foam insulated lids are fitted with fixing clips
- Ergonomic swing-over handle for safe transport

WARRANTY:
Two years

Capacity	I.D.	Height	Mfr. No.	Cat. No.	Each
1⅛ qt. (1L)	12cm	24.5cm	238-131/F	**03-692-155**	283.19
2⅛ qt. (2L)	14.5cm	27cm	238-134/F	**03-692-156**	350.18
4¾ qt. (4.5L)	18.5cm	34.3cm	238-137/F	**03-692-157**	494.31

Spherical Dewar Flask

Borosilicate glass with Florence flask design



10-196C

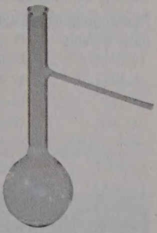
- Metal casing does not extend full length of flask
- Comes with low evaporation stopper

Capacity	O.D.	I.D.	Height	I.D. at Neck	Cat. No.	Each
5⁵⁄₁₆ qt. (5L)	25.5cm	21.6cm	45.6cm	53mm	**10-196C**	665.01

DISTILLING

Pyrex* 25 to 1000mL Distilling Flasks

Round bottoms, vial mouths, with side arms at 75° angle



- 125mL size has its side arm located approximately 5⅜" (137mm) from bottom of flask
- Side arms of all other flask sizes are approximately 3" (77mm) below tops, for immersion thermometers
- Without stopper

COMPLIANCE:
Meet Manufacturing Chemists Association Standards. Meet ASTM* D 233, D 86, and D 447 requirements.

Capacity	Stopper No.	Mfr. No.	Cat. No.	Price	Case of 4 Pk.
25mL	0	4620 25	**10-140B**	Cs. of 1/17.24	----
50mL	0	4620 50	**10-140C**	Cs. of 1/17.69	----
125mL	2	4620 125	**10-140D**	Pk. of 6/142.52	416.30
250mL	3	4620 250	**10-140F**	Cs. of 24/680.91	----
500mL	4	4620 500	**10-140G**	Cs. of 1/29.86	----
1000mL	5	4620 1L	**10-140H**	Cs. of 1/45.52	----

Pyrex* Distilling Flasks with Three Vertical, Level Necks

Side necks at same level as center neck

- Two side necks with 24/40 outer ₷ joints
- Center neck with a 24/40 ₷ joint

10-164-2A

Capacity	Mfr. No.	Cat. No.	Each	Case of
500mL	4950 500	**10-164-2A**	138.96	4/385.45
1000mL	4950 1L	**10-164-2B**	161.95	4/448.00
2000mL	4950 2L	**10-164-2C**	211.45	4/589.44
3000mL	4950 3L	**10-164-2D**	----	3/735.99
5000mL	4950 5L	**10-164-2E**	----	3/697.07

Pyrex* Distilling Flasks with Four Necks

Four vertical necks with ₷ joints

Three side necks are placed 90°apart.

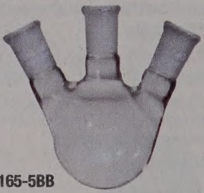
10-162A

	₷ Joint No.				
Capacity	Side Necks	Center Neck	Mfr. No.	Cat. No.	Each
1000mL	24/40	34/45	4935 1L	**10-162A**	275.76
2000mL	24/40	45/50	4935 2L	**10-162B**	326.96
5000mL	24/40	45/50	4935 5L	**10-162D**	426.17

Pyrex* Distilling Flasks with Three Angle Necks and ₷ Joints

Provide maximum assembly and working space

Necks are provided with outer ₷ joints.



10-165-5BB

	₷ Joint No.					
Capacity	Side Necks	Center Neck	Mfr. No.	Cat. No.	Each	Case of 4
100mL	19/38	24/40	4965 100	**10-165-5A**	131.29	364.99
250mL	19/22	19/22	4965B 250	**10-163-4A**	75.00	----
250mL	24/40	24/40	4965 250	**10-165-5BB**	150.99	420.04
500mL	19/22	19/22	4965B 500	**10-163-4B**	80.12	----
500mL	24/40	24/40	4965A 500	**10-163-3A**	142.06	----
500mL	24/40	34/45	4965 500	**10-165-5D**	----	649.88
1000mL	24/40	24/40	4965A 1L	**10-163-3B**	160.04	----
1000mL	24/40	34/45	4965 1L	**10-165-5E**	----	708.00

Pyrex* Distilling Flasks with Three Vertical Necks

With side and center neck ₷ joints

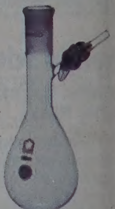
10-164A

	₷ Joint No.					
Capacity	Side Necks	Center Neck	Mfr. No.	Cat. No.	Each	Case o
250mL	24/40	24/40	4960 250	**10-164G**	—	4/408.6
500mL	24/40	29/42	4960A 500	**10-163-2D**	130.04	—
500mL	24/40	34/45	4960 500	**10-164A**	—	4/641.1
1000mL	24/40	29/42	4960A 1L	**10-163-2E**	164.72	—
1000mL	24/40	34/45	4960 1L	**10-164B**	175.29	4/482.1
2000mL	24/40	29/42	4960A 2L	**10-163-2F**	192.72	—
2000mL	24/40	45/50	4960 2L	**10-164C**	237.14	4/661.0
3000mL	24/40	45/50	4960 3L	**10-164D**	822.72	—
5000mL	24/40	45/50	4960 5L	**10-164E**	409.76	3/855.3
12,000mL	29/42	55/50	4960 12L	**10-164F**	432.37	—

Kontes* Distillation Flasks

Improved version of classic Schlenk tube

- Modified Kjeldahl shape facilitates heating, stirring, and solvent stripping
- Easily transfer liquids and solids
- Glass plug
- Pressure/vacuum retainer



K213100-2024

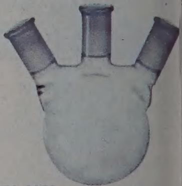
Capacity	₷ Joint No.	Cat. No.	Each
10mL	14/20	**K213100-0114**	69.55
25mL	14/20	**K213100-0214**	64.11
50mL	14/20	**K213100-0514**	80.40
100mL	14/20	**K213100-1014**	69.18
100mL	24/40	**K213100-1024**	76.17
200mL	24/40	**K213100-2024**	79.34
500mL	24/40	**K213100-5024**	81.87

Kontes* Flasks with Three Angle Necks and ₷ Joints

Side necks are angled off center neck for greater accessibility

COMPLIANCE:

Designed from ASTM* E 1378, Type VI requirements



K295550-0050

	₷ Joint No.			
Capacity	Side Necks	Center Neck	Cat. No.	Each
25mL	14/20	14/20	**K295550-0025**	53.10
50mL	14/20	14/20	**K295550-0050**	56.30
100mL	14/20	19/22	**K295500-0100**	51.15
100mL	19/22	19/22	**K295510-0100**	52.40
500mL	19/22	19/22	**K295510-0500**	61.96
500mL	24/40	24/40	**K606020-1024**	84.13

ERLENMEYER—GLASS WITHOUT STOPPERS

Pyrex* Flasks with $ Joint

Narrow mouth

- Graduated with outer $ joint at top
- Without stoppers

COMPLIANCE:
ASTM* E 123

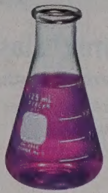
10-047C

Capacity	$ Joint No.	Mfr. No.	Cat. No.	Price	Case of
50mL	19/38	5000 50	**10-462-848**	Ea./25.54	----
125mL	24/40	5000 125	**10-047B**	Pk. of 6/151.85	2 Pk./226.15
250mL	24/40	5000 250	**10-047C**	Pk. of 6/159.31	2 Pk./231.83
500mL	24/40	5000 500	**10-047E**	Pk. of 6/155.76	2 Pk./239.63
1000mL	24/40	5000 1L	**10-047F**	Ea./40.20	12/327.70

Pyrex* Flasks with Reinforced Tooled Top

Ideal for routine usage

- Uniformly thick walls
- Durable white enamel marking spot
- Capacity scale accurate to ±5%
- Use stoppers (not included) as listed in ordering table
- 250, 300 and 500mL sizes also can use covers in place of stoppers


10-040D

Capacity	Stopper No.	Mfr. No.	Cat. No.	Price	Case of
10mL	0	4980 10	**10-040A**	----	12/80.56
25mL	0	4980 25	**10-040B**	Pk. of 12/62.87	4 Pk./182.56
50mL	1	4980 50	**10-040C**	Pk. of 12/62.87	4 Pk./182.56
125mL	5	4980 125	**10-040D**	Pk. of 12/58.93	4 Pk./172.46
250mL	6	4980 250	**10-040F**	Pk. of 12/62.21	4 Pk./178.52
300mL	6	4980 300	**10-040G**	Pk. of 12/74.86	4 Pk./218.36
500mL	7	4980 500	**10-040H**	Pk. of 6/38.61	6 Pk./168.68
1000mL	9	4980 1L	**10-040K**	Pk. of 6/62.13	4 Pk./182.80
2000mL	10	4980 2L	**10-040M**	Ea./26.11	8/143.47
4000mL	10	4980 4L	**10-040P**	Ea./82.25	4/227.39
6000mL	10	4980 6L	**10-040Q**	Ea./151.50	4/418.14

Pyrex* Titration and Culture Heavy-Duty Flasks

Rugged tooled top finish and wide mouth

- Conical-shaped flasks
- Graduations to show approximate capacity
- White square marking space
- Without stoppers

10-090B

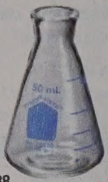
Capacity	Stopper No.	Mfr. No.	Cat. No.	Price	Case of
125mL	6	5100 125	**10-090A**	Pk. of 12/66.96	4 Pk./202.48
250mL	8	5100 250	**10-090B**	Pk. of 12/72.00	4 Pk./215.12
500mL	10	5100 500	**10-090C**	Pk. of 6/45.16	6 Pk./203.10
1000mL	11	5100 1L	**10-090D**	Pk. of 6/75.37	4 Pk./226.27
2000mL	13	5100 2L	**10-090E**	Ea./28.25	8/142.66

Pyrex* Vista* Erlenmeyer Flasks

Uniform wall thickness provides the proper balance between mechanical strength and thermal shock resistance

- Narrow mouth
- Approximate graduations in durable blue enamel
- Extra large marking space

COMPLIANCE:
Designed to ASTM* E-1404 Type 1


07-250-088

Capacity	Mfr. No.	Cat. No.	Pack of	Case of 2 Pk.
25mL	70980-25	**07-250-087**	12/43.62	63.68
50mL	70980-50	**07-250-088**	12/43.62	63.68
125mL	70980-125	**07-250-089**	12/37.84	55.23
250mL	70980-250	**07-250-090**	12/39.19	57.21
500mL	70980-500	**07-250-091**	6/24.71	36.08
1000mL	70980-1L	**07-250-092**	6/40.14	58.59

Kimax* Colorware Flasks

Colorful enamel graduations enhance readability and indicate approximate volumes

- Narrow mouth
- Durable, matte-finish marking spot provides good writing surface
- Without stoppers

COMPLIANCE:
Designed from ASTM* E 1404, Type I, Class 1 requirements

10-200-45

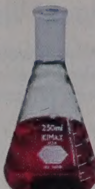
Capacity	Stopper No.	Mfr. No.	Cat. No.	Case of
Raging Red				
50mL	1	26500R 50	**10-200-30**	12/43.94
125mL	5	26500R 125	**10-200-34**	12/42.01
250mL	6	26500R 250	**10-200-38**	12/43.46
500mL	7	26500R 500	**10-200-42**	6/27.40
1000mL	9	26500R 1000	**10-200-46**	6/44.55
Sunny Yellow				
50mL	1	26500Y 50	**10-200-31**	12/43.94
125mL	5	26500Y 125	**10-200-35**	12/42.01
250mL	6	26500Y 250	**10-200-39**	12/43.46
500mL	7	26500Y 500	**10-200-43**	6/27.40
1000mL	9	26500Y 1000	**10-200-47**	6/44.55
Cool Green				
50mL	1	26500G 50	**10-200-29**	12/43.94
125mL	5	26500G 125	**10-200-33**	12/42.01
250mL	6	26500G 250	**10-200-37**	12/43.46
500mL	7	26500G 500	**10-200-41**	6/27.40
1000mL	9	26500G 1000	**10-200-45**	6/44.55
Bright Blue				
50mL	1	26500B 50	**10-200-28**	12/43.94
125mL	5	26500B 125	**10-200-32**	12/42.01
250mL	6	26500B 250	**10-200-36**	12/43.46
500mL	7	26500B 500	**10-200-40**	6/27.40
1000mL	9	26500B 1000	**10-200-44**	6/44.55

Kimax* Flasks with Narrow Mouth

With ₸ neck finish

- Graduated scale, marking areas
- Without stoppers

COMPLIANCE:
Designed from ASTM* E 1404,
Type II, Class 1 requirements


10-101B

Capacity	₸ Joint No.	Mfr. No.	Cat. No.	Price	Case of
50mL	19/38	26510 50	**10-101**	Pk. of 6/207.19	2 Pk./301.94
125mL	24/40	26510 125	**10-101A**	Pk. of 6/149.42	2 Pk./218.13
250mL	24/40	26510 250	**10-101B**	Pk. of 6/153.13	2 Pk./223.56
500mL	24/40	26510 500	**10-101D**	Pk. of 6/159.82	2 Pk./233.31
1000mL	24/40	26510 1000	**10-101E**	Pk. of 2/74.32	6 Pk./324.53
2000mL	24/40	26510 2000	**10-310-83**	Ea./47.09	----

Kimax* Flasks with Reinforced Beaded Top

Tooled heavy-duty top finish

- Durable white enamel capacity scale
- Uniformly thick walls
- Long tapered outside contour
- 250, 300, and 500mL sizes can use covers in place of stoppers
- Stoppers not included

10-039G

COMPLIANCE:
Designed from ASTM* E 1404, Type I, Class 1 requirements

Capacity	Stopper No.	Mfr. No.	Cat. No.	Price	Case of
25mL	0	26500 25	**10-039B**	Pk. of 12/59.85	4 Pk./174.72
50mL	1	26500 50	**10-039C**	Pk. of 12/59.85	4 Pk./174.72
125mL	5	26500 125	**10-039D**	Pk. of 12/57.21	4 Pk./167.04
250mL	6	26500 250	**10-039F**	Pk. of 12/59.19	4 Pk./172.80
300mL	6	26500 300	**10-039G**	Pk. of 12/73.66	4 Pk./215.04
500mL	7	26500 500	**10-039H**	Pk. of 6/37.32	6 Pk./163.44
1000mL	9	26500 1000	**10-039K**	Pk. of 6/60.67	4 Pk./177.12
2000mL	10	26500 2000	**10-039M**	Pk. of 4/94.25	2 Pk./137.60
4000mL	10	26500 4000	**10-039P**	Ea./74.72	4/218.16
6000mL	10	26500 6000	**10-039Q**	Ea./137.41	4/401.20

Kimax* Titration Flasks

Wide mouth

- Heavy-duty tooled top finish
- Thick walls
- Long tapered outside contour
- Durable white graduations on side
- Stoppers not included

10-091B

COMPLIANCE:
Designed from ASTM* E 1404, Type I, Class 2 requirements

Capacity	Stopper No.	Mfr. No.	Cat. No.	Pack of	Case of
125mL	6	26650 125	**10-091A**	12/67.19	4 Pk./196.09
250mL	8	26650 250	**10-091B**	12/71.49	4 Pk./208.62
500mL	10	26650 500	**10-091C**	6/45.12	6 Pk./197.30
1000mL	11	26650 1000	**10-091D**	6/75.12	4 Pk./219.22
2000mL	13	26650 2000	**10-091E**	4/93.84	2 Pk./136.91

ERLENMEYER—ACCESSORIES

*Fisherbrand** Covered Lead Rings for Flasks

Stabilize Erlenmeyer flasks immersed in water baths

- Reduce costly breakage and spilling
- Tough chemical-resistant coating

05-869 Series

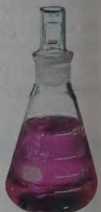
For Flask Size	I.D.	Cat. No.	Each
125 to 500mL	1⅝" (41mm)	**05-869-5**	18.17
250 to 1000mL	2" (51mm)	**05-869-6**	20.08
500 to 2000mL	2⅛" (56mm)	**05-869-7**	23.93
1000 to 4000mL	2¾" (70mm)	**05-869-8**	25.87

ERLENMEYER-GLASS WITH STOPPERS

Pyrex* Flasks with Barrelhead ₸ Stopper

Narrow mouths

- Graduated scales
- Marking areas


10-098D

Capacity	₸ Stopper No.	Mfr. No.	Cat. No.	Price	Case of
25mL	16	5020 25	**10-098B**	Ea./24.42	12/213.90
50mL	19	5020 50	**10-098C**	Ea./27.98	12/207.75
125mL	22	5020 125	**10-098D**	Pk. of 6/166.92	2 Pk./246.89
250mL	27	5020 250	**10-098E**	Pk. of 6/199.27	2 Pk./296.58
500mL	32	5020 500	**10-098G**	Ea./42.95	8/245.14
1000mL	32	5020 1L	**10-098H**	Ea./59.24	6/233.97

Pyrex* Iodine Determination Flasks with Barrelhead ₸ Stopper

Specially designed flasks blown in molds to ensure uniformity and proper contour

With ₸ 22 barrelhead stoppers that project above liquid seal trough to facilitate removal of stopper.

10-094A

COMPLIANCE:
ASTM* D 29 and D 555

Capacity	Mfr. No.	Cat. No.	Price	Case o
125mL	5400 125	**10-094A**	Pk. of 6/242.59	2 Pk./360.75
250mL	5400 250	**10-094B**	Ea./59.29	8/312.1
500mL	5400 500	**10-094C**	Ea./70.08	6/283.3

*Trademark. See Trademark Reference.

yrex* Low Actinic Flasks with Narrow Iouth, Ŧ Stopper

or laboratory applications involving hemicals sensitive to light

- Low actinic stained glass provides protection for photosensitive materials
- Uniform wall thickness provides mechanical strength, durability, and thermal shock resistance

C55020-250

apacity	Ŧ Stopper No.	Mfr. No.	Cat. No.	Each
50mL	27	55020 250	**C55020-250**	59.53

yrex* Graduated Erlenmeyer Flasks with Vide Mouths, Screw Caps

leal for all media prep and storage eeds

- Can be used with large-volume serological pipets
- Single-size plug-seal cap
- Wide, 29mm neck opening

10-041-6A

apacity	Approx. O.D. × H	Mfr. No.	Cat. No.	Case of
50mL	81 × 140mm	4995 250	**10-041-6A**	6/193.20
00mL	102 × 185mm	4995 500	**10-041-6B**	6/209.64
000mL	128 × 225mm	4995 1L	**10-041-6C**	6/246.52
000mL	160 × 268mm	4995 2L	**10-041-6D**	1/60.33
000mL	206 × 335mm	4995 4L	**10-041-6E**	1/114.73
000mL	235 × 395mm	4995 6L	**10-041-6F**	1/140.53

imax* Flasks with Pennyhead Ŧ Stopper

or volatile or hygroscopic liquids

- Narrow mouths
- Graduated scales

OMPLIANCE:
esigned from ASTM* E 1404, Type II, Class 2 quirements

10-100E

apacity	Ŧ Stopper No.	Mfr. No.	Cat. No.	Price	Case of
5mL	16	26600 25	**10-100B**	Pk. of 2/47.07	6 Pk./206.16
0mL	19	26600 50	**10-100C**	Pk. of 2/45.76	6 Pk./200.40
25mL	22	26600 125	**10-100D**	Pk. of 2/54.36	6 Pk./238.08
50mL	27	26600 250	**10-100E**	Pk. of 2/65.29	6 Pk./285.96
00mL	32	26600 500	**10-100F**	Pk. of 2/80.96	4 Pk./236.40
000mL	32	26600 1000	**10-100G**	Ea./52.01	6/227.76

Kimax* Iodine Determination Flasks with PTFE Stopper

250mL size

- Analyze dry shellac and shellac varnishes according to ASTM* D 29
- Determine total iodine value of oils, fatty acids, and bodied oils according to ASTM D 1541

500mL size

- Test drying oils for use in paints and varnishes according to ASTM D 555

COMPLIANCE:
Designed from ASTM E 1404, Type II, Class 3 requirements

10-096A

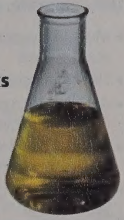
Capacity	Mfr. No.	Cat. No.	Pack of 2	Case of
125mL	27200 125	**10-096A**	94.82	6 Pk./414.04
250mL	27200 250	**10-096B**	109.55	4 Pk./319.28
500mL	27200 500	**10-096C**	131.94	3 Pk./288.42

ERLENMEYER—PLASTIC

Nalgene* Polycarbonate Flasks, Narrow-Mouth

Clear, unbreakable, strong graduated flasks especially useful in clinical work

- Molded-in graduations
- 500mL size is superior combustion flask for microdetermination of fluorine
- Autoclavable, but repeated autoclaving may result in some loss of mechanical strength
- Without stoppers



10-041-15C

Capacity	Stopper Ŧ No.	Mfr. No.	Cat. No.	Pack of	Case of
50mL	1	4103 0050	**10-041-15A**	----	36/229.48
125mL	5	4103 0125	**10-041-15B**	12/129.75	2 Pk./173.00
250mL	6	4103 0250	**10-041-15C**	6/86.78	2 Pk./115.71
500mL	7	4103 0500	**10-041-15D**	4/85.26	3 Pk./170.50
1000mL	9	4103 1000	**10-041-15E**	2/62.00	3 Pk./124.00

Nalgene* Polymethylpentene Flasks with Caps

Safer than glass flasks when used in shakers

- Clear, chemically inert, and transparent to microwave radiation
- Fully autoclavable; completely disengage threads or remove closure before autoclaving
- Ideal for preparation and storage of culture media and titrations

INCLUDES:
Polypropylene screw closures

10-042-5E

Capacity	Closure Size	Mfr. No.	Cat. No.	Pack of	Case of
125mL	33mm	4109 0125	**10-042-5C**	6/83.09	4 Pk./221.58
250mL	38mm	4109 0250	**10-042-5E**	4/70.01	3 Pk./140.02
500mL	43mm	4109 0500	**10-042-5G**	4/103.39	3 Pk./206.77
1000mL	53mm	4109 1000	**10-042-5J**	2/75.16	3 Pk./150.31

Nalgene* Polypropylene Flasks

Break and chemical resistant

- Translucent
- Autoclavable
- 2000mL size has molded-in graduations
- Without stoppers

10-041-10A

Capacity	Stopper No.	Mfr. No.	Cat. No.	Pack of	Case of
50mL	1	4102 0050	**10-041-10A**	12/94.48	3 Pk./188.96
125mL	3	4102 0125	**10-041-10B**	12/113.30	2 Pk./151.06
250mL	6	4102 0250	**10-041-10C**	6/73.49	2 Pk./97.99
500mL	7	4102 0500	**10-041-10D**	4/67.13	3 Pk./134.25
1000mL	8	4102 1000	**10-041-10E**	2/53.07	3 Pk./106.15
2000mL	10	4102 2000	**10-041-10F**	2/67.51	3 Pk./135.00

Nalgene* FEP Flasks with Caps

Unbreakable, graduated flasks

- Made of chemical-resistant FEP with Tefzel* ETFE screw closure
- Nearly transparent
- Autoclavable; completely disengage threads or remove closure before autoclaving
- For trace metal work, chemically sterilize or boil in concentrated nitric acid
- Withstands temperatures from -270° to +205°C (-454° to +401°F); closure, from -100° to +150°C (-148° to +302°F)

10-041-16C

Capacity	Closure Size	Mfr. No.	Cat. No.	Each	Case of 4
50mL	24mm	4106 0050	**10-041-16A**	53.16	141.75
125mL	33mm	4106 0125	**10-041-16B**	92.34	246.25
250mL	38mm	4106 0250	**10-041-16C**	127.12	339.00

FILTERING

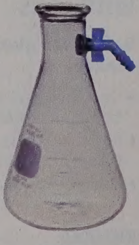
Pyrex* Filtering Flask with Plastic Tubulation

Replaceable plastic side arm secured by neoprene grommet

- Heavy wall glass flask
- Angled downward to reduce tendency of tubing to overturn flask
- Permanent white enamel graduations and marking spot

ORDERING INFORMATION:

Tubulation O.D. is ½" (12.5mm), accepts ⅜" I.D. (9.5mm) flexible tubing



10-180T

Capacity	Stopper No.	Mfr. No.	Cat. No.	Case of
500mL	7	5341 500	**10-180T**	1/38.16
4000mL	12	5341 4L	**10-462-849**	4/470.72

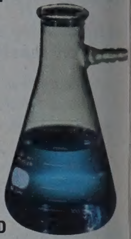
Pyrex* Filtering Flasks with Tubulation

Tubulations for easy connections to filter pumps

- Heavy walls, graduated on sides, flat bottoms
- Necks finished to give excellent fitting for rubber stoppers
- Sizes 25, 50, and 125mL suited for microanalysis
- All sizes are graduated except 25, 50, and 125mL

ORDERING INFORMATION:

Tubulation O.D. for 25 and 50mL flasks is 8mm; for sizes 125 to 1000mL, 10mm; for 2000 and 4000mL, 12.5mm



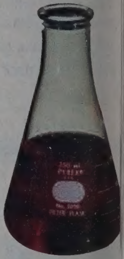
10-180D

Capacity	Stopper No.	Mfr. No.	Cat. No.	Price	Case o
25mL	3	5360 25	**10-180A**	Pk. of 6/149.68	3 Pk./330.7
50mL	4	5360 50	**10-180B**	Pk. of 6/152.92	3 Pk./333.7
125mL	5	5360 125	**10-180C**	Pk. of 6/158.47	3 Pk./348.3
250mL	6	5340 250	**10-180D**	Pk. of 6/124.84	3 Pk./266.6
500mL	7	5340 500	**10-180E**	Pk. of 6/155.96	3 Pk./342.2
1000mL	8	5340 1L	**10-180F**	Pk. of 6/323.08	2 Pk./481.7
2000mL	9	5340 2L	**10-180G**	Ea./128.11	12/956.9
4000mL	12	5340 4L	**10-180H**	Ea./169.34	6/702.8

Pyrex* Heavy-Wall Filtering Flasks, Graduated

Shaped to give maximum mechanical strength

- Erlenmeyer form with heavy walls, graduated on side
- Marked "Filter Flask" for quick, easy identification
- White marking spot
- Without tubulations
- Stoppers not included



10-041A

Capacity	Stopper No.	Mfr. No.	Cat. No.	Price	Case o
250mL	6	5320 250	**10-041A**	Pk. of 6/113.09	3 Pk./248.6
500mL	7	5320 500	**10-041B**	Pk. of 6/256.59	3 Pk./565.4
1000mL	8	5320 1L	**10-041C**	Pk. of 6/350.51	2 Pk./511.8
2000mL	9	5320 2L	**10-041D**	Ea./118.93	12/954.4
4000mL	12	5320 4L	**10-041E**	Ea./150.23	6/625.91

Pyrex* Vista* Heavy-Wall Filter Flask

Sidearm tubulations and graduated to show approximate capacity

Neck finish affords a fit for rubber stoppers.

ORDERING INFORMATION:

Tubulation O.D. is 10mm

COMPLIANCE:

Designed to ASTM* E-1406 Type 2

07-250-096

Capacity	Mfr. No.	Cat. No.	Pack of 6	Case of 2 P
250mL	70340-250	**07-250-096**	75.46	110.1
500mL	70340-500	**07-250-097**	96.83	141.3
1000mL	70340-1L	**07-250-098**	204.44	298.4

yrex* Vista* Micro Filter Flask

mall flasks recommended for microchemical use

- Permanent blue enamel marking spots
- With tubulation

OMPLIANCE:
esigned to ASTM* E-1406 Type 2

07-250-095

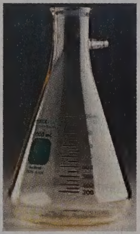
apacity	Mfr. No.	Cat. No.	Pack of 6	Case of 2 Pk.
25mL	70360-25	**07-250-093**	103.99	151.80
0mL	70360-50	**07-250-094**	104.89	153.12
25mL	70360-125	**07-250-095**	109.46	159.79

yrexPlus* Filtering Flasks with Tubulation

yrex* borosilicate glass with PVC coating reduces chance of breakage

- Graduated to show approximate capacity
- Uncoated tubulation allows easy connection of standard size tubing
- Autoclavable to 121°C (250°F)

RDERING INFORMATION:
ubulation O.D. is ⅜" (10mm) on 250, 500 and 1000mL izes; ½" (12.5mm) on 2000 and 4000mL sizes



10-180L

IOTE:
o not place over direct heat or open flame. Do not heat above 121°C 250°F) with moist heat or 110°C (230°F) with dry heat.

apacity	Mfr. No.	Cat. No.	Each	Case of
50mL	65340 250	**10-180J**	----	6/145.42
00mL	65340 500	**10-180K**	----	6/160.82
000mL	65340 1L	**10-180L**	----	6/344.04
000mL	65340 2L	**10-180M**	159.36	4/439.46
000mL	65340 4L	**10-180N**	234.47	2/322.75

Nalgene* Polypropylene Flasks with Angled Tubulation

Vithstand vacuum to 30"Hg

- Molded in one piece for strength
- Tubulation at 45° lessens chance of tipping
- Oval marking area
- Autoclavable
- Stoppers not included

RDERING INFORMATION:
arbed adapter accepts ¼ to ⅜" I.D. tubing

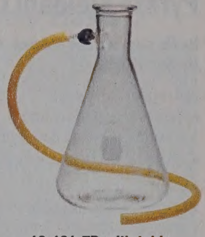
10-182-50A

apacity	Stopper No.	Mfr. No.	Cat. No.	Each
00mL	7	DS4101 0500	**10-182-50A**	15.34
000mL	8	DS4101 1000	**10-182-50B**	24.40
000mL	10	DS4101 2000	**10-182-51**	29.17

Kimax* Flasks with Quick-Release Hose Connector

Allow safe attachment of ¼" I.D. (6mm) tubing

- Tubing remains permanently attached to hose barb and opposite end attaches to flask tubulation with positive threaded seal
- Proper positioning of connector provides greater flask stability, as tubing angled downward has less tendency to tilt flask
- Graduated with approximate volume scale in durable white ceramic enamel
- Tubing and stoppers sold separately



10-181-7D with tubing (not included)

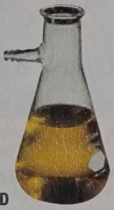
Capacity	Stopper No.	Mfr. No.	Cat. No.	Price	Case of
250mL	6	27070 250	**10-181-7B**	Pk. of 2/40.92	----
500mL	7	27070 500	**10-181-7C**	Pk of 2/83.21	4 Pk./242.83
1000mL	8	27070 1000	**10-181-7D**	Ea./49.91	----
2000mL	13	27070 2000	**10-181-7E**	Ea./87.23	----
4000mL	12	27070 4000	**10-181-7F**	Ea./115.44	----

Kimax* Flasks with Side Arm

Heavy walled with graduated scale, side tubulation, tooled neck

- Sizes 25 and 50mL suitable for microanalysis
- Sizes 25 through 500mL have side hose connections for 5⁄16" I.D. (8mm) flexible tubing
- Sizes 1000mL and larger accept ⅜" I.D. (9.5mm) tubing

COMPLIANCE:
Designed from ASTM* E 1406, Type II requirements



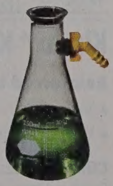
10-181D

Capacity	Stopper No.	Mfr. No.	Cat. No.	Price	Case of
25mL	3	27060 25	**10-181A**	Pk. of 6/152.07	3 Pk./333.00
50mL	4	27060 50	**10-181B**	Pk. of 6/152.07	3 Pk./333.00
250mL	6	27060 250	**10-181D**	Pk. of 6/116.97	3 Pk./256.14
500mL	7	27060 500	**10-181E**	Pk. of 6/204.68	3 Pk./448.20
1000mL	8	27060 1000	**10-181F**	Pk. of 6/323.05	2 Pk./471.60
2000mL	9	27060 2000	**10-181G**	Ea./106.96	12/936.84
4000mL	12	27060 4000	**10-181H**	Ea./157.10	6/688.02

Kimax* Flasks with Detachable Side Arm

Detachable plastic side arm secured by neoprene grommet

- Erlenmeyer form with heavy wall
- White graduated scale
- Tooled mouth
- Autoclavable plastic side arm is designed to accept 5⁄16" I.D. flexible tubing
- Bent grommet reduces tendency of rubber hose to overturn empty flask



10-181-5A

Capacity	Stopper No.	Mfr. No.	Cat. No.	Price	Case of
250mL	6	27065 250	**10-181-5A**	Pk. of 2/68.63	9 Pk./450.90
500mL	7	27065 500	**10-181-5B**	Pk. of 2/98.67	9 Pk./648.18
1000mL	8	27065 1000	**10-181-5C**	Pk. of 2/157.55	6 Pk./690.00
2000mL	9	27065 2000	**10-181-5D**	Ea./134.12	6/587.40
4000mL	12	27065 4000	**10-181-5E**	Ea./157.56	4/460.04

KJELDAHL

Pyrex* Kjeldahl Connecting Bulbs

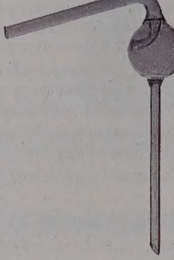
Bulb separates vapor from liquid in distillation

Spherical Bulbs

- Curved inner tube sealed to the upper arm prevents carryover during distillation
- Upper tube is 12mm long; lower is 9mm

Cylindrical Bulbs

- Low price trap designed to replace previously accepted types
- Square glass plate, sealed at the corners in lower part of bulb, acts as an efficient baffle
- Shown to be as efficient as more expensive type with two bent inner tubes
- Drains completely
- Large bottom tube facilitates the return of any condensate to the flask
- Upper tube is 12mm long; lower is 12mm



13-177A

Bulb Type	Bulb Diameter	Mfr. No.	Cat. No.	Pack of 2	Case of
Spherical	48mm	1980 48	**13-177A**	----	4/827.19
Spherical	65mm	1980 65	**13-177B**	----	12/902.36
Cylindrical	36mm	2040	**13-188**	137.09	12 Pk./1221.59

Pyrex* Kjeldahl Flasks

Long necks, round bottoms, substantial walls

- Size 100mL and larger have strong tool-finished mouths
- 30mL size (neck not tooled) is suited for multiple microdigestion apparatus
- Avoid contact between flask bottoms and heating elements

COMPLIANCE:
30mL meets ASTM* E 147; 100mL and larger meet ASTM E 258 requirements

10-110B

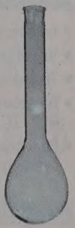
Capacity	Stopper No.	Mfr. No.	Cat. No.	Pack of 6	Case of
30mL	0	5440 30	**10-110B**	----	18/333.55
100mL	2	5420 100	**10-110C**	101.39	4 Pk./285.71
300mL	5	5420 300	**10-110D**	----	24/580.41
500mL	6	5420 500	**10-110E**	144.05	4 Pk./420.83
800mL	7	5420 800	**10-110G**	140.75	3 Pk./311.09

Kimax* Kjeldahl Flasks

Reinforced bead at the top

- Tooled neck
- Without stoppers

COMPLIANCE:
Designed from ASTM* E 1377, Type I requirements



10-111B

Capacity	Stopper No.	Mfr. No.	Cat. No.	Pack of 6	Case of
100mL	1	27400 100	**10-041-24A**	107.59	4 Pk./313.59
500mL	6	27400 500	**10-111B**	153.02	4 Pk./446.00
800mL	7	27400 800	**10-111C**	139.42	3 Pk./304.76

REACTION

Pyrex* Organic Reaction Kettles

Covers have four openings to accommodate interchangeable ₮ joints, allowing quick assembly with condensers, stirrers, funnels

- Glass kettles designed for organic reactions involving viscous materials
- Wide mouth for easy cleaning of interior
- Covers have heavy pressed construction
- Lower sections moldblown for breakage resistance
- Finely ground flanges for tight seal
- 500 and 1000mL sizes have interchangeable covers with four ₮ 24/40 joints; 2000, 3000, 4000mL sizes have one ₮ 34/45 and three ₮ 24/40 joints

CERTIFICATION:
CSA approved

11-847A kettle assembly is held together by 11-847-30A clamp and placed in 11-847-15A mantle to heat reaction (order all separately).

Complete Assembly

Includes bottom and cover. Order clamp and mantle separately.

Capacity	O.D. × H	Mfr. No.	Cat. No.	Eac
500mL	3¾ × 8¼" (9.5 × 21cm)	6947 500	**11-847A**	391.2
1000mL	4$\frac{5}{16}$ × 8⅝" (11 × 22cm)	6947 1L	**11-847B**	429.6
2000mL	5½ × 9$\frac{7}{16}$" (14 × 24cm)	6947 2L	**11-847C**	443.1
3000mL	5½ × 12⅝" (14 × 32cm)	6947 3L	**11-847D**	542.7
4000mL	5½ × 15¾" (14 × 40cm)	6947 4L	**11-847E**	518.0

Bottom Only

For Kettle	Mfr. No.	Cat. No.	Each	Case of
11-847A	6947 500BO	**11-847-10A**	----	659.7
11-847B	6947 1LBO	**11-847-10B**	226.64	625.0
11-847C	6947 2LBO	**11-847-10C**	----	963.2
11-847D	6947 3LBO	**11-847-10D**	----	1221.5
11-847E	6947 4LBO	**11-847-10E**	344.20	949.4

Cover Only

For Kettle	Mfr. No.	Cat. No.	Each	Case of
11-847A, B	6947 500CO	**11-847-5A**	----	829.4
11-847C, D, E	6947 2LCO	**11-847-5B**	416.05	573.8

*Trademark. See Trademark Reference.

Prices subject to change.

RECOVERY

ontes* Heavy-Wall Recovery Flasks with quare Bead Ŧ Outer Joint

deal for use with rotary evaporators

- Single-neck flask
- Designed for easy recovery of reaction products
- Total contents are accessible with a spatula or policeman
- Lower portion fits standard heating mantles
- Even wall thickness and minimum runout

K294300-0050

ith Square Bead

apacity	Ŧ Joint No.	Approx. Dia.	Cat. No.	Each
0mL	24/40	48mm	**K608675-4124**	27.90
0mL	29/42	48mm	**K608675-6129**	25.03
00mL	24/40	60mm	**K608675-4224**	24.15
00mL	29/42	60mm	**K608675-6229**	24.98
00mL	24/40	76mm	**K608675-4324**	29.70
00mL	29/42	76mm	**K608675-6329**	29.49
00mL	24/40	102mm	**K608675-4624**	49.50
00mL	29/42	102mm	**K608675-6629**	44.20
000mL	24/40	130mm	**K608675-4724**	58.32
000mL	29/42	130mm	**K608675-6729**	61.88
000mL	24/40	161mm	**K608675-4824**	82.14
000mL	29/42	161mm	**K608675-6829**	81.20

ith Standard Bead

apacity	Ŧ Joint No.	Approx. Dia.	Cat. No.	Each
0mL	14/20	31mm	**K294300-0010**	18.66
0mL	19/22	31mm	**K294305-0010**	18.80
5mL	14/20	42mm	**K294300-0025**	18.66
5mL	19/22	42mm	**K294305-0025**	18.80
0mL	14/20	48mm	**K294300-0050**	25.60
0mL	19/22	48mm	**K294305-0050**	18.80
0mL	24/25	48mm	**K608675-0124**	24.36
00mL	14/20	60mm	**K294300-0100**	19.43
00mL	19/22	60mm	**K294305-0100**	22.05
00mL	24/25	60mm	**K608675-0224**	24.90
00mL	29/26	60mm	**K608675-0229**	26.31
25mL	19/22	68mm	**K294305-0125**	24.36
00mL	14/20	76mm	**K294300-0200**	25.14
00mL	19/22	76mm	**K294305-0200**	25.39
00mL	24/25	76mm	**K608675-0324**	32.06
00mL	29/26	76mm	**K608675-0329**	33.37
00mL	24/25	102mm	**K608675-0624**	46.18
00mL	29/26	102mm	**K608675-0629**	49.36
000mL	29/26	130mm	**K608675-0729**	62.75
000mL	29/26	161mm	**K608675-0829**	86.24

SPINNER

Corning* ProCulture* Spinner Flasks

High performance

- ▸ Dynamic Vortex Impeller extends above gas-liquid surface to ensure constant top-to-bottom liquid media and cell motion
- ▸ Baffles provide enhanced agitation
- ▸ Wide angled side arms give easy access for 25 and 50mL pipets for feeding and harvesting
- ▸ Complete with impeller and caps

09-552-71

10-205Q

10-203 Series

Capacity	Center Neck Dia.	Side Arm Dia.	Mfr. No.	Cat. No.	Each
Standard Mouth					
125mL	70mm	32mm	4500 125	**10-203A**	346.71
250mL	70mm	32mm	4500 250	**10-203B**	361.77
500mL	100mm	45mm	4500 500	**10-203C**	379.80
1L	100mm	45mm	4500 1L	**10-203D**	550.44
3L	100mm	45mm	4500 3L	**10-203E**	611.02
6L	100mm	45mm	4500 6L	**10-303F**	733.52
8L	100mm	45mm	4500 8L	**10-203G**	849.27
Wide Mouth					
3L	120mm	45mm	4502 3L	**09-552-71**	644.04
Extra-Wide Mouth					
3L	140mm	45mm	4504 3L	**10-205Q**	825.69
6L	140mm	45mm	4504 6L	**10-205R**	875.23

Corning* Disposable Spinner Flasks NEW

Ready-to-use system comes with paddle and integrated magnet, eliminating the need for time-consuming assembly or cleaning and reassembly

07-201-152

- Made of ISO 10993 polystyrene
- Comparable to conventional glass spinner flasks for growth of suspension cell lines and any attachment-dependent cultures using microcarrier beads
- Paddle size and height are optimized for each vessel size
- Magnet provides a smooth, even rotation at required speeds on any laboratory slow speed stirrer
- Heat build-up in the vessel is reduced by means of a specially designed flange that raises the vessel off the stir-plate surface
- Flared base provides extra stability and support

Capacity	Center Neck Dia.	Side Arm Dia.	Mfr. No.	Cat. No.	Case of 12
125mL	70mm	32mm	3152	**07-201-152**	716.88
500mL	100mm	45mm	3153	**07-201-153**	840.48

Kontes* Cytostir* Stirred Bioreactors

Heavy borosilicate glass flasks with two large side arms and screw-cap closures that permit easy sampling

K882910 Series

- Domed bottom prevents microcarriers from accumulating directly under the stirring blades
- Large, height-adjustable PTFE-resin blades provide maximum stirring efficiency at slow speeds
- Center closure is PTFE-resin-lined polypropylene
- Sidearm closures are red polybutylene terephthalate (PBT) with a PTFE-resin-faced liner (100 to 500mL sizes) or blue polypropylene with a sealing ring (one liter and larger sizes)
- Flasks 1L and larger have antidrip pour lips
- Autoclavable

Capacity	Approx. Dia. × H	Screw Cap Size	Side Arm Size	Cat. No.	Each
100mL	72 × 120mm	70mm	25mm	**K882910-0100**	190.67
250mL	83 × 155mm	70mm	32mm	**K882910-0250**	204.01
500mL	110 × 190mm	70mm	32mm	**K882910-0500**	240.13
1L	130 × 215mm	100mm	45mm	**K882910-1000**	285.31
3L	181 × 305mm	100mm	45mm	**K882910-3000**	388.42
6L	203 × 392mm	100mm	45mm	**K882910-6000**	501.43
8L	259 × 420mm	100mm	45mm	**K882910-8000**	610.01

DON'T SEE THE RIGHT PRODUCT?

For microcarriers to enhance the growth and attachment of anchorage dependent cells, see Growth Environments in the Cell Culture section.

Wheaton MantaRay* Single-Use Spinner Flasks

Cost-effective alternative to glass spinner flasks

22-288-528; Stir plate not include

- Eliminate washing and sterilization steps as well as potential exposure to broken glass and contaminated cultures
- Presterilized and disposable MantaRay consists of a freestanding polyethylene/polypropylene container with fill cap and two sealed ports for pumps or injectors
- Built-in stirrer efficiently mixes at low speeds while avoiding damage to fragile cells
- Use for suspension culture or adherent cells on microcarrier beads for increased surface area
- Working volume range is 400 to 1000mL
- Space-saving design is shorter than, yet has the same headspace as, similar volume flasks

Mfr. No.	Cat. No.	Case
W356805-1	**22-288-528**	1/62.
W356805-4	**22-288-529**	4/201.

Wheaton Magna-Flex* Spinner Flasks

Produce high-yield cultures by maintaining even circulation while keeping microcarriers in suspension

06-416-1 Series

- Borosilicate glass flasks
- Two large side arms with screw-cap closures
- Flex-type, bulb-shaped glass impeller rotates from a fixed position above the liquid level around an indentation in the base of the flask
- Graduated
- Removable stainless-steel pin immobilizes the impeller during handling or decanting to prevent damage to cells or microcarriers
- Autoclavable flasks and impellers for selected sizes can also be ordered separately
- U.S. Patent No. 3,854,704

Capacity	Cap Size	Side Arm Size	Mfr. No.	Cat. No.	Ea
Flask with impeller					
125mL	51mm–440	33mm–430	356830	**06-416-1A**	162.
250mL	51mm–440	33mm–430	356831	**06-416-1B**	181.
500mL	100mm–440	45mm	356832	**06-416-1C**	245.
1000mL	100mm–440	45mm	356834	**06-416-1D**	353.
3000mL	100mm–440	45mm	356837	**06-416-1E**	452.
Flask only					
125mL	51mm-440	33mm-430	356916	**06-416-7C**	102.
500mL	100mm-440	45mm	356922	**06-416-7E**	197.
6L	100mm-440	45mm	356839	**03-344-01**	606.
Impeller only					
125mL	----	----	356841	**06-416-4A**	89.

*Trademark. See Trademark Reference.

Prices subject to change.

Wheaton Celstir* Spinner Double Side Arm Flasks

NEW

Provide maximum surface between culture and glass flask

- PTFE-resin coated glass impeller does not protrude through cap and has bottom dimple for more efficient stirring
- Silicone rubber-lined cap
- Autoclavable

06-416-2D

Without Water Jacket

Capacity	Screw Cap Size	Side Arm Size	Mfr. No.	Cat. No.	Each
Flask, impeller and caps					
25mL	38mm-430	15mm-415	356873	**06-416-2A**	159.74
50mL	38mm-430	15mm-415	356875	**06-416-2B**	158.38
125mL	51mm-440	33mm-430	356876	**06-416-2C**	192.64
250mL	51mm-440	33mm-430	356879	**06-416-2D**	210.18
500mL	100mm-440	45mm	356882	**06-416-2E**	308.78
1000mL	100mm-440	45mm	356884	**06-416-2J**	341.31
3000mL	100mm-440	45mm	356887	**06-416-2F**	507.50
6000mL	100mm-440	45mm	356889	**06-416-2G**	664.25
8000mL	100mm-440	45mm	356890	**06-416-2H**	787.64
Flask only					
50mL	38mm-430	15mm-415	356915	**06-416-7B**	78.36
125mL	51mm-440	33mm-430	356916	**06-416-7C**	102.90
500mL	100mm-440	45mm	356922	**06-416-7E**	197.75
1L	100mm-440	45mm	356924	**02-911-584**	248.21

With Water Jacket

Capacity	Screw Cap Size	Side Arm Size	Mfr. No.	Cat. No.	Each
Flask, impeller and caps					
25mL	38mm-430	15mm-415	356943	**06-416-3A**	249.19
50mL	38mm-430	15mm-415	356945	**06-416-3B**	286.69
125mL	51mm-440	33mm-430	356946	**06-416-3C**	401.11
250mL	51mm-440	33mm-430	356949	**06-416-3D**	449.00
500mL	100mm-440	45mm	356952	**06-416-3E**	515.92
1000mL	100mm-440	45mm	356954	**06-416-3F**	607.86

VOLUMETRIC—CLASS A

Class A Tolerances for Volumetric Flasks

The Fisherbrand*, Corning*, and Kimble* flasks on pp. 771-780 are calibrated within the following volume tolerances as specified in ASTM E288, E542, and E694 Standards:

Flask Capacity	Tolerance
1mL	±0.01mL
2mL	±0.015mL
5mL	±0.02mL
10mL	±0.02mL
25mL	±0.03mL
50mL	±0.05mL
60mL	±0.05mL
100mL	±0.08mL
110mL	±0.08mL
200mL	±0.10mL
250mL	±0.12mL
500mL	±0.20mL
1000mL	±0.30mL
2000mL	±0.50mL

Pyrex* Flasks Serialized and Certified with ₮ Barrelhead Stopper

Calibrated "To Contain" within Class A tolerances

- Individually serialized and supplied with a Certificate of Identification and Capacity
- Individually calibrated and certified against equipment whose calibration is traceable to NIST*

10-211E

Capacity	Stopper ₮ No.	Mfr. No.	Cat. No.	Each
10mL	9	5680 10	**10-211V**	35.87
25mL	9	5680 25	**10-211A**	42.79
50mL	9	5680 50	**10-211B**	45.69
100mL	13	5680 100	**10-211C**	49.15
200mL	13	5680 200	**10-211D**	52.27
250mL	16	5680 250	**10-211E**	55.96
500mL	19	5680 500	**10-211F**	69.31
1000mL	22	5680 1L	**10-211G**	84.49
2000mL	27	5680 2L	**10-211H**	105.99

Low Actinic Flasks

Capacity	Stopper ₮ No.	Mfr. No.	Cat. No.	Each
10mL	9	55680-10	**11-850-23**	48.84
25mL	9	55680-25	**11-850-27**	53.37
50mL	9	55680-50	**11-850-30**	55.30
100mL	13	55680-100	**11-850-24**	56.33
200mL	13	55680-200	**11-850-26**	68.17
250mL	16	55680-250	**11-850-28**	73.83
500mL	19	55680-500	**11-850-31**	88.82
1000mL	22	55680-1L	**11-850-25**	98.10
2000mL	27	55680-2L	**11-850-29**	128.12

Kimax* Flasks Serialized and Certified

Calibrated "To Contain" within Class A tolerances

- Permanently marked with individual serial numbers
- Individually calibrated and certified against equipment whose calibration is traceable to NIST*

COMPLIANCE:
Designed from requirements for Class A, serialized flasks of ASTM* E 288

10-201C 10-212B

With ₮ Pennyhead Stopper

Capacity	Stopper ₮ No.	Mfr. No.	Cat. No.	Each	Case of
10mL	9	28017 10	**10-212AA**	47.65	12/417.00
25mL	9	28017 25	**10-212BB**	56.69	12/496.56
50mL	9	28017 50	**10-212A**	60.59	12/530.40
100mL	13	28017 100	**10-212B**	67.86	12/594.36
200mL	16	28017 200	**10-212C**	69.25	12/606.60
250mL	16	28017 250	**10-212D**	74.14	12/649.44
500mL	19	28017 500	**10-212E**	91.87	12/804.72
1000mL	22	28017 1000	**10-212F**	111.99	6/490.44
2000mL	27	28017 2000	**10-212G**	141.83	4/414.08

With Snap Caps

500mL size is suitable for determining specific gravity of fine aggregate according to ASTM* C 128.

Capacity	Mfr. No.	Cat. No.	Each	Case of
50mL	28012 50	**10-201A**	31.70	12/276.59
100mL	28012 100	**10-201B**	35.52	12/309.87
250mL	28012 250	**10-201C**	49.47	12/431.58
500mL	28012 500	**10-201D**	48.83	12/426.05
1000mL	28012 1000	**10-201E**	66.01	6/288.24

CLASS A VOLUME TOLERANCES FOR ASTM* E288, AND E542, E694

Flask Cap.	Tol.	Flask Cap.	Tol.	Flask Cap.	Tol.	Flask Cap.	Tol.
1mL	±0.01mL	25mL	±0.03mL	110mL	±0.08mL	1000mL	±0.30mL
2mL	±0.015mL	50mL	±0.05mL	200mL	±0.10mL	2000mL	±0.50mL
5mL	±0.02mL	60mL	±0.05mL	250mL	±0.12mL	----	----
10mL	±0.02mL	100mL	±0.08mL	500mL	±0.20mL	----	----

*Fisherbrand** PFA Flasks with Screw Caps

Calibrated "To Contain" within Class A tolerances

Suitable for trace element analysis, isotope separations, sample digestions, and the handling of sensitive biological solutions.

02-617-15 Series

- Made from PFA copolymer
- Translucent
- Deliver outstanding chemical and solvent resistance over a temperature range of -260° to +270°C
- Extremely low absorption and permeability levels associated with PFA
- Graduation lines are highly legible, accurate, and permanent
- Autoclavable
- Can be sterilized using gas, dry heat, gamma irradiation, or chemical disinfectant

INCLUDES:
PFA screw closures to provide a secure seal from outside contamination

COMPLIANCE:
Meet ASTM* E 288, E 542, and E 694 standards

Capacity	Tolerance	Cat. No.	Each
25mL	±0.03mL	**02-617-152**	112.42
50mL	±0.05mL	**02-617-153**	131.45
100mL	±0.08mL	**02-617-154**	143.33
250mL	±0.12mL	**02-617-155**	203.85
500mL	±0.20mL	**02-617-156**	231.94

*Fisherbrand** White Line Flasks with ₮ Stoppers

- Economically priced for most analytical work
- White permanently etched graduation lines
- With ₮ ground-glass stoppers

COMPLIANCE:
Calibrated within listed volume tolerances for Class A as specified in ASTM* E 288, E 542, and E 694 standards

10-205D

Capacity	Tolerance	Stopper ₮ No.	Cat. No.	Each	Case of
25mL	±0.03mL	9	**10-205A**	85.94	12/711.24
50mL	±0.05mL	9	**10-205B**	102.52	12/848.41
100mL	±0.08mL	13	**10-205C**	100.33	12/830.37
250mL	±0.12mL	16	**10-205D**	116.91	12/967.54
500mL	±0.20mL	19	**10-205E**	190.04	12/1572.73
1000mL	±0.30mL	22	**10-205F**	229.24	4/632.41

Without Stoppers

Same as 10-205 Series, except without stoppers and ground-glass tops. Use rubber stoppers.

Capacity	Tolerance	Cat. No.	Each	Case of
25mL	±0.03mL	**10-200A**	53.21	12/440.34
50mL	±0.05mL	**10-200B**	53.28	12/440.91
100mL	±0.08mL	**10-200C**	60.12	12/497.57
200mL	±0.10mL	**10-200D**	66.03	12/546.49
250mL	±0.12mL	**10-200E**	69.75	12/577.22
500mL	±0.20mL	**10-200F**	90.02	12/745.01
1000mL	±0.30mL	**10-200G**	111.79	4/308.39

Pyrex* Class A EZ Access* Flasks

esigned for microchemical work

- Heavy-duty, wide mouth facilitates filling and mixing
- Easy-to-read graduation line is sharp and permanent
- Class A tolerances

Vith Glass Stoppers

nterchangeable ₮ 13 ground-glass stoppers

RDERING INFORMATION:
eplacement stoppers, order 14-640-1B

08-549-12B

.D. × H	Capacity	Mfr. No.	Cat. No.	Case of 6
40 × 100mm	25mL	5635 25	**08-549-12A**	147.04
51 × 130mm	50mL	5635 50	**08-549-12B**	153.20
55 × 160mm	100mL	5635 100	**10-462-873**	229.45
35 × 180mm	250mL	5635 250	**10-462-874**	289.80

Low Actinic

Low actinic stained glass provides protection for materials sensitive to light

Retain mechanical strength, chemical stability and thermal resistance.

O.D. × H	Capacity	Stopper ₮ No.	Mfr. No.	Cat. No.	Case of 6
Supplied with Interchangeable Stopper					
40 × 100mm	25mL	13	55635-25	**13-646-23**	193.87
65 × 160mm	100mL	16	55635-100	**13-646-22**	288.82
85 × 180mm	250mL	19	55635-250	**13-646-24**	361.24
Flask Only					
----	25mL	----	55635-25FO	**11-850-19**	179.41
----	50mL	----	55635-50FO	**11-850-20**	194.67

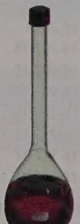
Pyrex* Class A Flasks

alibrated "To Contain"

olerances specified in Class A Tolerance chart.

Vith Screw Cap

- Poly-Seal* screw cap ensures a leakproof closure
- Black phenolic caps have inert, cone-shaped polyethylene liners
- Mouths of all sizes are wide enough to accept powder funnels



10-207B

Capacity	GPI Thread	Mfr. No.	Cat. No.	Pack of 6	Case of
25mL	18-410	5650 25	**10-207A**	----	12/370.52
50mL	18-410	5650 50	**10-207B**	217.17	2 Pk./316.80
100mL	18-410	5650 100	**10-207C**	225.18	2 Pk./328.48

Pyrex* Class A Flasks, Contd.

With Snap Cap

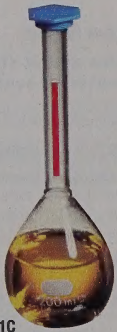
- Machine-blown bodies with sealed heavy-beaded, heavy-tubing necks tooled for snap-cap fit
- Sharp graduation lines for accuracy
- Sizes 1 to 25mL are suitable for micro work
- Sizes 1 and 2mL are test-tube shaped
- Plastic snap caps with sizes 10mL and larger

20-810B

Capacity	Mfr. No.	Cat. No.	Price	Case of
1mL	5580 1	**20-809A**	----	12/119.15
2mL	5580 2	**20-809B**	----	12/136.58
10mL	5580 10	**20-810A**	Ea./24.96	12/193.80
25mL	5580 25	**20-810B**	Pk. of 6/141.52	2 Pk./206.66
50mL	5580 50	**10-202A**	Pk. of 6/145.36	2 Pk./212.34
100mL	5580 100	**10-202B**	Pk. of 6/160.07	2 Pk./241.89
200mL	5580 200	**10-202C**	Pk. of 6/190.13	2 Pk./277.73
250mL	5580 250	**10-202D**	Pk. of 6/204.55	2 Pk./298.86
500mL	5580 500	**10-202E**	Pk. of 6/248.64	2 Pk./363.26
1000mL	5580 1L	**10-202F**	Ea./56.02	6/229.90
2000mL	5580 2L	**10-202G**	Ea./84.21	4/232.29

With Lifetime Red* Graduations, Snap Cap

- Same as 10-202 Series flasks except capacity markings are fine lines etched through narrow red bands
- Graduation lines are highly legible, accurate, and permanent
- Plastic snap cap



10-202-1C

Capacity	Mfr. No.	Cat. No.	Price	Case of
25mL	5600 25	**10-202H**	----	12/216.08
50mL	5600 50	**10-202-1A**	Pk. of 6/136.29	2 Pk./199.08
100mL	5600 100	**10-202-1B**	Pk. of 6/158.91	2 Pk./232.17
200mL	5600 200	**10-202-1C**	Pk. of 6/181.50	2 Pk./265.14
250mL	5600 250	**10-202-1D**	Pk. of 6/195.25	2 Pk./285.26
500mL	5600 500	**10-202-1E**	Pk. of 6/237.36	2 Pk./346.77
1000mL	5600 1L	**10-202-1F**	Ea./53.29	6/220.49
2000mL	5600 2L	**10-202-1G**	Ea./81.09	4/223.61

LOOKING FOR MORE EZ ACCESS* FLASKS?

Heavy duty, wide-mouth flasks are also available. For a complete listing,

Visit www.fishersci.com and search for EZ Access

Pyrex* Class A Square Flasks

Calibrated "To Contain"

- Require less shelf space (15-20%) than round flasks
- Graduation line is sharp and permanent
- Large white block letters make the inscription easy to read
- With PTFE color-coded keyhole stopper

COMPLIANCE:

Manufactured to Class A tolerances as established by ASTM* E-694 for volumetric ware, ASTM E-542 for calibration of volumetric ware, and ASTM E-288 for volumetric flasks

13-646-30

Capacity	Tolerance	O.D. × H	Stopper ₷ No.	Mfr. No.	Cat. No.	Eac
50mL	±0.05mL	35 × 140mm	9	5670-50	**11-850-32**	39.0
100mL	±0.08mL	44 × 175mm	13	5670-100	**13-646-47**	38.71
200mL	±0.10mL	55 × 230mm	13	5670-200	**13-646-27**	94.84
250mL	±0.12mL	58 × 242mm	16	5670-250	**13-646-28**	94.84
500mL	±0.20mL	72 × 300mm	19	5670-500	**13-646-30**	117.81
1000mL	±0.30mL	86 × 350mm	22	5670-1L	**13-646-26**	136.7
2000mL	±0.50mL	110 × 410mm	27	5670-2L	**13-646-29**	180.2

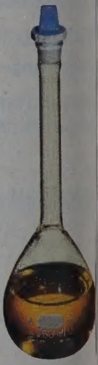
Pyrex* Class A Volumetric Flasks

Machine-blown bodies sealed to heavy-beaded, heavy-tubing necks

- High thermal and chemical resistance
- Sharp, clear graduation lines
- Calibrated "To Contain" within Class A Tolerances

With ₷ Polyethylene Stoppers

- Necks are ground for ₷ stopper
- Linear high-density, closed-bottom polyethylene stoppers
- Stopper ₷ sizes: 8 (5mL); 9 (10, 25, 50); 13 (100, 200); 16 (250); 19 (500); 22 (1000); 27 (2000)



10-210-5E

Capacity	Mfr. No.	Cat. No.	Price	Case o
5mL	5642 5	**10-210-5L**	----	1/22.7
10mL	5642 10	**10-210-5M**	----	12/238.5
25mL	5642 25	**10-210-5A**	Pk. of 6/178.26	2 Pk./260.3
50mL	5642 50	**10-210-5B**	Pk. of 6/191.98	2 Pk./280.3
100mL	5642 100	**10-210-5C**	Pk. of 6/199.14	2 Pk./290.7
200mL	5642 200	**10-210-5D**	Pk. of 6/232.46	2 Pk./339.3
250mL	5642 250	**10-210-5E**	Pk. of 6/246.98	2 Pk./360.5
500mL	5642 500	**10-210-5F**	Pk. of 6/317.15	2 Pk./463.3
1000mL	5642 1L	**10-210-5G**	Ea./68.42	6/282.7
2000mL	5642 2L	**10-210-5H**	Ea./85.56	4/235.9

Contd. on next page

Pyrex* Class A Voumetric Flasks, Contd.

With Lifetime Red* Graduation and ₮ Stopper

Capacity mark is a fine line etched through a narrow red band for high legibility and accuracy.

10-210-8D

Capacity	Stopper ₮ No.	Mfr. No.	Cat. No.	Price	Case of
25mL	9	5660 25	**10-210-8A**	Pk. of 6/206.49	2 Pk./301.60
50mL	9	5660 50	**10-210-8B**	Pk. of 6/220.04	2 Pk./321.46
100mL	13	5660 100	**10-210-8C**	Pk. of 6/234.81	2 Pk./343.01
200mL	13	5660 200	**10-210-8D**	Pk. of 6/271.20	2 Pk./396.22
250mL	16	5660 250	**10-210-8E**	Pk. of 6/292.78	2 Pk./427.76
500mL	19	5660 500	**10-210-8F**	Pk. of 6/363.27	2 Pk./530.67
1000mL	22	5660 1L	**10-210-8G**	Ea./77.69	6/321.40
2000mL	27	5660 2L	**10-210-8H**	Ea./113.66	4/313.59

With ₮ Stoppers

- Sizes 1 to 10mL are for microchemistry
- Sizes 1 and 2mL are test-tube shaped
- Sizes 3000 to 6000mL have ₮ pennyhead stoppers
- Sizes 1 to 2000mL have Corning* barrelhead stoppers with flat tops in order to stand the inverted stopper on the table and reduce plug contamination

10-210C

Capacity	Stopper ₮ No.	Mfr. No.	Cat. No.	Price	Case of
1mL	8	5640 1	**20-812A**	Ea./33.56	12/276.95
2mL	8	5640 2	**20-812B**	Ea./35.80	12/295.51
5mL	8	5640 5	**20-812C**	Ea./27.98	12/230.87
10mL	9	5640 10	**20-812D**	Ea./33.39	12/276.30
25mL	9	5640 25	**10-210A**	Pk. of 6/206.49	2 Pk./301.60
50mL	9	5640 50	**10-210B**	Pk. of 6/220.04	2 Pk./321.46
100mL	13	5640 100	**10-210C**	Pk. of 6/234.81	2 Pk./343.01
200mL	13	5640 200	**10-210D**	Pk. of 6/271.54	2 Pk./396.22
250mL	16	5640 250	**10-210E**	Pk. of 6/293.14	2 Pk./427.76
500mL	19	5640 500	**10-210F**	Pk. of 6/363.73	2 Pk./530.67
1000mL	22	5640 1L	**10-210G**	Ea./77.69	6/321.40
2000mL	27	5640 2L	**10-210H**	Ea./98.31	4/270.77
3000mL	32	5640 3L	**10-210J**	----	1/268.04
4000mL	38	5640 4L	**10-210K**	----	1/303.09
5000mL	38	5640 5L	**10-210L**	----	1/343.94
6000mL	38	5640 6L	**10-210M**	----	1/402.78

Without Stoppers

10-210-1E
(stopper not included)

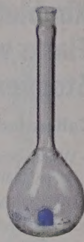
Capacity	Mfr. No.	Cat. No.	Case of
10mL	5640 10FO	**10-210-1B**	12/227.57
25mL	5640 25FO	**10-210-1C**	1/27.03
50mL	5640 50FO	**10-210-1D**	1/29.17
100mL	5640 100FO	**10-210-1E**	12/265.47
200mL	5640 200FO	**10-210-1F**	1/35.65
250mL	5640 250FO	**10-210-1G**	1/36.84
500mL	5640 500FO	**10-210-1H**	1/47.20
1000mL	5640 1LFO	**10-210-1J**	1/57.86

Pyrex* Vista* Volumetric Flasks

Necks are tooled for ₮ glass stoppers

- Provide precise volume measurement
- Graduation line is sharp and permanent
- Large blue block letters make the inscription easy to read

COMPLIANCE:
Manufactured to Class A tolerances as established by ASTM* E-694 for volumetric ware, ASTM E-542 for calibration of volumetric ware, and ASTM E-288 for volumetric flasks



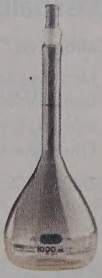
07-250-103

Capacity	Mfr. No.	Cat. No.	Pack of	Case of
10mL	70640-10	**07-250-099**	----	12/183.96
25mL	70640-25	**07-250-100**	6/137.52	2/200.76
50mL	70640-50	**07-250-101**	6/146.61	2/214.03
100mL	70640-100	**07-250-102**	6/156.42	2/228.36
200mL	70640-200	**07-250-103**	6/180.68	2/263.77
250mL	70640-250	**07-250-104**	6/195.07	2/284.77
500mL	70640-500	**07-250-105**	6/242.01	2/353.30
1000mL	70640-1L	**07-250-106**	1/50.22	2/73.31
2000mL	70640-2L	**07-250-107**	1/63.46	2/92.64

PyrexPlus* Volumetric Flasks

PVC coating on the outside reduces chance of breakage

- With Pyrex* glass stoppers
- Similar to 20-812 and 10-210 Series
- Autoclavable to 121°C (250°F)
- Easy-to-read graduation mark



10-240G

Capacity	Stopper ₮ No.	Mfr. No.	Cat. No.	Price	Case of
100mL	13	65640 100	**10-240C**	----	6/704.52
200mL	13	65640 200	**10-240D**	----	12/810.83
250mL	16	65640 250	**10-240E**	----	12/875.42
500mL	19	65640 500	**10-240F**	----	12/1085.15
1000mL	22	65640 1L	**10-240G**	Ea./123.80	4/341.42
2000mL	27	65640 2L	**10-240H**	Ea./156.44	2/215.74

WARNING
Do not place over direct heat or flame. Do not heat above 121°C (250°F) with moist heat or 110°C (230°F) dry heat.

CLASS A VOLUME TOLERANCES FOR ASTM* E288, AND E542, E694

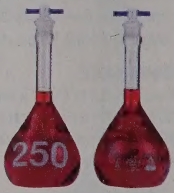
Flask Cap.	Tol.	Flask Cap.	Tol.	Flask Cap.	Tol.	Flask Cap.	Tol.
1mL	±0.01mL	25mL	±0.03mL	110mL	±0.08mL	1000mL	±0.30mL
2mL	±0.015mL	50mL	±0.05mL	200mL	±0.10mL	2000mL	±0.50mL
5mL	±0.02mL	60mL	±0.05mL	250mL	±0.12mL	----	----
10mL	±0.02mL	100mL	±0.08mL	500mL	±0.20mL	----	----

Kimble* Heavy-Duty Volumetric Class A Flasks with PTFE Stoppers

Calibrated "To Contain"

- Wall thickness and weight are at least double that of standard volumetric flasks
- Marking spot
- Color-coded PTFE stopper

COMPLIANCE:
Conform to ASTM* E 288, Type I, Class A unserialized flask tolerances as listed in Class A Tolerance chart.



K92810-250

Capacity	Stopper $ No.	Color Code	Mfr. No.	Cat. No.	Case of 12
50mL	9	Black	92810 50	**K92810-50**	362.88
100mL	13	Orange	92810 100	**K92810-100**	386.40
200mL	16	Blue	92810 200	**K92810-200**	452.16
250mL	16	Blue	92810 250	**K92810-250**	487.80
500mL	19	Green	92810 500	**K92810-500**	604.92

Kimax* Class A Flasks Unserialized with Snap Cap

Calibrated "To Contain"

- Meet Class A tolerances
- Graduation line is blasted on neck
- Enlarged top of cap will protect neck if flask is tippe over
- Polyethylene snap cap

COMPLIANCE:
Designed from ASTM* Specification E 288, Class A unserialized requirements

10-199-1J

Capacity	Mfr. No.	Cat. No.	Pack of	Case of
10mL	28008 10	**10-041-26K**	1/23.21	12/203.32
25mL	28008 25	**10-041-26M**	6/1478.87	12/215.88
50mL	28008 50	**K28008-50**	----	12/221.76
100mL	28008 100	**10-199-1J**	----	12/230.18
200mL	28008 200	**10-041-26L**	----	12/295.81
250mL	28008 250	**10-041-26N**	----	12/318.00
500mL	28008 500	**10-041-26P**	----	12/387.00
1000mL	28008 1000	**10-199-1H**	----	6/218.74
2000mL	28008 2000	**10-199-1K**	----	4/248.09

CLASS A VOLUME TOLERANCES FOR ASTM* E288, AND E542, E694

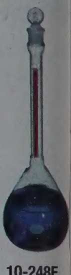
Flask Cap.	Tol.	Flask Cap.	Tol.	Flask Cap.	Tol.	Flask Cap.	Tol.
1mL	±0.01mL	25mL	±0.03mL	110mL	±0.08mL	1000mL	±0.30mL
2mL	±0.015mL	50mL	±0.05mL	200mL	±0.10mL	2000mL	±0.50mL
5mL	±0.02mL	60mL	±0.05mL	250mL	±0.12mL	----	----
10mL	±0.02mL	100mL	±0.08mL	500mL	±0.20mL	----	----

Kimax* Class A Flasks with Graduation Line Etched through Vertical Red Stripe

Calibrated "To Contain"

- Meet specifications in Class A Tolerances chart
- Colorless graduation is clearly legible against contrasting red background
- With $ pennyhead stoppers

COMPLIANCE:
Designed from requirements for Class A unserialized flasks of ASTM* E 288.



10-248E

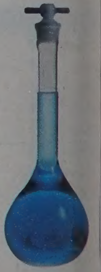
Capacity	Stopper $ No.	Mfr. No.	Cat. No.	Price	Case o
25mL	9	28013 25	**10-248A**	Pk. of 6/205.26	2 Pk./299.64
50mL	9	28013 50	**10-248B**	Pk. of 6/218.66	2 Pk./319.20
100mL	13	28013 100	**10-248C**	Pk. of 6/231.23	2 Pk./337.56
200mL	16	28013 200	**10-248D**	Pk. of 6/269.53	2 Pk./393.48
250mL	16	28013 250	**10-248E**	Pk. of 6/290.99	2 Pk./424.80
500mL	19	28013 500	**10-248F**	Pk. of 6/361.10	2 Pk./527.16
1000mL	22	28013 1000	**10-248G**	Ea./72.90	6/319.26
2000mL	27	28013 2000	**10-248H**	Ea./106.70	4/311.52

Kimax* Flasks with Color-Coded PTFE Stoppers

Calibrated "To Contain"

- Marking spot on 10mL and larger sizes
- The 2mL size is test-tube shaped; all other sizes are conventional flask shape
- Tolerances specified in Class A Tolerances chart
- Stopper $ sizes: 9 (2, 5, 10, 25, 50mL); 13 (100); 16 (200, 250); 19 (500); 22 (1000); 27 (2000)

COMPLIANCE:
Designed from ASTM* Specification E 288, Class A unserialized requirements.



10-280H

Capacity	Mfr. No.	Cat. No.	Price	Case of
2mL	28014F 2	**10-208B**	----	12/205.08
5mL	28014F 5	**10-208C**	----	12/245.28
10mL	28014F 10	**10-208D**	----	12/258.00
25mL	28014F 25	**10-208E**	Pk. of 6/192.76	2 Pk./281.40
50mL	28014F 50	**10-208F**	Pk. of 6/205.59	2 Pk./300.12
100mL	28014F 100	**10-208G**	Pk. of 6/218.73	2 Pk./319.32
200mL	28014F 200	**10-208H**	Pk. of 6/256.14	2 Pk./373.92
250mL	28014F 250	**10-208J**	Pk. of 6/276.35	2 Pk./403.44
500mL	28014F 500	**10-208K**	Pk. of 6/342.61	2 Pk./500.16
1000mL	28014F 1000	**10-208L**	Ea./69.88	6/306.06
2000mL	28014F 2000	**10-208M**	Ea./88.28	4/257.76

*Trademark. See Trademark Reference.

Prices subject to change.

imax* Flasks with ₮ ennyhead Stoppers

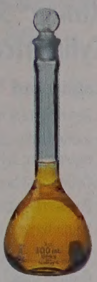
alibrated "To Contain"

Sizes 5mL and larger have designated volumes within Class A tolerances

Sizes 1 and 2mL are test-tube shaped

OMPLIANCE:

esigned from requirements for Class A unserialized asks of ASTM* E 288



10-209D

apacity	Stopper ₮ No.	Mfr. No.	Cat. No.	Price	Case of
nL	8	28014 1	**10-209AA**	----	12/272.52
nL	8	28014 2	**10-209BB**	----	12/293.52
nL	9	28014 5	**10-209M**	----	6/227.16
)mL	9	28014 10	**10-209A**	----	12/271.80
5mL	9	28014 25	**10-209B**	Pk. of 6/203.20	2 Pk./296.64
)mL	9	28014 50	**10-209C**	Pk. of 6/216.68	2 Pk./316.32
)0mL	13	28014 100	**10-209D**	Pk. of 6/231.23	2 Pk./337.56
)0mL	16	28014 200	**10-209E**	Pk. of 6/266.99	2 Pk./389.76
50mL	16	28014 250	**10-209F**	Pk. of 6/288.28	2 Pk./420.84
)0mL	19	28014 500	**10-209G**	Pk. of 6/357.57	2 Pk./522.00
)00mL	22	28014 1000	**10-209H**	Ea./72.19	6/316.20
)00mL	27	28014 2000	**10-209J**	Ea./91.23	4/266.36

imax* Flasks with ₮ olyethylene Stoppers

alibrated "To Contain"

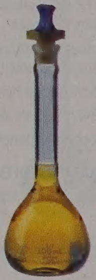
₮ ground neck

Enlarged top of stopper protects neck if flask is tipped over

Marking spot

Linear high-density, closed-bottom polyethylene stopper

Stopper ₮ sizes: 9 (5 to 50mL); 13 (100); 16 (200, 250); 22 (1000); 5 to 27 (2000)



10-212-5G

acity	Tolerance	Mfr. No.	Cat. No.	Price	Case of
L	±0.02mL	28014P 5	**10-212-5C**	----	Cs. of 12/260.16
nL	±0.02mL	28014P 10	**10-212-5D**	----	Cs. of 12/234.48
nL	±0.03mL	28014P 25	**10-212-5E**	Pk. of 6/175.41	2 Pk./256.08
nL	±0.05mL	28014P 50	**10-212-5F**	Pk. of 6/188.82	2 Pk./275.64
)mL	±0.08mL	28014P 100	**10-212-5G**	Pk. of 6/195.96	2 Pk./286.08
)mL	±0.10mL	28014P 200	**10-212-5H**	Pk. of 6/228.76	2 Pk./333.96
)mL	±0.12mL	28014P 250	**10-212-5J**	Pk. of 6/242.99	2 Pk./354.72
)mL	±0.20mL	28014P 500	**10-212-5K**	Pk. of 6/312.20	2 Pk./455.76
)0mL	±0.30mL	28014P 1000	**10-212-5L**	Ea./63.56	6/278.10
)0mL	±0.50mL	28014P 2000	**10-212-5M**	Ea./81.23	4/235.24

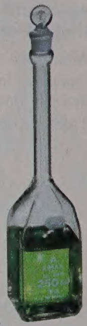
Kimax* Class A Square-Shaped Flasks

Calibrated "To Contain"

- Maximize small storage spaces
- Marking spots
- Cover 25 to 35% less area than conventional flasks
- Extra weight and square shape increase stability
- With ₮ stoppers

COMPLIANCE:

Retested for accuracy within ASTM* tolerances as specified in Class A Tolerances chart



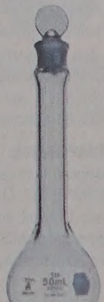
10-310-94

Capacity	Stopper ₮ No.	Mfr. No.	Cat. No.	Each
50mL	9	28040 50	**22-043527**	37.64
100mL	13	28040 100	**10-310-91**	37.28
200mL	16	28040 200	**10-310-219**	88.72
250mL	16	28040 250	**10-310-94**	88.28
500mL	19	28040 500	**10-310-95**	109.83
1000mL	22	28040 1000	**10-310-92**	127.09
2000mL	27	28040 2000	**10-310-93**	168.09

Kimax* Wide-Mouth Volumetric Flask

Calibrated "To Contain" within Class A tolerances

- #13 neck
- Provides easier pipet access
- Meets specifications in the volumetric flasks chart
- With glass stopper
- Capacity, 50mL



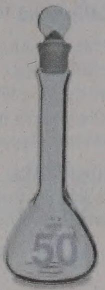
10-212-6

Mfr. No.	Cat. No.	Each	Case of 6
28014W 50	**10-212-6**	36.16	158.34

Kimax* Heavy-Duty Volumetric Flasks

Large numbers make it easy to identify volume from far away

- Wide mouth provides great pipet access
- Calibrated "To Contain" within Class A tolerances shown in Class A Tolerances chart
- Glass stopper



K92810W-50

Capacity	Tolerance	Stopper No.	Mfr. No.	Cat. No.	Each	Case of 6
10mL	±0.03mL	13	92810W 10	**10-310-235**	----	165.30
20mL	±0.03mL	13	92810W 20	**10-310-236**	----	165.30
25mL	±0.05mL	13	92810W 25	**10-310-237**	----	165.30
50mL	±0.05mL	13	92810W 50	**K92810W-50**	41.43	181.44
100mL	±0.08mL	16	92810W 100	**10-212-7A**	44.11	193.20
250mL	±0.12mL	19	92810W 250	**10-212-7B**	55.85	243.90

VOLUMETRIC—CLASS A MICROFLASKS

Pyrex* Serialized Cylindrical Microflasks

Calibrated "To Contain"

- Hexagonal base
- Interchangeable ₮ stoppers
- Sharp graduation lines, white markings
- Sizes 1, 2, and 5mL come with ₮ 8 stoppers; sizes 10 and 25mL, ₮ 9

COMPLIANCE:

Designed from requirements of ASTM* E 237, Class A serialized; Sizes 1 to 5mL are designed to meet standards of ACS Committee of Microchemical Apparatus, Analytical Division.

20-814 Series

Capacity	Tolerance	Mfr. No.	Cat. No.	Price	Case of
1mL	±0.01mL	5630 1	**20-814A**	Ea./49.02	12/405.56
2mL	±0.015mL	5630 2	**20-814B**	Ea./56.44	12/466.95
5mL	±0.02mL	5630 5	**20-814E**	Ea./55.27	12/457.08
10mL	±0.02mL	5630 10	**20-814F**	Ea./63.45	12/524.83
25mL	±0.03mL	5630 25	**20-814G**	Pk. of 6/419.88	2 Pk./613.34

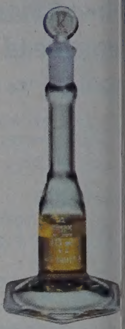
CLASS A VOLUME TOLERANCES FOR ASTM* E288, AND E542, E694

Flask Cap.	Tol.	Flask Cap.	Tol.	Flask Cap.	Tol.	Flask Cap.	Tol.
1mL	±0.01mL	25mL	±0.03mL	110mL	±0.08mL	1000mL	±0.30mL
2mL	±0.015mL	50mL	±0.05mL	200mL	±0.10mL	2000mL	±0.50mL
5mL	±0.02mL	60mL	±0.05mL	250mL	±0.12mL	----	----
10mL	±0.02mL	100mL	±0.08mL	500mL	±0.20mL	----	----

Kimax* Serialized/Certified Cylindrical Microflasks

Calibrated "To Contain"

- Permanently marked with individual serial number
- Individually calibrated and certified against equipment whose calibration is traceable to NIST*
- Cylindrical body for better mixing and draining
- Easier to withdraw samples using pipets
- Wide base provides stability
- Marking spot
- Ground glass stopper
- 1to 5mL sizes come with ₮ 8 stopper; 10 and 25mL sizes with ₮ 9 stopper



20-814-5F

COMPLIANCE:

Designed from requirements of ASTM* E 237, Class A serialized

Capacity	Tolerance	Mfr. No.	Cat. No.	Each	Case of
1mL	±0.01mL	28017A 1	**10-212J**	47.59	208.1
2mL	±0.015mL	28017A 2	**10-212K**	51.67	226.1
5mL	±0.02mL	28017A 5	**10-212H**	----	220.5
10mL	±0.02mL	28017A 10	**20-814-5F**	58.15	253.5
25mL	±0.05mL	28017A 25	**10-212L**	68.63	298.9

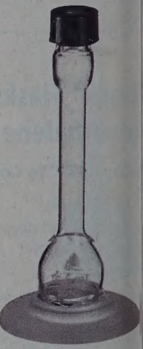
Kontes* Microflasks

Calibrated "To Contain"

- Class A, threaded flask
- PTFE-lined silicone septum for syringe access
- V-shaped bottom provides convenient sample retrieval
- Sandblasted base for writing
- 13-425 GPI thread finish
- Open-top phenolic cap

ORDERING INFORMATION:

Height, 2⅞" (7.3cm)



K297050-0005

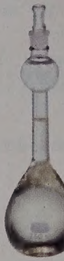
Capacity	Cat. No.	Eac
1mL	**K297050-0001**	23.4
2mL	**K297050-0002**	25.0
3mL	**K297050-0003**	25.9
5mL	**K297050-0005**	27.9
10mL	**K297050-0010**	29.8

VOLUMETRIC—CLASS A SPECIAL PURPOSE

Pyrex* Class A Flasks with Bulbed Neck

Calibrated "To Contain" at 20°C (68°F)

- Bulb has 1⁄10 of flask capacity for all sizes except 2000mL, which has 1⁄20 of flask capacity
- Extra capacity in neck is used for preliminary titration, leaving full volume for adjustment of normality of solution
- Tolerances specified on Class A Tolerances chart
- ₷ Barrelhead stoppers
- Stopper ₷ sizes: 13 (100); 16 (250); 19 (500); 22 (1000); 27 (2000)



10-224C

COMPLIANCE:

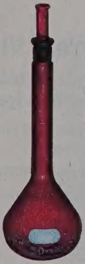
Meet specifications of Manufacturing Chemists Association

Capacity	Mfr. No.	Cat. No.	Case of
100mL	5820 100	**10-224B**	12/991.79
250mL	5820 250	**10-224C**	1/89.16
500mL	5820 500	**10-224D**	1/102.84
1000mL	5820 1L	**10-224E**	6/795.70
2000mL	5820 2L	**10-224F**	1/165.00

Pyrex* Class A Flasks for Light-Sensitive Materials

Calibrated "To Contain"

- Made of low actinic glass
- Filter out ultraviolet and most visible light below 500nm
- Tolerances specified on Class A Tolerances Chart
- ₷ Barrelhead stoppers



10-227B

Capacity	Stopper No.	Mfr. No.	Cat. No.	Pack of	Case of
10mL	9	55640 10	**10-227G**	----	12/354.81
25mL	9	55640 25	**10-227A**	6/268.87	2 Pk./406.47
50mL	9	55640 50	**10-227B**	1/57.93	12/461.88
100mL	13	55640 100	**10-227C**	1/55.70	12/462.53
250mL	16	55640 250	**10-227D**	1/72.40	12/567.79
500mL	19	55640 500	**10-227E**	1/94.67	----
1000mL	22	55640 1L	**10-227F**	1/116.23	----
Flask Only					
200mL	----	55640-200FO	**11-850-21**	----	12/440.86
250mL	----	55640-250FO	**11-850-22**	----	12/540.02

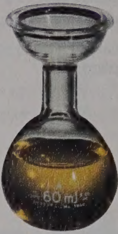
Pyrex* Class A Flask for Saybolt Viscosimeter

Calibrated "To Contain"

- Constricted neck
- Rugged mold-blown construction
- Tolerance, ±0.05mL
- Capacity, 60mL

COMPLIANCE:

Calibrated in accordance with ASTM* standards. Reference: ASTM D 88; ASTM E 102; U.S. Bureau of Mines Technical Paper 323B, No. 30.41; AASHTO No. T72



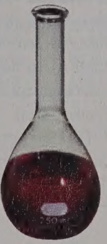
10-235

Mfr. No.	Cat. No.	Pack of 6	Case of 2 Pk.
5860 60	**10-235**	234.06	341.58

Pyrex* Flasks for Determining Phosphoric Acid in Fertilizer

Calibrated "To Contain," ±0.18mL limit of error

- Heavy construction to withstand vigorous shaking
- Wide neck
- Stopper not included



10-240B

Capacity	Mfr. No.	Cat. No.	Pack of 6	Case of 2 Pk.
200mL	5840 200	**10-240A**	198.01	288.84
250mL	5840 250	**10-240B**	196.97	287.38

Kimax* Class A Cassia Flask

Calibrated "To Contain"

- Official U.S. Pharmacopeia method to assay cinnamaldehyde and to analyze cassia, cinnamon, and clove extracts
- Determine amount of unsaturated constituents in straw oil or similar wash oils, by sulfonation method
- Tolerance: ±0.08mL
- Capacity: 100 to 110mL in 0.1mL divisions
- With ₷ 13 stopper

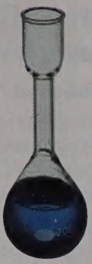
10-245

Mfr. No.	Cat. No.	Pack of 2	Case of 3 Pk.
28066 110	**10-245**	130.81	286.44

Kimax* Kohlrausch Flasks

Calibrated "To Contain"

- Meet tolerances specified in Class A Tolerances chart
- Easy to fill with solids; used in analysis of filter press cake
- Adjusted for use at 20°C (68°F)
- Stopper not included



10-260B

Capacity	Mfr. No.	Cat. No.	Pack of 2	Case of 6 Pk.
100mL	28100 100	**10-260A**	145.87	638.88
200mL	28100 200	**10-260B**	161.82	708.72

Kimax* Flasks for Light-Sensitive Materials

Calibrated "To Contain"

- Protection from wavelengths below 500nm for materials sensitive to light
- Class A, Ray-Sorb* processed glass
- Tolerances specified on Class A Tolerances chart
- Marking spots
- PTFE, $ stopper with color-coded handle
- Stopper $ sizes: 9 (10, 25, 50mL); 13 (100); 16 (200, 250); 19 (500); 22 (1000)

10-229 C

Capacity	Mfr. No.	Cat. No.	Price	Case of
10mL	28016 10	**10-229**	----	12/348.96
25mL	28016 25	**10-229A**	Pk. of 6/273.88	2 Pk./399.84
50mL	28016 50	**10-229B**	Pk. of 6/311.21	2 Pk./454.32
100mL	28016 100	**10-229C**	Pk. of 6/311.62	2 Pk./454.92
200mL	28016 200	**10-204-6**	----	12/460.56
250mL	28016 250	**10-229D**	Pk. of 6/382.72	2 Pk./558.72
500mL	28016 500	**10-229E**	Pk. of 6/735.03	2 Pk./1073.04
1000mL	28016 1000	**10-229F**	Ea./152.29	6/664.98

VOLUMETRIC—CLASS B

Class B Tolerances For Volumetric Flasks

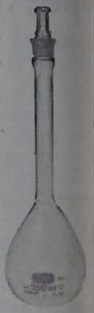
Tolerances for these volumetric flasks (Class B, Student, or Economy Grade) are twice those for Class A flasks.

Flask Capacity	Tolerance
10mL	± 0.04mL
25mL	±0.06mL
50mL	±0.10mL
100mL	±0.16mL
200mL	±0.20mL
250mL	±0.24mL
500mL	±0.40mL
1000mL	±0.60mL
2000mL	±1.00mL

Pyrex* Class B Flasks with $ Stopper

Calibrated "To Contain" at 20°C (68°F)

- Meet tolerance requirements listed in Class B Volume Tolerances chart
- Glass stopper
- Stopper $ sizes: 9 (10, 25, 50mL); 13 (100, 200); 16 (250); 19 (500); 22 (1000); 27 (2000)



10-206F

Capacity	Mfr. No.	Cat. No.	Price	Case of
10mL	5641 10	**10-206A**	----	12/238.71
25mL	5641 25	**10-206B**	Pk. of 6/180.23	2 Pk./263.19
50mL	5641 50	**10-206C**	Pk. of 6/190.55	2 Pk./278.39
100mL	5641 100	**10-206D**	Pk. of 6/207.31	2 Pk./302.86
200mL	5641 200	**10-206E**	Pk. of 6/237.20	2 Pk./346.50
250mL	5641 250	**10-206F**	Pk. of 6/251.20	2 Pk./366.87
500mL	5641 500	**10-206G**	----	12/460.89
1000mL	5641 1L	**10-206H**	Ea./68.52	6/283.41
2000mL	5641 2L	**10-206J**	Ea./98.67	4/272.08

Pyrex* Vista* Class B Flasks

Capacity tolerances are twice those specified for Class A volumetric ware

- Large, blue block letters make inscriptions easy to read
- Sharp, permanent graduation lines
- Snapcaps are supplied with all sizes

07-770-204

Capacity	Mfr. No.	Cat. No.	Pack of	Case of
10mL	70581-10	**07-770-200**	----	12/140.08
25mL	70581-25	**07-770-201**	6/99.33	2 Pk./152.82
50mL	70581-50	**07-770-202**	6/101.29	2 Pk./155.83
100mL	70581-100	**07-770-203**	6/116.32	2 Pk./178.96
250mL	70581-250	**07-770-204**	6/138.39	2 Pk./212.92
500mL	70581-500	**07-770-205**	6/172.96	2 Pk./266.09
1L	70581-1L	**07-770-206**	1/36.95	6/170.52
2L	70581-2L	**07-770-207**	1/57.30	4/176.31

*Trademark. See Trademark Reference.

Prices subject to change.

Nalgene* Class B Polymethylpentene Flasks with Screw Caps

Calibrated "To Contain" and "To Deliver" at 20°C (68°F)

10-198-52 Series

- Chemically inert, break resistant
- Autoclavable; completely disengage closure before autoclaving
- Leakproof (see definition below)
- Individually hand calibrated
- Polypropylene screw closures

INCLUDES:

Polypropylene screw closures

COMPLIANCE:

Meet ASTM* and ISO standards and tolerances in Class B Volume Tolerances chart

Capacity	Mfr. No.	Cat. No.	Each	Case of
50mL	4001 0050	**10-198-52A**	27.10	12/216.75
100mL	4001 0100	**10-198-52C**	29.07	12/232.50
250mL	4001 0250	**10-198-52E**	35.82	12/286.50
500mL	4001 0500	**10-198-52F**	43.31	8/231.00
1000mL	4001 1000	**10-198-52G**	55.43	6/221.75

Nalgene* Class B Polypropylene Flasks with Screw Caps

Calibrated "To Contain" and "To Deliver" at 20°C (68°F)

10-198-50D

- Break resistant, excellent chemical resistance
- Autoclavable; completely disengage closure before autoclaving
- Leakproof (see definition below)
- Individually hand calibrated
- Permanent color graduation line, oval marking spot
- No meniscus to confuse readings
- 200mL size has additional line at 203mL level for BOD and DO determinations
- Meet tolerances in Class B Tolerances chart
- Polypropylene screw closures

COMPLIANCE:

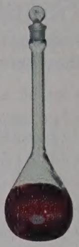
Meet ASTM* E 288 and ISO 384

Capacity	Mfr. No.	Cat. No.	Each	Case of
50mL	4000 0050	**10-198-50A**	26.94	12/215.50
100mL	4000 0100	**10-198-50B**	28.94	12/231.50
200mL	4000 0200	**10-198-50C**	32.53	12/260.25
250mL	4000 0250	**10-198-50D**	35.66	12/285.25
500mL	4000 0500	**10-198-50E**	43.13	8/230.00
1000mL	4000 1000	**10-198-50F**	55.19	6/220.75

†Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

Kimax* Class B Flasks with $ Pennyhead Stopper

Calibrated "To Contain"



10-204F

- Tolerances as specified in Class B Volume Tolerances chart
- $ ground glass stoppers
- Stopper $ sizes: 9 (1, 10, 25, 50mL); 13 (100); 16 (200, 250); 19 (500); 22 (1000); 27 (2000)

COMPLIANCE:

Designed from ASTM* E 288 Class B requirements.

Capacity	Mfr. No.	Cat. No.	Price	Case of
10mL	28015 10	**10-204A**	----	12/233.67
25mL	28015 25	**10-204B**	Pk. of 6/176.28	2 Pk./256.88
50mL	28015 50	**10-204C**	Pk. of 6/186.42	2 Pk./271.66
100mL	28015 100	**10-204D**	Pk. of 6/202.82	2 Pk./295.57
200mL	28015 200	**10-204E**	Pk. of 6/259.91	2 Pk./379.43
250mL	28015 250	**10-204F**	Pk. of 6/245.62	2 Pk./357.93
500mL	28015 500	**10-204G**	Pk. of 6/308.14	2 Pk./449.84
1000mL	28015 1000	**10-204H**	Ea./63.34	6/276.53
2000mL	28015 2000	**10-204J**	Ea./98.69	4/287.28

Kimax* Class B Flasks with Polyethylene Snap Cap

Calibrated "To Contain"

10-199F

- Meet Class B tolerances on Class B Volume Tolerances chart
- Permanent graduation line
- Polyethylene snapcap protects neck if tipped over

COMPLIANCE:

Designed from requirements for Class B flasks of ASTM* E 288.

Capacity	Mfr. No.	Cat. No.	Price	Case of
10mL	28010 10	**10-199A**	----	12/182.00
25mL	28010 25	**10-199B**	Pk. of 6/136.06	2 Pk./198.62
50mL	28010 50	**10-199C**	Pk. of 6/123.60	2 Pk./180.43
100mL	28010 100	**10-199D**	Pk. of 6/141.91	2 Pk./207.17
200mL	28010 200	**10-199E**	Pk. of 6/225.99	2 Pk./329.33
250mL	28010 250	**10-199F**	Pk. of 6/168.89	2 Pk./246.56
500mL	28010 500	**10-199G**	Pk. of 6/211.07	2 Pk./307.58
1000mL	28010 1000	**10-199H**	Ea./45.50	6/197.48
2000mL	28010 2000	**10-199J**	Ea./79.09	4/229.06

FLOOR MATS

*Fisherbrand** Adhesive Entryway Mats

Trap contaminating dirt, dust, and bacteria before they invade cleanrooms

- Tear-off, adhesive-coated polyethylene sheets
- Patented pull-tab system makes it easy to peel off top sheet when it becomes soiled; remaining sheets stay intact and clean
- Will not curl, tear or wrinkle
- Adhesive will not transfer to footwear
- Treated with antimicrobial agent
- Clear sheets on white mat; 2mil thickness

L x W	Cat. No.	Case of
Low-Tack Mats (40 sheets per mat)		
18 × 45" (46 × 114cm)	**19-181-506**	3/198.41
24 × 45" (61 × 114cm)	**19-181-507**	3/311.98
High-Tack Mats (30 sheets per mat)		
18 × 46" (46 × 117cm)	**19-181-508**	4/189.28
24 × 46" (61 × 117cm)	**19-181-509**	4/294.22
36 × 36" (91 × 91cm)	**19-181-510**	4/182.44
36 × 48" (91 × 122cm)	**19-181-511**	4/248.57

*Fisherbrand** Hard Surface Adhesive Mats

For sanitary conditions in cleanrooms

- When top sheet becomes soiled, just peel it off to expose fresh, clean surface
- Reorder notification on eighteenth sheet
- Blue sheets on blue mat

ORDERING INFORMATION:
Thirty sheets per mat

L x W	Cat. No.	Case of 4
Moderate-Tack Mats		
36 × 18" (91 × 46cm)	**19-181-519**	111.12
46 × 18" (117 × 46cm)	**19-181-518**	230.16
46 × 24" (117 × 61cm)	**19-181-520**	258.54
High-Tack Mats		
36 × 18" (91 × 46cm)	**19-181-516**	123.61
46 × 18" (117 × 46cm)	**19-181-517**	230.16

*Fisherbrand** Adhesive Roll Mop

Effectively removes dirt, debris, and lint

- Suitable for use on many surfaces including glass, plastic, metal, and cloth
- Picks up contaminants from hard-to-reach areas such as walls, ceilings, floors, benchtops, windows and corners
- Rolling mop unit with adhesive sheets connects to lightweight, 4' long (1.2m) aluminum handle—handle extends to 7' (2.1m)

06-527-50

- Roll is 18" wide (46cm) and contains 20 disposable, high-tack poly-foam sheets with bounce-back memory
- Perforations approximately every 14" (41cm) give easy access to fresh sheet

ORDERING INFORMATION:
Replacement 20-sheet rolls sold separately.

INCLUDES:
Four rolls and extendable handle

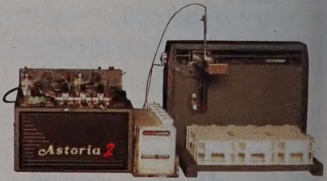
Description	Cat. No.	Each
Adhesive Roll Mop	**06-527-50**	320.89
Replacement Roll	**06-527-51**	48.13

FLOW ANALYZERS

Astoria-Pacific Astoria* 2 Micro Flow Analyzer System

Rapidly analyze microliters of sample for multiple analytes at sub-ppb and µM levels, with low dispersion, low carryover, and high reproducibility

Compact, integrated, dual-channel system combines the advantages of flow injection analysis (FIA) and segmented flow analysis (SFA), while minimizing the disadvantages. Highly reliable components ensure maximum system performance; technological innovations have resulted in improved performance at high rates of sample throughput. Offers several hundred methods in a diversity of applications ranging from nutrients and vitamins to fertilizers and pollutants.



200-S3 Series

Features and Benefits

- Rapid stabilization of detectors allows rapid start-up
- Tandem 2+2 model provides four channels of simultaneous analyses from a single sample
- Self-aligning flowcells allow for easy removal and replacement of flowcells
- Fast rinse-out of reagents and easy manifold detachment allow for rapid changeover of cartridges
- Pecking sampler and microbore glassware and tubing provide decreased dispersion and carryover, increased sample throughput
- Microliter flowrates/reagent usage, minimal reagent preparation time, and reduced hazardous waste mean reduced cost per sample
- Built-in self-monitoring system detects out-of-control and out-of-calibration conditions
- Results appear on screen in 15-20 minutes; printed results can be generated on demand at any time during or after the run; data between test channels can be manipulated and calculated automatically

Contd. on next page.

Astoria-Pacific Astoria* 2 Micro Flow Analyzer System, Contd.

FASPac Software System

- Controls the walk-away operation of the system, real-time reporting, calibration monitoring, and more; works within Windows* environment
- Controls, collects, and processes data from up to six digital channels and one analog channel simultaneously
- Offers sophisticated graphical presentation of information and data
- Easily customized to fit specific needs
- Sample tables can be imported from LIMS system and reports can be consolidated and exported to ASCII files or spreadsheet applications

ORDERING INFORMATION:

Electrical Requirements: Voltage: 105/125VAC, 220VAC (optional). Frequency: 60Hz, 50Hz (optional). Current: 5A.

Environmental Requirements: Operating Temperature: 15° to 35°C. Relative Humidity: Less than 80%.

REQUIRED ACCESSORIES:

A wide variety of cartridges is available to meet your application needs for the analysis of alkalinity, ammonia, chloride, hexavalent chromium, cyanide, fluoride, hardness, magnesium, nitrate/nitrite, nitrite, total Kjeldahl nitrogen, orthophosphate, phenol, total phosphorus, silicate, sulfate, sulfide and urea. Contact your Fisher Scientific Customer Service Representative to select a cartridge designed to meet your analysis needs.

WARRANTY:

Two years

Description	Includes	Cat. No.	Each
Astoria 2 System			
With 311XYZ Sampler	Astoria 2, 311XYZ Sampler, and FASPac II software	**200-S311-00**	33,499.38
Astoria 2+2 System			
With 311XYZ Sampler	Astoria 2+2, 311XYZ Sampler, and FASPac II software	**200-S311-01**	58,686.88

Model	Astoria 2
Sampler	311 XYZ random access sampler
Micropump	Integrated peristaltic pump with variable speed and leak detector
Cartridge	Space for two analytical cartridges. Two heating bath controllers.
Autodiluter	312 Autodiluter, software-controlled
Detector	Two integrated digital detectors. Built-in interface (IEEE port) allows the additional use of an external detector.
Software	FASPac II
Throughput	45–120 samples per hour, depending on method requirements
Sample Size	10–250µL, depending on method
Reagent Volume	Approximately 1mL/min., depending on method
Detection Range, Photometer	340-880nm
Limit of Sensitivity	As low as 0.5ppb, depending on method
Optical System	Digital dual-beam photometer
Light Source	Tungsten halogen lamp
Output	Digital with A/D conversion of an external analog detector

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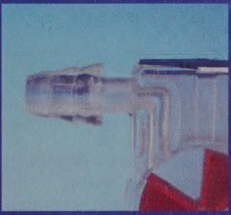
FLOW MONITORS

FLOW MONITORS

Visually monitor the flow of liquids or gas. Paddle-wheel monitor spins freely; ball model spins through circular course. Both increase speed with increase in flow.

Description	Monitors	Cat. No.	Each	Case of 12
Polystyrene Paddle Wheel	Liquids or gas, 5 to 95mL/sec.	**11-164-39**	47.44	486.61
Nylon Ball	Water, 100mL to 1L/min.	**K626250-0000**	15.89	----


11-164-39

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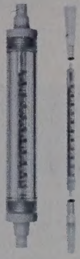
Visit www.fishersci.com and search for Flow Monitors

Thermo Scientific* Gilmont* Shielded Laboratory Flowmeters



15-078-103

- Made from corrosion-resistant materials
- Clear polycarbonate shield offers added strength and protection; ideal for pressure applications
- Fluid touches only borosilicate glass tube, PTFE inserts, Viton* fluoroelastomer O-rings, and either stainless-steel or glass floats
- Accept ⅜" (9.5mm) I.D. tubing
- Inserts accept flexible hose; polypropylene bushings are threaded to accept NPTF fittings
- Repeatability: ±1% of reading or ±0.5 scale division, whichever is greater
- Max. Temperature: 65°C (150°F) at full pressure rating

Calibrated/Correlated Style

Accuracy: ±2% of the reading or ±1 scale division[1].

INCLUDES:
Calibration table for air and water and comes with glass and stainless-steel floats.

		Flowrate (mL/min.)				
Tube Size	**Float**	**Air**	**Water**	**Max. PSI**	**Cat. No.**	**Each**
L × O.D.: 8 × 1" (20 × 3cm)						
Micro	Ruby	0.02–15	0.0002–0.12	125	**15-078-103**	202.73
L × O.D.: 10¼ × 1" (26 × 3cm)						
0	Glass	0.2–100	0.002–1.1	125	**15-078-106**	263.85
	316 SS	0.36–180	0.004–2.3			
1	Glass	1–280	0.01–4.0	125	**15-078-109**	239.41
	316 SS	2–500	0.02–8.6			
2	Glass	10–1900	0.2–36	100	**15-078-112**	258.77
	316 SS	20–3400	0.4–77			
3	Glass	200–14,000	3–300	75	**15-078-115**	258.77
	316 SS	360–25,000	6–640			

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[1] *For micro flowmeter, accuracy is ±5% of reading or ±2 scale division for air and ±10% of reading or ±3 scale division for water.*

Direct Reading Style[2]

Takes direct air and water readings without calibration curves. Accuracy: ±5% of reading or ±2mm of the scale length (whichever is greater).

INCLUDES:
An "R factor" chart (or use GF-4000 software formulas to convert scale readings for other fluids or for floats other than glass).

		Flowrate (mL/min.)				
Tube Size	**Float**	**Air**	**Water**	**Max. PSI**	**Cat. No.**	**Each**
10	Glass	0.2–90	0.002–1.1	125	**15-078-124**	174.21
	316 SS	0.36–160	0.004–2.3			
11	Glass	1–280	0.01–4.0	125	**15-078-126**	166.06
	316 SS	2–500	0.02–8.6			
12	Glass	20–2100	0.4–40	100	**15-078-128**	158.93
	316 SS	36–3700	0.86–86			
13	Glass	200–14,000	2–300	75	**15-078-130**	161.98
	316 SS	360–25,000	4–640			

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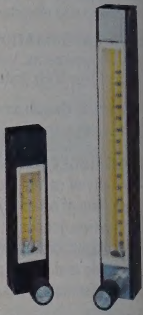
[2] *When using the stainless-steel float, refer to the correlation table (included) to obtain a proper reading.*

Thermo Scientific* Gilmont* Shielded Industrial Flowmeters

Ideal for measuring and controlling liquids and gases in lab and industrial applications



15-179-280 series and 15-179-130 series

Applications include gas chromatography, atomic absorption, chemical processing, and air and water pollution analysis. Conform to standard industry dimensions for easy retrofitting and direct replacements.

- Accuracy: ±5% of full scale
- Repeatability: 0.5% of reading
- Max. Pressure: 250psig
- Max. Temperature: 121°C (250°F)
- Front shields have 1.5X magnification for easy reading
- All models feature precision glass metering tubes, Unitized* tube holders for easy tube replacement, and glass, stainless-steel, or tungsten carbide floats

65mm Calibrated Models

Feature standard, 8-turn metering valve. Range: 10 to 1, 100% of full scale.

150mm Calibrated Models

Come in two styles: with standard, 8-turn metering valve or with 16-turn metering valve for critical flow regulation and adjustment. Range: 10 to 1, 100% to 10% full scale.

INCLUDES:
All models come with standard panel-mounting hardware and calibration tables for both air and water.

CERTIFICATIONS:
Certificate indicating instrument traceability to standards provided by NIST* available on request. Call your Fisher Scientific Customer Service Representative for details.

	Flowrate (mL/min.)		Aluminum		Stainless Steel	
Float	**Air**	**Water**	**Cat. No.**	**Each**	**Cat. No.**	**Each**
65mm Models with 8-turn Valve						
Glass	845–6318	4–147	**15-176-133**	114.17	**15-179-284**	229.46
Stainless	1973–12,058	42–364	**15-176-140**	114.73	**15-179-285**	229.46
Stainless	2272–24,680	127–745	**15-176-141**	114.73	**15-179-286**	229.46
Tungsten Carbide	6082–58,500	176-1866	----	----	**15-179-287**	241.76
150mm Models with 8-turn Valve						
Stainless	480–4562	5.4–133	**15-176-132**	167.08	**15-179-132**	282.28
Stainless	288–7590	6–217	**15-178-159**	168.00	**15-179-133**	282.27
Glass	462–22,536	15–541	**15-178-160**	181.31	**15-179-134**	294.37
150mm Models with 16-turn Valve						
Stainless	480–4562	5.4–133	**15-178-166**	223.50	**15-179-140**	402.24
Stainless	288–7590	6–217	**15-178-167**	223.50	**15-179-141**	402.24
Glass	462–22,536	15–541	**15-178-168**	228.43	**15-179-142**	415.35

*Trademark. See Trademark Reference.

Scienceware* Riteflow* Flowmeters

For corrosive and noncorrosive liquids and gases

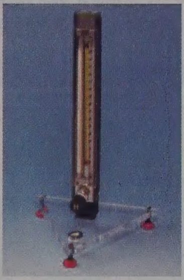
11-163-72A

Useful metering ratios are 10:1 or better. All flowmeters except size 1 may be used with dual float combinations to increase metering to 20:1. Pressure drop is negligible. Flow ranges are linear; low differential pressures are independent of flowrate changes.

- Heavy-walled borosilicate glass tubes with fused ceramic scales are shock resistant and chemically inert
- Can be used with almost any corrosive or noncorrosive gas or liquid
- Choice of five flowrate changes
- Accurate over a wide range of gas and liquid flowrates: from 0.03 to 1812mL/min. for water, and from 2.5 to 60,888mL/min. for air
- Accurate to within ±2% of full scale, with repeatability of ±0.25% of full scale

INCLUDES:

Calibration charts for air and water are included; charts for other gases and liquids are available from Bel-Art* on request at no charge.



11-163-77 Series with 11-163-80

NOTE:

Gaseous hydrofluoric acid may damage the glass.

Minimum and Maximum Flowrates for Scienceware Flowmeters[1]

		Air	Water
Size No.	**Float Material**	**mL/min.**	**mL/min.**
1	Glass	1.8–23	0.02–31
	Stainless	6.4–73	0.091–1.25
2	Glass	21–374	0.23–5.5
	Stainless	36–814	1.1–20.4
3	Glass	185–2313	1.6–53.5
	Stainless	480–4562	5.4–130.4
4	Glass	333.4–8678	3–209.5
	Stainless	996–16737	19–506.3
5	Glass	545.3–23564	13.1–567.9
	Stainless[2]	1790–44336	55.3–1369.9

[1] Flow capacities shown are based on calibrations at 70°F, 14.7psi

[2] Size 5 flowmeters are available with either stainless steel or Carboloy floats. Flowrates reflect stainless steel.

Mounted Flowmeters

Models with aluminum body have 1⁄8" female NPT connections with plastic hose barb for tubing with 5⁄16 to 3⁄8" I.D. PTFE body units have 3⁄8" O.D. (9.5mm) glass tube extensions.

ORDERING INFORMATION:

Overall housing length is 10½" (27cm). Length with leveling base is 12" (31cm). Order leveling base kit (11-163-80) separately below.

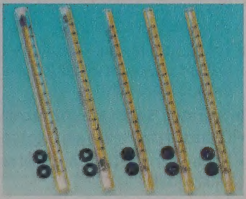
INCLUDES:

Metering tube mounted in an aluminum housing, an integral control valve, and two floats (one glass and one stainless steel; except size 5, which includes one glass and one Carboloy*).

Size	Max. PSI	Max. Temp.	Mfr. No.	Cat. No.	Each
150mm Models with Aluminum Body					
1	200	121°C (250°F)	H40407 0035	**11-163-75C**	204.77
2	200	121°C (250°F)	H40407 0075	**11-163-75E**	204.77
3	200	121°C (250°F)	H40407 0125	**11-163-75F**	204.77
4	200	121°C (250°F)	H40407 0215	**11-163-75G**	204.77
5	200	121°C (250°F)	H40407 0305	**11-163-75J**	243.91
150mm Models with PTFE Body					
1	100	65.5°C (150°F)	H40405 0035	**11-163-77C**	430.53
2	100	65.5°C (150°F)	H40405 0075	**11-163-77E**	450.56
3	100	65.5°C (150°F)	H40405 0125	**11-163-77G**	430.53
4	100	65.5°C (150°F)	H40405 0215	**11-163-77J**	430.53
5	100	65.5°C (150°F)	H40405 0305	**11-163-77M**	459.57

Unmounted Flowmeters

Two types available: plain or guarded. With the guarded model, the flowmeter tube is enclosed in a clear plastic guard tube with two end bushings.



11-163-70 Series

ORDERING INFORMATION:

All flowmeters have two floats: one glass and one stainless steel, except size 5, which has one glass and one Carboloy* float.

Size	Max. PSI	Max. Temp.	Mfr. No.	Cat. No.	Each
150mm Models with Plain Ends					
1	200	121°C (250°F)	H40401 0035	**11-163-70A**	106.90
2	200	121°C (250°F)	H40401 0075	**11-163-70C**	106.90
3	200	121°C (250°F)	H40401 0125	**11-163-70E**	106.90
4	200	121°C (250°F)	H40401 0215	**11-163-70G**	106.90
5	200	121°C (250°F)	H40401 0305	**11-163-70J**	139.87
150mm Guarded Models					
1	200	65.5°C (150°F)	H40403 0055	**11-163-72A**	217.56
2	200	65.5°C (150°F)	H40403 0095	**11-163-72C**	217.56
3	200	65.5°C (150°F)	H40403 0145	**11-163-72E**	217.56
4	200	65.5°C (150°F)	H40403 0235	**11-163-72G**	217.56
5	200	65.5°C (150°F)	H40403 0325	**11-163-72J**	243.91

ACCESSORIES

Leveling Base Kit

Assures flowmeter is exactly vertical.

For Cat. Nos.	Mfr. No.	Cat. No.	Each
11-163-75 and -77 Series	40404 1000	**11-163-80**	78.39

FLUOROMETERS

Shimadzu* RF-5301 Spectrofluorometer

Offers superior sensitivity, sophisticated functionality, and increased user control

Wide-application use including pharmaceutical, biochemistry, and food science. Performs measurement, data processing, editing, and recording with one mouse-click. Supports microcells, high-sensitivity cells, and LC-flow cells.

Superior Sensitivity

- High-throughput optical system uses a blazed holographic grating, photomultiplier, and digital circuit, for top-of-the-line sensitivity
- Measures spectrum in just seconds with high-speed scanning of up to 5500nm/min.
- Monochromator slewing at ultrahigh speed of 20,000nm/min.; allows easy setting of two or more wavelengths

Sophisticated Functionality and Measurement Modes

- Records changes in intensity over time for kinetic assays, or performs quantitative analysis on several samples
- Recalls up to 20 fluorescence standards to find best calibration curve for data
- Easy DNA quantification with Ethidium Bromide or Hoechst dye, OPA-derivatives of amino assays, cell viability assays and FITC or Rhodamine-labeled ligands; reads and averages relative fluorescence intensities of unknown samples; fits data to first-order through third-order curve, or force curve through zero
- Spectrum Measurement Mode differentiates spectra using colors and line patterns, zooms to autoscale all data, tabulates and picks peaks and valleys, and displays up to 10 spectra on screen
- Time-Course Measurement Mode monitors changes and measures reaction rates such as dehydrogenase activity; data collected up to every 0.02 seconds

Integrated Software for Increased User Control

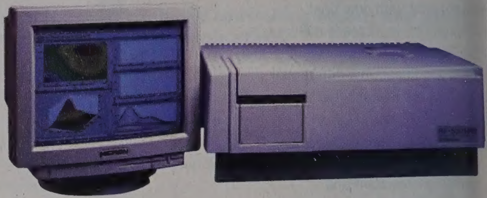
- Operating parameters are automatically verified when unit is turned on
- Noise level ratio check and light source usage monitoring help maintain optimal conditions
- Microsoft* Windows* environment features intuitive, menu-driven system, and online help
- SpeedBox* allows users to customize button shape or position, and eliminate keystrokes by assigning icons for common commands
- Easy data storage, retrieval, and file management
- RS-232 interface

APPLICATIONS:

Analyzing crude drugs; measuring trace components in foods, monitoring water and environmental pollutants; measuring trace components of organic and inorganic compounds.

ORDERING INFORMATION:

Dimensions (not including PC): 20⅞L × 26¼W × 10⅝"H (53 × 67 × 27cm). For 100–120V 50/60Hz, 400VA. Accessories, including sample holders and cell holders, available on our Web site.



22-092-33120 (monitor not included)

REQUIRED ACCESSORIES:

RS-232 cable (not included) to connect with computer, Microsoft Windows 3.1 or higher, plus PC with 486 or better processor, 8MB disk space, SVGA monitor, mouse, and CD-ROM drive.

Description	Cat. No.	Each
RF-5301PC Spectrofluorometer	22-092-33120	20,841.84

Specifications

Bandwidth	1.5, 3, 5, 10, 15 and 20nm†
Wavelength	
Range	220 to 750nm, 0 order standard
Accuracy	±1.5nm
Scan Speed	Survey (5500nm/min.), Super (3000nm/min.), Very Fast, Fast, Medium, Slow, Very Slow
Slewing Speed	20,000nm/min.
Response	0.02, 0.03, 0.1, 0.25, 0.5, 2, and 8 seconds for 98% of full scale
Sensitivity	High or Low‡
Lamp	Xenon lamp, 150w, Ozone-resolving housing
Optics	Concave, nonaberration, blazed holographic grating, F2.5, 1300 grooves/mm
Detector	Photomultiplier tube
Display	None
Temp. Range (Operating)	15 to 35°C (59 to 95°F)

† 6nm also available for half-sample height on excitation measurements.

‡ Signal-to-noise ratio is at least 150 for the Raman line of distilled water (@350nm excitation wavelength, 5nm spectral slitwidth, 2-second response for 98% of full scale).

LOOKING FOR ACCESSORIES?

Sample holders and cell holders are available online.

Visit www.fishersci.com and search for Sample and Cell Holders

Shimadzu* RF-1501 Spectrofluorometer

Provides exceptional sensitivity in a compact, economical instrument

Bright optical system and noise suppression digital filter allow for high sensitivity measurement.

Key Features

- Signal-to-noise ratio >300 for Raman line of distilled water
- 4-step selectable scanning speed—up to 3700nm/min.
- Wavelength slewing at ultrahigh speeds up to 30,000nm/min.
- Intuitive keypad operation
- Backlit LCD shows settings and parameters for wavelength scanning, quantitative analysis, and maintenance
- Manufactured with ISO 9001:2000-certified processes

Wavelength Scanning Functions

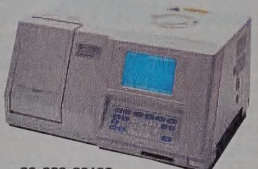
- Measurement of excitation and emission spectra
- Automatic search of optimal excitation and emission wavelengths
- Automatic response control
- Automatic shutter
- Spectrum expansion and compression
- Readout of spectrum values at cursor-specified points
- Peak pick
- Difference spectra
- Data printout

Quantitation

- Quantitation at fixed wavelengths
- Working curve generation (1st regression, 10-point)
- Working curve correction
- Repeated measurement and data averaging (up to 5 times repetition)
- Automatic shutter

Data Filing and Transmission

- Storage and recall of instrument parameters—three sets in main memory (60 in optional data packs)
- Storage and recall of measurement data—two sets in main (9 in optional data packs)
- RS-232-C interface



20-662-90192

ORDERING INFORMATION:

Dimensions: 15¾L × 19¾W × 10"H (40 × 50 × 25.5cm). Net weight: 51 lb. (23kg); for 100–120V 50/60Hz. Optional program packs, sample holders, polarizers (20-680-86000), and printer kit (22-092-35715) are available on our Web Site.

Description	Cat. No.	Each
RF-1501 Spectrofluorometer	**20-662-90192**	13,847.59

Specifications

Spectral Slitwidth	10 and 20nm
Wavelength	
Range	220 to 750nm, 0 order standard
Accuracy	±5nm
Scan Speed	Super, Fast, Medium, Slow
Slewing Speed	30,000nm/min.
Response	0.02, 0.03, 0.1, 0.25, 0.5, 2, and 8 seconds for 98% of full scale
Sensitivity	High or Low†
Lamp	Xenon lamp, 150w, Ozone-resolving housing
Optics	Concave, nonaberration, blazed holographic grating, F2.4, 900 grooves/mm
Detector	Photomultiplier tube
Display	Backlit LCD
Temp. Range (Operating)	10 to 35°C (50 to 95°F)

† Signal-to-noise ratio is at least 300 for the Raman line of distilled water (@350nm excitation wavelength, 10nm spectral slitwidth, 2 second response)

Thermo Scientific* Quantech* Digital Filter Fluorometers

Compact, economical fluorometers ideal for life-science applications involving multiple samples

- Menu-driven software navigates operator through setup of standard curve
- Store up to nine multipoint (2 to 9 points) standard curves in memory
- Help guide aids operator to select correct filter for application, diagnostics/ status menu to troubleshoot performance
- Measure single point raw fluorescence or sample concentrations based on linear regression analysis of standard curve data

11-164-52

- Feature discrete signal averaging and excellent sensitivity
- Automatic gain adjustment
- Automatic optimization of linear range maximizes working concentration range
- Ergonomic, low-profile design
- RS-232-C interface

Models

- Choose from four models: Base, IR, Wide Band and Protein
- Protein model (11-675-906) quantifies protein without use of fluorescent dyes
- All models come with large, versatile sample compartment to accommodate wide variety of cells or cuvets including 12.5 × 12.5 × 45mm square cuvets, 12 × 75mm round tubes and flow cell option

APPLICATIONS:

Quantitative biochemical assays; DNA and RNA quantification; quantification of nucleic acids in drug preparations; cell proliferation assays; wastewater analysis; hydrocarbon monitoring

ORDERING INFORMATION:

Dimensions: 15½D × 6¾H × 11½"W (39.4 × 17 × 29cm). For 120V 50/60Hz.

INCLUDES:

Unit, one excitation filter (11-164-68), and one emission filter (11-164-64)

WARRANTY:

Two years

CERTIFICATIONS:

CSA approved

LOOKING FOR EXCITATION AND EMISSION FILTERS?

You'll find a complete selection online.

Visit www.fishersci.com and search for Excitation Filters

Contd. on next page.

Thermo Scientific* Quantech* Digital Filter Fluorometers, Contd.

Model	Base	IR	Wide Band	Protein/Aromatic
Excitation Range	340–750nm	340–750nm	254–750nm	265–300nm, 340–750nm
Emission Range	300–650nm	185–870nm	185–870nm	185–870nm
Concen. Range	0.00–9999.99 (ppt, ppm, ppb, µg/dL, µg/mL, ng/mL, pg/mL, ng/µL)			
Linearity	1.00%	1.00%	1.00%	1.00%
Sensitivity	25pg/mL dsDNA with PicoGreen* reagent in 2mL assay volume; 30ppt QSO_4; 20ppt FITC in square cuvets			
Lamp	Quartz-Halogen	Quartz-Halogen	Quartz-Halogen, Mercury Line†	Quartz-Halogen, Mercury Phosphor
Software	Standard curve storage, 2–9 point standard curves, store up to 9 curves, blank/zero set, raw fluorescence, discrete signal averaging, filter selection help guide, diagnostics/status menus, injector pump option			
Mfr. No.	FM109515	FM109525	FM109535	FM109555
Cat. No.	**11-164-52**	**11-164-50**	**11-164-51**	**11-675-906**
Each	5638.00	7073.00	7501.00	7991.00

† Mercury line is a discontinuous source. Peak intensity of UV light at 254, 313, 360nm.

Hoefer* DQ 300 Fluorometer

Fast, easy, and convenient quantitation of DNA, RNA and protein

03-500-415

- UV and blue light sources enable accurate quantitation
- Internal memory stores up to 1000 data points
- Spreadsheet interface software enables export of data to a PC via an RS-232 interface
- Two reading modes (discrete and continuous) allow unit to be adapted to different experimental protocols
- Optional minicell adapter (Hoefer Cat. No. DQ310) can be used to measure sample volumes from 50 to 200µL with minicell cuvets
- Built-in rack accepts 10 × 10mm cuvets or minicell cuvets

INCLUDES:

Spreadsheet Interface Software CD with instructions, four 10 x 10mm methacrylate cuvets, power supply kit

Description	Mfr. No.	Cat. No.	Each
DQ300 Fluorometer	DQ300	**03-500-415**	3084.00

SPECIFICATIONS

Excitation Range	365-395nm (UV); 465-485nm (blue)
Emission Range	440-470nm (UV); 515-575nm (blue)
Dynamic Range	Three orders of magnitude
Measurement Range	300-1000nm
Calibration	Single-point or blank
LCD	2 × 16 characters
Weight	1.8 lb. (0.67kg)
L × W × H	7¼ × 5½ × 2¾" (18.42 × 14 × 6.9cm)

Turner BioSystems TBS-380 Mini-Fluorometer

Compact, economical, intuitive instrument supports DNA, RNA, and protein quantification

Delivers fast, accurate fluorescence measurements of low concentrations of nucleic acids and protein in low volume samples (<50µL). Dual-channel unit (UV and Blue) is lightweight and easy to use.

11-600-53

- LCD readout
- Uses common nucleic acid tags such as PicoGreen*, RiboGreen*, NanoOrange*, and Hoechst 33258 dye
- Discrete and continuous reading modes
- Built-in spreadsheet software allows transfer of data to Microsoft* Excel* via RS-232-C serial interface
- Attached storage cart holds and protects samples
- Recommended temperature range is 15° to 35°C (59° to 98°F)
- Use with optional minicell adapter and focusing lenses (11-600-54, sold separately) to measure small quantities of nucleic acids in a small assay volume (50µL), without losing sensitivity
- Accepts 10 × 10 × 45mm square plastic cuvets (not included)

ORDERING INFORMATION:

Dimensions: 7½L × 5½W × 2¾"H (19 × 14 × 6.9cm); for 100/240VAC 50/60Hz; accessories, including Minicell Adapter Kit (11-600-54), Inkjet Printer Package (11-600-56) and cuvets, are available online.

INCLUDES:

Unit, user manual, spreadsheet interface software and 9V power supply kit

REQUIRED ACCESSORIES:

Cuvets (sold separately)

WARRANTY:

One year

CERTIFICATIONS:

CE marked

Description	Mfr. No.	Cat. No.	Each
TBS-380 Mini-Fluorometer	3800-003	**11-600-53**	2834.02

ACCESSORIES

Description	Mfr. No.	Cat. No.	Price
Minicell Adapter Kit	3800-928	**11-600-54**	Ea./621.05
Minicell Disposable Cuvets (4.6mm O.D.)	7000-950	**11-600-59**	Ea./191.40
Polystyrene Cuvets (10L × 10mmW)	7000-957	**11-600-14**	Pk. of 100/116.09
Methacrylate Cuvets (10L × 10mmW)	7000-959	**11-600-15**	Pk. of 100/87.18
Inkjet Printer Package	7000-919	**11-600-56**	Ea./589.24
Thermal Paper, 1 roll	7000-918	**11-600-55**	Ea./16.13

FORCEPS

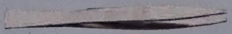
DISSECTING

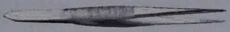
*Fisherbrand** Dissecting Forceps

08-953A

08-953D

08-953E, 08-953F


08-902

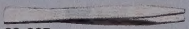

13-812-42

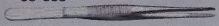
08-953C

08-900

08-880

08-875


08-895


08-890

08-887

08-953G

08-906

13-812-39

Tip Style	Handle Type	Guide Pin	Length	Cat. No.	Each	Pack of
Micro-Adson, Stainless Steel						
Straight, Serrated	Corrugated	No	4¾" (120mm)	**08-953A**	38.25	----
Sharp-Pointed, Chrome-Plated Steel						
Straight, Smooth	Smooth	No	4⅛" (105mm)	**08-902**	6.27	10/52.25
Medium-Pointed						
Curved, Serrated, Chrome-Plated Steel	Corrugated	Yes	4½" (114mm)	**08-882**	11.88	12/121.89
Straight, Serrated, Nickel-Plated Steel	Corrugated	Yes	4½" (114mm)	**08-885**	10.19	12/101.91
Straight, Smooth, Stainless Steel	Smooth	No	4½" (114mm)	**08-900**	13.23	10/113.07
Tissue, Stainless Steel						
Straight, Serrated	Corrugated	No	4½" (11.4cm)	**13-812-41**	17.97	4/61.44
Straight, Serrated	Corrugated	No	5½" (14cm)	**13-812-36**	15.32	4/52.37
Straight, Serrated	Corrugated	Yes	7⅞" (20cm)	**08-953G**	43.05	----
Straight, Serrated	Corrugated	No	8" (20.3cm)	**13-812-38**	29.21	4/99.88
Microforceps, Stainless Steel						
Straight, Smooth	Corrugated	Yes	7⅞" (200mm)	**08-953B**	67.41	----
Curved, Serrated	Corrugated	Yes	7⅞" (200mm)	**08-953D**	73.64	----
Extra-Fine-Pointed Splinter, Stainless Steel						
Straight, Serrated	Corrugated	No	4½" (114mm)	**13-812-42**	17.97	4/61.44
Fine-Pointed, Nickel-Plated Steel						
Curved, Serrated	Corrugated	Yes	4½" (114mm)	**08-875**	11.95	12/122.57
Straight, Serrated	Corrugated	Yes	4½" (114mm)	**08-880**	11.95	12/122.57
Self-Closing, Stainless Steel						
Straight, Smooth	Smooth	No	4⅝" (11.7cm)	**08-906**	13.13	10/112.18
Jeweler's Microforceps, Stainless Steel						
Straight, Smooth	Smooth	No	4¼" (10.8cm)	**08-953E**	35.34	----
Curved, Smooth	Smooth	No	4½" (11.4cm)	**08-953F**	48.53	----
Cushing Delicate Thumb, Stainless Steel						
Straight, Serrated	Corrugated	Yes	7" (178mm)	**08-953C**	34.22	----
Blunt-Pointed						
Straight, Smooth, Chrome-Plated Steel	Smooth	No	4⅛" (10.8cm)	**08-895**	6.62	10/55.15
Straight, Serrated, Chrome-Plated Steel	Corrugated	No	5" (12.7cm)	**08-890**	9.85	10/82.11
Curved, Smooth, Nickel-Plated Steel	Corrugated	Yes	5" (12.7cm)	**08-887**	10.19	12/101.91
Dressing, Stainless Steel						
Straight, Serrated	Corrugated	No	4½" (11.4cm)	**13-812-39**	10.02	12/100.23
Straight, Serrated	Corrugated	No	6" (15.2cm)	**13-812-40**	11.35	12/113.52

GENERAL PURPOSE

*Fisherbrand** General-Purpose Forceps

10-270

10-300

10-316A

10-275

10-295

10-280

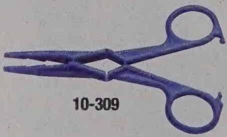
02-617-161

Tip Style	Handle Type	Guide Pin	Length	Cat. No.	Each	Pack of
Pinning, Nickel-Plated Steel						
Curved, Serrated	Corrugated	No	4½" (114mm)	**10-270**	8.58	12/85.81
Broad-Tipped, Nickel-Plated Steel						
Straight, Smooth	Corrugated	No	4½" (114mm)	**10-300**	5.70	10/47.52
Extra-Long, Chrome-Plated Steel						
Straight, Serrated	Corrugated	Yes	7⅞" (20cm)	**10-316A**	19.67	12/201.77
Straight, Serrated	Corrugated	Yes	9⅞" (25.1cm)	**10-316B**	28.06	12/287.83
Straight, Serrated	Corrugated	Yes	11¹³⁄₁₆" (30cm)	**10-316C**	29.88	12/306.44
Standard, Stainless Steel						
Curved, Smooth	Smooth	No	6" (150mm)	**10-275**	13.98	12/143.40
Offset-Tipped, Nickel-Plated Steel						
Bent, Smooth	Corrugated	No	4⅜" (111mm)	**10-295**	9.09	12/90.90
Student, Stainless Steel						
Straight, Serrated	Smooth	No	5" (127mm)	**10-280**	----	10/21.88
PTFE						
Straight, Square	Smooth	Yes	3¹⁵⁄₁₆" (10cm)	**02-617-158**	31.87	----
Straight, Square	Smooth	Yes	5⅞" (15cm)	**02-617-159**	38.09	----
Straight, Square	Smooth	Yes	7⅞" (20cm)	**02-617-160**	44.27	----
Straight, Sharp	Smooth	Yes	3¹⁵⁄₁₆" (10cm)	**02-617-161**	31.87	----
Straight, Sharp	Smooth	Yes	5⅞" (15cm)	**02-617-162**	38.09	----
Straight, Sharp	Smooth	Yes	7⅞" (20cm)	**02-617-163**	42.94	----

Nalgene* Polypropylene Scissor-Type Forceps

Resist deterioration from strong acids and bases

- Can be sterilized by EtO radiation
- Autoclavable to 135°C (275°F)
- Lightweight, durable polypropylene


10-309

Tip Style	Length	Mfr. No.	Cat. No.	Pack of 12	Case of 6 Pack
Straight, Serrated	4¾" (120mm)	6320 0010	**10-309**	31.68	126.72

Chemware* PTFE-Coated Forceps

For handling hot or chemically active materials

- Nickel-plated steel covered with an extra heavy-duty coating of PTFE
- Nonstick surface is inert
- Coating prevents scratching glass and other delicate surfaces

10-317-10

Tip Style	Length	Mfr. No.	Cat. No.	Each
Straight, Smooth	4½" (11.4cm)	D1069288	**10-317-10**	14.20

*Trademark. See Trademark Reference.

Prices subject to change.

HEMOSTATS

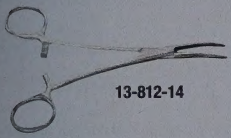
*Fisherbrand** Hemostats Forceps

With serrated jaws and box-lock joint

- Can be sterilized by EtO/gamma radiation
- Rockwell Hardness (HRC): 40 to 45
- Passivated
- Fully autoclavable

CERTIFICATIONS:
ASTM* (F899-84) standard stainless steel. FDA-certified stainless steel. Produced under ISO 9001, GMP, cGMP guidelines.

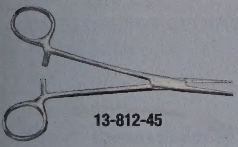
Kelly Forceps



13-812-14

Tip Style	Length	Cat. No.	Each
Straight, Serrated	5½" (14cm)	**08-907**	16.24
Curved, Serrated	5½" (14cm)	**13-812-14**	33.29

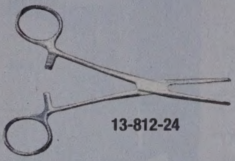
Rankin Forceps



13-812-45

Tip Style	Length	Cat. No.	Each	Case of 4
Straight	6¼" (159mm)	**13-812-45**	45.59	155.86

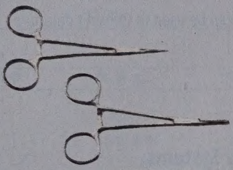
Rochester-Pean Serrated Forceps



13-812-24

Style	Length	Cat. No.	Each	Case of 4
Straight	5½" (14cm)	**13-812-24**	31.99	----
Straight	6¼" (15.9cm)	**13-812-26**	44.15	150.94
Curved	7¼" (18.4cm)	**13-812-27**	50.37	172.19

Halstead Mosquito Forceps



13-812-8 (top), 13-812-10

Style	Length	Cat. No.	Each	Case of 4
Straight, Serrated	5" (12.7cm)	**13-812-8**	28.29	----
Curved, Serrated	5⅛" (13cm)	**13-812-10**	39.10	133.68

DON'T SEE THE RIGHT PRODUCT?
Find more implements in the Dissecting, Knives, Scissors, and Tools sections.

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Visit www.fishersci.com and search for Hemostats

FREEZE DRY

Labconco* FreeZone* and FreeZone Plus* Freeze-Dry Systems

Benchtop, Console and Cascade models

Freeze-dry systems with environmentally safe, CFC-/HCFC-free refrigerants that do not harm the ozone layer. FreeZone Plus Cascade models are designed specifically for samples with low eutectic points.

10-271-16

System Characteristics

- Upright collector chamber simplifies defrosting; many models include built-in hot gas defrost to quickly melt any collected ice
- Automatic one-button startup initiates condenser cooldown and vacuum pulldown
- LCD indicates temperature in °C or °F; vacuum in mbar, Pa, and torr
- LED vacuum and temperature "waves" on all except 1L models show relative system vacuum and collector temperature
- LED alarm light on all except 1L models flashes for abnormal events, including power interruptions, improper power supply, when collector temperature rises above -40°C, and required vacuum pump service
- Vacuum control valve on all except 1L systems maintains vacuum level

Connectivity

- RS-232 port on all models except 1L can be used to transmit data to a computer

Features

- Easy to service with retractable drain hoses
- Cabinets are white epoxy-coated steel with brushed stainless-steel front panels and blue accents
- Console models have removable front panels and are roomy enough to accommodate vacuum pump
- Benchtop models easily fit on laboratory benchtop to process light to moderate loads
- PTFE-coated collector chamber and coil for processes involving corrosive compounds are available

ORDERING INFORMATION

Contact your Fisher Scientific* Customer Service Representative for pump con patibility.

REQUIRED ACCESSORIES

All require vacuum pumps and glassware; all except 4.5L models require drying accessories (4.5L models come with permanently installed 10-port stainless-steel drying chamber for bulk sample connection). Contact your Fisher Scientific* Customer Service Representative for pump compatibility an drying accessory details.

INCLUDES:

8' (2.4m) cord. Models wired for 115V, 60Hz include 3-wire cord with 20A NEMA 5-20P plug. Models wired for 220/240V 50Hz or 208/230V 60Hz includ 3-wire cord with 20A NEMA 6-20P plug.

COMPLIANCE:

Conform to ETL listed for UL standard (60Hz), CAN/CSA (60Hz), CE marked (220V/240V, 50Hz models)

FreeZone* Console Freeze-Dry Systems

Available in several system configurations and collector capacities to meet sample load requirements

- Cabinets are white epoxy-coated steel with brushed stainless-steel front panels and are mounted on 3" (7.6cm) casters for mobility
- Refrigeration system cools collector to -50°C (-58°F)
- 4.5L model comes with permanently installed 10-port stainless-steel drying chamber for bulk sample connection
- 6L models available with optional built-in shell freezer with stainless-steel bath, 12½L × 5½W × 7½"H (30.5 × 14 × 19cm) for easier prefreezing
- Purge Valve option with switch prevents back streaming of vacuum pump oil and minimizes chance for sample contamination of power if interrupted

ORDERING INFORMATION:

All models are also available with PTFE-coated collector chambers and with internal electrical configurations; contact your Fisher Scientific* Customer Service Representative for details.

Basic 4.5L Model with 10-273-19 Drying Chamber (sold separately)

10-271-46

18L Model (with included purge valve) and 10-273-2 48-port ampule manifold (sold separately)

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Labconco* Console Freezone* Freeze-Dry Systems, Contd.

Capacity	4.5L (5 qt.)	6L (6 qt.)	12L (13 qt.)	18L (19 qt.)
Load Size	Light-to-moderate	Moderate	Variety	Large/Multiple Batch
Sublimation Rate/24 hr.	>2L	≤4L	≤8L	≤10L
Temperature (Max.)	-50°C (-58°F)	-50°C (-58°F)	-50°C (-58°F)	-50°C (-58°F)
Refrigeration	⅓hp	¾hp	1hp	1½hp
Hot Gas Defrost	No	Yes	Yes	Yes
Drying Chamber Included	10 port	None (Except models w/Stoppering Tray Dryer)	None (Except models w/Stoppering Tray Dryer)	None
Electrical Reqts.	115V 60Hz	115V 60Hz	208/230V 60Hz	208/230V 60Hz
L × W × H (Overall Basic Unit)†	24 × 18 × 48⅛" (61 × 46 × 122cm)	28 × 31⅞ × 36¼" (71 × 81 × 92cm)	28 × 31⅞ × 36¼" (71 × 81 × 92cm)	28 × 31⅞ × 36¼" (71 × 81 × 92cm)
Basic Unit				
Mfr. No.	7751020	7753020	7754040	7755040
Cat. No.	**10-271-16**	**10-271-28**	**10-271-76**	**10-272-00**
Each	8990.00	9510.00	13,165.00	19,823.61
With Stoppering Tray Dryer‡				
Mfr. No.	----	7758520	7759040	----
Cat. No.	----	**10-274-59**	**10-274-75**	----
Each	----	28,670.00	32,440.00	----
With PTFE-coated Collector Chamber				
Mfr. No.	7751021	7753021	7754041	----
Cat. No.	**10-271-17**	**10-271-29**	**10-271-77**	----
Each	9940.00	10,465.00	14,110.00	----
With Purge Valve				
Mfr. No.	----	7753022	7754042	7755042
Cat. No.	----	**10-271-30**	**10-271-78**	**10-272-02**
Each	----	10,410.00	14,065.00	21,665.29
With Purge Valve and Shell Freezer				
Mfr. No.	----	7753522	----	----
Cat. No.	----	**10-271-46**	----	----
Each	----	13,525.00	----	----

† For 4.5L Model, overall dimensions include Drying Chamber.
‡ Stoppering Tray Dryer adds 27 1/16" (68.7cm) to overall height of system and is 32" (81.3cm) wide.

Capacity	4.5L (5 qt.)	6L (6 qt.)	12L (13 qt.)	18L (19 qt.)
With Purge Valve and Stoppering Tray Dryer‡				
Mfr. No.	----	7758522	----	----
Cat. No.	----	**10-274-61**	----	----
Each	----	29,570.00	----	----
With Purge Valve and Vacuum Drying Chamber				
Mfr. No.	----	7753026	----	----
Cat. No.	----	**10-271-32**	----	----
Each	----	11,940.00	----	----
With Purge Valve and PTFE-coated Collector Chamber				
Mfr. No.	----	7753024	7754044	7755044
Cat. No.	----	**10-271-31**	**10-271-79**	**10-272-03**
Each	----	11,365.00	15,015.00	21,663.68
With Purge Valve, PTFE-coated Collector Chamber, and Vacuum Drying Chamber				
Mfr. No.	----	7753027	7754047	7755047
Cat. No.	----	**10-271-33**	**10-271-81**	**10-272-05**
Each	----	12,885.00	16,540.00	23,069.41
With Purge Valve, PTFE-coated Collector Chamber, and Shell Freezer				
Mfr. No.	----	7753524	----	----
Cat. No.	----	**10-271-47**	----	----
Each	----	14,480.00	----	----
With Stoppering Tray Dryer and PTFE-coated Collector Chamber‡				
Mfr. No.	----	7758521	7759041	----
Cat. No.	----	**10-274-60**	**10-274-76**	----
Each	----	29,625.00	33,385.00	----
With Stoppering Tray Dryer, PTFE-coated Collector Chamber, and Purge Valve‡				
Mfr. No.	----	7758524	7759044	----
Cat. No.	----	**10-274-62**	**10-274-78**	----
Each	----	30,525.00	34,290.00	----

† For 4.5L Model, overall dimensions include Drying Chamber.
‡ Stoppering Tray Dryer adds 27 1/16" (68.7cm) to overall height of system and is 32" (81.3cm) wide.

Contd. on next page.

Labconco* FreeZone* and FreeZone Plus* Freeze-Dry Systems, Contd.

FreeZone* Benchtop Freeze-Dry Systems

NEW

With a small footprint and four rubber feet, these smaller capacity models fit easily on benchtop and are ideal for light and moderate loads.

- Refrigeration system cools collector to -50°C (-58°F)
- 4.5L Model has stainless-steel drying chamber with 10 valves to connect serum bottles, ampules, or freeze-dry flasks with ½ to ¾" adapters (available separately)
- Stoppering Tray Dryer option on 6L model allows bulk processing of large batches of material in small containers or large specimens
- PTFE-coated collector chamber and coil for processes involving corrosive compounds are available

ORDERING INFORMATION:

International Models are also available.

10-030-126 with 12-port Drying Chamber 10-273-19 (pump not included)

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Capacity	1L (1⅛ qt.)	2.5L (2¼ qt.)	4.5L (5 qt.)	6L (6 qt.)
Load Type	Light	Light	Light-to-moderate	Moderate
Sublimation Rate/24 hr.	≤1L	≤2L	>2L	≤4L
Temperature (Max.)	-50°C (-58°F)	-50°C (-58°F)	-50°C (-58°F)	-50°C (-58°F)
Refrigeration	¼hp	¼hp	⅓hp	¾hp
Hot Gas Defrost	No	No	No	No
Drying Chamber Included	None	None	10 port	None (Except models w/Stoppering Tray Dryers)
Electrical Reqts.	115V 60Hz	115V 60Hz	115V 60Hz	115V 60Hz
L × W × H Overall Basic Unit)†	17⅞ × 12 × 16⅝" (45.4 × 30.5 × 42.3cm)	17⅞ × 12 × 16⅝" (45.4 × 30.5 × 42.3cm)	18½ × 18 × 22½" (47 × 45.7 × 57.2cm)	31⅞ × 28 1⁄16 × 14⅝" (80.8 × 71.4 × 37.1cm)
Basic Unit				
Mfr. No.	7740020	7670520	7750020	7752020
Cat. No.	**10-030-126**	**10-030-132**	**10-271-10**	**10-271-22**
Each	4810.00	5725.00	8525.00	9015.00
With PTFE-coated Collector Chamber				
Mfr. No.	7740021	7670521	7750021	7752021
Cat. No.	**10-030-127**	**10-030-133**	**10-271-11**	**10-271-23**
Each	5440.00	6465.00	9475.00	9960.00

† *For 4.5L Models, overall dimensions include Drying Chamber.*

LOOKING FOR MORE ACCESSORIES?

Many accessories for FreeZone* Freeze-Dry Systems and other freeze-dry equipment such as drying chambers are available online...

Visit www.fishersci.com and search for Labconco FreeZone

Contd. on next page.

Labconco* FreeZone* and FreeZone Plus* Freeze-Dry Systems, Contd.

FreeZone Plus* Cascade Freeze-Dry Systems

Designed to freeze dry materials with low eutectic points

- With dual CFC-/HCFC-free refrigeration systems used in series to cool stainless-steel collector to -84°C (-119°F)
- Choice of 2.5L models to fit on benchtop; or freestanding 2.5, 6, and 12L console models
- Purge Valve option on 6 and 12L models prevents backstreaming of vacuum pump oil and minimizes chance for sample contamination
- Available with optional collector chamber and coil coated with PTFE for processes involving corrosive compounds

ORDERING INFORMATION:
International Models are also available.

REQUIRED ACCESSORIES:
Drying chamber or other drying accessory is required for operation.

10-030-138 and 20-port Manifold 10-273-14 (pump not included)

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Capacity	2.5L (2⅝ qt.)	2.5L (2⅝ qt.)	6L (6 qt.)	12L (13 qt.)
Style	Benchtop	Console	Console	Console
Load Size	Light	Light	Moderate	Variety
Sublimation Rate/24 hr.	≤1.8L	≤1.8L	>2L	≤4L
Temperature (Max.)	-84°C (-119°F)	-84°C (-119°F)	-84°C (-119°F)	-84°C (-119°F)
Refrigeration	One ⅓hp, one ¼hp	One ⅓hp, one ¼hp	Two ⅓hp	Two ¾hp
Hot Gas Defrost	No	No	Yes	Yes
Drying Chamber Included	None	None	None	None
Electrical Reqts.	115V 60Hz	115V 60Hz	115V 60Hz	208/230V 60Hz
L × W × H (Overall Basic Unit)	23¼ × 14½ × 16¾" (59 × 36.8 × 42.4cm)	23¼ × 18 × 36⅜" (59 × 45.7 × 92.6cm)	28 × 31⅞ × 36½" (71 × 81 × 93cm)	28 × 31⅞ × 36½" (71 × 81 × 93cm)
Basic Unit				
Mfr. No.	7670020	7420020	7934020	7960040
Cat. No.	**10-030-138**	**10-030-144**	**10-271-52**	**10-271-88**
Each	9270.00	9735.00	10,965.00	15,175.00
With Purge Valve				
Mfr. No.	----	----	7934022	7960042
Cat. No.	----	----	**10-271-54**	**10-271-90**
Each	----	----	11,855.00	16,075.00
With PTFE-coated Collector Chamber				
Mfr. No.	7670021	7420021	7934021	----
Cat. No.	**10-030-139**	**10-030-145**	**10-271-53**	----
Each	10,005.00	10,475.00	11,915.00	----
With Purge Valve and PTFE-coated Collector Chamber				
Mfr. No.	----	----	7934024	7960044
Cat. No.	----	----	**10-271-55**	**10-271-91**
Each	----	----	12,815.00	17,020.00
With Purge Valve, Vacuum Drying Chamber, and PTFE-coated Collector Chamber				
Mfr. No.	----	----	7934027	7960047
Cat. No.	----	----	**10-271-57**	**10-271-93**
Each	----	----	14,340.00	18,550.00

Labconco* FreeZone* Bulk Tray Dryers

For use with 6, 12, or 18L FreeZone Freeze-Dry Systems

16-317-92

Unique Shelf-heating System

- Three 16⅝L × 12¾"W (42.2 × 32.2cm) shelves, each with 210 sq. in. of space, accommodate bulk samples or batches of serum bottles, vials, or ampules (two additional shelves [order separately] can be added as needed)
- Microprocessor-controlled 200-watt heater on each shelf ensures efficient heating, up to +60°C, +/- 3°C of setpoint
- Three sensor probes monitor sample or shelf temperature; can add two more sensors for a total of five (sensors sold separately)

User-friendly Operation

- LCD display of setpoint and temperature of each shelf and indicates RUN (R) or STOP (S) modes
- Vacuum release valve vents chamber to open door after drying
- Rear-mounted RS-232 cable connection to IBM*-compatible computer; use connection to monitor parameters: shelf setpoint temperature, actual shelf temperature, run time, and operating status

Exterior Features

- Clear ¾" (1.9cm) thick acrylic viewing door
- Cabinet is white epoxy-coated steel with a brushed stainless-steel front with blue accents

Integral support stand

- Six-port manifold is included in 16-317-92 and 16-317-94; accommodates either ½ or ¾" flask adapters to allow connection of flasks and freeze dry glassware so that samples attached to manifold and in Tray Dryer may be lyophilized simultaneously

ORDERING INFORMATION:

Dimensions for all models (L × W × H): 19½ × 32 × 27½" (50 × 81 × 69cm)

REQUIRED ACCESSORIES:

Vacuum pump with displacement of 144L/min., 0.002mbar ultimate pressure, ¾" (1.9cm) I.D. fitting for vacuum hose; sold separately; freeze dry glassware if not bulk freeze drying

COMPLIANCE:

ETL listed to UL standards (115V models), CAN/CSA (115V models), CE marked (230V models)

Description	Electrical Reqts.	Shipping Weight	Mfr. No.	Cat. No.	Each
FreeZone Bulk Tray Dryer	115V 50/60Hz, 8A	202 lb. (92kg)	7806020	**16-317-91**	9825.00
FreeZone Bulk Tray Dryer with 6-port Manifold		225 lb. (102kg)	7806021	**16-317-92**	10,985.00
FreeZone Bulk Tray Dryer	230V 50/60Hz, 4A†	202 lb. (92kg)	7806030	**16-317-93**	9945.00
FreeZone Bulk Tray Dryer with 6-port Manifold		225 lb. (102kg)	7806031	**16-317-94**	11,160.00

† International models.

LOOKING FOR ACCESSORIES?

Bulk or Stoppering Tray Dryer Accessories are available online.

Visit www.fishersci.com and search for Tray Dryer

Labconco* Stoppering Tray Dryers

Use with any 6, 12, or 18L FreeZone* freeze-drying syster to lyophilize and bulk stopper samples under vacuum

10-274-50

Features

- Built-in pneumatic mechanism for stoppering
- Front panel LCD displays system chamber vacuum in mbar, Pa, or torr and system and probe temperatures in °C or °F; warning lights alert to power failure, temperature fluctuations, or vacuum decay
- Three processing shelves accommodate serum bottles, vials, or ampules; remove one or two shelves to allow for containers of various heights (samples may be pre-frozen on these shelves)
- Three probes monitor sample temperature
- Cabinet is constructed of brushed stainless steel and white epoxy-coated steel with blue accents; with clear ¾" (1.9cm) thick acrylic viewing door
- Support stand
- ⅛" (0.3cm) backfill port

Microprocessor Control

- Temperature programmable up to five different segments; also includes temperature ramp
- Built-in memory allows repetition of identical protocols
- Automatic and manual modes for setting system parameters
- 3" (7.6cm) diameter outlet on bottom of cabinet allows dryer to be connected to FreeZone systems
- Rear-mounted RS-232 port enables communication of the tray dryer with the system
- 1hp CFC-free refrigeration system and 1000w heater for shelf cooling and heating
- Temperature of fluid circulating through channels in the shelves can be set from -40° to +40°C within ±1°C of setpoint

INCLUDES:

8' (2.4m) 3-wire cord with plug. Models with 115V 60Hz have 20A NEMA 5-20P plug; models with 230V 50 or 60Hz have 15A NEMA 6-20P plug.

REQUIRED ACCESSORIES:

Vacuum pump with 144L/min. or higher displacement; freeze-dry glassware if not bulk freeze drying

COMPLIANCE:

ETL listed to UL standards (60Hz versions), CAN/CSA (60Hz versions), CE marked (220/240 50Hz version)

Electrical Reqts.	Mfr. No.	Cat. No.	Each
115V 60Hz, 16A	7948020	**10-274-50**	19,300.00
208/230V 50Hz, 9A†	7948030	**10-274-51**	19,415.00

† International model.

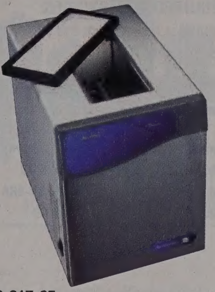
SPECIFICATIONS

Overall Cabinet Dimensions (L × W × H)	32 × 24⅝ × 27⅛" (81.3 × 62.4 × 68.8cm)
Shelf Dimensions (L × W)	16½ × 12" (41.9 × 30.5cm)
Shelf Capacity	196 sq. in. (0.13m²) for each shelf
Shipping Weight	400 lb. (181kg)

Labconco* FreeZone* Benchtop Shell Freezer

NEW

Compact system for prefreezing samples for lyophilization


16-317-95

- ½hp refrigeration system prefreezes samples to -40°C
- Stainless-steel bath with two rollers to rotate flasks in low-temperature heat transfer solution; produces a uniform thin coating of sample on container interior wall, ensuring efficient vapor flow from sample to collector during lyophilization
- Accepts serum bottles, ampules, and flasks up to 1200mL in size
- Does not contain ozone-depleting chlorofluorocarbons (CFCs)
- LED display of bath temperature from -20° to -42°C in predetermined increments
- Left-mounted retractable bath hose facilitates cleaning of bath
- Fits on countertop or lab cart
- Shipping weight, 95 lb. (43kg)

Cabinet Features

- White epoxy-coated steel with a brushed stainless-steel front with blue accents
- Dimensions (L × W × H): 22⅛ × 14½ × 19¾" (56.1 × 36.8 × 50cm)

Bath Features

- Stainless steel with urethane foam insulation and white HDPE cover
- Dimensions (D × W × H): 12 × 5½ × 6½" (30.5 × 14 × 16.5cm)

INCLUDES:
8' (2.4m) 3-wire cord and plug

REQUIRED ACCESSORIES:
2L of transfer solution (not included)

COMPLIANCE:
ETL listed to UL standards, CAN/CSA

Electrical Reqts.	Mfr. No.	Cat. No.	Each
115V 60Hz, 6A	7949020	**16-317-95**	4005.00

DON'T SEE THE RIGHT PRODUCT?

More drying chambers, including heated drying and clear stoppering chambers, are available online.

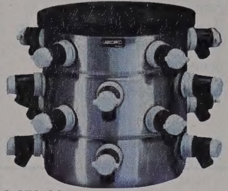
Visit www.fishersci.com and search for Labconco Chambers

Labconco* Drying Chambers

For use on FreeZone* Freeze-Dry Systems: 12-port for 1, 2.5, 6, 12, and 18L models; 16-port for 6, 12, and 18L models

- Place small sample inside freeze-dry flasks and attach to valves
- Type 304 stainless-steel construction
- Weld-free for dependable vacuum operation
- Neoprene valves accommodate both ½" and ¾" adapters, gaskets and clear acrylic top for complete visibility during bulk drying

10-273-19


10-273-20

Ports	Diameter	Mfr. No.	Cat. No.	Each
16	13" (33cm)	7522900	**10-273-20**	2420.00
12	8" (20cm)	7522800	**10-273-19**	1460.00

Labconco* Clear Drying Chambers

For visible bulk drying

- Durable and corrosion-resistant
- Chambers without valves include clear acrylic top and bottom lids, gaskets, vacuum break valve, and electrical pass-through for transformer cords
- Chambers with valves include aluminum lid with eight valves that accommodate both ½" and ¾" adapters for connecting flasks
- Use with or without product shelves (shelves available separately, visit our Web Site.

10-030-155

Description	For Use with	Dia. × H	Mfr. No.	Cat. No.	Each
Small Clear Drying Chamber	Any FreeZone Freeze-Dry System	10¼ × 13⅛" (26 × 33cm)	7442900	**10-030-154**	1150.00
Large Clear Drying Chamber	6, 12, and 18L FreeZone Freeze-Dry Systems	13 × 13" (33 × 33cm)	7867000	**10-271-1A**	1615.00
Small Clear Drying Chamber with Valves	Any FreeZone Freeze-Dry System	14⅝ × 12⅛" (37 × 31cm)	7443500	**10-030-155**	2295.00
Large Clear Drying Chamber with Valves	6, 12, and 18L FreeZone Freeze-Dry Systems	17⅜ × 15" (44 × 38.1cm)	7444000	**10-030-156**	2960.00

Labconco* Secondary Vacuum Traps

For any mechanically refrigerated freeze-dry system; ensure efficient processing of samples with low eutectic points

- Trap will cool to approximately -75°C (-103°F) with dry ice and solvent in its removable well
- Can be used as an inexpensive collector: connect a sample to incoming port, vacuum pump to outgoing port, and system is complete
- Stainless steel, with cover

10-269-46A

REQUIRED ACCESSORIES:
A pump is required for the use of this trap; see our selection of pumps in the Pumps section.

Ice Trapping Capacity	900mL (30 oz.)	900mL (30 oz.)	200mL (6.8 oz.)
Diameter × H	7⅞ × 9¾" (20 × 25cm)	7⅞ × 9¾" (20 × 25cm)	6⅝ × 7⅞" (17 × 20cm)
Vacuum Connection	¾" (19mm)	½" (13mm)	½" (13mm)
Mfr. No.	7538000	7538200	7538400
Cat. No.	**10-269-46A**	**10-269-46B**	**10-269-46C**
Each	940.00	850.00	820.00

Labconco* Freeze-Dry System Manifolds

4-Port Manifold

- Four valves accommodate both ½ or ¾" adapters
- For use with FreeZone* 1, 2.5, and 4.5L Freeze-Dry Systems
- Dimensions (L × W × H): 8¾ × 8¾ × 9" (22.1 × 22.1 × 22.9cm)
- Attachment Port Lid Accessory required for connection to 4.5L System (sold separately)

20-Port Manifold

- 20 neoprene valves that accommodate both ½ or ¾" adapters
- For use with all FreeZone* Freeze-Dry Systems
- Dimensions (L × W × H): 5 × 19 × 9" (13 × 48 × 23cm)
- Attachment Port Lid Accessory required for connection to 4.5L System (sold separately)

10-Port Manifold with Support Shelf

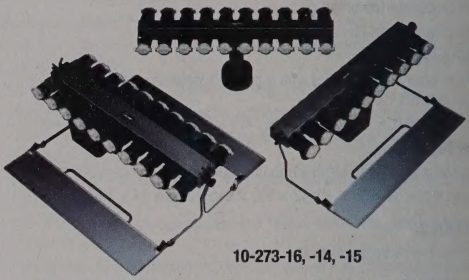
- 10 neoprene valves accommodate both ½ or ¾" adapters and adjustable support shelf
- For use with FreeZone 6, 12, and 18L Freeze-Dry Systems
- Dimensions (L × W × H): 6⅝ × 26 × 10" (17 × 66 × 25cm)

20-Port Manifold with Support Shelves

- 20 neoprene valves accommodate both ½ or ¾" adapters and two adjustable support shelves
- For use with FreeZone 6, 12, and 18L Freeze Dry Systems
- Dimensions (L × W × H): 9½ × 26 × 10" (24 × 66 × 25cm)

48-Port Valveless Manifold

- Tree-type manifold, complete with 48 ports with ¼" O.D. pipe stems that accommodate gum rubber or Tygon* tubing, fitting over any Labconco ampule
- Tubing not included



10-273-16, -14, -15

- For use with FreeZone 4.5, 6, 12, and 18L Freeze-Dry Systems
- Attachment Port Lid Accessory required for connection to 4.5L System (sold separately)
- Dimensions (L × W × H): 5 × 5 × 28⅝" (13 × 13 × 73cm)

Description	Mfr. No.	Cat. No.	Each
4-Port Manifold	7522200	**10-030-157**	555.00
20-Port Manifold	7522300	**10-273-14**	2820.00
10-Port Manifold with Support Shelf	7522400	**10-273-15**	2045.00
20-Port Manifold with Support Shelves	7522500	**10-273-16**	2960.00
48-Port Valveless Manifold	7868500	**10-273-2**	1865.00

LOOKING FOR SHELVES?

Several sizes of product shelves to accommodate bulk samples, plates, vials, and bottles for bulk drying are available online...

Visit www.fishersci.com and search for Labconco Shelves

*Trademark. See Trademark Reference.

Prices subject to change.

Labconco* Fast-Freeze* Flasks

Easy to handle and fast to load

- Flat borosilicate glass
- Silicone rubber snap-on tops provide reliable high-vacuum seals
- Eliminate risk of contamination by vacuum grease; reduce spillage and sample loss
- No easily misplaced small parts
- Wide openings
- Should be filled no more than ⅓ of the volume so a maximum surface area is achieved
- Compatible with all major brands of freeze-drying equipment, including Labconco and Virtis*

10-269 Series, plus 10-272-06

REQUIRED ACCESSORIES

Adapters are required to attach flasks to freeze dry valves—40 and 80mL flasks use a ½" (1.3cm) adapter; larger sizes use a ¾" (1.9cm).

Complete Assembly (Flask with Rubber Top)

Capacity	Mfr. No.	Cat. No.	Each
40mL	7540000	**10-269-50**	83.25
80mL	7540200	**10-269-51**	74.25
120mL	7540300	**10-269-62**	130.00
150mL	7540400	**10-269-52**	135.00
300mL	7540600	**10-269-53**	159.00
600mL	7540800	**10-269-54**	198.00
750mL	7541100	**10-272-06**	203.76
900mL	7540900	**10-269-63**	206.00
1200mL	7541000	**10-269-55**	240.00
2000mL	7541200	**10-269-56**	287.00

Flask Only

Capacity	Mfr. No.	Cat. No.	Each
40mL	7542000	**10-269-50B**	37.22
80mL	7542200	**10-269-51B**	45.77
120mL	7542300	**10-269-62A**	73.11
150mL	7542400	**10-269-52B**	79.90
300mL	7542600	**10-269-53B**	106.40
600mL	7542800	**10-269-54B**	106.40
900mL	7542900	**10-269-63A**	122.57
1200mL	7543000	**10-269-55B**	148.56
2000mL	7543200	**10-269-56B**	193.72

Rubber Tops Only

For Flasks	Mfr. No.	Cat. No.	Each
40, 80mL	7544000	**10-269-50A**	27.16
120, 150, 300mL	7544200	**10-269-52A**	38.98
600, 750, 900, 1200, 2000mL	7544400	**10-269-54A**	74.87

ACCESSORIES

Fast-Freeze* Flask Adapters

For connecting Fast-Freeze flasks to freeze-dryer valves

- 40 and 80mL flasks take size ½" or ½ to ¾"
- Larger flasks fit size ¾" or large end of ½ to ¾"

Size	Type	Mfr. No.	Cat. No.	Each
Borosilicate Glass				
½"	Straight	75450-00	**10-269-57A**	10.07
¾"	Straight	75452-00	**10-269-58A**	12.32
½ to ¾"	Straight	75454-00	**10-269-59A**	17.35
½"	45° Bend	75456-00	**10-269-57B**	16.85
¾"	45° Bend	75458-00	**10-269-58B**	16.85
½ to ¾"	45° Bend	75460-00	**10-269-59B**	27.92
Stainless Steel				
½"	Straight	75470-00	**10-269-60A**	24.40
¾"	Straight	75472-00	**10-269-61A**	24.40
½"	45° Bend	75474-00	**10-269-60B**	49.04
¾"	45° Bend	75476-00	**10-269-61B**	51.55

Lyph-Lock* Flask Adapters

For connecting Lyph-Lock flasks to valve ports on drying chamber or manifold

Borosilicate glass, with 90° bend

Connects	Mfr. No.	Cat. No.	Each
$ 19/38 to ½" port	7568000	**10-269-69A**	38.98
$ 19/38 to ¾" port	7568200	**10-269-69B**	38.98
$ 24/40 to ½" port	7568400	**10-269-69C**	42.25
$ 24/40 to ¾" port	7568600	**10-269-69D**	42.25

Labconco* Lyph-Lock* Freeze-Dry Flask Assembly

Complete three-piece flask consists of high-strength borosilicate glass molded top and bottom with silicone rubber seal

- With $ 24/40 joints
- Seal grasps top and bottom securely—never comes in contact with sample
- Flat bottomed
- Wide mouth lets you load samples easily and lyophilize quickly
- Compatible with Labconco, Virtis* and other major brands of freeze dryers
- Flasks should be filled to no more than ⅓ the volume so that maximum surface area is achieved for efficient lyophilization

10-269-68 Series

REQUIRED ACCESSORIES

Adapters are required to attach flasks to freeze dry valve ports.

Capacity	Mfr. No.	Cat. No.	Each
25mL	7554000	**10-269-68A**	190.71
50mL	7554200	**10-269-68B**	234.88
100mL	7554400	**10-269-68C**	260.98
250mL	7554600	**10-269-68D**	274.35
500mL	7554800	**10-269-68E**	315.39
750mL	7554900	**10-269-68G**	325.41
1000mL	7555000	**10-269-68F**	340.43

BEFORE YOU BUY FUME HOODS AND ENCLOSURES

CONSIDER YOUR APPLICATION

Choose a hood that fits your present and future applications and safety requirements.

Select a **fume hood** or **ductless carbon-filtered hood** if your work involves noxious or toxic fu vapors. Ducted fume hoods are generally preferable to ductless enclosures because they can han broadest range of applications and do not require filter maintenance and replacement. However, ducting is not feasible, ductless enclosures provide a practical solution.

Select a **Class II biological safety cabinet**, also known as a biohazard laminar flow hood, work involves hazardous airborne particulates, microorganisms, genetic material or carci The cabinet exhaust can be recirculated to the room but should be ducted to the outsi work requires minute quantities of toxic chemicals or trace amounts of radionuclide

CONSIDER YOUR SIZE REQUIREMENTS

Select the width of the hood based on the space required to accommodate t person(s) and apparatus needed to conduct the procedures.

OSHA 29 CFR-1910 recommends laboratories provide an average of 2.5 feet of hood space per person. Multi-step experiments may require mo Space and location in your lab may limit your size selection.

	PROTECTOR PREMIER LABORATORY FUME HOOD	BASIC LABORATORY FUME HOOD	PARAMOUNT FILTERED ENCLOSURE	PURIFIER LOGIC BIOSAFETY CABINET
Liner	Molded fiberglass	Epoxy-coated steel	Glass and epoxy-coated steel	Stainless steel
Protects the user from:	Fumes, vapors, light powders	Organic fumes, vapors	Fumes, vapors, light powders	Particulates, microorganisms
Protects the product	No	No	No	Yes
Filters	No	No	Carbon and HEPA	HEPA
Nominal Widths	4′, 5′, 6′, 8′	4′, 6′	3′, 6′	3′, 4′, 5′, 6′

Purifier Logic Biosafety Cabinet

sponsored by:

Protecting your laboratory environment
LABCONCO

CONSIDER OPTIONAL AND REQUIRED ACCESSORIES

Once you've narrowed your selection to the type of hood and size needed, select the options and accessories required to complete your ventilation system.

Optional accessories may include service fixtures and airflow monitors.

Required accessories may include a remote blower, ductwork, filters and supporti

For a full selection of Labconco® Hoods and Enclosures, see pp. 805–812, 818–82

FUME HOODS

Thermo Scientific* Hamilton* SafeAire* II Constant-Volume/Bypass Fume Hoods

NEW

Industry's first UL 1805-compliant fume hood

Designed for exact balancing of room ventilations system with hood exhaust volume. Double bypass maintains constant exhaust volume at all sash positions.

- Full-view, laminated safety glass vertical sash with full-width recessed pull
- Unique rectangular exhaust collar for more vertical space, less noise
- Louvered bypass helps maintain consistent face velocities by supplementing exhaust air when sash is lowered

Safety Features

- Perimeter side slots reduce fume accumulation or containment
- Secondary trough contains spills
- Gasketed access panel eliminates seepage into sidewall
- Metal-free liners resist high temperatures, meet NFPA 45 standards
- Sash lock/release sets and holds operating position
- Exterior lighting is remote from fumes and vapors
- Remote baffle control
- Optional safety monitor available (next page)

Construction

- Full-perimeter steel frame for long-term strength and durability
- Counterbalance system holds sash even if cable breaks
- Low-profile airfoil for obstruction-free access to hood interior
- WaterSaver* remote-control fixtures
- One 2-tube (T-8) fluorescent light fixture (96" model has two light fixtures)
- Two duplex 120V receptacles
- Chemical- and abrasion-resistant powder-coat exterior finish
- White polyresin liner
- Field-convertible to restricted-bypass or auxiliary-air type hood

Benchtop Models

- Exhaust volumes from 485 to 1081cfm (0.09 to 0.13H_2O), depending on hood size
- Sash opening: 18" (46cm) (28½" [72cm]) opening for set-up only)

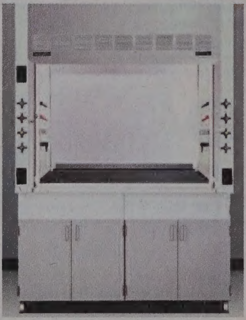
Floor-Mounted Models

- Designed for large and complex laboratory apparatus setups and roll-in equipment
- Exhaust volumes from 850 to 1900cfm (0.18 to 0.29H_2O), depending on hood size
- Sash opening: 66½" (169cm)
- One cupsink and two side-wall access panels with PVC gasket
- Plugged holes for future service fixture installation

ORDERING INFORMATION:

Benchtop Models: For installation on 30 to 36" (76 to 107cm) deep work surface, available separately. Contact your Fisher Scientific Customer Service Representative for more information. Shipped assembled; installation required. Overall H × D: 54¼ × 31¼" (138 × 79cm). For 120V 60Hz.

Floor-Mounted Models: Shipped knocked down. Require extensive jobsite assembly; installation by a certified Thermo Scientific Hamilton installer strongly recommended. Overall H × D: 90 × $32\frac{11}{32}$" (228.6 × 82.2cm). For 120V 60Hz.



03-421-200

CERTIFICATIONS:

UL 1085, NFPA 45

Hood Width	Collar L × W	Total Exhaust/Static Pressure Loss at 100fpm†	Cat. No.	Each
Benchtop Models				
48" (122cm)	6 × 15" (15 × 38cm)	485cfm (0.09"H_2O)	**03-421-200**	4797.00
60" (152cm)	6 × 23" (15 × 58cm)	660cfm (0.09"H_2O)	**03-421-201**	4994.00
72" (183cm)	6 × 23" (15 × 58cm)	785cfm (0.13"H_2O)	**03-421-202**	5540.00
96" (244cm)	6 × 30" (15 × 76cm)	1081cfm (0.09"H_2O)	**03-421-203**	6674.00
Floor-Mounted Models				
48" (122cm)	6 × 15" (15 × 38cm)	850cfm (0.18"H_2O)	**HM554S2707**	7924.00
60" (152cm)	6 × 15" (15 × 38cm)	1110cfm (0.20"H_2O)	**HM554S2710**	8410.00
72" (183cm)	6,× 23" (15 × 58cm)	1380cfm (0.32"H_2O)	**HM554S2713**	8912.00
96" (244cm)	6 × 30" (15 × 76cm)	1900cfm (0.29"H_2O)	**HM554S2716**	10,183.00

† With sash open 18" (46cm) on benchtop models, 66½" (169cm) on floor models.

Thermo Scientific* Hamilton* Concept* Fume Hoods

NEW

35" (89cm) sash opening for optimal visibility

- Exhaust volumes from 484 to 1084cfm (0.09 to 0.15H_2O), depending on hood size
- Designed for 60 to 100fpm face velocities
- Downdraft bypass for increased volume, less resistance, quieter operation
- Low-profile airfoil provides obstruction-free access to the hood interior
- Frameless vertical rising sash
- Chain and sprocket sash support with alignment shaft and sash leveling system
- Fixed-baffle system requires no adjustment

Safety Features

- Secondary trough provides an additional safeguard for the containment of spills
- AutoSash* locks in the setup position, automatically returns to maximum operational height when released

Construction

- Asbestos-free white polyresin lining
- Side wall access panels with PVC gasket
- Plugged holes for fixture installation on both posts
- Two-tube fluorescent light fixtures
- Light switch
- Two duplex 120V electrical receptacles

ORDERING INFORMATION:

Overall H × D: 63½ × 31¼" (161 × 79cm). Not pre-wired or pre-piped. Shipped assembled; installation required. For 120V 60Hz.

03-421-210

CERTIFICATIONS:

UL 1805 Classified

NOTE:

Not for use with standard Thermo Scientific Hamilton work surfaces.

Contd. on next page.

Thermo Scientific* Hamilton* Concept* Fume Hoods, Contd.

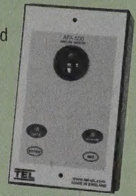
Hood Width	Collar Size	Total Exhaust/Static Pressure Loss†	Cat. No.	Each
48" (122cm)	6 × 15" (15 × 38cm)	484cfm (0.09"H_2O)	**03-421-209**	5857.00
60" (152cm)	6 × 23" (15 × 58cm)	634cfm (0.09"H_2O)	**03-421-210**	6296.00
72" (183cm)	6 × 23" (15 × 58cm)	784cfm (0.13"H_2O)	**03-421-211**	6628.00
84" (214cm)	6 × 26" (15 × 66cm)	934cfm (0.15"H_2O)	**03-421-212**	7124.00
96" (244cm)	6 × 30" (15 × 76cm)	1084cfm (0.09"H_2O)	**03-421-213**	7789.00

† At 60 and at 100fpm (sash opening 28½ or 18" [72 or 46cm]).

ACCESSORIES

Fume Hood Alarm

For use with Thermo Scientific* SafeAire* II, Concept*, and Pioneer* fume hoods



HM54LAFA05

Thermal sensors constantly monitor actual fume hood velocity. Should it fall below a set level, operator is alerted by an illuminated red light and 85db alarm. Sensors are exposed to clean laboratory air only.

- Alarm range: 30-400fpm (0.15-2.0 m/s)
- Accuracy: ±10%
- Field-adjustable setpoints to activate alarm signal
- Low-air alarm relay output, with fixed 5 sec. delay
- Pushbutton single-point calibration
- Relay input for night setback to mute audible alarm
- Mounting: Semi-flush
- Operating Temperature: 55° to 86°F (13° to 30°C)

ORDERING INFORMATION:
H × W × D: 5¼ × 3¼ × 2" (132 × 81 × 51mm). For 120V 60Hz.

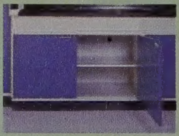
INCLUDES:
Mounting hardware

CERTIFICATIONS:
UL listed, CE marked

Cat. No.	Each
HM54LAFA05	604.88

Acid-Storage Cabinets

Use to store acid containers or as base cabinets for Thermo Scientific*SafeAire* fume hoods



HM144H8320B

- Resisto-Roc ¼" thick (6.4mm) lining resists chemical spills
- Full-width shelf adjusts up or down in ½" (13mm) increments
- With hinged double doors, flush front panel above cupboard and recessed toespace
- Vent access at rear (10" [25.4cm] from right end)
- To vent fume hood, use optional polyolefin vent assembly (available separately online on our Web site; Cat. No. HM90L06000)

ORDERING INFORMATION:
Worktops must be ordered separately. Cabinets measure 21⅝L × 35¼"H (54.9 × 89.5cm).

Width	Cat. No.	Each
30" (76.2cm)	**HM144H5320B**	1426.31
36" (91.4cm)	**HM144H6320B**	1471.22
48" (121.9cm)	**HM144H8320B**	1583.29

Fume Hood Work Surfaces

For Thermo Scientific* SafeAire* and Concept* benchtop fume hoods

- Black epoxy resin finish
- 1¼" (3.2cm) thick, 31¼" (79.4cm) deep
- Piping pass-through cutouts are symmetrical
- Cupsink sized for HM34L13700 (available online on our Web site.

ORDERING INFORMATION:
Cupsinks not included

NOTE:
For additional work surface configurations, contact your Fisher Scientific Customer Service Representative.

Width	Cat. No.	Each
No Cutouts		
48" (122cm)	**H21L4826000**	506.00
60" (152cm)	**H21L6026000**	614.55
72" (183cm)	**H21L7226000**	724.20
96" (244cm)	**H21L9626000**	943.01
Left Rear Cupsink Cutout		
48" (122cm)	**H21L48261LR**	595.35
72" (183cm)	**H21L72261LR**	813.37
Right Rear Cupsink Cutout		
48" (122cm)	**H21L48261RR**	595.35

Exhaust Duct Transitions

For connection to fume hood ducting

Outside Dia. (Rectangular to Round)	Cat. No.	Each
6 × 9" (15.2 × 22.9cm) to 8" (20.3cm)	**HM54L90100**	300.41
6 × 15" (15.2 × 38.1cm) to 10" (25.4cm)	**HM54L90200**	278.81
6 × 23" (15.2 × 58.4cm) to 12" (30.5cm)	**HM54L90300**	287.43
6 × 30" (15.2 × 76.2cm) to 14" (35.6cm)	**HM54L90400**	302.57

LOOKING FOR MORE FUME HOOD ACCESSORIES?

Conversion packages, duct nozzle assemblies, motor starters, vent assemblies and more can be found online.

Visit www.fishersci.com and search for Fume Hood Accessories

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* Hamilton* Horizon* Fume Hoods

A higher level of visibility for your lab

Designed to provide maximum visibility, allowing identification of potentially hazardous situations from virtually any location in the room. Restricted-bypass operating type, single-faced wall style or double-faced island models—can be "ganged" side-by-side.

- Exhaust volumes range from 550 to 1700cfm (0.15 to 0.35H_2O), depending on hood size and model
- 18" (45.7cm) sash opening during fume hood operation reduces exhaust air requirement by approximately 50% for significant energy savings
- Automatic 18" (45.7cm) sash stop, 34" (86.4cm) high opening for setup

Safety Features

- Upper 12" (30cm) of fume hood face opening is covered by sash glass during operation, protecting face and upper body
- Integral spill trough along front edge of work surface for secondary spill containment
- Narrow air foil front posts for enhanced visibility and airflow
- Flush sill air foil for easy access to work surface

Construction

- Back panel on single-faced units is white polyresin; side panels and vertical sash are ¼" (6.4cm) laminated safety glass
- Back, side and sash panels on double-faced units are 7⁄32" (5.6cm) laminated safety glass
- Dished epoxy resin work surface
- Isolated service drop allows vertical fixture mounting for maximum work surface area
- Perimeter exhaust slots provide uniform airflow
- Two-tube (T-8) fluorescent lighting
- **48" (122cm) model:** One combination light switch/receptacle and flush plate in right base cabinet
- **60" (152cm) model:** One combination light switch/receptacle and flush plate in right base cabinet; one 120V duplex receptacle and flush plate in left base cabinet
- **72" (183cm) model:** One light switch and flush plate, one 120V duplex receptacle and flush plate in right base cabinet; one 120V duplex receptacle and flush plate in left base cabinet

93-520

ORDERING INFORMATION:
For 120V 60Hz. Units ship knocked down.

INCLUDES:
Fume hood superstructure; work surface; base cabinets; service fixtures (right side only): remote-control gas, air, vacuum and cold water fixtures with 3 × 6" (7.6 × 15.2cm) cupsink

COMPLIANCE:
Meet or exceed ASHRAE* 110-95 standards

CERTIFICATIONS:
UL 1805 classified

Hood Width	Overall H × D	Exhaust Volume	Collar Size	Cat. No.	Each
Single-faced Style					
48" (122cm)	35 × 2⅜" (90 × 54cm)	550cfm (0.15"H_2O)	4 × 30" (10 × 76cm)	**93-517**	7459.00
60" (152cm)	35 × 2⅜" (90 × 54cm)	700cfm (0.18"H_2O)	4 × 30" (10 × 76cm)	**93-518**	8363.00
72" (183cm)	35 × 2⅜" (90 × 54cm)	850cfm (0.21"H_2O)	4 × 30" (10 × 76cm)	**93-519**	8758.00
Double-faced Style					
48" (122cm)	57 × 2⅜" (90 × 145cm)	1100cfm (0.25"H_2O)	9 × 30" (23 × 76cm)	**93-520**	13,750.00
60" (152cm)	57 × 2⅜" (90 × 145cm)	1400cfm (0.30"H_2O)	9 × 30" (23 × 76cm)	**93-521**	15,401.00
72" (183cm)	57 × 2⅜" (90 × 145cm)	1700cfm (0.35"H_2O)	9 × 30" (23 × 76cm)	**93-522**	16,116.00

WARNING
Not applicable to highly corrosive environments.

Thermo Scientific* Hamilton* PaceAire Fume Hood

HM54L51300B

Designed for small working spaces and limited budgets

Fits any standard laboratory benchtop. Constant volume/bypass airflow system efficiently removes fumes and vapors while keeping the airflow and duct velocity constant.

- Low-speed blower exhaust, 0.11sp at 75fpm face velocity (492cfm)
- High-speed blower exhaust, 0.28sp at 100fpm face velocity (657cfm)
- Face velocity adjustment to coordinate with a wide range of duct conditions: low speed, 1140rpm, ⅛hp; high speed, 1725rpm, ¼hp
- Fixed baffle in center position for an even flow of air
- Two-speed integral blower allows operation at a lower mode to conserve energy
- Full-view safety glass vertical sash with full-width recessed pull; 29" (73.7cm) sash opening
- Exhaust collar is 8" diameter (20cm)
- Constructed of double-walled, reinforced steel
- Liner and interior finished in gloss white

ORDERING INFORMATION:
Overall dimensions, 23¾L × 36W × 53"H (60.3 × 91.4 × 134.6cm). For 115V 60Hz. Choice of 18 colors. Contact your Fisher Scientific Customer Service Representative for color samples.

Description	Cat. No.	Each
Without blower	**HM54L51200B**	3625.31
With blower	**HM54L51300B**	5301.39

Thermo Scientific* Hamilton* SafeStore Solvent-Storage Cabinets

Provides safe storage of solvents

FLAMMABLE
KEEP FIRE AWAY

950S87

- Single- or double-door modular design with manual or self-closing door
- Single-door units are right-hinged
- Shelves are adjustable in ½" (12mm) increments
- Spill tray at bottom
- All have plugs at left and right sides, except Cat. Nos. 950S8800 and 950S8810, which have two plugs at the rear
- Lockable doors
- Painted safety yellow

CERTIFICATIONS:
All are FM listed, except Cat. Nos. 950S8740 and 950S8750, which meet NFPA-30 certification

Capacity	Exterior L x W x H	No. of Shelves	Cat. No.	Eac
Single Door, Manual Close				
4 gal.	17 × 22 × 17" (56 × 43 × 43cm)	One	**950S8740**	420.1
12 gal.	18 × 23¼ × 35" (46 × 59 × 89cm)	One	**950S8760**	482.4
15 gal.	18 × 23¼ × 44" (46 × 59 × 112cm)	One	**950S8780**	520.6
Single Door, Self-Closing				
4 gal.	17 × 22 × 17" (56 × 43 × 43cm)	One	**950S8750**	504.5
12 gal.	18 × 23¼ × 35" (46 × 59 × 89cm)	One	**950S8770**	547.7
Double Doors, Manual Close				
12 gal.	18 × 42 × 18" (46 × 107 × 46cm)	None	**950S8720**	495.4
17 gal.	18 × 42 × 24" (46 × 107 × 61cm)	One	**950S8730**	560.8
22 gal.	22 × 36 × 35" (56 × 91 × 89cm)	One	**950S8800**	630.1
30 gal.	18 × 42 × 44" (46 × 107 × 112cm)	One	**950S8650**	603.0
30 gal.	24 × 36 × 35" (61 × 91 × 89cm)	One	**950S8670**	686.4
45 gal.	18 × 42 × 65" (46 × 107 × 165cm)	Two	**950S8680**	697.0
60 gal.	34 × 36 × 65" (86 × 91 × 165cm)	Two	**950S8700**	775.0
Double Doors, Self-Closing				
22 gal.	22 × 36 × 35" (56 × 91 × 89cm)	One	**950S8810**	761.0
30 gal.	18 × 42 × 44" (46 × 107 × 112cm)	One	**950S8660**	615.0
45 gal.	18 × 42 × 65" (46 × 107 × 165cm)	Two	**950S8690**	856.0
60 gal.	34 × 36 × 65" (86 × 91 × 165cm)	Two	**950S8710**	892.0

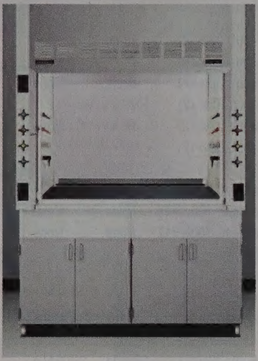
*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* Hamilton* SafeAire* II Fume Hood Assemblies

- Constant volume/bypass fume hood superstructure on one or two fume hood base cabinets
- Exhaust volumes from 760 to 1710cfm, depending on hood size

ORDERING INFORMATION:
Minimum height (floor to ceiling) needed: 110 " (279.4cm). Ductwork not included. Assembly required. Fume hoods not prewired or prepiped. Color selection required to complete your order. Contact your Fisher Scientific Customer Service Representative for color selection information.



HMLAB028

INCLUDES:
Vent kit, fillers, work surface with vent and cupsink cutout, cupsink, water service fixture, air service fixture, gas service fixture, vacuum service fixture, molding, corners, asymmetrical exhaust duct, blower sized for system

Hood Width	Total Exhaust/Static Pressure Loss at 100fpm	Base	Cat. No.	Each
48" (122cm)	760cfm (0.18"H_2O)	1 acid-storage cabinet	**HMLAB025**	10,596.57
60" (152cm)	1000cfm (0.18"H_2O)	1 acid-storage cabinet and 1 fume hood base cabinet	**HMLAB026**	12,118.82
72" (183cm)	1250cfm (0.27"H_2O)	1 acid-storage cabinet and 1 solvent-storage base cabinet	**HMLAB027**	16,179.80
96" (244cm)	1710cfm (0.26"H_2O)	1 acid-storage cabinet and 1 fume hood base cabinet	**HMLAB028**	14,924.86

Labconco* Protector Premier* Fiberglass-Lined Laboratory Hoods

Benchtop fume hoods for general-purpose laboratory work

One-piece molded fiberglass liner in standard and explosion-proof models provides superior corrosion and chemical resistance, durability and light reflectivity, with flame spread less than 25 per ASTM* E-84.

- Exhaust volumes from 730 to 1660cfm (0.17 to 0.22"H_2O), depending on model
- Preset baffle and bypass airflow design ensure stable face velocities across large 28" (71cm) sash opening
- Vertical-rising, counter-balanced 3⁄16" (0.5cm) tempered safety glass sashes with epoxy-coated aluminum frames
- Ergonomic air foil with Clean-Sweep* airflow openings pull inflow air from under air foil for maximum containment and continuous flow of clean air
- Front and side panels easily remove for lamp replacement and access to electrical connections
- Instant-start vaporproof T8 fluorescent or incandescent lighting (except explosion-proof models)
- Light and blower switches (except explosion-proof models)
- Glacier white, epoxy-coated steel exteriors

Explosion-proof Models

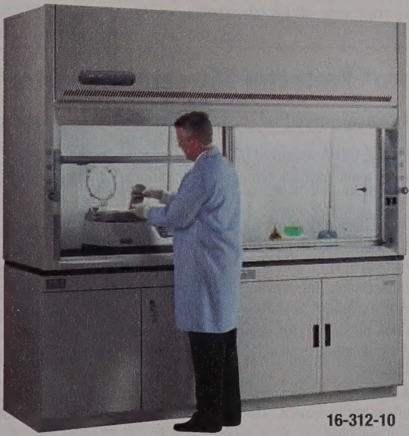
- Furnished without switches, electrical receptacles or wiring for conformance to local code
- Incandescent explosion-proof lighting (instead of T8 fluorescent lighting); bulb not included
- Explosion-proof built-in motor blower

Fixtured Models

- Pre-wired 115V 60Hz duplex electrical receptacle
- Two remote-controlled, color-coded service fixtures with forged brass valves
- Pre-plumbed brass tubing for gas fixture, copper tubing for cold water
- Includes components required to convert fixtures to air and vacuum

Models with Built-in Motor Blower

- Simplify installation for use in nontoxic applications where short, straight duct runs are required
- Motor blower is mounted behind front panel



16-312-10

ORDERING INFORMATION:
Exterior L × H: 33¼ × 59" (84.3 × 150cm). 115V 60Hz.

REQUIRED ACCESSORIES:
Ductwork, work surface and base cabinet or stand (available separately); motor blower required if not supplied with hood

COMPLIANCE:
Conform to SEFA 1-2005, NFPA 45-2004, ASTM E-84-01, ASHRAE* 110-95, ANSI* Z9.5-2003, CAN/CSA C22.2, UL 3101-1/61010-1 and 1805 standards

CERTIFICATIONS:
ETL listed

NOTE:
Contact your Fisher Scientific Customer Service Representative for complete information about selecting and installing laboratory fume hoods, base units, and worktops, and for international electrical configurations.

Contd. on next page.

Labconco* Protector Premier* Fiberglass-Lined laboratory Hoods, Contd.

Width	Total Exhaust/Static Pressure Loss†	Built-In Blower	Exhaust Collar I.D.	Lighting	Service Fixtures	Electrical Duplex	Mfr. No.	Cat. No.	Each
With Built-in Motor-Blower									
48" (122cm)	730cfm (0.17"H_2O)	⅓hp, Std.	10⅞" (27.5cm)	T8 Fluorescent, 25w (2)	None	None	4880000	**16-304**	7420.00
48" (122cm)	730cfm (0.17"H_2O)	⅓hp, Std.	10⅞" (27.5cm)	T8 Fluorescent, 25w (2)	2	1	4880300	**16-305**	8180.00
60" (152cm)	960cfm (0.12"H_2O)	½hp, Std.	12⅞" (32.5cm)	T8 Fluorescent, 32w (2)	None	None	6080000	**16-308**	8535.00
60" (152cm)	960cfm (0.12"H_2O)	½hp, Std.	12⅞" (32.5cm)	T8 Fluorescent, 32w (2)	2	1	6080300	**16-309**	9295.00
72" (183cm)	1180cfm (0.17"H_2O)	½hp, Std.	12⅞" (32.5cm)	T8 Fluorescent, 32w (2)	None	None	7280000	**16-311**	9355.00
72" (183cm)	1180cfm (0.17"H_2O)	½hp, Std.	12⅞" (32.5cm)	T8 Fluorescent, 32w (2)	2	1	7280300	**16-312**	10,115.00
Explosion-proof, with Built-in Motor Blower									
48" (122cm)	730cfm (0.17"H_2O)	⅓hp, EP	10⅞" (27.5cm)	EP Incandescent, 100w (1)	None	None	4880200	**16-307**	9000.00
60" (152cm)	960cfm (0.12"H_2O)	½hp, EP	12⅞" (32.5cm)	EP Incandescent, 100w (1)	None	None	6080200	**16-310-20**	10120.00
72" (183cm)	1180cfm (0.17"H_2O)	½hp, EP	12⅞" (32.5cm)	EP Incandescent, 100w (1)	None	None	7280200	**09-039-008**	10,935.00
Without Motor Blower									
48" (122cm)	730cfm (0.17"H_2O)	None	12⅞" (32.5cm)	T8 Fluorescent, 25w (2)	None	None	4880100	**16-306**	5745.00
48" (122cm)	730cfm (0.17"H_2O)	None	12⅞" (32.5cm)	T8 Fluorescent, 25w (2)	2	1	4880400	**16-306-3**	6505.00
60" (152cm)	960cfm (0.24"H_2O)	None	12⅞" (32.5cm)	T8 Fluorescent, 32w (2)	None	None	6080100	**16-310**	6640.00
60" (152cm)	960cfm (0.24"H_2O)	None	12⅞" (32.5cm)	T8 Fluorescent, 32w (2)	2	1	6080400	**16-310-10**	7400.00
72" (183cm)	1180cfm (0.31"H_2O)	None	12⅞" (32.5cm)	T8 Fluorescent, 32w (2)	None	None	7280100	**16-313**	7115.00
72" (183cm)	1180cfm (0.31"H_2O)	None	12⅞" (32.5cm)	T8 Fluorescent, 32w (2)	2	1	7280400	**16-314**	7875.00
96" (244cm)	1660cfm (0.22"H_2O)	None	12⅞" (32.5cm)‡	T8 Fluorescent, 32w (4)	2	1	9683000	**16-312-10**	10,910.00

† Maximum external total exhaust and static pressure loss at 100fpm for models with built-in motor blower. Total exhaust and static pressure loss at 100fpm with sash opening at 28" (71cm) for models without motor blower.

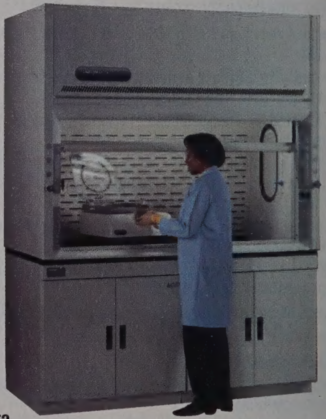
‡ 96" (243.8cm) models come with two exhaust collars.

Labconco* Protector XStream* Benchtop Hoods

Excellent containment of general chemistry fumes and vapors

When operated at OSHA-approved 60fpm face velocity, hood provides an excellent economic payback compared to traditional hoods running at 80 or 100fpm.

- Bypass airflow design with exhaust volumes from 280 to 640fpm with 18" (45.7cm) working sash opening, 730 to 1660fpm with 28" (71.1cm) loading sash opening
- Manual-release sash stop prevents sash from being raised vertically over 18" working height to conserve energy
- Upper dilution-air supply sweeps upper interior, eliminates stagnant pockets of air, prevents accumulation along sash plane without additional blowers
- Horizontal laminar air flowing toward dual baffle system is directed into rear downflow baffle system, then exhausted upward around a secondary baffle in a single pass
- Curved airfoil sweeps work surface with air while Clean-Sweep* openings pull inflow air from under airfoil
- Perforated air passage on sash handle bleeds air into chamber, directing fumes away from user
- 27¾" (69.3cm) interior working depth
- Anti-racking 3⁄16" (0.5cm) thick tempered safety glass
- Front and side panels remove easily for interior access
- Chemical-resistant, fiberglass-reinforced composite panel liner with flame spread less than 25 per ASTM* 84
- Prewired T8 fluorescent lighting, ADA-compliant light, blower switches
- Service fixture on lower right has brass tubing for gas; left is copper tubing for water (components to convert fixtures to air or vacuum included)
- 12⅞" (23.5cm) ID exhaust collar (two collars on 96" [244cm] models)
- Glacier white, dry powder epoxy-coated steel exterior



16-316-52

ORDERING INFORMATION:
Dimensions: 39¼D × 59"H (99.6 × 150cm). For 115V 60Hz. Contact your Fisher Scientific Customer Service Representative for information about international electrical configurations.

REQUIRED ACCESSORIES:
Work surface and base cabinet or base stand (available separately)

COMPLIANCE:
ASHRAE* 110-1995, SEFA 1-2005, NFPA 45-2004, ASTM E-84-01, ANSI* Z9.5-2003, CAN/CSA 22.2, UL 3101-1/61010-1 and 1805

CERTIFICATIONS:
ETL listed

Contd. on next page

*Trademark. See Trademark Reference.

Prices subject to change.

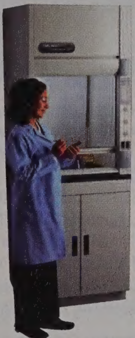
Labconco* Protector* XStream* Benchtop Hoods, Contd.

	Total Exhaust/Static Pressure Loss								
Width	**28" Sash Opening @ 100fpm**	**18" Sash Opening @ 60fpm**	**No. of Lamps**	**Service Fixtures**	**Electrical Duplex**	**Shipping Wt.**	**Mfr. No.**	**Cat. No.**	**Each**
Fume Hood Only									
48" (122cm)	730cfm (0.25"H_2O)	280cfm (0.04"H_2O)	2	None	None	440 lb. (200kg)	9840400	**16-071-100**	7440.00
Fume Hood with Service Fixtures and Electrical Duplex									
48" (122cm)	730cfm (0.25"H_2O)	280cfm (0.04"H_2O)	2	2	1	450 lb. (204kg)	9840401	**16-316-50**	8115.00
60" (152cm)	960cfm (0.30"H_2O)	370cfm (0.05"H_2O)	2	2	1	535 lb. (243kg)	9840501	**16-316-51**	9235.00
72" (183cm)	1180cfm (0.36"H_2O)	450cfm (0.06"H_2O)	2	2	1	610 lb. (277kg)	9840601	**16-316-52**	9830.00
96" (244cm)	1660cfm (0.28"H_2O)	640cfm (0.04"H_2O)	4	2	1	780 lb. (354kg)	9840801	**16-316-53**	13,310.00

Labconco* Fiberglass 30 Fume Hoods

Compact hoods with bypass airflow for efficient fume removal

Designed for small working spaces—footprint is just 30" (76.2cm) square. Mount safely on base cabinet or stand, lab cart or benchtop (available separately).



16-315

- Corrosion-resistant, direct-drive exhaust blower built in on 16-315 and 16-319; maximum external static pressure of 0.12"H_2O at 310cfm (100fpm)
- Static pressure loss for 16-317 (designed for use with remote blower, not included) does not exceed 0.14"H_2O
- Pivoting air foil
- Pre-set baffle with flame spread index less than 25 per ASTM* E-84
- Sash opens 20" (50.8cm), provides viewing height of 28" (71.1cm)
- 3⁄16" (0.2cm) thick tempered safety glass vertical-rising sash with epoxy-coated aluminum handle
- 6 11⁄16" I.D. (17cm) exhaust collar
- One-piece molded fiberglass liner
- Fixture panel accepts up to three service fixtures, one electrical duplex and one airflow monitor (sold separately)
- Prewired 100w vapor-proof incandescent lighting, light and blower switches (except on Explosion-Proof model, to conform with local codes)
- Explosion-proof model (16-319) features factory-installed ¼hp explosion-proof blower approved for Class I, Group D, and Class II,Groups E, F, and G

ORDERING INFORMATION:
W × L: 30 × 30⅛" (76.2 × 76.5cm). For 115V 60Hz. Contact your Fisher Scientific Customer Service Representative for information about optional fixtures and models with international electrical configuration.

REQUIRED ACCESSORIES:
Ductwork, work surface, base cabinet or stand. Explosion-proof modelwiring and switches must be supplied onsite to conform to local codes.

COMPLIANCE:
Conform to SEFA 1-2005, NFPA 45-204, ASTM* E-84-01, ASHRAE* 110-95, ANSI* Z9.5-2003, UL 3101-1/61010-1, CAN/CSA C22.2, UL 1805

CERTIFICATIONS:
ETL listed

Height	Blower	Static Pressure Loss†	Mfr. No.	Cat. No.	Each
Standard Models					
48" (122cm)	⅒hp Std.	≤0.12"H_2O	3030000	**16-315**	4210.00
	None‡	≤0.14"H_2O	3030002	**16-317**	3670.00
Explosion-proof Model					
54" (137cm)	¼hp EP	≤0.12"H_2O	3030004	**16-319**	4755.00

† At 100fpm face velocity (310cfm). *‡ Remote blower required (available separately).*

WARNING
Not for radioisotope, perchloric acid, or acid digestion use.

Labconco* Protector* XVS Ventilation Stations

An economical alternative to large, heavy-duty fume hoods

10-304-29

Compact, ventilated work enclosures can be used as light duty fume hoods, science classroom work stations, solvent cleaning work bays, weighing stations or for pathology and cytology. Low-profile enclosure protects user by containing powders and fumes during light-duty, fume-generating or weighing procedures.

- Clean-Sweep* airfoil sweeps the work surface for maximum containment
- Upper containment sash foil bleeds air into the enclosure to direct contaminants away from operator area
- Upper dilution air supply introduces room air at the top of sash to dilute upper chamber concentrations
- Rear baffle with perforation zones promotes horizontal laminar flow
- Side-entry air foils allow air to sweep across interior surfaces
- 2 × 10" (5 × 25.4cm) rectangular exhaust collars on top and bottom allow connection to ductwork for exhausting to the outside or to a FilterMate* Portable Exhauster (10-304-31, -33, -35, -37) for filtered removal of powders, particulates or fumes
- ¼" (6.4mm) tempered safety glass sash
- **22¾" high model:** Hinged, 20° angled sash with 8" (20.3cm) opening; swings up to provide 20" (50.8cm) opening
- **32" high model:** Hinged, 14° angled sash with 10" (25.4cm) opening; swings up to provide 29¼" (74.3cm) opening
- 23"D (58.4cm) interior work space
- Two utility ports for tubing and electrical cord connection to services
- Glacier white and gray, dry powder epoxy-coated aluminum frame and steel rear plenum and baffle
- 3⁄16" thick (4.8mm) tempered safety glass top and sides

REQUIRED ACCESSORIES:
Connection to a remote blower or FilterMate Portable Exhauster (10-304-31, -33, -35, -37); work surface; supporting base

WARRANTY:
One year against defects in materials and workmanship

COMPLIANCE:
ASHRAE* 110-95 (Method of Testing Performance of Laboratory Fume Hoods), SEFA 1-2002 (Laboratory Fume Hoods), ANSI* Z9.5-1993 (Laboratory Ventilation)

Height	Width	Mfr. No.	Cat. No.	Each
22¾" (57.8cm)	24" (61cm)	4862010	**10-304-25**	1885.00
22¾" (57.8cm)	36" (91.4cm)	4863010	**10-304-27**	2550.00
22¾" (57.8cm)	48" (121.9cm)	4864010	**10-304-29**	3655.00
32" (81.3cm)	36" (91.4cm)	4863030	**10-304-28**	3655.00
32" (81.3cm)	48" (121.9cm)	4864030	**10-304-30**	4205.00

Labconco* Basic* Laboratory Hoods

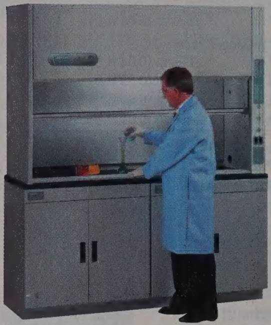
Ideal for rooms with ceilings below eight feet and shallow countertops

Automatic bypass system has openings above front panel and below airfoil to reduce face velocity fluctuation when sash is lowered, assuring continuous and efficient removal of fumes.

- Exhaust volumes of 720 or 1120cfm (0.25 or 0.57"H_2O), depending on hood width
- 10⅜" (26.2cm) OD duct collar for connection to exhaust system
- With two-piece adjustable baffle to direct airflow
- Removable curved air foil and front panel for easy cleaning
- Vertical-rising 3⁄16" thick (0.48cm) tempered glass counter balanced sash
- 25" (63.5cm) deep working area
- Switches for blower and vapor-proof incandescent light included on nonexplosion-proof models
- Right-side fixture panel is factory prepared to accept up to three service fixtures, one duplex electrical receptacle and airflow monitor (sold separately)
- Right-interior wall is factory-prepared for one cupsink with turret (sold separately)
- Durable glacier white epoxy-coated 16-gauge steel exterior and interior

Explosion-Proof Models

- With incandescent lighting fixture (order bulb separately)
- Without switches and wiring to permit conformity to local codes



16-080-4 (Base cabinet and work surface available separately.)

16-080-2 (Base cabinet and work surface available separately.)

ORDERING INFORMATION:

Exterior L × H: 25 × 48" (64 × 122cm). Add 5" (12.7cm) to height for models with built-in blower. Available with or without blower. Blower may be mounted in hood liner, above hood, or at remote roof location. Fully assembled units are pre-wired. Unassembled models not pre-wired; fit into carton less than 50% size of fully assembled hoods for more economical shipping.

REQUIRED ACCESSORIES:

Remote blowers, ductwork, base cabinets, adjustable-height base stands, solid epoxy flat work surfaces

COMPLIANCE:

SEFA 1-2002 (Laboratory Fume Hoods); NFPA 45-2000 (Fire Protection for Laboratories Using Chemicals) section 6-1 through 6-14; ASTM* E84-01 Surface Burning Characteristics of Building Materials; ASHRAE* 110-95 (Method of Testing Performance of Laboratory Fume Hoods) ; ANSI* Z9.5-1993 (Laboratory Ventilation); UL 3101-1/61010-1; CAN/CSA C22.2 No. 1010.1

CERTIFICATIONS:

ETL listed

					Fully Assembled Models			Unassembled Models		
Width	Total Exhaust Volume/Static Pressure Loss at 100fpm	Blower	Lighting	Electrical Requirements	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each
Standard Models										
47" (119cm)	720cfm (0.25"H_2O)	⅓hp Std.	Incandescent VP, 100w	115V 60Hz	2247300	**16-500-10**	4470.00	2246603	**16-080-11**	4470.00
47" (119cm)	720cfm (≤0.35"H_2O)	None†	Incandescent VP, 100w	115V 60Hz	2247400	**16-080**	3465.00	----	----	----
72" (178cm)	1120cfm (0.23"H_2O)	¾hp Std.	Incandescent VP, 100w	115V 60Hz	2246300	**16-080-2**	5880.00	2246703	**16-080-18**	5880.00
72" (178cm)	1120cfm (≤0.57"H_2O)	None†	Incandescent VP, 100w	115V 60Hz	2246400	**16-080-4**	4355.00	2246700	**16-080-15**	4355.00
Explosion-Proof Models										
47" (119cm)	720cfm (0.25"H_2O)	⅓hp EP	Incandescent EP‡	115/230V 60Hz	2247500	**16-080-1**	5335.00	2246605	**16-080-13**	5335.00
47"(119cm)	720cfm (≤0.35"H_2O)	None†	Incandescent EP‡	115/230V 50/60Hz	----	----	----	2246602	**16-080-10**	3595.00
72" (178cm)	1120cfm (0.23"H_2O)	¾hp EP	Incandescent EP‡	115/230V 60Hz	2246500	**16-080-6**	6485.00	----	----	----
72" (178cm)	1120cfm (≤0.57"H_2O)	None†	Incandescent EP‡	115/230V 50/60Hz	----	----	----	2246702	**16-080-17**	4490.00

† *Motor-blower required. Contact your Fisher Scientific Customer Service Representative for proper selection.*

‡ *Bulb not included.*

*Trademark. See Trademark Reference.

Prices subject to change.

Labconco* Protector* Storage Cabinets

For use with Labconco fume hoods

- Durable epoxy-coated steel construction
- Choice of standard (35½" [90cm]) and ADA (31½" [80cm]) heights
- Depth: 22" (56cm)

Standard Storage Cabinets

For storage of supplies and small laboratory instruments

- Manual-closing, nonlocking doors
- Work surface and shelf sold separately

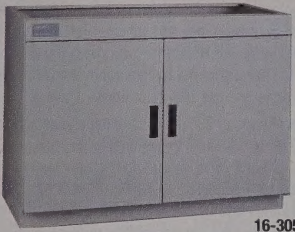
Door Type	Width	Mfr. No.	Cat. No.	Each
Standard (35½"/90cm)				
Dual	30" (76cm)	9900200	**16-305-81**	1060.00
	36" (91cm)	9900100	**16-305-79**	1100.00
	48" (122cm)	9900000	**16-305-80**	1200.00
Single, Right Hinge	24" (61cm)	9900300	**16-305-50**	1015.00
Single, Left Hinge	24" (61cm)	9900600	**16-305-51**	1015.00
ADA (31½"/80cm)				
Single, Right Hinge	24" (61cm)	9904000	**16-305-67**	1080.00
Single, Left Hinge	12" (30cm)	9904500	**16-305-65**	985.00
	24" (61cm)	9904300	**16-305-68**	1080.00

Acid Storage Cabinets

Safely store and vent acids and other highly corrosive liquids

- Manual-closing, nonlocking door(s)
- Corrosion-resistant polyethylene-lined interior
- Vacuum-formed polyethylene liner tray and two rear vent connection cutouts for venting the cabinet into a fume hood
- Work surface, shelf, and vent kit sold separately

Door Type	Width	Mfr. No.	Cat. No.	Each
Standard (35½"/90cm)				
Dual	30" (76cm)	9901200	**16-305-87**	1270.00
	36" (91cm)	9901100	**16-305-85**	1315.00
	48" (122cm)	9901000	**16-305-86**	1395.00
Single, Right Hinge	18" (46cm)	9901400	**16-305-52**	1180.00
	24" (61cm)	9901300	**16-305-54**	1225.00
Single, Left Hinge	18" (46cm)	9901600	**16-305-53**	1180.00
	24" (61cm)	9901500	**16-305-55**	1225.00
ADA (31½"/80cm)				
Single, Left Hinge	24" (61cm)	9905200	**16-305-72**	1285.00



16-305-80

Solvent Storage Cabinets

Safely store solvents and other highly flammable liquids

- Choose from manual-closing (FM-approved) or automatic self-closing doors with three-position locking handle
- Self-closing doors close automatically when temperature reaches 74°C (165°F)
- 1½" (3cm) air gap
- Epoxy-coated steel shelf and two rear cutouts with flame arrestors and closure plugs
- Work surface sold separately

CERTIFICATIONS:

Conform to OSHA 29 CFR 1910, and UFC 79 standards

Door Type	Width	Auto Door	Mfr. No.	Cat. No.	Each
Standard (35½"/90cm)					
Dual	30" (76cm)	No	9902200	**16-305-84**	1720.00
	36" (91cm)	No	9902100	**16-305-82**	1770.00
	36" (91cm)	Yes	9903100	**16-305-61**	2305.00
	48" (122cm)	No	9902000	**16-305-83**	1845.00
	48" (122cm)	Yes	9903000	**16-305-62**	2390.00
Single, Right Hinge	24" (61cm)	No	9902300	**16-305-56**	1670.00
	24" (61cm)	Yes	9903300	**16-305-58**	1955.00
Single, Left Hinge	24" (61cm)	No	9902400	**16-305-57**	1670.00
ADA (31½"/80cm)					
Single, Right Hinge	24" (61cm)	No	9906000	**16-305-73**	1740.00

Labconco* Protector* Workstations

Designed for pathologists and histotechnologists

- Hinged sash of ¼" thick (6.3mm) safety glass provides 8" (20.3cm) work opening and swings up to 20" (50.8cm) for loading or cleaning
- Foil with Clean-Sweep* openings directs air for efficient fume removal
- Baffled, stainless-steel rear baffle captures fumes and houses filters (when applicable)
- 30w fluorescent lighting
- Rear electrical receptacle
- Side walls are ¼" thick (6.3mm) safety glass
- Frame and rear plenum are epoxy-coated aluminum and steel

With Built-in Blower

- Exhaust volume 150-250cfm (60-1000fpm face velocity)
- Returns clean, filtered air back into room
- Blower speed control
- Designed for use with two carbon filters (not included)

Without Blower

- Returns clean, filtered air back into room when connected to a FilterMate* portable exhauster
- Can also be connected to an external duct sytem with a remote blower
- 2L × 10"W (5 × 25.4cm) exhaust openings on top and bottom for FilterMate Portable Exhauster or connection to duct system

ORDERING INFORMATION:

Dimensions: 29D × 48W × $25\frac{7}{10}$"H

REQUIRED ACCESSORIES:

Models with built-in blower require carbon filters (16-108-303 or 16-108-304, available separately). Models without built-in blower require remote blower (static pressure loss 0.06-0.16"H_2O).

Electrical Requirements	Shipping Weight	Mfr. No.	Cat. No.	Each
With Built-in Blower				
115V 60Hz, 10A	120 lb. (54kg)	3930000	**16-108-294**	6275.00
230V 50Hz, 5A	120 lb. (54kg)	3930020	**16-108-296**	6275.00
Without Built-in Blower				
115V 60Hz, 10A	100 lb. (45kg)	3930001	**16-108-295**	4220.00
230V 50Hz, 5A	100 lb. (45kg)	3930021	**16-108-297**	4220.00

Labconco* Paramount* Filtered Enclosures

Self-contained work stations require no ducting

Suited for applications that generate annoying or unsafe concentrations of organic solvents, acid gases, formaldehyde or ammonia fumes. Carbon filters rid the lab of these fumes and vapors. Duet models use both carbon-based and 99.99% efficient HEPA filters for removing gaseous and particulate contaminants. They are suited to cleanroom and other applications requiring ISO Class 5 (formerly Class 100) conditions.

- Exhaust volume of 236 or 472cfm, depending on model
- Angled ¼" (6.4mm) thick tempered safety glass sash, adjustable to 13" and 15" (33 and 38cm) operating heights, pivots to full open position (24¼" [61.6cm]) for cleaning and transfer of material
- 30" (76.2cm) viewing height to work surface
- Vapor sensors (on selected models) detect organic vapors with concentrations of 50ppm or greater and activate audible/visual alarm
- Control panel with LCD display of filter time elapsed; programmable timer for audio/visual alarm; ALARM/MUTE switch with LED indicator; SET FILTER TIME, UP/DOWN, and ENTER programming switches; and event timer
- With air-mixing, epoxy-coated steel rear baffle or glass baffle that pivots down for cleaning
- Two roughing prefilters†
- Two 1½" dia. (1.3cm) utility ports with plastic plugs†
- One gas-assisted filter clamping mechanism†
- One built-in nonsparking motor/blower†
- Two pre-wired 20w fluorescent lights and switches for blower and light†
- Air sampling test port and syringe
- Glacier white, dry powder epoxy-coated aluminum construction
- 3⁄16" (0.48cm) thick tempered safety glass sides

16-105-41

ORDERING INFORMATION:

All units are 29" (74cm) deep. Duet model height is 56⅞" (144cm), others are 53⅜" (136cm) high. Shipped fully assembled. For 115V 60Hz. Contact your Fisher Scientific Customer Service Representative for information about 230V models.

REQUIRED ACCESSORIES:

Available separately: work surface, base, ColorSmart Filter Cells (72 models require two sets), HEPA Color-Smart Filter Cells (Duet models only; 72 Duet models require two sets).

COMPLIANCE:

SEFA 1-2005, ASHRAE* 110-95, ANSI* Z9.5-2003, UL 3101-1/61010-1, CAN/CSA C22.2 No. 1010.1

CERTIFICATIONS:

ETL listed

Width	Exhaust Volume (100fpm, 13" Sash Opening; 80fpm, 15" Sash Opening)	Vapor Sensors	Shipping Weight	Mfr. No.	Cat. No.	Each
Paramount, with Solid Back and Baffle						
36" (91.4cm)	236cfm	No	290 lb. (132kg)	6910100	**16-105-87**	7290.00
36" (91.4cm)	236cfm	Yes	290 lb. (132kg)	6910000	**16-105-85**	7830.00
Paramount 360, with Clear Back and Baffle						
36" (91.4cm)	236cfm	No	290 lb. (132kg)	6910104	**16-105-98**	7290.00
36" (91.4cm)	236cfm	Yes	290 lb. (132kg)	6910004	**16-105-109**	7830.00
Paramount 72, with Solid Back and Baffle						
72" (183cm)	472cfm	No	580 lb. (264kg)	6910102	**16-105-41**	13,285.00
72" (183cm)	472cfm	Yes	580 lb. (264kg)	6910002	**16-105-40**	14,375.00
Paramount Duet, with Solid Back and Baffle						
36" (91.4cm)	236cfm	No	290 lb. (132kg)	6910110	**16-105-103**	7290.00
Paramount 360 Duet, with Clear Back and Baffle						
36" (91.4cm)	236cfm	Yes	290 lb. (132kg)	6910014	**16-105-105**	7830.00

† 72 models have twice as many.

Labconco* Benchtop Fume Adsorbers

Capture xylene, toluene, formaldehyde and ammonia fumes; recirculate filtered air

Lightweight and portable, these units fit available bench space.

- Built-in blower draws fumes through carbon filter at average face velocity of 35fpm
- Venting not required
- Epoxy-coated stainless-steel baffle and cabinet houses blower and easily replaceable filter(s)
- Clear, ⅜" thick (6.3mm) acrylic enclosure with 5° angled front shields
- 14½D × 13½"H (36.8 × 34.3cm) work area
- ON/OFF switch and 8' (2.4m) three-wire cord

ORDERING INFORMATION:

Overall: 23⅜L × 15⅜"H (59.4 × 39.1cm)

INCLUDES:

30" models come with one filter, 60" models with two filters. Replacement organic (10-090-104) and formaldehyde (10-090-105) filters available separately.

10-090-100 on lab cabinet (not included)

Filter	Electrical Requirements	Mfr. No.	Cat. No.	Each
30" (76.2cm) Model (35fpm, 100cfm)				
Organic	115V 60Hz	3955200	**10-090-100**	1840.00
Formaldehyde	115V 60Hz	3955201	**10-090-250**	1840.00
Ammonia	115V 60Hz	3955202	**10-090-251**	1840.00
Organic	230V 50Hz	3955200	**10-090-101**	1935.00
Formaldehyde	230V 50Hz	3955201	**10-090-252**	1935.00
Ammonia	230V 50Hz	3955202	**10-090-253**	1935.00
60" (152cm) Model (35fpm, 200cfm)				
Organic	115V 60Hz	3955400	**10-090-102**	3515.00
Formaldehyde	115V 60Hz	3955401	**10-090-254**	3485.00
Ammonia	115V 60Hz	3955402	**10-090-255**	3485.00
Organic	230V 50Hz	3955400	**10-090-103**	3590.00
Formaldehyde	230V 50Hz	3955401	**10-090-256**	3590.00
Ammonia	230V 50Hz	3955402	**10-090-257**	3590.00

WARNING

Fume Adsorbers are not general-purpose laboratory hoods and are designed specifically for use with xylene, toluene, formaldehyde or ammonia vapors; not for use with other organic solvents or pathogenic materials. Components are not explosion-proof.

LOOKING FOR MORE HOOD FILTERS?

Carbon, charcoal, Color-Smart* and other filters are available online.

Visit www.fishersci.com and search for Labconco Fume Hood Filters

Labconco* FilterMate* Portable Exhausters

Remove a broad range of contaminants and particulates

Filter contaminated air generated by procedures performed in the Protector* XVS Ventilation Station, XPert* Balance Enclosure, and Protector Work Station.

- One FilterMate is capable of exhausting 24", 36" and 48" wide enclosures (22¾"H models)
- Epoxy-coated steel exterior base and rubber feet
- Quiet, nonsparking, variable-speed, motorized impeller
- Negative pressure plenum to capture and refilter leaked fumes

INCLUDES:

8' (2.4m) of 5" I.D. (12.7cm) flexible duct, two clamps, transition adapter, and IEC electrical cord with plug

REQUIRED ACCESSORIES:

Cat. No. 10-304-35 requires outside ducting

CERTIFICATIONS:

ETL listed

NOTE:

International Models available. Contact your Fisher Scientific Customer Service Representative.

10-304-37

Filter	Airflow Potential	Dimension D × W × H	Exhaust Connection	Mfr. No.	Cat. No.	Each
HEPA	250cfm (60-100fpm)	23 × 14 × 22¾" (58.4 × 35.6 × 57.8cm)	None—room exhaust	3970000	**10-304-31**	3015.00
Carbon (not included)	250cfm (60-100fpm)	23 × 14 × 22¾" (58.4 × 35.6 × 57.8cm)	None—room exhaust	3970001	**10-304-33**	2580.00
HEPA	250cfm (60-100fpm)	23 × 18½ × 24¾" (58.4 × 47 × 62.9cm)	6" I.D. thimble to outside	3970002	**10-304-35**	3130.00
HEPA; Carbon (not included)[†]	200cfm (60-100fpm[‡])	23 × 15 × 22¾" (58.4 × 38.1 × 57.8cm)	None—room exhaust	3970003	**10-304-37**	3265.00

[†] *HEPA filter may be removed and substituted with a second carbon filter*

[‡] *60-80fpm on 4' wide enclosure*

Labconco* Telescoping Base Stands

Supports loads up to 1000 lb. (450kg); ADA compliant

- With four fixed leveling feet
- Length, 29" (74cm)

REQUIRED ACCESSORIES:
Work surface (sold separately)

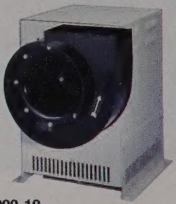
16-101-002

Width	Shipping Wt.	Mfr. No.	Cat. No.	Ea
24" (61cm)	100 lb. (45kg)	3746700	**16-108-307**	598.
36" (91cm)	72 lb. (33kg)	3746701	**16-101-002**	600.
48" (122cm)	80 lb. (36kg)	3746702	**16-101-003**	630.
60" (152cm)	85 lb. (39kg)	3746703	**16-101-004**	670.
72" (183cm)	92 lb. (42kg)	3746704	**16-101-005**	690.

Labconco* Motor Blowers

For use with Labconco Fume Hoods including Protector Premier*, Protector XStream*, Basic* 47 and 70, and Fiberglass 30

Choosing the correct blower depends on hood size, application, total exhaust (cfm) and length of ductwork. Blowers recommended below are for use with Labconco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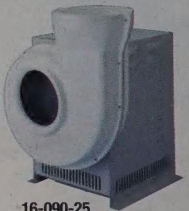

16-090-25

Coated-Steel Motor Blowers

For low to moderately corrosive applications.

For use with	HP	Inlet	Outlet L × W	Electrical Reqts.	Mfr. No.	Cat. No.	Ea
For 12" (30.5cm) Duct Size							
16-071-100; 16-316-50	⅙	10¾" (27.6cm) I.D.	5½ × 10" (14 × 25.4cm)	115V 60Hz	7068000	**16-090-11**	1490.
16-306; 16-306-3; 16-071-101, -102, -103[1]; 16-316-51, -52, -53[1]	⅓	12¼" (31cm) O.D.	7 × 13½" (17.8 × 34.3cm)	115V 60Hz	7068800	**16-090-19**	1680.
16-071-103[2, 3, 4]; 16-310, -313[1],[2], -314[1],[2]; 16-310-10; 16-316-53[2, 3, 4]	½	12¼" (31cm) O.D.	7 × 13½" (17.8 × 34.3cm)	115 60Hz	7069000	**16-090-21**	1740.
For 10" (25.4cm) Duct Size							
16-080[1, 2]	¼	10¾" (27.6cm) I.D.	5½ × 10" (14 × 25.4cm)	115V 60Hz	7068200	**16-090-12**	1575.
16-080[3, 4]	⅓	10¾" (27.6cm) I.D.	5½ × 10" (14 × 25.4cm)	115V 60Hz	7068400	**92-302**	1605.
For 6" (15.2cm) Duct Size							
16-317[1]	⅙	10¾" (27.6cm) I.D.	5½ × 10" (14 × 25.4cm)	115V 60Hz	7068000	**16-090-11**	1490.
16-317[2]	¼	10¾" (27.6cm) I.D.	5½ × 10" (14 × 25.4cm)	115V 60Hz	7068200	**16-090-12**	1575.

[1] *For 25' (7.6m) duct lengths.* [2] *For 50' (15.2m) duct lengths.* [3] *For 75' (22.8m) duct lengths.* [4] *For 100' (30.4m) duct lengths.*

Fiberglass Motor Blowers

For moderate to highly corrosive applications.

For use with	HP	Inlet O.D.	Outlet I.D.	Electrical Reqts.	Mfr. No.	Cat. No.	Ea
For 12" (30.5cm) Duct Size							
16-071-100; 16-316-50	⅙	10⅜" (26.4cm)	10¾" (27.3cm)	115V 60Hz	71800 00	**16-090-25**	2130.
16-071-101; 16-316-51	⅙	12⅜" (31.4cm)	12¾" (32.4cm)	115V 60Hz	71808 00	**16-090-33**	2470.
16-071-102; 16-306; 16-306-3; 16-316-52	¼	12⅜" (31.4cm)	12¾" (32.4cm)	115V 60Hz	71810 00	**16-090-35**	2530.
16-071-103; 16-310; 16-310-10; 16-316-53	½	12⅜" (31.4cm)	12¾" (32.4cm)	115V 60Hz	7181200	**16-311-11**	3305.
16-313, -314	¾	12⅜" (31.4cm)	12¾" (32.4cm)	115/230V 60Hz	71814 00	**16-090-39**	3410.
16-312-10	1½	12⅜" (31.4cm)	12¾" (32.4cm)	115/230V 60Hz	71816 00	**16-090-50**	3550.
For 10" (25.4cm) Duct Size							
16-080	⅓	10⅜" (26.4cm)	10¾" (27.3cm)	115V 60Hz	71804 00	**16-090-29**	2305.
16-080-4	¾	12⅜" (31.4cm)	12¾" (32.4cm)	115/230V 60Hz	71814 00	**16-090-39**	3410.
For 6" (15.2cm) Duct Size							
16-317†	⅙	10⅜" (26.4cm)	10¾" (27.3cm)	115V 60Hz	71800 00	**16-090-25**	2130.

† *For 25' (7.6m) duct lengths.*

*Trademark. See Trademark Reference.

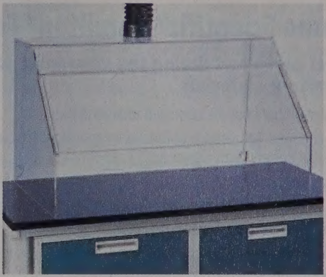
Prices subject to change.

hermo Scientific* Hamilton* Vented Workstations

laximum safety, optimum comfort, and high visibility

Vork with balance applications, tissue trimming, pipetting, titrating, and ther lab procedures. Workstations fit easily on a benchtop.

- Allow for safe containment at lower face velocities (50fpm) while reducing dangerous exposure levels in accordance with ASHRAE*-110-1995 guidelines
- Baffle system located at the rear of the enclosure provides flow patterns comparable to laboratory fume hoods
- Perimeter flow on top, bottom, and sides reduces turbulence and reverse flows typically found in nonbaffled enclosures
- Made of clear ¼" thick (0.6cm) acrylic
- Fused and polished edges ensure optimum clarity
- Hinged access shield facilitates setup and removal of apparatus from inside chamber
- 4" (10cm) outlet on 24" (61cm) and 36" (91.4cm) stations, 6" (15cm) outlet on 48" (121.9cm) station help minimize sound levels
- Can be easily connected to new or existing exhaust system with properly sized flex-ducts



54L27300

REQUIRED ACCESSORIES:
Duct and blower. Contact your Thermo Scientific Hamilton Customer Service Representative at **1-800-955-0707.**

Width	CFM at 50fpm	Cat. No.	Each
24" (61cm)	66	**54L27200**	1278.20
36" (91.4cm)	98	**54L27300**	1356.46
48" (121.9cm)	131	**54L27400**	1434.71

Misonix* Economy Workstation

Captures fumes and particulate matter

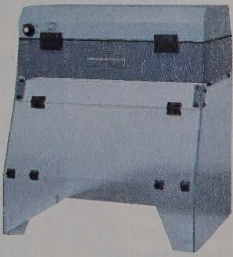
Use for drug and chemical analysis, pipetting, slide staining, coverslipping and graphic arts, and as a balance enclosure.

- Airflow manually adjusts from 0 to 120fpm—useful for powder weighing with hood as balance enclosure
- Durable epoxy-coated metal construction
- One-piece acrylic frame base section features hinged sash for easy access to hood interior
- Head and base separated for moving or storing unit

ORDERING INFORMATION:
External dimensions: 16L × 26W × 29¼"H (40 × 65 × 73.1cm). Internal dimensions: 15¾L × 25½W × 10"H (39.4 × 63.8 × 25cm). For 110V 60Hz.

REQUIRED ACCESSORIES:
99.997% efficient HEPA filter is required (Cat. No. 15-338-144, not included). For graphic arts applications, use carbon filter 15-338-141. Filters available online.

NOTE:
Prefilters extend the life of the main HEPA filter, so prefilter should be changed every six months.



15-338-157

Mfr. No.	Cat. No.	Each
FE-2620	**15-338-157**	2486.75

Misonix* Downflow Workstation

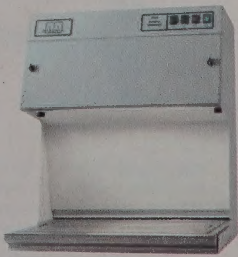
Stand-alone, ductless unit protects workers from small volumes of chemicals or powders

Useful for fingerprinting with powders, histology, powder weighing, and microscopy. Open design allows close inspection of samples while maintaining high level of operator protection.

- Particles/fumes drawn downward through stainless-steel work surface
- Contaminants removed by series of filters
- After fumes or powders are filtered, clean air is returned to the room
- Pressure switch for indicating when filters need replacement
- Aluminum frame with a powder-coated exterior
- Worksurface removes for easy cleaning
- Internal 15w fluorescent light

ORDERING INFORMATION:
Measures 24L × 28W × 32"H (60 × 70 × 80cm). For 110V 60Hz.

REQUIRED ACCESSORIES:
HEPA filter 15-338-175, prefilters 15-338-150, available online



15-338-158

Mfr. No.	Cat. No.	Each
FE-WS6	**15-338-158**	3852.89

Thermo Scientific* Hamilton* Forensics Cabinets

Protect personnel during the treatment of evidentiary materials

- Three chambers can be operated independently
- Each chamber has vaporproof incandescent light fixture and electrical outlets with power cord pass-through
- Padlock hasp on chamber doors
- Hanging rods in each chamber
- Plastic laminate and particle board construction
- Chemsurf* chemical-resistant plastic laminate interior
- High-pressure gray plastic laminate exterior
- Self-latching stainless-steel handles; stainless-steel piano hinges
- Laminated safety glass

Floor-Mounted Cabinet

- 31 cu. ft. of containment area
- Exhausts 31 cu. ft. of air per minute
- Shelf in large chamber
- 2" (5cm) I.D. exhaust collar

Base Cabinet

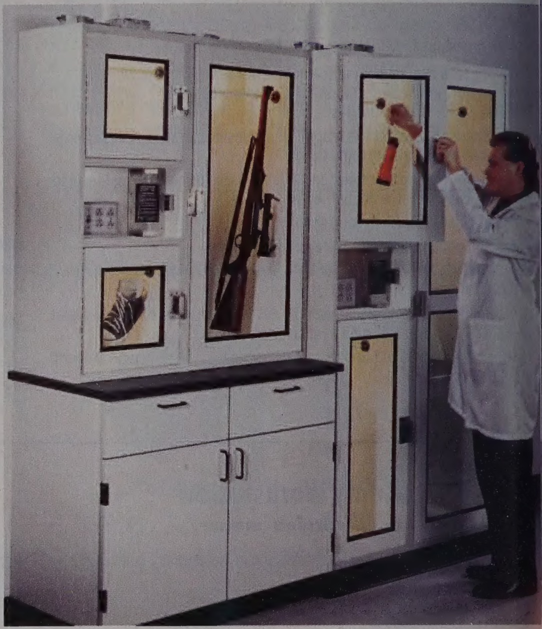
- Two drawers
- Two swing-out doors

Counter-Top Cabinet

- 13 cu. ft. of containment area
- Exhausts 13 cu. ft. of air per minute
- 1½" (3.8cm) I.D. exhaust collar

COMPLIANCE:

ASHRAE* 110-1995 tracer gas tested for containment



Left, 950P200GY on 148P732GY; right, 950P201GY

Description	L × W × H	Weight	Cat. No.	Each
Base Cabinet	(55 × 107 × 89cm)	155 lb. (70kg)	**148P732GY**	915.71
Counter-top Unit	(40 × 107 × 122cm)	230 lb. (104kg)	**950P200GY**	7739.21
Floor-mounted Unit	(55 × 107 × 212cm)	395 lb. (179kg)	**950P201GY**	10,595.38

BEFORE YOU BUY SAFETY CABINETS

Class II, Type A2 biological safety cabinets (BSC's) can be used for work with biological agents at Biosafety Levels 1 through 3 and BSL4 with appropriate facility design. Selection and use of any biological safety cabinet should be reviewed and approved by the appropriate safety officer. We have compiled some considerations to assist you in identifying the cabinet configuraton and additional equipment for your applications.

ERGONOMIC CONSIDERATIONS

With many improvements in safety containment performance, serviceability, and gas and vapor handling, today's BSC's are very effective in controlling and containing aerosols and volatile compounds. However, assuring a safe environment goes beyond containing aerosols and being certified to NSF standards. The next step in the evolution process is reducing accidents and laboratory-acquired infections through improved ergonomics.

Slanted Front—Poor posture and positioning are the most common problems encountered when using a BSC, and these can ultimately lead to mistakes. Working at a cabinet requires the operator to hold his head, shoulders and arms in a forward position. Choosing a cabinet with an ergonomic angled front allows the operator to extend his reach and assume a comfortable and relaxed working position, effectively eliminating musculoskeletal strain and fatigue during extended procedures.

Noise Levels—Noise is the number one irritant for BSC users. Noise distracts and irritates the operator, which decreases performance and increases the likelihood of errors. While NSF International requires BSC's to operate at no more than 67dBA, cabinets are available that operate at less than 64dBA. As noise is measured on a logarithmic scale, a difference of 3dBA below the NSF specification of 67dBA is equivalent to a more than 50% decrease in sound levels, which will make a big difference to the operator experience.

Bright work space—Laboratory research requires high-quality lighting for close work, and good lighting inside a BSC ensures a safer and more comfortable working environment. In addition, cabinets with white back walls reduce glare and make it easier to see variations in texture and color. Samples are easier to see against the white background.

Thermo Scientific® 1300 Series A2 Biological Safety Cabinet

Thermo
SCIENTIFIC

sponsored by
Thermo Fisher Scientific

COST SAVING CONSIDERATIONS

Energy consumption—Consider selecting biosafety cabinet designs that use brushless DC motor technology to reduce overall operating costs. Not only are DC motors more reliable in speed control applications, but they are more than 60% more energy efficient than AC motors. This energy efficiency is directly proportional to the amount of money spent on operating the cabinet.

Timed UV disinfection—While most users continue to use UV disinfection as a method of decontaminating the biosafety cabinet work surface, few follow the proper maintenance routine for replacing UV bulbs. As the bulb is used, the effectiveness of the UV light is diminished. UV shut-off timer options are now available to ensure that the bulb life is preserved for several years, rather than needing replacement within six months.

For a full selection of Thermo Scientific® Biological Safety Cabinets, see pp. 816–817.

BIOLOGICAL SAFETY

Thermo Scientific* 1300 Series Class II, Type A2 Biological Safety Cabinets

NEW

Ideal for working with biological agents at Biosafety Levels 1–3

Less energy consumption and heat output deliver unparallelled cost savings: energy-efficient DC motor technology provides savings in excess of 65% over competitive units.

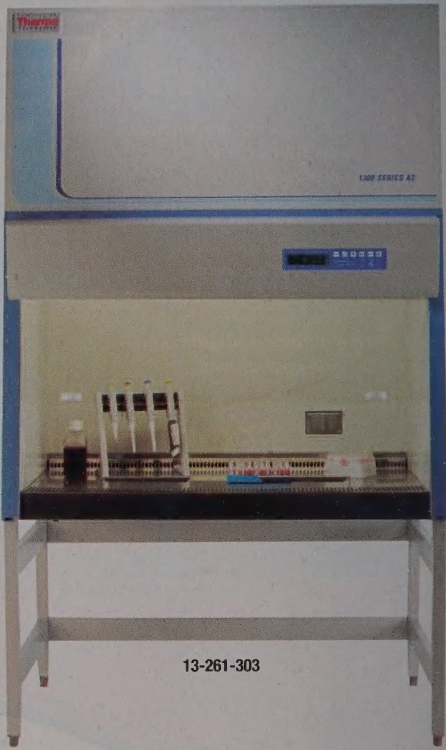
- Exhaust volumes from 328 to 541cfm, depending on model
- Patented, laminated safety glass front window has 10° slope for less glare and ergonomically comfortable working posture; lowers easily for interior cleaning
- Easy-to-reach control panel with LED displays hours of use, inflow/downflow velocities, services in use, filter usage status
- Sash opens to 10" (25cm); 21" (54cm) maximum opening
- Large, single-piece work surface provides ample space for optimizing productivity
- HEPA filter, 99.995% at 0.3μm
- Independent DC motors simultaneously control both inflow and downflow; reduce energy consumption, heat output, and vibration inside cabinet
- Motor operates at reduced speed when front window is closed—keeps interior cleaner and reduces lab noise
- No internal damper needed—continuous airflow adjustment maintains proper inflow

Safety Features

- Meet NSF Standard 49
- Real-time airflow adjustments ensure inflow and downflow velocities remain steady
- Pressure sensor filter monitoring measures total airflow across the working area
- Patented front window design simplifies cleaning for a safer working environment

Construction Features

- Work surface height ranges from 28 to 36" (71 to 91cm), with adjustable stand
- Armrest (included with package) supports ergonomic posture; prevents accidental blockage of front air grill
- Thimble exhaust connection has a zero leak damper; joins cabinet to standard 8" (20cm) dia. exhaust duct
- Two service connections (noncombustible gas, combustible gas, vacuum, water) can be ordered separately and installed on each side
- UV light (included with package) is programmable for different decontamination cycle lengths; timed UV light option preserves bulb life
- White interior walls reduce glare to improve ergonomics



13-261-303

INCLUDES:

Packages come with standard 30" (76.2cm) high stand, UV light and armrest. Accessories also available separately; contact your Fisher Scientific Customer Service Representative for more information.

WARRANTY:

Three years parts and labor on equipment

CERTIFICATIONS:

NSF Standard 49, TUV, EN; cUL listed. CE marked.

ORDERING INFORMATION:

Overall D × H (including stand set at 30" [76.2cm]): 31⅜ × 85⅝" (79.5 × 220cm)

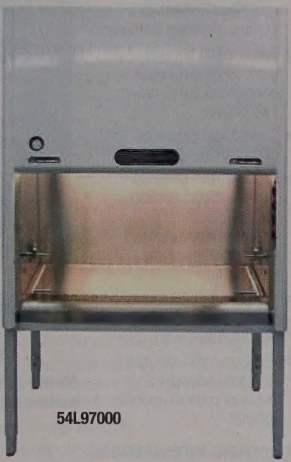
Hood Width	Cabinet Exhaust Volume	Thimble Exhaust Volume	Outlets	Electrical Requirements	Mfr. No.	Cat. No.	Each
Cabinet Only							
48" (122cm)	328-361cfm	426-469cfm	1 back wall	115V 50/60Hz	1355	**13-261-300**	6300.00
48" (122cm)	328-361cfm	426-469cfm	1 back wall	230V 50/60Hz	1356	**13-261-301**	6300.00
72" (183cm)	492-541cfm	640-703cfm	2 back wall	115V 50/60Hz	1357	**13-261-302**	7600.00
72" (183cm)	492-541cfm	640-703cfm	2 back wall	230V 50/60Hz	1358	**13-261-303**	7600.00
Cabinet Package[†]							
48" (122cm)	328-361cfm	426-469cfm	1 back wall	115V 50/60Hz	1385	**13-261-304**	6600.00
48" (122cm)	328-361cfm	426-469cfm	1 back wall	230V 50/60Hz	1386	**13-261-305**	6600.00
72" (183cm)	492-541cfm	640-703cfm	2 back wall	115V 50/60Hz	1387	**13-261-306**	7800.00
72" (183cm)	492-541cfm	640-703cfm	2 back wall	230V 50/60Hz	1388	**13-261-307**	7800.00

[†]Package includes standard 30" (76.2cm) high stand, UV light and armrest.

Thermo Scientific* Hamilton* SafeGuard* Biological Safety Cabinets

Class II Type A1/A2 protection for the operator, environment, and product

- Adjustable sliding sash seals during contamination
- Gasketed filter access panel eliminates contaminant seepage into sidewall
- Rolled airfoil and angled viewing window for easy access to fixtures and power
- Indicators for three sash positions: too high, too low, and proper operating position
- Light override keeps light off while sash is open
- Motor override shuts down the motor when sash is fully closed to prevent overheating of air space or motor
- Audible safety alarm
- Chemical-resistant finish in 18 standard urethane powder coat colors


54L97000

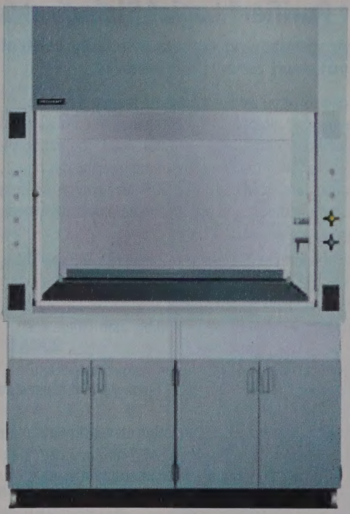
ORDERING INFORMATION:

Cabinet measures 61¾H × 32"D (157 × 81cm). Base stand must be ordered separately. Specify paint color when ordering. Contact your Fisher Scientific Customer Service Representative for details.

COMPLIANCE:

NSF approved

Width	Lighting	Fixtures	Cat. No.	Each
8" (20.3cm) Sash Opening				
42¼" (107.3cm)	None	One	**54L97000**	7025.35
¼" (107.3cm)	One UV Lamp	One	**54L97100**	6973.00
¼" (137.8cm)	None	None	**54L97200**	7888.00
¼" (137.8cm)	One UV Lamp	One	**54L97300**	8079.00
¼" (137.8cm)	None	Four	**54L97400**	8179.00
¼" (198.8cm)	None	Two	**54L97500**	10,316.00
¼" (198.8cm)	Two UV Lamps	Two	**54L97600**	10,553.00
¼" (198.8cm)	None	Four	**54L97700**	10,462.00
10" (25.4cm) Sash Opening				
¼" (107.3cm)	None	None	**54L97800**	6782.00
¼" (107.3cm)	One UV Lamp	One	**54L97900**	6973.00
¼" (137.8cm)	None	None	**54L98000**	7888.00
¼" (137.8cm)	None	One	**54L98100**	7960.00
¼" (137.8cm)	One UV Lamp	One	**54L98200**	8079.00
¼" (198.8cm)	None	None	**54L98300**	10,170.00
¼" (198.8cm)	None	Two	**54L98400**	10,316.00
¼" (198.8cm)	Two UV Lamps	Two	**54L98500**	10,816.83


54L0026P0BE

NEW

Thermo Scientific* Hamilton* ProVent* Laboratory Fume Hoods

Commonly used features and cost effective, with safety built in

- Exhaust volumes from 485 to 1570cfm, depending on hood size and sash opening
- Collar design reduces noise and conserves energy by maintaining lower static pressure
- Exterior fluorescent lighting optimizes visibility and safety

Safety Features

- Unframed sash for greater impact resistance
- 18" (46cm) sash lock/release with manual override
- Perimeter baffle slots contain fumes and eliminate dead spaces where fumes can accumulate

Construction

- Unique rectangular exhaust collar for more vertical space
- Polyresin liner has low flame spread rating, meets NFPA standards
- Blank cutout provided for optional blower switch or safety monitors

ORDERING INFORMATION:

Overall H × D: 57½ × 31¼" (146 × 79cm). Order base separately. Shipped assembled; installation required.

COMPLIANCE:

UL 1805 classified and labeled; adheres to ASHRAE* 110 tracer gas test parameters

	Total Exhaust/Static Pressure Loss at 100fpm			
Hood Width	Sash Open 18" (46cm)	Sash Fully Open	Cat. No.	Each
48" (122cm)	485cfm (0.09"H_2O)	700cfm (0.15"H_2O)	**54L0026P0BE**	4003.00
60" (152cm)	650cfm (0.09"H_2O)	920cfm (0.17"H_2O)	**54L0027P0BE**	4294.00
72" (183cm)	785cfm (0.13"H_2O)	1130cfm (0.24"H_2O)	**54L0028P0BE**	4823.00
96" (244cm)	1100cfm (0.09"H_2O)	1570cfm (0.21"H_2O)	**54L0029P0BE**	5925.00

Labconco* Purifier* Logic* Biological Safety Cabinets

Patented filter monitoring system precisely controls airflow without need for airflow sensors

Class II, Type A2 and B2 (total exhaust) cabinets feature a built-in electronically commutated motor (ECM) programmed to consistently deliver the precise volume of air required, even as filters load. The motor is in constant communication with the unit's information center, for rapid, accurate performance data. ECM consumes 50% less energy, which allows for cooler and quieter operation, and provides more power for increased HEPA filter loading.

- Exhaust volumes range from 203 to 554 (A2 models), 743 to 1151 (B2 models)
- 29" (74cm) sash-open viewing height
- Touchpad control of blower, light, timer, audible alarm mute and menu selection
- Smart-Start* System to program operations such as activation/deactivation of blower, fluorescent and UV lights when opening and closing sash
- Interior-mounted, line-of-sight LCD information center displays status, data and component icons for at-a-glance monitoring
- FILTER LIFE REMAINING bar graph displays an accurate percent of HEPA filter life remaining
- STATUS line communicates alarm conditions such as "sash too high"
- Alerts warn when filter life diminishes to 20% or airflow changes indicating an inlet grille or exhaust outlet obstruction
- Night-Smart* System idles blower when sash is fully closed to help maintain a clean, particulate-free environment inside the cabinet

Construction Features

- Built-in interval or elapsed timer for UV light control or experiment monitoring
- Supply and exhaust 99.99% efficient HEPA filters†
- Two electrical duplex receptacles (one on each side)
- Fully closing, clear ¼" (6.4mm) tempered safety glass sash with two handles; counterbalanced anti-racking mechanism; and 10" (25cm) slope
- Stainless-steel liner and removable stamped, one-piece dished work surface with two lift knobs
- Towel catch beneath work surface prevents wipes from being drawn into blower
- Curved stainless-steel inlet grille can serve as armrest
- Reserve-Air* Secondary Airflow Slots* prevent airflow blockage should operator inadvertently block portions of the inlet grille
- Glare-free fluorescent lighting outside contaminated work area
- Electronic security lock (optional activation) requires code to operate cabinet

09-681-120 (base and work surface not included)

ORDERING INFORMATION:
A2 Model dimensions: 61½H × 31¼"D (156 × 79cm). B2 Model dimension 71¼H × 31¼"D (181 × 79cm). For 115V 60Hz.

WARRANTY:
Three years parts and service

COMPLIANCE:
ETL and NSF International listed

Hood Width	Exhaust Volume	Sash Opening	Lighting	Service Fixtures	Mfr. No.	Cat. No.	Each
Class II, Type A2							
42" (107cm)	253–279cfm	10" (25cm)	Fluorescent	None	3430000	**09-681-117**	7020.00
42" (107cm)	253–279cfm	10" (25cm)	Fluorescent ultraviolet	1	3430001	**09-681-118**	7370.00
42" (107cm)	203–223cfm	8" (20cm)	Fluorescent	None	3430800	**09-681-109**	7020.00
42" (107cm)	203–223cfm	8" (20cm)	Fluorescent ultraviolet	1	3430801	**09-681-110**	7370.00
54" (137cm)	339–370cfm	10" (25cm)	Fluorescent	None	3440000	**09-681-119**	7970.00
54" (137cm)	339–370cfm	10" (25cm)	Fluorescent ultraviolet	1	3440001	**09-681-120**	8320.00
54" (137cm)	269–296cfm	8" (20cm)	Fluorescent	None	3440800	**09-681-111**	7970.00
54" (137cm)	269–296cfm	8" (20cm)	Fluorescent ultraviolet	1	3440801	**09-681-112**	8320.00
66" (168cm)	420–462cfm	10" (25cm)	Fluorescent	None	3450000	**09-681-121**	9270.00
66" (168cm)	420–462cfm	10" (25cm)	Fluorescent ultraviolet	1	3450001	**09-681-122**	9620.00
66" (168cm)	336–370cfm	8" (20cm)	Fluorescent	None	3450800	**09-681-113**	9270.00
66" (168cm)	336–370cfm	8" (20cm)	Fluorescent ultraviolet	1	3450800	**09-681-114**	9620.00
78" (198cm)	503–554cfm	10" (25cm)	Fluorescent	None	3460000	**09-681-123**	10,025.00
78" (198cm)	503–554cfm	10" (25cm)	Fluorescent ultraviolet	2	3460001	**09-681-124**	10,525.00
78" (198cm)	403–443cfm	8" (20cm)	Fluorescent	None	3460800	**09-681-115**	10,025.00
78" (198cm)	403–443cfm	8" (20cm)	Fluorescent ultraviolet	2	3460801	**09-681-116**	10,525.00
Class II, Type B2 (Total Exhaust)							
54" (137cm)	743–771cfm	8" (20cm)	Fluorescent	None	3441000	**09-681-133**	11,700.00
54" (137cm)	743–771cfm	8" (20cm)	Fluorescent ultraviolet	1	3441001	**09-681-134**	12,050.00
78" (198cm)	1111–1151cfm	8" (20cm)	Fluorescent	None	3461000	**09-681-135**	13,645.00
78" (198cm)	1111–1151cfm	8" (20cm)	Fluorescent ultraviolet	2	3461001	**09-681-136**	13,995.00

†Contact your Fisher Scientific Customer Service Representative for optional 99.999% efficient ULPA filters.

Labconco* Purifier* Class I and HEPA-Filtered Safety Enclosures

Personnel and environmental biohazard protection

Meet requirements for Biosafety Level 1, 2, or 3 containment without product protection, making these an economical alternative to Class II biosafety cabinets. Also suitable for chemical and particulate powder weighing and other procedures generating fine dusts or aerosols. HEPA-filtered enclosures require no outside exhausting.

- Total exhaust from 155 to 310cfm, depending on hood width
- Sash pivots 10°, from 9½" (24cm) operating position to 20" (50.8cm) opening for loading and maintenance
- Quiet variable-speed, solid-state internal blower maintains appropriate air velocity
- Airfoil with Clean-Sweep* airflow openings
- Optional built-in Guardian* Airflow Monitor to alert user of face velocities outside preset range (where applicable)
- Front-mounted Minihelic pressure gauge monitors pressure differential against the HEPA filter
- HEPA filter is 99.99% efficient on 0.3µm particles (where applicable)
- Negative pressure design ensures containment—should a leak occur, the system traps the contaminated air and recirculates it through the filter
- Class I Enclosures have a 15w, 254nm germicidal UV lamp to use in conjunction with surface disinfection to ensure decontamination of biohazardous particulates while unattended
- ¼" (6.4mm) tempered glass side panels and sash
- Glare-free fluorescent lamp mounted outside contamination area
- Blower and light switches are front-mounted for easy access
- Epoxy-coated aluminum frame and steel rear plenum and zone-perforated rear baffle
- Back panel has two utility ports for service connections
- Open bottom allows enclosure to be placed on existing cabinetry or accessory dished work surface

ORDERING INFORMATION:
28¾L × 37"H (73 × 94cm). 115V 60Hz, 3A.

COMPLIANCE:
ASHRAE* 110-1995 conformity tested. Biological containment verified per NSF Standard Number 49 Personnel Protection Test

CERTIFICATIONS:
ETL listed (certified to UL 3101-1/61010-1 and CAN/CSA C22.2 No. 1010.1)

10-304-115

NOTE:
For operator safety, UV lamp cannot be turned on when fluorescent lamp is in use.

Width	Exhaust Volume	Guardian Airflow Monitor	UV Lamp	Shipping Wt.	Mfr. No.	Cat. No.	Each
Class I Enclosures							
24" (61cm)	110-155cfm	No	254nm	125 lb. (57kg)	3980201	**10-304-110**	3830.00
24" (61cm)	110-155cfm	Yes	254nm	125 lb. (57kg)	3980203	**10-304-111**	4415.00
36" (91.4cm)	165-230cfm	No	254nm	160 lb. (73kg)	3980301	**10-304-114**	4255.00
36" (91.4cm)	165-230cfm	Yes	254nm	160 lb. (73kg)	3980303	**10-304-115**	4840.00
48" (121.9cm)	220-310cfm	No	254nm	195 lb. (88kg)	3980401	**10-304-118**	4680.00
48" (121.9cm)	220-310cfm	Yes	254nm	195 lb. (88kg)	3980403	**10-304-119**	5265.00
HEPA-Filtered Enclosures							
24" (61cm)	110-155cfm	No	None	125 lb. (57kg)	3980200	**10-304-122**	3540.00
24" (61cm)	110-155cfm	Yes	None	125 lb. (57kg)	3980202	**10-304-123**	4125.00
36" (91.4cm)	165-230cfm	No	None	160 lb. (73kg)	3980300	**10-304-126**	3965.00
36" (91.4cm)	165-230cfm	Yes	None	160 lb. (73kg)	3980302	**10-304-127**	4550.00
48" (121.9cm)	220-310cfm	No	None	195 lb. (88kg)	3980400	**10-304-130**	4390.00
48" (121.9cm)	220-310cfm	Yes	None	195 lb. (88kg)	3980402	**10-304-131**	4975.00

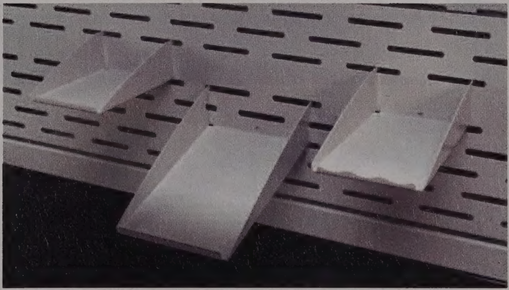
Labconco* Utility Shelf Kit

Keep accessories in reach

Three one-piece, epoxy-coated steel shelves attach to rear baffle perforations.

- Printer shelf (can also be inverted and rest atop enclosure); 6¾W × 10"D
- Utensil shelf with scalloped front edge supports spatulas, brushes and other items; 5¼W × 9"D
- Miscellaneous shelf, 5¼W × 7"D
- Fits XPert* Balance Enclosure, Station or System; Protector* XVS Ventilation Station; Purifier* Class I and HEPA-Filtered Enclosures (manufactured after July 2004); and Protector Work Station (manufactured after August 2004)

Mfr. No.	Cat. No.	Each
3925000	**10-304-74**	91.71



10-304-74

LAMINAR FLOW

Fisher Scientific PCR Workstation

Controlled, clean environment for PCR sample preparation

PCR WORKSTATION
Fisher Scientific

FB-PCR2

Compact vertical laminar flow cabinet—less than 5 sq. ft.—turns any area of the lab into a PCR cleanroom; provides sample protection during PCR work. Positive airflow system continually sweeps contaminants through the HEPA filter to reduce risk of contamination. Between amplifications, the built-in UV sterilizer destroys all potentially contaminating DNA and RNA.

- Airflow velocity: 70fpm
- 99.99% efficient HEPA filter delivers ISO 5 (Class 100) clean air
- 254nm UV lamp with 15 min. timer provides decontamination
- Large viewing area is slanted 7° for better visibility
- 1½" (3.8cm) dia. utility port
- Three-way light switch
- Fan switch
- Rear exhaust grill
- Stainless-steel work surface is removable and easy to clean
- Detachable clear polycarbonate front panel (safety switch prevents UV lamp activation when removed)
- Durable painted steel cabinet

ORDERING INFORMATION:
Dimensions: 24½ × 28¾ × 35½" (62 × 73 × 90cm). Shipping weight: 162 lb. (73.5kg). For 115V 50/60Hz.

INCLUDES:
HEPA filter and prefilter

WARRANTY:
12 months

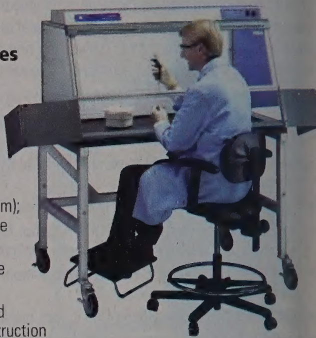
CERTIFICATIONS:
UL listed CSA US approved.

Cat. No.	Each
FB-PCR2	4096.69

WARNING
Workstation does not provide personal protection.

Labconco* Purifier* Non-Ventilated PCR and Tissue Culture Enclosures

Designed to reduce cross-contamination during PCR procedures and culture manipulations



16-108-286

- 7¾" (19.7cm) high sash opening
- 20°-angled, hinged sash pivots upward, locks to a loading height of 20" (51cm); has wiping seals to reduce cross contamination
- Bifold doors that close the sash opening
- UV-resistant epoxy-coated aluminum and steel construction
- UV-opaque and resistant, ¾" (1.5cm) thick tempered safety glass sash and sides
- Fluorescent and 254nm UV lamp
- Front-mounted switches for three-way light (fluorescent, UV and off)
- One interior electrical receptacle and one auxiliary electrical receptacle
- Two utility ports with iris openings and plugs

ORDERING INFORMATION:
Dimensions: 48W × 26¾D × 25¾"H (122 × 68 × 65cm). Shipping weight: 100 lbs. (45kg). Airflow monitor not included.

INCLUDES:
Variable timer for UV exposure with eight settings in minutes of 5, 10, 15, 30, 60, 120, 240 and continuous.

REQUIRED ACCESSORIES:
Supporting base, work surface (available separately)

CERTIFICATIONS:
ETL listed (115V models); CE marked (230V model)

Description	Electrical Reqts.	Mfr. No.	Cat. No.	Each
PCR Enclosure	115V 60Hz, 10A	3952400	**16-108-286**	4175.00
PCR Enclosure	230V 50Hz, 5A	3952420	**16-108-287**	4175.00
Tissue Culture Enclosure	115V 60Hz, 10A	3951400	**16-108-284**	4060.00

WARNING
Because these enclosures do not provide protection to the user, they should not be used in conjunction with biohazardous material, toxins or radionuclides. You and your safety officer must carefully assess the risk associated with any operation performed in a Purifier* Non-Ventilated Enclosure.

*Trademark. See Trademark Reference.

Prices subject to change.

Labconco* Purifier* Horizontal Clean Benches

Benchtop units for electronics and semiconductor testing, clinical labs and hospitals

Benches direct HEPA-filtered air horizontally over the work area to provide ISO Class 5 (formerly Class 100) conditions and protect work from particulate contamination. Applications include plant tissue culture, media plate preparation, electronics inspection, medical device assembly and pharmacy drug preparation.

- Draws room air through top of cabinet, filters out 99.99% of particles of 0.3µm and spreads sterile air over work area
- Provides ISO 5 (Class 100) air: fewer than 100 particles 0.5µm or larger per cubic foot of air
- Angled profile is free of protrusions that could interfere with visibility or obstruct taller users
- Differential pressure across the HEPA filter is monitored via a Minihelic* II pressure gauge
- Easy-to-clean, melanine-laminated hard board interior work surface, epoxy-coated steel on exterior
- Optional factory-installed 254nm UV lamp aids in decontamination while bench is not in use
- Chrome-plated forged brass service fixture(s) with quarter-turn knobs are mounted on the right-side panel

16-107-168

ORDERING INFORMATION:
Overall: 34¾L × 48½"H (88 × 123cm). Work surface: 19"D (51cm). 115V 60Hz. Shipped assembled.

INCLUDES:
Replacement prefilter (to trap large particles), one HEPA filter, variable-speed motor blower(s), light switch, blower switch, and three-wire cord and plug. 36" and 48" models have one polarized, grounded electrical receptacle; 72" models have two.

REQUIRED ACCESSORIES:
Supporting base

COMPLIANCE:
ETL listed

CERTIFICATIONS:
UL 3101-1/61010-1 listed, CAN/CSA C22.2 No. 1010.1 approved.

Nominal Width	UV Lamp(s)	Service Fixtures	Shipping Weight	Mfr. No.	Cat. No.	Each
36" (91cm)	None	None	344 lb. (156kg)	3600000	**16-107-1**	4765.00
	Yes	1	344 lb. (156kg)	3600004	**16-107-163**	5260.00
48" (122cm)	None	None	392 lb. (178kg)	3612500	**16-107-11**	6060.00
	Yes	1	392 lb. (178kg)	3612504	**16-107-168**	6755.00
72" (183cm)	None	None	514 lb. (233kg)	3610000	**16-107-10**	8460.00
	Yes	2	514 lb. (233kg)	3610004	**16-107-173**	9125.00

WARNING
Units do not protect user and should not be used in conjunction with biohazardous material, toxins or radionuclides.

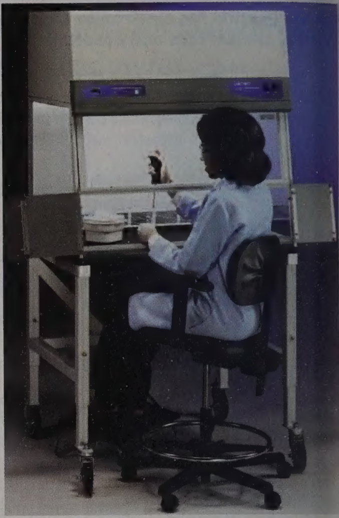
Labconco* Purifier* Vertical Clean Benches and Filtered PCR Enclosures

Protect work from particulate contamination

Available as clean benches or specially fitted for PCR procedures, units use a 99.99% efficient HEPA filter to maintain ISO Class 5 (Class 100) conditions within the work area.

- Intrinsically sound negative pressure design
- Room air is drawn into top-mounted prefilter, then through HEPA filter before circulating air vertically through work area (nominal downforce velocity of 45-65fpm)
- 10° sash pivots from 9⅜" (23.9cm) operating position to 20" (50.8cm) opening for loading and cleaning
- Air diffuser protects surface of HEPA filter from possible damage from apparatus
- Rear exhaust grille disperses air evenly across work area with minimal air turbulence
- Quiet variable-speed, solid-state internal blower with motorized impeller
- Blower and light switches are front-mounted and easily reached; UV lamp models have switch to power only one light at a time
- UV-opaque and resistant, ¼" thick (6.4mm) safety glass side panels and sash
- Epoxy-coated steel upper cabinet and back panel
- Front-mounted Minihelic* pressure gauge
- Fluorescent lamp is placed outside of work area
- Back panel has two utility ports for service connections
- Open cabinet bottom enables unit to fit on existing cabinetry or custom dished work surface

ORDERING INFORMATION:
Dimensions: 28⅝D × 36¾"H (72.6 × 93.5cm). For 115V 60Hz; 24" models are 3A, 36" and 48" models are 5A. Vertical Clean Benches can be ordered with bifold doors; specify when ordering. Guardian* Airflow Monitor is offered as factory-installed option on all benches and PCR Enclosures; specify when ordering.



16-108-273

INCLUDES:
Three-wire 15A line cord and plug. Filtered PCR Enclosures also include 15w, 254nm UV lamp for secondary decontamination; variable digital UV lamp timer (8 settings) and LED display; bifold doors for complete closure.

REQUIRED ACCESSORIES:
Work surface and base stand (sold separately)

WARRANTY:
One year parts and service

CERTIFICATIONS:
ETL listed

Width	UV Lamp	Guardian Airflow Monitor	Shipping Wt.	Mfr. No.	Cat. No.	Each
Vertical Clean Benches						
24" (61cm)	No	No	125 lb. (57kg)	3970200	**16-108-243**	4085.00
	Yes	No	125 lb. (57kg)	3970201	**16-108-245**	4420.00
	No	Yes	125 lb. (57kg)	3970203	**16-108-246**	4675.00
	Yes	Yes	125 lb. (57kg)	3970204	**16-108-247**	5005.00
36" (91cm)	No	No	160 lb. (73kg)	3970300	**16-108-252**	4485.00
	Yes	No	160 lb. (73kg)	3970301	**16-108-253**	4900.00
	No	Yes	160 lb. (73kg)	3970303	**16-108-254**	5070.00
	Yes	Yes	160 lb. (73kg)	3970304	**16-108-255**	5490.00
48" (122cm)	No	No	195 lb. (88kg)	3970400	**16-108-260**	5370.00
	Yes	No	195 lb. (88kg)	3970401	**16-108-261**	5870.00
	No	Yes	195 lb. (88kg)	3970403	**16-108-262**	5960.00
	Yes	Yes	195 lb. (88kg)	3970404	**16-108-263**	6455.00
Filtered PCR Enclosures						
24" (61cm)	Yes	No	125 lb. (57kg)	3970202	**16-108-268**	4530.00
	Yes	Yes	125 lb. (57kg)	3970205	**16-108-269**	5115.00
36" (91cm)	Yes	No	160 lb. (73kg)	3970302	**16-108-272**	5010.00
	Yes	Yes	160 lb. (73kg)	3970305	**16-108-273**	5515.00
48" (122cm)	Yes	No	195 lb. (88kg)	3970402	**16-108-276**	5980.00
	Yes	Yes	195 lb. (88kg)	3970405	**16-108-277**	6400.00

WARNING
Labconco* Purifier* Vertical Clean Benches do not provide user protection. Biohazardous materials, toxins and radionuclides should be handled in Class I or Class II biological safety cabinets. (See Labconco Purifier Class I Safety Enclosures and Delta Series Cabinets).

*Trademark. See Trademark Reference.

Prices subject to change.

Labconco* PuriCare* Bedding Disposal Station

Convenient, mobile system for disposing of used small animal bedding

10-269-135

- Nominal inflow velocity of 50 to 60fpm (15.2 to 16.8m/min.)
- 99.99%-efficient HEPA filter
- Rear baffle optimizes airflow and distributes air evenly across the entire work area
- Interior panel protects prefilter and HEPA filter from contact with animal cages placed inside the enclosure
- Top-mounted prefilters adsorb odors, low molecular weight contaminants, and other gases from the exhaust airflow; also extend HEPA filter life
- Variable-speed blowers with solid-state control
- Fits easily through doorways and aisles; large, nonmarking polyurethane casters can lock in position
- Large access opening accommodates larger cages
- Large LDPE waste container on casters holds 40 gal. standard-size trash bags
- Glacier white epoxy-coated stainless-steel exterior
- Type 304 stainless-steel interior sides, back, upper panel, rear baffle and work surface
- 20w fluorescent light
- Work surface features 12" (30.5cm) square receptacle with removable trim ring

ORDERING INFORMATION:

Exterior L × W × H: 35 × 36 × 75½"H (89 × 91 × 192cm). Interior D × W × H: 28 × 34½ × 21½" (71 × 88 × 55cm). Shipping weight: 400 lb. (182kg). Replacement waste container (09-039-122), exhaust filters (09-039-127), and dolly (09-039-123) available separately. For 115V 60Hz.

INCLUDES:

10' (3m) three-wire cord and plug

WARRANTY:

Limited three-year on parts and service

CERTIFICATIONS:

ETL listed

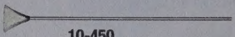
Mfr. No.	Cat. No.	Each
3840000	**10-269-135**	7875.00

FUNNELS

FILTERING—GENERAL PURPOSE

*Fisherbrand** Funnel with 300mm Stem

Flint glass with conical top



10-450

Top Dia.	Stem Dia.	Stem Length	Cat. No.	Each
45mm	6mm	300mm	**10-450**	14.86

Pyrex* Funnels with Precise 60° Angle Bowls and 150mm Stems

General-purpose filtering funnels with stems made of heavy-wall tubing

- Permit precise filter paper fitting
- Resist thermal shock and chemical action
- Beaded edges increase mechanical strength

10-326C

Top Dia.	Overall Length	Stem Dia.	Mfr. No.	Cat. No.	Case of
50mm	193mm	8mm	6140 50	**10-326A**	12/78.81
65mm	206mm	8mm	6140 65	**10-326B**	12/88.24
75mm	214mm	8mm	6140 75	**10-326C**	12/95.23
100mm	236mm	9mm	6140 100	**10-326D**	6/59.46

Pyrex* Funnels with 60° Angle Bowls and 100mm Stems

Beaded rims reduce chipping

- Withstand heat shock
- Resist chemical attack

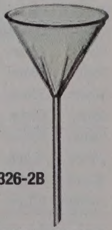
10-373B

Top Dia.	Mfr. No.	Cat. No.	Pack of 6	Case of 2 Pk.
122mm	6120 5	**10-373A**	139.17	202.58
147mm	6120 6	**10-373B**	248.77	362.91

Pyrex* Funnels with Fluted Bowls and 150mm Stems

Depressed inside flutings increase filtering speed

- Strong, beaded rims
- Bowl angle: 60°



10-326-2B

Top Dia.	Mfr. No.	Cat. No.	Case of 12
65mm	6160 65	**10-326-2B**	135.43
75mm	6160 75	**10-326-2C**	130.75

Pyrex* Funnels with Fluted Bowls and Short Stems

Useful in clinical and hospital labs; can be used in flasks or tubes without racks

- Strong, beaded rims
- Bowl angle: 60°

10-329A

Top Dia.	Stem Length	Mfr. No.	Cat. No.	Pack of	Case of 4 Pk.
50mm	65mm	6180 50	**10-329A**	12/131.85	385.14
65mm	65mm	6180 65	**10-329B**	12/147.10	429.74
75mm	75mm	6180 75	**10-329C**	12/159.11	464.69
100mm	100mm	6180 100	**10-329D**	6/102.84	300.51

Kimax* Funnels with 58° Angle Bowls and 150mm Stems

Bowls pressed to exact angle for fast filtering

- Heavy uniform walls
- Beaded reinforced rims
- Fire-polished ends

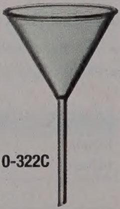
10-325B

Top Dia.	Fits Paper of Dia.	Mfr. No.	Cat. No.	Pack of	Case of 4 Pk.
55mm	90mm	28900 55	**10-325A**	12/103.39	301.34
65mm	110mm	28900 65	**10-325B**	12/109.98	320.56
75mm	125mm	28900 75	**10-325C**	12/118.39	345.07
100mm	185mm	28900 100	**10-325E**	6/83.46	243.55

Kimax* Funnels with 58° Angle Bowls and Short Stems

Bowls pressed to exact angle for fast filtering

- Heavy uniform walls
- Beaded reinforced rims
- Fire-polished ends

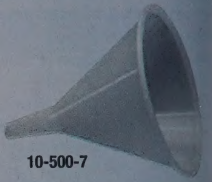

10-322C

Top Dia.	Stem Length	Fits Paper of Dia.	Mfr. No.	Cat. No.	Pack of	Case of 4 Pk.
25mm	40mm	42.5mm	28950 25	**10-322J**	24/106.48	----
35mm	50mm	55mm	28950 35	**10-322A**	6/48.01	139.96
45mm	50mm	70mm	28950 45	**10-322B**	6/45.61	132.98
55mm	63mm	90mm	28950 55	**10-322C**	12/127.47	371.50
65mm	63mm	110mm	28950 65	**10-322D**	12/142.14	414.28
75mm	75mm	125mm	28950 75	**10-322E**	12/153.68	447.92
90mm	97mm	150mm	28950 90	**10-322F**	6/78.09	227.89
100mm	97mm	185mm	28950 100	**10-322G**	6/99.47	289.56

*Fisherbrand** Heavy-Duty/Utility Funnels

Ideal for continuous lab work and heavy-duty jobs

- Durable polypropylene construction with external ridges and ribbing to prevent vapor lock
- Autoclavable to 120°C (248°F)

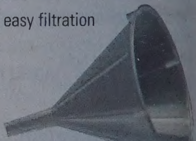

10-500-7

Top Dia.	Overall Length	Capacity	Cat. No.	Pack of	Case of
55mm	65mm	40mL	**10-500-4**	12/24.55	6 Pk./125.88
65mm	90mm	40mL	**10-500-5**	12/36.53	6 Pk./146.12
65mm	110mm	100mL	**10-500-6**	12/44.49	6 Pk./177.97
85mm	115mm	140mL	**10-500-7**	12/51.34	6 Pk./205.34
125mm	141mm	210mL	**10-500-8**	12/76.89	6 Pk./307.55
155mm	177mm	410mL	**10-500-9**	3/34.26	8 Pk./182.72
205mm	205mm	550mL	**10-500-10**	3/56.14	4 Pk./149.70

*Fisherbrand** Disposable Polypropylene Funnels with Short Stems

Clear, tough, molded polypropylene funnel withstands acids, alkalis, and organic solvents

- With tabs for sample identification
- Inside surfaces are ribbed and slope for easy filtration
- Outside ribbing prevents air lock
- Nonwetting surface drains completely
- Use standard filter paper
- Autoclavable to 120°C (248°F)
- Bowl angle: 60°

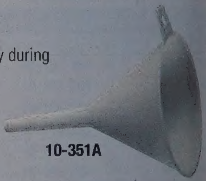

10-500-20

Top Dia.	Stem Length	Overall Length	Capacity	Cat. No.	Case of 100
55mm	65mm	65mm	40mL	**10-500-18**	27.88
65mm	90mm	90mm	50mL	**10-500-19**	27.88
100mm	115mm	115mm	85mL	**10-500-20**	42.78

Fisherbrand * Disposable Polypropylene Funnels with Long Stems

Chemical-resistant, nonstick, nonstaining surface won't stress-crack

- With tabs for sample identification
- Four ribs in cone/stem for extra rigidity during and after autoclaving
- Circular ribbing in stem for easy filtration
- Autoclavable at 120°C (248°F)
- Bowl angle: 60°


10-351A

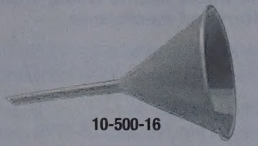
Top. Dia.	Stem Length	Overall Length	Capacity	Cat. No.	Pack of	Case of 10 Pk.
65mm	44mm	90mm	50mL	**10-351A**	10/27.29	233.22
102mm	70mm	150mm	150mL	**10-351C**	3/18.71	159.95
125mm	84mm	185mm	375mL	**10-351E**	2/18.71	159.95
158mm	99mm	215mm	725mL	**10-351G**	1/16.69	142.67

*Trademark. See Trademark Reference.

*Fisherbrand** Long-Stem Analytical Funnels

Molded polypropylene with external ridges and outside ribs to prevent vapor lock

- Inside ribbed surface slopes for quick filtration
- Use standard filter paper
- Autoclavable to 120°C (248°F)
- Bowl angle: 58°

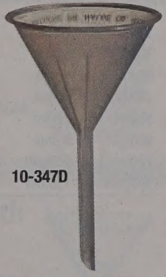

10-500-16

Top Dia.	Stem Length	Overall Length	Fits Paper of Dia.	Capac.	Cat. No.	Pack of	Case of
34mm	52mm	75mm	55mm	12mL	**10-500-11**	12/31.62	3 Pk./ 63.23
48mm	50mm	83mm	70mm	23mL	**10-500-12**	12/33.47	3 Pk./ 66.94
55mm	61mm	102mm	90mm	37mL	**10-500-13**	12/35.82	3 Pk./ 71.65
66mm	65mm	109mm	110mm	50mL	**10-500-14**	12/40.92	3 Pk./ 81.84
77mm	80mm	141mm	125mm	100mL	**10-500-15**	6/28.92	6 Pk./ 115.67
92mm	88mm	161mm	150mm	150mL	**10-500-16**	6/34.11	4 Pk./ 90.95
104mm	99mm	177mm	185mm	185mL	**10-500-17**	4/27.60	6 Pk./ 110.42

algene* Polypropylene Funnels with ong Stems and External Ridges

utside ribbing eliminates air lock

- Internal ribs sloped for rapid filtration
- Use standard filter paper
- Autoclavable
- Bowl angle: 58°

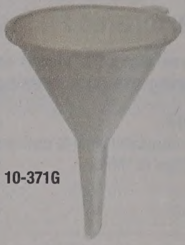

10-347D

op Dia.	Stem Length	Fits Paper of Dia.	Mfr. No.	Cat. No.	Pack of	Case of
4mm	52mm	55mm	4250-0035	**10-347C**	12/40.33	3 Pk./80.65
8mm	50mm	70mm	4250-0045	**10-347A**	12/42.84	3 Pk./85.68
5mm	61mm	90mm	4250-0055	**10-347B**	12/44.48	3 Pk./88.94
6mm	65mm	110mm	4250-0065	**10-347D**	12/52.20	3 Pk./104.39
7mm	80mm	125mm	4250-0075	**10-347E**	6/36.82	6 Pk./147.30
2mm	88mm	150mm	4250-0090	**10-347F**	6/43.48	4 Pk./115.93
04mm	99mm	185mm	4250-0100	**10-347G**	4/35.07	6 Pk./140.27
58mm	151mm	240mm	4250-0160	**10-347H**	2/43.10	6 Pk./172.39

Nalgene* Polyethylene Funnels

Heavy-duty funnels are ideal for vacuum filtration

- Three largest sizes are ribbed and have tab handles
- Funnel 10-371G is high-density polyethylene; others are low-density polyethylene
- Not recommended for exposure over 80°C (176°F)


10-371G

Top Dia.	Overall Length	Stem Dia.	Stem Length	Capac.	Mfr. No.	Cat. No.	Price	Case of
52mm	71mm	10mm	39mm	29mL	4260 0020	**10-371A**	6/39.94	3 Pk./ 79.90
76mm	99mm	11mm	40mm	104mL	4260 0030	**10-371B**	6/63.24	3 Pk./ 126.47
101mm	146mm	12mm	72mm	254mL	4260 0040	**10-371AA**	2/34.32	6 Pk./ 137.26
152mm	196mm	15mm	76mm	0.78L	4260 0060	**10-371BB**	Ea./ 25.63	12/ 205.02
248mm	319mm	23mm	117mm	3.68L	4260 0100	**10-371CC**	Ea./ 83.94	2/ 111.92
343mm	445mm	33mm	191mm	6.98L	4260 0120	**10-371G**	Ea./ 142.28	2/ 189.71

Scienceware* Polypropylene Funnels with Short Stems and External Ridges

Tough polypropylene construction stands up to heavy-duty jobs

- Especially recommended for continuous lab work
- With ridges to prevent vapor lock

10-371C

Top Dia.	Overall Length	Stem Dia.	Stem Length	Mfr. No.	Cat. No.	Pack of	Case of
100mm	105mm	19mm	45mm	14696 0000	**10-371C**	6/50.02	12 Pk./513.00
150mm	178mm	19mm	80mm	14697 0000	**10-371D**	3/30.83	8 Pk./210.79
180mm	187mm	25mm	70mm	14698 0000	**10-371E**	3/33.76	8 Pk./230.86
270mm	343mm	35mm	140mm	14699 0000	**10-371F**	1/27.48	6/140.93

FILTERING—BÜCHNER TYPE

Pyrex* Büchner Funnels with Perforated Plates

Clear glass for visual examination during use and cleaning

NOTE:
Do not subject plate to pressure differential in excess of 15psi (0.1MPa).

10-357B

Diameter	Overall Height	Height Above Plate	Mfr. No.	Cat. No.	Each	Case of 6
42.5mm	150mm	50mm	6060 42X	**10-357A**	----	774.07
55mm	154mm	50mm	6060 55	**10-357B**	155.13	642.00
90mm	240mm	90mm	6060 90	**10-357C**	208.50	----

Pyrex* Büchner Funnels with Fritted Discs

Useful where filter paper would be attacked by material being filtered

NOTE:
Do not subject disc to pressure differential greater than 15psi (0.1MPa).

10-358L

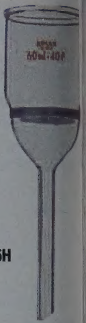
Capacity	Disc Dia.	Mfr. No.	Cat. No.	Price	Case of
Fine Fritted Discs—nominal maximum pore size 4 to 5.5µm					
15mL	20mm	36060 15F	**10-358A**	Pk. of 3/166.44	2 Pk./239.83
30mL	30mm	36060 30F	**10-358D**	Ea./58.47	6/242.18
60mL	40mm	36060 60F	**10-358G**	Ea./64.10	6/267.47
350mL	80mm	36060 350F	**10-358N**	Ea./160.81	3/332.42
600mL	90mm	36060 600F	**10-358V**	Ea./143.24	----
3000mL	152mm	36060 3LF	**10-358-2H**	Ea./459.43	----
Medium Fritted Discs—nominal maximum pore size 10 to 15µm					
2mL	10mm	36060 2M	**20-704B**	Ea./52.84	9/318.47
15mL	20mm	36060 15M	**10-358B**	Ea./52.86	6/215.13
30mL	30mm	36060 30M	**10-358E**	Ea./58.47	6/242.18
60mL	40mm	36060 60M	**10-358H**	Ea./64.10	6/267.47
150mL	60mm	36060 150M	**10-358L**	Ea./118.09	4/320.15
350mL	80mm	36060 350M	**10-358P**	Ea./160.81	3/332.42
600mL	90mm	36060 600M	**10-358S**	Ea./191.16	3/398.49
2000mL	127mm	36060 2LM	**10-358-2B**	Ea./432.97	2/609.73
3000mL	152mm	36060 3LM	**10-358-2G**	Ea./410.96	----
Coarse Fritted Discs—nominal maximum pore size 40 to 60µm					
15mL	20mm	36060 15C	**10-358C**	Ea./52.86	6/215.13
30mL	30mm	36060 30C	**10-358F**	Ea./58.47	6/242.18
150mL	60mm	36060 150C	**10-358M**	Ea./118.09	4/320.15
350mL	80mm	36060 350C	**10-358Q**	Ea./160.81	3/332.42
600mL	90mm	36060 600C	**10-358T**	Ea./191.16	3/398.49
2000mL	127mm	36060 2LC	**10-358-2A**	Ea./432.97	2/609.73
3000mL	152mm	36060 3LC	**10-358-2F**	Ea./410.96	----

Kimax* Büchner Funnels with Kimflow* Fritted Discs

Use where filtrate would attack paper filters and membranes

- With marking spots
- Heavy-wall stems and beaded top rims for extra strength

COMPLIANCE:
Designed from Fed. Spec. DD-F-776.



10-358-5H

Capacity	I.D.	Mfr. No.	Cat. No.	Each	Case
Fine Fritted Discs—maximum pore size 4 to 5.5µm					
2mL	10mm	28400 23	**10-310-112**	44.25	--
15mL	20mm	28400 153	**10-310-109**	43.48	--
30mL	30mm	28400 303	**10-310-113**	45.53	--
60mL	40mm	28400 603	**10-310-116**	50.29	--
150mL	60mm	28400 1503	**10-310-108**	90.23	--
350mL	80mm	28400 3503	**10-310-114**	124.99	--
600mL	90mm	28400 6003	**10-310-115**	155.81	--
Medium Fritted Discs—maximum pore size 10 to 15µm					
2mL	10mm	28400 22	**10-424A**	52.74	9/346.5
15mL	20mm	28400 152	**10-358-22D**	49.11	6/215.1
30mL	30mm	28400 302	**10-358-22F**	55.57	6/243.3
60mL	40mm	28400 602	**10-358-5H**	61.33	6/268.6
150mL	60mm	28400 1502	**10-358-22J**	108.62	4/317.1
350mL	80mm	28400 3502	**10-358-22L**	151.86	3/332.5
600mL	90mm	28400 6002	**10-358-5V**	----	3/398.6
2000mL	125mm	28400 20002	**10-310-111**	304.95	--
3000mL	150mm	28400 30002	**10-358-22S**	411.10	--
Coarse Fritted Discs—maximum pore size 40 to 60µm					
2mL	10mm	28400 21	**10-358-22A**	52.74	9/346.5
15mL	20mm	28400 151	**10-358-22C**	49.11	6/215.1
30mL	30mm	28400 301	**10-358-22E**	55.33	6/242.3
60mL	40mm	28400 601	**10-358-5J**	61.33	6/268.6
150mL	60mm	28400 1501	**10-358-5M**	109.67	4/320.2
350mL	80mm	28400 3501	**10-358-22K**	151.86	3/332.5
600mL	90mm	28400 6001	**10-358-5T**	----	3/400.3
2000mL	125mm	28400 20001	**10-310-110**	304.95	--
3000mL	150mm	28400 30001	**10-358-22R**	411.10	--

*Trademark. See Trademark Reference.

Prices subject to change.

Nalgene* Büchner Two-Piece Polypropylene Funnels

Components separate easily for cleaning

- Sturdy funnels consist of cup and funnel with perforated plate
- Autoclavable to 135°C (275°F)
- Made entirely of polypropylene

10-362B

Capacity	Top Dia.	Overall Length	Stem Dia.	Stem Length	Fits Paper of Outside Dia.	Mfr. No.	Cat. No.	Each	Case of
83mL	59mm	104mm	10mm	45mm	55mm	4280-0550	**10-362B**	12.02	8/64.07
186mL	76mm	146mm	11mm	65mm	70mm	4280-0700	**10-362C**	15.26	6/61.05
358mL	93mm	169mm	12mm	71mm	90mm	4280-0900	**10-362D**	26.00	4/69.35
919mL	130mm	213mm	22mm	93mm	110mm	4280-1100	**10-362E**	37.59	4/100.25
2.91L	172mm	283mm	20mm	107mm	150mm	4280-1500	**10-362G**	46.96	4/125.22

Coors* Porcelain Büchner Funnels with Fixed Perforated Plates

Completely glazed except for rims

- One-piece funnel

10-356A

apacity	Overall Length	Plate Dia.	Dia. of Perforated Area	Fits Paper Dia.	Mfr. No.	Cat. No.	Each	Case of
2mL	64mm	14.5mm	11mm	13mm	60238	**20-686**	26.80	12/292.41
0mL	89mm	43mm	32mm	42.5mm	60239	**10-356A**	25.88	12/282.37
7mL	101mm	56mm	42mm	55mm	60240	**10-356B**	30.85	8/224.37
86mL	143mm	83mm	60mm	75mm	60242	**10-356C**	40.66	6/221.80
20mL	160mm	100mm	77mm	90mm	60243	**10-356D**	56.56	4/193.37
50mL	195mm	114mm	95mm	110mm	60244	**10-356E**	68.03	4/240.79
00mL	202mm	126mm	105mm	125mm	60245	**10-356F**	91.81	2/162.49
060mL	221mm	151mm	135mm	150mm	60246	**10-356G**	129.54	2/221.43
860mL	270mm	186mm	160mm	185mm	60247	**10-356H**	226.26	2/386.77
500mL	350mm	253mm	213mm	240mm	60248	**10-356J**	293.30	----

oors* Porcelain Büchner Funnel with Fixed Perforated Plate for Vacuum

ne-piece table-type style

- Side outlet for vacuum filtration
- Glazed inside and out except for rim

10-354G

Capacity	Plate Dia.	Dia. of Perforated Area	Height	Mfr. No.	Cat. No.	Each
750mL	126mm	102mm	109mm	60281	**10-354G**	360.80
1900mL	186mm	160mm	122mm	60282	**10-354H**	435.21

FILTERING—HIRSCH TYPE

yrex* Hirsch-Type Funnel with ritted Disc

leal when necessary to wash precipitates nd redissolve with chemicals that would ttack filter paper

- Angle of funnel body eases removal of precipitates

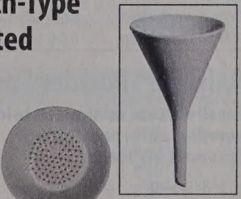
10-359 A

p Dia.	Stem Length	Disc Dia.	Mfr. No.	Cat. No.	Each
ne Fritted Discs—nominal maximum pore size 4 to 5.5µm					
mm	75mm	20mm	36210 50F	**10-359A**	51.75
mm	70mm	30mm	36210 75F	**10-359D**	72.35
edium Fritted Discs—nominal maximum pore size 10 to 15µm					
mm	75mm	20mm	36210 50M	**10-359B**	51.38
mm	70mm	30mm	36210 75M	**10-359E**	73.62
arse Fritted Discs—nominal maximum pore size 40 to 60µm					
mm	75mm	20mm	36210 50C	**10-359C**	52.29
mm	70mm	30mm	36210 75C	**10-359F**	72.35

Coors* Porcelain Hirsch-Type Funnels with Perforated Plates

Glazed inside and outside except for rims

- Cone-shaped with fixed perforated plates


10-360A

Top Dia.	Plate Dia.	Dia. of Perf. Area	Mfr. No.	Cat. No.	Each	Case of
42mm	11.5mm	8.5mm	60297	**20-684**	24.31	18/374.00
50mm	31mm	21mm	60299	**10-360-11**	28.97	12/297.16
55mm	16mm	11mm	60298	**10-360-10**	28.94	12/296.80
78mm	47mm	32mm	60301	**10-360A**	39.95	12/409.73
94mm	56mm	45mm	60302	**10-360B**	44.25	8/321.83

FILLING

*Fisher*brand* Powder Funnels

Parallel stem minimizes bridging of powder

- Durable polypropylene
- External ribbing prevents air locks
- Autoclavable

10-500

Capacity	Top Dia.	Overall Length	Cat. No.	Pack of	Case of
50mL	65mm	66mm	**10-500**	12/34.78	3 Pk./69.57
100mL	75mm	84mm	**10-500-1**	12/40.98	3 Pk./81.97
225mL	105mm	103mm	**10-500-2**	6/26.08	4 Pk./69.54
750mL	150mm	137mm	**10-500-3**	4/21.84	6 Pk./87.37

*Fisher*brand* Large LDPE Funnels

For transferring liquids

- Made of low-density polyethylene
- External ribbing for air release
- Internal ribbing in larger funnel
- Withstand temperatures up to 80°C (180°F)

10-349B

Top Dia.	Stem Length	Cat. No.	Each	Case of
194mm	89mm	**10-349A**	15.80	6/80.32
311mm	89mm	**10-349B**	33.22	2/56.31

Pyrex* Funnels

With short wide stems

- Plain type

10-346A

Top Dia.	Overall Length	Mfr. No.	Cat. No.	Pack of	Case of
65mm	83mm	6220 65	**10-346A**	12/114.04	2 Pk./166.58
75mm	94mm	6220 75	**10-346B**	12/126.93	2 Pk./185.40
100mm	120mm	6220 100	**10-346C**	6/92.91	4 Pk./271.46
125mm	132mm	6220 125	**10-346D**	12/348.94	----
150mm	157mm	6220 150	**10-346E**	6/365.01	2 Pk./533.24

Nalgene* Powder Funnels

Parallel stem minimizes bridging of powder; external ribbing prevents air locks

- Polypropylene
- Autoclavable

10-348A

Capacity	Overall Length	Stem Dia.	Stem Length	Mfr. No.	Cat. No.	Pack of	Case of
68mL	67mm	65mm	22mm	4252-0065	**10-348A**	12/50.81	3 Pk./101.63
115mL	85mm	80mm	29mm	4252-0080	**10-348B**	12/59.60	3 Pk./119.20
243mL	106mm	100mm	33mm	4252-0100	**10-348C**	6/38.21	4 Pk./101.88
716mL	136mm	150mm	30mm	4252-0150	**10-348D**	4/32.00	6 Pk./127.98

Nalgene* Utility Funnels

Ideal for numerous lab applications

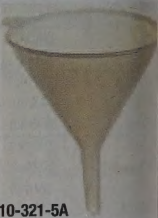
- Autoclavable

10-348-10E

Capacity	Overall Length	Stem Dia.	Stem Length	Mfr. No.	Cat. No.	Pack of 12	Case of
Polypropylene							
62mL	65mm	65mm	21mm	4256-0234	**10-348-10E**	41.75	24 Pk./668.00
270mL	117mm	103mm	34mm	4256-0414	**10-348-11A**	51.16	12 Pk./409.25
High-density polyethylene							
447mL	144mm	122mm	44mm	4256-0500	**10-348-11B**	88.51	12 Pk./708.00
1.86L	202mm	205mm	47mm	4256-0800	**10-348-11C**	236.72	4 Pk./631.25

Nalgene* Large High-Density Polyethylene Funnels

External and internal ribbing for air release



10-321-5A

Capacity	Top Dia.	Overall Length	Stem Length	Mfr. No.	Cat. No.	Each	Case of
1.90L	201mm	245mm	89mm	4262-0080	**10-371-5A**	25.13	100.5
4.06L	258mm	300mm	92mm	4262-0110	**10-371-5B**	58.53	234.1

Kimax* Funnels

Fire-polished edges reduce chipping

10-346-5B

Top Dia.	Stem Dia.	Stem Length	Mfr. No.	Cat. No.	Pack of	Case
60mm	13mm	35mm	29020 60	**10-346-5A**	6/54.98	4 Pk./160.4
80mm	15mm	35mm	29020 80	**10-346-5B**	6/61.34	4 Pk./178.9
100mm	18mm	35mm	29020 100	**10-346-5C**	6/89.74	4 Pk./261.2
125mm	19mm	35mm	29020 125	**10-346-5D**	2/56.71	6 Pk./248.2
150mm	19mm	35mm	29020 150	**10-346-5E**	2/118.15	6 Pk./515.8

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*Trademark. See Trademark Reference.

SPECIAL PURPOSE

*Fisherbrand** Glass Funnel for Buret Filling

03-865

Top Dia.	Overall Length	Stem Dia.	Stem Length	Cat. No.	Each	Pack of 12
40mm	65mm	8.5mm	35mm	**03-865**	11.26	112.65

Pyrex* Funnel for Sugar Analysis

Molded construction with bottom ground flat and beaded rim

- Without stem
- Bowl angle: 60°

10-384B

op Dia.	Overall Length	Opening Dia.	Mfr. No.	Cat. No.	Each	Case of 4 Pk.
75mm	60mm	6mm	6240 75	**10-384B**	149.59	436.35

tainless-Steel Funnels

loncorrosive 304 stainless steel

eamless, well-proportioned, special purpose unnels with satin-finished surfaces.

- Resist chemicals
- Ribbed stems allow air to escape when filling

10-368D

apacity	Top Dia.	Overall Length	Cat. No.	Each	Case of
0mL	75mm	90mm	**10-368A**	83.04	6/363.70
89mL	105mm	115mm	**10-368B**	75.09	6/328.83
84mL	125mm	130mm	**10-368C**	91.78	6/401.92
46mL	155mm	155mm	**10-368D**	99.81	6/437.15
.89L	210mm	220mm	**10-368E**	132.59	3/290.32

looney Air Vent Funnels or Liquids

eavy molded flint glass funnels ith smooth rims, inside ribs

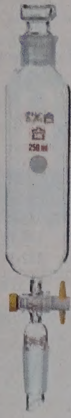
- Patented double vents extend up the stem—allow liquid to flow while air escapes
- Vents end around funnel bowl in heavy supporting bead

10-381A

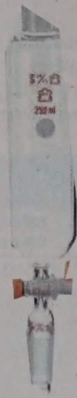
apacity	Top Dia.	Cat. No.	Each	Case of
25mL	90mm	**10-381A**	23.76	12/208.14
50mL	115mm	**10-381B**	27.77	12/243.24
0mL	145mm	**10-381C**	37.35	12/327.13
00mL	175mm	**10-381D**	55.67	12/487.60
00mL	215mm	**10-381E**	49.04	2/71.58
00mL	270mm	**10-381F**	44.33	----

ADDITION

Kontes* Cylindrical Addition Funnels

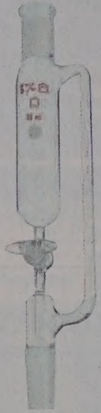


K633030-0250

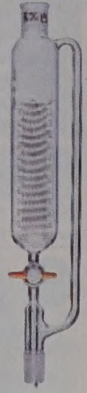


K633031-0250

K299230-0010



K63400-00060



K635430-0250

With PTFE-Plug Stopcocks, Stoppers, Ground Joints

- Glass stoppers with hexagonal heads are easy to grip and handle
- Stoppers sit on surface on their flattened heads, preventing possible contamination
- Lower joints are $ ground glass

Capacity	Overall Length	Stopcock Bore	$ Stopcock No.	$ Lower Joint No.	$ Plug No.	$ Stopper No.	Cat. No.	Each
10mL	184-mm	2	2	14/20	11/25	14/20	**K298780-0010**	105.51
25mL	208-mm	2	2	14/20	11/25	14/20	**K298780-0025**	105.51
50mL	212-mm	2	2	14/20	11/25	14/20	**K298780-0050**	105.51
250mL	326-mm	2	2	24/40	11/25	24/25	**K633030-0250**	147.52
500mL	361-mm	4	4	24/40	15.2/30	24/25	**K633030-0500**	166.78

With PTFE-Plug Stopcocks, Ground Joints

Lower joints are $ ground glass (similar to K298780 and K633030 Series funnels (above), except without stopper).

Capacity	Overall Length	Stopcock Bore	$ Stopcock No.	$ Lower Joint No.	$ Plug No.	Cat. No.	Each
10mL	168-mm	2	2	14/20	11/25	**K298781-0010**	93.13
25mL	192-mm	2	2	14/20	11/25	**K298781-0025**	93.13
50mL	196-mm	2	2	14/20	11/25	**K298781-0050**	93.13
250mL	310-mm	2	2	24/40	11/25	**K633031-0250**	123.16
500mL	345-mm	4	4	24/40	15.2/30	**K633031-0500**	144.97

Kontes* Cylindrical Addition Funnels, Contd.

With PTFE-Plug Stopcocks, Pressure Equalizing Lines, 14/20 Ground Joints, Ŧ Stoppers

- Ground top and bottom joints
- Pressure equalizing lines permit addition of material into a closed system
- Drip tips extend below the Ŧ joints to ensure delivery
- Glass stoppers have hexagonal heads for easy gripping
- Set stoppers down on their flattened tops to avoid contaminating ground surface

Capacity	Sub-division	Stopcock Bore	Ŧ Joint No.	Ŧ Stopper No.	Cat. No.	Each
10mL	2mL	2	14/20	14/20	**K299230-0010**	174.60
25mL	2mL	2	14/20	14/20	**K299230-0025**	132.14
50mL	2mL	2	14/20	14/20	**K299230-0050**	132.14

ACCESSORIES

Replacement glass stopper.

- Hexagonal head
- Hollow

Ŧ Joint	Cat. No.	Each
14/20	**K850400-1420**	20.04

With Pressure Equalizing Lines, Ŧ Stopcocks, 24/40 Ground Joints

Similar to K299230 Series funnels, but with all-glass stopcocks.

- Without stoppers
- Ground top and bottom joints

Capacity	Overall Length	Ŧ Joint No.	Stopcock Bore	Cat. No.	Each
60mL	295mm	24/40	2	**K634000-0060**	146.25
125mL	345mm	24/40	2	**K634000-0125**	151.38
250mL	345mm	24/40	2	**K634000-0250**	166.78
500mL	385mm	24/40	4	**K634000-0500**	191.14
1000mL	455mm	24/40	4	**K634000-1000**	241.19

With PTFE-Plug Stopcocks, Graduations, Pressure Equalizing Lines, Ground Joints

- Graduations to stopcock are numbered both up and down
- Without stoppers
- Drip tips extend below the Ŧ joint to ensure delivery

Capacity	Overall Length	Sub-division	Stopcock Bore	Ŧ Stop-cock No.	Ŧ Joint No.	Cat. No.	Each
10mL	190mm	0.2mL	2	2	14/20	**K299281-0010**	166.16
25mL	215mm	0.5mL	2	2	14/20	**K299281-0025**	171.27
50mL	215mm	1mL	2	2	14/20	**K299281-0050**	172.53
60mL	265mm	1mL	2	2	19/22	**K299290-0060**	203.22
60mL	295mm	1mL	2	2	24/40	**K634530-0060**	209.61
125mL	316mm	1mL	2	2	19/22	**K299290-0125**	236.45
125mL	345mm	1mL	2	2	24/40	**K634530-0125**	204.51
250mL	313mm	5mL	2	2	19/22	**K299290-0250**	205.77
250mL	345mm	5mL	2	2	24/40	**K634530-0250**	236.45
500mL	382mm	5mL	4	4	24/40	**K634530-0500**	259.45
1000mL	450mm	10mL	4	4	24/40	**K634530-1000**	342.51
2000mL	550mm	20mL	6	6	24/40	**K634530-2000**	407.71

SEPARATORY

Corning* Pyrex* Cylindrical Funnels with Graduations, Ŧ Glass Stopper, PTFE Stopcock Plug

Microfinish PTFE stopcock plugs reduce freezing problems and eliminate contaminating greases

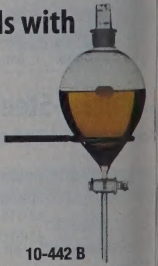
Approximate stem length, 65mm. Replacement stoppers are available; see Stoppers.

10-413-2A

Capacity	Overall Length	Gradu-ations	Ŧ Stopcock Plug No.	Ŧ Stopper No.	Mfr. No.	Cat. No.	Ea
125mL	315mm	1mL	2	22	6383 125	**10-413-2A**	1030
250mL	340mm	2mL	2	22	6383 250	**10-413-2B**	1166
500mL	390mm	5mL	4	27	6383 500	**10-413-2C**	1438
1000mL	493mm	10mL	4	27	6383 1L	**10-413-2D**	912

Pyrex* Globe-Shaped Funnels with Ŧ Stopcock and Stopper

Excellent for rack work



10-442 B

Capacity	Overall Length	Ŧ Stopcock Plug No.	Ŧ Stopper No.	Mfr. No.	Cat. No.	Each
125mL	328mm	2	22	6340 125	**10-442B**	84.51
250mL	357mm	2	22	6340 250	**10-442C**	99.66
1000mL	414mm	4	27	6340 1L	**10-442F**	173.99
4000mL	521mm	8	38	6340 4L	**10-427B**	373.25

*Fisherbrand** Squibb Pear-Shaped Funnels

With PTFE Stopcock and Stopper

- Made of borosilicate glass
- With solid Ŧ stoppers and PTFE resin stopcocks
- Stem length, 60mm

10-436-1A

Capacity	Ŧ Stopcock No.	Ŧ Stopper No.	Cat. No.	Case of
125mL	2	22	**10-436-1A**	6/505.09
250mL	4	22	**10-436-1B**	6/598.33
500mL	4	27	**10-436-1C**	6/634.40
1000mL	4	27	**10-436-1D**	4/581.95

Fisherbrand* Squibb Pear-Shaped Funnels, Contd.

With ₮ Stopcocks and Stoppers

- Made entirely of borosilicate glass
- Stem length, 75mm

10-436A

Capacity	₮ Stopcock Plug No.	₮ Stopper No.	Cat. No.	Each	Case of
125mL	2	22	**10-436A**	214.08	6/885.85
250mL	4	22	**10-436B**	257.65	6/1066.13
500mL	4	27	**10-436C**	284.35	6/1176.64
1000mL	4	27	**10-436D**	358.57	4/989.16

Pyrex* Squibb Pear-Shaped Funnels

With ₮ Stopcocks and Stoppers

- Constructed of durable Pyrex brosilicate glass
- Stem length, 65mm

10-437B

Capacity	₮ Stopcock Plug No.	₮ Stopper No.	Mfr. No.	Cat. No.	Each	Case of
30mL	2	9	6400 30	**10-437H**	107.61	----
60mL	2	16	6400 60	**10-437A**	94.21	6/389.22
125mL	2	22	6400 125	**10-437B**	113.91	6/470.67
250mL	2	22	6400 250	**10-437C**	134.33	4/370.08
500mL	4	27	6400 500	**10-437D**	160.56	4/442.31
1000mL	4	27	6400 1L	**10-437E**	165.32	----
2000mL	6	38	6400 2L	**10-437F**	239.05	----
4000mL	8	38	6400 4L	**10-437G**	525.71	----

Vith PTFE Stopcock Plugs and ₮ Glass Stoppers

- Stem length, 65mm

10-437-2B

apacity	Stopcock Plug No.	₮ Stopper No.	Mfr. No.	Cat. No.	Each	Case of 4
0mL	2	16	6402 60	**10-437-2A**	----	329.78
25mL	2	22	6402 125	**10-437-2B**	118.67	327.35
50mL	4	22	6402 250	**10-437-2C**	140.70	388.07
00mL	4	27	6402 500	**10-437-2D**	161.64	445.74
000mL	4	27	6402 1L	**10-437-2E**	155.87	----
000mL	6	38	6402 2L	**10-437-2F**	224.95	----

With PTFE-Fluorocarbon–Resin Stopcock Plug and ₮ 19/22 Inner and Outer Joints

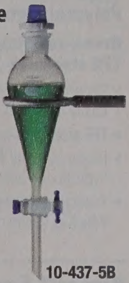
- Reduces freezing problems and grease contamination
- Stem length, 65mm

11-850-33

Capacity	₮ Stopcock No.	Mfr. No.	Cat. No.	Case of 4
125mL	2	6413-125FO	**11-850-33**	376.02

With PTFE Stopcock Plugs and Polyethylene Stoppers

- Closed-bottom stoppers of linear polyethylene
- Stem lengths, 65mm



10-437-5B

Capacity	Stopcock Plug No.	₮ Stopper No.	Mfr. No.	Cat. No.	Each	Case of 4
60mL	2	16	6404 60	**10-437-5A**	112.82	311.27
125mL	2	22	6404 125	**10-437-5B**	115.82	319.45
250mL	4	22	6404 250	**10-437-5C**	138.49	381.92
500mL	4	27	6404 500	**10-437-5D**	158.45	437.13
1000mL	4	27	6404 1L	**10-437-5E**	152.55	----
2000mL	6	38	6404 2L	**10-437-5F**	222.50	----

PyrexPlus* with PTFE Stopcock Plugs and ₮ Stoppers

Protective PVC coating reduces spills and helps prevent glass from shattering

- Autoclavable to 121°C (250°F)†; resistant to thermal shock
- PTFE ₮ stopcocks reduce freezing problems and grease contamination
- Glass stoppers
- Stem length, 65mm

10-438F

Capacity	₮ Stopcock No.	₮ Stopper No.	Mfr. No.	Cat. No.	Each	Case of 4
125mL	2	22	66402 125	**10-438D**	191.69	528.03
250mL	4	22	66402 250	**10-438E**	82.27	329.06
500mL	4	27	66402 500	**10-438F**	----	973.27
1000mL	4	27	66402 1L	**10-438G**	256.21	----
2000mL	6	38	66402 2L	**10-438H**	331.55	----

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† *Do not place over direct heat or open flame. Do not heat above 121°C (250°F) moist heat or 110°C (230°F) dry heat.*

Nalgene* Squibb Pear-Shaped Funnels

Transparent FEP Squibb with Screw Cap

Teflon*-fluorocarbon–resin FEP funnels with leakproof† stopcocks and Tefzel* ETFE screw closures

Funnel can be autoclaved; stopcock can be chemically sterilized. No stopcock lubrication needed.

- Nonwetting
- Break resistant and impervious to any chemical used in a separatory funnel
- Useful in radiological and hazardous separations
- So transparent, phase interface of even colorless liquids can be easily seen down to stopcock housing

10-437-25A

- Stem length, 65mm

Capacity	Closure Size	Mfr. No.	Cat. No.	Each	Case of
125mL	28mm	4301-0125	**10-437-25A**	128.15	4/341.75
250mL	33mm	4301-0250	**10-437-25B**	142.60	4/380.25
500mL	43mm	4301-0500	**10-437-25C**	205.40	4/547.75
1000mL	53mm	4301-1000	**10-437-25D**	238.60	4/636.25
2000mL	53mm	4301-2000	**10-437-25E**	367.32	2/489.75

†Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

Polypropylene with Screw Cap

Break-resistant polypropylene funnels with TFE stopcock

- Separation lines between immiscible liquids easily observed
- TFE stopcocks need no lubrication
- Resist virtually all chemicals, including hydrofluoric acid
- Autoclavable except for stopcock assembly, which is easily removed for chemical sterilization

10-437-30A

- Stem length, 65mm

Capacity	Closure Size	Mfr. No.	Cat. No.	Each	Case of
125mL	28mm	4300-0125	**10-437-30A**	86.75	6/347.00
250mL	33mm	4300-0250	**10-437-30B**	87.66	4/233.75
500mL	43mm	4300-0500	**10-437-30C**	97.97	4/261.25
1000mL	53mm	4300-1000	**10-437-30D**	119.91	4/319.75

Kimax* Squibb Pear-Shaped Funnels

With ₮ Stopcocks and Stoppers

Lower stems made of large-diameter tubing for liquid to drain out completely when stopcock is closed

- Stem length, 60mm

COMPLIANCE:
Designed from ASTM* E 1096-86.

10-435-5B

Capacity	₮ Stopcock No.	₮ Stopper No.	Mfr. No.	Cat. No.	Price	Case of
60mL	2	16	29048 60	**10-435-5A**	Ea./133.25	6/399.75
125mL	2	22	29048 125	**10-435-5B**	2/197.69	3 Pk./432.90
250mL	4	22	29048 250	**10-435-5C**	2/233.15	2 Pk./340.36
500mL	4	27	29048 500	**10-435-5D**	Ea./149.69	4/435.20
1000mL	4	27	29048 1000	**10-435-5E**	Ea./208.66	2/303.32

With PTFE-Plug Stopcocks and ₮ Polyethylene Stoppers

Closed-bottom, linear high-density polyethylene stopper in ₮ ground neck

Lower stem made of large-diameter tubing for liquid to drain out completely when stopcock is closed.

- Stem length, 60mm

COMPLIANCE:
Designed from ASTM* E 1096-86

Capacity	₮ Stopcock No.	₮ Stopper No.	Mfr. No.	Cat. No.	Pack of	Case of
125mL	2	22	29049F 125	**10-437-11C**	2/209.86	2 Pk./306.36
250mL	4	22	29049F 250	**10-437-11D**	2/250.85	2 Pk./366.20
500mL	4	27	29049F 500	**10-437-11E**	1/143.56	4/419.16
1000mL	4	27	29049F 1000	**10-437-11F**	1/199.56	2/291.34
2000mL	6	38	29049F 2000	**10-437-11G**	1/288.28	2/420.84

With PTFE-Plug Stopcocks

Do not require grease

Lower stems made of large-diameter tubing for liquid to drain out completely when stopcock is closed.

- Eliminates contamination
- Will not bind or freeze
- Stem length, 60mm

COMPLIANCE:
Designed from ASTM* E 1096-86

10-437-10B

Capacity	₮ Stopcock Plug No.	₮ Stopper No.	Mfr. No.	Cat. No.	Pack of	Case of
30mL	16	13	29048F 30	**10-437-10AA**	2/174.54	2 Pk./254.80
60mL	13	16	29048F 60	**10-437-10A**	2/222.57	2 Pk./324.92
125mL	22	22	29048F 125	**10-437-10B**	2/215.04	2 Pk./313.92
250mL	22	22	29048F 250	**10-437-10C**	2/254.98	2 Pk./372.24
500mL	27	27	29048F 500	**10-437-10D**	1/146.41	4/427.48
1000mL	27	27	29048F 1000	**10-437-10E**	1/201.98	2/294.86
2000mL	38	38	29048F 2000	**10-437-10F**	1/291.45	2/425.48

ACCESSORIES

Replacement funnel for 10-437-10 Series funnels.

Capacity	₮ Stopcock No.	Mfr. No.	Cat. No.	Each
250mL	4	29048G 250	**10-310-132**	68.95
2000mL	6	29048G 2000	**10-310-131**	152.39

*Trademark. See Trademark Reference.

Prices subject to change.

FURNACES

MUFFLE

Fisher Scientific* Isotemp* Programmable Forced Draft Furnaces

Rugged, programmable furnaces meet ASTM* D 3174 ash content testing requirements

24-step programmability plus four-program storage capability allows repeatable, ailored heating programs.

Control Features

- Variable temperature control to maximum 1125°C (2057°F)
- LED display shows set and actual temperature, and furnace sequences
- Timed or continuous-run modes
- Up to 12 heating/cooling ramps or dwell periods up to 99 hours 59 minutes each may be specified in any combination
- Self-tuning feature automatically provides the best parameter values during operation
- Automatic program-end alert and shutoff
- User-settable visual alert with auto shutoff guards against temperature fluctuations over setpoint (from 1° to over 100°C from the setpoint, can be set in 1°C increments to a maximum of 1125°C)

eating Features

- Exceptional temperature uniformity with two to four air changes per minute
- Ample air supply ensures complete oxidation of pyritic sulfur, removing all SO_2 formed
- Side and bottom heating elements are easily removable and replaced
- Element wire withstands high-sulfur coal and coke atmospheres
- Top-mounted exhaust port allows easy venting

esign and Safety Features

- Programmable automatic restart: units can be set to restart, hold or shut down after power loss
- Multilayer asbestos-free internal insulation keeps exterior cool to touch
- Sensor shuts off power to heating elements when door is opened
- Built-in circuit breaker protects internal elements from power surges
- Welded steel cabinet with baked-enamel finish

10-750-58

Models

- ▸ 0.14 cu. ft. (3.96L) model: 20 Fisherbrand* quartz crucibles or up to 15 standard porcelain crucibles
- ▸ 0.58 cu. ft. (16.4L) model capacity: 84 Fisherbrand quartz crucibles or up to 50 standard porcelain crucibles (when equipped with optional 10-651SN Accessory Shelf)
- ▸ 1.26 cu. ft. (35.7L) model capacity: 168 Fisherbrand* quartz crucibles or up to 100 standard porcelain crucibles (when equipped with standard 10-750S Shelf and two 10-651SN Accessory Shelves)
- ▸ 0.58 and 1.26 cu. ft. models have ceramic fiber rope door gaskets that prevent heat loss from the chamber

ORDERING INFORMATION:

Atmospheres other than air (N_2, CO_2, etc.) connect easily to the ⅜" (9.5mm) injection port using 10-550P Port Kit. (Order on our Web site.)

INCLUDES:

All units supplied with 10-year lithium battery for memory backup; 1.26 cu. ft. (35.7L) capacity model comes with one shelf.

COMPLIANCE:

Meet ASTM* E 145 for average temperature uniformity; meet ASTM D 3174 for ash content testing

odel	Small	Medium	Large
apacity (Chamber Volume)	0.14 cu. ft. (3.96L)	0.58 cu. ft. (16.4L)	1.26 cu. ft. (35.7L)
mperature Range	Ambient to 1125°C (2057°F)	Ambient to 1125°C (2057°F)	Ambient to 1125°C (2057°F)
verage Temperature Uniformity (Fan Off)[1,2]	±5°C (±9°F)	±8°C (±14.4°F)	±10°C (±18°F)
tpoint Accuracy[2,3]	±4°C (±7°F)	±4°C (±7°F)	±10°C (±18°F)
tpoint Repeatability	±1°C (±2°F)	±1°C (±2°F)	±1°C (±2°F)
. of Shelves	None	Accepts one 10-651SN Accessory Shelf	Comes with one 10-750S Shelf; accepts two additional 10-651SN Accessory Shelves[4]
amber D × W × H	10 × 6 × 4" (25 × 15 × 10cm)	14 × 12 × 6" (36 × 30 × 15cm)	14 × 12 × 13" (36 × 30 × 33cm)
erall L × W × H	19⅜ × 14½ × 19½" (49 × 37 × 50cm)	23⅜ × 21½ × 21½" (59 × 55 × 55cm)	23⅜ × 21½ × 28½" (59 × 55 × 72cm)
t Weight	60 lb. (27kg)	90 lb. (41kg)	110 lb. (50kg)
ectrical Requirements	120V 50/60Hz, 1700w, 14.2A[5]	----	----
t. No.	**10-750-14**	----	----
ch	4295.84	----	----
ectrical Requirements	208/240V 50/60Hz, 1700w, 7.1A[6]	208/240V 50/60Hz, 3000w, 12.5A[5,6]	208/240V 50/60Hz, 4600w, 19.2A[5,6]
t. No.	**10-750-14A**	**10-750-58**	**10-750-126**
ch	4496.57	5471.41	6569.76

s performed per ASTM E 145.

500° to 1125°C (932° to 2057°F).

ccuracy offset differences are customer adjustable by ±30°C (±54°F).

r loads over 3 lb. (1.4kg), replace 10-750SN Shelf with 10-650H Solid Hearth Plate.

ntact your Fisher Scientific Customer Service Representative for details.

SA approved.

is unit is also suitable as an International Model.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Fisher Scientific* Isotemp* Programmable Muffle Furnaces

Microprocessor control of linear heating and cooling rates and program duration; heat to 1125°C

- Available in three capacities
- 24-step programmability plus one-program storage capability allows up to 12 heating/cooling ramps or dwell periods up to 99 hours 59, minutes each to be specified in any combination
- LED displays furnace sequence, set temperature and actual temperature (°C or °F)
- 24-ramp/soak profiles can be repeated continuously for an infinite number of cycles—furnace will automatically ensure that temperature at end of each segment is within a specified tolerance before the profile continues
- One-program storage for frequently used run parameters
- Auto shutoff with flashing alert at end of heating sequence
- Continuous-run mode
- Bottom and side-mounted heating elements are embedded in removable, molded alumina-silicate ceramic fiber panels for easy replacement
- Light ceramic chamber makes unit easily portable; eliminates chipping and dust of traditional firebrick furnaces
- Welded steel cabinet with baked-on finish
- Solid hearth plate

Safety Features

- Selectable restart after power interruption (Restart, Hold, or Shut Down modes)
- Overtemperature protection with display code alerts if temperature deviates from 1°C to over 100°C from the setpoint (settable in 1°C increments), to a maximum of 1125°C (2057°F)
- Asbestos-free multilayer, internal insulation keeps exterior surfaces cool to touch
- Automatic heating shutoff when door is opened
- Manually resettable circuit breaker protects internal components from power surges
- Ventilated base prevents damage to benchtop
- Top-mounted exhaust port allows easy venting

Models

10-650-14A

- 0.14 cu. ft. (3.96L) model: 20 Fisherbrand* quartz crucibles or up to 15 standard porcelain crucibles
- 0.58 cu. ft. (16.4L) model: 84 Fisherbrand quartz crucibles or up to 50 standard porcelain crucibles (when equipped with optional 10-651SN Accessory Shelf)
- 1.26 cu. ft. (35.7L) model: 168 Fisherbrand quartz crucibles or up to 100 standard porcelain crucibles (when equipped with standard 10-750S Shelf and two 10-651SN Accessory Shelves)
- 0.58 and 1.26 cu. ft. models have ceramic fiber rope door gaskets that prevent heat loss from the chamber

APPLICATIONS:

Precipitate drying, enameling, ash determinations, fusions, ignitions, tempering

ORDERING INFORMATION:

Atmospheres other than air (N_2, CO_2, etc.) can be injected easily through the ⅜" (9.5mm) injection port using 10-550P Port Kit.

INCLUDES: 10-year lithium battery for memory backup

WARRANTY: 12 months

COMPLIANCE:

Meet ASTM* E 145 for average temperature uniformity

Model	Small	Medium	Large
Capacity (Chamber Volume)	0.14 cu. ft. (3.96L)	0.58 cu. ft. (16.4L)	1.26 cu. ft. (35.7L)
Temperature Range	Ambient to 1125°C (2057°F)	Ambient to 1125°C (2057°F)	Ambient to 1125°C (2057°F)
Average Temperature Uniformity[1,2]	±5°C (±9°F)	±8°C (±14.4°F)	±10°C (±18°F)
Setpoint Repeatability	±1°C (±2°F)	±1°C (±2°F)	±1°C (±2°F)
Setpoint Accuracy[2,3]	±5°C (±9°F)	±3°C (±5°F)	±15°C (±27°F)
Shelving	None	Accepts one 10-651SN Accessory Shelf	Comes with one 10-750S Shelf; accepts two additional 10-651SN Accessory Shelves[4]
Chamber D × W × H	10 × 6 × 4" (25 × 15 × 10cm)	14 × 12 × 6" (36 × 30 × 15cm)	14 × 12 × 13" (36 × 30 × 33cm)
Overall L × W × H	19⅜ × 14½ × 19½" (49 × 37 × 50cm)	23⅜ × 21½ × 21½" (59 × 55 × 55cm)	23⅜ × 21½ × 28½" (59 × 55 × 72cm)
Net Weight	60 lb. (27kg)	90 lb. (41kg)	110 lb. (50kg)
Electrical Requirements	120V 50/60Hz, 1700w, 14.2A[5]	----	----
Cat. No.	**10-650-14**	----	----
Each	3305.85	----	----
Electrical Requirements	208/240V 50/60Hz, 1700w, 7.1A[6]	208/240V 50/60Hz, 3000w, 12.5A[5,6]	208/240V 50/60Hz, 4600w, 19.2A[5,6]
Cat. No.	**10-650-14A**	**10-650-58**	**10-650-126N**
Each	3305.85	3660.87	4203.48

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[1] *As performed per ASTM E 145.*

[2] *At 500° to 1125°C (932° to 2057°F).*

[3] *Accuracy offset differences are customer adjustable by ±30°C (±54°F).*

[4] *For loads over 3 lb. (1.4kg), replace 10-750S shelf with 10-650H solid hearth plate. Contact your Fisher Scientific Customer Service Representative for details.*

[5] *CSA approved.*

[6] *This unit is suitable as an International Model.*

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Fisher Scientific* Isotemp* Basic Muffle Furnaces

Economical muffle furnaces heat up quickly with minimal power consumption

Digital proportional controller and display that show setpoint and actual temperature are flush mounted on the front for easy access and reading.

- Basic muffle furnace with 1125°C (2057°F) maximum heat
- Simple three-button control with toggle to display setpoint or actual temperature during operation
- Chamber is heated by side-mounted electric resistance heaters
- Elements are embedded in removable, molded alumina-silicate ceramic fiber panels for easy replacement
- Top-mounted exhaust port allows easy venting
- Welded steel cabinet with baked-on finish

Safety Features

- Asbestos-free internal insulation keeps exterior surfaces cool to touch
- Microprocessor automatically cuts power to heating elements and alerts if door is opened, if temperature deviates 25°C (45°F) above the setpoint, or if temperature rises above maximum 1125°C (2057°F)
- Manually resettable circuit breaker protects internal components in case of a power surge
- Ventilated base prevents damage to benchtop

ORDERING INFORMATION:
Atmospheres other than air (N_2, CO_2, etc.) connect easily to the ⅜" (9.5mm) injection port using Cat. No. 10-550P Port Kit.

WARRANTY:
12 months

10-550-14

COMPLIANCE:
Meet ASTM* E 145 for average temperature uniformity

Model	Small	Medium	Large
Capacity (Chamber Volume)	0.14 cu. ft. (3.96L)	0.58 cu. ft. (16.4L)	1.26 cu. ft. (35.7L)
Temperature Range	Ambient to 1125°C (2057°F)	Ambient to 1125°C (2057°F)	Ambient to 1125°C (2057°F)
Average Temp. Uniformity[1, 2]	±5°C (±9°F)	±8°C (±14.4°F)	±8°C (±14.4°F)
Setpoint Repeatability[2]	±1°C (±2°F)	±1°C (±2°F)	±1°C (±2°F)
Setpoint Accuracy[2, 3]	±5°C (±9°F)	±10°C (±18°F)	±15°C (±27°F)
Shelving	None	Accepts one 10-651S Accessory Shelf	Comes with one 10-750S Shelf; accepts two additional 10-651S Accessory Shelves[4]
Chamber D × W × H	10 × 6 × 4" (25 × 15 × 10cm)	14 × 12 × 6" (36 × 30 × 15cm)	14 × 12 × 13" (36 × 30 × 33cm)
verall L × W × H	19⅜ × 14½ × 19½" (49 × 37 × 50cm)	23⅜ × 21½ × 21½" (59 × 55 × 55cm)	23⅜ × 21½ × 28½" (59 × 55 × 72cm)
et Weight	60 lb. (27kg)	90 lb. (41kg)	110 lb. (50kg)
lectrical Requirements	120V 50/60Hz, 1200w, 10A[5]	----	----
at. No.	**10-550-14**	----	----
ach	2102.20	----	----
lectrical Requirements	208/240V 50/60Hz, 1200w, 5A[6]	208/240V 50/60Hz, 3000w, 12.5A[5, 6]	208/240V 50/60Hz, 4600w, 19.2A[5, 6]
at. No.	**10-550-14A**	**10-550-58N**	**10-550-126N**
ach	2348.14	2619.61	3333.99

As performed per ASTM E 145.
At 500° to 1125°C (932° to 2057°F).
Accuracy offset differences are customer adjustable by ±30°C (±54°F).
[4] *For loads over 3 lb. (1.4kg), replace 10-750S Shelf with 10-650H Solid Hearth Plate. Contact your Fisher Scientific Customer Service Representative for details.*
[5] *CSA approved.*
[6] *This unit is suitable as an International Model.*

ACCESSORIES

Stainless-Steel Racks for Quartz Crucibles

For use with Fisher Scientific* Isotemp* Furnaces.

- For use with 10-490-4 (25mm dia.) crucibles in all Isotemp furnaces
- Handle for racks (10-490-17) sold separately; order online

10-490-6Q

For Capacity	Crucible Dia.	Max. No. of Crucibles	Dimensions (L × W × H)	Cat. No.	Each
0.14 cu. ft.	25mm	20	7¼ × 5⅝ × ⅞" (18.4 × 14.25 × 2.25cm)	**10-490-6Q**	198.33
0.58 and 1.26 cu. ft.	38mm	15	10 × 8½ × ⅞" (25 × 21.5 × 2.25cm)	**10-497-5**	277.25

Stainless-Steel Racks for Porcelain Crucibles

- Accept crucibles up to 38mm size
- Hold 25 crucibles
- Handle (10-490-17) sold separately; order online

For Capacity	Dimensions (L × W × H)	Cat. No.	Each
0.58 and 1.26 cu. ft.	9½ × 9¼ × ¾" (24 × 23.5 × 2cm)	**10-497-10N**	264.78

Accessories Contd. on next page.

ACCESSORIES

Ceramic Shelves

For use with Fisher Scientific Isotemp* Furnaces. Accessory freestanding shelf with legs for 0.58 and 1.26 cu. ft. furnaces. Use surface on top and underneath.

- 0.58 cu. ft. furnace takes one shelf
- 1.26 cu. ft. furnace takes two shelves
- Replacement flat shelf is for 1.26 cu. ft. furnaces
- All shelves support 3 lb. (1.4kg)

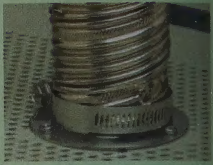
10-651SN

Shelf Style	Length × Width	Cat. No.	Each
Freestanding	13½ × 10" (34.3 × 25.4cm)	**10-651SN**	223.24
Flat	13½ × 11¼" (34.3 × 28.6cm)	**10-750S**	177.78

Exhaust Tubing

- Flexible stainless-steel
- Vents fumes formed during volatiles run
- In 10' (3m) section

INCLUDES:
Mounting hardware


10-490-10

Diameter	Cat. No.	Each
2" (5cm)	**10-490-10**	267.47

Thermo Scientific* Programmable and Automatic Large-Chamber Muffle Furnaces

1.6 cu. ft. (45.3L) capacity furnaces with choice of programmable or single-setpoint controller

Ideal for ashing, ignitions, suspended solids, drying and evaporating, heat treating.

Operating Features

- Temperature range: 100° to 1093°C (212° to 2000°F), ±5°C (±9°F)
- Maximum heat-up rate: 6°C/min. (11°F/min.)
- Advanced LED digital-set/digital-display temperature controller is microprocessor-controlled
- LED display simultaneously shows both setpoint and actual furnace temperatures in °C or °F
- User-selectable overtemperature protection
- Open thermocouple protection
- Adjustable power output from 1 to 100%

Design Features

- Four electric resistance heaters embedded (top, bottom and sides of chamber) in high-purity aluminum oxide refractory material
- Molded ceramic fiber insulation reduces energy consumption, speeds heatup and recovery
- Swing-out door design permits easy access to chamber
- Safety switch disengages heaters when door is opened
- Prepunched gas ports on furnace rear for atmosphere injection
- Built-in venting system removes contaminants

16-Segment Controller

- Four-program capability
- RS-232-C interface for computer control
- Programs incorporate "holdback" feature that will "hold" program until furnace temperature heats up or cools down to preprogrammed parameters—program will never outrun furnace performance

Single Setpoint Model

- Simple ramp to setpoint and a dwell

ORDERING INFORMATION:
Dimensions, chamber: 14D × 14W × 14"H (36 × 36 × 36cm); overall: 25½L × 21½W × 29½"H (65 × 55 × 75cm). Shipping weight, 260 lb. (118kg). All units must be hardwired.

INCLUDES:
Two refractory shelves

10-505-13

Controller/Electrical Requirements	Mfr. No.	Cat. No.	Each
16-Step Multiprogrammable			
208V 50/60Hz, 26.4A, 5500w	F30438CM	**10-505-14**	8032.00
Single-Setpoint			
208V 50/60Hz, 26.4A, 5500w	F30428C	**10-505-13**	6681.00
240V 50/60Hz, 22.9A, 5500w	F30420C	**10-505-10**	6811.00

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* Basic Large-Chamber Muffle Furnace

Economical furnace provides automatic single-setpoint control

- Capacity: 0.5 cu. ft. (14.2L)
- Temperature range: 100° to 1000°C (212° to 1832°F)
- Oval-shaped heating elements ensure even heat distribution
- User-selectable overtemperature protection
- Open thermocouple protection
- Self-tuning feature provides optimum temperature accuracy
- Easy-to-open, swing-out door is sealed with a ceramic fiber rope gasket
- Top vent port allows quick release of contaminants

10-505-40

ORDERING INFORMATION:
Dimensions, chamber: 11D × 11W × 7½"H (28 × 28 × 19cm); overall: 13¾L × 21½W × 14¼"H (35 × 55 × 36cm). Shipping weight, 47 lb. (21kg).

INCLUDES:
Thermocouple, ceramic fiber hearth tray, grounded three-wire cord, and plug

Mfr. No.	Electrical Requirements	Cat. No.	Each
F62735	120V 50/60Hz, 1488w	**10-505-40**	2379.00
F62730	240V 50/60Hz, 1488w	**10-505-39**	2379.00

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hermo Scientific* Medium-Chamber Muffle Furnaces

.5 cu. ft. capacity (14.2L) with choice of three controllers

- Temperature range: 100° to 1200°C
- Digital display
- Microprocessor control
- Temperature overshoot protection
- High-efficiency heating chamber with heating elements on four sides
- Built-in venting system removes contaminants
- Safety switch disengages heating elements when door is opened

rogrammable Model
- Four stored programs of 16 segments
- RS-232-C interface

asic Model
- Single-setpoint control

asic Automatic Model
- Single setpoint; single ramp to setpoint and a dwell
- Single digital display indicates chamber or setpoint temperature

RDERING INFORMATION:
mensions, chamber: 10D × 12¾W × 6¾"H (25 × 32 × 17cm); overall oor open): 29½L × 19⅛W × 21"H (74.9 × 49 × 53cm). Shipping weight, 4 lb. (60.8kg).

CLUDES:
rnace 10-557A supplied with line cord and plug; other models supplied th conduit connector. All models include thermocouple.

10-557E

Controller	Mfr. No.	Electrical Reqts.	Cat. No.	Each
16-Step (4 programs)	F6030CM	240V 50/60Hz, 18.3A, 4400w	**10-557E**	6044.00
Single Setpoint	F6020C	240V 50/60Hz, 18.3A, 4400w	**10-557C**	4378.00
Basic Automatic	F6010	240V 50/60Hz, 12.9A, 3095w	**10-557A**	2566.00

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Thermo Scientific* Benchtop Muffle Furnaces

Compact, lightweight benchtop furnaces in two heating chamber sizes: 0.07 and 0.2 cu. ft. (2 and 5.7L)

- One-program, eight-step, 16-step/four-program, or single-setpoint temperature controllers
- Operating temperature range: 100° to 1200°C (212° to 2192°F)
- LED simultaneously shows both setpoint and actual furnace temperatures in either °C or °F (programmable models only)
- User-selectable overtemperature protection
- Open thermocouple protection
- Adjustable power output from 1 to 100%
- Open coil heating elements provide fast heatup with minimum gradient
- Ceramic insulation surrounds chamber and spring-loaded door, reducing heat loss
- Safety switch deactivates heating elements when door is opened
- Ventilation system easily removes contaminants and moisture from chamber atmosphere
- ⅜" diameter (9.5mm) port on rear of furnace allows gas injection or monitoring of chamber temperature

Controller Options

- **Basic automatic** models display setpoint or chamber temperature on a single digital display
- **Single-setpoint** model offers automatic nonprogrammable operation
- **Eight-step programmable** models feature ramps to vary heat-up rate and dwell cycles to hold temperature at set levels from 0.1 to 999.9 minutes
- **Sixteen-step, four-program** models allow eight ramps and eight dwells, plus standard RS-232-C interface for computer control and four-program storage
- Programs incorporate "holdback" feature that will "hold" program until furnace temperature heats up or cools down to preprogrammed parameters—program will never outrun furnace performance

Small Models

- Capacity: 0.07 cu. ft. (2L)
- Dimensions, chamber: 6D × 5W × 4"H (15 × 13 × 10cm)

10-554-25

- Dimensions, overall (door open): 22L × 11¼W × 18"H (56 × 28.5 × 46cm)
- Shipping weight, 41 lb. (18.5kg)

Large Models

- Capacity: 0.2 cu. ft. (5.7L)
- Dimensions, chamber: 10D × 7W × 5"H (25 × 18 × 13cm)
- Dimensions, overall (door open): 27L × 13¼W × 19"H (68.5 × 33.5 × 48cm)
- Shipping weight, 60 lb. (27kg)
- Shelf included

ORDERING INFORMATION:

Eight-step programmable model (for 208V 50/60Hz) also available in both sizes; to order, contact your Fisher Scientific Customer Service Representative.

INCLUDES:

Unit, thermocouple, grounded three-wire cord, and plug; large models also supplied with one shelf

Controller	Mfr. No.	Electrical Requirements	Cat. No.	Each
Small Models - 0.07 cu. ft. (2L)				
16-Step (4-program)	F47955	120V 50/60Hz, 1000w	**10-554-13**	4125.00
8-Step Programmable	F47925 80	120V 50/60Hz, 1000w	**10-505-60**	3225.00
	F47920 80	240V 50/60Hz, 1000w	**10-505-59**	3225.00
Single-Setpoint	F47925	120V 50/60Hz, 1000w	**10-554-9**	2543.00
Basic Automatic	F47915	120V 50/60Hz, 1000w	**10-554-5**	1680.00
	F47910	240V 50/60Hz, 1000w	**10-554-3**	1680.00
Large Models - 0.2 cu. ft. (5.7L)				
16-Step (4-program)	F48055	120V 50/60Hz, 1800w	**10-554-25**	4498.00
	F48050	240V 50/60Hz, 1800w	**10-554-23**	4498.00
8-Step Programmable	F48025 80	120V 50/60Hz, 1800w	**10-505-29**	3574.00
	F48020 80	240V 50/60Hz, 1800w	**10-505-57**	3574.00
Single-Setpoint	F48025	120V 50/60Hz, 1800w	**10-554-21**	3024.00
	F48020	240V 50/60Hz, 1800w	**10-554-19**	3024.00
Basic Automatic	F48015	120V 50/60Hz, 1800w	**10-554-17**	2008.00
	F48010	240V 50/60Hz, 1800w	**10-554-15**	2008.00

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* Heavy-Duty Benchtop Muffle Furnaces

Compact, heavy-duty benchtop furnaces offer choice of single-setpoint or programmable control

- 0.08 cu. ft. (2.3L) capacity
- Temperature range: 100° to 1200°C (212° to 2192°F)
- Variable power output from 1 to 100%
- LED display simultaneously shows both setpoint and actual furnace temperatures in either °C or °F (programmable models only)
- Four individual embedded elements in special refractory cement permit excellent heat distribution in the chamber
- Open thermocouple protection
- Adjustable Alarm or Overtemperature Protection (OTP) setting can be used to protect the furnace or loaded chamber from excessive heat
- Counter-weighted door swings upward, directing heat away from operator
- Heavy-duty firebrick insulation surrounds chamber opening for added durability
- Door safety switch protects operator by removing power to the heating elements upon opening the door
- Rear-mounted 0.38" (0.95 cm) diameter port for monitoring chamber temperatures with independent measuring devices

Single setpoint controller

- Single ramp to setpoint and a dwell
- Single display shows actual temperature or setpoint

Eight-step Programmable controller

- Ramps to vary heat-up rate and dwell cycles to hold temperature at set levels from 0.1 to 999.9 minutes
- "Holdback" feature "holds" program until furnace temperature heats up or cools down to preprogrammed parameters—program will never outrun furnace performance

RDERING INFORMATION:

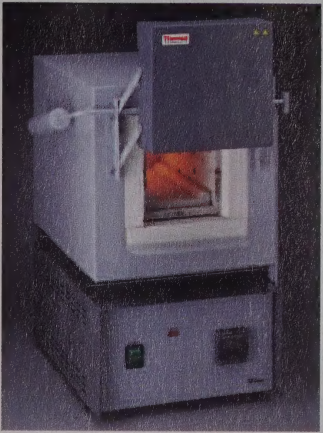
imensions, chamber: 9D × 4W × 3¾"H (23 × 10 × 9.5cm); overall (door open): 8L × 11W × 25 H (46 × 28 × 63.5cm). Shipping weight, 52 lb. (24kg); 2240w.

NCLUDES:

latinel* II thermocouple and a ceramic hearth plate to protect the bottom eating element.

OTE:

20V models require fixed wiring and are not supplied with a power cord.



10-554-28

Controller	Mfr. No.	Voltage	Cat. No.	Each
8-Step Programmable	FD1545M	120V 50/60Hz, 2240w	**10-554-28**	2537.00
	FD1540M	240V 50/60Hz, 2240w	**10-554-26**	2537.00
Single-Setpoint	FD1535M	120V 50/60Hz, 2240w	**10-554-27**	2088.00
	FD1530M	240V 50/60Hz, 2240w	**10-554-29**	2088.00

LOOKING FOR CRUCIBLES?

You'll find a full selection of metal, glass, porcelain and metallurgical crucibles in the Crucibles section.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Thermo Scientific* Portable Muffle Furnaces

Ideal for ashing organic and inorganic samples, heat treating small steel parts, ignition tests, gravimetric analysis, and determination of volatiles and suspended solids

Digital temperature control provides accuracy and reliability.

- Choice of 0.04 or 0.07 cu. ft. (1.1 or 2L) capacities
- 1100°C (2012°F) maximum temperature
- Embedded elements on top and both sides of chamber for improved chamber gradient (compensated for room temperature variations)
- Welded steel case with baked-on enamel finish and ceramic fiber insulation
- Door safety switch disengages heating elements when door is opened
- Door serves as shelf when open

Small Models

- Capacity: 0.04 cu. ft. (1.1L)
- Temperature range: 100° to 1100°C (212° to 2012°F); stability ±0.3°C at 1000°C
- Dimensions, chamber: 5D × 4W × 3¹³⁄₁₆"H (12.7 × 10.2 × 9.7cm)
- Dimensions, overall: 13L × 9W × 14"H (33 × 22.9 × 35.6cm)
- Shipping weight, 20 lb. (9kg)

Large Models

- Capacity: 0.07 cu. ft. (2 L)
- Temperature range: 100° to 1100°C (212° to 2012°F); stability ±0.5°C at 1000°C
- Dimensions, chamber: 6D × 5W × 4¼"H (15.2 × 12.7 × 10.8cm)
- Dimensions, overall: 15¾L × 10W × 14½"H (40.1 × 25.4 × 36.8cm)
- Shipping weight, 28 lb. (12.7kg)

ORDERING INFORMATION:
Accessory heating elements and thermocouples available separately online.

INCLUDES:
Thermocouple, line cord and plug

CERTIFICATIONS:
UL listed

Mfr. No.	Voltage	Cat. No.	Each
Small Models - 0.04 cu. ft. (1.1L)			
FB1315M	120V 50/60Hz, 8.8A	**10-553**	968.00
FB1310M	240V 50/60Hz, 4.4A	**10-553-1**	968.00
Large Models - 0.07 cu. ft. (2L)			
FB1415M	120V 50/60Hz, 12.5A	**10-552**	1196.00
FB1410M	240V 50/60Hz, 6.3A	**10-552-1**	1196.00

ACCESSORIES

Heating Elements

For use with Thermo Scientific* Portable Muffle Furnaces.

For Furnace	Mfr. No.	Voltage	Cat. No.	Each
10-552	EL48X1	120V	**10-552-6**	446.87
10-552-1	EL48X2	240V	**10-552-7**	500.07
10-553	EL44X1	120V	**10-553-5**	159.79
10-553-1	EL44X2	240V	**10-557-26**	159.79

TUBE

Thermo Scientific* Split Tube Furnaces

Ideal for hot applications

Choice of three control modules. All feature a chamber that can be moved approximately 5' (1.5m) from base and mounted in horizontal or vertical position.

- Split tube design allows easy access
- Operate to 1200°C (2192°F)
- Accept 1, 2, and 3" diameter (2.5, 5.1, and 7.5cm) process tubes
- Ceramic fiber insulation surrounds tube chamber for maximum energy efficiency and rapid heatup
- Include 1, 2 and 3" (2.5, 5.1, and 7.5cm) ceramic fiber chamber collars
- With overtemperature protection at a user-selected setpoint
- Thermocouple break protection cuts electricity to the heating element if the thermocouple fails
- Chamber safety switch cuts electricity to the heating element when tube chamber is opened

Single-Setpoint Control Model

- Simple ramp to setpoint and a dwell

Eight-Step Programmable Control Models

- Simple program with eight segments

10-559-15

16-Step (4-program) Control Model

- Set up to 16 segments
- With RS-232 communication port

APPLICATIONS:
Growing electronic crystals, catalytic material experimentation, radiation studies, and melting lead oxide glass

Temperature Controller	Heating Zone	Overall L × W × H	Electrical Requirements	Mfr. No.	Cat. No.	Each
Single-Setpoint	12" (30.5cm)	18⅞ × 21⅞ × 23⅛" (47.9 × 55.6 × 58.7cm)	120V 50/60Hz, 24.0A, 2880w	F79325	**10-559-15**	4706.00
8-Step Programmable	12" (30.5cm)	18⅞ × 21⅞ × 23⅛" (47.9 × 55.6 × 58.7cm)	120V 50/60Hz, 24.0A, 2880w	F79335 70	**10-559-17**	5444.00
	12" (30.5cm)	18⅞ × 21⅞ × 23⅛" (47.9 × 55.6 × 58.7cm)	240V 50/60Hz, 12.0A, 2880w	F79330 70	**10-559-16**	5444.00
16-Step (4-program)	12" (30.5cm)	18⅞ × 21⅞ × 23⅛" (47.9 × 55.6 × 58.7cm)	120V 50/60Hz, 24.0A, 2880w	F79345	**10-559-20**	5963.00

*Trademark. See Trademark Reference.

Thermo Scientific* Basic Tube Furnaces

Benchtop units, ideal for classroom, chemical and industrial labs

Removable furnace chamber gives these economical tube furnaces exceptional flexibility. Choice of manual or single-setpoint control models. All models automatically compensate or line voltage and ambient temperature changes.

Chamber features

- Easily removable—slides on and off bracket mounted on base
- Can be mounted vertically, horizontally, or angularly
- 12" long (31cm)
- Cavity accommodates 2" (5.1cm) tubes
- Perforated metal case contains self-insulating, lightweight ceramic fiber vestibule (asbestos-free)
- Embedded heating elements surround tubular heating cavity within vestibule
- Low-density insulation provides rapid heat-up, cool-down, and recovery times

Manually Controlled Model

- Displays temperature on a dual-scale pyrometer to 1100°C (2012°F)
- Maintains temperature to ±2% full scale

ingle-setpoint Controlled Models

- Provide automatic setpoint control to 1200°C (2192°F)
- LED simultaneously shows both setpoint or actual furnace temperatures in either °C or °F
- Overtemperature protection at user-selectable temperature
- Open thermocouple protection
- Adjustable power output from 1 to 100%

PPLICATIONS:

rowing electronic crystals, doping silicon wafers, pilot processing amples, high-temperature reactions and catalytic material experimentation

RDERING INFORMATION:

imensions: 12L × 16W × 15"H (30 × 41 × 38cm). Shipping wt.: 26 lb. (11.8kg).

10-559-13, 10-559-10

INCLUDES:

Furnace unit (chamber and base), line cord and plug

Controller	Mfr. No.	Electrical Requirements	Cat. No.	Each
1100°C (2012°F)				
Manual	F21125	120V 50/60Hz	**10-559-10**	1714.00
1200°C (2192°F)				
Single-setpoint	F21135	120V 50/60Hz	**10-559-13**	2107.00
	F21130	240V 50/60Hz	**10-559-12**	2148.00

SERVICE AGREEMENTS

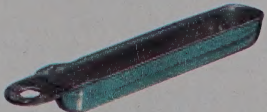
Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

FURNACE ACCESSORIES

isher Scientific Heavy-Gauge Nickel ombustion Boat

- Most popular in iron and steel labs
- Constructed of high-purity nickel



11-474-210

L × W × H	Cat. No.	Each
3½ × ⅝ × ⅜" (89 × 16 × 9.5mm)	**11-474-210**	16.00

oors* Glazed Porcelain Boats

lazed inside and out except for outside ottom surface

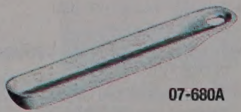
07-660E

× W × H	Mfr. No.	Cat. No.	Each	Case of
8 × ¼ × 3⁄16" (17 × 6 × 4mm)	60028	**07-660E**	15.73	24/302.07
¼ × ⅜ × 5⁄16" (60 × 10 × 8mm)	60032	**07-660A**	14.58	24/279.96
⅞ × ⅝ × ⅜" (97 × 16 × 10mm)	60035	**07-660C**	16.07	24/308.46
× ¾ × ½" (100 × 20 × 13mm)	60036	**07-660D**	16.77	18/257.93

Saint-Gobain* One-Piece Alundum Boat with Handle

For determinations using combustion at high temperatures, metal analysis, carbon content in steel and iron

- Aluminum oxide
- Resistant to 1430°C (2606°F)
- Low alkali content



07-680A

L × W × H	Mfr. No.	Cat. No.	Each	Case of 12
3½ × ½ × 5⁄16 " (89 × 13 × 7.9mm)	5733	**07-680A**	----	376.10
3¾ × ⅝ × 7⁄16" (95 × 16 × 11mm)	3729	**07-680B**	----	385.61
5 × ¾ × 7⁄16" (127 × 19 × 11mm)	5358	**07-680D**	56.36	578.03

FURNITURE

PLANNING AND INSTALLATION

Thermo Scientific* Hamilton* Laboratory Furniture

Thermo Scientific Hamilton furniture adapts easily and attractively to your changing needs, even if you have to add a cupboard, install a sink, or remove a fume hood. Choose from modular steel and wood furniture and accessories, including some styles available for shipment within 10 days of order placement (see QuickShip, next page). Additional furniture lines are available to fit every installation and budget requirement.

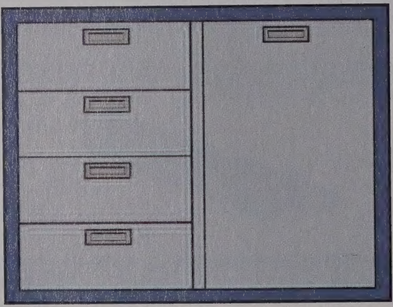
Modular Steel Line

- Made of 18-gauge cold-rolled steel reinforced at stress points
- Install easily and can be reconfigured
- All exposed cabinet surfaces—inside and out—are finished in an epoxy powder coating for excellent abrasion and chemical resistance
- When ordering, indicate color choices from those listed below†: one color for the cabinet shell and one color for the doors and drawer fronts, or one color for the entire unit

Wood Line

- Hardwood, full-frame construction
- Acrylic urethane finish provides excellent chemical and abrasion resistance

Wood Line Furniture on following pages has Oak veneer (shown here); also available in Maple, and with following finishes: Natural, Wheat, Honey Tan, Toasted Almond, Acorn, Rich Cinnamon, Burnt Umber. (Call your Fisher Scientific Customer Service Representative for details.)



- **Petal White - PW**
- **Shell White - SW**
- **Chameleon - CH**
- **Platinum - PL**
- **Sand - SA**
- **Sandstone - SS**
- **Dove Gray - G1**
- **Gray Slate - G3**
- **Khaki - KK**
- **Dark Khaki - DK**
- **Piedmont Green - PM**
- **Hunter Green - HG**
- **Blue Slate - BS**
- **Blue - BL**
- **Indigo - IN**
- **Purple - PA**
- **Brown Burgundy - BD**
- **Black - BK**

† Color reproductions shown here are representative only. It is recommended that you obtain actual colo samples from your Fisher Scientific Customer Service Representative prior to making a final selection.

Expert Laboratory Planning and Installation

- Available through our local full-service dealers
- Expert designers can help plan your laboratory using CAD
- Simple installations can be designed over the phone
- Factory-trained installers available

NOTE: There is a fee for planning and installation services. Please contact your Fisher Scientific Customer Service Representative for more information.

Thermo Scientific* Hamilton*—A Name That Means Quality

When you order Thermo Scientific* Hamilton furniture, you benefit from more than a century of research, design, and manufacturing.

- Headquartered in Two Rivers, Wisconsin, Thermo Scientific Hamilton is the largest laboratory furniture manufacturer in the world
- Over 1,000,000 sq. ft. (92,900m^2) of production facilities are dedicated to the manufacture of laboratory furniture products, including steel fixed casework systems and fume hoods
- Stringent product testing assures that all furniture meets or exceeds federal and industry standards for quality and safety

Thermo Scientific* Hamilton* Modular Steel* and Wood Line QuickShip* Furniture

ome cabinets pictured available on special order only. Call your Fisher Scientific Customer Service Representative for details.

or quality lab furniture that combines versatility with convenience and unctionality, choose Thermo Scientific Hamilton QuickShip Modular Steel nd Wood Line furniture products. Labs can be quickly installed or econfigured to eliminate downtime. All components fit together neatly and asily in a wide variety of configurations. Furniture ships within 10 working ays from the time of order placement. Call your Fisher Scientific Customer ervice Representative for more information at **1-800-766-7000**.

hoices

- Wall and floor cabinets
- Standard sitting- and standing-height base cabinets with a variety of door/drawer configurations
- Workstation assemblies
- Specialty sink, corner, fume hood base, and acid- and solvent-storage options

Features

- Base cabinets available in 18 different colors
- Shipped with doors and drawer fronts factory installed
- Nonstick drawers have easy-to-clean coved corners and corrosion-resistant stainless-steel hinges; self-closing, but can be locked open when desired
- Leveler access holes are located in the front cabinet toespace
- Casework complemented by epoxy resin or Chemsurf* tops, sinks, SafeAire* fume hoods, plus fixtures and accessories

CABINETS

hermo Scientific* Hamilton* Wood abinets

ak cabinets have wheat stained finish

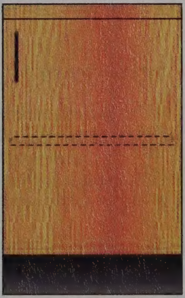
- Sitting-height cabinets measure 28½H × 21½"D (72.4 x 54.6cm)
- Standing-height cabinets measure 35H × 21½"D (88.9 x 54.6cm)
- Cabinets with drawers: drawer ends, back, and front are ½" (1.2cm) hardwood plywood; drawer bottoms are ¼" (0.5cm) MDF

RDERING INFORMATION:

ntact your Fisher Scientific Customer Service Representative for furniture tions. (See choice of additional veneers and finishes, p. 842. Cabinet neer finish selection must be indicated to complete your order.)

Wood Sitting-Height Base Cabinets with Doors

Adjustable shelf. Right-hinged, left-hinged, or double full-height doors.



HM102A422BB

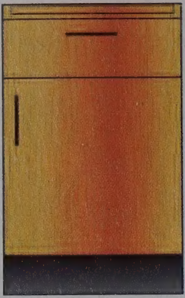
Hinge Side	Width	Cat. No.	Each
Right	24" (61cm)	**HM102A422BB**	514.00
Left	24" (61cm)	**HM103A422BB**	514.00
Double doors	36" (91cm)	**HM106A622BB**	700.00
Double doors	48" (122cm)	**HM106A822BB**	753.00

Contd. on next page.

Thermo Scientific* Hamilton* Wood Cabinets, Contd.

Wood Sitting-Height Combination Base Cabinets

One four-module high drawer above single cupboard. With pullboard.



HM126A422BB

Hinge Side	Width	Cat. No.	Each
Right	24" (61cm)	**HM126A422BB**	677.00

Wood Sitting-Height Base Cabinets with Drawers

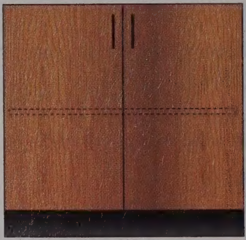
With pullboard.

HM130A222BB

Drawer Style	Width	Cat. No.	Each
Two 4-module high drawers above one 10-module high drawer; without card followers	18" (46cm)	**HM130A222BB**	775.00
Three 6-module high drawers	24" (61cm)	**HM133A422BB**	738.00

Wood Standing-Height Base Cabinets with Doors

Adjustable shelf. Right-hinged, left-hinged, or double full-height doors.



HM106A532BB

Hinge Side	Width	Cat. No.	Each
Right	18" (46cm)	**HM102A232BB**	520.00
Right	24" (61cm)	**HM102A432BB**	550.00
Left	24" (61cm)	**HM103A432BB**	550.00
Double swinging doors	30" (76cm)	**HM106A532BB**	716.00
Double swinging doors	36" (91cm)	**HM106A632BB**	746.00
Double swinging doors	48" (122cm)	**HM106A832BB**	807.00
Double sliding doors	48" (122cm)	**HM109A832EB**	844.00

Wood Standing-Height Base Cabinets with Drawers

HM206A632BB

Width	Cat. No.	Each
Four full-width, 6-module high drawers		
36" (92cm)	**HM173A632BB**	943.00
48" (122cm)	**HM173A832BB**	1040.95
Eight half-width, 6-module high drawers		
36" (92cm)	**HM206A632BB**	1265.95
48" (122cm)	**HM206A832BB**	1355.95
Four half-width, two full-width, 6-module high drawers		
36" (92cm)	**HM263A632BB**	1124.95
48" (122cm)	**HM263A832BB**	1210.95

Wood Standing-Height Combination Base Cabinets

Combination of drawers and cupboards. Right-hinged, left-hinged, or double doors.

HM148A532BB

Hinge Side	Width	Cat. No.	Each
One 6-module drawer above cupboard			
Right	24" (61cm)	**HM136A432BB**	627.00
Left	24" (61cm)	**HM137A432BB**	627.00
Two 6-module drawers above two cupboards			
Double doors	30" (76cm)	**HM148A532BB**	942.00
Double doors	36" (91cm)	**HM148A632BB**	979.95
Double doors	42" (107cm)	**HM148A732BB**	1005.95
Double doors	48" (122cm)	**HM148A832BB**	1057.95
Four 6-module drawers beside full cupboard			
Right	36" (91cm)	**HM152A632BB**	1078.95
Right	48" (122cm)	**HM152A832BB**	1157.95

Wood Standing-Height Fume Hood Cabinets

Feature double doors, front top panel inset with cabinet ends, and removable back panel.

HM121A532BB

Width	Cat. No.	Each
30" (76cm)	**HM121A532BB**	674.00
48" (122cm)	**HM121A832BB**	742.00

Contd. on next page.

*Trademark. See Trademark Reference.

Thermo Scientific* Hamilton* Wood Cabinets, Contd.

Wood Standing-Height Sink Cabinets

Full-height double doors. Some models have flush overlay panel above and between doors.

HM118A9320B

Overlay Panel	Recessed Toespace	Width	Cat. No.	Each
No	Front	30" (76cm)	**HM115A5320B**	703.00
No	Front	36" (91cm)	**HM115A6320B**	729.00
No	Front	48" (122cm)	**HM115A8320B**	778.00
Yes	Front and sides	57" (145cm)	**HM118A9320B**	950.95

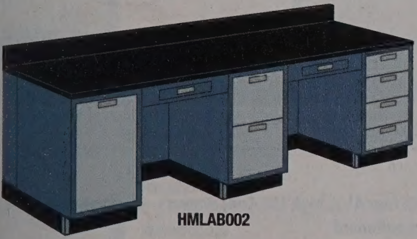
Thermo Scientific* Hamilton* Modular Steel* Workstation Assemblies

Order a complete workstation with a single catalog number

We have taken our most popular components and combinations to create our workstation assemblies. Each assembly includes all necessary components right down to the epoxy cement used to join work surfaces for a seamless appearance. All units are shipped disassembled and must be assembled at the installation site.

ORDERING INFORMATION:
All workstation assemblies are part of our QuickShip* program—they'll be manufactured and then shipped within 10 working days of order placement. Color selection must be indicated to complete your order. You must specify the color for (a) the cabinet shell, and (b) drawer and door fronts. Reference color chart on p. 842.

Sitting-Height Wall Assembly

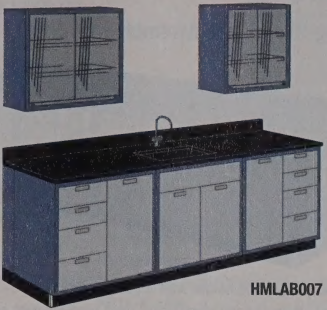


HMLAB002

- Three-cabinet sitting-height wall assembly with two knee areas
- Includes 1" thick (2.5cm) black epoxy resin worktop with curb
- Assembly measures 30D × 30⅜"H (76.2 × 77.2cm) with countertop assembly required

Length	Cat. No.	Each
8½' (259.1cm)	**HMLAB001**	4798.97
10' (304.8cm)	**HMLAB002**	5122.26
10½' (320cm)	**HMLAB003**	5422.24

Standing-Height Wall Assembly with Wall Cabinets

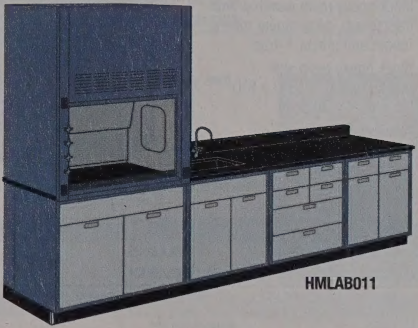


HMLAB007

- Three-cabinet standing-height wall assembly with sink and two wall cabinets with unframed glass sliding double doors
- Includes 1" thick (2.5cm) black epoxy resin worktop with curb, deck-mount mixing faucet and plastic P-trap
- Assembly measures 30D × 36¼"H (76.2 × 92.1cm) with countertop

Length	Cat. No.	Each
9' (274.3cm)	**HMLAB007**	7912.76
10' (304.8cm)	**HMLAB008**	8006.60
11' (335.3cm)	**HMLAB009**	8629.23
12' (365.8cm)	**HMLAB010**	8722.58

Standing-Height Wall Assembly with Safe Aire* Fume Hood



HMLAB011

- Four-cabinet standing-height wall assembly with sink and a constant volume/bypass fume hood
- Includes 1" thick (2.5cm) black epoxy resin worktop with curb, deck-mount mixing faucet, and plastic P-trap
- Measures 30D × 35¼"H (76.2 × 89.5cm) with countertop
- Fume hood superstructure is 48" wide (121.9cm) and equipped with four remote-control service fixtures for hot/cold water, gas/air/vacuum, and cupsink
- Installation required; minimum height (floor to ceiling) of 110" (279.4cm) needed
- Order blower and exhaust duct transition separately; see the Fume Hoods section.

Length	Cat. No.	Each
13' (396.2cm)	**HMLAB011**	13,229.50
14' (426.7cm)	**HMLAB012**	13,447.59
16' (487.7cm)	**HMLAB014**	14,067.21

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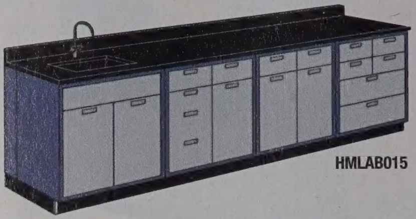
Thermo Scientific* Hamilton* Modular Steel* Workstation Assemblies, Contd.

Standing-Height Wall Assembly with Sink

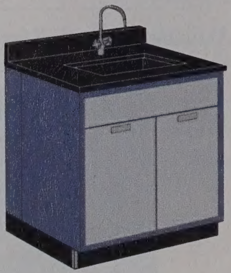

HMLAB015

- Four-cabinet standing-height wall assembly with sink
- Includes 1" thick (2.5cm) black epoxy resin worktop with curb, deck-mount mixing faucet and plastic P-trap
- Assembly measures 30D × 35¼"H (76.2 × 89.5cm) with countertop
- Black epoxy resin sink measures 24L × 16W × 8"D (61 × 40.6 × 20.3cm)

Length	Cat. No.	Each
12' (365.8cm)	HMLAB015	7909.54
14' (426.7cm)	HMLAB016	8189.53

Sink Cabinet Assembly

- Complete single-cabinet standing-height sink assembly with filler panels
- Includes 1" thick (2.5cm) black epoxy resin worktop with backsplash, deck-mount mixing faucet and plastic P-trap
- Black epoxy resin sink measures 24L × 16W × 8"D (61 × 40.6 × 20.3cm)
- Assembly measures 30D × 35¼"H (76.2 × 89.5cm) with countertop


HMLAB023

Length	Cat. No.	Each
3' (91.4cm)	HMLAB023	2305.92
4' (121.9cm)	HMLAB024	2415.59

Thermo Scientific* Hamilton* Sitting-Height Base Cabinets

Pullboards add increased functionality

Choose from cabinets with 10¼" high (26.7cm) file drawers and 4½" high (11.4cm) drawers.

- File drawers are equipped with full-extension slides
- Drawers self-close for safety, but can be locked open to allow hands-free access
- Coved edges make them easy to clean and corrosion-free
- All models have a toespace area with leveler access; backs include a cutout for service access
- Sound-deadening material in drawers
- Cabinets measure 21⅝D × 29⅜"H (54.9 × 74.6cm)

ORDERING INFORMATION:

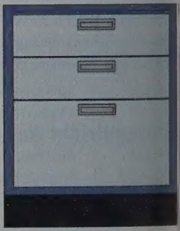
Cat. Nos. and prices listed are for Modular Steel cabinets that are part of our QuickShip program—units will be shipped to you within 10 working days of order placement.

Color selection must be indicated to complete your order. You must specify the color for (a) the cabinet shell, and (b) drawer and door fronts. Check p. 842 for color choices. Wood and Plastic Laminate cabinets are also available; call your Fisher Scientific Customer Service Representative for ordering information.

REQUIRED ACCESSORIES:

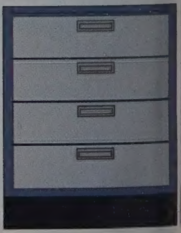
Worktops must be ordered separately (see p. 851). Finished back is required if cabinet back is exposed (p. 849); call your Fisher Scientific Customer Service Representative for ordering information.

With two 4½" high (11.4cm) drawers, one 10¼" high (26cm) file drawer, and pullboard


HM130H4220B

Width	Cat. No.	Each
18" (45.7cm)	HM130H2220B	1076.29
24" (61cm)	HM130H4220B	1089.23

With four 4½" high (11.4cm) drawers and pullboard


HM133H4220B

Width	Cat. No.	Each
18" (45.7cm)	HM133H2220B	1088.94
24" (61cm)	HM133H4220B	1152.43

*Trademark. See Trademark Reference.

Prices subject to change.

Thermo Scientific* Hamilton* Standing-Height Base Cabinets

Choose from cabinets with combinations of double-walled doors, 10¼" high (26.7cm) file drawers, 7⅜" high (18.7cm) drawers, and 4½" high (11.4cm) drawers. See drawings for door/drawer configurations.

- Cabinets with single doors can be hinged on the right or left side; HM180H and HM181H Series models (see next page) can have the cupboard door on the right or left side and drawers on the opposite side
- Sink cabinets include hanger brackets for supporting sinks
- All models have a toespace area; backs include a cutout to allow service access
- Cabinets feature a unique design which permits leveler access through the toespace, and include sound-deadening material in doors and drawers
- Measure 21⅝D × 35¼"H (54.9 × 89.5cm)
- All door cabinets include one shelf adjustable in ½" (1.3cm) increments

ORDERING INFORMATION:
Modular Steel* cabinets are part of our QuickShip* program—units will be shipped to you within 10 working days of order placement.

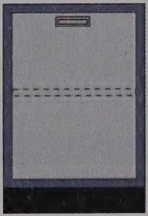
Color selection must be indicated to complete your order. You must specify the color for (a) the cabinet shell, and (b) drawer and door fronts. See p. 842 for color choices.

Wood and Plastic Laminate cabinets are also available; call your Fisher Scientific Customer Service Representative for details.

REQUIRED ACCESSORIES:
Worktops must be ordered separately (see p. 851). If cabinet backs are exposed, a finished back is required (see p. 849); for ordering information, contact your Fisher Scientific Customer Service Representative.

With one cupboard door

Adjustable shelf included.

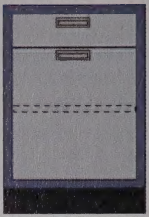


HM102H2320B

Width	Cat. No.	Each
Right Hinge Side		
18" (45.7cm)	**HM102H2320B**	637.93
24" (61cm)	**HM102H4320B**	671.45
Left Hinge Side		
18" (45.7cm)	**HM103H2320B**	636.75
24" (61cm)	**HM103H4320B**	670.41

With one cupboard door and one 4½" high (11.4cm) drawer

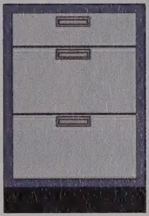
Adjustable shelf included.



HM136H2320B

Width	Cat. No.	Each
Right Hinge Side		
18" (45.7cm)	**HM136H2320B**	837.08
24" (61cm)	**HM136H4320B**	869.64
Left Hinge Side		
18" (45.7cm)	**HM137H2320B**	827.26
24" (61cm)	**HM137H4320B**	869.59

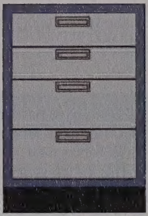
With one 4½" high (11.4cm) drawer and two 10¼" high (26cm) file drawers



HM141H2320B

Width	Cat. No.	Each
18" (45.7cm)	**HM141H2320B**	1029.74
24" (61cm)	**HM141H4320B**	1049.87

With two 4½" high (11.4cm) drawers and two 7⅜" high (18.7cm) drawers

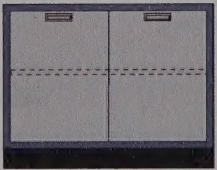


HM164H2320B

Width	Cat. No.	Each
18" (45.7cm)	**HM164H2320B**	1047.22
24" (61cm)	**HM164H4320B**	1091.09

With two hinged cupboard doors

Adjustable shelf included.



HM106H8320B

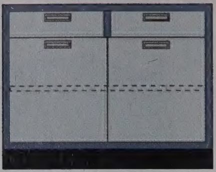
Width	Cat. No.	Each
30" (76.2cm)	**HM106H5320B**	885.36
36" (91.4cm)	**HM106H6320B**	902.72
48" (121.9cm)	**HM106H8320B**	1043.63

Contd. on next page.

Thermo Scientific* Hamilton* Standing-Height Base Cabinets, Contd.

With two cupboard doors and two half-width 4½" high (11.4cm) drawers

Double-walled doors. Adjustable shelf included.

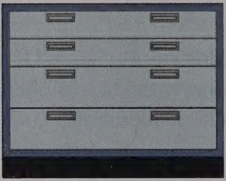


HM148H8320B

Width	Cat. No.	Each
36" (91.4cm)	HM148H6320B	1254.36
42" (106.7cm)	HM148H7320B	1367.64
48" (121.9cm)	HM148H8320B	1355.69

With two full-width 4½" high (11.4cm) drawers and two full-width 7⅜" high (18.7cm) drawers

Double-walled doors.

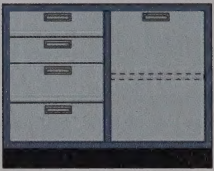


HM164H8320B

Width	Cat. No.	Each
36" (91.4cm)	HM164H6320B	1288.19
48" (121.9cm)	HM164H8320B	1402.18

With one cupboard door, two half-width 4½" high (11.4cm) drawers, and two half-width 7⅜" high (18.7cm) drawers

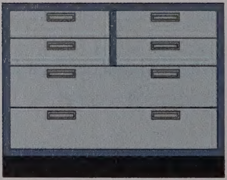
Double-walled doors. Adjustable shelf included.



HM180H8320B

Width	Cat. No.	Each
Right Door Cupboard		
36" (91.4cm)	HM180H6320B	1486.17
48" (121.9cm)	HM180H8320B	1585.00
Left Door Cupboard		
36" (91.4cm)	HM181H6320B	1486.17
48" (121.9cm)	HM181H8320B	1585.00

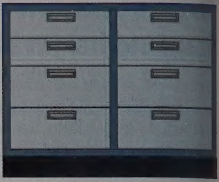
With four half-width 4½" high (11.4cm) drawers and two full-width 7⅜" high (18.7cm) drawers



HM200H8320B

Width	Cat. No.	Each
36" (91.4cm)	HM200H6320B	1557.45
48" (121.9cm)	HM200H8320B	1683.67

With four half-width 4½" high (11.4cm) drawers and four half-width 7⅜" high (18.7cm) drawers

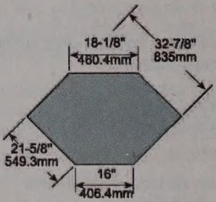


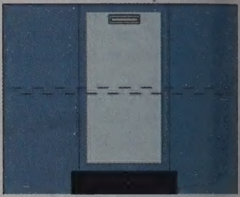
HM209H8320B

Width	Cat. No.	Each
36" (91.4cm)	HM209H6320B	1837.11
48" (121.9cm)	HM209H8320B	1952.05

Diagonal-type Corner Base Cabinet

Right-hinged door. Adjustable shelf included.

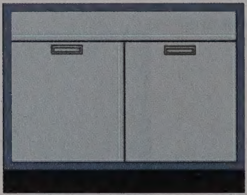




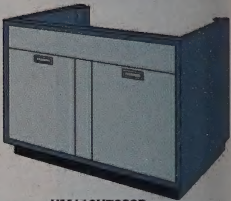
HM422H6320B

W × H	Cat. No.	Each
32⅞ × 35¼" (84 × 90cm)	HM422H6320B	1088.11

Sink Base Cabinets



HM115H6320B



HM116H7320B

Choose from standard sink cabinets (installed inline with other units) or end cabinets (installed perpendicularly to other cabinets in row).

- Solid hinged doors
- Back cutout to accommodate large sinks
- Include sink supports

ORDERING INFORMATION:
Worktops, sinks, fixtures, outlets and piping must be ordered separately (pp. 851-854).

Width	Type	Cat. No.	Each
30" (76.2cm)	Standard	HM115H5320B	869.72
36" (91.4cm)	Standard	HM115H6320B	891.97
48" (121.9cm)	Standard	HM115H8320B	953.83
52" (132.1cm)	End	HM116H7320B	1194.01
58" (147.3cm)	End	HM118H9320B	1223.07

Contd. on next page.

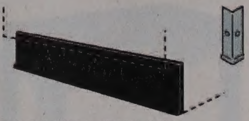
*Trademark. See Trademark Reference.

Thermo Scientific* Hamilton* Standing Height Base Cabinets, Contd.

Base Molding and Stainless-Steel Corner

Coved base molding conforms to irregularities in floor surface.

- Pliable to wrap around base cabinet corners
- Black; in 48" (122cm) lengths
- Stainless-steel corner secures and protects molding corner



HM04L02400; HM90L04000

Description	Cat. No.	Each
Base Molding	**HM04L02400**	5.52
Stainless-steel Corner	**HM90L04000**	5.41

LOOKING FOR MORE CORNER CABINETS?

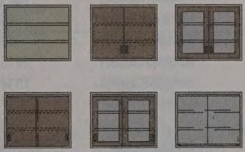
You can find them on our Web site.

Visit www.fishersci.com and search for Corner Cabinet

Thermo Scientific* Hamilton* Wall Cabinets

- Cabinets are 18-gauge steel with one-piece, wraparound design
- Glass in glass-door models is 7⁄32" thick (5.5mm) float glass
- With sturdy, integral finished backs, soffit bottoms and hanger rails for mounting
- All cabinets are 31" high (78.7cm), protrude 13" (33cm) from wall, and are supplied with two shelves, adjustable in ½" (1.3cm) increments

HM706H6330B and HM712H6330B



Clockwise from top left: Open Front, Solid Hinged Double Door, Framed Glass Hinged Double Door, Solid Sliding Double Door, Framed Glass Sliding Double Door, Unframed Glass Sliding Double Door

ORDERING INFORMATION:

Cat. Nos. and prices listed here are for Modular Steel* cabinets that are part of our QuickShip* program—cabinets will be shipped within 10 working days of order placement. Color selection must be indicated to complete your order (see p. 842). Wood and Plastic Laminate cabinets are also available—call your Fisher Scientific Customer Service Representative for ordering information.

Style	Width	Cat. No.	Each
Open Front	36" (91.4cm)	**HM700H6330**	630.89
	48" (121.9cm)	**HM700H8330**	772.90
Solid Hinged Double Door	36" (91.4cm)	**HM706H6330B**	994.87
	48" (121.9cm)	**HM706H8330B**	1130.41
Framed Glass Hinged Double Door	36" (91.4cm)	**HM712H6330B**	1295.53
	48" (121.9cm)	**HM712H8330B**	1424.67
Solid Sliding Double Door	36" (91.4cm)	**HM715H6330B**	418.48
	48" (121.9cm)	**HM715H8330B**	1234.47
Framed Glass Sliding Double Door	36" (91.4cm)	**HM718H6330B**	1373.01
	48" (121.9cm)	**HM718H8330B**	1463.43
Unframed Glass Sliding Double Door	36" (91.4cm)	**HM722H6330**	863.40
	48" (121.9cm)	**HM722H8330**	991.36

ACCESSORIES

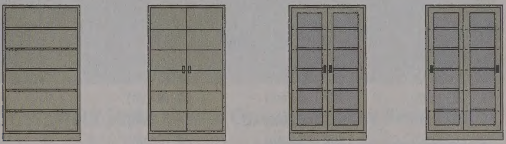
Wall Cabinet Rear Support Filler

- Covers area between back of cabinet and wall
- With concealed clips to attach to cabinet
- Cut to size

W × H	Cat. No.	Each
1⅜ × 31" (3.5 × 78.7cm)	**HM618H0360**	29.51

Thermo Scientific* Hamilton* Floor Cabinets

Provide more storage space—without taking up more floor space



From left: Open Front, Solid Hinged Double Door, Framed Glass Hinged Double Door, Framed Glass Sliding Double Door

- All cabinets are 84⅝" high (214.9cm) and protrude 22" (55.9cm) from wall
- Glass in door is 7⁄32" thick (5.5mm) float glass
- Supplied with five shelves adjustable in ½" (1.3cm) increments

ORDERING INFORMATION:

Cat. Nos. and prices listed here are for Modular Steel* cabinets that are part of our QuickShip* program—cabinets will be shipped within 10 working days of order placement. Color selection must be indicated to complete your order (see p. 842). Wood and Plastic Laminate cabinets are also available—call your Fisher Scientific Customer Service Representative for ordering information.

Description	Width	Cat. No.	Each
Open Front	36" (91.4cm)	**HM800H6920**	1172.75
	48" (121.9cm)	**HM800H8920**	1397.57
Solid Hinged Double Door	36" (91.4cm)	**HM806H6920B**	2011.11
	48" (121.9cm)	**HM806H8920B**	2277.44
Framed Glass Hinged Double Door	36" (91.4cm)	**HM812H6920B**	2518.97
	48" (121.9cm)	**HM812H8920B**	3001.67
Framed Glass Sliding Double Door	36" (91.4cm)	**HM818H6920B**	2600.15
	48" (121.9cm)	**HM818H8920B**	2829.13

LOOKING FOR MORE?

Fisher Scientific also sells stainless-steel cabinets and work surfaces. Ask your Fisher Scientific Customer Service Representative for details.

LOOKING FOR MORE?

Laminar Flow Cabinets and Fume Hoods can be found in the Fume Hoods and Enclosures section.

TABLES

Thermo Scientific* Hamilton* Laboratory Tables

Choose from Modular Steel* or wood tables

- Wood laboratory table is available with either an epoxy resin work surface or a chemical-resistant laminate; has an oak veneer with a wheat finish
- Steel laboratory tables available with either an epoxy resin work surface or a chemical-resistant, high-pressure Chemsurf* laminate
- Assembly required
- Tops are attached with a silicone-based adhesive (included)

Modular Steel

Oak Wood

ORDERING INFORMATION:

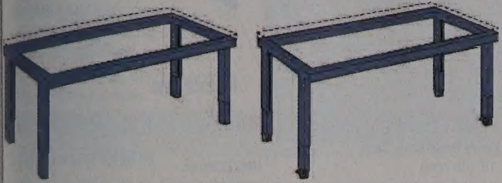
Both Modular Steel and wood laboratory tables are part of our QuickShip program—items will be shipped within 10 working days of order placement. Color selection must be indicated to complete your order. See p. 842 for Modular Steel color choices.

				With Epoxy Resin Worktop		With High-Pressure Laminate Worktop	
Width	Height	Depth	No. of Drawers	Cat. No.	Each	Cat. No.	Each
Modular Steel							
36" (91.4cm)	30" (76.2cm)	24" (61cm)	1	**HM950H330BR**	877.82	**HM950H330BC**	793.12
48" (121.9cm)	30" (76.2cm)	24" (61cm)	2	**HM950H334BR**	1120.41	**HM950H334BC**	974.85
60" (152.4cm)	30" (76.2cm)	24" (61cm)	2	**HM950H338BR**	1212.97	**HM950H338BC**	1010.59
72" (182.9cm)	30" (76.2cm)	24" (61cm)	3	**HM950H342BR**	1518.71	**HM950H342BC**	1263.22
36" (91.4cm)	36" (91.4cm)	24" (61cm)	1	**HM950H380BR**	892.69	**HM950H380BC**	807.94
48" (121.9cm)	36" (91.4cm)	24" (61cm)	2	**HM950H384BR**	1131.15	**HM950H384BC**	989.69
60" (152.4cm)	36" (91.4cm)	24" (61cm)	2	**HM950H388BR**	1224.77	**HM950H388BC**	1025.42
72" (182.9cm)	36" (91.4cm)	24" (61cm)	3	**HM950H392BR**	1529.48	**HM950H392BC**	1273.99
36" (91.4cm)	30" (76.2cm)	30" (76.2cm)	1	**HM950H331BR**	952.91	**HM950H331BC**	821.10
48" (121.9cm)	30" (76.2cm)	30" (76.2cm)	2	**HM950H335BR**	1202.76	**HM950H335BC**	999.71
60" (152.4cm)	30" (76.2cm)	30" (76.2cm)	2	**HM950H339BR**	1321.13	**HM950H339BC**	1053.78
72" (182.9cm)	30" (76.2cm)	30" (76.2cm)	3	**HM950H343BR**	1646.20	**HM950H343BC**	1316.27
36" (91.4cm)	36" (91.4cm)	30" (76.2cm)	1	**HM950H381BR**	965.99	**HM950H381BC**	834.16
48" (121.9cm)	36" (91.4cm)	30" (76.2cm)	2	**HM950H385BR**	1215.84	**HM950H385BC**	1012.76
60" (152.4cm)	36" (91.4cm)	30" (76.2cm)	2	**HM950H389BR**	1334.20	**HM950H389BC**	1066.83
72" (182.9cm)	36" (91.4cm)	30" (76.2cm)	3	**HM950H393BR**	1657.21	**HM950H393BC**	1329.31
Oak Wood							
36" (91.4cm)	30" (76.2cm)	24" (61cm)	1	**HM950C330R**	796.27	**HM950C330C**	725.13
48" (121.9cm)	30" (76.2cm)	24" (61cm)	2	**HM950C334R**	972.14	**HM950C334C**	847.27
60" (152.4cm)	30" (76.2cm)	24" (61cm)	2	**HM950C338R**	983.97	**HM950C338C**	850.75
72" (182.9cm)	30" (76.2cm)	24" (61cm)	3	**HM950C342R**	1302.15	**HM950C342C**	1084.62
36" (91.4cm)	36" (91.4cm)	24" (61cm)	1	**HM950C380R**	889.31	**HM950C380C**	826.22
48" (121.9cm)	36" (91.4cm)	24" (61cm)	2	**HM950C384R**	1063.13	**HM950C384C**	948.37
60" (152.4cm)	36" (91.4cm)	24" (61cm)	2	**HM950C388R**	1275.50	**HM950C388C**	1115.51
72" (182.9cm)	36" (91.4cm)	24" (61cm)	3	**HM950C392R**	1389.01	**HM950C392C**	1185.70
36" (91.4cm)	30" (76.2cm)	30" (76.2cm)	1	**HM950C331R**	870.54	**HM950C331C**	752.22
48" (121.9cm)	30" (76.2cm)	30" (76.2cm)	2	**HM950C335R**	1073.36	**HM950C335C**	891.55
60" (152.4cm)	30" (76.2cm)	30" (76.2cm)	2	**HM950C339R**	1201.46	**HM950C339C**	957.33
72" (182.9cm)	30" (76.2cm)	30" (76.2cm)	3	**HM950C343R**	1449.54	**HM950C343C**	1158.10
36" (91.4cm)	36" (91.4cm)	30" (76.2cm)	1	**HM950C381R**	980.04	**HM950C381C**	872.86
48" (121.9cm)	36" (91.4cm)	30" (76.2cm)	2	**HM950C385R**	1177.76	**HM950C385C**	1012.18
60" (152.4cm)	36" (91.4cm)	30" (76.2cm)	2	**HM950C389R**	1305.83	**HM950C389C**	1077.95
72" (182.9cm)	36" (91.4cm)	30" (76.2cm)	3	**HM950C393R**	1553.89	**HM950C393C**	1278.71

*Trademark. See Trademark Reference.

Thermo Scientific* Hamilton* Four-Leg Adjustable-Height Tables

Durable steel tables require minimal tools for adjustment



HMAFX94800 (left), HMAEX94800 (right)

- Height adjusts from 26 to 37" (66 to 94cm)
- Table with levelers holds up to 600 lb. (272kg); mobile table with lockable casters holds up to 300 lb. (136kg)
- All table frames are 29" deep (74cm)

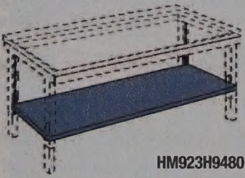
RDERING INFORMATION:

ops must be ordered separately (see p. 852). Add optional shelf (below) or more storage space. Adjustable-height tables, tops and storage shelves re part of our QuickShip* program—products will be shipped 10 working ays after order placement.

Vidth	Cat. No.	Each
Vith levelers		
6" (91.4cm)	**HMAFX93600**	809.05
8" (121.9cm)	**HMAFX94800**	844.27
Vith casters		
6" (91.4cm)	**HMAEX93600**	914.21
8" (121.9cm)	**HMAEX94800**	949.02

torage Shelf

- For adjustable-height tables
- 29" deep (73.7cm); 150 lb. (68kg) capacity
- Shelf mounted with brackets on adjustable legs



HM923H9480

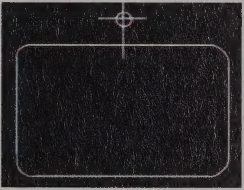
Vidth	Cat. No.	Each
6" (91.4cm)	**HM923H9360**	210.45
8" (121.9cm)	**HM923H9480**	236.26

Thermo Scientific* Hamilton* Work Surfaces for Wall Assemblies

All work surfaces are part of our QuickShip* program—products will be shipped within 10 working days of order placement.

Linear Work Surfaces with Cutout for Epoxy Resin Sink

For HM115H5320B, HM115H6320B, HM115H8320B, HM116H7320B and HM118H9320B Sink Cabinets (see p. 848).



HM21L3054ES

- 1" thick (2.5cm) black, chemical-resistant epoxy resin work surface
- 15D × 23"W (38.1 × 58.4cm) sink cutout (see epoxy resin sinks, p. 853)
- 1⅜" diameter (3.5cm) fixture hole (see fixtures, p. 853-854).
- Not designed for use with stainless-steel sinks
- Work surface depth: 30" (76.2cm)

ORDERING INFORMATION:

Order curb separately (see next page); smooth-on epoxy resin cement for attaching curb also appears on next page.

Width	Cat. No.	Each
30" (76.2cm)	**HM21L3030ES**	382.02
36" (91.4cm)	**HM21L3036ES**	435.75
48" (121.9cm)	**HM21L3048ES**	517.75
54" (137.2cm)	**HM21L3054ES**	605.96
60" (152.4cm)	**HM21L3060ES**	650.51

Linear Work Surfaces without Cutouts

For sitting-height (p. 846) and standing-height (pp. 847-849) base cabinets including HM220H8320B and HM221H8320B corner cabinets (see our Web site for corner cabinets).

- Installed individually or in assemblies
- 1" thick (2.5cm) black, chemical-resistant epoxy resin or high-pressure plastic laminate

HM21L2454E

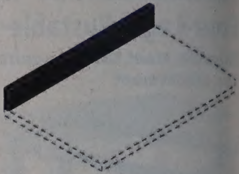
ORDERING INFORMATION:

Order curb separately (see at right); smooth-on epoxy resin cement for attaching curb also appears at bottom right.

Width	Depth	Cat. No.	Each
Epoxy Resin			
24" (61cm)	24" (61cm)	**HM21L2424E**	179.68
30" (76.2cm)	24" (61cm)	**HM21L2430E**	221.46
36" (91.4cm)	24" (61cm)	**HM21L2436E**	268.95
42" (106.7cm)	24" (61cm)	**HM21L2442E**	313.14
48" (121.9cm)	24" (61cm)	**HM21L2448E**	358.34
54" (137.2cm)	24" (61cm)	**HM21L2454E**	403.44
60" (152.4cm)	24" (61cm)	**HM21L2460E**	447.62
72" (182.9cm)	24" (61cm)	**HM21L2472E**	537.92
96" (243.8cm)	24" (61cm)	**HM21L2496E**	717.71
24" (61cm)	30" (76.2cm)	**HM21L3024E**	221.46
30" (76.2cm)	30" (76.2cm)	**HM21L3030E**	281.12
36" (91.4cm)	30" (76.2cm)	**HM21L3036E**	335.73
42" (106.7cm)	30" (76.2cm)	**HM21L3042E**	392.74
48" (121.9cm)	30" (76.2cm)	**HM21L3048E**	447.62
54" (137.2cm)	30" (76.2cm)	**HM21L3054E**	504.63
60" (152.4cm)	30" (76.2cm)	**HM21L3060E**	559.43
72" (182.9cm)	30" (76.2cm)	**HM21L3072E**	672.39
96" (243.8cm)	30" (76.2cm)	**HM21L3096E**	895.68
Chemical-Resistant Laminate			
30" (76.2cm)	24" (61cm)	**HM21L2430C**	158.61
36" (91.4cm)	24" (61cm)	**HM21L2436C**	182.00
42" (106.7cm)	24" (61cm)	**HM21L2442C**	200.69
48" (121.9cm)	24" (61cm)	**HM21L2448C**	213.70
60" (152.4cm)	24" (61cm)	**HM21L2460C**	243.87
72" (182.9cm)	24" (61cm)	**HM21L2472C**	289.28
30" (76.2cm)	30" (76.2cm)	**HM21L3030C**	182.42
36" (91.4cm)	30" (76.2cm)	**HM21L3036C**	200.78
42" (106.7cm)	30" (76.2cm)	**HM21L3042C**	223.41
48" (121.9cm)	30" (76.2cm)	**HM21L3048C**	241.83
60" (152.4cm)	30" (76.2cm)	**HM21L3060C**	289.32
72" (182.9cm)	30" (76.2cm)	**HM21L3072C**	358.99

Curbs for Work Surfaces

- Black, chemical-resistant epoxy resin
- ¾" thick (1.9cm) × 4" high (10.2cm)
- Back curbs also available in high-pressure plastic laminate


HM22L0436E

Length	Cat. No.	Each
Epoxy Resin Back Curb		
18" (45.7cm)	**HM22L0418E**	20.72
24" (61cm)	**HM22L0424E**	26.96
30" (76.2cm)	**HM22L0430E**	34.53
36" (91.4cm)	**HM22L0436E**	41.44
42" (106.7cm)	**HM22L0442E**	47.36
48" (121.9cm)	**HM22L0448E**	55.10
52" (132.1cm)	**HM22L0452E**	58.06
54" (137.2cm)	**HM22L0454E**	60.27
60" (152.4cm)	**HM22L0460E**	67.80
72" (182.9cm)	**HM22L0472E**	80.65
96" (243.8cm)	**HM22L0496E**	109.80
Epoxy Resin Corner Curb		
33½" (85.1cm)	**HM22L0433E**	37.65
34¼" (87cm)	**HM22L0434E**	39.88
39½" (100.3cm)	**HM22L0439E**	44.17
40¼" (102.2cm)	**HM22L0440E**	45.85
Epoxy Resin Side Curb		
22¾" (57.8cm)	**HM22L0423E**	25.89
28¾" (73cm)	**HM22L0429E**	33.15
High-Pressure Laminate Back Curb		
30" (76.2cm)	**HM22L0430C**	77.22
36" (91.4cm)	**HM22L0436C**	82.69
48" (121.9cm)	**HM22L0448C**	84.89
54" (137.2cm)	**HM22L0454C**	94.82
60" (152.4cm)	**HM22L0460C**	101.24
72" (182.9cm)	**HM22L0472C**	104.39

Smooth-On Epoxy Resin Cement

- Two-part black epoxy resin cement
- Use to join two epoxy resin tops together, or curb to work surface
- Covers 32 linear feet (9.8m) of seams

Cat. No.	Each
HM-SMOOTH-ON	115.80

LOOKING FOR MORE?

More examples of work surfaces, fixtures, and faucets can be seen by viewing the complete selection of Thermo Scientific* Hamilton* products online.

Visit www.fishersci.com and search for Hamilton Furniture

*Trademark. See Trademark Reference.

Prices subject to change.

Cleanroom Tables

Seamless, 14-gauge stainless-steel work surface with rounded edges

- 34" high (86.4cm)
- Support structure virtually eliminates "drumming"
- Posts with adjustable feet compensate for slight floor irregularities
- Shipped knocked down; assemble easily without tools

91-154

Stationary Tables

L × W	Mfr. No.	Cat. No.	Each
30 × 60" (76.2 × 152.4cm)	WT306US	**91-152**	1257.95
36 × 60" (91.4 × 152.4cm)	WT366US	**91-153**	1474.22
30 × 72" (76.2 × 182.9cm)	WT307US	**91-154**	1489.38
36 × 72" (91.4 × 182.9cm)	WT367US	**91-155**	1596.67
30 × 96" (76.2 × 243.8cm)	WT309US	**91-156**	1717.73

Mobile Tables

Vith four 5" diameter (12.7cm) swivel casters, two with foot-operated brakes. For other table sizes, call your Fisher Scientific Customer Service Representative.

L × W	Mfr. No.	Cat. No.	Each
30 × 60" (76.2 × 152.4cm)	MWT306US	**17-987-35A**	1405.36
30 × 72" (76.2 × 182.9cm)	MWT307US	**91-158**	1826.65

tainless-Steel Drawer for Cleanroom Tables

Mounts beneath top of cleanroom tables.

- Mount up to four stainless-steel drawers on 72 and 96"W (183.9 and 243.8cm) tables
- Removable seamless inner pan for easy cleaning
- Ball-bearing roller slides
- Additional drawer can be mounted directly beneath the first

91-159

RDERING INFORMATION:
5¾L × 24W × 7½"H
5.4 × 61 × 19.1cm)

escription	Mfr. No.	Cat. No.	Each
leanroom Drawer	WTD51S	**91-159**	715.85

LOOKING FOR MORE?
Chairs and stools can be found in the Seating section.

LOOKING FOR MORE?
Fisher Scientific carries a wide variety of products specifically designed for use in controlled environments. To see a full listing of these products, visit our online catalog.

Visit www.fishersci.com and search for Cleanroom

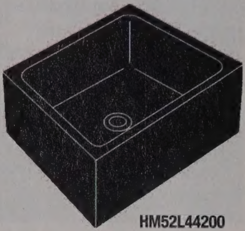
SINKS

Thermo Scientific* Hamilton* Epoxy Resin Laboratory Sinks

Available in 8 and 12" depths

For use in sink and corner base cabinets with epoxy resin worktops with sink cutouts

- One-piece black lab sinks
- Highly nonabsorbent and resistant to acids, solvents, and salts
- Coved corners, sides, and bottom


HM52L44200

ORDERING INFORMATION:
To order sink support, fixtures, outlet, and piping, contact your Fisher Scientific Customer Service Representative.

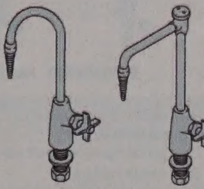
REQUIRED ACCESSORIES:
Each requires sink support (included with HM115H5320B, HM115H6320B, HM115H8320B, HM116H7320B and HM118H9320B Sink Base Cabinets).

Inside L × W × D	Cat. No.	Each
24 × 16 × 8" (61 × 40.6 × 20.3cm)	**HM52L44100**	280.58
24 × 16 × 12" (61 × 40.6 × 30.5cm)	**HM52L77800**	375.73
For Corner Sink Only		
18 × 15 × 8" (45.7 × 38.1 × 20.3cm)	**HM52L44200**	229.89

FIXTURES

Thermo Scientific* Hamilton* Deck-Mount Water Fixtures

- Brass body with heavy chrome-plated finish and fixed spout
- Forged brass four-arm handle with plastic color-coded screw-on index button (except single-service faucet with all-PVC construction)
- ⅜" (1cm) IPS coupling gooseneck
- Renewable unit with stainless-steel seat and special high-durometer bibb washer and serrations for position locking in valve body


HM32W38600 HM32W39200

ORDERING INFORMATION:
Deck-mount water fixtures are part of our QuickShip program—items will be shipped within 10 working days of order placement.

Single-Service Water Faucets

- With or without vacuum breaker
- Include ½" (1.3cm) IPS inlet with coupling nut
- With 6" (15.2cm) spread rigid gooseneck with serrated tip

Control Location	Cat. No.	Each
Without vacuum breaker		
Center	**HM32W38500**	146.16
Right	**HM32W38600**	146.16
Left	**HM32W38700**	146.16
With vacuum breaker		
Center	**HM32W39100**	223.30
Right	**HM32W39200**	223.30
Left	**HM32W39300**	223.30

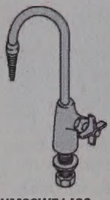
Contd. on next page.

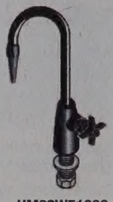
Thermo Scientific* Hamilton* Deck-Mount Water Fixtures, Contd.

Single-Service Faucets

Suitable for distilled and deionized service.

- HM32W51400 is tin-lined, has a self-closing control, and a ½" (1.3cm) IPS male inlet with coupling nut
- HM32W51300 is constructed of PVC, has a manual control with nylon four-arm handle, and is furnished with inlet adapters with a ½" (1.3cm) IPS coupling nut
- Both have 6" (15.2cm) spread rigid gooseneck

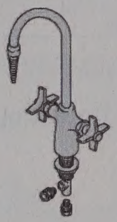

HM32W51400

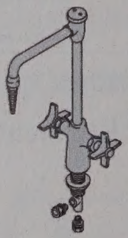

HM32W51300

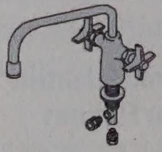
Material	Cat. No.	Each
Tin-lined	HM32W51400	362.42
PVC	HM32W51300	452.83

Hot and Cold Water Mixing Faucets

Furnished with inlet adapters with ½" (1.3cm) IPS coupling nut.


HM32W40500


HM32W40600


HM32W40700

Spout Type	Cat. No.	Each
Without vacuum breaker		
6" (15.2cm) spread rigid gooseneck with serrated tip	**HM32W40500**	260.40
9" (22.8cm) spread swing-spout	**HM32W40700**	296.16
With vacuum breaker		
6" (15.2cm) spread rigid gooseneck with serrated tip	**HM32W40600**	399.45

Thermo Scientific* Hamilton* Deck-Mount Gas/Air/Vacuum Fixtures

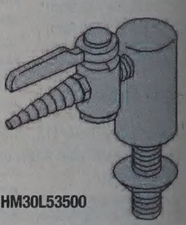
- Forged brass body with heavy chrome-plated finish
- Tapered inserts, individually lapped and fitted
- One-piece insert and handle with high-viscosity lubricant and stainless-steel roll-pin handle stop
- Color-coded screw-on raised index buttons to indicate gas, air or vacuum service
- Spring-loaded nut at bottom of fixture

ORDERING INFORMATION:

Furnished with connecting nipple, nut, and washer—require a ¾" diameter (1.9cm) hole for mounting. For burner gas, air or vacuum service only; working pressures up to 40psi. Part of our QuickShip program—products will be shipped within 10 working days of order placement.

Turret with one ground key cock

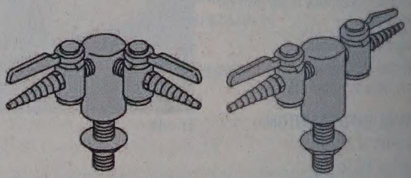
⅜" (1cm) NPT female inlet thread and ⅜" (1cm) mounting shank.


HM30L53500

Cat. No.	Each
HM30W53500	99.47

Turrets with two ground key cocks

- With cocks positioned at 180° or 90°
- ⅜" (1cm) NPT female inlet thread and ⅜" (1cm) mounting shank


HM30W53800 and HM30W54100

Cock Angle	Cat. No.	Each
180°	**HM30W53800**	152.23
90°	**HM30W54100**	152.23

LOOKING FOR MORE?

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Visit www.fishersci.com and search for Hamilton Furniture

ORGANIZERS

Spectrum* Drawer/Ganizers* Drawer Organizer Units

Handy compartmentalized trays keep each item in its proper place

- No need to rummage through cluttered, messy drawers
- Constructed of heavy-duty polystyrene
- Fit drawers of all standard modular metal lab furniture
- Withstand heavy use and abuse

14-334-12A

		Size	L x W x H	No. of Compartments	Cat. No.	Pack of 2
	Beaker Spacers Round depressions with pour-spout cutouts hold inverted beakers and Fleaker* beakers firmly in place. For beakers up to 600mL and Fleaker beaker sizes to 1200mL. Diameters: 5.7, 7.6 and 9.5cm.	Small	17⅜ × 13⅜ × 1⅞" (44.1 × 34 × 4.8cm)	20	**14-334-10B**	102.85
		Large	17⅜ × 19⅜ × 1⅞" (44.1 × 49.2 × 4.8cm)	27	**14-334-10A**	114.59
	Clamp Spacers For clamps and hardware with unusual shapes and lengths, instruments, accessories, and spare parts.	Small	17⅜× 13⅜× 2⅞" (44.1 × 34 × 7.3cm)	5	**14-334-14B**	106.20
		Large	17⅜ × 19⅜ × 2⅜" (44.1 × 49.2 × 7.3cm)	7	**14-334-14A**	118.80
	Grid Spacers For vials and other small items. Excellent for organized storage of samples or standards for fast reference. Each compartment is 1¼L × 1¼W × 1"D (3.2 × 3.2 ×2.5cm).	Small	17⅜ × 13⅜ × 2¼" (44.1 × 34 × 5.7cm)	70	**14-334-27B**	103.60
		Large	17⅜ × 19⅜ × 2¼" (44.1 × 49.2 × 5.7cm)	99	**14-334-27A**	115.00
	Micropipet Spacers For disposable-tip microliter pipets and tips. Suitable for Oxford*, Eppendorf*, and similar pipetting systems, syringes, etc.	Small	17⅜ × 13⅜× 2⅞" (44.1 × 34 × 7.3cm)	5 for pipets, 2 for tips	**14-334-26B**	103.60
		Large	17⅜ × 19⅜ × 2⅞" (44.1 × 49.2 × 7.3cm)	7 for pipets, 2 for tips	**14-334-26A**	115.00
	Pipet Spacers Compartmentalizes pipets by size, type, so they don't roll around and break. Walls absorb shock.	Small	17⅜ × 13⅜ × 2" (44.1 × 34 × 5.1cm)	4	**14-334-11B**	106.00
		Large	17¼ × 19⅜ × 1¾" (43.8 × 49.2 × 4.4cm)	6	**14-334-11A**	119.00
	Small Part Spacers Compartmented to hold weigh boats, stir bars, spatulas, ties, and other small articles so hard to find in littered drawers.	Small	17⅜ × 13⅜ × 2⅞" (44.1 × 34 × 7.3cm)	7	**14-334-20B**	106.20
		Large	17⅜ × 19⅜ × 2⅞" (44.1 × 49.2 × 7.3cm)	15	**14-334-20A**	118.50
	Stopper Spacers Perfect for rubber, glass, and cork stoppers; small hardware items; and all those laboratory supplies that usually get mixed together in one large drawer.	Small	17¼ × 13⅜ × 2⅞" (43.8 × 34 × 7.3cm)	12	**14-334-12B**	106.00
		Large	17⅜ × 19⅜ × 2⅞" (44.1 × 49.2 × 7.3cm)	16	**14-334-12A**	119.00
	Thermometer Trays Ideal protection for costly, fragile, precision thermometers and volumetric pipettes. Area for labeling types, ranges, and calibration.	Small	17⅜ × 13⅜ × 1¼" (44.1 × 34 × 3.2cm)	11 × 400mm; 3 × 420mm	**14-334-15B**	103.60
		Large	17⅜ × 19⅜ × 1¼" (44.1 × 49.2 × 3.2cm)	16 × 400mm; 5 × 420mm	**14-334-15A**	115.00

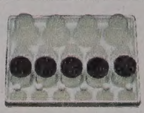
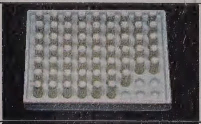
Contd. on next page.

Spectrum* Drawer/Ganizers* Drawer Organizer Units, Contd.

		Size	L x W x H	No. of Compartments	Cat. No.	Pack of 2
	Tool Spacers Spaces are shaped for commonly used tools and hardware supplies. You can tell at a glance if something is missing.	Small	17⅜ × 13⅜ × 1¾" (44.1 × 34 × 4.4cm)	15	**14-334-25B**	103.60
		Large	17¼ × 19⅜ × 1¾" (43.8 × 49.2 × 4.4cm)	15	**14-334-25A**	115.00
	Utility Spacers For bulky items that won't fit other drawer spacers, e.g., mortars and pestles, watch glasses, filter paper, coils of tubing, small appliances and instruments, centrifuge heads and rotors.	Small	17⅜ × 13⅜ × 2⅞" (44.1 × 34 × 7.3cm)	4	**14-334-13B**	103.70
		Large	17⅜ × 19⅜ × 2⅞" (44.1 × 49.2 × 7.3cm)	4	**14-334-13A**	119.00

Scienceware* Drawer Organizers

Stay organized

		Mfr. No.	Cat. No.	Each	Case of 6
	Open-Area Tray Flat, open tray holds large objects or light bulk materials. Depth, 2½" (6.4cm).	18655 0000	**15-252-4**	49.20	252.32
	Three-Compartment Tray Safely holds pipets and other slender, fragile items up to 16" long (40.6cm). Two 4" wide (10.2cm) compartments and one 5½" wide (14cm) compartment; all are 2½" deep (6.4cm).	18648 0000	**15-252-5**	45.45	233.07
	Five-Compartment Tray All compartments are 2½" deep (6.4cm). Center compartment for long items is 4 × 16" (10.2 × 40.6cm). Two side compartments are 7½ × 4" (19.1 × 10.2cm), and two are 7½ × 5½" (19.1 × 14cm).	18654 0000	**15-252-6**	49.20	252.32
	Twelve-Compartment Small Parts Tray Holds small articles easily lost in cluttered drawers. Each compartment is 3⅞L × 3⅞W × 2⅞"D (9.8 × 9.8 × 7.3cm).	18652 0000	**15-252-7**	49.20	252.32
	**Beaker, Flask or Jar Tray** With 20 wells of various diameters for beakers and flasks up to 600mL, as well as other containers up to 3⅞" (9.8cm) in diameter.	18650 0000	**15-252-8**	49.20	252.32
	**Scintillation Vial Tray** 63 wells in a 9 × 7 row format hold standard glass or plastic scintillation vials. Generous spacing makes handling easier and prevents vial-to-vial contact.	18653 0000	**15-252-9**	49.20	252.32
	Thermometer Sorter 14 "V" grooves hold thermometers or volumetric pipets in place to prevent chipping from glass contact, and permit quick identification. Flat areas between grooves are good for labeling, and depressions provide easy gripping. Overall, 14W × 17L × 1⅜"H (43.2 × 35.6 × 3.5cm).	18656 0000	**15-252-10**	49.20	252.32

STEPSTOOLS

Kik-Step* Stool

Rolling stool has rubber bumper to protect walls and equipment

11-931 Series

- Step on it and spring-loaded casters retract for safe, sure footing
- Step off and stool rolls smoothly
- Two steel steps cushioned with rubber treads
- Epoxy finish protected by wide rubber bumper around base

ORDERING INFORMATION:

Base, 15½ dia. × 14½"H (39 × 37cm). Load capacity, 500 lb. (227kg)

Color	Cat. No.	Each
Gray	**11-931**	110.00
Black	**11-931-000**	105.55
Beige	**11-931-001**	105.55
Silver	**11-931-005**	105.55
White	**11-931-006**	105.55
Burgundy	**11-931-008**	105.55
Green	**11-931-009**	105.55
Red	**11-931-010**	105.55
Yellow	**11-931-011**	105.55

LOOKING FOR MORE?

Chairs and stools can be found in the Seating section.

Rubbermaid* Heavy-Duty Step Stools

Glide easily over floor surface

- Rubber wheels retract when stool is stepped on
- Nonskid bottom ring provides a stable, steady base
- Ribbed stepping surface for nonslip safety
- Supports loads up to 350 lb. (159kg)

ORDERING INFORMATION:

Base, 16 dia. × 13"H (41 × 33cm)

11-931-1

Mfr. No.	Cat. No.	Each
2523	**11-931-1**	81.71

Cramer Industries Folding Platform Ladder

Safe, steel steps

- 16-gauge steel construction
- Three 18W × 8"D (46 x 20cm) perforated steps
- 2" dia. casters retract when weight is applied to the ladder
- Top step is 27" (69cm) high
- Folds to 10½" (27cm) wide for easy transportation and storage
- Nonskid plastic feet
- 300 lb. (136kg) capacity
- Beige scratch-resistant powder coating

11-931-017

ORDERING INFORMATION:

27½L × 18¾W × 32¾"H (70 × 48 × 83cm)

Cat. No.	Each
11-931-017	308.05

GAS ACCESSORIES

PURIFIERS AND TRAPS

Thermo Scientific* Super Clean* Cartridge Filters

Replace easily without tools

- 99.9999% pure gas (or 6.0 grade) output
- No carrier gas line contamination during cartridge change
- Cost effective
- TUEV approved

Description	For Gas	Capacity	Mfr. No.	Cat. No.	Each
Moisture with Indicator	Inert; Air; H_2, He	7.2g H_2O	5182-0817	**601-808-19**	145.00
Oxygen with Indicator	Inert	1000mL O_2	5182-0818	**601-808-20**	145.00
Hydrocarbon	Inert; Air; H_2	12g (*n*-butane)	5182-0820	**601-808-21**	145.00

601-808 series

601-808 Series cartridges on baseplates/manifolds; also available are combi and triple cartridges

Thermo Scientific* Super Clean* Cartridge Filter Baseplates/Manifolds

One-time installation procedure

- Can be configured to the individual user requirements
- Needle valves ensure gas line is not contaminated during cartridge change

601-808-14

601-808-17

Description	Includes	For Use With	Mfr. No.	Cat. No.	Each
Single Position Baseplate/ Manifold	Triple Filter	Carrier Gas Only	5182-0815	**601-808-14**	235.00
Two Position Baseplate/ Manifold	2 × Combi Filter	Air and Fuel Gas	5182-9706	**601-808-15**	435.00
Three Position Baseplate/ Manifold	Triple and 2 × Combi Filter	Carrier, Make Up, and Fuel Gas	5182-9707	**601-808-17**	630.00

Restek* Super-Clean* Gas Filters

Gas filter cartridges with a high-purity output to ensure 99.9% pure gas for laboratories

- Feature "quick-connect" for easy, leak-free filter cartridge changes
- Glass interior prevents diffusion; plastic exterior ensures safety
- Easy-to-read indicators with color change code printed on the filter cartridge aid in replacement
- **Ultra-High Capacity Filters** are available for removing hydrocarbons, moisture, or oxygen impurities. Maximum pressure: 11 bar. Estimated lifetime of filter cartridges is approximately two years.
- **Replacement Triple Filter Cartridge** removes oxygen, moisture, and hydrocarbon impurities. Ideal for use in mass spectrometry analyses, ECD detectors, and for protecting analytical columns against damage for contaminated carrier gas. Maximum pressure: 11 bar. Estimated lifetime of filter cartridge is approximately one year.
- **Replacement Fuel Gas Filter Cartridge** removes moisture and hydrocarbon impurities. Use for purifying flame ionization detector (FID) fuel gases to produce a stable baseline, improve overall reproducibility and sensitivity. Maximum pressure: 11 bar. Estimated lifetime of filter cartridge is approximately 1½ years.

06-711-833, 06-711-832, 06-711-831

ORDERING INFORMATION:
Dimensions of all cartridge filters: 10⅝L × 1¾" dia. (27 × 4.4cm)

REQUIRED ACCESSORIES:
Use filter cartridges with single-, two-, or three-position baseplates (sold separately, visit our Web site for more information).

Filter Type	For Gas	Capacity	Mfr. No.	Cat. No.	Each
Ultra-High-Capacity Moisture Filter	Inert Carrier Gas, Air, Hydrogen	7.2g H_2O	22028	**06-711-831**	127.00
Ultra-High-Capacity Oxygen Filter	Inert Carrier Gas	1000mL O_2	22029	**06-711-832**	127.00
Ultra-High-Capacity Hydrocarbon Filter	Inert Carrier Gas, Air, Hydrogen	Hydrocarbon not specified	22030	**06-711-833**	127.00
Replacement Triple Filter	Inert Carrier Gas	1.8g H_2O, 500mL O_2, Hydrocarbon not specified	22020	**06-711-824**	147.00
Replacement Fuel Gas Filter	Inert Carrier Gas, Air, Hydrogen	3.6g H_2O, Hydrocarbon not specified	22022	**06-711-826**	141.00

Restek* Filter and Baseplate Kits

Single-position mounting baseplate with 1⁄8" inlet/ outlet fittings (06-711-828)

Carrier Gas Cleaning Kit contains triple filter for oxygen, moisture, and hydrocarbon impurities (06-711-824).

Fuel Gas Purification Kit contains single-position mounting baseplate with ⅛" inlet/outlet fittings (06-711-828) Fuel Gas Filter for moisture and hydrocarbon impurities (06-711-826).

Description	Mfr. No.	Cat. No.	Each
Carrier Gas Cleaning Kit	22019	**06-711-823**	350.00
Fuel Gas Purification Kit	22021	**06-711-825**	357.00

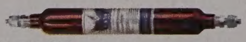
Restek* High-Capacity Oxygen and Moisture Traps

Reduce oxygen or water to less than 15ppb

High-capacity Oxygen Traps purify more than five 200 ft.² cylinders. Remove up to 2g of moisture and 600mg of oxygen.

High-capacity Moisture Traps are purged with ultrahigh–purity helium and shipped ready to use.

ORDERING INFORMATION:
Dimensions for the oxygen and moisture traps: 11L × 1½" dia. (28 × 3.8cm)


06-711-805

06-710-843

Fitting	Mfr. No.	Cat. No.	Each
High-capacity Oxygen Trap			
⅛"	20601	**06-710-844**	107.00
¼"	20600	**06-710-843**	107.00
High-capacity Moisture Trap			
⅛"	21997	**06-711-805**	90.00
¼"	20638	**06-710-867**	90.00

Restek* High-Capacity Indicating Oxygen Traps

High capacity design for long life; usable with all carrier gases

- Built-in microparticulate frit
- Color indicator notifies user as oxygen and water are trapped
- O_2 discharge gas purity is <0.1ppm where inlet does not exceed 15ppm; H_2O discharge gas purity is < 0.5ppm where inlet does not exceed 10ppm
- With an ambient operating temperature and 100psig maximum operating pressure
- Replacement cartridge can be used for oxygen traps with either ⅛ or ¼" fittings

06-710-855

ORDERING INFORMATION:

Dimensions: 9¼L × 2" dia. (23.5 × 5.1cm)

INCLUDES:

Cartridge housing and one cartridge

Description	Mfr. No.	Cat. No.	Each
With ⅛" compression tube fittings	20624	**06-710-855**	222.00
With ¼" compression tube fittings	20623	**06-710-854**	222.00
Replacement Cartridge	20625	**06-710-857**	109.00

Restek* Indicating Oxygen and Moisture Traps

Prepurged for fast stabilization time

- Feature a heavy-walled glass body to prevent oxygen and water diffusion
- Color indicator notifies user as oxygen or moisture is trapped

06-711-815

06-711-819

Indicating Oxygen Traps reduce oxygen from supply gases to 0.1ppm. With Vespel* sealing rings. Maximum operating pressure is 100psig. Dimensions: 10L × 1¼" dia. (25.4 × 3.2cm). Choice of ⅛ or ¼" fittings.

Indicating Moisture Traps reduce water to less than 10ppb; also decrease noise for high-sensitivity detectors. Indicator changes color at 5% relative humidity. A 40µm frit protects needle valves and flow controllers from microparticulate damage. Dimensions: 13L × 2" dia. (33 × 5.1cm). Choice of ⅛ or ¼" fittings.

Fitting	Mfr. No.	Cat. No.	Each
Indicating Oxygen Traps			
⅛"	22010	**06-711-815**	90.00
¼"	22011	**06-711-816**	90.00
Indicating Moisture Traps			
⅛"	22014	**06-711-819**	99.00
¼"	22015	**06-711-820**	99.00

Gas-Specific Purifiers

Ideal for removing moisture, hydrocarbons and oxygen from gas chromatography gas supplies

Used inline with the GC carrier gas or detector gas supply to produce gases that are at least a factor of ten higher in purity than a 99.9999% "Chromatography Grade" cylinder of gas (when the purifier is supplied by a 99.995% "High Purity" cylinder of gas).

- Available with ⅛ or ¼" compression fittings

For Gas	Cat. No.	Each
With ⅛" compression fitting		
He/Inert	**05-730-1**	235.57
H_2	**05-730-3**	235.57
N_2	**05-730-5**	235.57
Air	**05-730-7**	235.57
With ¼" compression fitting		
He/Inert	**05-730-2**	235.57
H_2	**05-730-4**	236.42
N_2	**05-730-6**	235.57
Air	**05-730-8**	236.42

- All models feature proprietary adsorptive materials to help capture and retain specific contaminants for the operating life of the purifier
- These materials adsorb a larger number and variety of contaminants than commonly used adsorptive materials

05-730 series

SPECIFICATIONS

Length	20⅝" (52.3cm)
Diameter	1½" (3.8cm)
Max. Inlet Pressure	1000psi (6895kPa)
Max. Recommended Flow	500mL/min.
Pressure Drop, 120psi (8.27MPa) inlet at a flow of 0 to 500mL/min.	<0.30psi (<2.1kPa)
Compression End Connections	⅛ or ¼"

REGULATORS

*Fisherbrand** Heavy-Duty Single-Stage Regulators

Ideal for applications requiring short intervals of use

- For noncorrosive gases
- Rugged forged brass body ensures strength
- Sintered metal filter inlet stem protects regulator from dirt
- Large 2¾" diameter (7cm) diaphragm assures accurate delivery pressure

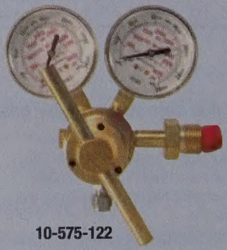
INCLUDES:
Chrome-plated brass outlet needle valve with ¼ NPT male thread

10-575-111

For Gas	Max. Inlet Pressure, psig (MPa)	Delivery Pressure Range, psig (MPa)	Outlet Gauge Pressure Range, psig (MPa)	CGA	Cat. No.	Each
Acetylene	400 (2.75)	2–15 (0.0138–0.10)	2–30 (0.0276–0.207)	510	**10-575-106**	359.20
	400 (2.75)	2–15 (0.0138–0.10)	2–30 (0.0276–0.207)	300	**10-575-107**	402.14
Air	3000 (27.6)	2–40 (0.0138–0.276)	2–60 (0.0276–0.414)	346	**10-575-108**	380.43
	3000 (27.6)	2–40 (0.0138–0.276)	2–60 (0.0276–0.414)	590	**10-575-109**	380.43
Argon, Nitrogen, Helium	3000 (27.6)	2–15 (0.0138–0.10)	2–30 (0.0276–0.207)	580	**10-575-110**	406.21
	3000 (27.6)	5–125 (0.0345–0.862)	2–200 (0.0276–1.38)	580	**10-575-111**	368.89
Carbon Dioxide	3000 (27.6)	2–40 (0.0138–0.276)	2–60 (0.0276–0.414)	320	**10-575-112**	380.43
	3000 (27.6)	5–125 (0.0345–0.862)	2–200 (0.0276–1.38)	320	**10-575-113**	376.72
Hydrogen	3000 (27.6)	2–40 (0.0138–0.276)	2–60 (0.0276–0.414)	350	**10-575-114**	374.69
	3000 (27.6)	5–125 (0.0345–0.862)	2–200 (0.0276–1.38)	350	**10-575-115**	365.85
Oxygen	3000 (27.6)	2–40 (0.0138–0.276)	2–60 (0.0276–0.414)	540	**10-575-116**	368.89
	3000 (27.6)	5–125 (0.0345–0.862)	2–200 (0.0276–1.38)	540	**10-575-117**	368.89
Propane	3000 (27.6)	2–40 (0.0138–0.276)	2–60 (0.0276–0.414)	510	**10-575-118**	376.62
Nitrous Oxide	3000 (27.6)	2–40 (0.0138–0.276)	2–60 (0.0276–0.414)	326	**10-575-119**	380.43

*Fisherbrand** High-Pressure Single-Stage Regulators

Safe, accurate delivery pressure control for noncorrosive gases



10-575-122

Use in hydrogenation, catalytic reduction, dead-end and pressure testing.

- Delivery range up to 3000psig (20.7MPa)
- Constructed without solder for easy disassembly and repair; built to give long life
- Single-stage design features machined brass body and cap, 2½" brass gauges, bronze sintered inlet filter with PCTFE seat
- All have ¼" stainless-steel Swagelok* type fitting outlets
- Cylinder gauge of all regulators has pressure range of 4000psi (27.5MPa)
- ¼" NPT inlet

COMPLIANCE:
Conforms to CGA E-4

For Gas	Delivery Pressure Range, psig (MPa)	Max. Outlet Gauge Pressure, psig (MPa)	CGA	Cat. No.	Each
Hydrogen	100–1500 (0.689–10.3)	2000 (13.7)	350	**10-575-120**	779.76
Nitrogen	100–1500 (0.689–10.3)	2000 (13.7)	580	**10-575-121**	1005.95
	200–3000 (1.38–20.7)	4000 (27.5)	580	**10-575-122**	1032.61

*Fisherbrand** High-Purity Brass Single-Stage Regulators

Made from materials that will not outgas impurities into the gas stream—for noncorrosive gases

Ideal for instrument and OEM applications employing very high-purity, noncorrosive gases and gas mixtures where some variations in delivery pressure can be tolerated.

- Made from chrome-plated brass bar stock
- Ultrasonically cleaned and machined under statistical process control (SPC)
- 10-micron stainless-steel inlet filter
- Low internal volume
- PCTFE seat
- Viton* seal
- Diffusion-resistant 316L stainless-steel diaphragm packless valve on the outlet controls gas flow
- 2" dual-scale gauges
- Inboard leak rate <1 × 10^{-9}cc/sec. (helium) allows resistance to atmospheric contaminants
- Threaded housing cap for easy panel mounting and drilled body for rear-bracket mounting
- Operating temperature range: -40° to +60°C (-40° to +140°F)
- ¼" NPT outlet port
- Delivery pressure change ≤0.53/100psig

NOTE:
Specify cylinder outlet connection (CGA) at time of order.

Delivery Pressure Range, psi (MPa)	Max. Inlet Pressure, psig (MPa)	Outlet Gauge Pressure Range, psig (MPa)	Cat. No.	Each
2–40 (0.0138–0.276)	3000 (20.7)	30" Hg 0–60 (0–0.21)	**10-575-123**	401.67
5–125 (0.0345–0.862)	3000 (20.7)	30" Hg 0–200 (0–0.21)	**10-575-124**	401.67
10–300 (0.0690–2.07)	3000 (20.7)	10–400 (0.069–0.276)	**10-575-125**	401.67
20–500 (0.138–3.45)	3000 (20.7)	60–600 (0.414–4.14)	**10-575-126**	401.67

*Fisherbrand** High-Purity Stainless-Steel Single-Stage Regulators

10-575-129

For semi-corrosive gases

For use with extremely high-purity gases, mildly corrosive or reactive gases, and toxic gases where slight variations in delivery pressure can be tolerated.

- Ultrasonically cleaned 316L stainless-steel construction is highly resistant to inboard diffusion of air
- Electropolished 316L stainless-steel bar stock body
- 10-micron sintered inboard filter, nozzle, poppet and other internal parts
- PCTFE seat
- PTFE-resin seals to minimize outgassing and contamination of gas stream
- Diffusion-resistant, 316L stainless-steel diaphragm packless valve installed on the outlet
- 2" dual-scale gauges
- Withstand internal vacuums generated during purging operations
- Inboard leak rate $<1 \times 10^{-9}$cc/sec. (helium)
- Operating temperature: -40° to +60°C (-40° to +140°F)
- ¼" NPT outlet port
- Delivery pressure change ≤0.53/100psig

NOTE:
Specify cylinder outlet connection (CGA) at time of order.

Delivery Pressure Range, psig (MPa)	Max. Inlet Pressure, psig (MPa)	Outlet Gauge Pressure, Range psig (MPa)	Cat. No.	Each
2–40 (0.0138–0.276)	3000 (27.6)	30" Hg 0–60 (0–0.21)	**10-575-127**	1022.41
5–125 (0.0345–0.862)	3000 (27.6)	30" Hg 0–200 (0–0.21)	**10-575-128**	1023.81
10–300 (0.0690–2.068)	3000 (27.6)	10–400 (0.069–2.76)	**10-575-129**	1025.22
20–500 (0.138–3.45)	3000 (27.6)	60–600 (0.414–4.14)	**10-575-130**	1026.62

*Fisherbrand** Multistage Cylinder Regulators

10-575-139

For noncorrosive gases

Ideal for applications requiring maintenance of a constant delivery pressure until cylinder contents are empty.

- Feature neoprene diaphragms reinforced with nylon fabric, nylon seals, Orthane* seats for first and second stages
- Dual-scale gauges, brass bonnet, internal self-reseating relief valve, and easy pressure-adjusting knob
- Outlet needle valve with ¼" NPT male thread

For	Max. Inlet Pressure, psig (MPa)	Delivery Pressure Range, psig (MPa)	Outlet Gauge Pressure Range, psig (MPa)	CGA	Cat. No.	Each
Acetylene	400 (2.76)	1–15 (0.006–0.1)	2–30 (0.0138–0.20)	510	**10-575-131**	551.07
	400 (2.76)	1–15 (0.006–0.1)	2–30 (0.0138–0.20)	300	**10-575-132**	523.54
Air, Breathing	3000 (20.7)	1–40 (0.006–0.276)	2–60 (0.0138–0.41)	346	**10-575-133**	483.37
Air, Industrial	3000 (20.7)	1–40 (0.006–0.276)	2–60 (0.0138–0.41)	590	**10-575-134**	514.90
Argon, Nitrogen, Helium	3000 (20.7)	1–40 (0.006–0.276)	2–60 (0.0138–0.41)	580	**10-575-135**	551.07
	3000 (20.7)	1–125 (0.006–0.8)	5–200 (0.0345–1.37)	580	**10-575-136**	551.07
	3000 (20.7)	1–250 (0.006–1.7)	5–400 (0.0345–2.76)	580	**10-575-137**	674.46
	3000 (20.7)	1–325 (0.006–2.24)	5–400 (0.0345–2.76)	580	**10-575-138**	521.22
Carbon Dioxide	3000 (20.7)	1–40 (0.006–0.276)	2–60 (0.0138–0.41)	320	**10-575-139**	565.48
	3000 (20.7)	1–125 (0.006–0.8)	5–200 (0.0345–1.37)	320	**10-575-140**	654.84
Hydrogen	3000 (20.7)	1–40 (0.006–0.276)	2–60 (0.0138–0.41)	350	**10-575-141**	535.49
	3000 (20.7)	1–125 (0.006–0.8)	5–200 (0.0345–1.37)	350	**10-575-142**	415.69
Nitrous Oxide	3000 (20.7)	1–40 (0.006–0.276)	2–60 (0.0138–0.41)	326	**10-575-143**	535.59
Oxygen	3000 (20.7)	1–40 (0.006–0.276)	2–60 (0.0138–0.41)	540	**10-575-144**	514.90
	3000 (20.7)	1–125 (0.006–0.8)	5–200 (0.0345–1.37)	540	**10-575-145**	520.08
	3000 (20.7)	1–325 (0.006–2.24)	5–400 (0.0345–2.76)	540	**10-575-146**	917.10
Oxygen Mix, Medical†	3000 (20.7)	1–40 (0.006–0.276)	2–60 (0.0138–0.41)	280	**10-575-147**	396.45
	3000 (20.7)	1–125 (0.006–0.8)	5–200 (0.0345–1.37)	280	**10-575-148**	396.45
	3000 (20.7)	1–40 (0.006–0.276)	2–60 (0.0138–0.41)	500	**10-575-149**	396.45
	3000 (20.7)	1–125 (0.006–0.8)	5–200 (0.0345–1.37)	500	**10-575-150**	396.45
Oxygen Mix, Industrial	3000 (20.7)	1–40 (0.006–0.276)	2–60 (0.0138–0.41)	296	**10-575-151**	480.85
	3000 (20.7)	1–125 (0.006–0.8)	5–200 (0.0345–1.37)	296	**10-575-152**	520.67

† Includes O_2 and CO_2 (with $CO_2 < 7\%$).

WARNING
Not for use with corrosive, toxic, or high-purity gases.

Restek* Ultra-High-Purity Brass Body Regulators

For use with noncorrosive, high-purity, or liquified gases

Ideal with ultra-high-purity carrier gas for sensitive GC applications using MS, PID, HID, or ECD detection methods.

- Brass construction for minimum dead volume
- Oxidation-resistant chrome plating
- 10µm sintered bronze filter, metal-to-metal seals for long-term leak tightness, and PTFE-resin seats
- Type 316 stainless-steel regulator diaphragm with ¼" FPT-fitting outlet-valve ensures ultra-high–purity control of gases and leak-free shutoff
- 2" (5.1cm) dia. gauge displays pressure in psi/kPa
- Multiturn shutoff handle
- Helium leak-test -to 2×10^{-8}cc/sec.
- Operating temperature range: -4° to +60°C (24.8° to 60°F)
- Fully assembled and tested
- **Single-stage regulators:** Use where there is secondary pressure regulation downstream
- **Dual-stage regulators:** Recommended for stable outlet control when using high-pressure gas-cylinders (secondary pressure regulation not needed)

06-711 Series

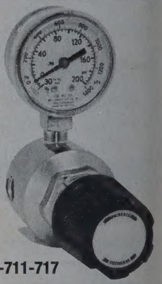
For Gas	Max. Inlet Pressure, psig (kPa)	Max. Delivery Pressure, psig (kPa)	Flow Capacity CV	Outlet Gauge Pressure, Range psig (kPa)	CGA	Mfr. No.	Cat. No.	Each
Dual-stage								
Argon, Helium, Nitrogen	3000 (20680)	100 (689.5)	0.1	0-100 (0-689.5)	580	21667	**06-711-718**	408.00
Hydrogen, P_5 (95% Argon, 5% Methane)	3000 (20680)	100 (689.5)	0.1	0-100 (0-689.5)	350	21668	**06-711-719**	408.00
Air	3000 (20680)	100 (689.5)	0.1	0-100 (0-689.5)	590	21669	**06-711-720**	408.00
Single-stage								
Argon, Helium, Nitrogen	3000 (20680)	100 (689.5)	0.1	0-100 (0-689.5)	580	20646	**06-710-872**	278.00
Hydrogen, P_5 (95% Argon, 5% Methane)	3000 (20680)	100 (689.5)	0.1	0-100 (0-689.5)	350	20647	**06-710-873**	278.00
Air	3000 (20680)	100 (689.5)	0.1	0-100 (0-689.5)	590	20648	**06-710-874**	278.00

Restek* Ultra-High-Purity Brass Line Regulator

For use with critical purity and corrosive gases

Ideal for MS, PID, HID, or ECD detection methods when the line pressure needs to be reduced by 20psig (137.9kPa) or more.

- Single-stage
- Brass construction for minimum dead volume
- Features a 10µm sintered Type 316 stainless-steel filter and PTFE-resin seats
- 2" (5.1cm) dia. gauge that displays pressure in psi/kPa
- Helium leak-test—certifiable to 1×10^{-8}cc/sec.
- Operating temperature range: -40° to +60°C (-40° to +140°F)



06-711-717

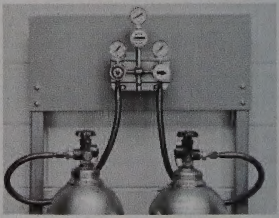
Max. Inlet Pressure, psig (kPa)	Max. Delivery Pressure, psig (kPa)	Flow Capacity CV	Outlet Gauge Pressure Range, psig (kPa)	Fittings	Mfr. No.	Cat. No.	Each
3000 (20,680)	0-50 (344.7)	0.1	0-100 (689.5)	¼" Female NPT	21666	**06-711-717**	248.00

Restek* Critical Purity Switchover System for Noncorrosive Service

Allow the replacement of a depleted gas source without interrupting the gas supply to the instrument or process

Provide a continuous supply of high-purity gas to the laboratory, process, or instrument by setting the two regulators at slightly different pressures to discharge one side of the system at a time.

- Allow the replacement of a depleted gas source without interrupting the gas supply to the instrument or process
- Choice of brass or stainless-steel systems with line regulators
- All models feature flexible, all-stainless-steel pigtails with armor casing
- CGA connection on each pigtail has check valve to prevent contamination and minimize purging requirements



06-710 series

For Gas	CGA	Mfr. No.	Cat. No.	Each
Brass				
Argon, Helium, Nitrogen	580	20668580	**06-710-889**	1532.00
Hydrogen, P_5 (95% Argon, 5% Methane)	350	20668350	**06-710-888**	1532.00
Air	590	20668590	**06-710-890**	1532.00
Stainless Steel				
Argon, Helium, Nitrogen	580	21593580	**06-711-679**	2620.00

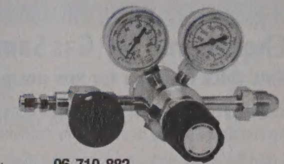
*Trademark. See Trademark Reference.

Restek* Ultra-High-Purity Stainless-Steel Body Regulators

For noncorrosive, high purity, or liquified gases

Ideal for all-stainless cylinder systems where welded tubing and special fittings are used, and thorough cleaning and specific gas management are practiced.

- Body constructed out of Type 316 stainless steel that is more easily purged of atmospheric contaminants than brass and resistant to attack from dry corrosive gases
- Include 10μm sintered bronze filter, metal-to-metal seals for long-term leak tightness, and PTFE-resin seats
- Type 316 stainless-steel diaphragm with ¼" FPT-fitting outlet-valve ensures purity of gas flow and leak-free shutoff
- Features 2" (5.1cm) dia. gauge that displays pressure in psi/kPa, and multiturn shutoff handle
- Helium leak-test-certifiable to 1×10^{-8}cc/sec.
- Operating temperature range: -40° to +60°C (-40°°to +140°F)
- Fully assembled and tested
- **Single-stage regulators:** Use where there is secondary pressure regulation downstream
- **Dual-stage regulators:** Recommended for stable outlet control when using high-pressure gas cylinders (secondary pressure regulation not needed)



06-710-882

For Gas	Max. Inlet Pressure, psig (kPa)	Max. Delivery Pressure, psig (kPa)	Flow Capacity CV	Outlet Gauge Pressure Range, psig (kPa)	CGA	Mfr. No.	Cat. No.	Each
Dual-stage								
Argon, Helium, Nitrogen	3000 (20680)	0-150 (1034)	0.1	0-100 (0-689.5)	580	20662	**06-710-882**	797.00
Hydrogen, P_5 (95% Argon, 5% Methane)	3000 (20680)	0-150 (1034)	0.1	0-100 (0-689.5)	350	20663	**06-710-883**	797.00
Air	3000 (20680)	0-150 (1034)	0.1	0-100 (0-689.5)	590	20664	**06-710-884**	797.00
Single-stage								
Argon, Helium, Nitrogen	3000 (20680)	0-150 (1034)	0.1	0-100 (0-689.5)	580	20665	**06-710-885**	619.00
Air	3000 (20680)	0-150 (1034)	0.1	0-100 (0-689.5)	590	20667	**06-710-887**	619.00

Kontes* Double Vacuum/Gas Manifold

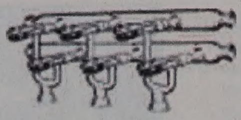
Grease-free operation

K216040 Series Vacuum/Gas Manifold

- Forward-facing valves
- Compact for assembly in fume hood
- Modular and easily disassembled for cleaning
- Ports spaced 100mm apart

K215050 Series Vacuum/Gas Manifold

- An all-glass manifold for connecting inert gas and vacuum sources to sidearm stopcocks
- Each stopcock has a metering groove cut into the plug to provide fine control of vacuum and inert gases
- Distance between stopcocks is 65mm for the 3 position size and 100mm for the 5 position size
- Supplied with patented pressure/vacuum retainers



K216040 Series

K216060 Series Vacuum/Gas Manifold

- For connecting inert gas and vacuum sources
- Sample contacts only PTFE and borosilicate glass
- Beams ½" O.D. with upper-left and lower-right ends open
- Delivery ports 9mm O.D.
- Distance between valves 100mm

Description	No. of Stations	L x H x D	Cat. No.	Each
Manifold with Forward-Facing Valves	4	425 x 160 x 140mm	**K216040-0004**	908.92
Manifold with Forward-Facing Valves	5	525 x 160 x 140mm	**K216040-0005**	1136.14
Manifold with PTFE Valves	5	500 x 148 x 83mm	**K216060-0000**	691.84
Manifold with PTFE Valves	3	300 x 148 x 83mm	**K216060-0003**	511.58
All-Glass Manifold	3	500 x 87 x 90mm	**K216050-0005**	582.67
All-Glass Manifold	3	230 x 87 x 90mm	**K2160500000**	373.68

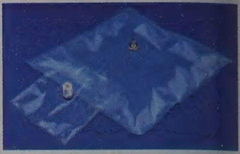
SAMPLING BAGS

Chemware* FEP Gas Sampling Bags

5mL thick FEP film for low permeability and maximum sample retention

For gas sample analysis, extracting air samples from exhaust systems, monitoring air quality or calibrating instruments in the field.

- Nonabsorbent, nonreactive to resist most corrosives
- Heat-sealed on all four sides
- Second outboard seal not required
- Available with either a nickel-plated brass ON/OFF valve which accepts ¼" I.D. flexible tubing, or with a PTFE/silicone septum fitting in a polypropylene housing for use with a hypodermic needle
- Individually packaged



10-923-7, 10-923-4

Volume	Size	Mfr. No.	Cat. No.	Each	Case of
With ON/OFF Valve					
0.5L	6 × 6" (15 × 15cm)	D1075002-10	**10-923-2**	46.49	10/397.34
1.2L	6 × 10" (15 × 25cm)	D1075001-10	**10-923-1**	36.08	10/308.37
4.7L	12 × 12" (30 × 30cm)	D1075003-10	**10-923-3**	43.89	10/375.13
50.0L	24 × 36" (61 × 91cm)	D1075004-5	**10-923-4**	----	5/597.73
With Septum Valve					
0.5L	6 × 6" (15 × 15cm)	D1075005-10	**10-923-5**	23.69	10/202.45
1.2L	6 × 10" (15 × 25cm)	D1075006-10	**10-923-6**	33.11	10/283.03
4.7L	12 × 12" (30 × 30cm)	D1075007-10	**10-923-7**	----	10/363.70
50.0L	24 × 36" (61 × 91cm)	D1075008-5	**10-923-8**	----	5/566.01

Chemware* Tedlar* PVF Gas Sampling Bags

Good for use with carbon monoxide, sulfur dioxide, hydrogen sulfide, radon, and mercaptans

Can also be used for liquid sampling, when supported with tray, and for gas sampling trains.

- 2mm thick PVF
- Sealed on all four sides
- Second outboard seal not required
- Available with either a nickel-plated brass ON/OFF valve which accepts ¼" I.D. flexible tubing, or with a PTFE/silicone septum fitting in a polypropylene housing for use with a hypodermic needle

10-923-18, 10-923-10

COMPLIANCE:

EPA cited, Title 40CFR, Part 60, App A Method 18

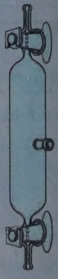
Volume	Size	Mfr. No.	Cat. No.	Each	Case of
With ON/OFF Valve					
0.3L	6 × 6" (15 × 15cm)	D1075009-10	**10-923-9**	30.95	10/264.57
1.6L	9 × 9" (23 × 23cm)	D1075010-10	**10-923-10**	36.28	10/310.12
3.8L	12 × 12" (30 × 30cm)	D1075011-10	**10-923-11**	41.62	10/355.71
8.1L	15 × 15" (38 × 38cm)	D1075012-10	**10-923-12**	46.52	10/397.60
20.3L	18 × 18" (46 × 46cm)	D1075013-5	**10-923-13**	----	5/251.35
37.7L	24 × 24" (61 × 61cm)	D1075014-5	**10-923-14**	62.32	5/275.75
85.7L	30 × 30" (76 × 76cm)	D1075015-5	**10-923-15**	109.01	5/465.84
With Septum Valve					
0.3L	6 × 6" (15 × 15cm)	D1075016-10	**10-923-16**	----	10/257.51
1.6L	9 × 9" (23 × 23cm)	D1075018-10	**10-923-18**	39.52	10/337.78
3.8L	12 × 12" (30 × 30cm)	D1075017-10	**10-923-17**	36.02	10/307.89
8.1L	15 × 15" (38 × 38cm)	D1075019-10	**10-923-19**	45.67	10/390.37
37.7L	24 × 24" (61 × 61cm)	D1075021-5	**10-923-21**	60.26	5/266.63

TUBES

*Fisherbrand** Septum-Port Gas Sampling Tube

For gas chromatography

- Extract gas by piercing self-sealing cap on side arm with syringe
- With ₷ stopcocks
- Borosilicate glass



11-134-190

Capacity	Cat. No.	Each
250mL	**11-134-190**	177.70

ACCESSORIES

Sleeve Stoppers

- Comprised of dry natural rubber
- Folds down over neck of bottle
- With hollow plugs, rounded corners, and needle guide
- Easily perforated with hypodermic needles
- Self-sealing

14-126AA

Size No.	Sleeve Length	Plug Diameter	Cat. No.	Pack of 100
11½	10.70mm	5.16–6.73mm	**03-215-5**	59.62
13	14.60mm	10.50mm	**14-126AA**	49.39
14½	15.87mm	13.88mm	**14-126BB**	90.20
15	19.05mm	15.85mm	**14-126DD**	105.29

*Trademark. See Trademark Reference.

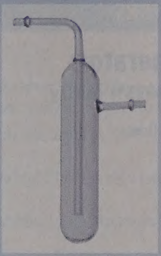
*Fisherbrand** Dudley Bubbling Tube

Can be mounted in any position to conform to other apparatus or for use as gas trap

- Borosilicate glass
- Capacity, 50mL

ORDERING INFORMATION:

Overall length, 6⅞" (175mm)

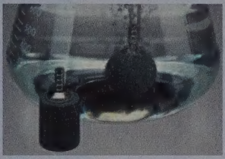

11-184

Cat. No.	Each
11-184	56.60

*Fisherbrand** Gas Diffusing Stones

Fast gas diffusion into liquids

- Made of porous, fused crystalline alumina grains
- Average pore size 60µm
- Particle retention 25µm
- With cadmium-plated nipples for 3⁄16" I.D. (4.8mm) tubing


11-139B, 11-139A

Shape	Dimensions	Cat. No.	Each
Sphere	1" dia. (25mm)	**11-139A**	22.09
Cylinder	⅞ dia. × 1"H (22 × 25mm)	**11-139B**	35.94

Pyrex* Gas Sampling Tubes

With ₸ stopcocks and retainer clips

10-921B

apacity	₸ Stopcock	Mfr. No.	Cat. No.	Case of
250mL	3	9500 250	**10-921B**	6/1250.09
500mL	4	9500 500	**10-921C**	4/1028.48

yrex* Gas Dispersion Tubes

Vith fritted cylinders

- Use in test tubes or flasks
- Filtering tubes permit small bubbles to rise from fritted cylinder without the excessive formation of large bubbles

11-138B

orosity	Mfr. No.	Cat. No.	Each	Case of 6
xtra-coarse	39533 12EC	**11-138A**	50.76	206.76
oarse	39533 12C	**11-138B**	50.76	206.76

WASHING BOTTLES

Pyrex*Tall-Form Gas Washing Bottles

Tall design permits thorough washing

- Stable hexagonal base
- Tubulation O.D., 10mm
- ₸ 29/42 stopper assembly included with all bottle sizes

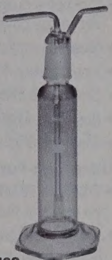
03-036B

Capacity	Mfr. No.	Cat. No.	Each
4 oz. (125mL)	1760 125	**03-036A**	126.39
8 oz. (250mL)	1760 250	**03-036B**	133.89
16 oz. (500mL)	1760 500	**03-036C**	161.09

Pyrex* Tall-Form Gas Washing Fritted Cylinder Bottles

½" (12mm) fritted cylinder is part of stopper assembly

- Tubulation O.D. is 5⁄16" (8mm)
- Available in coarse (C) or extra-coarse (EC) porosity
- ₸ 29/42 stopper assembly included with all bottle sizes


03-040C

Capacity	Porosity	Mfr. No.	Cat. No.	Each
4 oz. (125mL)	C	31770 125C	**03-040A**	174.57
4 oz. (125mL)	EC	31770 125EC	**03-039A**	159.08
8 oz. (250mL)	C	31770 250C	**03-040B**	170.13
16 oz. (500mL)	C	31770 500C	**03-040C**	188.89
16 oz. (500mL)	EC	31770 500EC	**03-040E**	210.64

Pyrex*Tall Form Gas Washing Bottles with Fritted Discs

Uniform dispersion with ¾" O.D. (20mm) fritted disc, which is part of stopper assembly

- Available in coarse (C) with 40–60µm pore size or extra-coarse (EC) porosity with 170–220µm pore size
- 16 oz. (500mL) size is available with or without ₸ 40/50 stopper assembly

03-038B

Capacity	Porosity	Mfr. No.	Cat. No.	Each
With Stopper Assembly				
4 oz. (125mL)	C	31760 125C	**03-038A**	197.47
4 oz. (125mL)	EC	31760 125EC	**03-038D**	200.04
8 oz. (250mL)	C	31760 250C	**03-038B**	190.96
8 oz. (250mL)	EC	31760 250EC	**03-038E**	215.71
16 oz. (500mL)	C	31760 500C	**03-038C**	209.47
16 oz. (500mL)	EC	31760 500EC	**03-038F**	224.05
Without Stopper Assembly				
16 oz. (500mL)	N/A	31760 500BO	**03-038-1**	103.07

GAS GENERATORS

domnick hunter* High-Purity Nitrogen Gas Generators

Generate in-house uninterrupted gas flow up to 99.999 or 99.9995% purity

Generators transform atmospheric air into high-purity nitrogen gas. Continuous gas flow eliminates need for high-pressure cylinders and liquid Dewars—prevents interruptions created by untimely cylinder changeouts. Choose from models compatible with a variety of chromatography applications.

- Units use patented pressure swing adsorption (PSA) technology to trap oxygen, carbon dioxide and moisture in a bed of carbon molecular sieve (CMS) that alternates between regeneration and purification modes
- Feature digital hours-run meter and service indicator
- Standard integral oil-free air compressor with Oil-X*Plus filter
- Easily installed under a standard laboratory bench
- Connector Type: ¼" Swagelok*

Ultra-high-Purity Models

- Produce a guaranteed consistent 99.999% pure nitrogen gas flow without secondary downstream filtration
- Ideal for applications including GC carrier and make-up gas and instrument purging
- Incorporate oil-free compressor that prefilters air using domnick hunter Oil-XPlus technology
- Single bed of carbon molecular sieve (CMS)
- Residual oxygen content: <10ppm
- Manufactured using ISO 9001:2000-certified processes

Ultra-high-Purity Zero Model

- Produces 99.9995% pure nitrogen gas capable of maintaining a flat GC baseline with no peaks or fluctuations
- Air from integral compressor is prefiltered using domnick hunter Oil-XPlus technology before being passed through alternating beds of carbon molecular sieve; catalyst system oxidizes hydrocarbons
- Processes combine to remove oxygen to <10ppm and hydrocarbon content to <0.1ppm (as methane)

High-Purity Models

- Produce 99.5% pure nitrogen gas flow
- Single bed of carbon molecular sieve (CMS)
- 14-950-5 includes integral compressor, while 14-950-6 does not

14-950 Series

WARRANTY:
Two years

COMPLIANCE:
CE marked

ORDERING INFORMATION:
Electrical requirements: 110V 60Hz†

	Ultra-high-Purity—99.999%		Ultra-high-Purity Zero—99.9995%	High Purity Nitrogen Gas Generators	
Model	**G2-010W**	**G2-110W**	**G5-010W**	**G4-510W**	**G4-600W**
Oxygen Output	<10ppm	<10ppm	<10ppm	<0.5%	<0.5%
Outlet Flowrate	1500cc/min.	3000cc/min.	1000cc/min.	12L/min.	18L/min.
Outlet Pressure	73psig (5barg)	73psig (5barg)	73psig (5barg)	102psig (7barg)	102psig (7barg)
No. of Beds	One	One	Two	Two	Two
Purification and Regeneration Modes	Alternating	Alternating	Staggered	Staggered	Staggered
Heated Catalyst	No	No	Yes	No	No
L × W × H	26 × 14 × 33" (67.0 × 35.5 × 83.5cm)	26 × 14 × 33" (67.0 × 35.5 × 83.5cm)	18 × 14 × 33" (46.0 × 35.5 × 83.5cm)	26⅛ x 13⅝ x 34⅜" (663 x 345 x 873mm)	26⅛ x 13⅝ x 34⅜" (663 x 345 x 873mm)
Net Weight	176 lb. (80kg)	176 lb. (80kg)	101 lb. (46kg)	198 lb. (90kg)	170 lb. (77kg)
Electrical Reqts.†	110V 50/60Hz	110V 50/60Hz	110V 60Hz	110V 60Hz	110V 60Hz
Power Rating	300w	300w	350w	50w	50w
Cat. No.	**14-950-2**	**14-854-82**	**14-950-8**	**14-950-6**	**14-950-5**
Each	8799.00	9920.00	8999.00	11,329.56	8999.00

† 230V 50/60Hz models also available. For more information, contact your Fisher Scientific Customer Service Representative.

domnick hunter* Pure Air Generators

mproves compressed-air quality

Removes water, oil and dirt from the existing compressed-air supply, eliminating corrosion and damage to pneumatic and analytical instruments.

- Easily connects to existing compressed-air supply line using ¼" NPT inlet/outlet connections
- Two beds of high-performance desiccant remove moisture to a dew point of -40°C (-40°F) at 100psig (7barg)
- Integral pre- and post-filtration units remove particles to <0.01ppm and non-methane hydrocarbons of <0.01ppm
- Unit automatically switches between purification and regeneration on a two-minute cycle

COMPLIANCE:
JL listed, CSA approved, CE marked

14-951 Series

Model	DAS1	DAS2	DAS4
Outlet Flow‡	70L/min.	140L/min.	300L/min.
Required Inlet Flow	85L/min.	171L/min.	366L/min.
L × W × H	4 × 12 × 15" (9 × 31 × 38cm)	4 × 12 × 18" (9 × 31 × 47cm)	4 × 12 × 28" (9 × 31 × 71cm)
Weight	18 lb. (8kg)	22 lb. (10kg)	27 lb. (12kg)
Cat. No.	**14-951-0**	**14-951-1**	**14-951-2**
Each	1287.49	1378.31	1656.11

† 230V 50/60Hz models also available. For more information, contact your Fisher Scientific Customer Service Representative.

‡ At 100psig (7barg).

SPECIFICATIONS

Total Non-methane Hydrocarbons	>0.01ppm
nlet Air Pressure (min./max.)	60/152psig (4/10.5barg)
ressure Drop at Max. Flow	5psig (300mbarg)
lectrical Requirements†	110V 50/60Hz
ower Rating	3.6w

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domnick hunter* Zero-Air Generators

roduce a continuous flow of clean, dry air with an ultralow residual methane ontent of <0.1ppm from an existing compressed air supply

eatures

- Compact, modular design has interchangeable top panel to allow for direct mounting of a UHP hydrogen generator, providing an all-in-one flame gas solution for GC-FID, FPD, and NPD applications
- Guaranteed consistent purity reduces baseline noise and improves stability
- Operates over the temperature range 35° to 150°F
- Digital temperature display
- Autodrain on the inlet filter

imple Operation

- Three-stage generators use an Oil-X* Evolution grade AO filter to remove oil, water and particulates
- Heated platinum high-performance catalyst converts hydrocarbons, including methane, to carbon dioxide and water before a final pass through a high-efficiency Oil-X Evolution grade AA 0.01µm particulate filter
- Inlet design ensures a balanced airflow through catalyst unit
- Can achieve total hydrocarbon concentration of <0.1ppm

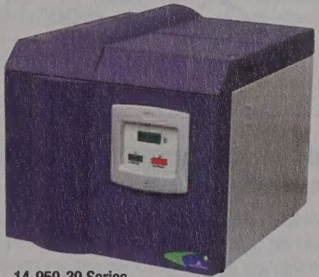
PPLICATIONS:
se to supply zero air for nebulizer and exhaust gas for LC/MS pplications, zero gas and combustion gas for total hydrocarbon nalyzers, and calibration/dilution gas for gas sensing equipment

PECIFICATIONS

otal Hydrocarbons (methane)	<0.1ppm
nlet Air Pressure (min./max.)	20/125psig (1.5/8.5barg)
ressure Dew Point	-40°F
ower Rating	100w
imensions (L × W × H)	15¾ × 13½ × 12¾" (40 × 34.2 × 32.5cm)
eight	21 lb. (9.5kg) for 10ZAW and 35ZAW Models 30 lb. (13.5kg) for 50ZAW, 75ZAW, 150ZAW, and 200ZAW Models

WARRANTY:
10 years for die-cast filter housing with inner and outer Alocrom corrosion protection

COMPLIANCE:
CE marked, UL listed, CRN approved



14-950-30 Series

NOTE:
To ensure optimum performance and longevity of the generator, the air inlet/outlet filters should be changed every 12 months.

Model	Outlet Flow	Inlet/Outlet Connections	Electrical Reqts.	Cat. No.	Each
UHP-10ZAW	1L/min.	⅛" Swagelok*	110V 60Hz	**14-950-30**	1465.00
UHP-10ZAE			230V 50/60Hz	**14-950-31**	1465.00
UHP-35ZAW	3.5L/min.	⅛" Swagelok*	110V 60Hz	**14-950-32**	3880.00
UHP-35ZAE			230V 50/60Hz	**14-950-33**	3880.00
UHP-50ZAW	5.0L/min.	⅛" Swagelok*	110V 60Hz	**14-950-34**	5510.00
UHP-50ZAE			230V 50/60Hz	**14-950-35**	5510.00
UHP-75ZAW	7.5L/min.	¼" Swagelok*	110V 60Hz	**14-950-36**	6485.00
UHP-75ZAE			230V 50/60Hz	**14-950-37**	6485.00
UHP-150ZAW	15.0L/min.	¼" Swagelok*	110V 60Hz	**14-950-38**	7345.00
UHP-150ZAE			230V 50/60Hz	**14-950-39**	7345.00
UHP-200ZAW	20.0L/min.	¼" Swagelok*	110V 60Hz	**14-950-40**	9190.00
UHP-200ZAE			230V 50/60Hz	**14-950-41**	9190.00

domnick hunter* LC/MS Nitrogen Gas Generators

Specifically designed to meet the gas flow, purity, and pressure requirements of modern LC/MS instruments

Units use fully regenerative patented pressure swing adsorption (PSA) technology to trap oxygen, carbon dioxide, and moisture in a bed of carbon molecular sieve (CMS) that alternates between regeneration and purification modes.

- Provide a continuous stream of clean, dry nitrogen without the need for secondary purification
- Suitable for nebulizing, sheath, and drying gas
- Digital interface; units are fully compatible with APCI and ESI interfaces
- With FEP tubing for phthalate-free operation
- Soundproofed compressor box
- Space saving—can fit under a bench
- LC/MS 15 is designed for use with Agilent* 1100 Series LC/MS products
- Some models include integral oil-free compressors–external supply is not needed

14-950 Series

- For those models without the integral compressor: 7barg specified outlet pressure, 9barg specified inlet pressure; 70L/min. minimum constant air requirement for 15 and 20 models, 130L/min. minimum constant air requirement for 30 and 40 models
- International models also available

COMPLIANCE:
CE marked, UL listed, CRN approved

Model	With Integral Compressor	Outlet Flow	Oxygen Output	Inlet/Outlet Connections	L × W × H	Weight	Electrical Reqts.	Cat. No.	Each
LCMS15-0W	No	15L/min.	0.5%	¼" BSP/⅛" BSP	22 × 20 × 27¾" (55.9 × 51 × 70.5cm)	196 lb. (89kg)	110V 60Hz	**14-950-511**	9499.00
LCMS15-0E	No	15L/min.	0.5%	¼" BSP/⅛" BSP	22 × 20 × 27¾" (55.9 × 51 × 70.5cm)	196 lb. (89kg)	230V 50/60Hz	**14-950-513**	9499.00
LCMS15-1W	Yes	15L/min.	0.5%	—/⅛" BSP	32½ × 20 × 27¾" (82.6 × 51 × 70.5cm)	284 lb. (129kg)	110V 60Hz	**14-950-510**	12,975.00
LCMS15-1E	Yes	15L/min.	0.5%	—/⅛" BSP	32½ × 20 × 27¾" (82.6 × 51 × 70.5cm)	284 lb. (129kg)	230V 50/60Hz	**14-950-512**	12,975.00
LCMS20-0E	No	20L/min.	1%	¼" BSP/⅛" BSP	22 × 20 × 27¾" (55.9 × 51 × 70.5cm)	196 lb. (89kg)	230V 50/60Hz	**14-950-517**	9950.00
LCMS20-1W	Yes	20L/min.	1%	—/⅛" BSP	32½ × 20 × 27¾" (82.6 × 51 × 70.5cm)	284 lb. (129kg)	110V 60Hz	**14-950-514**	13,595.00
LCMS20-1E	Yes	20L/min.	1%	—/⅛" BSP	32½ × 20 × 27¾" (82.6 × 51 × 70.5cm)	284 lb. (129kg)	230V 50/60Hz	**14-950-516**	13,595.00
LCMS30-0W	No	30L/min.	1%	¼" BSP/⅛" BSP	29⅞ × 20 × 27¾" (76 × 51 × 70.5cm)	298 lb. (135kg)	110V 60Hz	**14-950-519**	12,775.00
LCMS30-0E	No	30L/min.	1%	¼" BSP/⅛" BSP	29⅞ × 20 × 27¾" (76 × 51 × 70.5cm)	298 lb. (135kg)	230V 50/60Hz	**14-950-521**	12,775.00
LCMS30-1W	Yes	30L/min.	2%	—/⅛" BSP	32½ × 20 × 27¾" (82.6 × 51 × 70.5cm)	284 lb. (129kg)	110V 60Hz	**14-950-518**	15,350.00
LCMS30-1E	Yes	30L/min.	2%	—/⅛" BSP	32½ × 20 × 27¾" (82.6 × 51 × 70.5cm)	284 lb. (129kg)	230V 50/60Hz	**14-950-520**	15,350.00
LCMS40-0E	No	40L/min.	1%	¼" BSP /⅛" BSP	29⅞ × 20 × 27¾" (76 × 51 × 70.5cm)	298 lb. (135kg)	230V 50/60Hz	**14-950-523**	14,795.00

domnick hunter* Hydrogen Generators

Research-grade hydrogen gas on demand

Provide a safe and economical alternative to high-pressure gas cylinders and can be easily installed on the lab bench. Ideal for carrier and fuel gas applications and suitable for use with any laboratory instrument requiring a supply of ultra-high-purity hydrogen. Eliminate interruptions in analyses to change cylinders. Three models available with 160, 250, and 500cc/min. outlet flowrates.

- LCD display shows system status and diagnostic capabilities
- Automatic leak detection
- Integrated microprocessor control
- Low water and poor quality water detection and alarms
- Built-in switch-mode power supply unit accepts electricity supplied between 100 and 230V and 50 to 60Hz

APPLICATIONS:
Produce a continuous stream of research-grade hydrogen gas from deionized water using a proprietary ion exchange membrane and drying cartridge.

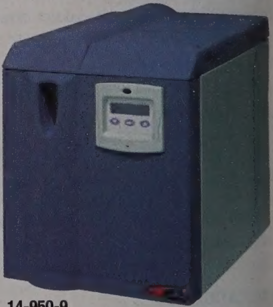
Using hydrogen as a GC carrier gas increases speed and sensitivity compared to helium, decreasing analysis time without discernible loss of resolution.

ORDERING INFORMATION:
Connector: ⅛" Swagelok*; additional cartridges and bags sold separately.

INCLUDES:
One desiccant cartridge, two deionizer bags

WARRANTY:
Two years

CERTIFICATIONS:
CE marked, UL listed, CSA approved


14-950-9

SPECIFICATIONS

Purity	99.999%
Max. Outlet Pressure	0-100psig
Electrical Requirements	110/230V 50/60Hz
Dimensions (L × W × H)	18 × 13½ × 17¼" (45.7 × 34.3 × 43.8cm)
Weight	53 lb. (24kg)

Model	Outlet Flow	Power Rating	Cat. No.	Each
20H	160cc/min.	190w	**14-950-9**	5699.00
40H	250cc/min.	285w	**14-950-10**	7299.00
60H	500cc/min.	285w	**14-950-11**	9399.00

*Trademark. See Trademark Reference.

GASES

Gases in Lecture Bottles

Standard lecture bottles with ON/OFF valve in head

12L × 2" dia. (30 × 5cm)

10-599 Series

as	Outlet CGA	Pressure, psig (MPa)	Volume, cu. ft. (m³)	Cat. No.	Each
mmonia	180	114 (0.787)	8.46 (0.240)	**10-599A**	244.38
arbon Dioxide	170	830 (5.727)	4.39 (0.124)	**10-599E**	156.44
hlorine	180	85 (0.588)	5.45 (0.154)	**10-599F**	295.20
thylene	170	1200 (8.274)	3.45 (0.097)	**10-599I**	197.34
elium	170	1775 (12.25)	2.00 (0.056)	**10-599J**	147.24
ydrogen	170	1775 (12.25)	2.00 (0.056)	**10-599K**	149.29
ydrogen Sulfide	180	252 (1.737)	5.62 (0.159)	**10-599L**	381.84
ethane	170	1775 (12.25)	2.00 (0.056)	**10-599N**	184.05
itrogen	170	1775 (12.25)	2.00 (0.056)	**10-599P**	155.42
xygen	170	1600 (11.39)	2.00 (0.056)	**10-599R**	139.06
O_2 Anhyd.	180	34 (0.234)	5.90 (0.167)	**10-599W**	308.30

GAUGES

isher Scientific* Diaphragm Pressure nd Vacuum Gauges

ccuracy is ±1% in midrange, ±2 to 3% at extremes

awn steel case and ring, enamel ish, polycarbonate and brass ovement. 2½" diameter (6.4cm).

Diaphragm is phosphor bronze

Serrated ¼" (6.4mm) hose connection on bottom of gauge

11-281A and 11-282A

nge	Divisions	Cat. No.	Each
ssure Gauge			
60mmHg	1mm	**11-281A**	143.65
300mmHg	5mm	**11-281B**	143.65
uum Gauge			
250mmHg	5mm	**11-282A**	143.65
760mmHg	10mm	**11-282B**	143.65

Kontes* McLeod-Lippincott Vacuum Gauge

Tilting-type McLeod gauge

With precision capillaries, interchangeable engraved scale, cast-aluminum base, ½" diameter (1.3cm) aluminum support rod, automatic stops, and mercury self-leveling device for automatic zeroing.

- Gauge can be used as a bench instrument, mounted on framework, or connected to an all-glass system with a $ 19/38 inner joint on rotating shaft
- Range letter is sandblasted on center bulb for easy identification

K923000-0021

ORDERING INFORMATION:

Overall dimensions: 6¹¹⁄₁₆W × 10⅝"H (17 × 27cm)

INCLUDES:

Instructions.

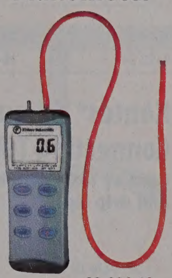
REQUIRED ACCESSORIES:

Mercury is not included.

Range	Letter	Lowest Reading	Volume of Mercury Required	Cat. No.	Each
0–1mm	A	0.001mm	11mL	**K923000-0021**	494.41
0–5mm	B	0.005mm	9mL	**K923000-0022**	494.41
0–10mm	C	0.01mm	10mL	**K923000-0023**	494.41
0–15mm	D	0.05mm	8mL	**K923000-0024**	494.41

Fisher Scientific* Traceable* Manometer Pressure/Vacuum Gauges

Portable unit measures and displays differential pressure/vacuum in 11 different units: psi, mbar, bar, cm/H_2O, inch/H_2O, feet/H_2O, mm/Hg, inch/Hg, kg/cm², oz./inch², and kPa. Response time: 0.5 sec. Accuracy: ±0.3% of full-scale between 0 and 50°C.



06-664-18

- Readings are shown on backlit display with ⅝"H (1.6cm) digits visible from 6 ft.
- Features DATA HOLD button to freeze display and capture readings
- Memory key recalls highest and lowest readings
- Differential feature calculates the difference between two readings
- Zeroing is achieved at the touch of a button
- Displays times up to 99 hours, 59 minutes, 59 seconds, which allows the user to record when maximum or minimum pressure is achieved

ORDERING INFORMATION:

Dimensions: 7⅛L × 2¾W × 1⅛"H (18.1 × 7.0 × 2.9cm). Accepts tubing from ¹⁄₁₆ to ³⁄₁₆" I.D.

INCLUDES:

Tubing, 9V battery, ABS plastic carrying case, and RS-232 port

CERTIFICATIONS:

A certificate is provided to indicate instrument traceability to standards provided by NIST*.

Range	Resolution	Cat. No.	Each
-259 to +259mmHg	0.2mm	**06-664-18**	162.73
-776 to +776mmHg	0.5mm	**06-664-19**	162.73
-1551 to +1551mmHg	1mm	**06-664-21**	163.46
-5171 to +5171mmHg	3mm	**06-664-22**	162.73

GLASS CONNECTING TUBES

Pyrex* Vacuum Connecting Adapter Tubes

105° angle connector with 10mm O.D. tubulation for attaching to vacuum pump

- Drip tip on inner tube
- Inner and outer $ joints are same size

01-034-7B

$ Joint	Mfr. No.	Cat. No.	Price
14/20	8947 14	01-034-7A	Ea./79.50
19/22	8947 19	01-034-7B	Cs. of 6/379.11

Pyrex* Vacuum Distilling Adapter Tube

Converts flasks with $ necks to vacuum-type $ receivers

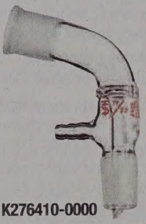
- Connecting tube with outer $ 24/40 joint at top, same size inner $ joint at bottom
- Side arm for rubber tubing is 10mm O.D. by 25mm long

15-323C

Mfr. No.	Cat. No.	Each	Case of 6
9420 24	15-323C	96.65	399.31

Kontes* Vacuum Connecting Tubes

Bent at 105°, with hose connection and drip tip


K276410-0000

$ Joint	Hose I.D.	Approx. Height	Cat. No.	Each
19/22	5⁄16" (7.9mm)	104mm	K276410-0000	41.50
24/40	3⁄8" (9.5mm)	145mm	K205500-2440	52.67
29/42	3⁄8" (9.5mm)	150mm	K205500-2942	68.87

Pyrex* Adapter Tube with Parallel Side Arm

Three-way connecting tube with two outer and one inner $ 24/40 joints

- Inner joint at bottom of tube
- Overall length, 160mm

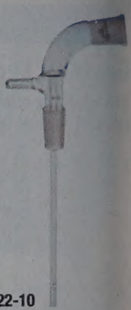
15-326A

Mfr. No.	Cat. No.	Each	Case of 6
9040 24	15-326A	97.08	401.29

Pyrex* Adapter Tube with $ Joints and Suction Connection

Two-way tube with arms at 105° angle

- Both arms have $ 24/40 joints
- Approximate stem length below joint, 170mm
- Vacuum tube O.D., 10mm

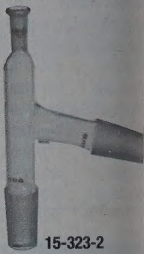

15-322-10

Mfr. No.	Cat. No.	Case of 6
8945 24	15-322-10	518.01

Pyrex* Adapter Tube with Two $ Joints and Thermometer Opening

Connecting three-way tube with side arm placed at 75° angle from lower joint

- Lower end of tube and side arm have inner $ 24/40 joints
- Thermometer opening has outer $ 10/30 joint
- Overall length, 160mm


15-323-2

Mfr. No.	Cat. No.	Each	Case of 6
8980 24	15-323-2	87.55	361.64

Pyrex* Adapter Tube with $ Joints at 75° Angle

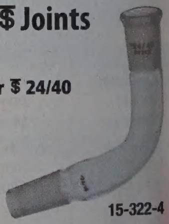
Two-way tube with $ 24/40 inner joints at both ends

15-322-2

Mfr. No.	Cat. No.	Pack of 2	Case of 6 Pk.
8920 24	15-322-2	86.82	379.90

Pyrex* Adapter Tube with $ Joints at 105° Angle

Two-way tube with inner and outer $ 24/40 joint connections at 105° angle


15-322-4

Mfr. No.	Cat. No.	Each	Case of 1
8940 24	15-322-4	65.01	538.1

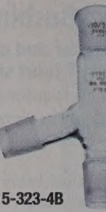
*Trademark. See Trademark Reference.

Prices subject to change.

Pyrex* Adapter Tube with 75° Angle and Three $ Joints

Three-way connecting tube with side arm placed at 75° angle from lower joint

- All joints are the same size



15-323-4B

$ Joints	Mfr. No.	Cat. No.	Each	Case of 6
14/20	9000 14	**15-323-4A**	56.86	----
19/22	9000 19	**15-323-4B**	53.09	----
24/40	9000 24	**15-323-4**	79.10	326.82

GLASS DISTILLATION TRAPS/TUBES

Pyrex* Barrett Trap

For Barrett test to determine water content in petroleum or bituminous products

- Receiver has 20mL capacity
- Graduated upward from stopcock to 3mL in 0.2mL divisions, and from 3 to 20mL in 0.5mL divisions
- With two $ 24/40 joints that provide connections for flasks and condensers
- Stopcock $ Plug No. 1

ORDERING INFORMATION:
Overall H, 228mm (9")

09-150-5

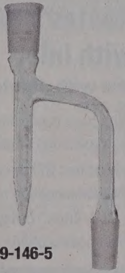
Mfr. No.	Cat. No.	Pack of 2	Case of 2 Pk.
622 20	**09-150-5**	510.61	772.02

Pyrex* Dean-Stark Trap

For water from petroleum or bitumens with volatile solvents

- With two $ 24/40 joints
- 10mL receiver graduated from 0 to 1mL in 0.1mL divisions ±0.05mL, and 1 to 10mL in 0.2mL divisions ±0.1mL

COMPLIANCE:
Meets ASTM* E 123-92 specifications



09-146-5

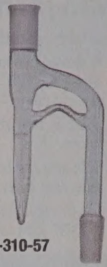
Mfr. No.	Cat. No.	Each	Case of 4
602 10	**09-146-5**	147.23	413.13

WARNING
Because of variations in conditions, glassware cannot be guaranteed against breakage under vacuum or pressure. Adequate precautions should be taken to protect personnel who are doing such work.

Kimax* Distilling-Moisture Receiver

With two arm outlets

- Modified Dean-Stark trap calibrated "To Contain" with $ 24/40 joints and a side arm bridge to equalize pressure
- 10mL receiver graduated from 0 to 1mL in 0.1mL divisions ±0.05mL, and from 1 to 10mL in 0.2mL divisions ±0.1mL
- Durable white scale
- Designed from ASTM* E 123-92, Style A



10-310-57

Mfr. No.	Cat. No.	Each
22012 10	**10-310-57**	141.39

Pyrex* Connecting/Distilling Adapter Tube with Full-Length Inner $ Joints

Tube 22mm O.D. with 24/40 inner $ joints

- Arm is approximately 75° angle from vertical and 200mm long (7⅞")

01-034-5A

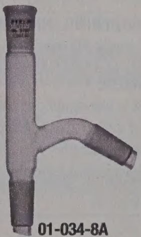
Mfr. No.	Cat. No.	Each
8930 24	**01-034-5A**	77.50

Pyrex* Distilling Adapter Tube with 60° Angle and Three $ Joints

Three-way connector with 60° angle

- Contains three $ 24/40 joints

ORDERING INFORMATION:
Approximate length: 206mm (8⅛")



01-034-8A

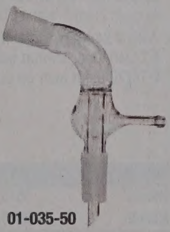
Mfr. No.	Cat. No.	Each
8950 24	**01-034-8A**	107.69

Pyrex* Distilling Adapter Tube with Side Arm and $ Joints

Adapter with $ 24/40 outer joint at top and $ 24/40 inner joint at bottom

- Drip tip sealed through bottom joint extends 20mm below end of joint
- Bent at 105° angle
- Serrated side arm O.D., 10mm

ORDERING INFORMATION:
Overall length, 175mm



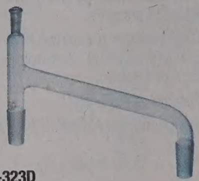
01-035-50

Mfr. No.	Cat. No.	Each	Case of 6
8946 24	**01-035-50**	121.51	502.24

Pyrex* Distilling/Connecting Tube Adapter with Thermometer Opening and ₮ Joints

Permits monitoring temperature when distilling

- Three-way connecting tube with side arm at 75° angle from vertical tube
- Joint on side arm at 105° angle to arm
- Side arm and bottom of vertical tube with inner ₮ 24/40 joints
- Top of vertical tube has outer ₮ 10/30 joint for thermometers

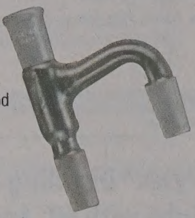

15-323D

Mfr. No.	Cat. No.	Case of 6
9060 24	**15-323D**	852.10

Pyrex* Solvent Recovery Head

Allows for condensation and collection of solvents while performing concentrations with a traditional Kuderna-Danish concentrator

- Simple ₮ 24/40 design permits use with other existing apparatus
- Contains ₮ 24/40 top and bottom joints
- 96 to 99% solvent recovery allows for concentrations to be done outside fume hood
- Allows for convenient recovery of sample in case of a BLEVE (Boiling Liquid Expanding Vapor Explosion)


07-770-1

ORDERING INFORMATION:

Length: 150mm

NOTE:

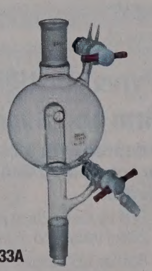
It is recommended that some type of ventilation system be used in case of a drop in condenser water temperature or loss of condenser cold water supply.

Mfr. No.	Cat. No.	Case of 4
2159 24	**07-770-1**	439.95

Pyrex* Solvent Still Head

Apparatus for maintaining oxygen-free solvents

- Head has sufficient storage space to allow solvent removal by syringe or drainage through 2mm T-bore PTFE-resin stopcock
- With ₮ 24/40 outer joint at top, ₮ 24/40 inner joint at bottom and ₮ 14/20 inner joint on drainage arm


09-133A

Capacity	Mfr. No.	Cat. No.	Each
250mL	3575 250	**09-133A**	436.26
500mL	3575 500	**09-133B**	452.50

GLASS JOINT ADAPTERS

Pyrex* Bushing Type Reducing Adapters

With ₮ inner and outer joints for changing ₮ joint sizes

- Shorter than conventional adapters
- Larger ₮ joint size is on outside of bushing; smaller ₮ joint size is within the bore of bushing
- Fabricated with heavy walls for mechanical strength
- Heavy uniform rim at top serviceable as finger grip

01-033 Series

Outer ₮ Joint	Inner ₮ Joint	Approx. Length	Mfr. No.	Cat. No.	Pack of 2	Case of
24/40	14/35	54mm	8825 2414	**01-033D**	101.57	6 Pk./444.93
29/42	24/40	56mm	8825 2924	**01-033G**	101.57	6 Pk./444.93
34/45	24/40	59mm	8825 3424	**01-033H**	----	12/750.06

Pyrex* Reducing Adapters

For attaching apparatus with one ₮ joint size to equipment having a different size ₮ joint

- Outer ₮ joint at top and smaller inner ₮ joint at bottom

01-035F

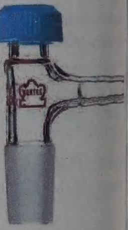
Outer ₮ Joint	Inner ₮ Joint	Approx. Length	Mfr. No.	Cat. No.	Price	Case of 3 Pack
24/40	19/38	105mm	8800 2419	**01-035D**	Pk. of 2/116.65	254.64
29/42	24/40	105mm	8800 2924	**01-035E**	Cs. of 6/346.70	----
34/45	24/40	110mm	8800 3424	**01-035F**	Ea./56.21	----

Kontes* Universal Adapters with Inlet

Use with pipets and syringes

With hose connection for vacuum or introduction of gases.

- Modified GPI thread, 13-425
- Accommodation range, 5.5-6.5mm
- With Viton* O-ring, size 010
- Without septum


K179750-2114

₮ Joint	Hose I.D.	Cat. No.	Eac
14/20	5⁄16"	**K179750-2114**	28.
24/40	3⁄8"	**K179750-2124**	35.1

*Trademark. See Trademark Reference.

Prices subject to change.

Kontes* Reducing Adapters

For connecting dissimilar ₷ joints

- Outer joint at top; inner joint at bottom

K150100-0261

Outer ₷ Joint	Inner ₷ Joint	Cat. No.	Each
19/22	14/20	**K274750-0253**	25.42
24/40	10/30	**K150100-0261**	30.77
24/40	14/20	**K274750-0263**	29.70
24/40	19/22	**K274750-0264**	32.55
29/42	19/22	**K274750-0273**	33.60
29/42	24/40	**K150100-0274**	38.31
34/45	24/40	**K150100-0282**	42.79
45/50	24/40	**K150100-0432**	63.26
55/50	24/40	**K150100-0451**	71.78

Pyrex* Enlarging Adapters

For attaching apparatus with one ₷ joint size to equipment having larger size ₷ joint

- Outer ₷ joint at top and larger inner ₷ joint at bottom

01-034A

Outer ₷ Joint	Inner ₷ Joint	Approx. Length	Mfr. No.	Cat. No.	Each	Case of
10/30	19/38	85mm	8820 1019	**01-034A**	36.70	----
10/30	24/40	90mm	8820 1024	**01-034B**	----	12/515.67
14/35	24/40	90mm	8820 1424	**01-034K**	40.95	----
19/38	24/40	95mm	8820 1924	**01-034C**	----	6/294.33
24/40	29/42	100mm	8820 2429	**01-034D**	----	6/266.48
24/40	34/45	110mm	8820 2434	**01-034E**	----	6/369.80
24/40	45/50	115mm	8820 2445	**01-034F**	80.75	6/333.60
24/40	55/50	120mm	8820 2455	**01-034G**	----	6/564.18

Kontes* Bevel-Seal* Inlet Adapter

For use with pipets, syringes or other small items with outer diameters from 1/16 to 5/8" (2 to 17mm)

- Provides vacuum-tight seal with compression cap and O-ring, to allow adjustable immersion of thermometers, etc.
- Cap can be used to 150°C (302°F)

INCLUDES:

Adapter, cap and Viton* O-ring

K179700-0519

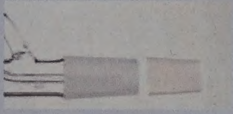
₷ Joint	Accom. Range	Nominal Size	O-ring size	Mod. GPI Thread	Cat. No.	Each
14/10	5.5-6.5mm	¼" (6mm)	010	15-425	**K746030-0000**	20.68
14/20	2-5mm	⅛" (3mm)	105	13-415	**K179700-0514**	24.66
14/20	5.5-6.5mm	¼" (6mm)	010	13-425	**K179700-2114**	21.71
14/20	5-8mm	¼" (6mm)	108	15-415	**K179700-0814**	26.44
19/22	2-5mm	⅛" (3mm)	105	13-415	**K179700-0519**	25.42
19/22	5.5-6.5mm	¼" (6mm)	010	13-425	**K179700-2119**	23.24
19/22	5-8mm	¼"(6mm)	108	15-415	**K179700-0819**	26.93
24/40	2-5mm	⅛" (3mm)	105	13-415	**K179700-0524**	26.44
24/40	5.5-6.5mm	¼" (6mm)	010	13-425	**K179700-2124**	23.24
24/40	5-8mm	¼" (6mm)	108	15-415	**K179700-0824**	27.84
24/40	8-11mm	⅜" (9mm)	111	20-415	**K179700-1124**	32.55
24/40	11-14mm	½" (12mm)	113	22-415	**K179700-1424**	35.00
29/42	2-5mm	⅛" (3mm)	105	13-415	**K179700-0529**	26.44
29/42	5.5-6.5mm	¼" (6mm)	010	13-425	**K179700-2129**	26.31
29/42	8-11mm	⅜" (9mm)	111	20-415	**K179700-1129**	36.79
29/42	14-17mm	⅝" (15mm)	207	28-415	**K179700-1729**	44.06

GLASS JOINT SLEEVES

*Fisherbrand** Thin PTFE Sleeves

Elongated cones of microthin (0.05mm) polytetrafluoroethylene film tapered to fit snugly around glass joints

- Eliminate lubrication contamination along with frozen or leaking ground joints
- Usable from -75° to +250°C (-103° to +482°F)



02-617-166

₷ Joint	Cat. No.	Pack of 6
7/25	**02-617-166**	21.14
10/30	**14-320B**	51.45
14/35	**14-320D**	52.21
19/38	**14-320E**	54.74
24/40	**14-320F**	58.01
29/42	**14-320G**	63.20
34/45	**14-320H**	69.34
40/50	**02-617-167**	31.34
45/50	**14-320K**	82.93
50/50	**02-617-168**	38.02
55/50	**02-617-169**	45.03
60/50	**02-617-170**	51.99

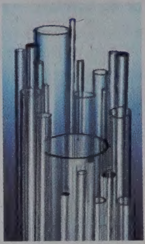
GLASS TUBING

TUBING

Pyrex* Standard Wall Tubing

Low coefficient of expansion, great mechanical strength

- Softening point, 821°C (1509°F)
- Working (forming) point, 1252°C (2885°F)
- Small sizes can be bent after heating over a blast burner using gas and compressed air
- Larger sizes must be heated over a blast burner using gas and oxygen



11-366-10

ORDERING INFORMATION:

Supplied in 4' (1.2m) lengths

O.D.	O.D. Tol.	Wall Thickness	Approx. lb./ft.	Mfr. No.	Cat. No.	Approx. lb./Case
±0.1mm Wall Tolerance						
3mm	±0.2mm	0.6mm	0.0068	234030	**11-365A**	1/431.94
4mm	±0.3mm	0.8mm	0.012	234040	**11-365B**	25/467.77
5mm	±0.3mm	0.8mm	0.016	234050	**11-365C**	1/357.86
6mm	±0.3mm	1.0mm	0.023	234060	**11-365D**	1/341.60
7mm	±0.3mm	1.0mm	0.028	234070	**11-365E**	1/357.86
8mm	±0.3mm	1.0mm	0.033	234080	**11-365F**	1/357.86
9mm	±0.3mm	1.0mm	0.038	234090	**11-365G**	1/357.86
10mm	±0.3mm	1.0mm	0.042	234100	**11-365H**	1/357.86
11mm	±0.3mm	1.0mm	0.047	234110	**11-365J**	1/357.86
12mm	±0.3mm	1.0mm	0.052	234120	**11-365K**	1/341.60
13mm	±0.3mm	1.2mm	0.067	234130	**11-365L**	1/341.60
14mm	±0.3mm	1.2mm	0.072	234140	**11-365M**	1/357.86
15mm	±0.3mm	1.2mm	0.078	234150	**11-365N**	1/341.60
16mm	±0.3mm	1.2mm	0.083	234160	**11-365P**	1/341.60
18mm	±0.3mm	1.2mm	0.095	234180	**11-365R**	1/343.60
19mm	±0.3mm	1.2mm	0.100	234190	**11-365S**	1/357.86
20mm	±0.4mm	1.2mm	0.106	234200	**11-365T**	1/357.86
±0.2mm Wall Tolerance						
22mm	±0.4mm	1.5mm	0.145	234220	**11-365U**	1/357.86
25mm	±0.4mm	1.5mm	0.166	234250	**11-365V**	1/357.86
28mm	±0.4mm	1.5mm	0.187	234280	**11-365W**	1/357.86
30mm	±0.7mm	1.8mm	0.238	234300	**11-365X**	1/357.86
32mm	±0.7mm	1.8mm	0.255	234320	**11-365Y**	1/359.96
35mm	±0.7mm	2.0mm	0.31	234350	**11-365AA**	1/388.76
41mm	±0.9mm	2.0mm	0.37	234410	**11-365CC**	1/400.49
45mm	±1.0mm	2.0mm	0.41	234450	**11-365DD**	1/400.49
51mm	±1.0mm	2.0mm	0.46	234510	**11-365FF**	1/400.49
±0.3mm Wall Tolerance						
54mm	±1.0mm	2.4mm	0.58	234540	**11-366A**	1/192.14
57mm	±1.0mm	2.4mm	0.61	234570	**11-366B**	1/222.68
60mm	±1.1mm	2.4mm	0.66	234600	**11-366C**	1/218.85
64mm	±1.2mm	2.4mm	0.69	234640	**11-366D**	1/260.67
100mm	±1.4mm	2.4mm	1.12	234000	**11-366K**	1/342.84

Pyrex* Standard Wall Tubing Bundle

- Convenient bundle of 10 sizes from 3 to 12mm O.D., with O.D. tolerances from ±0.2 to ±1.4mm and wall thickness from 0.6 to 2.4mm.
- Approximate 4' (1.2m) pieces per bundle: (18) 3 O.D., (21) 4 O.D., (31) 5 O.D., (27) 6 O.D., (26) 7 O.D., (22) 8 O.D., (18 each) 9 and 10 O.D., (16) 11 O.D., (19) 12 O.D.

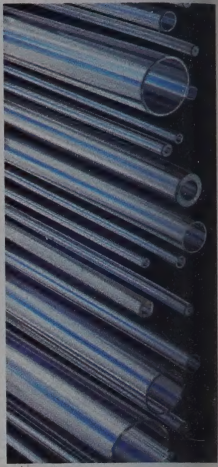
Mfr. No.	Cat. No.	Case of 25 lb.
234990	**11-366-10**	419.44

Kimax* Brand Standard Wall Borosilicate Glass Tubing

Low alkali content borosilicate glass tubing for general laboratory use

Low coefficient of expansion and high resistance to chemical attack.

- Softening point, 827°C (1520°F)
- Working (forming) point, 1255°C (2291°F)
- 6 to 12, 14, 15, and 22mm O.D. sizes have glazed ends; all others have cut ends



11-361E, 11-368J, 11-362 Series

ORDERING INFORMATION:

Supplied in 4' (1.2m) lengths

COMPLIANCE:

Meets requirements of Type I Class A glass of ASTM* E 438-92

O. D.	O. D. Tol.	Wall Thickness	Approx. lb./ft.	Mfr. No.	Cat. No.	Approx. lb./Case
±0.1mm Wall Tolerance						
3mm	±0.2mm	0.6mm	0.0068	80200 3	**11-362A**	15/386.35
4mm	±0.3mm	0.8mm	0.012	80200 4	**11-362B**	25/407.21
5mm	±0.3mm	0.8mm	0.016	80200 5	**11-362C**	25/341.91
6mm	±0.3mm	1.0mm	0.023	80200 6	**11-362D**	25/341.91
7mm	±0.3mm	1.0mm	0.028	80200 7	**11-362E**	25/341.91
8mm	±0.4mm	1.0mm	0.033	80200 8	**11-362-1L**	25/341.91
9mm	±0.4mm	1.0mm	0.038	80200 9	**11-362F**	25/341.91
10mm	±0.4mm	1.0mm	0.042	80200 10	**11-368H**	25/341.91
12mm	±0.4mm	1.0mm	0.052	80200 12	**11-362G**	25/341.91
13mm	±0.4mm	1.2mm	0.067	80200 13	**11-362H**	25/341.91
14mm	±0.4mm	1.2mm	0.072	80200 14	**11-361B**	25/341.91
15mm	±0.25mm	1.2mm	0.078	80200 15	**11-362J**	25/341.91
16mm	±0.25mm	1.2mm	0.083	80200 16	**11-362K**	25/342.34
18mm	±0.25mm	1.2mm	0.095	80200 18	**11-362L**	25/341.91
19mm	±0.25mm	1.2mm	0.100	80200 19	**11-362M**	25/341.91
20mm	±0.25mm	1.2mm	0.106	80200 20	**11-362N**	25/341.91
±0.2mm Wall Tolerance						
22mm	±0.25mm	1.5mm	0.145	80200 22	**11-362P**	25/341.91
28mm	±0.7mm	1.5mm	0.187	80200 28	**11-362R**	31/424.52
30mm	±0.7mm	1.8mm	0.238	80200 30	**11-362S**	34/465.56
35mm	±0.8mm	2.0mm	0.310	80200 35	**11-362V**	30/417.35
±0.3mm Wall Tolerance						
54mm	±1.0mm	2.4mm	0.580	80200 54	**11-361E**	9/148.12
57mm	±1.0mm	2.4mm	0.610	80200 57	**11-362-1A**	10/168.15
60mm	±1.1mm	2.4mm	0.660	80200 60	**11-362-1B**	10/168.7
64mm	±1.2mm	2.4mm	0.690	80200 64	**11-362-1C**	11/207.3
70mm	±1.2mm	2.4mm	0.750	80200 70	**11-362-1D**	12/226.1
80mm	±1.3mm	2.4mm	0.880	80200 80	**11-368J**	14/263.8
100mm	±1.4mm	2.4mm	1.120	80200 100	**11-362-1H**	18/339.6
110mm	±2.1mm	2.6mm	1.310	80200 110	**11-362-1J**	21/396.2

*Trademark. See Trademark Reference.

Prices subject to change.

Vycor* Brand Standard Wall Hi-Temp Tubing

Approximately 96% silica

- Withstands temperatures up to 900°C (1652°F)
- Softening point of 1500°C (2732°F)

ORDERING INFORMATION:
Supplied in 3' (0.9m) lengths

O.D.	Approx. Wall Thickness	Mfr. No.	Cat. No.	Pieces/Case
7mm	1.0mm	743172	**11-369B**	20/337.60
9mm	1.0mm	743180	**11-369C**	15/327.82
13mm	1.2mm	743173	**11-369D**	10/399.44
15mm	1.2mm	740034	**11-369E**	8/385.68
19mm	1.2mm	743190	**11-369G**	7/416.95
25mm	1.5mm	744380	**11-369J**	6/478.63
30mm	1.8mm	744381	**11-369K**	4/497.83

Pyrex* Capillary Tubing

Low-expansion, borosilicate glass

- Softening point, 821°C (1509°F)
- Working (forming) point, 1252°C (2885°F)

ORDERING INFORMATION:
Supplied in 4' (1.2m) lengths

O.D.	Approx. Bore	Approx. lb./ft.	Mfr. No.	Cat. No.	1 lb./Case	15 lb./Case
5.5mm ±0.4	0.5mm ±0.1	0.035	236510	**11-367A**	----	394.61
6.5mm ±0.4	1.0mm ±0.2	0.048	236520	**11-369-11C**	30.67	353.87
6.5mm ±0.4	1.25mm ±0.2	0.048	236521	**11-369-11D**	30.67	353.87
7.5mm ±0.4	1.75mm ±0.2	0.061	236540	**11-367D**	----	394.61
8.0mm ±0.4	3.38mm ±0.3	0.063	236523	**11-369-11F**	----	284.76
9.0mm ±0.4	2.38mm ±0.2	0.087	236560	**11-367E**	----	376.71

ACCESSORIES

Diamond-Tip Cutter

- With rack on shank for breaking off single- or double-strength glass
- Nickel-plated brass parts set into hardwood handle

Top to bottom: 11-315, 11-326, 11-347A

Cat. No.	Each
11-315	176.54

Carbide Wheel Glass Cutter

Cuts borosilicate glass easily

- Disposable
- With rack on shank for breaking off single- or double-strength glass

Cat. No.	Each
1-326	41.90

Tool Specialty Tubing Knife

or soft or borosilicate glass tubing

- Fine 1" (25mm) cutting edge of durable, rustproof tungsten carbide
- Stainless-steel shank
- Wooden handle

at. No.	Each
1-347A	170.00

Griffin-Type Glass Cutter

trong cutter is corrosion esistant

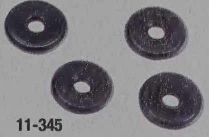
- Cuts glass tubing up to 40mm
- Nickel-plated, zinc alloy, die cast

11-340

t. No.	Each
-340	29.10

Steel Cutting Wheel

For 11-340 glass cutters.



11-345

Cat. No.	Pack of 10
11-345	41.35

GLASS WOOL

GLASS WOOL

For general laboratory and industrial use; suitable for filtering. Borosilicate glass. For more information and choices, visit our Web site and search for **Glass Wool**.

11-388

Cat. No.	Each	Case of 12
11-388	106.83	883.05

WHAT IS A GLOVE BOX?

A glove box is a sealed enclosure that allows handling of materials through long, relatively imper gloves secured to ports in the walls of the enclosure. The purpose of a glove box is protection or is which is provided by the physical barrier. There are two main types of glove boxes:

Controlled Atmosphere—Isolates a sensitive material inside the box from environmental cont tion. Choose from Protector® and Precise™ Controlled Atmosphere Glove Boxes. Precise Basic Boxe customized with accessories to function as a controlled atmosphere glove box.

HEPA-filtered—Protects the operator from hazardous materials and establishes a cleanroom environment inside the box. Choose from Protector Multi-Hazard, Precise HEPA Filtered and XPert® Weigh Boxes.

SELECTION CRITERIA

Leak rate—Low leak rate ensures that the internal environment is maintaine little degradation. Low oxygen and low moisture levels are important in cont atmosphere boxes; in HEPA filtered boxes, low particulate levels are require

Desired oxygen/moisture level—The more oxygen sensitive the wo lower the oxygen level required. Oxygen levels below 1% (10,000ppm) achieved with oxygen and moisture removal columns. Maintaining lev as 1ppm requires a regenerative drying train accessory.

Materials of construction—Fiberglass and polyethylene liners excellent chemical resistance, as well as excellent moisture tolera stain resistance for cleanability. Stainless steel has good stain resi cleanability and chemical resistance (although subject to attack acids) and excellent heat resistance.

BEFORE YOU BUY GLOVE BOXES

	PROTECTOR CONTROLLED ATMOSPHERE	PRECISE CONTROLLED ATMOSPHERE	PRECISE BASIC	PROTECTOR MULTI-HAZARD	PRECISE HEPA-FILTERED	XPERT WEIGH
Liner Material	Fiberglass or Stainless Steel	Polyethylene	Polyethylene	Fiberglass or Stainless Steel	Polyethylene	Polyethylene
Leak Rate	1×10^{-6}mL/sec.	1×10^{-4}mL/sec.	1×10^{-4}mL/sec.	1×10^{-6}mL/sec.	1×10^{-3}mL/sec.	1×10^{-3}mL/sec.
Oxygen Level <1%	Optional	Optional	Optional	N/A	N/A	N/A
Cleanroom Conditions	N/A	N/A	N/A	ISO Class 3	ISO Class 3	ISO Class 3
Interior Main Chamber Dimensions (Approx.)	28D x 35W x 32"H	$27^1/_2$D x $33^1/_2$W x 25"H	$27^1/_2$D x $33^1/_2$W x 25"H	28D x 35W x 32"H	$27^1/_2$D x $33^1/_2$W x 25"H	$27^1/_2$D x $33^1/_2$W x 25"H

sponsored by:

Protecting your laboratory environment
LABCONCO

For a full selection of Labconco® Glove Boxes, see p. 877–880.

Labconco* XPert* Weigh Boxes

Protect operator when weighing hazardous samples

In addition to HEPA inlet and outlet filters, these boxes include an antistatic ionizer fan to reduce static charge and a balance vibration isolator.

Design Features

- One-piece molded, medium-density polyethylene shell
- Dry powder epoxy-coated steel superstructure and interior shelf of transfer chamber
- Approx. 13 cu. ft. main chamber
- ¼" thick (0.64cm) laminated safety glass viewing window with powder-coated steel frame and neoprene gasket; cut-out is 26⅜ × 12½" (67.1 × 31.8cm)
- Upward-pivoting inner and outer transfer chamber doors counterbalanced and equipped with quick-latches
- Black, chemical-resistant phenolic core work surface sealed to glove box floor

Performance

- Dual HEPA filters boast 99.99% efficiency against particulates down to 0.3 microns
- 0.05ppm or lower average tracer gas levels detected during perimeter scan testing surpasses ASHRAE* 110 standards
- Factory testing with mass spectrometer reveals no detectable leaks greater than 1×10^{-3}mL/sec. when tested while glove box is pressurized with helium at 1" water gauge
- Vibration is less than 1.5×10^{-5} inches displacement when measured at work surface at both minimum and maximum airflow volumes

RDERING INFORMATION:

verall dimensions: 31⅝L × 52¾W × 40"H (80 × 134 × 102cm). Main hamber interior measures 27½D × 33½W × 25"H (69.9 × 85.1 × 63.5cm). ransfer chamber is 11" nominal I.D. × 12"L (28 × 30cm). Vibration solator slab measures 20⅜D × 13⅜W × 2¾" thick. Shipping weight: 50 lb. (159kg).

NCLUDES:

ntegral neoprene gloves (size 9¾, 30" [76cm] long, 15mil gauge); 22w uorescent lamp; interior ceiling-mounted electrical duplex receptacle vith 5A (115V model) or 2A (230V model) circuit load; built-in blower with peed control capable of airflow from 13 to 100cfm; antistatic ionizer fan ounted on interior ceiling; switches for light, blower, and innermost interior ceptacle wired for ionizer fan; balance vibration isolator, consisting of arble slab with isolator pads and Type 304 stainless-steel cover; inlet and utlet HEPA filters and test port for challenging HEPA filter; main chamber atic pressure gauge to monitor HEPA filter loading integrity.

EQUIRED ACCESSORIES:

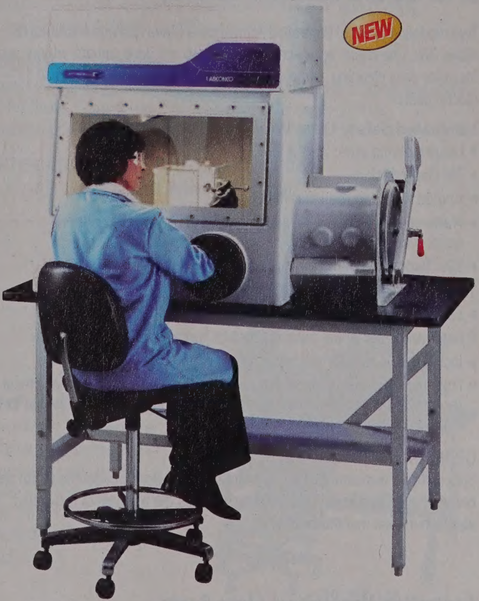
pporting base (see 10-358-108 and -109, p. 880)

OMPLIANCE:

rborne particulate cleanliness (measured under positive and negative essures per ISO 14644-1 test method) exceeds ISO Class 5 conditions quivalent to Class 100) and achieved ISO Class 3 conditions (equivalent Class 1) at both minimum and maximum operational airflow volumes. onforms to UL 3101-1/61010-1 and CAN/CSA C22.2 No. 1010.1 15V model).

ERTIFICATIONS:

L listed (115V model). CE marked (230V model).



10-358-106

Electrical Requirements	Liner Material	Mfr. No.	Cat. No.	Each
115V 60Hz, 8A	Polyethylene	5220300	**10-358-106**	9495.00
230V 50Hz, 4A	Polyethylene	5220320	**10-358-107**	9495.00

ACCESSORIES

Replacement Labconco* Glove Box Sleeves

16-200-5

16-200-10

- For use with neoprene or latex glove hands
- Made of neoprene
- Straight or accordian
- Supplied in pairs, complete with O-rings and springs

Style	Length	Mfr. No.	Cat. No.	Pack of 1 Pair
Straight	19" (48cm)	5005800	**16-200-5**	298.38
Accordian	15" (38cm)	5005900	**16-200-10**	425.54

Labconco* Protector* Glove Boxes

Designed for use in controlled atmospheres (dry boxes) or for use with hazardous materials

Two models available: Controlled Atmosphere Glove Box and Multihazard Glove Box. One-piece, epoxy-coated steel cabinets have smooth interior surfaces for easy cleaning. Large glove ports 8" (20cm) in dia. are spaced 17" (43cm) apart.

Laminated Safety Glass Window

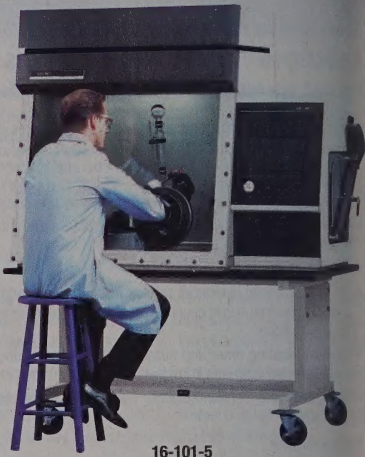
- Large viewing area, 36W × 27⅝"H (91 × 71cm)
- ⅜" (1cm) thick
- Angled at 10° to reduce reflection
- Frame is epoxy-coated 12-gauge steel with one-piece molded neoprene gasket
- 30w fluorescent lamp provides glare-free lighting

Transfer Chamber

- Large transfer chamber, 20L × 11W × 13"H (51 × 28 × 33cm)
- Inner and outer doors pivot upward to conserve space when open
- Includes two interior electrical receptacles
- Front mounted control panel has switches for lamp and interior electrical receptacles; controlled atmosphere models also have pressure gauge for transfer chamber

ORDERING INFORMATION:

Special order combinations are available: Double Box with double-width chamber door and Combination Box which combines the features of controlled atmosphere and multihazard boxes.



16-101-5

INCLUDES:

Both models offered with either chemical-resistant, molded fiberglass liner with acrylic transfer doors or stainless-steel liner with stainless-steel transfer doors, and both feature integral neoprene gloves (size 9¾, 30" [76cm] long, 15mil gauge).

REQUIRED ACCESSORIES:

Supporting base (see 19-101-27 and -28, p. 880)

Controlled Atmosphere Glove Boxes

Provide leak-tight environment for working with contamination-, moisture-, or oxygen-sensitive materials such as organics, inorganics, or biochemicals.

- Four manually operated valves regulate gas input/exhaust as well as vacuum purge and backfill of transfer chamber
- Pressure relief bubbler protects against over- and under-pressurizations
- Rear-mounted, 3-wire electrical receptacle for accessory vacuum pump
- Control panel has pressure gauges for glove box and transfer chamber as well as switches for lamp and interior/exterior electrical fixtures
- Pressure Control Module and Foot Pedal automatically monitor and control glove box pressure
- Purge/Fill Control Module automatically controls evacuation and backfill of transfer chamber
- Switches provided for selection of the following functions: number of purge/fill cycles, level of vacuum achieved at each purge cycle, and choice of backfill gas source
- LED display indicates number of purge/fill cycles selected and countdown of cycles, status of each cycle (purging or filling), and end of purge/fill cycles

ORDERING INFORMATION:

Overall dimensions: 37⅝L × 62⅜W × 38½"H (96 × 158 × 98cm).
Electrical Requirements: 115V 60Hz, 20A.

Liner Material	Shipping Weight	Mfr. No.	Cat. No.	Each
With Pressure Control Module and Foot Pedal				
Fiberglass	500 lb. (227kg)	5070000	**16-101-25**	19,610.00
Stainless steel	650 lb. (295kg)	5070100	**16-101-19**	23,535.00
With Pressure Control Module, Foot Pedal, and Purge/Fill Control Module				
Stainless steel	650 lb. (295kg)	5080100	**16-101-22**	26,795.00

Multihazard Glove Box

Provides protective physical barrier when working with hazardous materials such as low-level radioisotopes, bacteriological agents, or carcinogens.

- Inlet and exhaust HEPA filters trap particulate contaminants and prevent them from entering the box or being exhausted; 99.99% efficient on particulates 0.3µm dia.
- High efficiency polyester inlet prefilter traps large particles which extends the life of the HEPA filter
- Location of secondary exhaust filter allows user to customize system by adding an additional HEPA or carbon filter
- Manually controlled, built-in variable speed blower permits the box to be exhausted to the outside for additional safety
- 3" (7.6cm) square collar on top of box connects to ducting system
- Pressure differential gauge shows glove box pressure and condition of inlet HEPA filter
- Front-mounted transfer chamber control panel contains the blower speed knob, pressure differential gauge, and switches for the fluorescent lamp and interior electrical receptacles
- Manual inlet control damper adjusts internal negative pressure
- LED display indicates high/low span and actual pressure
- Audible alarm sounds when pressure is beyond ±6" water gauge; LED indicator remains on until alarm is reset
- Foot pedal has 8" (2.4m) cable and permits convenient insertion and removal of hands by momentarily adjusting glove box to negative pressure

ORDERING INFORMATION:

Overall dimensions: 31⅛L × 62⅜W × 46⅜"H (79 × 158 × 118cm).
Electrical Requirements: 115V 60Hz, 15A.

Liner Material	Shipping Weight	Mfr. No.	Cat. No.	Eac
Fiberglass	500 lb. (227kg)	5065000	**16-101-8**	16,300.0
Stainless steel	650 lb. (295kg)	5065500	**16-101-5**	20,400.0

*Trademark. See Trademark Reference.

Labconco* Precise* Glove Boxes

Design Features

- One-piece molded, medium-density polyethylene shell
- Dry epoxy-coated steel superstructure, transfer sleeve and interior shelf
- Inner and outer transfer chamber doors are pivoted, counterbalanced and equipped with quick-release latches
- Black, chemical-resistant phenolic core work surface sealed to box floor
- Nominal 13 cu. ft. interior space in main chamber
- ¼" thick (0.64cm) laminated safety glass viewing window with powder-coated steel frame and neoprene gasket; cut-out is 26⅜ x 12½" (67.1 x 31.8cm)

ORDERING INFORMATION:
Dimensions: Main chamber: 27½D × 33½W × 25"H (70 × 85 × 64cm); transfer chamber: 11 nominal I.D. × 12"L (28 × 30cm); window: 26⅜W × 12½"H (67 × 32cm); pressure relief valve: 4" nominal dia. (10.2cm); overall: 31⅝D × 52¾W × 40"H (80 × 134 × 102cm).

REQUIRED ACCESSORIES:
Support base (see 10-358-108, -109) vacuum source for purging, and inert gas for filling. Contact your Fisher Scientific Customer Service Representative for assistance.

CERTIFICATIONS:
ETL listed (115V models). CE marked (230V models).

Basic Precise* Glove Box

Simple design allows user to customize box with ptional accessories to meet specific applications

esigned to provide leak-tight physical barrier between user and materials nside box.

erformance

- Factory testing with mass spectrometer reveals no detectable leaks greater than 1 x 10^{-4}mL/sec. when tested while glove box is pressurized with helium at 5" water gauge

RDERING INFORMATION:
hipping weight: 255 lb. (166kg)

NCLUDES:
tegral neoprene gloves (size 9¾, 30" [76cm] long, 15mil gauge); 22w uorescent lamp and control switch; interior ceiling-mounted electrical uplex receptacle and switch with 5A (115V model) or 2A (230V model) ircuit load

COMPLIANCE:
Meets Class 1 atmosphere containment conditions for oxygen leak rates per SO 10648-2 test method. Conforms to UL 3101-1/61010-1 and CAN/CSA C22.2 No. 1010.1 (115V model).

10-358-100

Electrical Reqts.	Liner	Mfr. No.	Cat. No.	Each
150V 60Hz, 8A	Polyethylene	5220000	**10-358-100**	5450.00
230V 50Hz, 4A	Polyethylene	5220020	**10-358-101**	5450.00

---

ontrolled Atmosphere Precise* Glove Box

rovides leak-tight environment for contamination-ensitive materials

eal for procedures requiring low levels of oxygen (<5ppm) or moisture 50ppm) such as work with organometallics, alternative energy cells, or drophilic chemicals.

erformance

- Performance-tested to maintain <5ppm oxygen/<50ppm moisture levels
- Automatic pressure relief valve activates at ±6" of water gauge

RDERING INFORMATION:
hipping weight: 260 lb. (118kg)

CLUDES:
tegral neoprene gloves (size 9¾, 30" [76cm] long, 15mil gauge); 22w orescent lamp and control switch; interior ceiling-mounted electrical plex receptacle and switch with 5A (115V model) or 2A (230V model) cuit load; six manual valves with ⅜" compression fittings and hose rbs: main chamber, four (two purge/fill, two drying); transfer chamber, o purge/fill; main chamber pressure gauge calibrated from -5 to +5 of ater gauge; transfer pressure chamber gauge from 0 to -0.29" Hg

MPLIANCE:
eets Class 1 atmosphere containment conditions per ISO 10648-2 st method

10-358-102

Electrical Reqts.	Mfr. No.	Cat. No.	Each
115V 60Hz, 8A	5220100	**10-358-102**	7595.00
230V 50Hz, 4A	5220120	**10-358-103**	7595.00

Labconco* Precise Glove Boxes, Contd.

HEPA-Filtered Precise* Glove Box

Provides a leak-tight physical barrier to protect operator from hazardous airborne particulates and powders

Leak-tight design and HEPA inlet and outlet filters make this box suitable for pharmaceutical research, nanotechnology and biochemistry. Also suitable for work with microorganisms, low-level radiochemicals, chemical carcinogens and asbestos, as well as cleanroom applications requiring ISO Class 3 conditions

Performance

- Dual HEPA filters boast 99.99% efficiency against particulates down to 0.3 microns
- 0.05ppm or lower average tracer gas levels detected during perimeter scan testing surpasses ASHRAE* 110 standards
- Factory testing with mass spectrometer reveals no detectable leaks greater than 1×10^{-3}mL/sec. when tested while glove box is pressurized with helium at 1" water gauge
- Vibration is less than 1.5×10^{-5} inches displacement when measured at work surface at both minimum and maximum airflow volumes

ORDERING INFORMATION:

Shipping weight: 280 lb. (127kg)

INCLUDES:

Integral neoprene gloves (size 9¾, 30" [76cm] long, 15mil gauge); 22w fluorescent lamp; interior ceiling-mounted electrical duplex receptacle with 5A (115V model) or 2A (230V model) circuit load; built-in blower with speed control capable of airflow from 13 to 100cfm; switches for light, blower, and innermost electrical receptacle; inlet and outlet HEPA filters and test port for challenging HEPA filter; main chamber static pressure gauge to monitor HEPA filter loading integrity

10-358-104

COMPLIANCE:

Airborne particulate cleanliness (measured under positive and negative pressures per ISO 14644-1 test method) exceeds ISO Class 5 conditions (equivalent to Class 100) and achieved ISO Class 3 conditions (equivalent to Class 1) at both minimum and maximum operational airflow volumes. Conforms to UL 3101-1/61010-1 and CAN/CSA C22.2 No. 1010.1 (115V model).

Electrical Requirements	Liner	Mfr. No.	Cat. No.	Each
115V 60Hz, 8A	Polyethylene	5220200	**10-358-104**	7995.00
230V 50Hz, 4A	Polyethylene	5220220	**10-358-105**	7995.00

ACCESSORIES

Base Stands for Labconco* Glove Boxes

- Firmly support glove boxes
- Epoxy-coated welded steel with black phenolic laminate work surface
- Lower shelf provides convenient storage for accessories
- Mobile stands furnished with 5" (13cm) swivel casters with locking brakes
- Stationary stands have adjustable leveling feet

ORDERING INFORMATION:

Work surface measures 31L × 60W × 1⅛"H (79 × 152 × 3cm). Height adjusts between 30 and 36" (76 and 91cm) on base stands for Protector* Series Glove Boxes; adjusts between 30 and 40" (76 and 101.6cm) for Precise* Series stands.

Description	Mfr. No.	Cat. No.	Each
For Protector Series Glove Boxes			
Mobile	5062000	**16-101-27**	2015.00
Stationary	5062001	**16-101-28**	1830.00
For Precise Series Glove Boxes			
Mobile	5235500	**10-358-109**	1800.00
Stationary	5235501	**10-358-108**	1800.00

Plas-Labs* Anaerobic Chamber

Versatile unit can be used as a controlled atmosphere or anaerobic chamber

lluminated, rigid acrylic glove box with transfer compartment, for manipulation of anaerobic materials at factory-set temperature f 37°C (98.6°F).

General Features

- Equipped with two pressure/vacuum diaphragm pumps, catalyst heater/oxygen remover, desiccant train, and system of purge valves for adjusting interior atmosphere
- Thick, clear acrylic walls are essentially impermeable to ambient oxygen
- Usable on a lab cart or table
- All controls are illuminated

Work Chamber

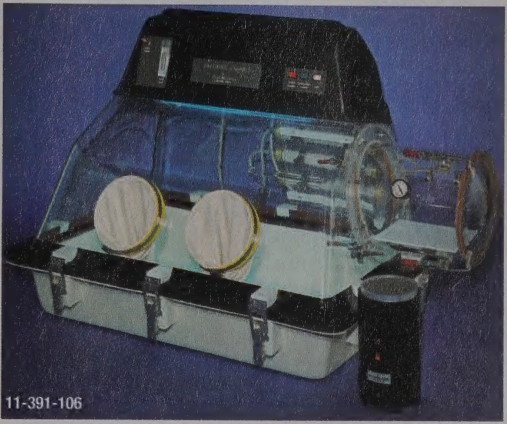
- Consists of clear acrylic hood and white thermoset base which clamp together against a double neoprene gasket; clamps adjust for wear
- Includes two ground key cock valves for purging (not for use with oxygen)
- Superstructure contains a fluorescent light system and two pumps: one recirculates chamber atmosphere through the desiccant train; the other is for evacuating and purging the transfer compartment and/or work chamber

ransfer Compartment

- Equipped with two ground key cock purge valves and vacuum gauge
- Inner door, when unlocked, is self-opening upon equilibration of internal pressure
- A leveling tray fits bottom of compartment to assist loading and unloading of liquids

esiccant Cartridges

- Three clear polycarbonate desiccant cartridges (supplied) are attached in series externally on back of unit
- Can be disconnected quickly from their self-sealing hose connections without disturbance to the internal atmosphere
- Each cartridge contains molecular sieve and silica gel medium
- Contents can be rejuvenated by heating at 163°C (325°F)


11-391-106

ORDERING INFORMATION:

Overall dimensions: 35L × 55W × 38"H (89 × 140 × 96.5cm). Work chamber is 41L × 28W × 26"H (104 × 71 × 66cm). Transfer compartment is 11 I.D. × 12"L (28 × 30cm) of thick, clear acrylic. Electrical Requirements: 120V 60Hz.

INCLUDES:

Glove ports are fitted with a pair of white, ambidextrous Hypalon* gloves with straight sleeves. With transfer tray and hospital-grade outlet strip. Catalyst heater includes two palladium canisters.

Shipping Weight	Mfr. No.	Cat. No.	Each
250 lb. (113kg)	855-AC	**11-391-106**	13,520.50

ACCESSORIES

Hypalon* Gloves

Ambidextrous, with straight sleeves

- For use with Plas-Labs* Anaerobic Chamber (11-391-106), Plas-Labs Basic Glove Box (11-389), and Plas-Labs Analytical Balance Chamber (11-389-6)

ORDERING INFORMATION:

Supplied in pairs

Description	Cat. No.	Each Pair
Glove Box/Balance Chamber Gloves	**11-389-1**	297.51

LOOKING FOR MORE?

To view other Plas-Labs* glove boxes...

Visit www.fishersci.com and search for Plas-Labs Box

Scienceware* Bare Hand Entry (Iris) Port

Entry for bare hand operation

- Fits 7¾" I.D. (19.7cm) glove ports
- Made of ten layers of soft, conforming rubber
- Easy access and withdrawal, plus excellent sealing

ORDERING INFORMATION:

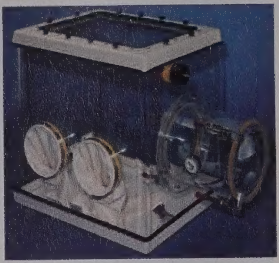
One pair per pack.

11-391-103

Mfr. No.	Cat. No.	Pair
50025 0020	**11-391-103**	538.20

Plas-Labs* Compact Glove Box

For safe containment of hazardous materials when being weighed



11-389-6

Work chamber accommodates analytical and toploading balances, bench scales and moisture analyzers.

- Work chamber top is removable for installation of balance or scale
- Transfer chamber has a white leveling tray, two purging gas valves (not for use with oxygen) and one adjustable vacuum gauge
- Glove ports have ambidextrous Hypalon* gloves with superior abrasion, chemical and UV resistance
- Relief valve balances pressures when hands are inserted in gloves
- HEPA filter on relief valve prevents escape of particulates and organic vapors

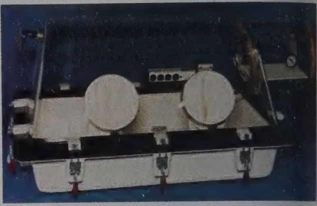
ORDERING INFORMATION:
Overall dimensions: 24L × 43W × 31"H (61 × 109 × 79cm). Work chamber is 23L × 28W × 30"H (58 × 71 × 76cm). Transfer chamber measures 11 I.D. x 12"L (28 × 30cm). Electrical Requirements: 120V 60Hz.

INCLUDES:
Two purging gas valves on the work chamber (not for use with oxygen), and hospital-grade electrical outlet strip.

Shipping Weight	Mfr. No.	Cat. No.	Each
200 lb. (91kg)	830 ABC	**11-389-6**	6788.26

Plas-Labs* Basic Glove Box

Economical glove box for general lab or industrial use



11-389

Clear, one-piece, ⅜" (9.5mm) acrylic top for a full view of isolated material and white thermoset base.

- Top and bottom are sealed airtight with double-layered closed cellular neoprene gasketing system
- Adjustable clamps compensate for wear
- All corners are rounded for easy cleaning
- Glove ports are fitted with ambidextrous Hypalon* gloves with superior abrasion, chemical and UV resistance
- Gloves are held in place with stainless-steel O-rings
- Transfer chamber has a vacuum gauge adjustable to ambient pressure

ORDERING INFORMATION:
Overall dimensions: 35L × 55W × 27"H (89 × 140 × 69cm). Work chamber is 28L × 41W × 26"H (71 × 104 × 66cm). Transfer chamber is clear acrylic, 11 I.D. x 12"L (28 x 30cm). Electrical Requirements: 120V 60Hz.

INCLUDES:
Four ground key cock valves for purging (not for use with oxygen). Shipped with hospital-grade electrical outlet strip. A white leveling tray for transferring liquids through the transfer chamber is also included.

Shipping Weight	Mfr. No.	Cat. No.	Eac
150 lb. (67.5kg)	818-GB	**11-389**	6930.1

Scienceware* Budget-Priced Glove Box

Use as glove box, dust box, dry box, or environmental enclosure

Unaffected by most inorganic solutions, oils, low concentrations of alcohol, paraffinic and olefinic hydrocarbons, amines, alkyl monohalides, and esters containing more than 10 carbon atoms.

- Versatile as well as economical
- Acrylic construction provides durability and optimum visibility from all sides
- Two 11¾" I.D. (30cm) side entries for attachment of accessories
- Two front 7¾" I.D. (19.7cm) and 8" O.D. (20cm) circular glove holes accept any standard glove

ORDERING INFORMATION:
With two side access opening covers. Without clamping rings, gloves, or sleeves; order separately. Overall dimensions: 20L × 36W × 26"H (51 × 91 × 66cm). Average wall thickness, 7⁄32" (6mm). Shipping weight: 40 lb. (18.1kg).

REQUIRED ACCESSORIES:
Gloves and sleeves, air lock, and clamping ring are sold separately.

11-391-1

Mfr. No.	Cat. No.	Eac
50025 0000	**11-391-100**	1620.0

LOOKING FOR MORE?
A variety of accessories and replacement parts are available for Scienceware* Glove Boxes, including gloves and sleeves, air locks, and clamping rings. To see a complete listing...

Visit www.fishersci.com and search for Scienceware Box

GLOVES

CHEMICAL RESISTANT

*Fisherbrand** Double-Dipped PVC Gloves

Provide enhanced cut resistance and excellent wet or slippery grip

- Available with sandy or rough acid grip finish
- Interlock lining provides great dexterity; jersey lining provides comfort and moderate insulation

19-068-177

19-047-458

Length	Color	Cat. No.	Pack of 12 Pair	Case of 6 Pk.
Rough Acid Grip Finish, Jersey Lined				
Knitwrist	Black	**19-068-177**	28.65	146.17
10" (25cm)	Black	**19-120-1471**	25.50	130.10
12" (30cm)	Black	**19-046-385**	24.29	122.42
14" (36cm)	Black	**19-046-386**	27.00	136.09
10" (25cm)	Green	**19-068-178**	26.76	136.52
14" (36cm)	Green	**19-068-180**	48.13	245.58
Sandy Finish, Interlock Lined				
Knitwrist	Black	**19-047-494**	27.51	140.40
10" (25cm)	Black	**19-047-457**	24.15	123.21
12" (30cm)	Black	**19-120-1473**	25.05	----
14" (36cm)	Black	**19-120-1474**	29.02	----
Sandy Finish, Jersey Lined				
12" (30cm)	Black	**19-047-458**	35.09	179.07
14" (36cm)	Black	**19-047-467**	38.88	198.40

*Fisherbrand** Flock-Lined Neoprene/Latex Double-Dipped Gloves

Protection with comfort

Ideal for general housekeeping and maintenance applications. Double-dipped construction provides increased protection, versatile chemical resistance properties, and comfort.

19-816-834

- Made of blue neoprene over yellow latex
- Raised diamond grip on palm and fingers for good wet or dry grip
- Flock lining to absorb perspiration; permits easy on and off
- Straight cuff
- Thickness: 19mil
- Length: 12" (30cm)

Size	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
Small	**19-816-835**	39.85	406.63
Large	**19-816-834**	39.85	406.63
X-Large	**19-816-836**	39.85	406.63

*Fisherbrand** Unsupported Latex Gloves

Resist a wide range of chemicals and detergents

- Flexible, form fitting, and made from unsupported natural rubber latex
- Diamond pattern provides an excellent grip superior to that of other embossed gloves
- 12" long (30cm)

COMPLIANCE:
Rubber latex conforms tp USDA standards.

19-072-153

19-084-837

19-049-850

Size	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
17mil Thick, Blue, Unlined			
7	**19-084-834**	10.69	----
8	**19-084-835**	11.33	----
9	**19-084-836**	11.33	----
10	**19-084-837**	11.33	----
18mil Thick, Yellow, Flock-Lined			
7	**19-049-847**	12.80	134.26
8	**19-049-850**	13.09	134.26
9	**19-049-508**	12.80	134.26
10	**19-049-531**	13.09	134.26
19mil Thick, Natural, Unlined			
7	**19-072-151**	13.09	134.26
8	**19-072-152**	13.09	134.26
9	**19-072-153**	13.09	134.26
10	**19-072-154**	13.09	134.26

WARNING

These products contain natural rubber latex, a component of which may cause allergic reaction in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these products.

*Fisherbrand** Butyl Chemical Handling Gloves

For aggressive chemical handling

NEW

Butyl gloves are available in various thicknesses and lengths to suit a variety of applications including concentrated oxidizing mineral acids.

- Deliver the ketone resistance of natural rubber latex with better hydrocarbon resistance
- Provide ester resistance of nitrile gloves with better aldehyde resistance
- Available with a Viton* outer layer for extra protection
- Hand-specific

ChemTek
Ansell

19-161-431D

ChemTek
Ansell

19-161-442

ORDERING INFORMATION:
Each pair is packed with an individual informational insert so critical information is always at your fingertips.

Size	Finish	Cat. No.	Case of
12" long, 14mil Thick Butyl			
7	Rough	**19-161-431A**	36/979.56
8	Rough	**19-161-431B**	36/979.56
9	Rough	**19-161-431C**	36/979.56
10	Rough	**19-161-431D**	36/979.56
11	Rough	**19-161-431E**	36/979.56
14" long, 14mil Thick Butyl			
7	Smooth	**19-161-430A**	36/1234.65
7	Rough	**19-161-432A**	36/1088.10
8	Smooth	**19-161-430B**	36/1234.65
8	Rough	**19-161-432B**	36/1088.10
9	Smooth	**19-161-430C**	36/1234.65
9	Rough	**19-161-432C**	36/1088.10
10	Smooth	**19-161-430D**	36/1234.65
10	Rough	**19-161-432D**	36/1088.10
11	Smooth	**19-161-430E**	36/1234.65
11	Rough	**19-161-432E**	36/1088.10
12" long, 20mil Thick Butyl			
9	Rough	**19-161-435**	36/1249.11
10	Rough	**19-161-436**	36/1249.11
11" long, 20mil Thick Butyl			
9	Smooth	**19-161-433**	36/1401.99
9	Rough	**19-161-437**	36/1438.17
10	Smooth	**19-161-434**	36/1401.99
10	Rough	**19-161-438**	36/1438.17
14" long, 28mil Thick Butyl			
9	Smooth	**19-161-439**	12/577.50
10	Smooth	**19-161-440**	12/577.50
12" long, 12mil Thick Viton/Butyl			
8	Smooth	**19-161-441**	36/3153.60
9	Smooth	**19-161-442**	12/1051.20

Ansell* Snorkel* PVC-Nitrile Blend Coated Gauntlets

Excellent wet grip, and chemical, cut, and abrasion resistance

Ideal for applications involving petrochemicals and for handling equipment and abrasive materials coated with acids, caustics, solvents, grease, and oil.

- Feature PVC-nitrile blend rough finish
- Two-piece lining eliminates seams from work areas to prevent irritation and premature wear-through
- Curved, preflexed fingers and wing thumb give extra comfort and flexibility

19-014-904

ORDERING INFORMATION:
Choose interlock knit lining, for flexibility and launderability, or jersey lining for cushioning and moderate insulation.

Size	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of
Style 4-412, 12" Long (30cm), Jersey Lined				
Medium	4 412 9	**19-014-903**	83.55	6 Dz./443.62
Large	4 412 10	**19-014-904**	83.55	6 Dz./443.62
Style 4-414, 14" Long (36cm), Jersey Lined				
Medium	4 414 9	**19-014-906**	95.20	6 Dz./505.49
Large	4 414 10	**19-014-907**	95.20	6 Dz./505.49
Style 4-454, 14" Long (36cm), Knit Lined				
Medium	4 454 9	**19-014-914**	95.53	6 Dz./507.25
Large	4 454 10	**19-014-917**	----	72 Pr./558.00

Ansell* Sol-Vex* II Nitrile Gloves

Will not weaken or swell like rubber and neoprene in many solvents, caustics, and animal fats

Protect against abrasions, cuts, snags, and punctures. Ideal for work in meat processing; parts degreasing; machining operations; wiping down parts and machinery; and handling hoses, belts, and steel chains.

- Nitrile gloves contain no protein allergens and will not promote contact dermatitis
- Raised-diamond pattern for a superior grip on wet or slippery material
- Form-fitting fingers, contoured palm, and a tapered wrist create a comfortable, ergonomic fit
- Flock-lining keeps hands cool and dry
- Length: 13" (33cm)
- Thickness: 15mil

19-120-393C

COMPLIANCE:
Component materials comply with FDA regulations for food contact.

Size	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 12 Pk
7–7½	37-676-7-7.5	**19-120-393A**	37.22	381.7
8–8½	37-676-8-8.5	**19-120-393B**	37.22	381.7
9–9½	37-676-9-9.5	**19-120-393C**	37.22	381.7
10	37-676-10	**19-120-393D**	37.22	381.7
11	37-676-11	**19-120-393E**	37.22	381.7

*Trademark. See Trademark Reference.

Ansell* FL200 Flock-Lined Latex Gloves

uperior tensile strength and sensitivity

ll styles are ideal for chemical plants, anitorial services, automotive assembly, plant naintenance, agriculture, petroleum refineries, anning, and pharmaceutical manufacturing.

- Made from flock-lined natural latex for excellent abrasion, puncture, and tear resistance
- Two styles available with pattern embossing for secure grip of wet or dry objects
- Resist acids, detergents, salts, caustics, animal fats, and alcohols
- Length: 12" (30cm)
- Thickness: 20mil

OMPLIANCE:

omponent materials of Styles 254 and 255 omply with 21CFR177.2600 for food contact.

11-394-7B

Size	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
Style 255, Blue, Embossed Pattern				
8	255 8	**11-394-89B**	17.23	176.74
9	255 9	**11-394-89C**	17.23	176.74
10	255 10	**11-394-89D**	17.23	176.74
Style 298, Yellow, Embossed Pattern				
7	298 7	**11-394-7A**	17.23	176.74
8	298 8	**11-394-7B**	17.23	176.74
9	298 9	**11-394-7C**	17.23	176.74
10	298 10	**11-394-7D**	17.23	176.74
Style 254, Blue, Smooth Finish				
7	254 7	**19-014-489**	17.23	176.74
8	254 8	**19-014-492**	17.23	176.74
9	254 9	**19-014-493**	17.23	176.74
10	254 10	**19-014-494**	17.23	176.74
Style 297, Yellow, Smooth Finish				
8	297 8	**19-014-504**	17.23	176.74
9	297 9	**19-014-506**	17.23	176.74
10	297 10	**19-014-507**	17.23	176.74

nsell* FL100 Flock-Lined Latex Gloves

leal for light-duty applications

- Made from natural rubber latex
- With patterned grip and pinked cuff
- Cotton-flock lining keeps hands dry and cool
- Length: 12" (30cm)
- Thickness: 17mil

RDERING INFORMATION:

lybag packaging keeps gloves clean fore use.

18-999-2377

Size	Ansell No.	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
Yellow				
7	198 7	**18-999-2372**	10.25	102.52
8	198 8	**18-999-2373**	10.25	102.52
9	198 9	**18-999-2374**	----	117.89
10	198 10	**18-999-2375**	10.25	102.52
Blue				
8	155 8	**18-999-2377**	10.61	106.05
9	155 9	**18-999-2378**	10.61	106.05
10	155 10	**18-999-2379**	10.61	106.05

orth* Butyl Gloves

igh permeation resistance to gas or water vapors

eal for use with ketones d esters.

- Made from butyl synthetic rubber
- Series 11-394-8 has textured Grip Saf* finish for wet applications
- Curved fingers and hand design or greater comfort
- All gloves have rolled cuffs

11-394-8C

Size	Mfr. No.	Cat. No.	Pair
11" Long (28cm), 13mil Thick, Smooth Finish			
7	B131/7	**11-394-9A**	18.33
8	B131/8	**11-394-9B**	18.33
9	B131/9	**11-394-9C**	18.33
10	B131/10	**11-394-9D**	18.33
11	B131/11	**11-394-9E**	18.33
14" Long (36cm), 17mil Thick, Rough Finish			
8	B174R/8	**11-394-8A**	41.46
9	B174R/9	**11-394-8B**	41.46
10	B174R/10	**11-394-8C**	41.46
11	B174R/11	**11-394-8D**	41.46
14" Long (36cm), 32mil Thick, Smooth Finish			
8	B324/8	**11-395-44A**	44.08
9	B324/9	**11-395-44B**	44.08
10	B324/10	**11-395-44C**	44.08
11	B324/11	**11-395-44D**	44.08

WARNING

Components used in making these gloves may cause allergic reactions in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these gloves.

North* Dry Box Gloves

Gloves come in hand-specific pairs for a comfortable fit

Three styles of shoulder-length gloves made from neoprene, butyl and Hypalon*.

- Cuff diameters match 8" dia. (20cm) dry box or glove box ports
- Fit a hand size of 9¾" (25cm)
- Unsupported, with smooth-finish grips
- 32" long (81cm)

Black Neoprene Dry Box Gloves

- Ideal for work requiring good sensitivity and dexterity
- Seamless one-piece construction provides high tear resistance

Black Butyl Dry Box Gloves

- Provide exceptionally high permeation resistance to gases and water vapors
- Offer superior resistance to toxic chemicals (including most missile fuels), and resist oxygenated solvents and most oxidizing chemicals

White Hypalon* Dry Box Gloves

- Offer outstanding abrasion resistance; naturally soft for greater comfort
- Provide superior resistance to ozone attack (a major cause of premature failure in dry box gloves), acids, or oxidizing chemicals

ORDERING INFORMATION:

For chemical resistance data on these gloves, call your Fisher Safety Customer Service Representative at **1-800-772-6733**.

11-395-41B

11-395-42A

11-395-43A

11-395-41A

Also available in ambidextrous style in sizes of 9¾" (25cm) and 10½" (27cm). (North Viton* dry box gloves are available on special order. Other sizes available include 8½" [22cm], 10½" [27cm], and 11½" [29cm]. Please call your Fisher Safety Customer Service Representative for pricing information.) All gloves in pack of one pair.

Material	Mfr. No.	Cat. No.	Pair
15mil Thick			
Neoprene	8N15329Q	**11-395-41A**	140.54
Butyl	8B15329Q	**11-395-42A**	207.09
Hypalon	8Y15329Q	**11-395-43A**	186.95
30mil Thick			
Neoprene	8N30329Q	**11-395-41B**	168.98
Butyl	8B30329Q	**11-395-42B**	220.33
Hypalon	8Y30329Q	**11-395-43B**	292.76

WARNING

Components used in making these gloves may cause allergic reactions in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these gloves.

North* Silver Shield*/4H* Laminate Gloves

Protect against solvents, hydrocarbons, ketones, and acids

Protect against many types of chemicals used in hazardous materials cleanup; chemical, petrochemical, photo and medical labs; general industry; hospitals; agriculture; and the military.

- Made from an exceptionally thin, lightweight, five-layer laminate of PE and EVOH
- Help to reduce hand fatigue and provide exceptional dexterity
- Can be used alone or as a permeation-resistant liner
- Sealing process ensures extremely strong seams
- Ambidextrous
- Thickness: 2.7mil

18-999-431C

COMPLIANCE:

Pressure tested in accordance with ASTM* F 1052-87. Permeation tested in accordance with ASTM F 739-91.

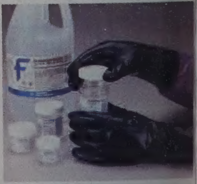
Size	Mfr. No.	Cat. No.	Pack of 10 Pair	Case of 5 Pk.
14½" Long (39cm)				
6	SSG/6	**18-999-431A**	65.21	288.56
7	SSG/7	**18-999-431B**	65.21	288.56
8	SSG/8	**18-999-431C**	65.21	288.56
16" Long (43cm)				
9	SSG/9	**18-999-431D**	66.09	264.34
10	SSG/10	**18-999-431E**	66.09	264.34
11/12	SSG/11	**18-999-431F**	66.09	264.34

North* Viton* Gloves

Protect against toxic and highly permeating chemicals

For protection against PCBs, polychlorinated triphenyls and benzene. Exhibit a high degree of impermeability to most or all chemicals that quickly deteriorate natural rubber, neoprene, nitrile, and PVC gloves. Excellent resistance to chlorinated and aromatic solvents. Can be used in water-based solutions.

- Made from Viton fluoroelastomer material
- Smooth finish



11-393-62B

- Unlined with straight cuffs
- Color: black

Size	Mfr. No.	Cat. No.	Pair
11" Long (28cm), 10mil Thick			
8	F101/8	**11-393-62A**	78.0
9	F101/9	**11-393-62B**	78.0
10	F101/10	**11-393-62C**	78.0
11	F101/11	**11-393-62D**	78.0
14" Long (36cm), 12mil Thick			
8	F124/8	**11-395-46A**	116.8
9	F124/9	**11-395-46B**	116.8
10	F124/10	**11-395-46C**	116.8
11	F124/11	**11-395-46D**	116.8

NEOPRENE

nsell* Unsupported Neoprene Gloves

mbossed finish for better gripping

11-391-130B

ase hardened to provide excellent resistnce to abrasion and a wide range of hemicals, including oils, acids, austics, and solvents. Feature straight uffs, curved fingers, contoured palm.

nlined

- Length: 12" long (30cm)
- Thickness: 17mil thick

lock-Lined

- Soft, cotton-flock lining absorbs perspiration
- Generously proportioned wrist, make donning and doffing easy
- Length: 13" long (33cm)
- Thickness: 18mil thick

ize	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
nlined				
	29 845 7	**11-391-129A**	80.22	851.91
	29 845 8	**11-391-129B**	80.22	851.91
	29 845 9	**11-391-129C**	80.22	851.91
0	29 845 10	**11-391-129D**	80.22	851.91
1	29 845 11	**11-391-129E**	28.93	347.16
ock-Lined				
	29 865 7	**11-391-130A**	75.23	798.88
	29 865 8	**11-391-130B**	75.23	798.88
	29 865 9	**11-391-130C**	75.23	798.88
)	29 865 10	**11-391-130D**	75.23	798.88
	29 865 11	**11-391-130E**	75.23	798.88
2	29 865 12	**19-087-139**	65.48	----

nsell* Technicians* Gloves

eal for applications involving tricate parts, laboratory tasks, d pharmaceuticals

11-394-91B

- lend of neoprene and natural latex exceptional dexterity, sensitivity, and istance to animal fats, acids, alcohols, d vegetable and mineral oils.
- mbossed "pebble" pattern ensures ecure grip on wet or dry surfaces
- ength: 12" long (30cm)
- hickness: 17mil

MPLIANCE:

ve materials comply with 21 CFR177.2600 standard for d contact.

e	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
	390 7	**11-394-91**	13.79	141.40
	390 7 5	**11-394-91A**	13.79	141.40
	390 8	**11-394-91B**	13.79	141.40
	390 8 5	**19-048-649A**	13.79	141.40
	390 9	**19-014-557**	13.79	141.40
	390 9 5	**11-394-91E**	13.79	141.40
	390 10	**11-394-91F**	13.79	141.40
	390 11	**11-394-91G**	13.79	141.40

Ansell* Neox* Supported Neoprene Gloves

Reinforced neoprene coating results in exceptional resistance to abrasion, cutting, and chemicals

19-014-958

Ideal for applications involving refining and petrochemicals; degreasing; plating; metal fabrication; Haz Mat work; and oils, acids, caustics, alcohols, and many other solvents.

- Seamless, two-piece knit lining prevents hand irritation and enhances puncture and snag resistance
- Curved fingers and wing thumb provide a natural, comfortable fit
- Fully coated gloves available in gauntlet and shoulder-length gauntlet styles

Fully Coated Shoulder-Length Gauntlet

- Available in 12" (30cm), 14" (36cm), or 31" (79cm) lengths
- Ideal for reaching into drums or tanks

Lighter Weight Style

- Length: 12" long (30cm)
- Fully coated gauntlet

Hi-Lo Temperature Gauntlet

- Length: 12" long (30cm)
- Insulates against intermittent contact with heat or cold
- Operating temperature range: -34° to +204°C (-30° to +400°F)

Length	Mfr. No.	Cat. No.	Pack of	Case of
Fully Coated Gauntlet				
12" (30cm)	9 922	**19-014-958**	12 Pr./146.13	6 Dz./749.40
14" (36cm)	9 924	**19-014-959**	12 Pr./162.67	6 Dz./834.23
31" (79cm)	9 430	**11-394-91H**	1 Pr./84.99	12 Pr./902.57
Lighter Weight Style				
12" (30cm)	9 912	**19-014-955**	12 Pr./133.38	6 Dz./684.00
Hi-Lo Temperature Gauntlet				
12" (30cm)	9 022	**19-014-948**	----	72 Pr./2064.41

Best* Chloroflex* Neoprene Gloves

Chlorinated for easy on and off

Liquid-resistant gloves provide excellent abrasion and chemical resistance. Useful for assembly applications requiring dexterity and chemical resistance.

- Tractor Tread firm-grip finish
- Flock lined
- Pinked-cuff
- Length: 12" (30cm)
- Thickness: 28mL
- Color: black

11-395-3B

Size	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
Small	723-S	**11-395-3A**	60.00	584.73
Medium	723-M	**11-395-3B**	60.00	584.73
Large	723-L	**11-395-3C**	60.00	584.73
X-Large	723-XL	**11-395-3D**	60.00	584.73

WARNING

These products contain natural rubber latex, a component of which may cause allergic reaction in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these products.

Best* Chem Master* Neoprene/Natural Rubber Gloves

Self-flushing, tractor-tread grip pattern improves gripping effectiveness by encouraging fluid runoff

11-394-114B

Neoprene-over-natural-rubber construction provides Chem Master gloves resistance to a broad range of chemicals, including acids, alcohols, oils, grease, caustics, salts, ketones, detergents, petroleum-based solvents and animal fats. Appropriate for use in chemical plants, automotive and battery manufacturing, pesticide manufacturing, and plant maintenance

- Flexible and tactile-sensitive for easy donning and doffing
- Offer good resistance to abrasion, tear, and puncture
- Black-over-blue wear-indicator construction provides additional safety
- 100% cotton flock lining enhances worker comfort
- Length: 12" (33cm)
- Thickness: 26mil

COMPLIANCE:
Comply with 21 CFR 170–199, and are acceptable for food and pharmaceutical applications. Both ASTM* Test Methods F739 (total immersion) and F1383 (intermittent contact) were used to determine the chemical resistance properties.

Size	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
Small (7)	CHM S	**11-394-114A**	25.50	248.12
Medium (8)	CHM M	**11-394-114B**	25.50	248.12
Large (9)	CHM L	**11-394-114C**	29.40	312.17
X-Large (10)	CHM XL	**11-394-114D**	25.50	248.12

WARNING
These products contain natural rubber latex, a component of which may cause allergic reaction in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these products.

LOOKING FOR MORE NEOPRENE GLOVES?
Browse Fisher Scientific's full line of neoprene gloves in our onlinecatalog.

Visit www.fishersci.com and search for Neoprene Gloves

MAPA Professional* Stanzoil* Knit-Lined Multi-Layer Supported Neoprene Gloves

Combine flexibility with abrasion, cut, and tear resistance

11-392-31C

Unique multi-dip construction offers liquidproof hand protection and excellent chemical resistance to most oils, grease, acids, caustics, alcohols, and solvents. Ideal for applications involving assembly, degreasing, lubricating; castings; steam cleaning; motor parts; chemical processing; petroleum refining; grinding, filing, and metal finishing; and general maintenance.

- Neoprene overdip in glove work area eliminates pinholes and weak spo
- throughout the glove and cuff
- Nonslip finish ensures a safe grip—even on wet or oily parts
- Two-way stretch cotton interlock knit lining insulates from heat and col
- and absorbs perspiration
- Seamless liner in work area protects hands from chafing
- Roomy thumb crotch for long-wear comfort
- Pinked cuff
- Washable

COMPLIANCE:
Meet 21 CFR 170-199.

Size	Mfr. No.	Cat. No.	Pack of	Case
12" Long (30cm), Blue with Black Overdip				
Small (7)	334946	**11-392-31A**	12 Pr./84.11	6 Pk./446.
Medium (8)	334947	**11-392-31B**	12 Pr./84.11	6 Pk./446.
Large (9)	334948	**11-392-31C**	12 Pr./84.11	6 Pk./446.
X-Large (10)	334949	**11-392-31D**	12 Pr./84.11	6 Pk./446.
12" Long (30cm), Dark Green with Light Green Overdip				
Large (9)	336428	**19-039-063**	1 Pr./8.06	72 Pr./446.
X-Large (10)	336429	**19-039-064**	1 Pr./8.06	72 Pr./446.
14" Long (36cm), Blue with Black Overdip				
Medium (8)	337428	**11-388-118A**	----	48 Pr./411.
Large (9)	337429	**11-388-118B**	12 Pr./120.42	4 Pk./411.
X-Large (10)	337420	**11-388-118C**	12 Pr./120.42	4 Pk./411.
XX-Large (11)	337421	**11-388-118D**	12 Pr./120.42	4 Pk./411.

ChemGrip* Neoprene Gloves

Offer superior durability and protection from a wide range of chemicals

19-148-383

- Smooth finish gloves are available with knitwrist or 12" (30cm) gauntlet
- Multi-dipped rough finish gauntlets offer excellent grip and cut resistance; available in 12 or 14" (30 or 36cm) lengths
- Fully coated and interlock-lined

Type	Mfr. No.	Cat. No.	Pack of 12 Pair	Ca
Smooth Finish				
Knitwrist	8615	**19-148-382**	67.09	6 Pk./35
12" long (30cm) Gauntlet	8630	**19-148-383**	85.88	6 Pk./45
Multi-Dipped Rough Finish				
12" long (30cm) Gauntlet	8630R	**19-148-380**	110.59	6 Pk./56
14" long (36cm) Gauntlet	8640R	**19-148-381**	——	72 Pr./74

*Trademark. See Trademark Reference.

Prices subject to change.

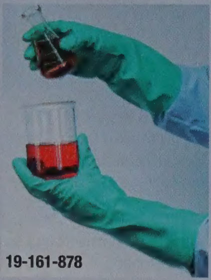
NITRILE

Fisherbrand* Diamond Grip* Nitrile Gloves

Excellent grip with wet and dry applications

Acceptable for use in both food and pharmaceutical applications.

- Unsupported nitrile
- Embossed raised-diamond pattern on the palm and fingers
- Size is embossed on each glove
- Color: green


19-161-878

COMPLIANCE:
Manufactured using ISO* 9002:2001 certified processes. Gloves are made using only listed materials and levels outlined in 21 CFR 170–199.

Size	Cat. No.	Pack of 12 Pair	Case of
Medium weight, Unlined, 13" long (33cm), 14mil thick			
Small (7)	**19-161-876**	25.73	12 Pk./262.53
Medium (8)	**19-161-878**	25.73	12 Pk./262.53
Large (9)	**19-161-877**	25.73	12 Pk./262.53
X-Large (10)	**19-161-879**	25.73	12 Pk./262.53
Medium weight, Flock lined, 13" long (33cm), 16mil thick			
Small (7)	**19-161-866**	30.09	12 Pk./307.04
Medium (8)	**19-161-867**	30.09	12 Pk./307.04
Large (9)	**19-161-868**	30.09	12 Pk./307.04
X-Large (10)	**19-161-869**	30.09	12 Pk./307.04
XX-Large (11)	**19-161-870**	30.09	12 Pk./307.04
Heavyweight, Unlined, 15" long (38cm), 22mil thick			
Large (9)	**19-161-871**	145.02	2 Pk./247.89
X-Large (10)	**19-161-872**	145.02	2 Pk./247.89
Heavyweight, Unlined, 17" long (43cm), 22mil thick			
Medium (8)	**19-161-874**	185.08	----
Large (9)	**19-161-875**	185.08	----
X-Large (10)	**19-161-873**	185.08	2 Pk./316.38

Fisherbrand* Powder-Free Nitrile Exam Gloves

Exceptional durability and puncture resistance

Softer formulation offers exceptional fit and feel.

19-130-1597C

- Latex-free nitrile construction
- Textured surface ensures excellent grip
- Beaded cuff for easier donning
- Nonsterile, ambidextrous
- Length: 9½" (24cm)
- Thickness at fingertip: 5.5mil
- Color: blue

COMPLIANCE:
Meets ASTM* F1671.

Size	Cat. No.	Pack of 100	Case of 10 Pk.
X-Small	**19-130-1597A**	17.47	154.60
Small	**19-130-1597B**	17.47	154.60
Medium	**19-130-1597C**	17.47	154.60
Large	**19-130-1597D**	17.47	154.60
X-Large	**19-130-1597E**	17.47	154.60
XX-Large	**19-130-1597F**	17.60	155.75

Fisherbrand* Powder-Free Nitrile Exam Gloves with Aloe

Coated with aloe to help moisturize and soothe dry, chapped hands

Offer superior puncture and chemical resistance.

19-050-550B

- Unique,100% latex-free, odor-free synthetic formulation reduces hand fatigue
- Textured surface for superior grip
- Nonsterile and ambidextrous
- Length: 9½" (24cm)
- Thickness: 5-6mil
- Color: green

COMPLIANCE:
Medically cleared 510K. Meets ASTM* Standard D 3578 for critical defects.

Size	Cat. No.	Pack of 100	Case of 10 Pk.
Small	**19-050-550A**	20.76	183.73
Medium	**19-050-550B**	20.76	183.73
Large	**19-050-550C**	20.76	183.73
X-Large	**19-050-550D**	20.76	183.73

Ansell* Sol-Vex* Nitrile Gloves

Embossed texture improves grip for easier handling of wet and slippery objects

Ideal for numerous applications involving chemical processing, oil refining, petrochemicals, food processing, and aerospace and automotive degreasing, as well as furniture and battery manufacturing. Strong and chemical resistant—will not weaken or swell in many solvents, caustics, or animal fats.

11-391-139C

- Nitrile construction protects against abrasions, cuts, snags, and punctures
- Curved finger design and contoured palm help reduce fatigue
- Full cut for easy donning and doffing
- Contain no protein allergens
- Will not promote contact dermatitis
- Color: dark green

COMPLIANCE:
Approved for direct food contact.

Contd. on next page.

Ansell* Sol-Vex* Nitrile Gloves, Contd.

Size	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of
13" Long (33cm), 11mil Thick				
6	37 145 6	**11-391-136A**	32.05	12 Pk./328.74
7	37 145 7	**11-391-136B**	32.05	12 Pk./328.74
8	37 145 8	**11-391-136C**	32.05	12 Pk./328.74
9	37 145 9	**11-391-136D**	32.05	12 Pk./328.74
10	37 145 10	**11-391-136E**	32.05	12 Pk./328.74
11	37 145 11	**11-391-136F**	32.05	12 Pk./328.74
13" Long (33cm), 15mil Thick				
7	37 155 7	**11-391-137A**	37.22	12 Pk./381.77
8	37 155 8	**11-391-137B**	37.22	12 Pk./381.77
9	37 155 9	**11-391-137C**	37.22	12 Pk./381.77
10	37 155 10	**11-391-137D**	37.22	12 Pk./381.77
11	37 155 11	**11-391-137E**	37.22	12 Pk./381.77
13" Long (33cm), 15mil Thick, Flock-Lined				
6	37 175 6	**11-391-139A**	36.53	12 Pk./374.70
7	37 175 7	**11-391-139B**	36.53	12 Pk./374.70
8	37 175 8	**11-391-139C**	36.53	12 Pk./374.70
9	37 175 9	**11-391-139D**	36.53	12 Pk./374.70
10	37 175 10	**11-391-139E**	36.53	12 Pk./374.70
11	37 175 11	**11-391-139F**	36.53	12 Pk./374.70
15" Long (38cm), 22mil Thick				
7	37 165 7	**11-391-138A**	——	72 Pr./714.84
8	37 165 8	**11-391-138B**	130.28	6 Pk./668.09
9	37 165 9	**11-391-138C**	130.28	6 Pk./668.09
10	37 165 10	**11-391-138D**	130.28	6 Pk./668.09
11	37 165 11	**11-391-138E**	130.28	6 Pk./668.09
18" Long (46cm), 22mil Thick				
7	37 185 7	**11-391-140A**	164.34	----
8	37 185 8	**11-391-140B**	164.34	----
9	37 185 9	**11-391-140C**	164.34	----
10	37 185 10	**11-391-140D**	164.34	----
11	37 185 11	**11-391-140E**	164.34	----

Best* N-DEX* Accelerator-Free Nitrile Gloves

Designed to minimize allergic reactions

19-170-357D

Accelerator-free disposable nitrile gloves are perfect for laboratory, pharmaceutical, or industrial tasks. Ideal for jobs requiring high visibility, quick identification.

- Nitrile construction contains no natural rubber latex, nor problem-causing accelerators
- Durable, puncture-resistant
- Available in smooth- or textured-finger styles
- Powder-free, ambidextrous
- Color: green

COMPLIANCE:

Comply with FDA 21CFR and NFPA 1999 standards.

Size	Mfr. No.	Cat. No.	Pack of	Case of 20 Pk.
9½" (24cm) Long, 4mil, Textured Fingers				
X-Small	7705PFTXS	**19-170-357A**	100/16.63	290.06
Small	7705PFTS	**19-170-357B**	100/16.63	290.06
Medium	7705PFTM	**19-170-357C**	100/16.63	290.06
Large	7705PFTL	**19-170-357D**	100/16.63	290.06
X-Large	7705PFTXL	**19-170-357E**	100/16.63	290.06
11" (28cm) Long, 5mil, Smooth Fingers				
Small	9500PFSM	**19-130-3710**	50/16.16	286.09
Medium	9500PFMD	**19-130-3711**	50/16.16	286.09
Large	9500PFLG	**19-130-3712**	50/16.16	286.09
X-Large	9500PFXL	**19-130-3713**	50/16.16	286.09

Best* N-DEX* Clinical and Medical Nitrile Gloves

Ideal gloves for patient contact

11-394-115

- Powder-free and free of natural rubber proteins
- Ambidextrous
- Single-use
- Color: blue

ORDERING INFORMATION:

Style 6005PF and 9005PF are packaged in dispenser packs; style B6005PF packaged in resealable polybags. Suitable for use with certain cytotoxic drugs (call your Fisher Scientific Customer Service Representative for detail

COMPLIANCE:

Meet FDA requirements for Class I Medical Device and 21CFR Part 800 recommendation.

Size	Mfr. No.	Cat. No.	Pack of	Case o
Powder-Free, 9½" Long (24cm), 4mil Thick (Style 6005PF)				
X-Small	6005PFXS	**19-120-2415A**	100/30.77	20 Pk./544.5
Small	6005PFS	**19-120-2415B**	100/30.77	20 Pk./544.5
Medium	6005PFM	**19-120-2415C**	100/30.77	20 Pk./544.5
Large	6005PFL	**19-120-2415D**	100/30.77	20 Pk./544.5
X-Large	6005PFXL	**19-120-2415E**	100/30.77	20 Pk./544.5
Powder-Free, 9½" Long (24cm), 4mil Thick (Style B6005PF)				
X-Small	B6005PFXS	**19-120-2523A**	100/23.79	20 Pk./421.0
Small	B6005PFS	**19-120-2523B**	100/23.79	20 Pk./421.0
Medium	B6005PFM	**19-120-2523C**	100/23.79	20 Pk./421.0
Large	B6005PFL	**19-120-2523D**	100/23.79	20 Pk./421.0
X-Large	B6005PFXL	**19-120-2523E**	100/23.79	20 Pk./421.0
Long-Cuff, Powder-Free, 11" Long (28cm), 6mil Thick (Style 9005PF)				
X-Small	9005PFXS	**11-394-115A**	50/52.78	6 Pk./280.2
Small	9005PFS	**11-394-115B**	50/52.78	6 Pk./280.2
Medium	9005PFM	**11-394-115C**	50/52.78	6 Pk./280.2
Large	9005PFL	**11-394-115D**	50/52.78	6 Pk./280.2
X-Large	9005PFXL	**11-394-115E**	50/52.78	6 Pk./280.2

Best* N-DEX* Nitrile Laboratory and Industrial Gloves

Provide chemical resistance when exposed to intermittent splashing

11-395-19B

- Lightly powdered nitrile with a nontalc vegetable starch
- Ambidextrous
- Single-use
- Length: 9½" (24cm)
- Color: blue

NOTE:

Intended for laboratory occupational safety use only; not designed for patient contact.

Size	Mfr. No.	Cat. No.	Pack of	Case of 20 P
Style 7005, 4mil Thick				
Small	7005S	**11-395-19A**	100/18.47	326.
Medium	7005M	**11-395-19B**	100/18.47	326.
Large	7005L	**11-395-19C**	100/18.47	326.
X-Large	7005XL	**11-395-19D**	100/18.47	326.
XX-Large	7005XXL	**11-395-19E**	100/18.60	329.
Style 8005, 8mil Thick				
Small	8005S	**11-388-88A**	50/22.88	404.
Medium	8005M	**11-388-88B**	50/22.88	404.
Large	8005L	**11-388-88C**	50/22.88	404.
X-Large	8005XL	**11-388-88D**	50/22.88	404.

*Trademark. See Trademark Reference.

Prices subject to change.

Best* N-DEX* Ultimate Nitrile Gloves

Gloves relax to conform exactly to the hand within minutes after donning

19-120-216C

Excellent barrier protection against bacteriophage phi X-174. Class I Medical Device.

- Hypoallergenic nitrile contains no natural rubber latex proteins, phthalates or silicones
- Splash- and puncture-resistant
- Rolled cuffs
- Powered or powder-free, single-use
- Length: 11" (28cm)
- Thickness: 6mil
- Color: blue

Size	Mfr. No.	Cat. No.	Pack of	Case of
Powder-Free Nonsterile in Dispenser Pack (Style 9905PF)				
Small	9905PFS	**19-120-216A**	50/19.48	20 Pk./344.81
Medium	9905PFM	**19-120-216B**	50/19.48	20 Pk./344.81
Large	9905PFL	**19-120-216C**	50/19.48	20 Pk./344.81
X-Large	9905PFXL	**19-120-216D**	50/19.48	20 Pk./344.81
Powder-Free Nonsterile in Resealable Polybag (Style B9905PF)				
X-Small	B9905PFXS	**19-120-2524E**	50/19.79	20 Pk./350.25
Small	B9905PFS	**19-120-2524A**	50/19.79	20 Pk./350.25
Medium	B9905PFM	**19-120-2524B**	50/19.79	20 Pk./350.25
Large	B9905PFL	**19-120-2524C**	50/19.79	20 Pk./350.25
X-Large	B9905PFXL	**19-120-2524D**	50/19.79	20 Pk./350.25
Sterile and Powder-Free (Style S9905PF)				
Small	S9905PFS	**19-048-640A**	25/50.00	4 Pk./176.96
Medium	S9905PFM	**19-048-640B**	25/50.00	4 Pk./176.96
Large	S9905PFL	**19-048-640C**	25/50.00	4 Pk./176.96
X-Large	S9905PFXL	**19-048-640D**	25/50.00	4 Pk./176.96
Lightly Powdered Nonsterile in Dispenser Pack (Style 9905)				
Small	9905S	**11-394-117A**	50/13.85	20 Pk./254.22
X-Large	9905XL	**11-394-117D**	50/13.85	20 Pk./254.22

Cardinal Health* Esteem* Stretchy Powder-Free Nitrile Exam Gloves

Firm, nonslip grip

Esteem Stretchy Nitrile
Textured
L

19-120-2942C

- Unique stretchy nitrile formulation for greater comfort; contain no natural rubber
- Puncture-resistant
- Textured fingers for superior grip
- Beaded cuff resists tearing and minimizes cuff rolldown
- Nominal length: 9½" (24cm)
- Thickness: 6.8mil
- Color: blue

COMPLIANCE:

Meet or exceed ASTM* D 6319 for physical properties.

Size	Mfr. No.	Cat. No.	Pack of	Case of 10 Pk.
X-Small	8815N	**19-120-2942A**	100/27.71	213.10
Small	8816N	**19-120-2942B**	100/27.71	213.10
Medium	8817N	**19-120-2942C**	100/27.71	213.10
Large	8818N	**19-120-2942D**	100/27.71	213.10
X-Large	8819N	**19-120-2942E**	90/27.71	213.10
XX-Large	8819NXX	**19-120-2942F**	90/28.37	216.38

Cardinal Health* Esteem* Nitrile Gloves with Neu-Thera*

Combine comfort and a precision fit with excellent puncture resistance

Designed for and tested by health-care professionals, these gloves are more than just a moisturizer—they are clinically proven to improve the health of your skin.

- Protect hands from moisture loss
- With beaded cuffs and fully textured
- Powder-free, nonsterile

Esteem with Neu-Thera
XS

19-165-500A

- Average length: 10¼" (26cm)
- Fingertip thickness: 5.9mil
- Color: blue

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
X-Small	N88RX01T	**19-165-500A**	19.92	192.48
Small	N88RX02T	**19-165-500B**	19.92	192.48
Medium	N88RX03T	**19-165-500C**	19.92	192.48
Large	N88RX04T	**19-165-500D**	19.92	192.48
X-Large	N88RX05T	**19-165-500E**	19.92	192.48
XX-Large	N88RX06T	**19-165-500F**	19.92	192.48

Cardinal Health* Esteem* XP Stretchy Powder-Free Nitrile Exam Gloves

Longer length for extra protection

Gloves typically used for tasks involving prolonged exposure to blood, body fluids, chemotherapeutic agents, surgical instrument cleaning solutions and other chemicals. Contain no natural rubber latex.

19-120-2943C

- Made of nitrile
- Puncture-resistant
- Textured fingertips
- Beaded cuff
- Ambidextrous
- Nominal length: 11½" (29cm)
- Thickness: 8.5mil
- Color: blue

COMPLIANCE:

Pass ASTM* F 1671 (standard test method for resistance of materials used in protective clothing to penetration by bloodborne pathogens using Phi-X174 bacteriophage penetration system).

Size	Mfr. No.	Cat. No.	Pack of 50	Case of 10 Pk.
X-Small	N8850XP	**19-120-2943A**	26.40	204.36
Small	N8851XP	**19-120-2943B**	26.40	204.36
Medium	N8852XP	**19-120-2943C**	26.40	204.36
Large	N8853XP	**19-120-2943D**	26.40	204.36
X-Large	N8854XP	**19-120-2943E**	26.40	204.36

WARNING

These products contain natural rubber latex, a component of which may cause allergic reaction in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these products.

Kimberly-Clark* Purple Nitrile* and Purple Nitrile-XTRA* Exam Gloves

Unique purple color distinguishes these gloves from latex and other synthetic gloves

Contain no natural rubber latex proteins, low levels of chemical allergens.

- Nitrile gloves protect against a broad range of chemicals
- Provide excellent tactile sensitivity
- Textured fingertips enhance wet and dry grip
- Powder- and odor-free
- Single-use

19-149-863B

ORDERING INFORMATION:

Purple Nitrile sold in 100 gloves per pack; X-Large has 90 gloves per pack. Purple Nitrile-XTRA sold in 50 gloves per pack.

COMPLIANCE:

Made in accordance with ISO 9002 and exceed ASTM* D 6319 standard (AQL-1.5). Meets FDA requirement for Class I medical device.

Size	Mfr. No.	Cat. No.	Pack of	Case of 10 Pk.
Purple Nitrile, 9½" Long (24cm)				
X-Small	55080	**19-149-863**	100/23.22	198.42
Small	55081	**19-149-863A**	100/23.22	198.42
Medium	55082	**19-149-863B**	100/23.22	198.42
Large	55083	**19-149-863C**	100/23.22	198.42
X-Large	55084	**19-149-863D**	90/23.22	198.42
Purple Nitrile-XTRA 12" Long (30cm)				
X-Small	55090	**19-149-864**	50/25.86	171.89
Small	50601	**19-149-864A**	50/25.86	171.89
Medium	50602	**19-149-864B**	50/25.86	171.89
Large	50603	**19-149-864C**	50/25.86	171.89
X-Large	50604	**19-149-864D**	50/25.86	171.89

Kimberly-Clark* Sterling* Nitrile Gloves

NEW

Excellent tactile sensitivity

Offer superior barrier protection.

- Latex gloves
- Textured fingertips
- Beaded cuff
- Powder-free
- Nonsterile
- Ambidextrous
- Length: 9½" (24cm)
- Thickness: 3.5mil
- Color: gray

19-161-590C

Size	Mfr. No.	Cat. No.	Pack of	Case of 10 Pk.
X-Small	55085	**19-161-590A**	150/30.72	262.56
Small	55086	**19-161-590B**	150/30.72	262.56
Medium	55087	**19-161-590C**	150/30.72	262.56
Large	55088	**19-161-590D**	150/30.72	262.56
X-Large	55089	**19-161-590E**	150/30.72	262.56

Marigold* Triple-Dipped Nitrile-Over-Latex Gloves

Comfortable, sure grip

Nitrile over two dips of natural latex provides broad-range chemical resistance. Liquidproof.

- Flock lining (100% cotton) for comfortable wear
- Honeycomb pattern in palm allows sure grip
- Rolled cuffs offer easy donning and doffing
- Length: 12" (30cm)

19-161-845

- Thickness: 24mil
- Color: two-tone yellow

Size	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
Small	50-N2420GY/S	**19-161-843**	23.18	236.59
Medium	50-N2420GY/M	**19-161-844**	23.18	236.59
Large	50-N2420GY/L	**19-161-845**	23.18	236.59
X-Large	50-N2420GY/XL	**19-161-846**	23.18	236.59

Microflex* Supreno* Powder-Free Nitrile Exam Gloves

NEW

Durable nitrile for improved elasticity and greater comfort

Made from 100% nitrile to alleviate potential for adverse reactions associated with natural latex protein.

- Provide unparalleled strength, durability and comfort
- Interior polymer coating provides easy donning
- Textured fingers ensures consistent grip

SUPRENO SE
XL
MICROFLEX

19-048-723D

SUPRENO EC
XL
MICROFLEX

19-051-314E

Supreno SE

- Length: 9½" (24cm)
- Fingertip Thickness: 8.7mil
- Color: blue

Supreno EC

- For higher risk environments
- Length: 11½" (29cm)
- Fingertip Thickness: 7.9mil
- Color: blue

COMPLIANCE:

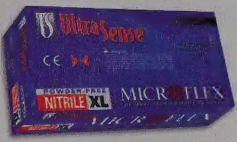
Supreno SE meets or exceeds current ASTM* standards. Supreno EC meets or exceeds the emergency medical glove requirements of NFPA 1999 Standard on protective clothing for Emergency Medical Operations, 2003 edition.

Size	Mfr. No.	Cat. No.	Pack of	Case of 10 Pk.
Supreno SE				
X-Small	SU690XS	**19-048-723AA**	100/29.60	266.40
Small	SU690S	**19-048-723A**	100/29.60	266.40
Medium	SU690M	**19-048-723B**	100/29.60	266.40
Large	SU690L	**19-048-723C**	100/29.60	266.40
X-Large	SU690XL	**19-048-723D**	100/29.60	266.40
Supreno EC				
Small	SEC-375-S	**19-051-314A**	50/12.54	112.90
Medium	SEC-375-M	**19-051-314B**	50/12.54	112.90
Large	SEC-375-L	**19-051-314C**	50/12.54	112.90
X-Large	SEC-375-XL	**19-051-314D**	50/12.54	112.90
XX-Large	SEC-375-XXL	**19-051-314E**	50/12.54	112.90

licroflex* Ultra Sense* Powder-Free litrile Exam Gloves

NEW

ltra soft fit and feel



19-167-032E

igh quality nitrile offers reliable arrier protection against many azards and infectious substances.

- Patented ultra soft nitrile provides the fit and feel of latex
- Textured fingers provide outstanding grip in wet and dry environments
- Beaded cuff for easy donning and doffing
- Nonsterile, ambidextrous, single-use
- Length: 9½" (24cm)
- Fingertip Thickness: 4.7mil
- Color: blue

OMPLIANCE:
loves meet ASTM* D 6319 standards.

ize	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
-Small	US-220-XS	**19-167-032A**	29.13	285.92
mall	US-220-S	**19-167-032B**	29.13	285.92
ledium	US-220-M	**19-167-032C**	29.13	285.92
arge	US-220-L	**19-167-032D**	29.13	285.92
-Large	US-220-XL	**19-167-032E**	29.13	285.92

IP* Assurance* Nitrile Gloves

rovide superior resistance to physical hazards

oves provide resistance to cut, incture, snag and abrasion and many iemical hazards, including solvents and l-based chemicals.

- Raised diamond grip
- Available with flock lining or unlined
- Length: 13" (33cm)
- Thickness: 15mil

19-161-852

19-161-850

OMPLIANCE:
mply with FDA Regulations for Food ontact. 21CFR 170-199.

ze	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
ock-Lined				
nall	50-N160B/S	**19-161-848**	25.66	261.88
edium	50-N160B/M	**19-161-849**	----	297.40
irge	50-N160B/L	**19-161-850**	25.66	261.88
Large	50-N160B/XL	**19-161-851**	25.66	261.88
lined				
nall	50-N140B/S	**19-161-864**	25.81	263.43
edium	50-N140B/M	**19-161-865**	25.81	263.43
rge	50-N140B/L	**19-161-852**	25.81	263.43
Large	50-N140B/XL	**19-161-853**	25.81	263.43

WARNING
These products contain natural rubber latex, a compound of which may cause allergic reaction in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these products.

North* Chemsoft Industrial Nitrile Gloves

Demonstrate superior stretch—up to 59% more than traditional industrial-weight nitrile gloves

Provide excellent resistance to chemical permeation, cuts, snags and abrasions.

19-045-426D

- Nitrile construction offers no hand fatigue usually associated with industrial-weight gloves
- Curved-hand shape offers more natural fit
- Features textured sandblast finish
- Flock-lined with straight cuff
- Hand specific, nonsterile
- Length: 13" long (33cm)
- Thickness: 15mil
- Color: royal blue

Size	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
Flock-lined				
7	CS153B 7	**19-045-426A**	28.70	294.41
8	CS153B 8	**19-045-426B**	28.70	294.41
9	CS153B 9	**19-045-426C**	28.70	294.41
10	CS153B 10	**19-045-426D**	28.70	294.41
11	CS153B 11	**19-045-426E**	28.70	294.41
Unlined				
10	CS113B/10	**19-045-425D**	----	311.04

North* Grip N* Nitrile Gloves

Nitrile N-Tread* coating improves grip, abrasion resistance and durability

Ideal for use in automotive assembly, general maintenance work, light assembly, manufacturing, and small parts handling.

19-025-813

- Seamless construction provides superior comfort and lessens hand fatigue
- Blended cotton/polyester knit shell absorbs perspiration
- Ambidextrous design provides flexibility
- Can be laundered or dry cleaned with minimal shrinkage

Size	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
Women's Universal Size	79/1191S	**18-999-2491**	27.79	285.00
Men's Universal Size	79/1191M	**19-025-813**	29.48	302.40

WARNING
These products contain natural rubber latex, a compound of which may cause allergic reaction in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these products.

Safety Choice* Powder-Free Nitrile Exam Gloves

Seal polymer nitrile is powder-free, odorless, and 100% latex-free

- Textured fingers offer exceptional wet and dry gripping
- Beaded cuff resists tears and eases donning
- Ambidextrous
- Single-use
- Color: blue

19-170-010B

COMPLIANCE:
Manufactured under good manufacturing practices (GMP) and are internationally accepted.

Size	Cat. No.	Pack of 100	Case of 10 Pk.
Small	**19-170-010A**	12.60	107.70
Medium	**19-170-010B**	12.60	107.70
Large	**19-170-010C**	12.60	107.70
X-Large	**19-170-010D**	12.60	107.70

LATEX

*Fisherbrand** Flock-Lined Heavyweight Latex Gloves

Ideal for use in hospitals, municipalities, laboratories, and the electronics industry

Liquidproof gloves have a high resistance to water-based chemicals.

- Provide moderate insulation against hot and cold
- Feature a roughened sandblast finish for excellent grip in damp conditions
- Cotton-flock lined for comfort
- With fluted cuffs
- Hand specific
- Length: 12¾"
- Thickness: 30mil
- Color: orange

19-816-846

ORDERING INFORMATION:
Individually polybagged pairs.

COMPLIANCE:
Materials conform to USDA specifications.

Size	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
Small	**19-816-847**	24.90	254.08
Medium	**19-816-846**	24.90	254.08
Large	**19-816-845**	24.90	254.08
X-Large	**11-128-17D**	24.90	254.08

WARNING
These products contain natural rubber latex, a component of which may cause allergic reaction in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these products.

*Fisherbrand** Powdered and Powder-Free Latex Exam Gloves

Provide a watertight barrier for protection from infectious materials

Flexible, durable, and comfortable. Ideal for medical, laboratory and industrial applications.

- Gloves made of surgical-quality natural rubber latex
- Puncture- and tear-resistant with textured fingers
- Beaded cuff promotes easy donning
- Powdered gloves are lghtly dusted with USP absorbable dusting powder
- Powder-free gloves are fully textured for excellent gripping power
- Ambidextrous, nonsterile, single-use
- Length: 9½" (24cm)
- Thickness: 6mil
- Color: white

11-394-4B

Size	Cat. No.	Pack of 100	Case of 10 Pk.
Powdered			
X-Small	**11-394-4AA**	24.26	214.62
Small	**11-394-4A**	24.26	214.62
Medium	**11-394-4B**	24.26	214.62
Large	**11-394-4C**	24.26	214.62
X-Large	**11-394-4D**	24.26	214.62
Powder-Free			
Small	**11-394-5A**	35.65	315.51
Medium	**11-394-5B**	35.65	315.51
Large	**11-394-5C**	35.65	315.51
X-Large	**11-394-5D**	35.65	315.51

*Fisherbrand** Powder-Free Latex Gloves with Aloe

Help prevent chapped and cracked hands caused by moisture loss

Gloves are coated inside with a soothing, skin-protecting aloe vera gel. Contain ≤50µg/g of total water-extracted protein, reducing the risk of latex allergies.

- Fully textured
- Ambidextrous
- Nonsterile
- Length: 9½" (24cm)
- Thickness: 5-6mil
- Color: natural

19-050-548B

COMPLIANCE:
Medically cleared 510K. Meet ASTM* Standard D 3578 for critical defects.

Size	Cat. No.	Pack of 100	Case of 10 Pk.
Small	**19-050-548A**	19.70	174.27
Medium	**19-050-548B**	19.70	174.27
Large	**19-050-548C**	19.70	174.27
X-Large	**19-050-548D**	19.70	174.27

*Fisherbrand** Powdered and Powder-Free Latex Medical Gloves

Medical-grade latex gloves also suit laboratory and industrial applications

19-020-557B

Gamma sterilized gloves. Total extractable protein per gram: <100µg (powdered); <50µg (powder-free).

- Micro-textured for enhanced grip control
- Beaded cuff ensures easy donning and doffing
- Available with absorbent dusting powder USP or powder-free and lightly chlorinated
- Hand-specific natural rubber gloves
- Length: 11.6" (29.5cm)
- Thickness: 8.8mil
- Color: natural

COMPLIANCE:
Manufactured in accordance with FDA Good Manufacturing Practices.

Size	Cat. No.	Pack of 50 Pair	Case of 4 Pk.
Powdered			
6	**19-020-557B**	38.75	131.83
6½	**19-020-557C**	38.75	131.83
7	**19-020-557D**	38.75	131.83
7½	**19-020-557E**	38.75	131.83
8	**19-020-557F**	38.75	131.83
8½	**19-020-557G**	38.75	131.83
9	**19-020-557H**	38.75	131.83
Powder-free			
6	**19-020-558B**	53.82	183.08
6½	**19-020-558C**	53.82	183.08
7	**19-020-558D**	53.82	183.08
7½	**19-020-558E**	53.82	183.08
8	**19-020-558F**	53.82	183.08
8½	**19-020-558G**	53.82	183.08
9	**19-020-558H**	53.82	183.08

nsell* Orange Heavyweight Latex Gloves

uperior tensile strength and sensitivity

19-014-477

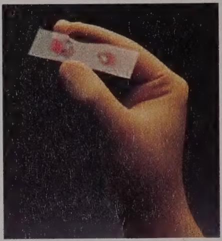
loves resist acids, ketones, salts, etergents, alcohols, alkalis, and fats. leal for fishing, chemical processing, griculture, petroleum refining, plant aintenance, heavy equipment ssembly, and cleanup.

- Made from unsupported natural latex
- Offer abrasion, puncture, and tear resistance
- With extra-heavy-duty, cotton, flock-lining
- Length: 13" (33cm)
- Thickness: 29mil
- Color: orange

ize	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
	208 7	**19-014-476**	33.09	339.35
	208 8	**19-014-477**	33.09	339.35
	208 9	**19-014-478**	33.09	339.35
0	208 10	**19-014-479**	33.09	339.35

Ansell* AccuTech* 870 Sterile Latex Surgical Gloves

Ideal for pharmaceutical applications, sterile laboratory analysis, and technical work


19-014-641

Gloves undergo 100% electronic testing for pinholes. Gamma irradiation ensures sterility without EtO toxic residue.

- Bisque surface for excellent wet or dry grip
- With straight cuff
- Powder-free
- Length, 12" (30cm)
- 8mil thick at fingertips for sensitive touch
- 11mil at cuff for superior strength and tear resistance
- Color: natural

ORDERING INFORMATION:
Packed one pair per sterile package.

COMPLIANCE:
Meet or exceed ASTM* 3598-91 requirements.

Size	Mfr. No.	Cat. No.	Pack of 20 Pair	Case of 6 Pk.
6	870 6	**19-014-637**	37.91	194.42
6½	870 6 5	**18-999-2964**	37.91	194.42
7	870 7	**19-014-641**	37.91	194.42
7½	870 7 5	**19-014-643**	37.91	194.42
8	870 8	**19-014-644**	37.91	194.42
8½	870 8 5	**18-999-2668**	37.91	194.42
9	870 9	**18-999-2969**	37.91	194.42

Ansell* Latex Canners and Handlers* Gloves

Unlined industrial latex gloves

11-391-135B

Ideal for food processing, small parts assembly, pharmaceutical manufacturing, and plant maintenance. Chemical resistant to acids, detergents, salts, caustics, and alcohols. Gloves provide excellent dexterity, tensile strength, and elasticity.

- Made from 100% unsupported natural latex
- Resistant to tearing, abrasion and vegetable oil
- Available with embossed pattern or "pebble" design for excellent grip on wet or dry surfaces
- Length: 12" long (30cm)
- Thickness: 20mil
- Color: yellow

COMPLIANCE:
Component materials comply with 21CFR177.2600 for food contact.

Size	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
Pebble Pattern (Style 392)				
7	392 7	**11-391-135A**	15.51	159.07
8	392 8	**11-391-135B**	15.51	159.07
9	392 9	**11-391-135C**	15.51	159.07
10	392 10	**11-391-135D**	15.51	159.07
11	392 11	**11-391-135E**	15.51	159.07
Embossed Pattern (Style 394)				
7	394 7	**11-394-94A**	15.51	159.07
8	394 8	**11-394-94B**	15.51	159.07
9	394 9	**11-394-94C**	15.51	----
10	394 10	**11-394-94D**	15.51	159.07

Cardinal Health* Insta-Gard* Powdered Latex Exam Gloves

Fitted cuff for superior fit

Lightweight gloves provide protection without losing comfort. Feature a natural latex formulation.

- Beaded cuff
- Ambidextrous
- Length: 9⅛" (23cm)
- Thickness: 7.5mil
- Color: natural

COMPLIANCE:
Meet ASTM* D3578 requirements.

19-130-3453B

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 20 Pk.
Small	8826	**19-130-3453A**	16.57	301.60
Medium	8827	**19-130-3453B**	16.57	301.60
Large	8828	**19-130-3453C**	16.57	301.60

Cardinal Health* Sterile Multi-Flex* Latex Gloves with Bisque Finish

Protect against gross particulate contamination

Ideal for controlled environments or the research lab. Sterility Assurance level of 10^{-6}.

- Independent thumb configuration and tapered fingers for a better fit
- Antislip finish provides firm grip
- Special tapered cuff with reinforced ribs negate slipping during heavy use
- Powder-free
- Hand-specific
- Length: 12" (31cm)
- Thickness: 7mil
- Color: tan

19-120-2962

ORDERING INFORMATION:
Individually pair packaged.

COMPLIANCE:
Meet ASTM* D 3577 for physical property requirements.

Size	Mfr. No.	Cat. No.	Case of 200 Pair
5.5	2Y1420T	**19-120-2959**	533.26
6	2Y1421T	**19-120-2960**	533.26
6.5	2Y1422T	**19-120-2961**	533.26
7	2Y1423T	**19-120-2962**	533.26
7.5	2Y1424T	**19-120-2963**	533.26
8	2Y1425T	**19-120-2964**	533.26
8.5	2Y1426T	**19-120-2965**	533.26
9	2Y1427T	**19-120-2966**	533.26

LOOKING FOR MORE?

See the whole latex glove line on our Web site.

Visit www.fishersci.com and search for Latex

Cardinal Health* Positive Touch* Gloves with Neu-Thera*

Designed for and tested by healthcare professionals

Clinically proven to improve the health of your skin. Soothe dry, flaky and irritated skin; moisturize skin for deep-down relief. Neu-Thera formulation includes the same complex ingredients found in physician-recommended hand lotions.

- Fully bisque exterior provides secure grip
- Powder-free, ambidextrous, nonsterile, single-use
- Average length: 10" (25.4cm)
- Fingertip thickness: 6.3mil
- Color: tan

19-130-1899C

COMPLIANCE:
AQL specification of 1.5, 510K cleared, Passes ASTM* F 1671for bacteriophage penetration test. Meet or exceed ASTM D 3578. Pass ASTM F 739; results available upon request.

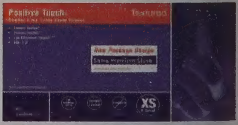
Size	Mfr. No.	Cat. No.	Pack of	Case of 10 Pk.
X-Small	L88RX01	**19-130-1899A**	100/24.97	192.13
Small	L88RX02	**19-130-1899B**	100/24.97	192.13
Medium	L88RX03	**19-130-1899C**	100/24.97	192.13
Large	L88RX04	**19-130-1899D**	100/24.97	192.13
X-Large	L88RX05	**19-130-1899E**	90/24.97	192.13

Cardinal Health* Positive Touch* Powder-Free Latex Ambi Exam Gloves

Double coated for easier donning

NEW

Lightweight exam gloves offer excellent barrier protection without sacrificing comfort. Superior fit and feel while providing tactile sensitivity, durability and sure grip on everything from wet surfaces to even the smallest instruments.



19-130-2608A

- Textured
- Beaded cuff
- Ambidextrous
- Nominal length: 9½" (24cm)
- Thickness: 7.8mil
- Color: natural

COMPLIANCE:
Exceed ASTM* D 3578 freedom from holes requirements.

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
X-Small	8835	**19-130-2608A**	17.55	156.04
Small	8836	**19-130-2608B**	17.55	156.04
Medium	8837	**19-130-2608C**	17.55	156.04
Large	8838	**19-130-2608D**	17.55	156.04
X-Large	8839	**19-130-2608E**	17.55	156.04

WARNING

These products contain natural rubber latex, a component of which may cause allergic reaction in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these products.

imberly-Clark* PFE* Latex Powder-Free xam Gloves

rocessed to reduce contact sensitizers and rotein allergens

edical grade, exceptionally durable oves reduce problems caused by ove powder, and offer a mfortable fit.

Textured
Beaded cuffs
Ambidextrous
Single-use
Length: 9½" (24cm)
Fingertip thickness: 6mil
Color: natural

19-166-108

OMPLIANCE:
eet or exceed ASTM* D 3578. (AQL 1.5). Manufactured in an ISO 9002 rtified facility. Meets FDA requirements for Class I medical device.

ze	Mfr. No.	Cat. No.	Pack of	Case of 10 Pk.
-Small	57110-10	**19-166-105**	100/22.00	200.00
nall	57220-10	**19-166-106**	100/22.00	200.00
edium	57330-10	**19-166-107**	100/22.00	200.00
rge	57440-10	**19-166-108**	100/22.00	200.00
-Large	57440-10	**19-166-109**	90/22.00	200.00

imberly-Clark* Satin Plus* Latex PFE loves

anufactured in an ISO 9002 certified facility

oves eliminate risk of powder-induced boratory assay interference infection used by contaminated glove powder.

Latex construction offers excellent barrier protection
Smooth finish provides superior tactile sensitivity
Beaded cuffs offer added strength and make donning easier
Powder-free, ambidextrous, single-use
Length: 9½" (24cm)
Fingertip thickness: 6mil
Color: natural

11-391-147D

OMPLIANCE:
QL 1.5. Meet FDA requirement for Class I medical device. Meet or exceed STM* D3578 standard.

ze	Mfr. No.	Cat. No.	Pack of	Case of 10 Pk.
Small	SP2110	**11-391-147A**	100/36.89	315.28
nall	SP2220	**11-391-147B**	100/36.89	315.28
edium	SP2330	**11-391-147C**	100/36.89	315.28
rge	SP2440	**11-391-147D**	100/36.89	315.28
Large	SP2550	**11-391-147E**	90/37.21	318.05

Microflex* Diamond Grip* Powder-Free Latex Exam Gloves

Effective barrier against many hazards

NEW

Perfect choice for procedures in labs that require greater tactile sensitivity for instrument manipulation.

- Made of premium quality, low modulus latex
- Offer high tensile strength for excellent resiliency
- Thicker than the typical latex exam glove
- Textured surface ensures secure grip
- Beaded cuff for easy donning
- Ambidextrous, nonsterile, single-use
- Length: 9¾" (24.8cm)
- Fingertip thickness: 9.1mil
- Color: natural

DIAMOND GRIP
MICROFLEX
11-462-67E

COMPLIANCE:
Meet ASTM* D 3578 standard.

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
X-Small	MF300 XS	**11-462-67A**	34.70	312.30
Small	MF300 S	**11-462-67B**	34.70	312.30
Medium	MF300 M	**11-462-67C**	34.70	312.30
Large	MF300 L	**11-462-67D**	34.70	312.30
X-Large	MF300 XL	**11-462-67E**	34.70	312.30

Microflex* Evolution One* Powder-Free Latex Exam Gloves

Unique polymer coating for easy donning and doffing

NEW

Ideal for handling potentially hazardous materials.

- Excellent tactile sensitivity and high tensile strength
- Textured for better handling in wet conditions
- Beaded cuffs for easy donning and doffing
- Ambidextrous, nonsterile, single-use
- Length: 10" (25.4cm)
- Thickness: 8.7mil
- Color: natural

EVOLUTION ONE
MICROFLEX
EXTRA-LARGE
11-462-68E

COMPLIANCE:
Meet ASTM* D 3578 standard.

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
X-Small	EV2050 XS	**11-462-68A**	43.12	388.08
Small	EV2050 S	**11-462-68B**	43.12	388.08
Medium	EV2050 M	**11-462-68C**	43.12	388.08
Large	EV2050 L	**11-462-68D**	43.12	388.08
X-Large	EV2050 XL	**11-462-68E**	43.12	388.08

WARNING
These products contain natural rubber latex, a component of which may cause allergic reaction in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these products.

Microflex* Comfort Grip* Powder-Free Latex Exam Gloves

Reduced protein rating

NEW
ComfortGrip
SIZE XL
MICROFLEX

19-167-030E

- Natural rubber latex offers elasticity with protection and comfort
- Fully textured surface for secure grip
- Beaded cuff provides easy donning and doffing
- Ambidextrous, nonsterile, single-use
- Length: 9½" (24cm)
- Fingertip thickness: 5.9mil
- Color: natural

COMPLIANCE:
Gloves meet ASTM* D 3578 standard.

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
X-Small	CFG-900-XS	**19-167-030A**	33.74	335.00
Small	CFG-900-S	**19-167-030B**	33.74	335.00
Medium	CFG-900-M	**19-167-030C**	33.74	335.00
Large	CFG-900-L	**19-167-030D**	33.74	335.00
X-Large	CFG-900-XL	**19-167-030E**	33.74	335.00

Calapro Low-Powder Latex Finger Cots

Fit without bulkiness at the tip to reduce finger fatigue

Ideal when particle count is not critical but product must be protected from skin oils.

11-392-8C

- Made of 100% pure, super-thin latex for comfort and dexterity
- Thickness: 5mil
- Length: $2\frac{13}{16}$" (7cm)
- Rolled

COMPLIANCE:
Mechanically cleaned for ISO Class 7 (Class 10,000) applications

Size	Mfr. No.	Cat. No.	Pack of 1440	Case of 20 Pk.
Small	FW01S	**11-392-8A**	29.25	500.00
Medium	FW01M	**11-392-8B**	29.25	500.00
Large	FW01L	**11-392-8C**	29.25	500.00
X-Large	FW01X	**11-392-8D**	29.25	500.00

Calapro Powder-Free Latex Finger Cots

Made of 100% pure, super-thin latex (5mil thick) for comfort and dexterity

Finger cots fit without bulkiness at the tip to reduce finger fatigue.

11-392-9C

- Chlorination-washed to minimize contamination
- Rolled
- Length: Measure $2\frac{13}{16}$" (7cm)

COMPLIANCE:
Inspected and packaged under ISO Class 5 (Class 100) cleanroom specifications

Size	Mfr. No.	Cat. No.	Pack of 1440	Case of 20 Pk.
Small	FY01S	**11-392-9A**	43.88	750.00
Medium	FY01M	**11-392-9B**	43.88	750.00
Large	FY01L	**11-392-9C**	43.88	750.00
X-Large	FY01X	**11-392-9D**	43.88	750.00

North* Multiple-Washed Latex Finger Cots

Prevent contamination from reactive ions

Very low particle count and extractables. Natural rubber latex cots feature uniform thickness for excellent tactility, strength, and product protection.

19-023-276

- Powder-free
- Length: 2¾" (7cm)
- Rolled
- Thickness: 3mil
- Color: white

COMPLIANCE:
Meet IES-RP-CC005.2 standard.

Size	Mfr. No.	Cat. No.	Pack of 1440	Case of 30 Pk.
Small	115LWR	**19-023-276**	22.60	564.92
Medium	125LWR	**19-023-279**	22.60	564.92
Large	135LWR	**19-069-930**	22.60	564.92
X-Large	145LWR	**19-062-392**	22.60	564.92

North* Static Dissipative Latex Finger Cots

Won't weaken with age, rubbing or washing

Inherently static dissipative. Not dependent on humidity. Static decay of 5000 to 0V in 0.01 second. Surface resistivity, 2×10^6 ohms/sq.

19-062-381

- Very low particle count
- Powder-free and multiple-washed
- Length: 2¾" (7cm)
- Thickness: 3mil
- Color: black
- Rolled, in conductive bags

COMPLIANCE:
Meet ASTM* D 3772 requirements.

Size	Mfr. No.	Cat. No.	Pack of 1440	Case of 30 Pk.
Small	115LBR	**19-062-381**	42.30	1057.50
Medium	125LBR	**19-067-514**	42.30	1057.50
Large	135LBR	**19-062-380**	42.30	1057.50
X-Large	145LBR	**19-067-515**	42.30	1057.50

S-Curve* Acrylic Dispensers for Gloves

Wall-mountable, clear acrylic

- Ideal for ambidextrous exam gloves
- Hold one, two or three boxes of gloves

Fisherbrand
Fisherbrand
Fisherbrand

11-127-47B and 11-127-47

ORDERING INFORMATION:
Cat. No. 11-127-47A measures 3½D × 11W × 5¼"H (9 × 28 × 13cm).
Cat. No. 11-127-47B measures 3½D × 11W × 11"H (9 × 28 × 28cm).
Cat. No. 11-127-47C measures 3½D × 11W × 15"H (9 × 28 × 38cm).

INCLUDES:
Screws and wall anchors.

Capacity	Mfr. No.	Cat. No.	Each	Case of
1 box	EBD 1000	**11-127-47A**	29.20	10/258.45
2 boxes	EBD 2000	**11-127-47B**	54.07	5/239.22
3 boxes	EBD 3000	**11-127-47C**	93.33	----

WARNING
These products contain natural rubber latex, a component of which may cause allergic reaction in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these products.

*Trademark. See Trademark Reference.

Prices subject to change.

VINYL

Fisherbrand* Powdered Vinyl xam Gloves

uperior fit and flexibility for maximum tear resistance

- Medical-grade, high elastic vinyl provides unrestricted hand movement
- Smooth finish
- Lightly powdered with USP cornstarch
- Nonsterile
- Length: 9½" (24cm)
- Thickness: 4.5mil (palm)
- Color: clear

19-041-189C

OMPLIANCE:

xceed FDA minimum requirements for xam gloves.

ize	Cat. No.	Pack of 100	Case of 10 Pk.
-Small	**19-041-189A**	12.29	108.75
mall	**19-041-189B**	12.29	108.75
ledium	**19-041-189C**	12.29	108.75
arge	**19-041-189D**	12.29	108.75
-Large	**19-041-189E**	12.29	108.75

Fisherbrand* Powder-Free Vinyl xam Gloves

xcellent sensitivity and comfort

- Medical-grade, 100% latex-free vinyl
- Smooth finish
- Beaded cuff
- Ambidextrous
- Nonsterile
- Length: 9½" (24cm)
- Thickness: 4.5mil
- Color: clear

19-041-190C

OMPLIANCE:

xceed FDA minimum requirements for exam gloves.

Size	Cat. No.	Pack of 100	Case of 10 Pk.
X-Small	**19-041-190A**	12.81	113.38
Small	**19-041-190B**	12.81	113.38
Medium	**19-041-190C**	12.81	113.38
arge	**19-041-190D**	12.81	113.38
X-Large	**19-041-190E**	12.81	113.38

LOOKING FOR MORE?

To see our full line of vinyl gloves,

Visit www.fishersci.com and search for Vinyl Gloves

Oak Heavyweight* Lab Handies* Vinyl Gloves

Nearly twice as thick as standard vinyl gloves

Flexible enough to handle small objects. Strong enough to provide protection from chemicals and other harmful laboratory substances. Will not irritate skin or contaminate sensitive scientific samples.

- Special vinyl compound provides extra durability and sensitivity and enhances gripping
- Powder-free
- Length: 9½" (24cm)
- Thickness: 6.5mil, to increase tear and snag resistance
- Green

11-394-55B

Size	Mfr. No.	Cat. No.	Pack of 50	Case of 10 Pk.
Small	96 183	**11-394-55A**	25.50	216.89
Medium	96 283	**11-394-55B**	25.50	216.89
Large/X-Large	96 383	**11-394-55C**	25.50	216.89

Safety Choice* Vinyl Gloves

All gloves are 100% air tested

Flexible, durable and comfortable.

- Soft modulus vinyl promotes greater comfort to user and patient
- Beaded cuff provides more protection
- Powdered gloves are lightly dusted with USP absorbable cornstarch for easy donning and removal
- Powder-free gloves provide low particulate and extractable levels tested in accordance with the Institute of Environmental Science
- Ambidextrous
- Nonsterile
- Single-use
- Length: 9½" (24cm)
- Thickness: 5mil
- Color: white

19-121-833B

COMPLIANCE:

Manufactured to 1.5 A.Q.L. with stringent quality controls for safe protection.

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
Powdered				
Small	S-003	**19-121-833A**	10.14	84.50
Medium	M-003	**19-121-833B**	10.14	84.50
Large	L-003	**19-121-833C**	10.14	84.50
X-Large	XL-003	**19-121-833D**	10.14	84.50
Powder Free				
Small	S-033	**19-121-834A**	11.27	93.91
Medium	M-033	**19-121-834B**	11.27	93.91
Large	L-033	**19-121-834C**	11.27	93.91
X-Large	XL-033	**19-121-834D**	11.27	93.91

POLYETHYLENE

*Fisherbrand** Polyethylene Elbow- and Shoulder-Length Gloves

Two lengths provide excellent hand and arm coverage

Ideal for food handling in schools, bakeries, restaurants, industrial safety, veterinary procedures, electronics assembly, cosmetology, painting, antiquing, gardening, printing, photography, and laboratory work.

- Made from unusually soft and pliable polyethylene
- Protects hands from exposure and the need for messy and expensive cleanups
- Single-use

19-181-537

Size	Cat. No.	Pack of 100	Case of
Elbow Length			
One size fits all	**19-181-537**	13.13	5 Pk./58.00
Shoulder Length			
Medium	**19-181-538**	29.87	10 Pk./192.83
Large	**19-181-539**	29.87	10 Pk./245.00

*Fisherbrand** Polyethylene Long Cuff Gloves

Inexpensive, disposable gloves available in two weights

Ideal for workers handling food and small parts. Liquidproof.

- Soft and pliable polyethylene
- Extra-long cuffs for increased protection
- Ambidextrous
- Single-use

19-181-532

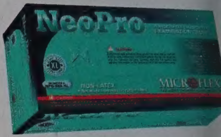
Size	Cat. No.	Pack of 100	Case of 10 Pk.
Medium Weight (1.25mil)			
Small	**19-181-531**	6.25	54.59
Medium	**19-181-532**	6.25	56.75
Large	**19-181-533**	7.94	72.15
Heavyweight (1.75mil)			
Small	**19-181-534**	9.16	80.18
Medium	**19-181-535**	9.16	80.18
Large	**19-181-536**	9.16	80.18

CHLOROPRENE

Microflex* NeoPro* Chloroprene Powder-Free Exam Gloves

Provide manual dexterity and tactile sensitivity with reduced hand fatigue

Chloroprene construction offers better puncture resistance than latex. Provides unique protection against a variety of chemicals.



19-120-3010

- Made of Polychloroprene to provide the barrier of a synthetic glove with the comfort and fit of natural rubber latex
- Enhanced memory for extended comfort and fit
- Textured fingers endure secure grip
- Beaded cuff provides easy donning and doffing
- Powder-free, ambidextrous, nonsterile, single-use
- Length: 9½" (24cm)
- Fingertip thickness: 6.7mil
- Color: spring green

COMPLIANCE: Meet ASTM* D 3578 standard.

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
X-Small	NPG-888-XS	**19-120-3010A**	26.79	241.07
Small	NPG-888-S	**19-120-3010B**	26.79	241.07
Medium	NPG-888-M	**19-120-3010C**	26.79	241.07
Large	NPG-888-L	**19-120-3010D**	26.79	241.07
X-Large	NPG-888-XL	**19-120-3010E**	26.79	241.07

INSPECTION

*Fisherbrand** Low-Lint Nylon Inspection Gloves

ISO Class 7 (Class 10,000 suggested)

Moisture-absorbent ambidextrous gloves.

19-013-621

Nylon Style

- 40-denier tricot fabric in a two-piece construction
- Easily identify size by color-coded hem on rolled cuff
- Can be used as a liner

Stretch Nylon Style

- Heavyweight fabric constructed in a full-fashion pattern
- Easy size identification by color-coded hem on "zig-zag" stitched cuff
- Provides limited heat protection

Size	Cuff Color	Cat. No.	Pack of 12 Pair	Case of
Women's Nylon				
Small	Black	**19-053-703**	11.56	100 Pk./884.67
Medium	Blue	**19-053-702**	11.56	100 Pk./884.67
Large	Pink	**19-013-620**	11.56	100 Pk./884.67
Men's Nylon				
Small	Yellow	**19-053-707**	11.32	100 Pk./866.12
Medium	Red	**19-053-706**	11.32	100 Pk./866.12
Large	Green	**19-013-621**	11.32	100 Pk./866.12
X-Large	White	**19-053-708**	11.32	100 Pk./866.12
Stretch Nylon				
Women's	Red	**19-075-289**	20.04	50 Pk./778.90
Men's	Blue	**19-075-288**	17.29	50 Pk./672.00

*Fisherbrand** Cotton Inspection Gloves

Ideal for general inspection work or as liners for unlined liquidproof gloves

19-013-540

- Lightweight, 100% cotton lisle gloves
- With two-piece construction
- Ambidextrous gloves available in men's and women's sizes

Size	Length	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 100 Pk.
Women's					
Medium	8" (20cm)	97-501	**19-013-538**	6.66	510.06
Men's					
Large	8½" (22cm)	97-500	**19-013-540**	7.07	540.58
Jumbo	9" (24cm)	97-500J	**19-075-340**	6.52	499.09

*Fisherbrand** Lightweight Elbow-Length Cotton Gloves

Designed to minimize contamination of products from human hands

NEW

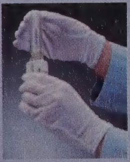
19-059-613

Premium quality, cotton lisle gloves are ideal for inspection and can also be used as liners under disposable and unsupported liquid proof gloves.

- 100% cotton fabric
- Two-piece, reversible pattern
- Unhemmed
- Length: 14" (35.6cm)
- Men's size

Cat. No.	Pack of 12 Pair	Case of 50 Pk.
19-059-613	11.22	429.43

LOOKING FOR MORE INSPECTION GLOVES?



See PIP* CleanTeam* Economy Nylon Inspection Gloves.

Visit www.fishersci.com and search for 19-148-389

CLEANROOM

Ansell* Nitrilite* Cleanroom Gloves

Significantly reduced particulate and extractable levels

NEW

Manufacturer-suggested ISO Class 5 (Class 100). Manufactured using ISO 9002:2001-certified processes and processed in a clean environment. Each lot tested, certified and documented.

19-014-687B

- Nitrile polymer formulation free of plasticizers, silicone, and pigments
- Superior strength with light comfortable fit
- Textured fingers and rolled, beaded cuff
- Powder-free, ambidextrous
- Length: 12" long (30cm)
- Fingertip thickness: 5mil
- Color: natural white

ORDERING INFORMATION:

50 gloves vacuum-sealed in unprinted polybag; two polybags sealed in master pack.

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
X-Small	93-311-XS	**19-014-687**	25.85	220.93
Small	93-311S	**19-014-687A**	25.85	220.93
Medium	93-311M	**19-014-687B**	25.85	220.93
Large	93-311L	**19-014-687C**	25.85	220.93
X-Large	93-311XL	**19-014-687D**	25.85	220.93
XX-Large	93-401-2X	**19-014-689E**	—	305.10

Cardinal Health* CR100* Sterile Latex Cleanroom Gloves

Enhanced fit and comfort

19-120-2994

Powder-free, gloves are versatile and suitable for use in critical environments with stringent aseptic procedures. Low in natural proteins, ≤50µg of total water-extractable protein per gram.

- 100% natural rubber latex
- Gamma sterilized in a quality-regulated facility
- Provide excellent dexterity and barrier protection
- Bisque finish ensures a secure grip
- Fitted cuff for easy donning
- Hand-specific
- Fingertip thickness: 7mil
- Length: 12" (30cm)
- Color: natural

ORDERING INFORMATION:

Performance tested and traceable with batch documentation on each pack. Certificate of sterility available upon request.

COMPLIANCE:

Meet or exceed ASTM* D 3577 physical property requirements.

Size	Mfr. No.	Cat. No.	Case of 100 Pair
5½	2Y1640	**19-120-2991**	469.68
6	2Y1624	**19-120-2992**	469.68
6½	2Y1625	**19-120-2993**	469.68
7	2Y1626	**19-120-2994**	469.68
7½	2Y1627	**19-120-2995**	469.68
8	2Y1628	**19-120-2996**	469.68
8½	2Y1629	**19-120-2997**	469.68
9	2Y1630	**19-120-2998**	469.68

Cardinal Health* Multi-Flex* Clean Process Ambi Latex Gloves

Provide excellent tactile sensitivity

Gloves are packaged under ISO Class 5 (formerly Class 100) laminar flow hoods. Each package label is printed with manufacturing lot number to ensure traceability.

- 100% natural rubber latex
- Micro-textured finish
- Powder-free
- Ambidextrous
- Length: 10½" (27cm)
- Thickness: 7mil
- Color: natural

19-025-094

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
Small	2Y1700	**19-025-093**	40.62	357.55
Medium	2Y1701	**19-025-094**	40.62	357.55
Large	2Y1702	**19-025-095**	40.62	357.55

Cardinal Health* Sterile Protegrity* CP Latex Clean Process Gloves

Designed for use in pharmaceutical, biotechnology, and medical device applications

Triple-layer, powder-free clean process glove created with advanced triple-dip bonding technology integrating comfort of natural rubber and strength of nitrile.

- Natural rubber latex outer layer provides enhanced comfort with outstanding tactile properties
- Blended natural rubber latex and nitrile middle layer bonds other layers and maintains performance integrity; facilitates effortless donning
- Sterilized to 10^{-6} SAL
- Beaded cuffs
- Length: 12" (30cm)
- Average thickness: 9mil
- Color: natural

19-120-2978

ORDERING INFORMATION:

Film packaged by the pair; 50 pairs per polybag; 4 polybags (200 pairs) per case.

COMPLIANCE:

Meet or exceed ASTM* D 3577 physical property requirements.

Size	Mfr. No.	Cat. No.	Case of 200 Pair
5½	2Y72N0	**19-120-2975**	658.23
6	2Y72N1	**19-120-2976**	658.23
6½	2Y72N2	**19-120-2977**	658.23
7	2Y72N3	**19-120-2978**	658.23
7½	2Y72N4	**19-120-2979**	658.03
8	2Y72N5	**19-120-2980**	658.23
8½	2Y72N6	**19-120-2981**	658.03
9	2Y72N7	**19-120-2982**	658.23

CTI Clean-Class* Washing Latex Gloves

Qualified for use in pharmaceutical industry

Washed with deionized water to ensure consistent particle and extractable controls. Acceptable for use in ISO Class 4 (formerly Class 10) or higher controlled environments.

- Made from 100% natural rubber latex
- Leak tested and processed to reduce chemicals known to cause skin irritation
- Double chlorinated to broaden chemical resistance
- With textured surface for superior wet or dry grip
- Tapered, beaded cuff prevents roll-down and seals glove over garment sleeve
- Ambidextrous or hand-specific
- Length: 12" (30cm)
- Thickness: 6.5mil
- Color: natural

19-059-937

ORDERING INFORMATION:

Ambidextrous style, 100 gloves per pack. Hand-specific style, 200 pairs per pack. Double bagged.

COMPLIANCE:

Meet or exceed ASTM D 3578–95 standards.

Size	Mfr. No.	Cat. No.	Pack of	Case of
Ambidextrous				
Small	PFLT201	**18-999-274A**	100/26.91	10 Pk./230.03
Medium	PFLT202	**18-999-274B**	100/26.91	10 Pk./230.03
Large	PFLT203	**18-999-274C**	100/26.91	10 Pk./230.03
X-Large	PFLT204	**18-999-274D**	100/26.91	10 Pk./230.03
Hand-Specific				
6½	CHS650	**19-062-685**	200/165.34	----
7	CHS700	**19-062-120**	50/48.35	4 Pk./165.29
7½	CHS750	**19-059-937**	200/165.34	----
8	CHS800	**19-059-939**	50/48.35	4 Pk./165.29
8½	CHS850	**19-062-118**	200/165.34	----
9	CHS900	**19-059-941**	50/48.35	4 Pk./165.30
10	CHS1000	**18-999-492**	50/49.00	4 Pk./167.52

WARNING

These products contain natural rubber latex, a component of which may cause allergic reaction in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these products.

Kimberly-Clark* Kimtech Pure* G3 Latex Gloves

or critical environment cleanroom use

ll Kimtech Pure G3 gloves are multiple-washed in deionized water to inimize particles and extractables. Low latex protein content—≤50µg otal water extractable protein per gram.

- Manufacturer suggested ISO Class 3 (Class 1)
- Excellent strength and durability, with flexibility that minimizes fatigue yet maximizes dexterity and comfort
- Feature tapered beaded cuff and textured nonslip grip
- Available nonsterile or sterile
- Length: 12" (30cm)
- Thickness: 9mil
- Color: natural

lonsterile Hand-Specific Gloves

xcellent strength and durability

RDERING INFORMATION:

air-packed one pair per inner polybag, 50 pairs per master pack; or bulk-acked 50 lefts in a sealed inner bag and 50 rights in another sealed inner ag, 50 pairs per master pack.

OMPLIANCE:

ested in accordance with IEST-RP-CC005.2; meet AQL 1.5 standards for ritical defects. Meet or exceed ASTM* D 3577 standard.

ize	Mfr. No.	Cat. No.	Pack of 50 Pair	Case of 4 Pk.
ulti-Packed				
	HC1460	**11-390-10A**	103.58	414.32
½	HC1475	**11-390-10B**	105.34	372.87
	HC1470	**11-390-10C**	105.34	372.87
½	HC1465	**11-390-10D**	103.58	414.32
	HC1480	**11-390-10E**	105.34	372.87
½	HC1485	**11-390-10F**	105.34	372.87
	HC1490	**11-390-10G**	103.58	414.32
0	HC1410	**11-390-10H**	103.58	414.32
air-Packed				
	HC1360	**11-390-8A**	30.06	120.24
½	HC1365	**11-390-8B**	126.14	454.15
	HC1370	**11-390-8C**	111.91	396.14
½	HC1375	**11-390-8D**	111.91	396.14
	HC1380	**11-390-8E**	111.91	396.14
½	HC1385	**11-390-8F**	111.91	396.14
	HC1390	**11-390-8G**	111.91	396.14
0	HC1310	**11-390-8H**	111.91	396.14

lonsterile Ambidextrous Gloves

lexibility minimizes fatigue

RDERING INFORMATION:

ulk-packed 100 gloves per ouble-polybagged pack.

OMPLIANCE:

ested in accordance with IEST-RP-CC005.2; eet AQL 1.5 standards for critical defects. leet or exceed ASTM* D 3578 standard.

11-390 Series

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
Small	HC225	**11-390-6A**	54.78	468.21
Medium	HC335	**11-390-6B**	54.78	468.21
Large	HC445	**11-390-6C**	54.78	468.21
X-Large	HC555	**11-390-6D**	54.78	468.21

Sterile Gloves

Ideal for biotech, pharmaceutical and medical device industries

19-120 Series

ORDERING INFORMATION:

Pair-packaged in an ISO Class 5 (formerly Class 100) cleanroom. Poly-walleted for clean, aseptic donning; 20 walleted pairs per pack.

COMPLIANCE:

Tested in accordance with IEST-RP-CC005.2; meet AQL 1.5 standards for critical defects. Gamma irridated. Validated to a Sterility Assurance Level (SAL) of 10-6 accorded to ANSI*/AAMI/ISO 11137. Comply with ASTM* D 3577 standard specification for rubber surgical gloves.

Size	Mfr. No.	Cat. No.	Pack of 20 Pair	Case of 10 Pk.
6	HC1360S	**19-120-879**	56.07	504.64
6½	HC1365S	**19-120-880**	61.02	610.28
7	HC1370S	**19-120-881**	61.02	610.28
7½	HC1375S	**19-120-882**	61.02	610.28
8	HC1380S	**19-120-883**	61.02	610.28
8½	HC1385S	**19-120-884**	61.02	610.28
9	HC1390S	**19-120-885**	61.02	610.28
10	HC1310S	**19-120-886**	57.02	471.13

Kimberly-Clark* Kimtech Pure* G3 Nitrile Gloves

NEW

Manufacturer-suggested ISO Class 3 (Class 1) or higher

19-048-653A

Gloves are chlorinated to remove powders used in manufacture, subjected to multiple deionized water rinses, and packaged in a cleanroom environment. Resistant to oils and a broad range of chemicals.

- Made of soft, 100% nitrile
- Propriety process used for lowest particle and ionic/elemental extractables
- Excellent ESD characteristics, dexterity and comfort
- Tapered, beaded cuffs for reduced tearing and easy donning and doffing
- Ambidextrous
- Length: 12" (30cm)
- Thickness: 6mil
- Color: blue or white

ORDERING INFORMATION:

Triple-bagged with case liner and flat-stacked for easy access to cuff.

COMPLIANCE:

Tested in accordance with IEST-RP-CC005.2; meet AQL 1.5 standards for critical defects.

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
Blue				
X-Small	HC1150N	**19-048-591A**	61.81	531.08
Small	HC2250N	**19-048-591B**	58.58	527.21
Medium	HC3350N	**19-048-591C**	58.58	527.21
Large	HC4450N	**19-048-591D**	58.58	527.21
X-Large	HC5550N	**19-048-591E**	60.04	540.39
White				
X-Small	HC61010	**19-048-653A**	33.40	285.43
Small	HC61011	**19-048-653B**	33.40	285.43
Medium	HC61012	**19-048-653C**	33.40	285.43
Large	HC61013	**19-048-653D**	33.40	285.43
X-Large	HC61014	**19-048-653E**	33.40	285.43

Kimberly-Clark* Kimtech Pure* G5 Latex Gloves

ISO Class 5 (Class 100) or higher

Low in natural rubber proteins. Cleanroom compatible.

- Textured palm and fingers
- Beaded cuff adds strength and makes donning easier
- Ambidextrous style
- Length: 10 or 12" (25 or 30cm)
- Thickness: 8mil
- Manufactured using ISO 9002:2001-certified processes

11-390-4B

ORDERING INFORMATION:
Bulk packed 100 gloves per triple-bagged polybag with case liner.

COMPLIANCE:
Meet or exceed applicable ASTM* D3578 standards.

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
10" (23cm) long				
Small	HC220	**11-390-4A**	29.45	251.73
Medium	HC330	**11-390-4B**	29.45	251.73
Large	HC440	**11-390-4C**	29.45	251.73
X-Large	HC550	**11-390-4D**	29.45	251.73
12" (30cm) long				
Small	HC2211	**11-390-5A**	49.05	419.22
Medium	HC3311	**11-390-5B**	49.05	419.22
Large	HC4411	**11-390-5C**	49.05	419.22
X-Large	HC5511	**11-390-5D**	49.05	419.22

Kimberly-Clark* Kimtech Pure* G5 Blue Nitrile Gloves

Latex-, perfume- and powder-free

Recommended for ISO Class 5 or higher cleanroom environment. Resistant to oils and a broad range of chemicals. Contain no natural rubber latex.

- Made from a "soft" blue nitrile compound to ensure superior ergonomic properties
- Bisque finish, easy to don
- Beaded cuff for extra strength
- Length: 10" (25cm)
- Thickness: 6mil
- Color: blue
- Manufactured using ISO 9002:2001-certified processes

11-390-13B

ORDERING INFORMATION:
Available in sealed triple polybags of 100 gloves with case liner.

COMPLIANCE:
AQL 1.5. Meet or exceed ASTM* D6319 standard. Available in sealed triple polybags of 100 gloves with case liner.

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
X-Small	HC150N	**19-002-942**	41.56	355.24
Small	HC250N	**11-390-13A**	41.56	355.24
Medium	HC350N	**11-390-13B**	41.56	355.24
Large	HC450N	**11-390-13C**	41.56	355.24
X-Large	HC550N	**11-390-13D**	40.14	355.24

Kimberly-Clark* Kimtech Pure* G5 Sterile Latex Gloves

NEW

Manufacturer-suggested ISO Class 5 (Class 100) or higher

Ideal for biotechnology, pharmaceuticals, and medical device manufacturing, as well as laboratory applications. Low in natural rubber proteins (≤50µg of total water-extractable protein per gram).
Exceptionally strong, durable, and flexible to reduce fatigue while enhancing dexterity and comfort.

- Natural rubber latex provides superior barrier protection
- Textured palms and inner fingers provide sure wet and dry grip without compromising tactility
- With rolled beaded cuff for optimum protection
- Gamma-irradiated
- Powder-free
- Hand-specific
- Length: 12" (30cm)
- Thickness: 8mil
- Natural color

19-048-586A

ORDERING INFORMATION:
Triple bagged with case liner.

COMPLIANCE:
Meet or exceed ASTM* D 3577 standards. Meet AQL 1.5 standards.

Size	Mfr. No.	Cat. No.	Pack of	Case of
6	HC1160S	**19-048-586A**	20/37.78	10 Pk./334.32
6½	HC1165S	**19-048-586B**	20/37.38	10 Pk./334.32
7	HC1170S	**19-048-586C**	20/37.78	10 Pk./334.32
7½	HC1175S	**19-048-586D**	20/37.78	10 Pk./334.32
8	HC1180S	**19-048-586E**	20/37.78	10 Pk./334.32
8½	HC1185S	**19-048-586F**	20/37.78	10 Pk./334.32
9	HC1190S	**19-048-586G**	20/37.78	10 Pk./334.32
10	HC1110S	**19-048-586H**	20/37.78	10 Pk./334.32

MAPA Professional* Rollpruf* Special Formula Gloves

Exclusive cuff design prevents rolldown

Ideal for ISO Class 4 (Class 10) cleanroom applications in the semiconductor, electronics, aerospace, pharmaceutical and biotechnology industries. Include no pigment, fillers, or DOP plasticizers. Resist acids, salts, alcohols, ketones, and alkalis.

11-394-68

- Made from triple polymer blend of natural latex, neoprene, and nitrile
- Washed with ultrapure deionized water to remove particulate and surface reactive ions
- Low level of nonvolatile residue protects sensitive products and processes
- Stretch in palms and across knuckles permits freedom of movement and reduces tension and hand fatigue
- Surgical glove design provides acute sense of touch for precision handling and assembly

Contd. on next page.

*Trademark. See Trademark Reference.

IAPA Gloves Contd.

Hand-specific shape (left and right) provides greater comfort

Case-hardened, abrasion-resistant, textured surface finish for improved product protection and a secure grip

Color-coded cuff band prevents rolldown, secures glove on sleeve, identifies size, and helps contain particulate contaminant (colored band does not contain titanium dioxide)

Length: 12" (30.5cm)

Thickness: 8mil

Color: natural

RDERING INFORMATION:

ulk-Packed

upplied in sealed master polybag containing two inner polybags—one ith 50 left-hand gloves, the other with 50 right-hand gloves. Four outer lybags per case (200 pairs total).

air-Packed

upplied in sealed master polybag containing 100 individually wrapped airs. Each case contains two master polybags, for a total of 200 pairs.

COMPLIANCE:

Subjected to stringent quality assurance program, including IEST-RP-CC005.2 wet test for particle levels. Finished, inspected, tested, and packaged in ISO Class 5 (Class 100) cleanrooms. Meet or exceed ASTM* D3578 requirements. Meet 21CFR170-199 specifications for food and drug handling.

Size	Cuff Color	Mfr. No.	Cat. No.	Case of 200 Pair
Bulk-Packed				
6	Yellow	513981	**11-394-66**	341.38
6½	Blue	513982	**11-394-67**	341.38
7	Red	513983	**11-394-68**	341.38
7½	Black	513984	**11-394-69**	341.38
8	Green	513985	**11-394-70**	341.38
8½	Orange	513986	**11-394-71**	341.38
9	Gold	513987	**11-394-72**	341.38
10	Brown	513988	**11-394-73**	327.72
Pair-Packed				
7	Red	513563	**19-249-522**	342.00
8	Green	513565	**19-249-524**	342.00
8½	Orange	513566	**19-249-525**	342.00
9	Gold	513567	**19-249-526**	342.00

IAPA Professional* TRIonic* Tripolymer Cleanroom Gloves

Ianufacturer-suggested ISO Class 4 (Class 10)

eal for acid etching, chemical mixing, and wet quartzware, instrument and uipment handling. Tripolymer blend (nitrile, neoprene and natural rubber) itperforms natural rubber in applications involving aggressive chemicals.

Natural rubber protein levels test below detection

Very strong and durable; highly resistant to tears, snags, cuts

In three hand-specific styles, all 20mil

Meet 21CFR170–199 specifications for food and drug handling

Meet or exceed ASTM 3577 requirements

Quality assurance procedure includes IEST-RP-CC-005.2 wet test for particle levels

Finished, inspected, tested and packaged in ISO Class 5 (Class 100) cleanroom

Pair-packaged in individual heat-sealed polybags, 12 pairs per pack

npigmented, "Z" Grip

Triple-washed: twice in a 5ppm calcium carbonate solution; third ultra-pure deionized water wash extracts reactive ions

Individually air-tested for pinholes

Flat cuff and embossed "Z" grip

Unlined

Length: 14" (36cm)

npigmented, Diamond Grip, Banded Cuff

Banded tapered cuff helps keep glove up over forearm

Orange band aids in acid application identification

Raised diamond grip provides sure handling of wet and dry objects

Length: 14" (36cm)

igmented, Diamond Grip, Flat Cuff

Orange-pigmented gloves with tapered flat cuffs—fit snugly over sleeves to protect forearm

Raised diamond grip

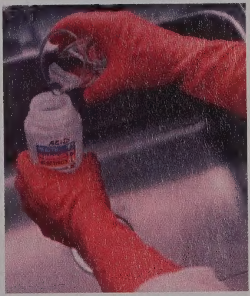
Length: 14" (36cm)

RDERING INFORMATION:

nished, inspected, tested and packaged in ISO Class 5 (Class 100) clean-iom; pair-packaged in individual heat-sealed polybags.

COMPLIANCE:

Meet 21CFR170–199 specifications for food and drug handling. Meet or exceed ASTM* 3577 requirements. Quality assurance procedure includes IEST-RP-CC-005.2 wet test for particle levels.



Size	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 72
Unpigmented, "Z" Grip, Flat Cuff				
7	517317	**11-392-26A**	36.54	187.37
8	517318	**11-392-26B**	36.54	187.37
9	517319	**11-392-26C**	36.54	187.37
10	517310	**11-392-26D**	36.54	187.37
11	517311	**11-392-26E**	36.54	187.37
Pigmented, Diamond Grip, Flat Cuff				
7	518567	**19-048-517T**	38.05	195.11
8	518568	**19-048-517S**	38.05	195.11
9	518569	**19-048-517R**	38.05	195.11
10	518560	**19-048-517Q**	38.05	195.11
Unpigmented, Diamond Grip, Banded Cuff				
7	514047	**19-048-574A**	----	220.49
8	514048	**19-048-574B**	----	220.49
9	514049	**19-048-574C**	----	220.49
10	514040	**19-048-574D**	----	220.49
11	514041	**19-048-574E**	----	220.49

WARNING

These products contain natural rubber latex, a component of which may cause allergic reaction in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these products.

North* AK Latex Gloves

Manufacturer-suggested ISO Class 5 (Class 100)

Manufactured in a powder-free facility designed specifically for clean, high-tech rubber processing. Resists acids, caustics, punctures, tears. Ideal for use in agitating wafers in an acid bath, handling or mixing etching and cleaning acids or caustics, fab room maintenance, and transportation and handling of chemicals.

19-067-714

- Specially formulated 100% natural rubber latex material
- Case-hardened glove that's soft enough for dexterity
- Diamond-embossed palm provides a secure grip in wet or dry applications
- Thickness: 20mil
- Length: 15" (38cm)
- Color: orange

ORDERING INFORMATION:
Each pair individually packaged in a polybag.

COMPLIANCE:
Tested using a modified, more stringent IEST-RP-CC05.3 method to ensure low particulates and extractables.

Size	Mfr. No.	Cat. No.	Pack of 10 Pair	Case of 10 Pk.
7	AK1815 0 7	**19-067-709**	36.45	311.55
8	AK1815 0 8	**19-067-714**	36.45	311.55
9	AK1815 0 9	**19-067-715**	36.45	311.55
10	AK1815 0 10	**19-067-716**	36.45	311.55
11	AK1815 0 11	**19-067-717**	43.74	373.86

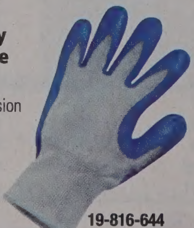
WARNING
These products contain natural rubber latex, a compound of which may cause allergic reaction in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these products.

CUT RESISTANT

Perfect Fit* PureFit* Nitrile-Coated Dyneema* Gloves

Provide superior tactile sensitivity for precision handling and delicate operations

- 100% Dyneema fibers provide cut and abrasion resistance in light-duty applications
- Blue nitrile coating provides grip plus additional resistance to cuts and abrasions
- Machine washable for longer service life



19-816-644

Size	Mfr. No.	Cat. No.	Price
Small	PF545S	**19-822-658**	12/250.68
Medium	PF545M	**19-816-644**	1 Pr./20.89
Large	PF545L	**19-816-643**	1 Pr./20.89
X-Large	PF545XL	**19-816-645**	1 Pr./20.89

Perfect Fit* Tuff-Coat II* Gloves

Maximum comfort and breathability

Ideal for handling glass, small parts and bricks. Provide protection during injection molding, canning, recycling, laundering, integrated waste management, general maintenance, construction, light fabrication, sanitation, farming, lumbering, mill work, and shipping and receiving.

18-999-1038

- Knit from 100% Kevlar* brand fiber yarn for excellent resistance to cuts, slashes and abrasion
- Natural rubber latex palm coating provides excellent cut and puncture resistance without sacrificing dexterity or tactile sensitivity
- Natural contour hand and open back design ensure maximum comfort and breathability
- Seamless knit construction
- Launderable for extended service life

Size	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 12 Pk.
Medium	KV300 M	**18-999-1038B**	159.99	1589.67
Large	KV300 L	**18-999-1038C**	154.99	1589.67
X-Large	KV300 XL	**18-999-1038D**	154.99	1665.67

TEMPERATURE RESISTANT

*Fisherbrand** Hot Mill Gloves

Available in either gauntlet or band top

Ideal for forging and other operations that require heat protection. Men's universal size.

Double-layer
- Consist of two cotton layers
- Weight: 24 oz. (680g)

Triple-layer
- Consist of three fabric layers
- Burlap lining creates air pocket affording increased heat protection
- Weight: 28 oz. (795g)

19-053-495 (top) and 19-013-541 (bottom)

Style	Cat. No.	Pack of 12 Pair	Case of 10 Pk.
Double Layer			
Band Top	**19-013-541**	31.29	266.07
Gauntlet	**19-053-495**	38.70	329.12
Triple Layer			
Band Top	**19-013-544**	37.99	323.12
Gauntlet	**19-062-844**	47.22	401.54

Scienceware* Clavies* Autoclave Gloves

Unload your autoclave safely

Replace hazardous asbestos gloves.

11-394-299

- Made of soft, all-cotton terry cloth knit
- Heat resistant up to 232°C (450°F)
- Gauntlet style provides wrist and forearm protection
- Bright orange color for high visibility
- Machine washable

Length	Mfr. No.	Cat. No.	Pair	Case of 12 Pair
13" (33cm)	13201-0000	**11-394-299**	24.63	252.57
18" (47cm)	13201-0001	**11-394-298**	33.95	348.18

*Trademark. See Trademark Reference.

Tempshield* Cryo-Gloves*

Breathable stay-dry lining

Left to right: 11-394-323, 11-394-305, 11-394-306, 11-394-308

Ideal for use in cryogenic atmospheres (such as liquid nitrogen, oxygen or helium; liquified natural gas; dry ice; liquid baths; or blast freezers) where organs, blood units, pharmaceuticals, or specimens are frozen.

- Comfortable and lightweight with excellent dexterity
- Protect hands and arms in temperatures as low as -162°C (-260°F)
- Water-resistant and waterproof styles with breathable, stay-dry lining
- Contain no asbestos

NOTE: Not for immersion in liquid nitrogen or for use near open flame or in hazardous areas where ignition could occur.

Size	Mfr. No.	Cat. No.	Pair	Case of 10 Pair
Water-resistant Wrist Length, 11½-12¾" (29-33cm)				
Small	WRS	**19-276-533**	----	1113.60
Medium	WRM	**19-276-534**	121.77	1040.79
Large	WRL	**19-276-535**	121.77	1040.79
Water-resistant Midarm Length, 13½-15" (35-39cm)				
Medium	MAM	**11-394-305**	130.43	1114.77
Large	MAL	**11-394-200**	130.43	1114.77
X-Large	MAXL	**19-059-925**	111.05	----
Water-resistant Elbow Length, 18-20" (46-51cm)				
Medium	EBM	**11-394-306**	171.74	1467.83
Large	EBL	**11-394-307**	162.52	1389.07
X-Large	EBXL	**11-394-309**	168.98	1444.30
Water-resistant Shoulder Length, 26½" (68cm)				
Large	SHL	**11-394-308**	214.01	1829.17
Waterproof Wrist Length with Liner, 11½-12¾" (29-33cm)				
Small	WRSWP	**11-394-322**	149.28	1275.86
Medium	WRMWP	**11-394-323**	149.28	1275.86
Large	WRLWP	**11-394-324**	149.28	1275.86
Waterproof Midarm Length with Liner, 13½-15" (35-39cm)				
Small	MASWP	**11-394-325**	160.84	1374.72
Medium	MAMWP	**11-394-326**	160.84	1374.72
Large	MALWP	**11-394-327**	160.84	1374.72
X-Large	MAXLWP	**11-394-328**	159.46	1362.87
Waterproof Elbow Length with Liner, 18 to 20" (46 to 51cm)				
Medium	EBMWP	**11-394-329**	198.59	1697.32
Large	EBLWP	**11-394-330**	198.59	1697.32
X-Large	EBXLWP	**11-394-331**	198.59	1697.32

Wells Lamont* Kelklave Autoclave Gloves

Made from high loop terry cloth, a natural insulator

Excellent alternative to asbestos or leather in most applications.

- Maintains flexibility and comfort
- Gloves withstand temperatures up to 121°C (250°F)
- Clute cut, 11" (28cm) gauntlet cuff style
- Lined, preshrunk, and launderable

19-013-586

Size	Cat. No.	Pack of 12 Pair	Case of 4 Pk.
Large	**19-013-586**	99.44	351.99

Kevlar* Terry Cloth

Thermal-resistant quality won't wash or wear out

- Made of heavyweight (24 oz./sq. yd.), machine knit, 100% Kevlar terry cloth
- Withstand temperatures from -184° to +93°C (-300° to +200°F) for intermittent use
- With high-loop pile for added wear resistance
- Reversible

11-462-56

Size	Mfr. No.	Cat. No.	Pair	Case of 72 Pair
Large	Y5550L	**11-462-56**	17.02	957.60

WORK

*Fisherbrand** Leather Driver's Gloves

Provide abrasion resistance and excellent dexterity

- Ideal for construction, machine operation, utility work, farming, roping, and other general applications
- Top-grain leather is available with straight thumb or keystone thumb to provide additional wear and greater comfort
- Launderable

19-013-352

Grade	Size	Cat. No.	Pack of 12 Pair	Case of 10 Pk.
Straight Thumb, Elastic Back				
Intermediate Grade	Small	**19-013-349**	150.12	1283.09
	Medium	**19-013-352**	150.12	1283.09
	Large	**19-013-357**	150.12	1283.09
	X-Large	**19-013-359**	150.12	1283.09
Premium Grade	Small	**19-042-128**	130.61	1184.72
	Medium	**19-042-127**	138.61	1184.72
	Large	**19-058-791**	138.61	1184.70
	X-Large	**19-058-792**	138.61	1184.70
Straight Thumb, Pull Strap Closure				
Intermediate Grade	Small	**19-069-485**	119.19	----
	Medium	**19-816-922**	119.19	----
Keystone Thumb, Split Back, Elastic Back				
Regular Grade Top Grain Palm	Small	**19-071-371**	75.57	665.40
	Medium	**19-071-373**	75.57	665.40
	Large	**19-071-375**	75.57	665.40
	X-Large	**19-071-377**	75.57	665.40

LOOKING FOR MORE?

See our entire cut-resistant glove offering on our Web Site.

Visit www.fishersci.com and search for Cut Resistant

*Fisherbrand** Pigskin Driver's Gloves

Return to original pliability even after being soaked in water

- Suited for construction, machine operation, utility work, and many general applications
- Gunn-cut style with straight thumb and elastic wrist
- Unlined

Size	Cuff Color	Cat. No.	Pack of 12 Pair	Case of 10 Pk.
Small	Red	**19-043-035**	70.53	621.04
Medium	Green	**19-043-030**	70.53	621.04
Large	Brown	**19-043-020**	70.53	621.04
X-Large	Blue	**19-043-042**	70.53	621.04

*Fisherbrand** PVC-Coated String Knit Gloves

- Ideal for handling a variety of materials
- 100% cotton knit shell coated with blue "F" pattern on both sides

19-053-388

Size	Cat. No.	Pack of 12 Pair	Case of
Men's	**19-053-388**	26.87	20 Pk./457.09
Women's	**19-053-378**	27.62	25 Pk./552.39

*Fisherbrand** Standard Leather Palm Gloves

Ideal for use in dirty applications

Made with traditional striped fabric back and cuff with split cowhide palm. Choose from two styles.

Gunn-cut

- Features a wing thumb and shirred elastic back
- With leather pull patch, leather covering over palm, thumb, index finger, and fingertips

19-013-466

Clute-cut

- Straight thumb
- With leather only on palm side of gloves
- Available with knitwrist, gauntlet, or 2½" (6cm) rubberized safety cuff

19-053-924

Size	Cuff	Cuff Color	Cat. No.	Pack of 12 Pair	Case of
Clute Cut, Standard Palm, Shoulder Leather					
Women's	Knitwrist	Red	**19-013-461**	30.51	10 Pk./259.51
Men's	Knitwrist	Brown	**19-013-463**	30.51	10 Pk./259.51
Men's	Safety Cuff	Brown	**19-013-453**	32.05	10 Pk./272.60
Gunn Cut, Standard Palm					
Small	Safety Cuff	Red	**19-013-465**	29.86	10 Pk./253.96
Large	Safety Cuff	Brown	**19-013-466**	33.18	10 Pk./282.17
X-Large	Safety Cuff	Blue	**19-816-871**	35.40	10 Pk./301.08
Large	Gauntlet Cuff	Brown	**19-053-924**	34.01	6 Pk./173.56
Gunn Cut, Double-Reinforced Jointed Palm					
Large	Safety Cuff	Brown	**19-816-873**	33.20	6 Pk./169.39

Best* Neo Grab* Neoprene Gloves

Offer superior durability and chemical protection

Provide abrasion and cut resistance.

- Multidipped neoprene gauntlet gloves offer excellent chemical protection
- Heavyweight gloves feature wrinkle finish for better wet gripping
- May be worn over unsupported chemical resistant gloves for added protection
- With Sanitized* cotton liner

11-395-9

Gauntlet Type	Mfr. No.	Cat. No.	Pack of 12	Case of 6 Pk.
12" long (30cm)	6780R	**11-395-9**	109.53	561.71
14" long (36cm)	6784R-10	**19-019-202**	130.20	660.49
Elbow length	6797R	**11-395-22**	183.60	923.33

Best* Ultraflex* Neoprene Gloves

Lightweight, flexible, and abrasion resistant

Ideal for electronics, petrochemical, refinery applications, materials handling and general utility.

- Fully coated, rough-finished gauntlets
- With Sanitized* two-piece interlock liner

COMPLIANCE:
Comply with 21CFR170–199.

11-395-1B

Size	Mfr. No.	Cat. No.	Pack of 12 Pair	Case of 6 Pk.
12" Long (30cm)				
9	3109	**11-395-1B**	83.70	414.39
10	3210	**11-395-1C**	83.70	414.39
11	3311	**19-048-525**	90.60	481.05
14" Long (36cm)				
10	3214	**11-395-27B**	88.80	473.06

WARNING
These products contain natural rubber latex, a component of which may cause allergic reaction in some users. Use only as directed and in accordance with manufacturer instructions and warnings. Please consult your institution's policies regarding use of these products.

*Trademark. See Trademark Reference.

Perfect Fit* Atlas Fit* Rubber-Coated Gloves

Ergonomic design conforms snugly to the natural shape of the hand, reducing hand fatigue

18-999-4410B

Comfortable, medium-weight, 10-cut, seamless knit cotton/polyester blend shell is palm coated with natural rubber.

- Textured, rubber-coated palm resists cuts and abrasions, inhibits liquid penetration and provides a safe, sure grip on tools and machinery
- Critical wear areas at fingertips and thumb crotch are also rubber coated to minimize wear for longer glove life
- Fully launderable gray fabric hides the dirt, allowing longer usage between washings

Size	Mfr. No.	Cat. No.	Pack of 12	Case of 12 Pk.
Small	300-S	**18-999-4410**	46.26	504.64
Medium	300-M	**18-999-4410A**	46.26	504.64
Large	300-L	**18-999-4410B**	46.26	504.64
X-Large	300-XL	**18-999-4410C**	46.26	504.64

UltraFIT* Nylon Glove Liners

Form-fitting liners are pre-shrunk for multiple laundering

14-379-35

Designed to protect extra-sensitive hands from irritation and occlusion of the skin associated with frequent gloving.

- Form-fitting design for a skin-tight fit
- Ultra-thin fabric for optimum dexterity and sense of touch
- Extra layer of insulation when working in cooler areas
- Seamless fingertips
- Cuffs are color coded for easy sorting
- Non-linting and washable

Size	Cuff Color	Mfr. No.	Cat. No.	Pack of	Case of
Laboratory/Cleanroom Use					
Small	Green	51001-12-001	**14-379-35**	12 Pr./32.75	12 Pk./335.96
Medium	Orange	51002-12-001	**14-379-36**	12 Pr./32.75	12 Pk./335.96
Large	Blue	51003-12-001	**14-379-45**	12 Pr./32.75	12 Pk./335.96
Laboratory/Cleanroom Use					
X-Large	Red	51004-2C-001	**19-149-888**	20 Pr./61.10	10 Pk./540.36
Inspected for Medical Use					
Small	Green	51001-12-001I	**14-379-37**	----	144/456.30
Medium	Orange	51002-12-001I	**14-379-38**	12 Pr./38.40	12 Pk./394.00
Large	Blue	51003-12-001I	**14-379-39**	12 Pr./38.40	12 Pk./394.00

GRADUATES

*Fisherbrand** Conical Polypropylene Graduates

Wide bases for increased stability

- Highly resistant to chemicals
- Withstand temperatures up to 121°C (262°F)
- Molded graduation markings for easy measuring
- Autoclavable

08-570-20A, 08-570-20D

Capacity	Subdiv.	Approx. Height	Cat. No.	Each	Case of 6
100mL	2mL	$4\frac{5}{8}$" (117mm)	**08-570-20A**	11.33	57.61
250mL	5mL	$6\frac{3}{8}$" (162mm)	**08-570-20B**	17.80	90.53
500mL	10mL	$7\frac{3}{16}$" (183mm)	**08-570-20C**	19.20	97.62
1000mL	20mL	$10\frac{3}{8}$" (264mm)	**08-570-20D**	38.61	196.31

Nalgene* Shatterproof PMP Graduates

Excellent chemical resistance

- Transparent polymethylpentene (PMP) construction
- Graduated in oz. and mL; 1 oz. size graduated in oz., mL, dr.
- Easy-to-read volumes—no meniscus
- Autoclavable

COMPLIANCE:

4 oz. size and larger conform to the volume and accuracy requirements of ASTM E 1094-98

11-423C

Capacity	Accuracy	Mfr. No.	Cat. No.	Each	Case of
1 oz. (30mL)	±0.6mL	3673-0001	**11-423AA**	20.84	12/166.75
2 oz. (60mL)	±1.1mL	3673-0002	**11-423BB**	22.69	12/181.50
4 oz. (125mL)	±1.8mL	3673-0004	**11-423A**	24.25	12/194.00
8 oz. (250mL)	±3.4mL	3673-0008	**11-423B**	31.06	12/248.50
16 oz. (500mL)	±4.8mL	3673-0016	**11-423C**	45.60	8/243.25
32 oz. (1000mL)	±9.0mL	3673-0032	**11-423D**	58.19	6/232.75

Kimax* Glass Dual-Scale Graduates

Calibrated "To Deliver"

- In English and metric.

COMPLIANCE:
All sizes except 11-417-2D designed from ASTM Specification E 1094-98, Type 2 and NBS Handbook 44 requirements.

11-417D

Capacity	Subdivisions	Mfr. No.	Cat. No.	Each	Case of
4 dr./15mL	½ dr. (1-4)/1mL†	60345 40	**11-417-2D**	62.82	12/547.92
8 dr./25mL	1 dr./5mL	60345 80	**11-417A**	70.49	----
2 oz./50mL	¼ oz./5mL	60345 2	**11-417B**	105.00	12/915.84
4 oz./100mL	½ oz./10mL	60345 4	**11-417C**	92.57	8/538.24
4⅛ oz./120mL	1⁵⁄₁₆ dr. (10-40)/5mL‡	60345 120	**11-417-2C**	35.58	----
8 oz./250mL	½ oz./25mL	60345 8	**11-417D**	83.76	----
16 oz./500mL	1 oz./25mL	60345 16	**11-417E**	171.16	6/747.36
32 oz./1000mL	2 oz./50mL	60345 32	**11-417F**	214.40	----

†¼ dr./⅛mL subdivisions from 0–1.
‡2¹¹⁄₁₆ dr./10mL subdivisions from 40–120.

Stainless-Steel Graduates

Graduated inside in oz. and mL

- Convenient handle
- Smooth-pour spout

11-420-10A

Capacity	Cat. No.	Each	Case of 6
17 oz. (500mL)	**11-420-10A**	81.87	358.54
34 oz. (1000mL)	**11-420-10B**	105.23	460.84
68 oz. (2000mL)	**11-420-10C**	130.83	573.01

GREASE AND LUBRICANTS

*Fisherbrand** Cello-Seal* Grease

Won't add to pressure in vacuum system

- Low vapor pressure lubricant maintains consistency of petrolatum at 100°C (212°F)
- May be blended with Cello-Grease* Lubricant for heavier consistency
- Size: 100g jar

C601-100

Cat. No.	Each	Case of 6
C601-100	138.38	653.82

*Fisherbrand** Cello-Grease* Lubricant

May be blended with Cello-Seal* Grease

- Similar to Cello-Seal* Grease except that it is heavier and darker
- Maintains consistency of petrolatum at 119°C (246°F)
- Size: 100g jar

STORAGE CONDITIONS:
ChemAlert Storage Code: Gray (no major health hazard)

Cat. No.	Each	Case of 6
C602-100	127.29	597.83

Apiezon* Greases

Low vapor pressure sealing agents and lubricants for high-vacuum applications

Apiezon products are silicone-free, high-purity hydrocarbons distilled from selected petroleum feedstock in a molecular still.

14-638-15A

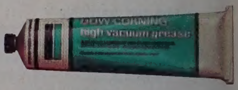
- **L Grease** (14-638-15B)is an all-purpose high-vacuum lubricant that is also recommended for stationary liquid phase in gas-liquid chromatography
- **M Grease** (14-638-15C) is inexpensive enough to be used as general-purpose grease
- **N Grease** (14-638-15D) is a special cryogenic vacuum grease which forms a rubbery cushion at ambient temperature to protect glassware
- Both **T Grease** (14-638-15E) and **H Grease** (14-638-15A) are for high-temperature applications, with H Grease having the broadest range

Type	Temperature Range	Vapor Pres. at 20°C Torr	Size	Cat. No.	Each	Case of
L	+10° to +30°C	7×10^{-11}	50g	**14-638-15B**	177.49	5/758.50
M	+10° to +30°C	1.7×10^{-9}	100g	**14-638-15C**	147.12	5/628.73
N	-269° to +30°C	6×10^{-10}	25g	**14-638-15D**	217.32	10/1857.46
T	+10° to +120°C	4.6×10^{-9}	25g	**14-638-15E**	191.47	10/1636.51
H	-10° to +240°C	1.7×10^{-9}	25g	**14-638-15A**	199.40	10/1704.30

Dow Corning* High-Vacuum Grease

Designed for sealing and lubricating vacuum and pressure systems

- Low vapor pressure, stiff, nonmelting silicone lubricant maintains its consistency from -40° to +204°C (-40° to +400°F)
- Resists oxidation and chemicals; noncarbonaceous


14-635-5D

Size	Mfr. No.	Cat. No.	Each	Case of 12
5.3 oz. tube (150g)	1597418	**14-635-5D**	31.50	319.88
8 lb. can (3.6kg)	1658832	**14-635-5C**	360.99	—

*Trademark. See Trademark Reference.

Prices subject to change.

ow Corning* 7 Release Compound

eat-stable, silicone release agent

01-185-4C

ontains inert silica filler and selected olydimethyl silicone fluids. For plastics, ubber, metals and adhesives.

- Retains much of its light consistency from -40° to +204°C (-40° to +400°F)
- Gives long-lasting release, yet remains inert to most materials
- Excellent dielectric properties, nontoxic, nonmelting
- Shows little tendency to dry out in service
- Shelf life, 60 months from manufacture date
- Size: 5.3 oz. tube

fr. No.	Cat. No.	Each
927582	01-185-4C	12.44

luorocarbon Lubricant in Spray Can

afe for a variety of plastic and rubber surfaces

CROWN
DRY FILM LUBRICANT
6075

12-008-8

orms slippery, frictionless film of TFE on glass, wood, nd metal. Ideal for tapered glass joints, stopcocks, icroscope tracks, stirrer bearings, bolts, slide rules, struments, and tools.

- Retains lubricating properties and releasing qualities to 260°C (500°F)
- Prevents galling, freezing, abrasion
- Durable, chemically inert, greaseless, and nonstaining
- Will not pick up dust
- Size: 10.5 A.V. oz. (300g) spray can

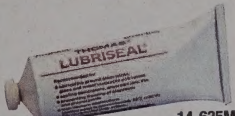
OTE:

lways test on surface before using product.

at. No.	Each	Case of 12
2-008-8	20.26	213.67

ubriseal* Stopcock Grease

or lubricating ground-glass joints, glass and metal topcocks and valves



14-635M

deal for sealing desiccators, anaerobic ulture jars and similar utensils, has a ow vapor pressure. Also recommended or use in high-vacuum systems. Smooth extured and stable. Free from oil or ilicone and practically insoluble in water.

- Retains lubricating properties up to 52°C (125°F)
- Has low vapor pressure and resists attack by acidic and alkaline solutions
- Mobility in film-like quantities permits lubrication and prevents freezing of stopcocks, ground joints
- Size: 2.7 oz. tube (75g)

Cat. No.	Each	Case of 6
14-635M	24.75	135.00

LOOKING FOR MORE?

Please see our Web site for additional grease and lubricants.

Visit www.fishersci.com and search for Lubricants

HEATERS

ELECTRIC MANTLES

Fisher Scientific* Three-in-One Heating Mantle

One mantle, three capacities, and no overheating

12-142-3

- Heats up to 450°C (842°F)
- For round-bottom flasks; heat zone adjusts to flask size
- Solid-state external power controller for precise manual control
- Double-pole ON/OFF switch, power and heater indicator lamps, and flexible cord
- Spun aluminum-coated housing remains cool during operation
- Chemical-resistant and easy to clean
- Can be used in fume hoods and operated with extension cord set (not supplied; contact your Fisher Scientific Customer Service Representative) and controller
- For 115V 50/60Hz

ORDERING INFORMATION:

Mantle dimensions: 12 dia. × 6"H (30.5 × 15.2cm); weighs 3.7 lb. (1.7kg). Controller dimensions: 6L × 2W × 4"H (15.2 × 5.1 × 10.2cm); weighs 0.9 lb. (0.4kg)

CERTIFICATIONS:

CE marked, CSA

For Flask Capacity	Watts	Cat. No.	Each
250mL, 500mL, 1L	240	12-142-3	381.02

Thermo Scientific* Economical Unimantle

50mL size boils 50% full flask of water in as little as eight minutes

11-473-50

- Heats to 450°C (842°F)
- Ceramic fiber thermal insulation
- Vacuum-formed polypropylene case
- Nonslip feet

INCLUDES:

Support clamp for ½" diameter (1.3cm) support rod; 6.5' (2m) 3-wire cord

REQUIRED ACCESSORIES:

Requires power controller (see 11-436-46, 115V 50/60Hz) to avoid exceeding 450°C (842°F)

Flask Size	Watts	Mfr. No.	Cat. No.	Each
50mL	75	UM0050BX1	11-473-50	116.00
100mL	100	UM0100BX1	11-473-52	127.00
250mL	200	UM0250BX1	11-473-54	146.00
500mL	280	UM0500BX1	11-473-56	158.00
1000mL	380	UM1000BX1	11-473-58	182.00
2000mL	500	UM2000BX1	11-473-60	194.00

Thermo Scientific* Hemispherical Mantle-Bottom

Heats bottom half of flask only

- Heats to 482°C (900°F)
- Hemispherical mantle with fiberglass exterior

11-472 Series

ORDERING INFORMATION:
230V units are available; contact your Fisher Scientific Customer Service Representative

REQUIRED ACCESSORIES:
Power controller on 120V AC/DC

CERTIFICATIONS:
CE, CSA

Flask Size	Watts	Mfr. No.	Cat. No.	Each
50mL	60	HM0050-HS1	**11-472-63**	114.00
100mL	80	HM0100-HS1	**11-472-64**	122.00
125mL	80	HM0125-HS1	**11-472-65**	130.00
200mL	100	HM0200-HS1	**11-472-66**	136.00
250mL	180	HM0250-HS1	**11-472-68**	144.00
500mL	270	HM0500-HS1	**11-472-69**	153.00
1000mL	380	HM1000-HS1	**11-472-70**	175.00
2000mL	500	HM2000-HS1	**11-472-71**	190.00
3000mL	500	HM3000-HS1	**11-472-72**	215.00
5000mL	600	HM5000-HS1	**11-472-73**	249.00
12000mL	1300	HM12000-HS1	**11-472-74**	511.00

Thermo Scientific* Flask and Funnel Mantle with Controller

Heat flasks and funnels

11-473 Series

- Heats to 450°C (842°F)
- Built-in energy regulator
- Mantle fits snugly against pear-shaped or round-bottom flasks
- Bottom outlet accommodates 60° funnels of various diameters from 50 to 300mm for heated filtrations[1]
- Standard features: safety grounded screen between heating element and flask or funnel, replaceable heater cartridge, and indicator lights for POWER ON (clear) and HEATER ON (amber)
- Housing made of chemical-resistant polypropylene
- All models have two circuits except 11-473-25, which has one
- For 115V[2]

ORDERING INFORMATION:
220V available on special order; contact your Fisher Scientific Customer Service Representative

INCLUDES:
One bracket for ½" (1.3cm) support rods (5000mL size has three)

Flask Size Range	Watts	Mfr. No.	Cat. No.	Each
10-50mL	72	EMV-0050-CEX1	**11-473-25**	418.52
100-250mL	1 × 50; 1 × 100	EMV-0250-CEX1	**11-473-27**	476.59
500-1000mL	1 × 100; 1 × 200	EMV-1000-CEX1	**11-473-29**	549.00
2000-5000mL	1 × 300; 1 × 500	EMV-5000-CEX1	**11-473-31**	860.00

[1] *Bottom outlet diameters: 50mL, 18mm; 250mL, 18mm; 1000mL, 33mm; 5000mL, 68mm.*
[2] *Mantles with two circuits have upper circuit switch for greater mantle efficiency.*

Thermo Scientific* Mantle with Insulated Heater and Controller

Maximum heat transfer with minimum risk of flask breakage

11-474-105 Series

- Heats to 450°C (842°F)
- For round-bottom flasks from 50mL to 5L
- Built-in energy regulator
- Insulating material in removable heater cartridge
- Chemical-resistant polypropylene housing
- Pilot lamps for power and heater operation
- All models have one circuit except 11-474-105H, which has two
- For 115VAC

ORDERING INFORMATION:
220VAC available on request; contact your Fisher Scientific Customer Service Representative

INCLUDES:
Supplied with clamps for ½" diameter (1.3cm) support rods, grounded line cord

Flask Size	Watts	Mfr. No.	Cat. No.	Each
50mL	72	EM0050/CX1	**11-474-105A**	346.00
100mL	72	EM0100/CX1	**11-474-105B**	351.00
250mL	150	EM0250/CX1	**11-474-105C**	374.00
500mL	200	EM0500/CX1	**11-474-105D**	390.00
1L	300	EM1000/CX1	**11-474-105E**	411.00
2L	500	EM2000/CX1	**11-474-105F**	554.00
3L	500	EM3000/CX1	**11-474-105G**	577.00
5L	1 × 300; 1 × 500[†]	EM5000/CX1	**11-474-105H**	621.00

[†] *Maximum watts per circuit.*

LOOKING FOR FLASKS?
Round bottom, pear-shaped or flat-bottom? You'll find a complete selection of flasks for boiling and heating in the Flask section.

*Trademark. See Trademark Reference.

Thermo Scientific* Stirrer Mantle with Controller

Bidirectional stirring with variable speed

11-473-18

- Heats to 450°C (842°F)
- Offers single directional stirring up to 520rpm and bidirectional stirring with auto capture of stir bar (reverses stirring direction about every 20 seconds)
- Heating element is attached to thermal insulation bowl for easy replacement; built-in energy regulator
- Solid-state controls
- Preformed stainless-steel screen above heating element is grounded to line cord
- Polypropylene case
- Indicator lights: POWER ON (clear), HEATER ON (amber)
- All units have two circuits
- For 115V 50/60Hz

ORDERING INFORMATION:
220V available on special order; contact your Fisher Scientific Customer Service Representative.

INCLUDES:
50 to 1000mL sizes have one ½" diameter (1.3cm) rod support clamp; 2000mL units have three; 3-wire cord

Flask Size	Watts	Mfr. No.	Cat. No.	Each
50mL	1 × 60; 1 × 20	EMA0050/CEBX1	**11-473-18**	1174.00
100mL	1 × 60; 1 × 20	EMA0100/CEBX1	**11-473-19**	1201.00
250mL	1 × 150; 1 × 20	EMA0250/CEBX1	**11-473-20**	1245.00
500mL	1 × 200; 1 × 20	EMA0500/CEBX1	**11-473-21**	1289.00
1000mL	1 × 300; 1 × 20	EMA1000/CEBX1	**11-473-22**	1323.00
2000mL	1 × 500; 1 × 20	EMA2000/CEBX1	**11-473-23**	1402.00

HEAT GUNS

Wagner Spray Tech Milwaukee* Heat Guns

Rugged industrial heat guns provide up to 5700 BTUs and 1680w of power

09-201-32

- Adjustable hot-air temperature up to 540°C (1000°F); also cool-air setting
- Body is diecast magnesium; heating element is replaceable
- With stationary stand for hands-free operation

ORDERING INFORMATION:
For 120V 50/60Hz

CERTIFICATIONS:
UL listed

Temperature Range	Current	Cat. No.	Each
400° to 540°C (750° to 1000°F)	14A	**09-201-13**	157.70
Ambient to 540°C (1000°F)	14A (at maximum heat setting)	**09-201-32**	168.35

HEATING TAPES

Thermo Scientific* BriskHeat* Heating Tapes

Outstanding thermal properties

11-463-48A

Standard heating tape

- Heats to 480°C (900°F)
- Fibrox* fibrous glass insulation
- Finely stranded resistance wires double-insulated with braided fibrous glass
- With two-piece connector and separable cap
- 2' (0.6m) insulated lead wires emerge from opposite ends
- Not suitable for direct contact with metal

Heavy insulated tape

- Heats to 480°C (900°F)
- Fibrox* fibrous glass insulation
- Two-piece connector and separable cap
- 2' (0.6m) insulated lead wires emerge from opposite ends

Silicone rubber extruded tape

- Heats to 260°C (500°F)
- Standard insulated tape enclosed in high-strength silicone rubber
- Resists moisture and vapors
- With two-piece connector and separable cap
- 2' (0.6m) insulated lead wires emerge from opposite ends

REQUIRED ACCESSORIES:
Use with power regulator or input controller with appropriate voltage rating to limit temperature to the recommended maximum. Regulators used with pyrometer and thermocouple will provide appropriate reference settings for reproducible temperatures.

Length × Width	Watts	Mfr. No.	Cat. No.	Each
Standard Heating Tape				
2' × ½" (0.6m × 1.3cm)	105	B00051-020	**11-463-48A**	53.31
4' × ½" (1.2m × 1.3cm)	210	B00051-040	**11-463-48B**	58.29
6' × ½" (1.8m × 1.3cm)	310	B00051-060	**11-463-48C**	76.39
8' × ½" (2.4m × 1.3cm)	420	B00051-080	**11-463-48D**	84.42
2' × 1" (0.6m × 2.5cm)	210	B00101-020	**11-463-49A**	61.31
4' × 1" (1.2m × 2.5cm)	420	B00101-040	**11-463-49B**	78.39
6' × 1" (1.8m × 2.5cm)	620	B00101-060	**11-463-49C**	87.44
8' × 1" (2.4m × 2.5cm)	830	B00101-080	**11-463-49D**	121.45
Heavy Insulated Tape				
2' × ½" (0.6m × 1.3cm)	105	BIH051-020	**11-463-50A**	61.00
4' × ½" (1.2m × 1.3cm)	210	BIH051-040	**11-463-50B**	81.00
6' × ½" (1.8m × 1.3cm)	310	BIH051-060	**11-463-50C**	96.00
8' × ½" (2.4m × 1.3cm)	420	BIH051-080	**11-463-50D**	116.00
2' × 1" (0.6m × 2.5cm)	210	BIH101-020	**11-463-51A**	78.00
4' × 1" (1.2m × 2.5cm)	420	BIH101-040	**11-463-51B**	109.00
6' × 1" (1.8m × 2.5cm)	620	BIH101-060	**11-463-51C**	168.00
8' × 1" (2.4m × 2.5cm)	830	BIH101-080	**11-463-51D**	198.00
10' × 1" (3m × 2.5cm)	1040	BIH102-100	**11-463-82**	231.00
Silicone Rubber Extruded Tape				
2' × ½" (0.6m × 1.3cm)	52	BS0051-020	**11-463-54A**	88.44
4' × ½" (1.2m × 1.3cm)	104	BS0051-040	**11-463-54B**	98.50
6' × ½" (1.8m × 1.3cm)	156	BS0051-060	**11-463-54C**	113.42
8' × ½" (2.4m × 1.3cm)	209	BS0051-080	**11-463-54D**	127.47
2' × 1" (0.6m × 2.5cm)	104	BS0101-020	**11-463-55A**	118.44
4' × 1" (1.2m × 2.5cm)	209	BS0101-040	**11-463-55B**	146.55
6' × 1" (1.8m × 2.5cm)	313	BS0101-060	**11-463-55C**	172.65
8' × 1" (2.4m × 2.5cm)	418	BS0101-080	**11-463-55D**	198.74

Thermo Scientific* BriskHeat* Heating Tapes with Controllers

Heat to 260°C (500°F)

11-488 Series

- For direct contact with metal
- Constructed of finely stranded resistance wires doubly insulated with braided fiberglass and knitted into flat tapes with fiberglass yarn
- Tapes contain flexible 1" wide (2.5cm) heating element to wrap around pipes as small as ½" diameter (1.3cm)
- Percentage controller regulates heating of tapes
- Tapes encapsulated in silicone rubber to resist moisture and vapor

Length × Width	Watts	Mfr. No.	Cat. No.	Each
2' × 1" (0.6m × 2.5cm)	144	BSAT101-020	**14-488-26**	155.58
4' × 1" (1.2m × 2.5cm)	288	BSAT101-040	**14-488-25**	172.65
6' × 1" (1.8m × 2.5cm)	432	BSAT101-060	**14-488-27**	206.77
8' × 1" (2.4m × 2.5cm)	576	BSAT101-080	**14-488-28**	220.83
10' × 1" (3m × 2.5cm)	720	BSAT101-100	**14-488-29**	233.87

TEMPERATURE/POWER CONTROLLERS

Thermo Scientific* Single and Double Proportional Voltage Power Controllers

Precise manual control of heating mantles, tapes, cords, and other resistive loads

14-259-1

- Solid-state
- Adjust output range from 3 to 100% of rated voltage; dial controller is completely linear from 2 to 100% of rated voltage
- Double controller can control two separate circuits
- Units are enclosed in modular, low-profile housing
- Double-pole ON/OFF switch, power and heater indicator lamps, and flexible cord

ORDERING INFORMATION:

Dimensions: Single controller, 6L × 2W × 4"H (15 × 5 × 10cm); double controller, 12L × 2W × 4"H (30 × 5 × 10cm)

Voltage	Watts	Mfr. No.	Cat. No.	Each
Single Controller				
115V	10	MC239X1	**14-259-1**	164.62
Double Controller				
115V	14	MC240X1	**14-259-3**	235.88
230V	14	MC240	**14-259-5**	235.88

Thermo Scientific* Electrothermal MC 228 Power Controller

Variable power controller

11-463-46

For Thermo Scientific* Unimantle (available separately, see p.911) or other mantles and tapes without controllers.

- 100 to 125V range
- Rugged, grounded, diecast zinc case, a clamp for ½" diameter (1.3cm) support rod and an amber pilot light
- For 115V

INCLUDES:

Unit, 3-wire cord and plug, connector leads, a replaceable fuse, and instructions.

Mfr. No.	Cat. No.	Each
MC228X1	**11-463-46**	174.66

Thermo Scientific* MC240 Power Controller

Regulates mantles, tapes, cords, small furnaces, and hotplates

11-472-76

- Manually adjusted from 5½ to 100% of full power with percentage-timer design
- Effects positive break when OFF
- Full-view pilot light
- User-controlled operation needs no sensing element
- Anodized-aluminum case, with no-mar rubber feet.

ORDERING INFORMATION:

Dimensions: 4¼L × 2½W × 2"H (11 × 6.5 × 5cm)

INCLUDES:

Unit, 6' (1.8m), 3-wire SJT cord and receptacle; for 120VAC, 13A.

CERTIFICATIONS:

CSA

Voltage	Mfr. No.	Cat. No.	Each
120V	MC242X1	**11-472-76**	130.49
240V	MC242	**11-472-77**	130.49

LOOKING FOR MORE HEATERS?

Go online for a selection of immersion, wire coil, and infrared heaters as well as heating mats and tapes.

Visit www.fishersci.com and search for Heaters

HISTOLOGY

CHEMICALS AND REAGENTS

Fisher Diagnostics PROTOCOL* 10% Buffered Formalin

Traditional fixative, buffered to a neutral pH

23-245-685 (left), 23-245-684

Quantity	Cat. No.	Each	Case of 12
32 oz.	23-305-510	16.05	161.39
1 gal.	23-245-684	51.38	172.20
2.5 gal.	23-427-098	83.43	----
5 gal.	23-245-685	109.46	----
55 gal.	23-253-998	555.04	----

DON'T SEE THE RIGHT PRODUCT?

We also carry empty containers that eliminate formalin evaporation as well as pre-filled containers in a variety of sizes. For a complete listing, look in the Histology Supplies section or visit our Web site and search for: Histology Formalin.

Fisher Diagnostics PROTOCOL* SafeFix* II All-Purpose Fixative

General-purpose fixative utilized for routine, manual or automated tissue fixation as well as autopsy specimens

23-042-601, 23-042-600

- Works well with all tissue types including breast, colon, lymph nodes, bone marrow and brain biopsies
- Will not dry out small biopsies over time
- Optimized for use with routine semi-rapid histological procedures; provides fixation results comparable to formalin or B-5
- Completely compatible with most other fixatives and decalcifiers
- Safe—does not contain formaldehyde, mercury or glutaraldehyde; odorless and nontoxic
- Replaces most formalin-based, alcohol-based and other fixatives and does not leave damaging precipitates when used in tissue processors
- Maintains the morphological integrity of cells/tissues and enhances staining results
- Ideal for immunohistochemical mRNA and RNA procedures

Quantity	Cat. No.	Each	Case of
1 gal.	23-042-600	68.46	4/237.59
5 gal.	23-042-601	199.82	----

Fisher Scientific* HistoPrep* Chemicals in Bulk Sizes

DOT-approved containers are lighter than metal and safer than glass

HC Series

- High-quality solvents packaged in economical 1 gal. polyethylene containers
- Molded handle for easier use, helps prevent spills
- Inner seal in the screw cap prevents leaking
- Labels contain safety information and meet all current regulatory requirements

Description	Cat. No.	Each	Case of 4
Acetone, Purified	HC-300-1GAL	74.79	259.57
70% Alcohol	HC-1000-1GL	46.38	155.47
80% Alcohol	HC-1200	27.24	91.30
95% Alcohol	HC-1300-1GL	53.18	178.25
100% Alcohol	HC-800-1GAL	68.58	237.99
95% Denatured Alcohol	HC-1100-1GL	55.17	184.91
Methanol, Purified	HC-400-1GAL	59.17	205.35
2-Propanol	HC-500-1GAL	47.84	160.34
70% Reagent Alcohol	HC-1500-1GL	47.54	159.35
80% Reagent Alcohol	HC-1400-1GL	49.70	166.57
Reagent Alcohol	HC-600-1GAL	63.97	221.99
Xylenes	HC-700-1GAL	98.25	340.96

FisherChemical* Cal-Ex* Decalcifier

Ready-to-use for human and animal calcified tissues, bone, cartilage, and other hard specimens

Solution of efficient chelating agent in dilute hydrochloric acid completely removes and binds all calcium in specimen under treatment, with minimal distortion of tissue and loss of structure after decalcification, or interference with subsequent staining.

CS510-1D

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	CS510-1D	29.33	6/139.78
10L	PolyPac*	CS510-10D	147.91	-----

FisherChemical* Cal-Ex* II Fixative/Decalcifier

Provides simultaneous fixation and decalcification to prevent loss of cellular structures from putrefaction or autolysis

- Quick penetration preserves cells' structural elements without additional steps required in normal decalcification procedures
- Enhances hematoxylin staining

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	CS511-1D	41.34	6/197.01
4L	Poly Bottle	CS511-4D	111.22	4/348.07

Fisher Diagnostics PROTOCOL* SafeClear* Xylene Substitutes

Nonhazardous, nonflammable clearing and deparaffinization agent specifically designed for use in processing and staining histological/cytological specimens

- Essentially odorless with low toxicity
- Less irritating to the skin than xylene- and d-limonene-based clearants
- Can be used during staining in the same manner as xylene and with a variety of tissue processors

23-314-629

SafeClear

- Not oily like some d-limonene clearing agents
- Will not harden tissues or cause difficulty in producing thin tissue sections

SafeClear II

- With the added chemical behavior of traditional xylene and a quicker drying time

Description	Quantity	Cat. No.	Each	Case of 4
SafeClear Clearing Agent	1 gal.	**23-314-629**	64.42	223.57
SafeClear II Clearing Agent	1 gal.	**23-044-192**	71.58	241.97

WARNING
SafeClear* II has a lower flash point than SafeClear. Do not use near open flames or ignition sources.

*Fisherbrand** CitriSolv* Clearing Agent

Xylene substitute for use in histology, cytology and parasitology

- Pleasant-smelling, limonene-based solvent derived from citrus
- Soluble with absolute alcohol, paraffin embedding media, and mounting media
- Causes minimal tissue shrinkage and enhances some stains
- Dissolves paraffin waxes, glues, and adhesives; dries slowly with no residue
- Can safely be used in most histology, cytology, hematology, and microbiology procedures that require xylene
- Biodegradable

Fisherbrand
CitriSolv

23-143-975

Quantity	Cat. No.	Each	Case of
1 gal.	**22-143-975**	146.15	4/292.25
5 gal.	**22-143-976**	657.93	----

*Fisherbrand** Super Friendly Freeze'It*

Aerosol for cooling liquid, semisolid, and solid samples

- Rapidly cools any material without CFCs or HCFCs
- Concentrates freezing power exactly where needed
- Capable of dropping sample temperature from room temperature to -60°F in three seconds
- Triple-filtered gas prevents sample contamination and enhances cooling ability
- Deters the water crystal formation that occurs with slower refrigerants

NEW
Fisherbrand
SUPER
FRIENDLY
FREEZE'IT

23-022-524

INCLUDES:

11 oz. (312g) of noncorrosive, nonflammable, odorless, completely volatile gas; 5" (12.7cm) polyethylene "snorkel"

Size	Cat. No.	Case of 6
11 oz. (312g)	**23-022-524**	124.05

Decon Flash Freeze* Rapid Freezing Spray

Moisture-free propelled cold gas

- Rapidly cools or freezes samples in scientific laboratories

FLASH FREEZE

22-281-496

Size	Cat. No.	Each	Case of 6
11 oz. (312g)	**22-281-496**	26.33	135.00

Decon Hyde-Away Aldehyde Decontaminant

Converts used aldehydes into nonhazardous materials for disposal

Crystalline Hyde-Away turns aldehydes into a solid polymer at 1:30 ratio and the liquid version turns aldehydes into a fluid suitable for sewer system disposal at 1:15 ratio.

- Highest neutralization ratio available
- Useful for formaldehydes, formalin, and glutaraldehydes
- Tested via EPA methods and proven safe for drain or trash disposal

Hyde-Away
Aldehyde Management Product
Decon
Hyde-Away
Liquid Aldehyde Management Product
Decon

04-355-77, 04-355-78

Description	Size	Mfr. No.	Cat. No.	Each	Case of
Crystalline Powder	32 oz.	2224	**04-355-77**	38.64	12/396.29
Liquid	1 gal.	2201	**04-355-78**	70.09	4/248.10

*Trademark. See Trademark Reference.

Decon SlideRite* Cytology Fixative

A water soluble fixative for use in exfoliative cytology

04-355-88

- Forms a clear protective coating over specimens and fixates cells immediately
- Protects samples during transportation and while in storage
- Dries in as little as five minutes

Cat. No.	Each	Case of 12
04-355-88	18.44	189.13

Fisher Scientific* Permount* Mounting Medium

For both mounting and long-term storage of slides

SP15-100

- Low viscosity
- Gives a thinner adhesive layer for better optical quality
- A refractive index near that of fixed protein helps keep image free of optical imperfections such as diffraction halos
- Suitable for mounting cover slips to slides with thick or thin specimens
- Won't shift the colors of biological dyes
- Won't lose its cohesiveness, adhesive quality, or color with age
- Preserves most biological dyes with little or no fading when slides are stored in darkness

Quantity	Cat. No.	Each	Case of 6
100mL	**SP15-100**	20.71	117.42
500mL	**SP15-500**	42.30	236.39

Fisher Diagnostics PROTOCOL* Mounting Media

Thermoplastic resins for mounting and preserving microscope slide specimens

- Size: 480mL

23-245-695

Description	Cat. No.	Each	Case of 2
Xylene Mounting Media	**23-245-691**	52.41	87.83
Toluene Mounting Media	**23-245-695**	66.45	114.19

Fisher Diagnostics PROTOCOL* Hema 3* Manual Staining System

For 30-second, three-step staining comparable to the Wright-Giemsa method

23-123-869

Description	Quantity	Cat. No.	Each	Case of
Hema 3 Stat Pack (includes Fixative and Solutions I and II)	3 × 90mL	**23-123-869**	48.48	12/482.76
Hema 3 System (includes Fixative and Solutions I and II)	3 × 500mL	**22-122-911**	199.14	10/1757.61
Fixative	1 gal.	**23-122-929**	218.88	4/772.74
Solution I	1 gal.	**23-122-937**	368.32	4/1300.32
Solution II	1 gal.	**23-122-952**	368.20	4/1299.91

Biomeda* Mounting Media

For immunohistochemical and fluorescence-stained tissue sections

Crystal/Mount*

- Water-based mounting media for the preservation of tissue sections stained by immunohistochemical techniques
- Useful when working with chromogens that are sensitive to or soluble in organic solvents; tissue sections stained with chromogens such as 3-amino-9-ethyl carbazol, fast red and those using coupled dye systems with BCIP, naphthol-phosphate salts, etc., are best preserved using aqueous mounting media
- Permits postmounting of specimens with Fisher Scientific* Permount* mounting medium
- Nonhazardous

BMM-02 (left); BMM-01

Gel/Mount*

- Aqueous-based mounting medium for the preservation of fluorescence-stained tissue sections
- Especially recommended when mounting sections stained with tracers containing phycocrythrin, phycocyanin, allophycocyanin or FluoroBlue; can also be used with conventional fluorescent tracers such as fluorescein (FITC), Rhodamine (TMRITC), Texas Red, Cy2, Cy3 and Cy5

Media	Quantity	Cat. No.	Each
Gel/Mount	20mL	**BMM-01**	33.87
Crystal/Mount	30mL	**BMM-02**	39.90
	250mL	**BMM-03**	238.54

Fisher Scientific* SureStain* Stains

Fast, reliable staining for differential blood cell analysis

- For manual staining
- Produce uniform results
- Use for immersion or rack-type staining procedures
- Entire procedure can be performed in 30 seconds

ORDERING INFORMATION:
32 oz. bottles

STORAGE CONDITIONS:
Store at room temperature.

Stain	Cat. No.	Each	Case of 12
Wright	**CS432D**	102.20	1026.43
Wright-Giemsa	**CS434D**	109.47	1099.43

Cell Type	Color of Nucleus	Color of Cytoplasm	Color Granules
Erythrocytes	----	Pink or yellowish-red	----
Leukocytes Granular			
Polymorphonuclear neutrophils	Dark blue	Pale pink	Reddish-lilac
Basophils†	Purple to dark blue	----	Dark purple to almost black
Eosinophils	Blue	Blue	Red/red-orange
Nongranular			
Monocytes	Violet	Sky blue	----
Lymphocytes	Violet	Sky blue	----
Platelets	----	----	Violet to purple

† Water-soluble cell components may take up aqueous stain differently.

*Fisherbrand** Harris Modified Method Hematoxylin Stains

For histological and cytological use as a nuclear stain

- Mercury-free
- Suitable for PAP staining

NOTE:
Exposure to low temperatures may cause precipitation of dye. Mix at ambient temperature before use and filter if necessary. Sedimentation does not affect use of this stain.

Quantity	Cat. No.	Each	Case of
With Acetic Acid			
500mL	**SH26-500D**	41.63	6/198.36
4L	**SH26-4D**	180.62	4/569.33
Without Acetic Acid			
500mL	**SH30-500D**	40.04	6/190.76
4L	**SH30-4D**	187.07	4/583.94

Fisher Diagnostics PROTOCOL* Histological/Cytological Stains

Prepared with stain certified by the Biological Stain Commission

- Manufactured with strict quality control to ensure lot-to-lot uniformity

Harris Hematoxylin Stains

Regressive stains offer exceptional nuclear detail with well-delineated nuclear chromatin

- Require no dilution
- Mercury-free

23-245-678

Quantity	Cat. No.	Each	Case of
4L	**23-245-651**	135.54	4/478.53
Acidified			
475mL	**23-245-677**	40.63	12/408.59
4L	**23-245-678**	193.40	4/682.80

Gill Hematoxylin Stains

Progressive stains used to highlight cell nuclei

- Specially formulated to avoid precipitation
- *Gill-1* is recommended for cytology
- *Gill-2* produces more intense color; and can also be used for histology
- *Gill-3* shortens staining time to intensify color and for thicker specimens

23-245-655

Quantity	Cat. No.	Each	Case of
Gill-1			
4L	**23-245-653**	117.67	4/415.42
Gill-2			
475mL	**23-245-654**	33.83	12/336.85
4L	**23-245-655**	140.47	4/495.91
Gill-3			
475mL	**23-245-656**	33.43	12/332.89
4L	**23-245-657**	154.01	4/543.74

Bluing Agent

Used to highlight hematoxylin nuclear stains

- pH compatible with hematoxylin

23-245-681

Quantity	Cat. No.	Each
4L	**23-245-681**	104.06

Eosin Y, 1% Alcohol

Color variations differentiate between muscle, red blood cells, and connective tissue

23-345-827

Quantity	Cat. No.	Each	Case of
1L	**23-245-658**	64.68	12/666.83
4L	**23-245-827**	122.72	4/433.24

Eosin Y, Intensified

Provides excellent contrast between cytoplasmic components and nuclei

- Produces a more intensified, longer-lasting stain than standard Eosin Y

Quantity	Cat. No.	Each	Case of
32 oz.	**23-314630**	61.46	12/633.65
1 gal.	**23-314631**	122.52	4/432.57

Scott's Tap Water Substitute

Ready-to-use magnesium sulfate buffered with sodium bicarbonate

- Use to blue nuclear hematoxylin stain in both histology and cytology

Quantity	Cat. No.	Each	Case of 4
4L	**CS410-4D**	112.15	448.60

*Trademark. See Trademark Reference.

MICROM EC350 Embedding Center

22-050-850, 22-050-851

Modular format provides flexibility and saves space

Dispensing Console

- With a 5L paraffin reservoir, heated dispenser nozzle, heated work surface, heated forceps holder, and a cold spot
- Includes separate heated compartments for molds and cassettes

Cryo-Console

- Features a large, nonstick surface for cooling paraffin embedded blocks
- Temperature can be controlled from 0° to -15°C
- Unit features programmable operating times including automatic start
- All heated surfaces are independently controlled and range in temperature from 50° to 75°C
- Can be placed to the left or right of the Dispensing Console
- A second Cryo Console can also be added

Description	Mfr. No.	Cat. No.	Each
Dispensing Console	802352	**22-050-850**	7006.79
Cryo Console	802351	**22-050-851**	2861.06
EC350 Package (Cryo and Dispensing Console)	802350	**22-050-915**	9866.85

Electrical Requirements	110/120V, 50/60Hz
Dimensions (D × W × H)	
Dispensing Console	25½ × 23½ × 17" (650 × 595 × 430mm)
Cryo Console	23½ × 13⅜ × 16" (600 × 340 × 405mm)

LOOKING FOR PARAFFIN?

For high-quality paraffin for embedding, look to the Chemicals section or visit our Web site.

Visit www.fishersci.com and search for Embedding Paraffin

Thermo Scientific* Shandon* Excelsior* ES Tissue Processor

NEW

Economical, walk-away xylene-free tissue processing with superior tissue quality

A78400006

Continuous agitation of circular vessels evenly distributes reagents around specimens for consistent processing. Automatic, in-process rotation along with the Excelsior Reagent Management greatly reduces reagent usage.

Improved Productivity

- Dehydrant and clearing reagents can be preheated for more rapid and consistent processing
- Vacuum or cycling vacuum is available
- Laboratory Information Management System (LIMS) interface
- Three wax baths are included in the reagent rotation management system
- 222 cassette capacity with the organized basket; up to 300 with the random basket (when using 5L reagent bottles)

Safety

- Downdraft fume control minimizes exposure to hazardous vapors
- Built to flammable cabinet specifications
- Two remote alarms signal potential problems
- Battery back-up for specimen safety and protection provide up to four hours of continuous processing during the power outage
- Seven password-protected areas

Advanced Design

- Sloped lid prevents excess condensation build-up
- Glass lid enables viewing during processing
- Baskets are microwavable; designed for use with microwave pre-fixation using the Thermo Scientific Shandon TissueWave* 2 microwave oven
- Organized baskets have unique interlocking design
- Complete temperature control with ambient option

Easy to Use

- 10 customized programs and five flush options
- Five speeds of counter-stir agitation available
- Accommodates most commercial 3.8 to 5L reagent bottles
- User-friendly software with multilingual screen displays

ORDERING INFORMATION:

D × W × H (to top of cabinet): 20½ × 26½ × 63" (52 × 67 × 63cm. For 100-240V 50/60Hz.

INCLUDES:

Potassium Permanganate filter (for formaldehyde), charcoal vapor filter, six organized baskets, one random basket, one each organized and random basket lids, large block metal divider, water flush bottle, two 5L storage bottles, waste wax drawer kit (two drawers, one each lid and cover), monitor, spatula, wax fill chute, 20 wax waste liners, wrench/spanner, operator manual, service book

Cat. No.	Each
A78400006	50,300.00

LOOKING FOR REPLACEMENT PARTS?

Filters, bottles, adapter kits, and other accessories are available for the Thermo Scientific* Shandon* Excelsior* ES Tissue Processor.

Visit www.fishersci.com and search for Excelsior

Thermo Scientific* Shandon* TissueWave* 2 Microwave Specimen Processing and Staining System

Can be used for the entire tissue processing cycle

Utilizes PolarHeat* sheets to convert microwave energy to heat, safely heating paraffin without the need for additional ovens or paraffin dispensers. Ideal for small samples and batches, the TissueWave 2 delivers excellent results in a fraction of the time needed for traditional methods.

Features

- Facilitates regular and special staining procedures as well as epitope retrieval used in conjunction with IHC staining
- Flexible temperature probe provides accurate temperature control to ±1°C
- Ventilation system with operation interlock safely removes vapors and fumes
- Delivers one cycle/one second pulsing power mode
- Provides detailed processing information throughout the processing cycle
- Enhanced vacuum pump and accumulator

Design

- Programmable for temperature or power control
- User-friendly, tri-colored key pad
- Easy-to-operate display screen
- Compact unit fits on table top
- Compatible with Thermo Scientific Shandon Excelsior* organized baskets

APPLICATIONS:
Tissue processing, immunohistochemistry, decalcification, non-automated special stains

INCLUDES:
Air agitator tubing, air adjustment screw, 15A fuse, AC input fuse holder, interior lamp, microwavable specimen containers, two Excelsior organized baskets, temperature probe, vacuum chamber, operator's guide

Thermo Scientific
TissueWave

NEW

B35600002

Electrical Requirements	Cat. No.	Each
110-120V, 60Hz	B35600002	18,000.0

ACCESSORIES

For use with the Thermo Scientific* Shandon Tissue Wave* 2

Description	Cat. No.	Each
Shandon Excelsior* ES Organized Baskets (6 supplied)	A78410025	202.00
Microwave Detector, hand held model	B35240070	115.54
Shandon TissueWave Gold Service Plan	B352000002C	1399.00
PolarHeat* Sheets (50/pk.)	B35610001	231.75
PolarHeat Sheets (100/pk.)	B35610002	463.50
PolarHeat Sheets (200/pk.)	B35610003	927.00

Fisher Scientific* TissuePrep* Certified Embedding Media

A formulation of purified paraffin and synthetic polymer

- Forms smooth, even ribbons
- Cells protected from shrinkage and distortion
- Melting point, 56° to 57°C (133° to 135°F)
- Viscosity: 7-14 centipoises

STORAGE CONDITIONS:
Store at room temperature.

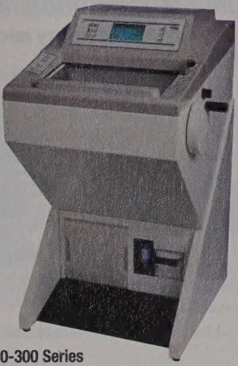
TissuePrep
TissuePrep
A superior embedding compound
NEW

T565

Size	Cat. No.	Case of 4
5 lb. (2.3kg)	T565	115.78

Thermo Scientific* Richard-Allan Scientific* HM 550 Cryostat

Open top cryostat with ergonomic design for working while standing or sitting



22-050-300 Series

Features

- Stainless-steel construction with maintenance-free cross-roller bearings
- Motorized coarse feed and reset movement
- Automatic Cryo Approach (ACA) system for exact and safe approach of the specimen toward the knife
- Battery backed storage and self-diagnostic system
- Automatic defrosting with immediate defrosting and interruption function

Operation

- LCD shows relevant data such as set and actual temperature, section sum, remaining travel, number of sections, time, trim and fine section thicknesses, retraction function
- Movable chamber illumination reduces light reflection
- Standby and sleep modes reduce energy consumption and operating noise

Models

- **HM 550 P** - basic unit with integrated fast freezing device with separate cooling element that cools up to four specimens to -60°C (max)
- **HM 550 VP** - basic unit with Peltier and integrated Vacutome system for flattening of specimens and extraction of sectioning debris
- **HM 550 OP** - basic unit equipped with Peltier and object cooling from 10°C to -55°C
- **HM 550 MP** - basic unit equipped with Peltier and motorized specimen cutting movement from 0 to 250mm/second; can be controlled by foot pedal or from the control panel; accelerated return stroke; programmable cutting window; brake and emergency stop button
- **HM 550 MVP** - basic unit with Peltier, motorized sectioning, and Vacutome
- **HM 550 OMP** - basic unit with Peltier, object cooling, and motorized sectioning
- **HM 550 OMVP** - basic unit with Peltier, object cooling, motorized sectioning, and Vacutome

ORDERING INFORMATION:

All packages available with disinfection option. Contact your Fisher Scientific Customer Service Representative for ordering information.

INCLUDES:

Three specimen stages, 2 oz. Neg-50, 100mL cryostat oil, section waste tray, brush shelf, one brush, one large brush, tools, and instruction manual

Model	Mfr. No.	Cat. No.	Each
HM 550 P (Package)	956424A	**22-050-336**	23,376.42
HM 550 P (Basic Unit)	956424	**22-050-337**	21,072.68
HM 550 OP (Package)	956454A	**22-050-334**	27,616.71
HM 550 OP (Basic Unit)	956454	**22-050-335**	25,268.71
HM 550 VP (Package)	956444A	**22-050-328**	28,397.33
HM 550 VP (Basic Unit)	956444	**22-050-329**	25,763.24
HM 550 MP (Package)	956524A	**22-050-332**	31,744.33
HM 550 MP (Basic Unit)	956524	**22-050-333**	29,396.33
HM 550 OMP (Package)	956554A	**22-050-330**	35,936.02
HM 550 OMP (Basic Unit)	956554	**22-050-331**	33,637.62
HM 550 MVP (Package)	956544A	**22-050-326**	37,280.35
HM 550 MVP (Basic Unit)	956544	**22-050-327**	35,295.51
HM 550 OMVP (Package)	956564A	**22-050-324**	38,997.59
HM 550 OMVP (Basic Unit)	956564	**22-050-325**	36,969.49

Maximum Specimen Size	70 × 55mm
Thickness Range	1 to 100µm
Trim Section Thickness	5 to 500µm
Vertical Specimen Stroke	60mm
Maximum Horizontal Stroke	28mm
Chamber Cooling Range	0 to -35°C
Weight	125 to 155kg (depending on configuration)
Electrical Requirements	115V, 60Hz, 12A ±10%
Dimensions (D × W × H)	30 × 25 × 47"; (76 × 64 × 120cm)

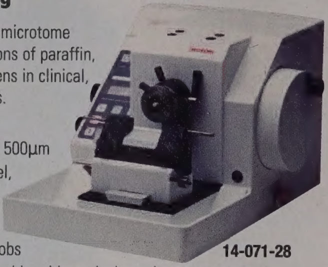
LOOKING FOR BLADES?

For a variety of Microtome Blades, see p. 924. These are also available online.

Visit www.fishersci.com and search for Microtome Blades

MICROM HM 360 Rotary Microtome

Heavy-duty automated rotary microtome for paraffin and plastic sectioning



14-071-28

Electronic, motorized rotary microtome is designed for all applications of paraffin, semi-thin, and hard specimens in clinical, research, and industrial labs.

- Ergonomic design
- Feed range: 0.25µm up to 500µm
- Smooth-turning handwheel, easy-to-use control panel that can be moved to either side of microtome, and large-sized control knobs
- Cutting window programmable with vertical specimen movement of 64mm
- Reproducible precision and comfortable operation for automated paraffin block sectioning
- Electronically controlled motor drive that generates high cutting forces; e.g., in methyl-methacrylate embedded undecalcified bones
- Integrated specimen retraction on return stroke with ability to disengage retraction
- Dove-tailed knife support stage for greater stability
- Vertical movement on maintenance-free cross-roller bearings
- Knife system advance of 28mm through stepping motor technology with three-speed motorized advance

APPLICATIONS:

The HM 360 is also suitable for scientific applications with the ability to program a series of sections; also suitable for semi-thin technique.

Description	Mfr. No.	Cat. No.	Each
MICROM HM 360 Rotary Microtome Equipped for Adaptation	905240	**14-071-28**	17,899.76

Specimen Size	55 × 50mm
Cutting Range	0.25–60µm
Cutting Increments	
0.25µm	0.25–1µm
1µm	5–20µm
2µm	20–30µm
5µm	30–60µm
Trimming Range	5–500µm
Trimming Increments	
5µm	5–10µm
10µm	10–100µm
20µm	100–200µm
Knife Carrier Retraction During Return	60µm
Travel of Specimen	
Max. Horizontal Feed	28mm
Max. Vertical Stroke	64mm
Section Counter	Five-digit LC Display with reset
Sum of Section Thickness	Five-digit LC Display with reset
Remaining Travel to Front End Position	Five-digit LC Display
Cutting Drive	Motorized, electronically controlled
Dimensions (W × D × H)	16 × 20¼ × 11" (51 × 52 × 28cm)

MICROM HM 325 Auto-Retracting Rotary Microtome

Manual sectioning and coarse advance

23-900-667

Easily sections routine paraffin-embedded specimens for any clinical, research and industrial application.

- Adjust microns from left or right side for user comfort
- Wing-style dovetail knife support
- Removable blade carrier levers help protect settings; protective blade guard design moves blade without exposing blade edge
- Zero position specimen head
- Smooth turning handwheel and precision micrometer feed system
- Vertical movement on maintenance-free cross roller bearings
- Section thickness range from 0.5 to 60µm with a full-feed range of up to 28mm
- Integrated specimen retraction on return stroke protects knife and specimen
- Integrated section trimming device automatically trims block at 10 and 30m
- Integrated waste tray with arm rests

Description	Cat. No.	Each
HM 325 Microtome	**23-900-667**	8450.40

SPECIFICATIONS

Maximum Specimen Size	50 × 55mm
Cutting Range	0.5 to 60µm
Cutting Increments	
0.5µm	0.5 to 2µm
1µm	2 to 10µm
2µm	10 to 20µm
5µm	20 to 60µm
Maximum Horizontal Feed Range	28mm
Dimensions (W × D × H)	16½ × 19¼ × 11" (42 × 49 × 28cm)
Weight	50¾ lb. (23kg)

ACCESSORIES

Knife Holders

MICROM Rotary Microtomes HM 310, 315, and 325

Description	Cat. No.	Each
Accessories for TSRAS MICROM Rotary Microtomes, Standard Knife Carrier N	**14-070-36**	1484.62
Accessories for TSRAS MICROM Rotary Microtomes, Disposable Blade Carrier E	**14-070-37**	1954.97
Base for Rotary Microtome Knife Carrier	**14-070-97**	889.25
Knife Carrier C w/ Interchangeable Press.	**14-071-03**	2392.77
Knife Carrier S for Triangle G, K, and Diamond Knives	**14-071-04**	4023.21

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

Specimen Holders

MICROM microtomes HM 310, 315, and 325

Description	Mfr. No.	Cat. No.	Each
Standard Object Clamp	715010	**14-070-40**	585.16
Universal Quick Release Cassette Clamp	715020	**14-070-41**	794.70
V-insert for Round Specimens	715100	**14-070-42**	62.13
Standard Specimen Clamp	546050	**14-070-95**	412.28
Foil Clamp Non-Orientable, for use with 14-070-40	715040	**14-071-11**	513.16
Insert for Round Specimens 6mm, for use with 14-070-40	715070	**14-071-12**	148.64
Insert for Round Specimens 15mm, for use with 14-070-40	715080	**14-071-13**	148.64
Insert for Round Specimens 25mm, for use with 14-070-14	715090	**14-071-14**	148.64
Insert for Round Specimens 19mm	715280	**14-071-16**	148.64
V Distance Piece for Standard Object Clamp 14-070-40, -42	715320	**14-071-17**	95.16
Round Specimen Clamp for Rotary Microtomes	715580	**14-071-18**	1135.76
Segment Arc Holder for use with NC9967753	715590	**14-071-19**	1317.34
Histo Collimator for Rotary Microtomes and Ergostar	755130	**14-071-22**	2585.46

MICROM HM 430 Sliding Microtome

With adjustable course advance and memory function

22-050-855

- Automatic or manual fine sectioning
- Designed to section paraffin and frozen specimens
- Course advance can be adjusted in 100µm increments up to 800µm
- Accommodates specimens up to 80 × 60mm
- Automatic specimen advance
- Knife holder with integrated, movable knife guard
- Memory function saves time for multiple sample advancing

INCLUDES:

Three specimen stages, one anti-roll plate, 2-oz. Neg-50, 100mL cryostat oil, one brush, brush shelf, section waste tray, tools, and instruction manual

Description	Mfr. No.	Cat. No.	Each
HM 430	910010	**22-050-855**	10,000.65

Cutting Range	1–60µm
Maximum Specimen Size	80 × 60mm
Total Specimen Stroke	40mm
Coarse Advance	Up to 800µm in 100µm increments
Dimensions (W × D × H)	12¼ × 19 × 13" (310 × 480 × 320mm)
Weight	26kg

MICROM HM 650 V Vibrating Blade Microtome

Electronic microtome with vibrating blade for cutting tissue and unfixed specimens

22-050-852

- Micrometer and vibration systems enclosed in an ergonomically designed housing
- All sectioning and operational parameters can be stored and recalled
- Fine and trim section thickness via stepping motor from 0 to 1500µm
- Amplitude adjustable from 0 to 1.2mm in 1mm increments
- Frequency of vibration adjustable from 0 to 100Hz
- Maximum specimen size of 45 × 45mm
- Motorized cutting movement from 0 to 5mm

Mfr. No.	Cat. No.	Each
920110	**22-050-852**	14,968.27

MICROM HM 450 Sliding Microtome

With automatic fine sectioning and trimming features, and selectable specimen retraction

Integrated knife carrier glides along a maintenance-free precision cross-roller bearing system ensuring fast, comfortable and non-tiring operation.

22-050-856

- Accommodates specimen sizes up to 80 × 60mm (up to 155 × 90mm with special stage)
- Precise, accurate specimen advance to the knife is assured by incorporation of stepping motor technology
- Trimming function allows for precision block trimming prior to the fine sectioning function
- Automatic or manual sectioning can be selected
- User-friendly control panel allows for programming of settings and sectioning parameters
- Important sectioning information including section counter, step sum, remaining travel and specimen position memory function are retained

Additional Features

- Memory function for time-saving specimen advance to the knife
- Knife holder with integrated, movable knife guard
- Three-speed motorized coarse feed
- Ergonomic handle for moving knife carrier
- Specimen fine orientation on X/Y axes

Description	Mfr. No.	Cat. No.	Each
Richard-Allan Scientific HM 450 Sliding Microtome	910020	**22-050-856**	12,791.42

Specimen Size	80 × 60mm
Thickness Range	1 to 100µm
Total Specimen Stroke	40mm
Electrical Requirements	110/120V, 50/60Hz
Weight	57½ lb. (26kg)
Dimensions (W × D × H)	19 × 15 ×12½ (48 × 38 × 32cm)

MICROTOME ACCESSORIES

Thermo Scientific* Richard-Allan Scientific* Edge-Rite* Disposable Microtome Blades

Consistent quality from blade to blade and sample to sample

- Surgical grade steel
- High and low profile blades are specially coated to increase longevity and optimize section quality

14-070-60 Series

Low profile blades:

- 20% thicker than traditional blades to increase knife edge stability, which allows for excellent ribboning and facilitates usage in cryostats
- Blades are 5% longer allowing for more sections per blade
- Fit any low profile blade holder

Description	Mfr. No.	Cat. No.	Pack of 50
High Profile	4275H	**14-070-61**	109.14
Low Profile	4280L	**14-070-60**	109.14

Fisher Scientific* Tissue Path* High-Profile Microtome Blades

Available in two thicknesses

- Heat-treated, high carbon blades are precision-ground for optimal angle and facet configuration
- Thicker size has greater rigidity to prevent chattering and produces excellent ribboning characteristics

ORDERING INFORMATION:

Packaged in easy-to-use dispenser packs

Blade Thickness	Cat. No.	Pack of
0.012"	**22-030-530**	99.02
0.033"	**22-244-028**	141.94

DON'T SEE THE RIGHT PRODUCT?

For a complete listing of Thermo Scientific* Shandon* stainless steel and tungsten carbide microtome knives refer to our Web site.

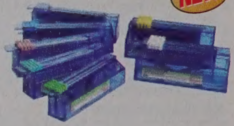
Visit www.fishersci.com and search for Microtome Knives

Thermo Scientific* Shandon* Disposable Microtome Blades

MX35 Premier Plus

NEW

Provides superb performance for sectioning hard tissues and high-quality thin sections



- Low profile
- Sharper edge with increased durability for longer blade life
- L × W: 31½ × 3⅛" (80 × 8mm)
- Thickness: 0.1" (0.25mm)
- Cutting Angle: 30°

Cat. No.	Pack of 50
3052835	113.68

MX35 Premier

NEW

Excellent for routine applications with a high proportion of harder tissue

- Low profile
- Increased durability
- L × W: 31½ × 3⅛" (80 × 8mm)
- Thickness: 0.1" (0.25mm)
- Cutting Angle: 35°

Cat. No.	Pack of 50
3051835	104.03

MB22 Premier

NEW

Great for applications where extremely thin, high-quality sections are required, such as cryostats, renal biopsies and lymph nodes

- Low profile
- L × W: 31½ × 3⅛" (80 × 8mm)
- Thickness: 0.1" (0.25mm)
- Cutting Angle: 22°

Cat. No.	Pack of 50
3050822	98.94

MB35 Premier

NEW

Best for routine sectioning applications

- Low profile
- Increased durability
- L × W: 31½ × 3⅛" (80 × 8mm)
- Thickness: 0.1" (0.25mm)
- Cutting Angle: 35°

Cat. No.	Pack of 50
3050835	92.82

HP35

NEW

Ideal for routine applications with a high proportion of harder tissue

- High profile
- Increased durability
- L × W: 29½ × 5½" (75 × 14mm)
- Thickness: 0.122" (0.31mm)
- Cutting Angle: 35°

Description	Cat. No.	Pack of 50
Coated	**3150734**	105.56
Non-Coated	**3152735**	109.62

EQUIPMENT

Fisher Scientific* TissuePrep* Circular Flotation Bath

Eliminates wrinkles and distortions in specimen sections after microtoming

- Maintains temperatures from ambient to 70°C
- One piece, seamless aluminum chamber prevents leaks
- Front mounted on/off switch and temperature control with indicator light
- Bath capacity: 2.3L
- For 120V, 300W

ORDERING INFORMATION:

Chamber Dimensions (H × Dia.): 2.5" × 8.5" (6 × 22 cm).

Cat. No.	Each
15464Q	551.76

*Trademark. See Trademark Reference.

Prices subject to change.

Fisher Scientific* TissuePrep* Rectangular Flotation Bath

Functional, easy-to-clean bath for flattening out tissue sections wrinkled by microtoming

15-464-10Q

- Sleek base houses thermostatic temperature control and fluorescent lamp
- Clear borosilicate glass flotation tray sits in bath well—simply lift it out for fast and easy water changes and cleaning
- Illuminated removable flotation tray; tissues are always easy to see during processing
- Tissues illuminated from above and below water surface by built-in fluorescent lamp
- Bath temperature can be adjusted from ambient to 55°C (131°F) ± 1°C (±1.8°F)
- Use temperature-control knob to stabilize bath at desired temperature, as indicated on glass thermometer (order separately), which is immersed in bath in holder provided
- Finished in baked-acrylic enamel
- Front panel includes power switch, temperature-control knob, heat indicator light, and lamp switch

ORDERING INFORMATION:
× W × H: 14½ × 13 × 4½" (37 × 33 × 11cm).
Electrical Requirements: 115V 60Hz.

WARRANTY:
One year

INCLUDES:
Three-wire cord and plug

COMPLIANCE:
CSA approved

Description	Cat. No.	Each
Model 135Q Flotation Bath	15-464-10Q	1037.53

LOOKING FOR MORE?

Fisherbrand* Superfrost* microscope slides come in a variety of styles, all with superior adhesiveness and visibility for ease of use. For details,

Visit www.fishersci.com and search for Superfrost

Thermo Scientific* Shandon* ParaTrimmer*

NEW

Removes excess wax from the outside of a tissue cassette after embedding

- Easy to use—just slide the outside of the block across the heated, ridged surface
- Multiple blocks may be passed across the surface at one time
- Patented, compact, dual voltage unit

B3120205

Cat. No.	Each
B3120205	553.24

Thermo Scientific* Shandon* Wax Dispenser

NEW

Holds up to 5L of molten wax at a thermostatically controlled temperature

- Separate tap heater ensures an even flow of wax
- Convenient as a stand-alone or auxiliary source of molten wax
- Stainless-steel outer casing and lid
- Aluminum inner reservoir for good thermal conductivity and improved temperature control
- Non-drip lever tap controls wax delivery and can be locked in the open position if required
- Reservoir filter screen prevents coarse particles from blocking the deliver tap
- Temperature range from 40° to 75°C, ±2°C

3120069

ORDERING INFORMATION:
Dia. × H: 8.46 × 16.1" (21.5 × 41cm)

COMPLIANCE:
Designed to meet IEC 61010

INCLUDES:
Operator's manual

CERTIFICATIONS:
CE marked; UL listed

Electrical Requirements	Cat. No.	Each
110/120V, 50/60Hz	3120069	1353.00

ACCESSORIES

Thermo Scientific* Richard-Allan Scientific* Signature Series Paraffin

NEW

Unique blend of polymers and highly refined paraffin with narrow carbon chain distribution that minimizes compression

- Triple filtered to eliminate impurities
- Both Type L and Type H can be used for infiltration and embedding and have a melting point of 55° to 57°C
- Type H allows for ultra-thin sections; Type L may reduce infiltration times during processing
- Packaged in easy-to-open, resealable 2 lb. bags

Description	Mfr. No.	Cat. No.	Each
Type H, high polymer	8338	22-050-128	104.61
Type L, low polymer	8339	22-050-129	104.61

Thermo Scientific* Shandon* MicroWriter* Cassette Labelers

Permanently mark tissue cassettes with easy-to-read black type

Use foil tape and a heated stylus to imprint characters that maintain legibility, even through processing solutions. Print barcodes on cassettes via manual data entry, or choose optional Barcode Printing Systems that take data from requisition barcode and print cassettes automatically.

- Mark approximately 200,000 characters per roll of tape
- Printing can be inverted for reading in either direction
- Prints on all 45° flat-faced cassettes
- Hoppers hold 75 cassettes
- For 110-120V, 50/60Hz

Compliance:
UL listed; CSA approved; CE marked.

Carousel Cassette MicroWriter*

Change cassette color and style easily with fully automated dispensing and labeling process

- Easy-to-change hoppers for maximum flexibility
- Choice of collection systems makes organizing cassettes easy
- Each unit holds six hoppers for up to 450 cassettes

INCLUDES:
Carousel MicroWriter, six hoppers, power cord, RS-232 cable, Thermo Scientific* Shandon BarcodeWriter CD, Operator Guide

A78200001

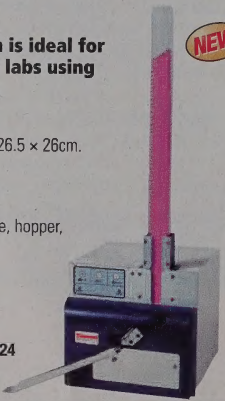
Description	Cat. No.	Each
Cassette Labeler only	A78200001	17,298.00
Cassette Labeler w/ Dell* PC, touch screen monitor, licensed MicroWriter software	B1002801	17,298.00
Barcode Printing System	B35500002	28,675.86

MicroWriter* I

Single hopper loading system is ideal for low volume processing or for labs using single-color cassettes

ORDERING INFORMATION:
D × W × H: 11.6 × 10.5 × 10.3" (29.5 × 26.5 × 26cm. Height with hoppers: 30.8" (70cm).

INCLUDES:
MicroWriter I, power cable, RS232 cable, hopper, BarcodeWriter CD, and Operator Guide



A78200024

Description	Cat. No.	Each
MicroWriter I	A78200024	11,088.00
MicroWriter I w/Dell* PC, touch-screen monitor	B1002803	14,837.00
MicroWriter I Barcode Printing System	B35500004	18,929.27

ACCESSORIES

Thermo Scientific* Shandon* Embedding Cassettes II

Acetal polymer cassettes with writing face at 45° angle

- Designed to hold tissue specimens during processing and embedding
- Pore style: small slots
- With attached lids
- Compatible with Thermo Scientific Shandon MicroWriter* cassette labelers

B100729 Series

ORDERING INFORMATION:
Tube packs are supplied in 10 tubes of 75 cassettes each.

Color	Cat. No.	Each
White	B1000729WH	113.62
Green	B1000729GR	113.62
Yellow	B1000729YW	113.62
Blue	B1000729BL	113.62
Gray	B1000729GY	113.62
Orange	B1000729OR	113.62
Peach	B1000729PE	113.62
Tan	B1000729TN	113.62
Lilac	B1000729LI	113.62
Aqua	B1000729AQ	113.62
Fluorescent Green	B1000729FGR	132.55
Fluorescent Pink	B1000729FPK	132.55
Fluorescent Yellow	B1000729FYW	132.55

Thermo Scientific* Shandon* Disposable Tissue Cassettes IV

Plastic cassettes hold tissue samples during processing and embedding

- Pore type: small slots
- Attached lids
- Compatible with Thermo Scientific Shandon Carousel Cassette MicroWriter* only

ORDERING INFORMATION:
Tube packs are supplied in 10 tubes of 75 cassettes each.

Color	Cat. No.	Each
Blue	41720T	276.38
White	41721T	276.38
Yellow	41722T	276.38
Green	41723T	276.38
Pink	41724T	276.38
Tan	41725T	276.38
Orange	41726T	276.38
Gray	41727T	276.38

LOOKING FOR MORE THERMO SCIENTIFIC* SHANDON* CASSETTES?

For a complete line of reusable and disposable tissue, embedding, and biopsy cassettes,

Visit www.fishersci.com and search for Shandon Cassettes

*Trademark. See Trademark Reference.

Prices subject to change.

hermo Scientific* Shandon* MicroWriter* lide Labeler

NEW

rmanently etches specimen identification formation onto the end of a microscope slide

A78200012

- Diamond-tipped stylus etches letters, numbers, Roman numerals and special characters in four font sizes
- Can also print barcodes
- Printing can be inverted for reading in either direction
- Numbers and letters can be automatically incremented for desired number of slides
- Accepts standard 75 × 25mm slides with plain ends, colored ends, frosted ends and back-masked ends
- ntegrated Dust Extractor's powerful vacuum pulls dust from the writing area
- Dispense hopper holds up to 72 slides, which feed directly into the printing system
- Once printed, slides are stacked in the collection hopper in sequential order

scription	Cat. No.	Each
ide Labeler w/BarcodeWriter software	**A78200012**	16,794.00
ide Labeler w/Dell* PC, touchscreen monitor	**B1002802**	21,058.26
ide MicroWriter Barcode Printing System	**B35500008**	25,400.66

ICROM HMS 760X Robot Slide Stainer

un multiple staining protocols simultaneously

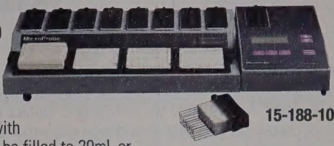
22-050-300 Series

- X/Y robotic movement
- Continuous slide loading
- Contains 36 easily accessible reagent stations
- Integrated fume control through downdraft ventilation and charcoal filtration
- Selectable slide agitation
- Carriers for two slide baskets of 30 slides each

escription	Mfr. No.	Cat. No.	Each
tainer with two heater stations and all astic vessels	960170	**22-050-320**	30,604.53
tainer with two deionized water stations nd all plastic vessels	960180	**22-050-321**	30,604.53
tainer with two heater stations and all lass vessels	960190	**22-050-322**	30,604.53
ccessories			
tandard 30-slide Basket	172550	**14-070-81**	49.37
harcoal Filter	184320	**14-070-82**	27.39
ponge (5 × 2 pieces)	184340	**14-070-83**	56.85

FisherBiotech* MicroProbe* Manual Staining System

Performs multistep staining protocols and simplifies standard chemical staining, immunostaining, and *in situ* hybridization


15-188-10

Compact system stains 20 slides at a time using capillary gap technology.

Staining Station

- Eight reagent buckets with removable lids that can be filled to 20mL or 100mL levels
- Removable tray retains four plastic holders that accept Isolon* reagent isolators or absorbent pads

Slide Holder Assembly and ProbeOn* Microscope Slides

- Allow users to move 20 ProbeOn slides (10 pairs) between staining station and incubator
- Patented holder has lightweight, chemical-resistant plastic handle with numbered positions and indexing bump

Isolon Reagent Isolators

- Available with three wells that contain milliliter volumes or with 30 smaller wells for microliter volumes of antibodies or DNA probes
- Disposable, 30-well glass isolators are also available

MicroProbe Incubator

- Heats from 30° to 110°C (86° to 230°F) in less than ten minutes
- Internal fan
- Anodized aluminum incubation chamber

INCLUDES:

MicroProbe Staining Station with eight reagent buckets and lids; locator tray for Isolon holders; four Isolon holders; five 30-well rubber reagent isolators; five 3-well rubber reagent isolators; six absorbent pads; slide holder with 72 ProbeOn microscope slides; MicroProbe Incubator with lid, calibration block, and power cord; user's Manuals; and applications Guide.

WARRANTY:
One year

COMPLIANCE:
CSA approved

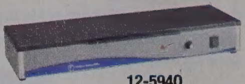
Configured for	Cat. No.	Each
120VAC 50/60Hz†	**15-188-10**	2743.95

† *Customer configurable for 100/220/240VAC. (Line cords must be ordered separately—contact your Fisher Scientific Customer Service Representative.)*

LOOKING FOR MORE?
For accessories and replacement parts for this system,
Visit www.fishersci.com and search for MicroProbe

Fisher Scientific* Slide Warmer

Fast-heating aluminum warming plate



12-594Q

- Holds up to fifty-six 1 × 3" (25 × 76mm) or twenty-four 2 × 3" (50 × 76mm) slides
- Coated with black fluorocarbon resin to resist corrosion and provide high-contrast background for viewing slides
- Easy to clean
- Graduated dial thermometer is mounted on front panel instead of warming surface; provides more usable surface area, eliminates problem of contaminant buildup on and around thermometer
- Heats from ambient to 40° to 45°C (104° to 113°F) range (commonly used for nonadhesive mounting of sections) in just 15 minutes, and to 54°C (129°F) for dehydrating; setting adhesives takes 20 minutes

COMPLIANCE:
CSA approved

Description	Cat. No.	Each
115V 50/60Hz, 2.0A Slide Warmer	**12-594Q**	651.96
230V 50/60Hz, 1.0A Slide Warmer	**12-594-1Q**	712.97

SPECIFICATIONS

Temperature Range	Ambient to 60°C
Temperature Constancy	±3°C (±5.4°F)
Uniformity	±2°C (±3.6°F)
Usable Heated Area	6½ × 23½" (17 × 60cm)

LOOKING FOR MORE SLIDE WARMERS?

For a full listing,

Visit www.fishersci.com and search for Slide Warmers

SUPPLIES

Fisher Diagnostics PROTOCOL* 10% Buffered Formalin Filled Containers

Specifically engineered for storage of histological tissue specimens

- PET
- Crystal-clear, non-autoclavable
- Flexible containers are resistant to alkalis and weak acids
- Prefilled containers are supplied with silk-screened warning label

Capacity	Fill Volume	Cat. No.	Case of
240mL (8 oz.)	120mL (4 oz.)	**23-426-796**	60/100.95
480mL (16 oz.)	240mL (8 oz.)	**23-426-797**	32/88.98

DON'T SEE THE RIGHT PRODUCT?

For Fisher Diagnostics PROTOCOL* 10% Buffered Formalin in 16 oz. to 55 gal. quantities, see p. 915.

Fisher Diagnostics PROTOCOL* Empty Containers

Eliminate formalin evaporation

- Polypropylene
- Autoclavable
- Graduation marks clearly identify volume
- Empty containers come with adhesive labels for patient identification and hazardous chemical warning

Capacity	Cat. No.	Case of
20mL (⅝ oz.)	**22-032-061**	200/121.51
40mL (1⅜ oz.)	**22-316-158**	600/173.09
60mL (2 oz.)	**22-316-159**	500/299.62
90mL (3 oz.)	**22-316-160**	400/120.69
120mL (4 oz.)	**22-032-062**	300/391.80

Fisher Diagnostics PROTOCOL* Color-Coded Prefilled Formalin Containers

Prefilled with 10% neutral buffered formalin

- Color-coded screw cap with leakproof O-ring
- Autoclavable polypropylene
- Paper labels to indicate date, doctor, patient name or ID, and specimen type
- Graduated

23-032-059, 23-316-156, 23-316-155, 23-316-154

ORDERING INFORMATION:
The $^{20}/_{10}$, $^{40}/_{20}$ and $^{60}/_{30}$mL containers are packaged in shrink wrapped trays to allow for ease of use, handling and storage.

Capacity	Buffer Volume	Cap Color	Qty./Tray	Cat. No.	Case of
Shrink Wrapped Trays					
20mL	10mL	Green	4 trays of 25	**23-032-059**	100/81.28
40mL	20mL	Red	5 trays of 30	**23-316-154**	150/166.41
60mL	30mL	Blue	3 trays of 25	**23-316-155**	75/58.89
Standard Packaging					
90mL	45mL	Orange	----	**23-316-156**	75/53.02
120mL	60mL	Yellow	----	**23-032-060**	50/49.26

Fisher Scientific* HistoPrep* Modular File Drawer

To transport, just remove drawer and go

15-182-511A

- Stackable self-contained drawers
- Made of high impact plastic
- Two drawers hold 250 cassettes or embedding rings†

INCLUDES:
Color decals to separate, organize by function

Type	Cat. No.	Case of 2
Without cassettes	**15-182-511A**	63.42

---

† *Storage capacity approximate. Compatible with common brand names of cassettes and embedding rings, including HistoPrep* and OmniSette*.*

Vheaton Balsam Bottle

leal for applying media used in mounting slides

oda-lime glass bottle is sealed
/ a ground-glass cap fitted to
ound-glass neck of the bottle.

RDERING INFORMATION:
imensions, 2⅞ dia. × 3⅞"H
.4 × 9.9cm)

ICLUDES:
lass applicator rod, glass cap

03-082-1

ze	Mfr. No.	Cat. No.	Case of 6
00mL	208890	03-082-1	132.81

*Fisherbrand** Glass Staining Dishes

For 10 Slides, With Ground Glass Cover

Holds up to 10 standard 3 × 1" (75 × 25mm) slides back-to-back

- Heavy molded glass Coplin staining dish holds slides vertically
- Rectangular body with five grooves

ORDERING INFORMATION:
Cover O.D., 2⅜" (60mm). Overall height, 4⁵⁄₁₆" (110mm)

08-815

Cat. No.	Each	Pack of 12
08-815	32.89	288.08

ACCESSORIES

Cover Only

Replacement ground cover for 08-815 Dish

Cat. No.	Each	Pack of 12
08-815-1A	13.90	121.75

For 10 Slides, With Screw Cap

Holds up to 10 standard 3 × 1" (75 × 25mm) slides back-to-back

- Heavy molded glass Coplin staining dish holds slides vertically
- Rectangular body with five grooves
- With tight-fitting plastic screw cap

ORDERING INFORMATION:
Cover O.D., 2⅜" (60mm). Overall height, 4⁵⁄₁₆" (110mm)

08-816

Cat. No.	Each	Pack of 12
08-816	43.57	381.59

For 16 Slides

Staining jar holds 3 × 1" (75 × 25mm) slides vertically

- Eight grooves, each wide enough to hold two slides back-to-back
- With molded glass cover

08-817

Cat. No.	Each	Pack of 12
08-817	29.18	255.63

For 20 Slides

Staining dish with 10 grooves for carrying up to 20 standard microscope slides back-to-back

- Holds slides horizontally
- With cover

ORDERING INFORMATION:
Overall L × W × H: 3⅛ × 2⅛ × 1¼"
(79 × 54 × 32mm)

08-810

Cat. No.	Each	Pack of 36
08-810	24.50	643.73

Wheaton Glass Staining Dishes

Dishes and covers are made from Wheaton "810" borosilicate glass

For 5 or 10 Slides

For fully immersed slides

- Coplin staining jar holds up to five single slides or 10 slides 3 × 1" (75 × 25mm) back-to-back vertically
- Linerless polypropylene screw cap to reduce evaporation is included

ORDERING INFORMATION:
Outside height without cap: 4¼" (108mm).
Slide grip available separately (08-813-1).

08-813E

Mfr. No.	Cat. No.	Each
900570	08-813E	22.04

For 10 Slides

For partially immersed slides

- Grooved Coplin staining jar holds up to ten standard 3 × 1" (75 × 25mm) slides vertically (slides extend above stain, so they can be handled without the use of forceps)
- Linerless polypropylene screw cap to reduce evaporation is included

08-813D

ORDERING INFORMATION:
Overall height: 2½" (65mm)

Mfr. No.	Cat. No.	Case of 6
900520	08-813D	96.84

Contd. on next page.

For 10 or 20 Slides

Grooved staining dish holds up to ten single slides or twenty slides back-to-back

Immerse standard 3 × 1" (75 × 25mm) slides horizontally.

ORDERING INFORMATION:
L × W × H: 1¾ × 2¾ × 1¼"
(45 × 70 × 32mm)

INCLUDES:
Glass cover

08-811

Mfr. No.	Cat. No.	Case of 6
900170	**08-811**	131.77

For 20 Slides

Complete with dish, cover, and glass slide rack

- Removable glass rack has a spring wire handle for manual staining of up to 20 horizontal slides
- Bottom of rack is open for rapid immersion in and draining of stain
- Holds slides measuring 3 × 1" (75 × 25mm), 3 × 1½" (75 × 38mm), and 3 × 2" (75 × 51mm)

08-812

ORDERING INFORMATION:
L × W × H: 4⅛ × 2¾ × 3⅜"
(105 × 70 × 85mm)

Description	Mfr. No.	Cat. No.	Each	Case of
Dish w/rack and cover	900200	**08-812**	70.35	6/373.56
Dish w/Cover	900203	**08-812-1A**	----	3/122.71
Slide Rack only	900204	**08-812-1B**	----	3/72.32
Handle only	900205	**08-812-1C**	----	6/30.87

For 50 Slides

Holds up to 50 slides horizontally

- Rack (08-813A only) is nontarnishable and withstands most staining solutions
- Hinged handle on rack allows easy insertion and removal of slides

ORDERING INFORMATION:
L × W × H: 3¼ × 7⅞ × 4⅛"
(80 × 200 × 105mm)

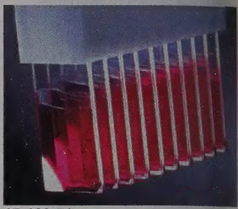
08-813A

Description	Mfr. No.	Cat. No.	Case of
Dish w/rack and cover	900400	**08-813A**	6/721.74
Dish w/cover	900403	**08-813C**	3/290.41
Dish only	900401	**22-029-567**	3/209.10
Cover only	900402	**22-031-300**	3/119.10

FisherBiotech* ProbeOn* and ProbeOn Plus Slides

Provide the precise capillary gap required for the MicroProbe System

- Both slides easily accommodate 5µm thick control and sample sections
- Slides measure 1 × 3" (25 × 75mm) and are 1mm thick
- ProbeOn Plus slides are enhanced for superior tissue adherence—eliminating the need for water bath additives or polylysine pretreatment


15-188-51

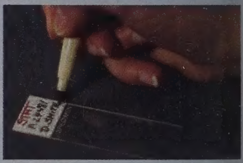
Slide Type	Cat. No.	Pack of 144	Case of 10 Pk.
ProbeOn	**15-188-51**	57.55	491.79
ProbeOn Plus	**15-188-52**	71.15	618.66

*Fisherbrand** Securline* Marker II Pens

Specially designed for marking Superfrost* and frosted microslides and plastic embedding cassettes

Perform well on ceramic, vinyl, paper, porcelain, metal, Mylar*, and other types of glass and plastic.

- Ink is resistant to many normal laboratory solutions when used in procedures that do not require abrasive contact
- Perfect for histology and cytology work
- Ink will withstand steam or gas sterilization and temperatures from cryogenic to approximately 200°C (392°F)
- Line width is approximately 0.015"
- Ink dries to the touch almost immediately, but should be allowed to fix for five minutes before processing in solvent baths
- Removes easily with a variety of such solvents as acetic acid, methylene chloride, methyl benzoate, 2-ethoxyethanol
- Black or red


14-905-30 Series

NOTE:
Test on material before using.

Color	Mfr. No.	Cat. No.	Pack of 10
Black	1450 20 PDC	**14-905-30**	56.31
Red	1450 16 PDC	**14-905-35**	56.91

HOMOGENIZERS

ROTOR/STATOR

isher Scientific* PowerGen* Model 125 lomogenizer

ightweight, ergonomic unit for PCR and other mall-volume applications

14-261-02

isperses liquid volumes from 0.03 to 100mL. Ideal for use ith sinewy materials such as plant and animal tissue, or r hard materials such as grains and soil material.

eatures

- Speed range: 8000 to 30,000rpm
- Use with sterilized stainless-steel or disposable generators (sold separately see p. 933
- Can be used as handheld unit, or stand-mounted (Stand 14-261-02S, sold separately)

vailable in three configurations:

- **Unit-only** includes: Model 125 Homogenizer, manual, power cord, and tools
- **Package** includes: Model 125 Homogenizer and accessories listed above, stand assembly 14-261-02S, 5 × 95mm flat-bottom generator 14-261-11, 7 × 95mm sawtooth generator 14-261-15, and 10 × 95mm sawtooth generator 14-261-17
- **PCR Kit** includes Model 125 Homogenizer, selected generators for PCR, adapter for disposable generators, and carrying case; to order, see Cat. No. 14-261-28 at right

PPLICATIONS:

NA protein assays, DNA and RNA blot analysis, PCR, Tissue ecomposition, Suspensions

EQUIRED ACCESSORIES:

enerators (sold separately; see Fisher Scientific PowerGen enerators, p. 933)

VARRANTY:

wo years, parts and labor.

ERTIFICATIONS:

E marked

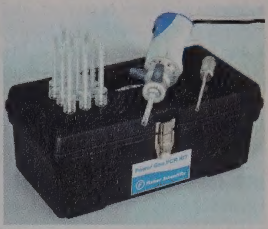
PECIFICATIONS

olume Range (for water)	0.03 to 100mL
peed Range	8000 to 30,000rpm
laximum Viscosity (cps)	20,000
peed Control	Stepless
isplay	Scale
se Options	Handheld or stand-mounted
lotor	125w
loise Level	65dB
verload Protection	Yes
limensions (L × W × H)	23⅝ × 17¾ × 72¾" (60 × 45 × 185cm)
et Weight	1⅛ lb. (0.5kg)
lectrical Requirements	115V 60Hz

escription	Cat. No.	Each
lomogenizer Only	**14-261-02**	900.92
owerGen 125 Package	**14-261-02P**	4368.25
tand Assembly	**14-261-02S**	202.00

Fisher Scientific* PowerGen* Model 125 Homogenizer PCR Kits

All-in-one kits—with homogenizer, generators and carrying case—designed specifically for PCR work



14-261-28

Powerful Model 125 Homogenizer delivers complete homogenization for most samples with just three to four short bursts at top speed.

Model 125 Features

- Process volumes from 0.03 to 100mL
- Variable speed control to 30,000rpm for efficient cell disruption
- Disposable plastic generators eliminate sample cross-contamination
- Flat-bottom stainless-steel generators process liquid or soft tissues
- Saw-tooth stainless-steel generators handle tough, fibrous tissues

ORDERING INFORMATION:

Kits do not include a stand assembly; order separately (14-261-02S). Model 125 Homogenizer (14-261-02) can be ordered separately, at left.

INCLUDES:

One PowerGen Model 125 Homogenizer; a selection of disposable plastic and/or reusable stainless-steel generators (combinations vary by kit; see ordering chart); one Adapter 14-261-35 (Kits with disposable generators only; adapter is required to use disposable generators with Model 125); carrying case

WARRANTY:

Two years, parts and labor.

CERTIFICATIONS:

CE marked

Kits Include Model 125 Homogenizer and Generators listed below:	Cat. No.	Each
Kit with Disposable Plastic Generators only		
7 × 65mm Disposable Generators (Pack of 12)	**14-261-28**	959.50
Kits with Stainless-steel Generators only		
One 5 × 95mm Flat-bottom SS Generator	**14-261-30**	1792.75
One 7 × 95mm Saw-tooth SS Generator	**14-261-29**	1868.50
One 10 × 95mm Saw-tooth SS Generator	**14-261-31**	1868.50
Kits with both Disposable Plastic and Stainless-steel Generators		
7 × 65mm Disposable Generators (Pack of 12) and one 5 × 95mm Flat-bottom SS Generator	**14-261-32**	1934.15
7 × 65mm Disposable Generators (Pack of 12) and one 7 × 95mm Saw-tooth SS Generator	**14-261-33**	1969.50
7 × 65mm Disposable Generators (Pack of 12) and one 10 × 95mm Saw-tooth SS Generator	**14-261-34**	1969.50

LOOKING FOR TUBES?

Fisher Scientific offers a wide variety of microcentrifuge, polypropylene, and sterile tubes from Fisherbrand*, Corning, and other leading suppliers. Find them in the Tubes section.

Fisher Scientific* PowerGen* Model 500 Homogenizer

High-performance homogenizer for mid-sized volumes from 0.03 to 5000mL

Ideal for creating solid/liquid dispersions and liquid/liquid emulsions, or for sample preparation.

- Speed range: 6500 to 24,000rpm
- Accepts wide range of stainless-steel generators for a variety of applications (sold separately, see p. 933)
- Also accepts 7 × 65mm and 7 × 110mm disposable generators (sold separately and requires adapter 14-261-35)

ORDERING INFORMATION:
Available as unit only or in a package with accessories

INCLUDES:
Model 500 homogenizer unit only, or as Package with:

- Unit (14-261-04)
- Stand assembly (14-261-04S)
- 35 × 195mm flat-bottom generator (14-261-14)
- 10 × 95mm sawtooth generator (14-261-17)
- 20 × 195mm sawtooth generator (14-261-19)

REQUIRED ACCESSORIES:
Generators (sold separately; see Fisher Scientific* PowerGen Generators, p. 933).

14-261-04

WARRANTY:
Two years, parts and labor

CERTIFICATIONS:
CE marked

Description	Cat. No.	Each
Homogenizer Only	**14-261-04**	984.75
PowerGen 500 Package	**14-261-04P**	5050.00
Stand Assembly	**14-261-04S**	204.14

SPECIFICATIONS

Volume Range (water)	0.03mL to 5L
Speed Range	6500 to 24,000rpm
Maximum Viscosity (cps)	20,000
Speed Control	Stepless
Display	Scale
Use Options	Stand-mounted or handheld
Motor	500w
Noise Level	73dB
Overload Protection	Yes
Dimensions (L × W × H)	31½ × 25⅝ × 94½" (80 × 65 × 240cm)
Net Weight	3½ lb. (1.6kg)
Electrical Requirements	115V 60Hz

Fisher Scientific* PowerGen* Model 1000 Homogenizer

High-viscosity homogenizer for volumes from 0.03mL to 10L

Spectrum of applications run from sample preparation to use in laboratory reactors to dispersion tasks under vacuum and pressure.

- Speed range: 7500 to 30,000rpm
- Accepts wide range of stainless-steel generators for a variety of applications (sold separately, see p. 933)
- Also accepts 7 × 65mm and 7 × 110mm disposable generators (sold separately and requires adapter 14-261-35)

ORDERING INFORMATION:
Available as unit only or in a package with accessories

INCLUDES:
Model 1000 homogenizer unit only, or as Package with:

- Unit (14-261-06)
- Stand assembly (14-261-04S)
- 35 × 195mm flat-bottom generator (14-261-14)
- 10 × 95mm sawtooth generator (14-261-17)
- 20 × 195mm sawtooth generator (14-261-19)

REQUIRED ACCESSORIES:
Generators (sold separately; see Fisher Scientific* PowerGen Generators, p. 933)

14-261-06

WARRANTY:
Two years, parts and labor

CERTIFICATIONS:
CE marked

Description	Cat. No.	Each
Homogenizer Only	**14-261-06**	1363.50
PowerGen 1000 Package	**14-261-06P**	5656.00
Stand Assembly	**14-261-04S**	204.14

SPECIFICATIONS

Volume Range (water)	0.03mL to 10L
Speed Range	7500 to 30,000rpm
Maximum Viscosity (cps)	20,000
Speed Control	Stepless
Display	Scale
Use Options	Stand-mounted
Motor	1050w
Noise	81dB
Overload Protection	Yes
Dimensions (L × W × H)	36¼ × 29½ × 118" (92 × 75 × 300cm)
Net Weight	5¾ lb. (2.6kg)
Electrical Requirements	115V 60Hz

NEED TO CLEAN YOUR GENERATORS?

Use a sterilizer to safely clean your reusable stainless-steel generators. For a selection of models, see the Sterilizers section.

Fisherbrand* **EASY READER PLASTIC CENTRIFUGE TUBES**

Conical-bottom graduated tubes in 15 or 50mL sizes with a large labeling area. Available sterile or nonsterile. Closures included. To find these, look to the Tubes section.

isher Scientific* PowerGen* Model 1800 Homogenizer

ugged, high-performance homogenizer for large volumes from 250mL to 30L

Speed range: 4000 to 10,000rpm with variable speed control

Suitable for continuous run

Speed remains constant even with viscosity changes for better reproducibility

Electronic safety circuit and smooth start

Accepts wide range of stainless-steel generators for a variety of applications (sold separately)

RDERING INFORMATION:

/ailable as unit only, or in a package with accessories

ICLUDES:

odel 1800 homogenizer unit only, or as Package with:

Unit (14-261-10)

Stand assembly

Three 45 × 300mm flat-bottom generators (Coarse, 14-261-21; Medium,14-261-22; and Fine, 14-261-23)

EQUIRED ACCESSORIES:

enerators (sold separately, see PowerGen Generators below).

14-261-10

WARRANTY:

Two years, parts and labor

CERTIFICATIONS:

CE marked

Description	Cat. No.	Each
Homogenizer Only	**14-261-10**	4343.00
PowerGen 1800 Package	**14-261-10P**	9595.00

SPECIFICATIONS

Volume Range (water)	250mL to 30L
Speed Range	4000 to 10,000rpm
Maximum Viscosity (cps)	20,000
Speed Control	Stepless
Display	Scale
Use Options	Stand-mounted
Motor	1800w
Noise	72dB
Overload Protection	Yes
Dimensions (L × W × H)	47¼ × 49⅛ × 144½" (120 × 125 × 367cm)
Net Weight	13¼ lb. (6kg)
Electrical Requirements	115V 60Hz

ACCESSORIES

Fisher Scientific* PowerGen* Generators

For use with PowerGen Homogenizers as indicated in the chart below

Choose from durable stainless-steel generators in flat-bottom or saw-tooth styles, or disposable generators. All generators are autoclavable.

- **Stainless-steel generators** are designed for working with difficult, frozen or fibrous tissues, or where sample-to-sample contamination is not a concern
- Oversized windows allow larger sample pieces to pass through the processing head, where shearing occurs
- Disassemble easily for cleaning and bearing maintenance
- Flat-bottom styles for liquid or soft tissues
- Saw-tooth styles for processing fibrous tissues
- Compatible with older PowerGen models; no adapter required (**Note:** 45 × 300mm sizes cannot be used with older PowerGen units.)
- **Disposable generators** are ideal for applications where molecular cross-contamination is a concern
- Fit directly into most microcentrifuge tubes
- Homogenize tissues from 0.25 to 20mL
- Can be cleaned, sterilized or disinfected for reuse, or discarded
- Autoclavable at 121°C (30 psi for 20 min.) up to five times
- Plastic construction reduces risk of cuts
- Nonsterile
- For use in Models 125, 500 and 1000 only; require adapter 14-261-35 (sold separately)

REQUIRED ACCESSORIES:

Disposable Tip Adapter (14-261-35) required to use disposable plastic generators with Models 125, 500, 1000, or older PowerGen models

14-261-23 Fine

14-261-11 Flat Bottom

14-261-22 Medium

14-261-15 Saw-tooth

14-261-21 Coarse

14-261-24 Disposable

Stator Dia. × L	For Use with PowerGen Model(s)	Volume Range	Cat. No.	Price
Flat-Bottom Stainless-steel Generators				
5 × 95mm	125, 500, 1000	0.03 to 5mL	**14-261-11**	Ea./1095.85
7 × 95mm	125, 500, 1000	0.25 to 20mL	**14-261-12**	Ea./1095.85
7 × 195mm	125, 500, 1000	0.25 to 20mL	**14-261-13**	Ea./1348.35
35 × 195mm	500, 1000	100mL to 10L	**14-261-14**	Ea./1616.00
45 × 300mm coarse	1800	500mL to 20L	**14-261-21**	Ea./2106.30
45 × 300mm medium	1800	500mL to 15L	**14-261-22**	Ea./2106.30
45 × 300mm fine	1800	250mL to 10L	**14-261-23**	Ea./2106.30
Saw-Tooth Stainless-steel Generators				
7 × 95mm	125, 500, 1000	0.25 to 20mL	**14-261-15**	Ea./1136.25
7 × 195mm	125, 500, 1000	0.25 to 20mL	**14-261-16**	Ea./1247.35
10 × 95mm	125, 500, 1000	1.5 to 100mL	**14-261-17**	Ea./1136.25
10 × 195mm	125, 500, 1000	1.5 to 100mL	**14-261-18**	Ea./1247.35
20 × 195mm	500, 1000	100 to 1800mL	**14-261-19**	Ea./1414.00
32 × 195mm	500, 1000	100mL to 5L	**14-261-20**	Ea./1717.00
Disposable Generators†				
7 × 65mm	125, 500, 1000	0.25 to 20mL	**14-261-24**	Pk. of 25/303.00
7 × 65mm	125, 500, 1000	0.25 to 20mL	**14-261-25**	Pk. of 50/545.40
7 × 110mm	125, 500, 1000	0.25 to 20mL	**14-261-26**	Pk. of 25/333.30
7 × 110mm	125, 500, 1000	0.25 to 20mL	**14-261-27**	Pk. of 50/600.95
Adapter for Disposable Generators†				
N/A	125, 500, 1000	N/A	**14-261-35**	155.00

†Adapter is required to use disposable generators with Models 125, 500 and 1000.

Fisher Scientific* PowerGen* Model 35 Handheld Homogenizer

Handheld unit with battery-powered option

Processes small liquid or soft tissue samples (such as for DNA extraction or cell disruption) from 0.05 to 100mL.

15-338-35P

Features

- Lightweight, 11 oz. (311g) design and built-in thumb notch reduce hand strain
- Portable—runs from rechargeable NiCd battery that clips on belt or rests on table
- Small footprint, just 2½ sq. in. (16cm^2)

Performance

- With battery power: fixed speed (25,000rpm); 40 minutes continuous use with no load before recharge
- With pulse feature: fixed speed (30,000rpm)
- With transformer and speed control unit: variable speed from 5000 to 30,000rpm
- Store on accessory transformer and speed control unit (15-338-35PB), or stand unsupported on lab bench
- Available as a single unit or as a complete package with accessories and generators

Transformer and Speed Control Unit

- Use for continuous-duty processing with built-in speed control from 5000 to 30,000rpm
- Doubles as storage shelf for PowerGen Model 35 motor unit and three generators

PowerGen* Model 35 Homogenizer includes:

- Homogenizer unit with 35w motor in Noryl* plastic double-insulated housing
- Two-position rocker switch control (fixed speed and pulse)
- Polarized 2-wire, 6' (1.8m) cord
- Tool kit
- Instruction manual
- Rechargeable NiCd battery with belt clip (15-338-1)
- 115V battery charger (15-338-2)
- Does not include generators; order separately. For stationary use, order motor stand assembly (14-670B, 05-754, and 15-338-21)

PowerGen* Model 35 Package adds:

- Transformer and speed control unit (15-338-35PB)
- 5mm diameter × 95mm long flat-bottom generator (14-261-11)
- 7 and 10mm diameter × 95mm long saw-tooth generators (14-261-15 and -17)
- Spare bearings
- Generator cleaning kit

REQUIRED ACCESSORIES:

Generators, order separately

Description	Electrical Requirements	Cat. No.	Each
PowerGen 35 Package	115V 50/60Hz	**15-338-35P**	5395.41
Homogenizer Only	115V 50/60Hz	**15-338-35H**	875.91
Transformer and Speed Control Unit	115V 50/60Hz	**15-338-35PB**	628.12
Replacement Battery Pack	----	**15-338-1**	285.07
Charger Unit	----	**15-338-2**	57.50

ACCESSORIES FOR POWERGEN* 35

Motor Stand Assembly

Mount PowerGen* Model 35 on this assembly for stationary use.

- **All three components listed are needed and must be ordered separately.** Epoxyn* solid epoxy resin base is chemical and mar resistant, measures 5W × 8"L (13 × 20cm) and comes with a ⅜" diameter (9.5mm) nickel-plated steel rod. Castaloy* clamp links base rod with ⅜" diameter (9.5mm) nickel-plated motor unit support rod.

Description	Cat. No.	Each
Base with Rod	**14-670B**	44.35
Castaloy Clamp	**05-754Q**	16.38
Motor Unit Support Rod	**15-338-221**	35.00

Fisher Scientific* Tissuemiser Homogenizer

Economical small-sample laboratory homogenizer with probe

Portable and lightweight. Ideal for homogenizing, dispersing and emulsifying samples in aqueous media with volumes of 0.25 to 30mL. Can also mix, disperse and emulsify.

15-338-420

- Continuously adjustable motor speed range from 5000 to 30,000rpm
- Liquid medium with suspended material is drawn into and repeatedly cycled by the action of a screw-shaped rotor
- High-speed mechanical shear disperses and disintegrates material
- Homogenization of tissues (e.g., muscle, liver, breast tissue) typically takes less than one minute
- Motor drive is housed in sturdy black plastic, textured for easy handling
- Can be stand mounted

INCLUDES:

Stainless-steel probe (7mm) that easily fits into small test tubes or vials. Comes with two-conductor cable.

Model	Fisher Scientific Tissuemiser
Motor Speed	Variable from 5000 to 30,000rpm
Dimensions (Probe L × Dia. × Overall L)	3¼ × 9⁄32 × 11¼" (8.3 × 0.7 × 28.6cm)
Net Weight	14 oz. (397g)
Electrical Requirements	115V 50/60Hz, 125w
Cat. No.	**15-338-420**
Each	900.00

WARNING

Not for use with flammable solvents.

*Trademark. See Trademark Reference.

Prices subject to change.

BEFORE YOU BUY HOMOGENIZERS

Homogenizers are devices that blend and emulsify a substance by forcing it through a fine opening against a hard surface. Homogenizers reduce small particles of uniform size and distribute them evenly – usually as a liquid.

IMPORTANT TERMS TO KNOW

Rotor/Stator Technology—The rotor is the moving part of a dispersing element. The stator is the static part (non-moving).

Emulsions—An emulsion is a homogenous mixture of two liquids that are normally unmixable with each other, e.g., oil and water.

Suspension—A suspension is a mixture of one solid (or more) and one liquid, e.g., toothpaste.

High Shear—A high shear mixer's distinguishing feature is a rotating element, or rotor, that rotates in very close proximity to a fixed element, or stator. The rotor tip speeds typically range from 10 to 50 m/s. High shear mixers have very high-energy dissipation and shear rates, and they are much greater than conventional mixers.

Dispersion—A stable or unstable system of fine particles, evenly distributed in a medium.

THINGS TO ASK YOURSELF BEFORE BUYING

Volume—What volume will I be working with?

Sample Size/Type—How large are my samples, e.g., 50mL, 500mL? What type of sample are you homogenizing, e.g., H_2O?

Dispersing Elements—There are three types of dispersing elements: e.g., coarse, fine, and medium. Depending on your sample and task at hand, this will help determine which tool you will need.

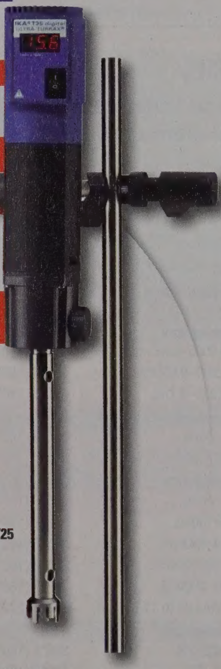
Pressure—Will you be working under pressure or vacuum?

IKA HOMOGENIZERS	VOLUME RANGE (H_2O)	MAX. VISCOSITY	SPEED RANGE (UNDER LOAD)	APPLICATIONS
Ultra-Turrax Tube Disperser † (Digital)	2-15mL	N/A	300 - 6000rpm	R&D, human medicine, chemistry, cosmetics
Ultra-Turrax T10 †	0.5 – 100mL	5000 mPas	8000 – 30,000rpm	Soft tissue, HPLC prep
Ultra-Turrax T18 †	1 – 1500mL (H_2O)	5000 mPas	3500 – 24,000rpm	Muscle, immulsions, suspensions
Ultra-Turrax T25 † (Digital)	1 – 2000mL (H_2O)	5000 mPas	3400 – 24,000rpm	Wastewater samples, medical diagnostics, paper
Ultra-Turrax T50 †	0.25 – 30L (H_2O)	5000 mPas	4000 – 10,000rpm	Bones, paint, pigments, polymer solution, fuel
Ultra-Turrax T65	2 – 50L	5000 mPas	7200rpm (fixed)	Large scale pilot plant situations

† Disposable generators available

sponsored by:

IKA®



IKA T25

IKA T10

For a full selection of IKA® Homogenizers, see pp. 936, 942.

IKA* Ultra-Turrax* Homogenizers

Offer high-performance dispensing for wide range of applications, including medical and clinical diagnostics, wastewater and soil analysis, high-sheer mixing and tissue homogenization

Choice of dispersing elements adds versatility and value.

- Electronic speed control
- Handle viscosities to 5000mPas
- Overload protection

Model T10

- For small quantity process emulsions and dispersions, tissue decomposition, medical and clinical diagnostics and suspensions
- Volume range: 0.5 to 100mL
- Scale speed control
- Wide speed range allows work at high circumferential speeds
- Quick-release button for dispersing elements
- Ideal for manual operation with lightweight, ergonomic design
- Includes R200 clamp and storage case

Model T18

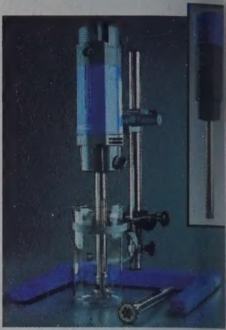
- Slender design for comfortable handheld use with volumes from 1 to 1500mL
- Scale speed control
- Quick-release button for fast generator change
- Smooth start feature eliminates spilling

Model T25

- High-performance dispensing for volumes from 1 to 2000mL
- Digital display
- Smooth-start feature

Model T50

- Heavy-duty unit handles volumes from 0.25 to 30L
- Reproducible results due to constant speed even with viscosity changes
- Smooth-start feature



14-260-34 (stand not included); 14-505-169 (insert)

ORDERING INFORMATION:

Kits (Homogenizer with generator) available online, search: Ultra-Turrax Homogenizer Kits

REQUIRED ACCESSORIES:

Generators (sold separately), see below

Model	Volume Range	Speed Range	Power Input/Output	Outside Dia. x L	Electrical Reqts.	Cat. No.	Each
T10	0.5 to 100mL	8000 to 30,000rpm	125/75w	2¼ × 8" (5.7 × 20.1cm)	115V 50/60Hz	**14-266-111**	787.20
T10	0.5 to 100mL	8000 to 30,000rpm	125/75w	2¼ × 8" (5.7 × 20.1cm)	230V 50/60Hz	**14-266-112**	827.20
T18	1 to 1500mL	3500 to 24,000rpm	500/300w	3⅛ × 9⅜" (8 × 24cm)	115V 50/60Hz	**14-505-169**	836.40
T18	1 to 1500mL	3500 to 24,000rpm	500/300w	3⅛ × 9⅜" (8 × 24cm)	230V 50/60Hz	**14-505-168**	777.00
T25	1 to 2000mL	3400 to 24,000rpm	500/300w	3⅛ × 9⅜" (8 × 24cm)	115V 50/60Hz	**14-505-300**	1098.30
T25	1 to 2000mL	3400 to 24,000rpm	500/300w	3⅛ × 9⅜" (8 × 24cm)	230V 50/60Hz	**14-505-301**	1098.30
T50	0.25 to 30L	4000 to 10,000rpm	1100/700w	5⅛ × 12" (14.9 × 30.5cm)	115V 50/60Hz	**14-260-34**	2349.30

ACCESSORIES

Ultra-Turrax* Rotor/Stator Generators

For use with Ultra-Turrax T10, T18, T25 and T50 Homogenizers

14-505-300

14-505-301

14-505-302

Suitable for a wide range of media.

- 14-259-137 and -76 achieve fine dispersions; all other generators produce coarse dispersions
- Generator for inline processing (14-259-137) is made of Kalrez* and stainless steel; requires wet chemical sterilization
- All other models made of PTFE and stainless steel and can be sterilized by all known methods
- All generators are appropriate for a pH range of 2 to 13 and can be used with solvents and abrasive substances

Description	Volume Range	Maximum Temperature	Rotor/Stator Diameter	Gap Between Rotor/Stator	Min./Max. Immersion Depth	Cat. No.	Each
For Ultra-Turrax T10 Homogenizer							
S10N-5G	0.0005–0.010mL	356°F (180°C)	3.8mm/5mm	0.1mm	20mm/75mm	**14-505-300**	914.30
S10N-8G	0.001–0.050mL	356°F (180°C)	6.1mm/8mm	0.25mm	20mm/95mm	**14-505-301**	892.00
S10N-10G	0.001–0.1mL	356°F (180°C)	7.6mm/10mm	0.2mm	20mm/100mm	**14-505-302**	892.00
For Ultra-Turrax T18 Homogenizer							
S18N-10G	1–50mL	356°F (180°C)	7.5mm/10mm	0.35mm	25mm/70mm	**14-259-72**	685.80
S18N-19G	10–1500mL	356°F (180°C)	12.7mm/19mm	0.40mm	35mm/170mm	**14-259-73**	685.80
For Ultra-Turrax T25 Homogenizer							
S25N-8G	1–50mL	356°F (180°C)	6.1mm/8mm	0.25mm	27mm/85mm	**14-259-023**	735.00
S25N-10G	1–100mL	356°F (180°C)	7.5mm/10mm	0.35mm	22mm/85mm	**14-259-81**	667.30
S25N-18G	10–1500mL	356°F (180°C)	12.7mm/18mm	0.30mm	40mm/165mm	**14-259-75**	801.60
S25N-25F	100–2000mL	356°F (180°C)	18mm/25mm	0.50mm	40mm/165mm	**14-259-056**	935.90
S25N-25G	50–2000mL	356°F (180°C)	17mm/25mm	0.50mm	40mm/165mm	**14-259-80**	935.90
S25KV-25F-IL	Inline up to 11.6L/min.	428°F (220°C)	18mm/25mm	0.50mm	40mm/85mm	**14-259-137**	1967.00
For Ultra-Turrax T50 Homogenizer							
S50N-G45F	0.25–20L	356°F (180°C)	40mm/45mm	1mm	70mm/250mm	**14-259-76**	2173.00
S50N-G45G	0.5–20L	356°F (180°C)	36mm/45mm	0.50mm	70mm/250mm	**14-259-77**	1850.20

Brinkmann* Polytron* Homogenizers

Versatile units combine quality, convenience and high performance for rapid, reproducible sample processing and consistent sample-to-sample uniformity

- Variable speed control
- Accept wide range of stainless-steel Polytron generators (order separately)

Handheld Models

- Lightweight for comfortable processing of sample volumes from 0.1 to 100mL
- Powerful 100w motors achieve speeds up to 30,000rpm, based on model
  - Model PT 1200E features fingertip control
  - Model PT 1300D offers digital display and control and has a safety transformer that isolates handheld unit from high line voltage (can be turned off when not in use)

Benchtop Models

- For heavy-duty use
- High-speed, high-performance motors handle wide range of sample volumes (capabilities vary by model)
- Stand included
  - Models PT 3100 and PT 6100 deliver maximum speed of 30,000rpm for volumes up to 30L (capacity based on model)
  - Both feature LED display and digital speed control (100rpm) that maintains set speed regardless of sample changes, and have built-in noise reduction for greater operator comfort (72dB at maximum speed)
  - Soft-start motor prevents splashing and sample loss
  - Quick-connect: change generator with one hand
  - Economical Model PT 10/35 handles volumes to 2L

APPLICATIONS:

Pulverizing plant and animal tissues, grains and seeds; soil extractions; DNA/RNA extractions, Karl Fischer sample prep

ORDERING INFORMATION:

Model PT 1200E is available as homogenizer unit only or in System Bundle with homogenizer, three stainless-steel generators (5, 7 and 12mm), and one box of 7mm disposable generators

INCLUDES:

- ▸ Support stand (benchtop models only)
- ▸ PT 1200E System Bundle includes PT 1200E homogenizer, three stainless-steel generators (5, 7 and 12mm), and one box of 7mm disposable generators

REQUIRED ACCESSORIES:

Generators (sold separately; see Polytron Accessories)

POLYTRON
PT 1200 E

05-400-261

Model	Sample Volume	Max. Speed	Motor	Speed Control	Display	Accepts Generator Sizes	Electrical Requirements	Cat. No.	Each
Handheld Models									
PT 1200E	0.1–100mL	25,000rpm	100w	Fingertip	----	5–12mm	115V 60Hz	**05-400-261**	1170.00
PT 1200E System Bundle	0.1–100mL	25,000rpm	100w	Fingertip	----	5–12mm	115V 60Hz	**04-987-310**	4260.00
PT 1300D	0.1–100mL	30,000rpm	100w	Digital	LED	5–12mm	110V 60Hz	**08-451-71**	2870.00
Benchtop Models									
PT 10/35 GT	0.1–3000mL	30,000rpm	1000w	Digital	LED	5–12mm	110V 60Hz	**13-874-615**	2595.00
PT 10/35 GT	0.1–3000mL	30,000rpm	1000w	Digital	LED	5–12mm	230V	**13-874-616**	2595.00
PT 10/35 GT with stand	0.1–3000mL	30,000rpm	1000w	Digital	LED	5–12mm	110V 60Hz	**13-874-617**	3195.00
PT 10/35 GT with stand	0.1–3000mL	30,000rpm	1000w	Digital	LED	5–12mm	230V	**13-874-618**	3195.00
PT 10/35	0.1–2L	27,000rpm	710w	Digital	----	5–36mm	110/220V 60Hz	**08-451-29**	3780.00
PT 3100	0.1–10L	30,000rpm	750w	Digital	LED	5–60mm	110V 60Hz	**08-451-90**	4670.00
PT 6100	0.1–30L	30,000rpm	1600w	Digital	LED	5–60mm	110V 60Hz	**08-451-80**	7080.00
Adapters									
For PT 10/35 GT to accept PT 10/35 and PT 3100 Generators								**13-874-619**	395.74

LOOKING FOR KARL FISCHER PRODUCTS?

Fisher Scientific offers a wide variety of Karl Fischer reagents and titration products. You'll find them in the Titration section.

LOOKING FOR BEAKERS?

You'll find your choice of reusable and disposable beakers—from Corning*, Kimble*, Nalge*, Fisherbrand* and more—in the Beakers section.

ACCESSORIES

Polytron* Generators

- One-piece Type 316L stainless steel
- Quick-connect for swift changes
- EasyCare* generators disassemble for cleaning, maintenance and sterilization

Rotor/Stator Diameter	Volume Range	Description	Quick-connect	Easy Care	Other Features	Mfr. No.	Cat. No.	Each
For PT 1200CL Homogenizer								
5mm	0.1–1.0mL	Standard, long shaft slots, 1 rotating and 1 stationary ring	Y	Y	Maximum aeration/turbulence	27 12 555 7	**05-400-262**	1060.00
7mm	0.5–1.5mL	Standard, long shaft slots, 1 rotating and 1 stationary ring	Y	Y	Maximum aeration/turbulence	27 12 556 5	**05-400-263**	1060.00
12mm	1.5–100mL	Standard, long shaft slots, 1 rotating and 1 stationary ring	Y	Y	Maximum aeration/turbulence	27 12 557 3	**05-400-264**	1200.00
7mm	0.5–1.5mL	Disposable, not stainless steel	N	N	——	27 12 558 1	**05-400-265**	550.00
For PT 1300D Homogenizer								
5mm	0.1–1.0mL	Standard, long shaft slots, 1 rotating and 1 stationary ring	Y	Y	Maximum aeration/turbulence	27 13 490 4	**08-451-74**	1640.00
7mm	0.5–1.5mL	Standard, long shaft slots, 1 rotating and 1 stationary ring	Y	Y	Maximum aeration/turbulence	27 13 492 1	**08-451-75**	1760.00
12mm	1.5–100mL	Standard, long shaft slots, 1 rotating and 1 stationary ring	Y	Y	Maximum aeration/turbulence	27 13 494 7	**08-451-70**	1870.00
For PT 10/35 Homogenizer								
7mm	0.5–1.5mL	Model-specific	N	N	——	27 11 172 6	**08-451-28**	1660.00
10mm	1.5–100mL	Standard, saw teeth, long slots in shaft	N	N	Shearing	27 11 330 3	**08-451-32**	1720.00
10mm	1.5–100mL	Foam reducing, saw teeth	N	N	Minimal aeration/turbulence	27 11 335 4	**08-451-33**	1660.00
20mm	5–500mL	Standard, saw teeth, long shaft slots	N	N	Shearing	27 11 390 7	**08-451-34**	1870.00
For PT3100 and PT 6100 Homogenizers								
7mm	0.5–1.5mL	Standard, long shaft slots, 1 rotating and 1 stationary ring	Y	N	Maximum aeration/turbulence	27 13 050 0	**08-451-37**	1610.00
12mm	1.5–100mL	Standard, long shaft slots, 1 rotating and 1 stationary ring	Y	N	Maximum aeration/turbulence	27 13 052 6	**08-451-38**	1650.00
12mm	1.5–100mL	Foam reducing, small shaft slots, 1 rotating and 1 stationary ring	Y	N	Minimal aeration/turbulence	27 13 056 9	**08-451-40**	1600.00
12mm	1.5–100mL	Foam reducing, with knives, 1 rotating and 1 stationary ring	Y	N	Minimal aeration/turbulence	27 13 058 5	**08-451-41**	1710.00
20mm	5–500mL	Standard, long shaft slots, 1 rotating and 1 stationary ring	Y	N	Maximum aeration/turbulence	27 13 060 7	**08-451-42**	1780.00

NEED TO CLEAN YOUR GENERATORS?

Use a sterilizer to safely clean your reusable stainless-steel generators. For a selection of models, see the Sterilizers section.

LOOKING FOR SPECIAL PURPOSE HOMOGENIZERS?

Multi-sample processors, cryogenic homogenizers and more—see them in the Homogenizers/Specialty subsection.

SONIC

isher Scientific* Model 500 Sonic Dismembrator

leal for preparing samples for soil extractions

ompact, programmable and easy to operate. Disrupts cells, extracts imples, reduces particle sizes, accelerates chemical reactions, and mixes id dissolves particles in solution. Ideal for preparing samples for soil tractions. Microprocessor controller allows strict adherence to the most acting protocols.

perating Features

Processes 1 to 500mL

Programmable 20-level hard memory, useful for multi-user labs

Run durations can be set from 1.0 second to 10 hours, and pulsing sequences in both ON/OFF modes

Easy-to-read LCD screen with user prompts displays power output, parameter settings, alarms and messages

Five operating modes—continuous, timed, pulsed, timed/pulsed or temperature; front-panel screen displays

Can be programmed in English, Spanish, Italian, German or French

Automatic overload feature protects intricate circuitry and reduces costly downtime

Parallel printer and serial interfaces (I/O connector) allow connection to any computer and printing to any printer (with date stamp and parameters)

mer Features

Digital integrating timer shows 1-second increments from 1 second o 10 hours

Total desired processing time is set on a pressure-sensitive keypad; selected processing time and actual total elapsed processing time are displayed

START/STOP control initiates or reinitiates timed sonication, while a PAUSE control allows manual pulsing or delay

Total preset time of active sonication is unaffected by pauses or pulsing

DERING INFORMATION:

tional accessories increase processing volume, reduce noise. Choose anium alloy horns and tips in a wide range of sizes for efficient process- of volumes up to 1L, and a soundproof enclosure for eliminating pro- ssing noise and ensuring quiet operation. All sold separately.

INCLUDES:

Generator, converter, ½" tapped horn with one flat tip, wrench set and users manual

WARRANTY:

Full two-year

15-338-550

Electrical Requirements	Cat. No.	Each
115V 50/60Hz	**15-338-550**	4359.26
230V 50Hz	**15-338-551**†	4359.26

†International Model(s).

SPECIFICATIONS

Generator	
L × W × H	16 × 7½ × 9½" (41 × 19 × 24cm)
Weight	17 lb. (7.7kg)
Power	400w
Frequency	20kHz
Input (50/60Hz)	117V, 10A/230V, 5A
Meter Display	LCD
Intensity Control	Continuous (1-100%)
Timer	1.0 sec. to 10 hr.
Converter	
Dia. × H (w/o horn)	2½ × 7" (6 × 18cm)
Weight	2 lb. (900g)
Horn	
Length	5½" (14cm)
Body Diameter	1½ "(4cm)
Tip Diameter	½" (1.3cm)

ACCESSORIES FOR MODEL 500 SONIC DISMEMBRATOR

Microtips

- Process liquids in small test tubes.
- Tapered ⅛" Microtip* attaches directly to the ½" tapped horn
- Upper coupler replaces horn and lower stepped section has a 3" reach into narrow test tubes and a ⅛" tip diameter

Description	Cat. No.	Each
Microtip		
Tapered ⅛" dia.	**15-338-67**	210.00
Two-part Microtip		
Upper coupler section	**15-338-68**	335.00
Lower stepped section	**15-338-69**	240.00

Tapped Horns

- High-gain "Q" horns maintain intensity when processing with large tip diameters
- Horns supplied with one replaceable tip

Description	Processing Volume	Cat. No.	Each
½" dia.	10 to 250mL	**15-338-56**	512.80
¾" dia.	200 to 500mL	**15-338-57**	531.41
Q, ¾" dia.	200 to 500mL	**15-338-59**	1068.47

Cup Horns

- Transparent polycarbonate water bath with 1/8 NPT flow ports

Cup I.D.	Max. Beaker Size	Cat. No.	Each
2½" (6cm)	150mL Griffen or 200mL Berzelius	**15-338-74**	1105.72
3" (7cm)	250mL Griffen or 300mL Berzelius	**15-338-75**	1382.09

ACCESSORIES FOR MODEL 500 SONIC DISMEMBRATOR

Replacement Flat Tips and Extender for Tapped Horns

- Replace only the flat tip to remedy cavitation erosion; use extender with ¾" horns for environmental and other particulate samples

Description	Cat. No.	Each
Replacement Flat Tips for		
½" dia. Horn	**15-338-64**	52.00
¾" dia. Horn	**15-338-65**	75.95
Extender for		
¾" dia. Horn	**15-338-66**	373.51

Fisher Scientific* 150 Model Digital Sonic Dismembrators

Versatile units are suitable for a broad range of liquid processing applications

NEW

15-335-106

Consists of power supply, converter and mechanical probe or horn. Power supply/converter changes standard electrical power to high-frequency mechanical energy, which is then applied to the horn, where it is further amplified for use.

- Digital LED display and parameter entry
- Digital amplitude control (10 to 100% in 1% increments)
- Built-in auto-tuning for optimal control
- Continuous or pulsed operation
- Memory retains last settings (even after shut-off or power loss)
- Overall experiment timer
- Local or remote (plc) control capability
- Supplied probe is ideal for Eppendorf* or Falcon*-style vessels
- I/O port for external control

Timed Control Model 150T

- Variable time setting from 1 sec. to 99 hours

Energy Control Model 150E

- Variable energy settings from 1 to 10,000 joules

APPLICATIONS:

Biological cell disruption/homogenization, emulsification, reaction acceleration, dispersion, fine mixing, degasing

INCLUDES:

Power supply 1/8" microtip, converter, interconnects.

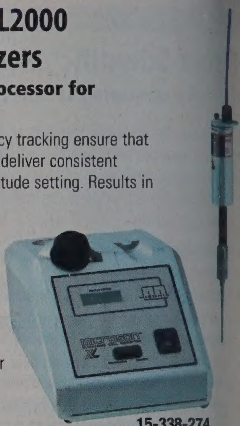
Model	Electrical Reqts.	Cat. No.	Each
150T (Time Control)	120V 50/60Hz	**15-335-106**	2816.00
150E (Energy Control)	120V 50/60Hz	**15-335-107**	2816.00

Model	150T	150E
Control	Timed	Energy
Output Frequency	40kHz	40kHz
Input Power	117V 50/60Hz	117V 50/60Hz
Output Power	150w	150w
Dimensions	12L × 7½W × 12"H (30 × 19 × 30cm)	12L × 7½W × 12"H (30 × 19 × 30cm)
New Weight	17 lb. (7.7kg)	17 lb. (7.7kg)

Misonix* Microson* XL2000 Ultrasonic Homogenizers

Economical small volume processor for volumes from 0.2 to 100mL

Improved load monitoring and frequency tracking ensure that the probe operates more efficiently to deliver consistent sonication intensity at any given amplitude setting. Results in shorter processing times and greater sample-to-sample consistency.



15-338-274

Features

- Operating modes: continuous run or pulse
- Automatic tuning—no need to tune probe before each use; saves time
- Thumb pulse switch provides greater sonication control
- Compact design—uses minimal benchtop space

ORDERING INFORMATION:

Optional probes available (sold separately), including Micro Cup Horn (15-338-259) for safe processing of hazardous samples inside sealed vials

INCLUDES:

Generator, converter, ⅛"L microprobe (Model P1), cable, wrench set and manual

Electrical Requirements	Cat. No.	Each
110V 50/60Hz	**15-338-274**	2595.95
220V 50/60Hz	**15-338-275**	2675.00

SPECIFICATIONS

Overall Dimensions (Generator)	13L × 7½W × 7"H (33 × 19 × 17.8cm)
Maximum Power Output	100w
Operating Frequency	22.5kHz

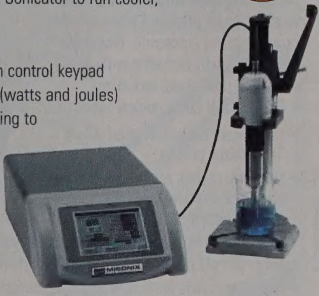
LOOKING FOR ACCESSORIES?

They are available online.

Visit www.fishersci.com and search for Fisher 150 Dismembrator

isonix Sonicator* S4000 Homogenizer

lvanced digital unit design allows more efficient ocessing with less energy consumption



luced energy usage allows Sonicator to run cooler, ending unit life.

erating Features

- " digital display with touch control keypad
- otal energy output display (watts and joules)
- onstant frequency monitoring to nsure horn resonates at ptimal setting
- mplitude control from to 100% for greater esolution and ability to inpoint exact amplitude eeded
- lultiple sequence rogramming
- ulse or continuous run-mode up to 72 hours

DERING INFORMATION:

iensions (L × W × H): 20 × 11 × 5½" (51 × 28 × 14cm). Recommended essories: Sound enclosure, microtips, cup horns for indirect sonication; available online. Search: Sonicator S4000.

UIRED ACCESSORIES:

ierator, converter, ½" horn, wrench set, and power cables

RTIFICATION:

CE, CSA

trical Requirements	Cat. No.	Each
/240V 50/60Hz	**15-338-280**	4550.00

SPECIALTY

sher Scientific* PowerGen* High hroughput Homogenizer

signed to grind large samples of seeds, bone d other tough tissues

02-215-503

vides a cost-effective method to cess multiple samples quickly. essory vials and equipment enable e efficient throughput.

- ses vials and tubes filled with a eel bead
- apacity: 24 × 4mL or 5 × 15mL vials
- ariable speed range from 0 to 1500rpm
- ack-and-forth motion for thorough pulverizing

DERING INFORMATION:

essory vials, bead remover and bead dispenser sold separately; visit our site.

UIRED ACCESSORIES:

s (sold separately)

trical Requirements	Cat. No.	Each
V 60Hz	**02-215-503**	5900.00
V 60Hz	**02-215-504**	6200.00

ACCESSORIES

For use with PowerGen* Hard Tissue Homogenizer

- Vials withstand vigorous shaking
- Vials are supplied with caps and are available with or without stainless-steel mixing beads
- Magnetic pipet tips are used to remove beads from microplates
- Bead dispenser places beads into plates easily and efficiently

Description	Packaging	Cat. No.	Price
4mL Polycarbonate Vial (with cap only)	10 Packs of 24	**02-215-508**	Pk. of 240/ 125.00
4mL Polyethylene Vial (with cap only)	Bulk	**02-215-509**	Pk. of 240/ 105.00
4mL Polycarbonate Vial with cap and ⅜" (9.5mm) stainless-steel bead	10 Packs of 24	**02-215-505**	Cs. of 240/ 395.00
4mL Polyethylene Vial with cap and ⅜" (9.5mm) stainless-steel bead	Bulk	**02-215-506**	Cs. of 240/ 299.00
15mL Polycarbonate Vial with cap and 7⁄16" (11.1mm) stainless-steel bead	10 Packs of 5	**02-215-507**	Cs. of 50/ 395.00
Magnetic Pipet Tips	----	**02-215-510**	Pk. of 12/ 125.00
Microwell Plate Bead Dispenser	----	**02-215-511**	Ea./550.00
Stainless-steel Grinding Beads	----	**02-215-512**	Pk. of 5000/ 425.00

Fisher Scientific* PowerGen* Cryogenic Homogenizer

For quick, efficient grinding of plant and animal tissue at cryogenic temperatures

02-215-500

Combines a powerful drive motor and stainless-steel tissue pestle with stainless-steel grinding tubes chilled in a liquid nitrogen reservoir. Samples of 1-2 grams can be processed rapidly.

- For sample processing, the 10 mL grinding tubes are placed in the liquid nitrogen reservoir
- Tissue samples are added to the grinding tubes and allowed to freeze
- Stainless-steel pestle, which is pre-chilled as well, is connected to the motor with a flexible coupling and inserted into the grinding tube
- By raising and lowering the grinding tube, the sample is mechanically ground to a fine powder
- To prevent sample melting, the grinding tube is replaced to the liquid nitrogen reservoir
- For higher throughput, use multiple grinding tubes and pestles
- All components are easily disassembled for cleaning and decontamination

ORDERING INFORMATION:

Accessories include Cryogenic Tubes (set of five stainless-steel 10mL tubes) and a Kit (with six tubes, six bits and tube holder)

INCLUDES:

Motor unit with stand, tube holder and support, reservoir, and stainless-steel tissue pestle

Description	Electrical Requirements	Cat. No.	Each
Cryogenic Homogenizer	230V 60Hz	**02-215-500**	925.00
Accessories			
Cryogenic Homogenizer Kit	——	**02-215-502**	469.00
Replacement Tubes, set of 5	——	**02-215-501**	99.00

IKA* Ultra Turrax* Tube Disperser Workstation

The first closed homogenizing system for stirring, milling and dispersing

NEW

14-259-600

Easy to operate for quick, one-time sample preparation with no cleanup. Disposable tubes lock into place and remove quickly with a simple twist.

- Speed range: 300 to 6000rpm
- Continuously variable speed control
- Digital display
- Accommodates sample volumes from 2 to 15mL
- Hygienic—Tubes contain samples securely
- Hermetically sealed—protects internal components from accidental spills
- Anti-locking function ensures consistent results
- Low-voltage (24V) for added safety

ORDERING INFORMATION:

Replacement containers available

INCLUDES:

Tube drive unit, two DT-20 stirring tubes, two ST-20 dispersing tubes, two BMT-20G/S grinding/milling tubes, ceramic and stainless-steel grinding balls, power supply, carrying case

WARRANTY:

Three years

COMPLIANCE:

Protection class according to DIN EN 60529: IP 20

CERTIFICATIONS:

CE, CSA, UL, CUL

Electrical Requirements	Cat. No.	Each
115V 50/60Hz, 0.8A	**14-259-600**	524.00
230V 50Hz, 0.8A	**14-259-601**	524.00

SPECIFICATIONS

Speed Range	300-6000rpm
Speed Control	Variable
Timer	1 to 59 sec. (300-6000rpm); 1-29 min. (300-4000rpm)
Motor Input/Output	24/17w
L × W × H	6⅜ × 4 × 1⅝" (16 × 10 × 4cm)

Omni Prep* Multisample Homogenizer

Homogenize six samples per cycle—up to 250 samples per hour

NEW

15-340-120 (tubes sold separatel

Modular system† allows one group of samples to be prepared while another group is being processed. Processes samples rapidly and efficiently in a variety of tube sizes, including 1.5/2, 15, and 50mL conical tubes.

- Unit works exclusively with Omni Tip* plastic probes
- Omni Tip probes are disposable to eliminate cross-contamination; may also be reused and autoclaved up to seven times
- Programmable time and speed—stores up to three programs
- Most samples processed in under one minute
- Movable rack is ideal for processing samples that require probe mobilit within the sample
- Ultra quiet, trouble-free performance
- Fan-driven positive airflow can be exhausted to a HEPA-filter or fume ho
- Ice tray (sold separately) keeps sensitive samples cold during processin

INCLUDES:

Omni Prep processing unit, two six-place processing racks, nine tube holders (three each of 1.5/2, 15, and 50mL sizes), 50 Omni Tip soft tissue probes, and 50 Omni Tip hard tissue probes

WARRANTY:

One year

CERTIFICATIONS:

CE marked.

Description	Mfr. No.	Cat. No.	Eac
Omni Prep Multisample Homogenizer Package	06-023-F	**15-340-120**	14,995.0

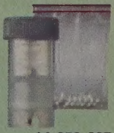
† *Patent pending.*

SPECIFICATIONS

Working Volume	0.25 to 30mL
Speed Range	500 to 30,000 rpm
Timer Range	Up to 10 min.
Display	Backlit LCD with LED characters
Motor	150w
Noise Level	70dB
L × W × H	15¾ × 7⅞ × 11¾" (40 × 20 × 30cm)
Net Weight	21 lb. (9.5kg)
Electrical Requirements	115/230V 50/60Hz

ACCESSORIES

For use with Ultra Turrax* Tube Dispenser


14-259-887

Four varieties of plastic sample containers available; all supplied with caps.

- ST-20 for simple stirring
- BMT-20G, -20S with glass or stainless-steel balls for grinding
- DT-20 with rotor/stator element for homogenizing

Description	Cat. No.	Pack of 10	Cat. No.	Pack of 25
ST-20 Container for stirring	**14-259-882**	100.75	**14-259-883**	201.13
BMT-20G Container with glass grinding beads	**14-259-886**	100.75	**14-259-887**	201.13
BMT-20S Container with stainless-steel grinding beads	**14-259-884**	100.75	**14-259-885**	201.13
DT-20 Container with rotor/stator	**14-259-880**	100.75	**14-259-881**	201.13

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

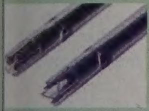
mni Tip Probes

lear to ensure that sample is not lost in the probe

isposable to eliminate cross-contamina- ion. May also be reused and autoclaved p to seven times.

- Slots, instead of windows, prevent sample from being trapped
- Probes fit tubes from 1.5 to 50mL
- Patented
- Soft tissue probes utilize flexible tines for gentler processing
- Hard tissue probes have saw teeth for more aggressive processing

15-340-103, 15-340-100



-340-103, 15-340-100

15-340-100

15-340-103

ia. x L	Volume Range	Mfr. No.	Cat. No.	Pack of
ard Tissue Probes				
× 110mm	0.25 to 30mL	30750H	**15-340-100**	25/263.07
× 110mm	0.25 to 30mL	32750H	**15-340-101**	50/494.38
× 110mm	0.25 to 30mL	34750H	**15-340-102**	100/918.75
oft Tissue Probes				
× 110mm	0.25 to 30mL	30750	**15-340-103**	25/263.07
× 110mm	0.25 to 30mL	32750	**15-340-104**	50/494.38
× 110mm	0.25 to 30mL	34750	**15-340-105**	100/918.75

Movable Rack

Six place rack; adjustable for processing samples in fixed and/or oscillating position

Accepts three tube racks (which hold two tubes each) and six Omni Tip* probes.

15-340-124 (tube racks, probes, and tubes sold separately)

fr. No.	Cat. No.	Each
6-220-F	**15-340-124**	995.00

Tube Holders

For use with the Omni Prep Multisample Homogenizer

- Tube holder is inserted into movable rack
- Each holder accepts two tubes

15-340-122, 15-340-123, 15-340-121

escription	Mfr. No.	Cat. No.	Each
.5/2.0mL Tube Holder	06-209-02-F	**15-340-121**	56.10
5mL Conical Tube Holder	06-209-15-F	**15-340-122**	56.10
0mL Conical Tube Holder	06-209-50-F	**15-340-123**	56.10

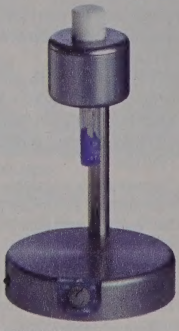
Omni Ultra Shear Homogenizer

Ideal for homogenizing and suspending small samples from 0.8 to 10mL

NEW

Magnetic drive-less technology delivers smooth, quiet and virtually maintenance-free performance.

- Speed range: 15,000 to 75,000rpm
- Automatic start—activates when tool is placed in drive unit
- Choice of three dispersing tools from 3 to 7mm dia.
- Includes three level plates for height adjustment of cooling vessel
- Sound level: <55dB



15-340-200

ORDERING INFORMATION:
Dimensions: Drive unit (Dia. × H), 5 × 7¾" (12.5 × 17cm); For 100/240V 47/63Hz, 24w

REQUIRED ACCESSORIES:
Dispersing tool (sold separately)

WARRANTY: 3 year on motor.

Description	Cat. No.	Each
Ultra Shear Homogenizer	**15-340-200**	1115.00

ACCESSORIES

For use with Omni Ultra Shear Homogenizer

Dispersing Tools

- Stainless steel
- Can be hot-air or steam sterilized
- Easy to attach or remove for cleaning
- Choice of three sizes
- Each tool comes with 10 polypropylene attachments

Tool Attachments

- Fit in dispersing tools
- PTFE construction

Description	Dia. x L	Volume Range	Cat. No.	Price
Dispersing Tool 3F	3.3 × 26mm	0.8 to 1.0mL	**15-340-201**	980.00
Dispersing Tool 5F	5 × 38mm	2.0 to 4.0mL	**15-340-202**	980.00
Dispersing Tool 7F	7 × 55mm	6.0 to 10.0mL	**15-340-203**	980.00
Replacement Attachment for 3F	----	----	**15-340-204**	25.23
Replacement Attachment for 5F	----	----	**15-340-205**	30.27
Replacement Attachment for 7F	----	----	**15-340-206**	35.32

HOTPLATES

FISHER SCIENTIFIC

Fisher Scientific* Isotemp* Digital Hotplates and Stirring Hotplates

Designed for routine lab heating and sample drying, these low-profile hotplates provide exact temperature control, simple operation, and complete operating data on display

Operating Features

- Compact design with 7 × 7" ceramic or aluminum top plate
- LED displays actual and setpoint readings
- Temperature is adjustable in 1°C increments, 0.1°C for temperatures below 100°C with remote temperature probe
- User-programmable timer automatically shuts off unit—perfect for timed experiments
- "Favorites" feature allows users to store three commonly used settings

Safety Features

- Top plate and base are molded to divert liquids away from internal electronics
- Safety warning system protects users from accidental burns; red warning light alerts when heating surface exceeds 50°C and flashes when heat is shut off until surface is cool
- Incorporated base mount holds support rods up to 13mm diameter—ideal when using thermometers or pH probes

11-300-49SHP

Ceramic-top Models

- Heat to 540°C (1004°F)
- Reflective white ceramic surface is acid- and alkali-resistant and easy to cl
- Nonheating frame surrounds the heated ceramic plate for added protect

Aluminum-top Models

- Heat to 380°C (716°F)
- 49 in². heating surface will not crack or chip

Stirring Hotplate Models add:

- Variable analog stirring control from 60 to 1200rpm
- Separate LED displays for temperature and speed (actual or set point)
- INSTANT-ON feature begins stirring at low 60rpm to prevent splashing
- Direct-drive motor/magnet system runs silently

ORDERING INFORMATION:
100V and 230V UK models available on our Web site.

INCLUDES:
Detachable line cord, 6" (18cm) PTFE-coated stainless-steel temperature probe, 18"L (46cm) support rod and clamp, PTFE stir bar .

WARRANTY:
One year

COMPLIANCE:
IEC 1010

CERTIFICATIONS:
120V units: CSA, CUS; 230V units: CSA, CUS, CE

Top Plate Size	Top Plate Material	Temperature Range	Stirring Range	Electrical Requirements	Cat. No.	Each
Hotplates						
7 × 7"	Ceramic	30° to 540°C (86° to 1004°F)	----	120V 60Hz	**11-300-49HP**	607.00
7 × 7"	Ceramic	30° to 540°C (86° to 1004°F)	----	230V 60Hz	**11-302-49HP**	676.60
7 × 7"	Aluminum	30° to 380°C (86° to 716°F)	----	120V 60Hz	**11-400-49HP**	741.00
7 × 7"	Aluminum	30° to 380°C (86° to 716°F)	----	230V 60Hz	**11-402-49HP**	889.20
Stirring Hotplates						
7 × 7"	Ceramic	30° to 540°C (86° to 1004°F)	60 to 1200rpm	120V 60Hz	**11-300-49SHP**	726.00
7 × 7"	Ceramic	30° to 540°C (86° to 1004°F)	60 to 1200rpm	230V 60Hz	**11-302-49SHP**	808.80
7 × 7"	Aluminum	30° to 380°C (86° to 716°F)	60 to 1200rpm	120V 60Hz	**11-400-49SHP**	857.00
7 × 7"	Aluminum	30° to 380°C (86° to 716°F)	60 to 1200rpm	230V 60Hz	**11-402-49SHP**	1028.40

LOOKING FOR LABORATORY GLASSWARE?

You can find a wide selection of glass vessels for heating and stirring in the Beakers and Flasks sections.

*Fisherbrand** MAGNETIC STIR BARS

Stock up on Fisherbrand Magnetic Stir Bars—the perfect accessories for your stirring hotplate. We offer many different sizes, shapes and colors. Check them out in the Stirrers section.

LOOKING FOR STIRRERS?

Non-heating magnetic stirrers are available in a wide selection of styles. Find them in the Stirrers section.

*Trademark. See Trademark Reference.

isher Scientific* Isotemp* Basic Hotplates and Stirring Hotplates

eek, compact units combine unbeatable performance, reliability and economy.

easily in hood or on benchtop. Easy and safe to use. Excellent for sample ving and general lab heating in environments between 4° to 40°C (39° to 4°F). Available with either a ceramic or aluminum heating plate surface.

- Fit virtually anywhere in lab
- Easy to set analog temperature control knob with graduated scale
- LED display
- Top plate and base design diverts liquids away from internal electronics
- Safety warning system with visual alert protects user from accidental burns
- Redundant temperature control systems for overtemperature protection
- Incorporated base mount holds support rods up to 13mm diameter—ideal when using thermometers or pH probes

CERTIFICATIONS:
120V: CSA, CUS; 230V: CE, CSA, CUS

11-100-49SH

ating Surface Area	Material	Temperature Range	Stirring Range	Electrical Requirements	Cat. No.	Each
tplates						
× 4"	Ceramic	Ambient to 540°C (Ambient to 1004°F)	----	120V 60Hz	**11-100-16H**	188.00
× 4"	Ceramic	Ambient to 540°C (Ambient to 1004°F)	----	230V 50/60Hz	**11-102-16H**	269.00
× 7"	Ceramic	Ambient to 540°C (Ambient to 1004°F)	----	120V 60Hz	**11-100-49H**	215.00
× 7"	Ceramic	Ambient to 540°C (Ambient to 1004°F)	----	230V 50/60Hz	**11-102-49H**	265.80
× 7"	Aluminum	Ambient to 380°C (Ambient to 716°F)	----	120V 60Hz	**11-200-49H**	260.00
× 7"	Aluminum	Ambient to 380°C (Ambient to 716°F)	----	230V 50/60Hz	**11-202-49H**	333.20
× 10"	Ceramic	Ambient to 400°C (Ambient to 752°F)	----	120V 60Hz	**11-100-100H**	350.00
× 10"	Ceramic	Ambient to 400°C (Ambient to 752°F)	----	230V 50/60Hz	**11-102-100H**	424.40
ring Hotplates						
× 4"	Ceramic	Ambient to 540°C (Ambient to 1004°F)	60 to 1200rpm	120V 60Hz	**11-100-16SH**	345.00
× 4"	Ceramic	Ambient to 540°C (Ambient to 1004°F)	60 to 1200rpm	230V 50/60Hz	**11-102-16SH**	375.20
× 7"	Ceramic	Ambient to 540°C (Ambient to 1004°F)	60 to 1200rpm	120V 60Hz	**11-100-49SH**	360.00
× 7"	Ceramic	Ambient to 540°C (Ambient to 1004°F)	60 to 1200rpm	230V 50/60Hz	**11-102-49SH**	395.00
× 7"	Aluminum	Ambient to 380°C (Ambient to 716°F)	60 to 1200rpm	120V 60Hz	**11-200-49SH**	420.00
× 7"	Aluminum	Ambient to 380°C (Ambient to 716°F)	60 to 1200rpm	230V 50/60Hz	**11-202-49SH**	484.20
× 10"	Ceramic	Ambient to 400°C (Ambient to 752°F)	60 to 1200rpm	120V 60Hz	**11-100-100SH**	480.00
× 10"	Ceramic	Ambient to 400°C (Ambient to 752°F)	60 to 1200rpm	230V 50/60Hz	**11-102-100SH**	521.40

sher Scientific* Economy Hotplates and Stirring Hotplates

neral-purpose heating with retro styling

mpact, sleek general-purpose hotplates are available in hotplate or stirg hotplate versions in two top plate sizes—4 × 4" or 7 × 7".

- Heat from 150° to 590°C; reach maximum temperature in minutes
- Reflective white ceramic top plate resists alkalis and acids, cleans easily; drip edge guards against spills
- Durable die-cast aluminum base
- Stirring hotplates have variable analog speed control from 100 to 200rpm—stir up to 2L water; Instant-on at 100rpm ensures smooth, afe low-speed operation; come with support rod mount and PTFE-coated tir bar

DERING INFORMATION:
120V 60Hz

INCLUDES:
3-wire grounded cord; stirring hotplates include PTFE stir bar

WARRANTY:
12 months

COMPLIANCE:
CSA approved

NOTE:
For non-heating Economy Stirrers, see Fisher Scientific Economy Stirrers

11-510-49SHQ, 11-510-46SHQ

Plate Size	Color	Temperature Range	Stirring Range	Load Capacity	Dimensions (L × W × H)	Cat. No.	Each
plates							
4" (10.2 × 10.2cm)	Blue	150° to 590°C	----	10 lb. (4.5kg)	8¼ × 5¼ × 4⅜" (21 × 13.3 × 11.1cm)	**11-510-16HQ**	192.16
7" (17.8 × 17.8cm)	Blue	150° to 590°C	----	25 lb. (11.3kg)	11½ × 8½ × 4½" (29.2 × 21.6 × 11.4cm)	**11-510-49HQ**	207.41
ring Hotplates							
4" (10.2 × 10.2cm)	Blue	150° to 590°C	100 to 1200rpm	10 lb. (4.5kg)	8¼ × 5¼ × 4⅜" (21 × 13.3 × 11.1cm)	**11-510-16SHQ**	383.30
7" (17.8 × 17.8cm)	Blue	150° to 590°C	100 to 1200rpm	25 lb. (11.3kg)	11½ × 8½ × 4½" (29.2 × 21.6 × 11.4cm)	**11-510-49SHQ**	386.65

Fisher Scientific* Infrared Hotplates

Offer faster, higher-temperature heating than other hotplates

11-493-614Q

Ensure more uniform heating throughout the sample since heat-up time is not affected by the flatness of the glassware.

Operating Features

- Variable temperature control from 95° to 615°C (203° to 1139°F)
- Variable power control from 0 to 100%
- 8 or 6" dia. (20 or 15cm) high heating area
- Two heating zones: High-heat circular center for boiling liquids; area outside circle for simmering
- Black glass-ceramic top surface cleans easily and resists mechanical, scratch and chemical damage
- Built-in support rod clamp secures odd-shaped containers

Model IR 6000

- 8" dia. (20cm) heating surface area
- Boils 1L of water in less than 17 minutes

Model IR 4000

- 6" dia. (15cm) heating surface area
- Boils 1L of water in less than 14 minutes

ORDERING INFORMATION:
Cleaning cream (11-493-621) for top surface is available on our Web site

INCLUDES:
Unit, 3-wire cord and plug

WARRANTY:
12 months

CERTIFICATIONS:
CSA approved

Model	IR 6000	IR 4000
Heating Surface Area	8" dia. (20cm)	6" dia. (15cm)
Temperature Range	95° to 615°C	95° to 615°C
Overall L × W × H	15⅜ × 11⅜ × 4⅞" (39 × 29 × 12.4cm)	13⅛ × 8⅞ × 4⅞" (33 × 22 × 12.4cm)
Electrical Requirements	115V 50/60Hz, 1600w, 14.2A†	115V 50/60Hz, 1200w, 10.5A
Cat. No.	**11-493-612Q**	**11-493-614Q**
Each	862.76	834.75
Electrical Requirements	----	230V 50Hz 1200w, 5.5A
Cat. No.	----	**11-493-618Q**
Each	----	865.34

† Requires 20A outlet.

WARNING
Not for use with reflective vessels such as those made from metal.

Fisher Scientific* Infrared Stirring Hotplates

Fast, high-temperature infrared heating with electronic stirring

11-493-615Q

Operating Features

- Electronically controlled stirring from 60 to 1500rpm
- Adjustable temperature control from 95° to 615°C (203° to 1139°F)
- Variable power control from 0 to 100%
- 8 or 6" dia. (20 or 15cm) high heating area
- Two heating zones: High-heat circular center for boiling liquids; area outside circle for simmering
- Black glass-ceramic top surface cleans easily and resists mechanical, scratch and chemical damage
- Built-in support rod clamp secures odd-shaped containers
- Supplied octagonal stir bar provides efficient mixing action

Model IR 6100

- 8" dia. (20cm) heating surface area
- Boils 1L of water in less than 17 minutes

Model IR 4100

- 6" dia. (15cm) heating surface area
- Boils 1L of water in less than 14 minutes

ORDERING INFORMATION:
Cleaning cream (11-493-621) for top surface is available on our Web site

INCLUDES:
Unit, built-in support rod clamp, 3-wire cord and plug, and 5⁄16 diameter × 1½" long (8 × 38mm) PTFE-coated octagonal stir bar

WARRANTY:
12 months

CERTIFICATIONS:
CSA approved

Model	IR 6100	IR 4100
Heating Surface Area	8" dia. (20cm)	6" dia. (15cm)
Stirring Range	60 to 1500rpm	60 to 1500rpm
Temperature Range	95° to 615°C	95° to 615°C
Overall L × W × H	15⅜ × 11⅜ × 4⅞" (39 × 29 × 12.4cm)	13⅛ × 8⅞ × 4⅞" (33 × 22 × 12.4cm)
Electrical Requirements	115V 50/60Hz, 1600w, 14.6A†	115V 50/60Hz, 1200w, 11A
Cat. No.	**11-493-615Q**	**11-493-616Q**
Each	1146.68	1037.52

† Requires 20A outlet.

***Fisherbrand** MAGNETIC STIR BARS*

Stock up on Fisherbrand Magnetic Stir Bars—the perfect accessories for your stirring hotplate. We offer many different sizes, shapes and colors. Check them out in the Stirrers section.

SELECTING THE RIGHT TOP PLATE MATERIAL

Ceramic —The most popular top plate material, its white color enhances sample visibility and can withstand temperatures of up to 550°C. Ceramic offers excellent chemical resistance and is easily cleaned with any non-abrasive cleanser, but it can be broken or cracked upon impact. The heat distribution on a ceramic top is not as uniform as metal tops.

Aluminum—Provides the most uniform heat distribution of any surface. Aluminum tops can withstand a maximum temperature of 400°C. Aluminum offers the added durability to sustain point impacts that might break ceramic or glass surfaces; however, corrosion resistance is limited and chemicals may stain the silver surface causing discoloration.

Stainless Steel —Silver in color, stainless steel tops reach maximum temperatures of 450°C and offer excellent corrosion resistance and chemical compatibility. The heat uniformity of stainless steel is better than ceramic, but not as good as aluminum.

How important is solution and surface temperature control for your application?

Surface Temperature Control — Hotplates with a digital temperature display control the top plate surface temperature.

Solution Temperature Control—The addition of a temperature probe allows for more precise control. The hotplate measures and controls the solution temperature to within ±0.1°C

SAFETY FEATURES

Hot Surface Warning— Bright red warning light illuminates alerting user that the surface is over 50°C. Display flashes "HOT – OFF" when heating is turned off until the surface temperature is below 50°C

Overtemperature Protection—A redundant temperature control system limits top plate temperature to a user-selected temperature, preventing burnt samples or fires

Low Profile Design—Two-piece cast aluminum design deflects spills away from electronics and provides added stability

BEFORE YOU BUY HOTPLATES & STIRRING HOTPLATES

		CIMAREC®	SUPER NUOVA™	RT™	RT-ELITE™
TEMPERATURE RANGE	*Ceramic*	5°-540°C	1°-370°C		
	Aluminum	5°-300°C	1°-300°C	4°-350°C	1°-350°C
	Stainless			1°-450°C	1°-450°C
Temperature Resolution		5°C	0.1°C	2°C	0.1°C
Remote Temperature Probe		None	Included	Included	Included
Stir Range		60-1200rpm	60-1200rpm	60-1200rpm	60-1200rpm
Stir Resolution		N/A	1rpm	N/A	1rpm
Hot Top Indicator		Yes	Yes	Yes	Yes
Overtemperature Protection		Runaway	User-adjustable	User-adjustable	User-adjustable
Calibration		No	Single Point	No	Single Point
Output		None	RS232	None	RS232
Program Save		No	4	No	3
Timer		No	Yes	No	Yes
Top Plate Size		4x4", 7x7", 10x10"	7x7", 10x10"	5.3" dia.	5.3" dia.
Types		Hotplate, Stirrer, Stirring Hotplate	Hotplate, Stirrer, Stirring Hotplate	Hotplate, Stirrer, Stirring Hotplate	Hotplate, Stirrer, Stirring Hotplate
Top Plate		Ceramic Aluminum	Ceramic Aluminum	Aluminum Stainless Steel	Aluminum Stainless Steel

Thermo
SCIENTIFIC

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Thermo Fisher Scientific

545
HEAT
STIR

For a full selection of Thermo Scientific® Hotplates and Stirring Hotplates, see pp. 948–951.

THERMO SCIENTIFIC

Thermo Scientific* Cimarec* Digital Hotplates and Stirring Hotplates

Digital performance, safety and control for general lab heating applications

Sleek, compact design is available in three sizes.

Operating Features

- Microprocessor-controlled feedback technology maintains consistent, repeatable temperature settings from 5° up to 540°C (41° to 1004°F), adjustable in 5° increments (based on model)
- Digital LED dislays temperature settings
- Ceramic-top models: seamless, high visibility surface cleans easily and resists alkalis and acids
- Aluminum-top model: superior durability and uniform heat distribution across surface
- Flat top and high-wattage heating elements provide superior heat transfer and fast time-to-boil
- Rugged cast aluminum body is stable and durable

11-675-909

Safety Features

- Hot surface alert protects from accidental burns; light activates when hea ing surface is above 50°C (122°F)
- Unit displays HOT OFF until unit reaches 50°C (122°F) or below, even whe heat control is turned off

Stirring Hotplates

Include all hotplate features, plus:

- Adjustable speed range from 60 to 1200rpm
- StirTrac* technology for improved low-speed stirring, consistent speed control and stronger magnetic coupling
- StirTrac braking brings stir bar to immediate stop for quick flash remova
- Integrated ring stand holder to accommodate ½" diameter (1.3cm) support rod

ORDERING INFORMATION:
220/240V, CE-approved models are available online

INCLUDES:
Unit, detachable line cord; stirring models also supplied with stir bar

WARRANTY:
Two years

CERTIFICATIONS:
CSA (all models)

Heating Surface Area	Heating Surface Material	Load Capacity	Stir Range	Temperature Range	Overall L × W × H	Electrical Reqts.	Mfr. No.	Cat. No.	Each
Hotplates									
4¼ × 4¼" (10.8 × 10.8cm)	Ceramic	15 lb. (6.8kg)	----	5° to 540°C	10 × 5 × 3⅝" (25 × 13 × 10cm)	120V 50/60Hz, 385w, 3.8A	HP130915Q	**11-675-908Q**	221.64
7¼ × 7¼" (18.4 × 18.4cm)	Ceramic	25 lb. (11.3kg)	----	5° to 540°C	13 × 8¼ × 3⅞" (33 × 21 × 10cm)	120V 50/60Hz, 1060w, 8.8A	HP131225Q	**11-675-911Q**	246.15
7¼ × 7¼" (18.4 × 18.4cm	Aluminum	25 lb. (11.3kg)	----	5° to 300°C	13 × 8¼ × 3⅞" (33 × 21 × 10cm)	120V 50/60Hz, 660w, 5.5A	HP141925Q	**11-4000-02Q**	286.00
10¼ × 10¼" (26 × 26cm)	Ceramic	35 lb. (15.9kg)	----	5° to 400°C	16¼ × 11⅜ × 4" (41 × 29 × 10cm)	120V 50/60Hz, 1410w, 11.7A	HP131535Q	**11-675-914Q**	409.18
Stirring Hotplates									
4¼ × 4¼" (10.8 × 10.8cm)	Ceramic	15 lb. (6.8kg)	60 to 1200rpm	5° to 540°C	10 × 5× 3⅝" (25 × 13 × 10cm)	120V 50/60Hz, 395w, 3.3.A	SP131015Q	**11-675-909Q**	397.46
7¼ × 7¼" (18.4 × 18.4cm)	Ceramic	25 lb. (11.3kg)	60 to 1200rpm	5° to 540°C	13 × 8¼ × 3⅞" (33 × 21 × 10cm)	120V 50/60Hz, 1070w, 8.9A	SP131325Q	**11-675-912Q**	417.70
10¼ × 10¼" (26 × 26cm)	Ceramic	35 lb. (15.9kg)	60 to 1200rpm	5° to 500°C	16¼ × 11⅜ × 4" (41 × 29 × 10cm)	120V 60Hz, 1440w, 12A	SP131635Q	**11-675-915Q**	551.97

hermo Scientific* Super-Nuova* Digital Hotplates and Stirring Hotplates

ovide superior flexibility, precision and safety

Camic- or aluminum-top general ppose hotplates with four-function mnory are excellent for labs with mtiple users. Low temperature austment is ideal for life science a biotechnology applications.

11-675-916Q

Cerating Features

- licroprocessor control ensures ccurate and stable setpoints for mperature (and stirring speed for irring models only)
- ectronic feedback controls monitor ther top plate surface or liquid mperature (when using external TFE-coated probe, included) and adjust to setpoint
- ngle control knob controls heat and speed (based on model); lock feature events accidental changes
- igital display for temperature or rpm (separate displays on stirring tplates)
- owerful motor and magnetic system prevents magnetic decoupling
- mperature adjusts 1° increments
- ur user-defined temperature/speed memory keys recall settings
- alibration mode allows remote probe to be calibrated to external andards; probe can be programmed as a system (probe, control, display) any user-selected temperature
- eramic tops clean easily, resists chemicals and provides fast boiling time
- luminum tops ensure uniform heating across surface; resist acking and chipping
- an be used in 0° to 27°C, 80% relative humidity, non-condensing nvironment
- S-232 port allows output of time count, temperature setpoint, top rface/remote probe temperature, stirring setpoint and actual speed

Safety Features

- Red "hot top" warning light activates when heating surface is above 50°C (122°F); unit flashes HOT OFF until surface temperature falls to 50°C or below, even when heat control is turned off
- Adjustable overprotection circuit limits top plate temperature, prevents runaway conditions
- Rugged low-profile cast aluminum body provides stability and durability
- Unit design protects internal components from accidental spills
- Walk-away timer shuts off heating, stirring or both after preset user-defined interval
- **Hotplate models** include all features described above
- **Stirring hotplate models** include all hotplate features, plus:
  - Stirring range from 50 to 1200rpm
  - StirTrac technology offers improved low-speed stirring, consistent speed control and superior magnetic coupling
  - Four-position model (11-475-30Q) functions as four stirring hotplates in one—each position is independently controlled

APPLICATIONS:

Solubility studies, titration, digestion, enzymatic studies

INCLUDES:

Unit, 6" Type K probe, detachable cord. Stirring models also include stir bar.

COMPLIANCE:

CSA approved

H ting Surface Area	Heating Surface Material	No. of Places	Load Capacity	Stirring Range	Temperature Range	Electrical Reqts.	Mfr. No.	Cat. No.	Each
H lates, Overall Dimensions: 13L × 8¼ × 3⅞"H (33 × 21 × 10cm)									
7 × 7¼" (18.4 × 18.4cm)	Ceramic	1	25 lb. (11.3kg)	N/A	1° to 370° C	120V 50/60Hz, 660w, 5.5A	HP131725Q	**11-675-916Q**	716.07
7 × 7¼" (18.4 × 18.4cm)	Aluminum	1	25 lb. (11.3kg)	N/A	1° to 300°C	120V 50/60Hz, 660w, 5.5A	HP133425Q	**11-675-918Q**	823.00
1¼ × 10¼" (26 × 26cm)	Ceramic	1	35 lb. (15.9kg)	N/A	1° to 370° C	120V 50/60Hz, 1200w, 10A	HP133735Q	**09-050-286Q**	935.57
S ing Hotplates, Overall Dimensions: 16¼ × 11⅜ × 4"H (41.3 × 28.9 × 10.2cm)									
7 × 7¼" (18.4 × 18.4cm)	Ceramic	1	25 lb. (11.3kg)	50 to 1200rpm	1° to 370° C	120V 50/60Hz, 670w, 5.6A	SP131825Q	**11-675-917Q**	856.72
7 × 7¼" (18.4 × 18.4cm)	Aluminum	1	25 lb. (11.3kg)	50 to 1200rpm	1° to 300°C	120V 50/60Hz, 670w, 5.6A	SP133525Q	**11-675-926Q**	954.00
1¼ × 10¼" (26 × 26cm)	Ceramic	1	35 lb. (15.9kg)	50 to 1200rpm	1° to 370° C	120V 50/60Hz, 1210w, 10.1A	SP133835Q	**09-050-287Q**	1203.03
1¼ × 10¼" (26 × 26cm)	Ceramic	4	35 lb. (15.9kg)	50 to 1200rpm	1° to 370° C	120V 50/60Hz, 1400w, 11.8A	SP135935Q	**11-475-30Q**	1923.00

Fisherbrand* MAGNETIC STIR BARS

Stock up on Fisherbrand Magnetic Stir Bars—the perfect accessories for your stirring hotplate. We offer many different sizes, shapes and colors. Check them out in the Stirrers section.

LOOKING FOR LABORATORY GLASSWARE?

You can find a wide selection of glass vessels for heating and stirring in the Beakers and Flasks sections.

Thermo Scientific* RT Elite* Stirring Hotplates

Integral temperature, stirring and time control

Enhanced operating features provide superior precision control and repeatability.

Hotplate Features

- Aluminum top plate, 5⅜" dia. (13.5cm)
- Heat to 350°C (662°F) with 0.1°C control increments
- Single control knob combined with separate LCD displays for temperature, speed and time
- Redundant temperature control system includes user-selectable overtemperature setpoint
- Walk-away timer shuts off heating, stirring, or both after 1 to 999 minutes
- RS-232 port outputs time count, temperature and setpoint to external PC

11-400-023Q

Stirring Features

- Stirs to 1200rpm (with 1rpm control increments)
- StirTrac* system provides improved low-speed stirring, consistent speed control and stronger manual coupling
- StirTrac braking feature brings stir bar to immediate stop for quick flask removal; prevents decoupling

WARRANTY:
Two years

SPECIFICATIONS

Type	Stirring Hotplate
Top Plate	Aluminum
Stirring Speed Range	50 to 1200rpm
Temperature Range	1 to 350°C (39 to 662°F)
Heating Surface Area	5⅜" dia. (13.5cm)
Overall L × W× H	11¼ × 6½ × 3⅞"H (28 × 17 × 10cm)
Electrical Requirements	120V 50/60Hz, 5.3A, 635w
Mfr. No.	SP136425Q
Cat. No.	**11-400-023Q**
Each	924.00
Electrical Reqts.	220/240V 50/60Hz, 3A, 710w
Mfr. No.	SP138825Q
Cat. No.	**11-400-026Q**
Each	1017.00

Thermo Scientific* Explosion-Proof Hotplate

For Class 1, Group D hazardous areas where flammable gas or vapors are present

Electrical contacts are enclosed in a sealed aluminum housing that contains and protects controls from explosive atmospheres.

Features

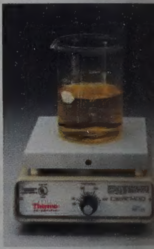
- Thermostatically controlled up to 243°C (469°F)
- Cast-aluminum top plate provides maximum heat transfer for excellent uniformity and stability
- Metal case finished in tan enamel

ORDERING INFORMATION:

- Dimensions: Thermometer well, 2L × ¼" diameter (51 × 6.7mm); Overall, 7L × 7⅝W × 3¼"H (17.8 × 19.4 × 8.3cm)
- Top plate: 6⅛L × 6⅛"W (16 × 16cm)
- Without dial thermometer 11-496-4 (sold separately)
- For 120V 50/60Hz, 600w, 5A

INCLUDES:
Mounting lugs for permanent installation

CERTIFICATIONS:
UL listed



11-496-3

Note: Professional installation required.

Electrical Requirements	Mfr. No.	Cat. No.	Eac
120V 50/60Hz, 600w, 5A	HP11515B	**11-496-3**	881.0

Thermo Scientific* Micro Hotplate

Tiny benchtop variable-control hotplates

Process delicate materials at low temperatures.

- Infinitely adjustable, demand-type control provides ±5°C (±9°F) temperature control over the entire operating range
- Reaches 260°C (500°F) in just 4½ minutes; 371°C (700°F) in 7½ minutes
- Cast-aluminum top plate
- Embedded heating elements
- Perforated stainless-steel case

ORDERING INFORMATION:
Height: 3¾" high (9.5cm); Top plate diameter: 3½" (9cm); Weight: 4 lb. (1.8kg)

CERTIFICATIONS:
UL listed

11-496-10Q

Electrical Requirements	Cat. No.	Eac
120V 50/60Hz, 325w, 2.7A	**11-496-10Q**	198.0
240V 50/60Hz, 325w, 1.4A	**11-496-11Q**	201.0

THERMO SCIENTIFIC* NUOVA* HOTPLATES

Compact, easy-to-use hotplates reach maximum temperature in just eight minutes! Available online.

Visit www.fishersci.com and search for Nuova Hotplates

hermo Scientific* Remote-Control Hotplates

rge and extra-large hotplates that can be controlled from outside fume hoods d other corrosive environments

atures

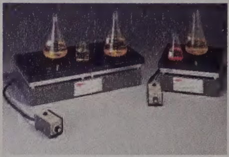
- laximum operating temperature: 371°C (700°F)
- emote control can be placed up to 5' (1.5m) from hotplate
- mbedded heating elements provide excellent temperature uniformity cross top-plate surface
- n-power light
- eramic-coated stainless-steel top plate is tough, durable and hemical-resistant
- tainless-steel hotplate housing case provides maximum corrosion esistance and strength
- emote control unit housed in baked enamel steel case
- ine cord from hotplate to control protected by chemical-resistant cover

Large models

- 12L × 12W × 6⅛"H (31 × 31 × 15.5cm)
- Top plate: 12L × 12"W (31 × 31cm)

Extra-large models

- 12L × 24W × 6⅛"H (31 × 61 × 15.5cm)
- Top plate: 12L × 24"H (31 × 61cm)



11-496-66Q, 11-496-6EQ

INCLUDES:
Each model comes with 5' (1.5m), 3-wire cord and plug

WARRANTY:
Two years

Model	Electrical Requirements	Cat. No.	Each
Large	120V 50/60Hz	**11-496-66Q**	1042.00
Large	240V 50/60Hz	**11-496-65Q**	1052.00
Extra-large	240V 50/60Hz	**11-496-6EQ**	1354.00

hermo Scientific* Extra-Capacity Hotplates

rge and extra-large hotplates for any constant temperature application where even at to 371°C (700°F) is required

atures

- emand-type thermostat provides temperature stability within ±3°C 5.4°F) at 100°C (212°F)
- tepless temperature selection easily reproduced
- luminum top-plate, reflective baffles, and thick insulation provide fast eatup and excellent temperature uniformity (±4.0°C at 100°C)
- mbedded heating elements
- erforated stainless-steel case
- ccommodates up to 40 lb (18.2kg) loads

Lge Model

- imensions: 13L × 12W × 6"H 3 × 31 × 16cm)
- p plate: 12L × 12"W (31 × 31cm)
- hipping weight 20 lb. (9.1kg)
- ith 3-wire line cord and plug

Extra-large Model

- Dimensions: 13¾L × 24W × 6¼"H (35 × 61 × 16cm)
- Top plate: 12L × 24"W (31 × 61cm)
- Shipping weight 39 lb. (17.7kg)
- Without line cord and plug; must be connected through conduit system

11-496-5BQ
11-496-5AQ

INCLUDES:
Line cord and plug (large models only)

CERTIFICATIONS:
UL listed

Mfr. No.	Electrical Requirements	Cat. No.	Each
Large models			
HPA2235M	120V 50/60/Hz, 13.3A, 1600w	**11-496-5AQ**	756.00
HPA2230M	240V 50/60/Hz, 6.7A, 1600w	**11-496-6AQ**	756.00
Extra-large models			
HPA2245M	120V 50/60Hz, 26.6A, 3200w[1]	**11-496-5BQ**	1065.00
HPA2240M	240V 50/60Hz, 13.3A, 3200w	**11-496-6BQ**	1065.00

[1] *Requires special heavy-duty 120V supply line.*

WARNING
Recommended for use with glass vessels only.

ACCESSORIES

Replacement Heating Element

- Fits all Thermo Scientific* extra-capacity hotplates

Electrical Requirements	Cat. No.	Each
120/240V	**11-496-7**	139.82

IKA

A RCT Basic IKAMAG* Safety Control Magnetic Stirrer

fers medium-viscosity stirring power with advanced hating protection for unsupervised operation

Splied with PT 1000 temperature sensor.

erating and Safety Features

14-261-100

- tegrated temperature control
- recise temperature/speed setting via digital isplay—even when turned off
- djustable safety circuit for heating plate temperature
- igital readout of set safety temperatureand error codes
- ot-top indicator alerts against accidental burns
- igh magnetic adhesion
- ' 42 enclosed assembly for long service life
- ighly polished aluminum alloy heating plate for optimal heat transfer
- IN 12878 bushing for connecting a contact thermometer

LUDES:
P1000 temperature sensor

SPECIFICATIONS

Stirring Capacity	5 gal. (20L)
Speed Range	50 to 1200rpm
Speed Stability	5%
Heating Temperature Range	50 to 310°C
Adjustable Safety Circuit Range	50 to 360°C
Permissible Ambient Temperature	5 to 40°C
Permissible Relative Humidity	80%
Power Input	610w
Motor Input/Output	9.5w/3.5w
Heat Output	600w
Max. Stir Bar Length	3¼" (80mm)
Top Plate Dia.	5¾" (135mm)
Overall Dimensions (L × W × H)	10¾ × 6½ × 3¼" (27.5 × 16.5 × 8.5cm)
Net Weight	5½ lb. (2.5kg)
Electrical Requirements	115V 50/60Hz
Cat. No.	**14-261-100**
Each	716.50

IKA RCT Basic IKAMAG* Stirrer

Low-profile, heating magnetic stirrer

Available separately or in kit form with support rod hardware.

- For volumes up to 5 gal. (20L)
- Stirs to 1100rpm
- Heats from ambient to 300°C (572°F) with safety circuit fixed at 370°C (698°F)
- Top plate diameter: 5⅜" (13.5cm)
- Maximum load: 55 lb. (24.9kg)
- Enclosed assembly ensures long product life
- With connection for optional contact thermometer (Cat. No. 14-260-28, included in kit) according to DIN 12878 Cl. 2

14-259-202 Stirrer Kit

ORDERING INFORMATION:
Overall dimensions: 11L × 6⅜W × 3½"H (27.9 × 16 × 8.9cm).

INCLUDES:
Stirrer, Thermometer (14-260-28), Support Rod (14-259-79), Holding Rod (14-259-87) and Boss Head (14-259-88). Stand-alone unit or kit.

Description	Mfr. No.	Cat. No.	Each
Stirrer, 115V 50/60Hz	2581001	**14-260-37**	723.45
Stirrer Kit, 115V 50/60Hz	L004270	**14-259-202**	1258.95
Stirrer, 230V 50/60Hz	25810.00	**14-259-112**	726.60

IKA RET Control-Visc IKAMAG* Stirrer

Safety magnetic stirrer with heat, for stirring up to 5 gal. (20L) at speeds up to 1100rpm

Features fuzzy logic control and microprocessor technology for maximum accuracy. Available separately or in kit form with support rod hardware.

Operating Features

- Digital display shows all functions
- RS-232-C and analog interfaces
- Temperature of contents controlled by sensor (Cat. No. 14-260-27, order separately [included in kit version])
- Maximum load: 55 lb. (24.9kg)

Operating Modes

- Variable control—allows user to change setpoints during operation
- Memory control—automatically returns stirrer to last selected setpoint
- Safety mode—locks in setpoints to prevent accidental changes

Safety Features

- Smooth-start stirring prevents spraying
- Optical warning activates when heating plate is hot, even when heating function is switched off
- At start, unit automatically tests all safety elements
- Design protects internal components and ensures maximum product life

14-259-206 Stirrer Ki

ORDERING INFORMATION:
Overall dimensions: 11L × 6⅜W × 3½"H (27.9 × 16 × 8.9cm). Top plate diameter: 5⅜" (13.5cm); For 115V 50/60Hz.

INCLUDES:
Stirrer and Labworldsoft* 2.6 Windows*-based software (Allows user to control, regulate and document temperature, speed and viscosity trend parameters); kits add sensor and mounting hardware (see above). Kit includes stirrer, Labworldsoft 2.6, Temperature Sensor (14-260-27), Support Rod (14-259-79), Holding Rod (14-259-87) and Boss Head (14-259-88)

Description	Mfr. No.	Cat. No.	Each
Stirrer	2673101	**14-260-29**	1418.60
Stirrer Kit	L004330	**14-259-206**	1859.40

IKA RO Multiplate IKAMAG* Stirrers

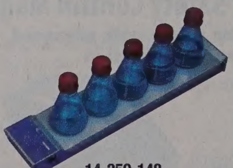
Multiposition magnetic stirrers with powerful rotary field drive

- Choice of 5-, 10- and 15-position models
- Serial stirring place alignment (1, 2 or 3 rows of 5 places each)
- Stirrer spacing for all models: 3½" (9cm)
- Speed range: 0 to 1200rpm
- Operating temperature range: 5° to 40°C (41° to 104°F)
- Max. L × dia. of magnetic bar: 1³⁄₁₆ × ⁵⁄₁₆" (3.0 × 0.8cm)
- Stainless-steel surface cleans easily, protects against penetration of liquids

Stirring Capacities

- Five-position model: up to ½ gal. of liquid (1.9L), distributed over all stirrers
- 10-position model: 1⅛ gal. (4.2L)
- 15-position model: 1⅝ gal. (6.1L)

ORDERING INFORMATION:
For 115V 50/60Hz



14-259-148

14-259-150

No. of Stirring Positions	L × W × H	Mfr. No.	Cat. No.	Each
5	4¾ × 21¾ × 2⁵⁄₁₆" (12 × 55 × 6cm)	29302.01	**14-259-148**	1041.40
10	7⅛ × 21¾ × 2⁵⁄₁₆" (18 × 55 × 6cm)	29304.01	**14-259-150**	1522.20
15	10⅝ × 21¾ × 2⁵⁄₁₆" (27 × 55 × 6cm)	29306.01	**14-259-152**	1933.20

*Trademark. See Trademark Reference.

KA RH-C Magnetic Stirring Hotplate

ecise digital control with superior stirring strength

- × 7" square ceramic top plate
- Digital display
- Stirring capacity: 10L
- Speed Range: 100 to 1500rpm

- Temperature Range: 50° to 500°C
- Temperature Accuracy: ±3°C
- Heating Power: 1000w
- Motor Rating Input/Output: 15w/1.5w

INCLUDES:
Unit and temperature probe

WARRANTY:
Two years

DERING INFORMATION:
hensions: 13L × 9W × 4"H (33 × 23 × 10cm); For 115V 50/60Hz

14-259-230

Cat. No.	Each
14-259-230	385.48

ACCESSORIES

IKA ETS-D6 Electronic Contact Thermometer

Three patented operating modes guarantee optimum adjustment to your working method

For use with all magnetic stirrers with contact thermometer bushing according to DIN 12878, Class 2 (i.e., IKA, Brinkmann/Heidolph* and Corning* with adapter AD-C1). Ensures perfect temperature control without overshooting the set temperature, even in the case of quick heating.

Features

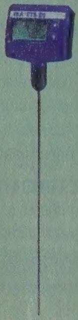
- Optimized PID control
- Reset function
- Stainless-steel sensor, H-62
- Integrated pH measuring instrument

Three Operating Modes

- A: Suitable for work with varying parameters (from -50° to 450°C); safety temperature adjustable
- B: Suitable for series operation under uniform conditions
- C: Suitable for unsupervised operation

Specifications

- Temperature range: -50° to +450°C
- Resolution: 0.01K
- Measuring accuracy: ±0.2K + tolerance PT1000 (DIN IEC 751 Class A)
- Heat control accuracy: ±0.1K
- Control accuracy with sensor: ±0.2K
- Immersion depth: 200mm
- W × D × H: 82 × 22 × 83mm (without sensor)
- Permissible ON time: 100%
- Permissible ambient temperature: 0-60°C
- Permissible relative moisture: 80%
- Protection class according to DIN EN 60529: IP 54
- Voltage: 8 - 16V



14-259-683

NOTE:
All values are taken from the memory. This ensures perfect protection against inadvertent improper adjustment.

Temperature	Cat. No.	Each
-50° to +450°C	**14-259-683**	376.71

CORNING

rning* Digital Hotplates and Stirring Hotplates

ramic-top benchtop units offer precise control with digital readouts for optimal heating and stirring

roprocessor controlled feedback technology maintains consistent eatable temperature and stir speed settings. Compact units have a small print and low profile to fit easily on a desktop or inside a hood.

erating Features

- eating Range: 5° to 550°C
- mple, easy-to-use controls
- gital temperature display is adjustable in 5° increments and indicates hen set temperature is reached
- ight LED icon for POWER and HOT TOP icon, which lights up when top ate is over 60°C
- parate temperature sensor provides power cutoff if unit overheats
- ass-ceramic Pyroceram* top cleans easily and resists scratches, rrosion, and chemicals
- pill-deflecting housing design
- uilt-in support rod mount for mperature probe

ring Hotplate Models

- ature separate temperature d speed displays
- irring Range: 60 to 1150rpm

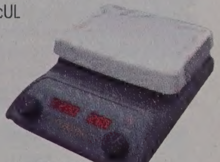
ORDERING INFORMATION:
Accessories, including External Temperature Controller (07-250-143) and support rods, are available online. For stirring-only units, see Corning Digital Stirrers

INCLUDES:
Stirring Hotplate Kits include one each: stirring hotplate (see model for size), Temperature Controller 07-250-143, two 9" (22.9cm) Support Rods 07-250-144, and Stir Bar Retriever 14-972-50

REQUIRED ACCESSORIES:
Stir bars (stirring models only); sold separately

WARRANTY:
Two years

CERTIFICATIONS:
UL, cUL


11-550-150

Description	Top Plate Area	Temperature Range	Stirring Range	Electrical Requirements	Cat. No.	Each
Hotplate	5 × 7"	50° to 550°C (41° to 1022°F)	----	120V 60Hz, 628w, 5.3A	**11-500-152**	236.25
Hotplate	10 × 10"	50° to 550°C (41° to 1022°F)	----	120V 60Hz, 1043w, 8.7A	**11-500-153**	404.25
Stirring Hotplate	5 × 7"	50° to 550°C (41° to 1022°F)	60 to 1150rpm	120V 60Hz, 698w, 5.9A	**11-500-150**	414.75
Stirring Hotplate	10 × 10"	50° to 550°C (41° to 1022°F)	60 to 1150rpm	120V 60Hz, 1113w, 9.3A	**11-500-151**	546.00
Stirring Hotplate Kit	5 × 7"	50° to 550°C (41° to 1022°F)	60 to 1150rpm	120V 60Hz, 698w, 5.9A	**07-250-140**	499.37
Stirring Hotplate Kit	10 × 10"	50° to 550°C (41° to 1022°F)	60 to 1150rpm	120V 60Hz, 1113w, 9.3A	**07-250-141**	624.75

HYDROMETERS

Fisher Scientific* API Hydrometers

Available in regular and ASTM*-recommended forms. Manufactured to meet or exceed ASTM E 100 specifications which are accepted by NIST* and U.S. Bureau of Mines. Permanently marked with individual serial numbers and calibrated according to ASTM E 126 specifications.

11-603-5B

Combined Form Hydrometers

- With thermometer in body or stem
- Temperature ranges indicated in the chart; divisions of 0.1°F
- Temperature of standardization: 60°F
- Accurate to ½ division of scale
- Approximate length, 380mm

CERTIFICATIONS:

Certificate of Accuracy and Compliance provided to indicate calibration against standards provided by NIST

ASTM No.	API Range	Contains Mercury	Cat. No.	Each
Temperature range 60° to 220°F; thermometer in body				
51HH	-1° to +11°	Yes	**11-603-5K**	49.55
52HH	9° to 21°	Yes	**11-603-5A**	49.10
Temperature range 30° to 180°F; thermometer in body				
53HM	19° to 31°	Yes	**11-603-5B**	49.10
54HM	29° to 41°	Yes	**11-603-5C**	49.10
Temperature range 0° to 150°F; thermometer in body				
55HL	39° to 51°	Yes	**11-603-5D**	49.10
56HL	49° to 61°	Yes	**11-603-5E**	49.10
57HL	59° to 71°	Yes	**11-603-5F**	49.10
58HL	69° to 81°	Yes	**11-603-5G**	49.10
59HL	79° to 91°	Yes	**11-603-5H**	49.10
60HL	89° to 101°	Yes	**11-603-5J**	49.55
Temperature range 30° to 220°F; thermometer in stem				
71H	-1° to +11°	Yes	**11-603-3N**	71.40
72H	9° to 21°	Yes	**11-603-3P**	70.15
73H	19° to 31°	Yes	**11-603-3Q**	71.40
74H	29° to 41°	Yes	**11-603-3R**	71.95

WARNING

The products indicated contain mercury. Don't put products containing mercury in the trash. Products containing mercury are to be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

Plain Form Hydrometers

- Without thermometer in body
- Approximate length, 330mm
- Temperature of standardization: 60°F
- Use 11-604 or 11-604-5 API Gravity Thermometers (available separately on our Web site)

ORDERING INFORMATION:

A certificate of calibration is available; simply add the letter "C" to the end of the catalog number when ordering.

CERTIFICATIONS:

A certificate is provided to indicate instrument traceability to standards provided by NIST*

ASTM No.	API Range	Division	Cat. No.	Each
1H	-1° to +11°	0.1°	**11-603J**	31.88
2H	9° to 21°	0.1°	**11-603K**	31.88
3H	19° to 31°	0.1°	**11-603A**	31.88
4H	29° to 41°	0.1°	**11-603B**	31.88
5H	39° to 51°	0.1°	**11-603C**	31.88
6H	49° to 61°	0.1°	**11-603D**	31.88
7H	59° to 71°	0.1°	**11-603E**	31.88
8H	69° to 81°	0.1°	**11-603F**	31.88
9H	79° to 91°	0.1°	**11-603G**	31.88
10H	89° to 101°	0.1°	**11-603H**	31.88

Combined Form, Temperature Range 0° to 150°F

- With thermometer in body
- Approximate length, 190mm
- Temperature of standardization: 60°F

CERTIFICATIONS:

A certificate is provided to indicate instrument traceability to standards provided by NIST*.

API Range	Division	Contains Mercury	Cat. No.	Each
10° to 45°	1.0°	Yes	**11-603-4M**	49.10
9° to 21°	0.2°	Yes	**11-603-4P**	49.10
19° to 31°	0.2°	Yes	**11-603-4Q**	49.10
29° to 41°	0.2°	Yes	**11-603-4R**	49.10
39° to 51°	0.2°	Yes	**11-603-4S**	48.10
49° to 61°	0.2°	Yes	**11-603-4T**	49.10
59° to 71°	0.2°	Yes	**11-603-4U**	59.30
69° to 81°	0.2°	Yes	**11-603-4V**	49.10

LOOKING FOR CYLINDERS?

For cylinders to use with these hydrometers, see the Ungraduated Cylinders in the Cylinders section.

*Trademark. See Trademark Reference.

Fisher Scientific* Precision Specific Gravity Hydrometers

Use where a high degree of accuracy is required in hydrometer readings

- Permanently marked with individual serial numbers
- Accuracy meets or exceeds ASTM* E 100 specifications
- Calibrated according to ASTM E 126 specifications

ORDERING INFORMATION:

A certificate of calibration is available; simply add the letter "C" to the end of the catalog number when ordering.

CERTIFICATIONS:

A certificate is provided to indicate traceability to standards provided by NIST*.

150mm Long (Approximate)

- With divisions of 0.001
- Requires 140mL liquid volume for submersion

Sp. Gr. Range	Approx. Length	Cat. No.	Each
0.700 to 0.770	160mm	**11-556A**	41.55
0.760 to 0.830	160mm	**11-556B**	41.55
0.820 to 0.890	160mm	**11-556C**	41.55
0.880 to 0.950	170mm	**11-556D**	41.55
0.940 to 1.010	165mm	**11-556E**	41.55
1.000 to 1.070	170mm	**11-556F**	41.55
1.060 to 1.130	175mm	**11-556G**	41.55
1.120 to 1.190	170mm	**11-556H**	41.55
1.180 to 1.250	160mm	**11-556J**	41.55
1.240 to 1.310	185mm	**11-556K**	41.55
1.300 to 1.370	172mm	**11-556L**	42.47
1.360 to 1.430	170mm	**11-556M**	43.03
1.420 to 1.490	175mm	**11-556N**	43.03
1.480 to 1.550	170mm	**11-556P**	41.55
1.540 to 1.610	170mm	**11-556Q**	41.55
1.600 to 1.670	165mm	**11-556R**	42.48
1.660 to 1.730	165mm	**11-556S**	42.48
1.720 to 1.790	165mm	**11-556T**	42.48
1.780 to 1.850	165mm	**11-556U**	42.48
1.840 to 1.920	165mm	**11-556V**	42.48

340mm Long (Approximate)

- With divisions of 0.0005
- Requires 275mL liquid volume for submersion

Sp. Gr. Range	Approx. Length	Cat. No.	Each
0.640 to 0.710	340mm	**11-555A**	43.20
0.700 to 0.770	340mm	**11-555B**	43.20
0.760 to 0.830	330mm	**11-555C**	43.20
0.820 to 0.890	345mm	**11-555D**	43.20
0.880 to 0.950	340mm	**11-555E**	43.20
0.940 to 1.010	325mm	**11-555F**	43.20
1.000 to 1.070	340mm	**11-555G**	43.20
1.060 to 1.130	330mm	**11-555H**	43.20
1.120 to 1.190	335mm	**11-555J**	43.20
1.180 to 1.250	340mm	**11-555K**	43.20
1.240 to 1.310	340mm	**11-555L**	43.20
1.300 to 1.370	340mm	**11-555M**	43.20
1.360 to 1.430	345mm	**11-555N**	43.20
1.420 to 1.490	345mm	**11-555P**	43.20
1.480 to 1.550	330mm	**11-555Q**	43.20
1.540 to 1.610	330mm	**11-555R**	43.20
1.600 to 1.670	330mm	**11-555S**	37.38
1.660 to 1.730	330mm	**11-555U**	37.35
1.720 to 1.790	325mm	**11-555V**	37.35
1.780 to 1.850	330mm	**11-555T**	37.38
1.840 to 1.920	330mm	**11-555W**	37.35

Fisher Scientific* Set of Eight Precision Specific Gravity Hydrometers

Accurate to one graduation line that meets or exceeds ASTM* E 100 specifications

Set includes thermometer with 0° to 220°F range and eight precision hydrometers that cover specific gravity range of 0.695 to 2.000.

11-582

- Permanently marked with individual serial numbers
- Calibrated according to ASTM E 126 specifications
- Approximately 300mm long
- In lined case

WARNING

The products indicated contain mercury. Don't put products containing mercury in the trash. Products containing mercury are to be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

ORDERING INFORMATION:

A certificate of calibration is available; simply add the letter "C" to the end of the catalog number when ordering.

CERTIFICATIONS:

A certificate is provided to indicate traceability to standards provided by NIST*.

Description	Contains Mercury	Cat. No.	Each
Set of 8	Yes	**11-582**	326.08

Replacement Hydrometers for 11-582 Hydrometer Set

Sp. Gr. Range	Division	Cat. No.	Each
0.695 to 0.810	0.001	**11-583A**	37.21
0.795 to 0.910	0.001	**11-583B**	37.21
0.900 to 1.010	0.001	**11-583C**	38.00
1.000 to 1.220	0.002	**11-583D**	38.00
1.200 to 1.420	0.002	**11-583E**	38.00
1.400 to 1.620	0.002	**11-583F**	38.00
1.600 to 1.820	0.002	**11-583G**	40.71
1.800 to 2.000	0.002	**11-583H**	40.71

Fisher Scientific* ASTM* Specific Gravity Hydrometers for Liquids Heavier than Water

Accuracy meets or exceeds ASTM E 100 specifications

- Calibrated according to ASTM E 126 specifications
- Temperature of standardization: 60°F

ORDERING INFORMATION:

A certificate of calibration is available; simply add the letter "C" to the end of the catalog number when ordering.

ASTM No.	Sp. Gr. Range	Division	Approx. Length	Cat. No.	Each
275mL liquid volume					
89H	1.000 to 1.050	0.0005	330mm	**11-603-4H**	38.23
90H	1.050 to 1.100	0.0005	330mm	**11-603-4J**	38.23
111H	1.000 to 1.050	0.0005	330mm	**11-603-7A**	38.23
112H	1.050 to 1.100	0.0005	330mm	**11-603-7B**	38.23
113H	1.100 to 1.150	0.0005	330mm	**11-603-7C**	38.23
114H	1.150 to 1.200	0.0005	330mm	**11-603-7D**	38.23
115H	1.200 to 1.250	0.0005	330mm	**11-603-7E**	38.23
116H	1.250 to 1.300	0.0005	330mm	**11-603-7F**	38.23
117H	1.300 to 1.350	0.0005	330mm	**11-603-7G**	38.23
118H	1.350 to 1.400	0.0005	330mm	**11-603-7H**	38.23
119H	1.400 to 1.450	0.0005	330mm	**11-603-7L**	38.23
120H	1.450 to 1.500	0.0005	330mm	**11-603-7K**	38.23
260mL liquid volume					
125H	1.000 to 1.050	0.001	260mm	**11-603-8A**	30.96
126H	1.050 to 1.100	0.001	260mm	**11-603-8B**	30.96
127H	1.100 to 1.150	0.001	260mm	**11-603-8C**	28.82
128H	1.150 to 1.200	0.001	260mm	**11-603-8D**	30.96
129H	1.200 to 1.250	0.001	260mm	**11-603-8E**	30.96
130H	1.250 to 1.300	0.001	260mm	**11-603-8F**	30.96
131H	1.300 to 1.350	0.001	260mm	**11-603-8G**	30.96
132H	1.350 to 1.400	0.001	260mm	**11-603-8H**	30.96
133H	1.400 to 1.450	0.001	260mm	**11-603-8J**	30.96
134H	1.450 to 1.500	0.001	260mm	**11-603-8K**	30.96
135H	1.500 to 1.550	0.001	260mm	**11-603-8L**	30.96
136H	1.550 to 1.600	0.001	260mm	**11-603-8M**	30.96
137H	1.600 to 1.650	0.001	260mm	**11-603-8N**	30.96
138H	1.650 to 1.700	0.001	260mm	**11-603-8P**	30.96
139H	1.700 to 1.750	0.001	260mm	**11-603-8Q**	30.96
140H	1.750 to 1.800	0.001	260mm	**11-603-8R**	30.96
141H	1.800 to 1.850	0.001	260mm	**11-603-8S**	30.96

Fisher Scientific* Specific Gravity Hydrometers

Double scales can be read without turning hydrometer

- Measure true specific gravity of liquids.
- Meet or exceed ASTM* E 100 for accuracy, ASTM E 126 for calibration
- Chemical-resistant bulbs and stems
- Streamlined to avoid trapping air bubbles
- With directional device that stops the instrument with the scale facing the user for more convenient, more accurate readings

ORDERING INFORMATION:

A certificate of calibration is available; simply add the letter "C" to the end of the catalog number when ordering.

Sp. Gr. Range	Div.	Approx. Length	Approx. Liquid Volume	Cat. No.	Each
For liquids lighter than water					
0.695 to 0.810	0.001	310mm	250mL	**11-510A**	36.20
0.795 to 0.910	0.001	310mm	250mL	**11-510B**	36.20
0.895 to 1.010	0.001	305mm	250mL	**11-510C**	36.20
0.650 to 1.000	0.005	305mm	250mL	**11-510D**	33.62
0.690 to 0.800	0.002	180mm	140mL	**11-512A**	36.20
0.790 to 0.900	0.002	170mm	140mL	**11-512B**	36.20
0.890 to 1.000	0.002	180mm	140mL	**11-512C**	36.20
0.650 to 1.000	0.010	165mm	140mL	**11-512D**	32.33
For liquids heavier than water					
1.000 to 1.220	0.002	305mm	250mL	**11-520A**	33.62
1.200 to 1.420	0.002	275mm	250mL	**11-520B**	36.20
1.400 to 1.620	0.002	285mm	250mL	**11-520C**	36.20
1.600 to 1.820	0.002	290mm	250mL	**11-520D**	38.80
1.000 to 2.000	0.010	305mm	250mL	**11-520E**	32.33
1.000 to 1.600	0.005	290mm	250mL	**11-520F**	43.96
1.000 to 1.225	0.005	185mm	140mL	**11-522A**	36.20
1.200 to 1.425	0.005	160mm	140mL	**11-522B**	36.20
1.400 to 1.625	0.005	160mm	140mL	**11-522C**	36.20
1.000 to 2.000	0.020	165mm	140mL	**11-522D**	33.62

LOOKING FOR CYLINDERS?

For cylinders to use with these hydrometers, see the Ungraduated Cylinders section starting on p. 576.

Fisher Scientific* Specific Gravity/ Baume Hydrometers

Accuracy meets or exceeds ASTM* E 100 specifications

- Calibrated according to ASTM E 126 specifications
- Permanently marked with individual serial numbers

ORDERING INFORMATION:

A certificate of calibration is available; simply add the letter "C" to the end of the catalog number when ordering.

CERTIFICATIONS:

A certificate is provided to indicate traceability to standards provided by NIST*.

Sp. Gr. Range	Div.	Baume Range	Div.	Approx. Length	Approx. Liquid Vol.	Cat. No.	Each
For liquids lighter than water							
0.790 to 0.900	0.002	46°–25°	0.5°	175mm	140mL	**11-532B**	45.01
0.890 to 1.000	0.002	26°–10°	0.5°	170mm	140mL	**11-532C**	45.01
For liquids heavier than water							
1.000 to 1.220	0.002	0°–26°	0.2°	310mm	250mL	**11-540A**	46.40
1.200 to 1.420	0.002	24°–43°	0.2°	310mm	250mL	**11-540B**	46.40
1.400 to 1.620	0.002	42°–55°	0.2°	310mm	250mL	**11-540C**	46.40
1.600 to 1.820	0.002	54°–65°	0.2°	295mm	250mL	**11-540D**	46.40
1.000 to 2.000	0.010	0°–72°	1.0°	285mm	250mL	**11-540E**	43.07
1.000 to 1.225	0.005	0°–26°	0.5°	180mm	140mL	**11-542A**	46.40
1.200 to 1.425	0.005	24°–43°	0.5°	165mm	140mL	**11-542B**	46.40
1.400 to 1.625	0.005	42°–55°	0.5°	180mm	140mL	**11-542C**	46.40
1.000 to 2.000	0.020	0°–72°	1.0°	165mm	140mL	**11-542D**	43.07
"Universal" range							
0.700 to 2.000	0.010	10°–70°	1.0°	330mm	515mL	**11-550**	41.65

Fisher Scientific* Baume Hydrometers

Baume "heavy" (H) scale for liquids heavier than water

11-571A

- Accuracy meets or exceeds ASTM* E 100 specifications
- Calibrated according to ASTM E 126 specifications
- Permanently marked with individual serial numbers

CERTIFICATIONS:

A certificate is provided to indicate traceability to standards provided by NIST*.

Baume Range	Division	Approx. Length	Cat. No.	Each
0° to 12°H	0.1°	310mm	**11-571A**	36.20
9° to 21°H	0.1°	305mm	**11-571B**	36.20
19° to 31°H	0.1°	310mm	**11-571C**	36.20
29° to 41°H	0.1°	305mm	**11-571D**	42.67
39° to 51°H	0.1°	290mm	**11-571E**	36.20
49° to 61°H	0.1°	295mm	**11-571F**	38.80
59° to 71°H	0.1°	295mm	**11-571G**	36.20
0° to 35°H	0.5°	280mm	**11-580A**	36.20
35° to 70°H	0.5°	300mm	**11-580D**	36.90
0° to 50°H	0.5°	305mm	**11-580B**	32.33
0° to 70°H	1.0°	285mm	**11-580C**	33.62

Fisher Scientific* Twaddell Hydrometers

Use with liquids heavier than water such as milk, sulfuric acid, tanning solutions

- Accuracy meets or exceeds ASTM* E 100 specifications
- Calibrated according to ASTM E 126 specifications
- Permanently marked with individual serial numbers

ORDERING INFORMATION:

A certificate of calibration is available; simply add the letter "C" to the end of the catalog number when ordering.

CERTIFICATIONS:

A certificate is provided to indicate traceability to standards provided by NIST*.

Twaddell Range	Div.	Approx. Length	Approx. Liquid Vol.	Cat. No.	Each
0° to 10°	0.1°	300mm	235mL	**11-587-10**	41.43
0° to 26°	0.5°	290mm	235mL	**11-585A**	54.57
24° to 50°	0.5°	290mm	235mL	**11-585B**	54.57
48° to 74°	0.5°	300mm	235mL	**11-585C**	54.57

Fisher Scientific* Alcohol Hydrometers

Used by distillers, law enforcement, and taxing agencies to measure the alcohol content of beverages

11-590

Calibrated on two scales: Tralle (0% by volume alcohol) and proof (2 × percentage of alcohol).

- Tralle scale, 0 to 100% graduated in 1% divisions
- Proof scale, 0 to 200 in 2-proof divisions
- Accuracy meets or exceeds ASTM* E 100 specifications
- Calibrated according to ASTM E 126 specifications
- Permanently marked with individual serial numbers
- Approximate liquid volume, 250mL

ORDERING INFORMATION:

A certificate of calibration is available; simply add the letter "C" to the end of the catalog number when ordering.

CERTIFICATIONS:

A certificate is provided to indicate traceability to standards provided by NIST*.

Cat. No.	Each
11-590	44.78

Fisher Scientific* Salimeters

Used to measure pickling and meat-packing brines

Saturated salt solution contains 26.4% by weight sodium chloride.

- Accuracy meets or exceeds ASTM* E 100 specifications
- Calibrated according to ASTM E 126 specifications
- Can be calibrated to read percentage saturation or percent salt at 60°F
- Permanently marked with individual serial numbers
- Approximate length, 305mm

ORDERING INFORMATION:
A certificate of calibration is available; simply add the letter "C" to the end of the catalog number when ordering.

CERTIFICATIONS:
A certificate is provided to indicate traceability to standards provided by NIST*.

Range	Division	Cat. No.	Each
0 to 100% Saturation	1%	**11-605**	38.23
0 to 26.4% Salt	0.5%	**11-606**	40.95

Fisher Scientific* Concentration Scale (ASTM* 152H) Soil Hydrometers

Use in soil particle size analysis

14-331-5C

For reading concentration directly when using ASTM* D 422 to determine particle size distribution.

- Accuracy meets or exceeds ASTM E 100 specifications
- Calibrated according to ASTM E 126 specifications
- Scaled from -5 to +60g/L in 1g/L divisions
- Permanently marked with individual serial numbers

CERTIFICATIONS:
Certificate of Accuracy and Compliance provided to indicate calibration against standards provided by NIST*.

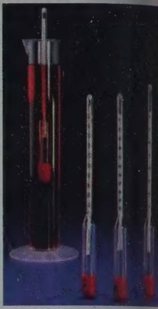
Cat. No.	Each
14-331-5C	49.55

Nalgene* Plain-Form Hydrometers

Safe, break-resistant alternatives to glass hydrometers

- Made from polycarbonate for glass-like clarity
- Available in three specific gravity ranges for fluids heavier than water
- Salt version also available for food, beverage and other testing
- Not autoclavable
- Use with Nalgene Polymethylpentene Cylinder (11-582-1) available separately

CERTIFICATIONS:
Individually calibrated to meet NIST* tolerances of accuracy.


11-603-6 hydrometers with 11-582-1 cylinder (available separately)

Range	Length	Mfr. No.	Cat. No.	Each	Case of 12
Specific Gravity, 0.002 divisions					
1.000–1.220	290mm	3630 1000	**11-603-6A**	92.19	737.50
1.200–1.420	305mm	3630 1200	**11-603-6B**	92.19	737.50
1.400–1.620	305mm	3630 1400	**11-603-6C**	92.19	737.50
Salt, 1.0 divisions					
0–100%	285mm	3630 0100	**11-603-6F**	92.19	737.50

Nalgene* Polymethylpentene 500mL Hydrometer Cylinders

Suitable as a lactometer cylinder

- Ungraduated
- Autoclavable
- Approximate height, 390mm

Mfr. No.	Cat. No.	Each	Case of 6
6230 0500	**11-582-1**	26.99	108.00

LOOKING FOR MORE HYDROMETERS?
Our full line is available online!
Visit www.fishersci.com and search for Hydrometers

*Trademark. See Trademark Reference.

Prices subject to change.

HYGROMETERS

Fisher Scientific* Traceable* Relative Humidity/Temperature Meters

Monitor air conditions in environmental chambers, chemical storage areas, cleanrooms, incubators and stockrooms

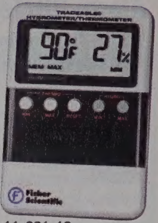
- Humidity range is 25 to 95% RH with an accuracy of ±2% (midrange) to ±4% (outside midrange)
- Continuously and simultaneously display relative humidity (11-661-11) or humidity/temperature (11-661-12) in extra-large, ⅝"-high (1.5cm) digits
- Made from high-impact, chemical-resistant ABS plastic

With Temperature Readout

- Temperature readout in °C or °F; ranges from 0° to 50°C (32° to 122°F) with ±1°C/°F accuracy
- Measures ¾L × 3¼W × 7"H (2 × 8 × 18cm)
- Net weight: 5 oz. (142g)
- Wall mount included

With Temperature Readout and Dual Min./Max. Memory

- Temperature readout in °C and °F; ranges from 0° to 50°C (32° to 122°F) with ±1°C/°F accuracy
- Minimum and maximum memories permit air monitoring overnight, during weekends, or for virtually any other time period
- Measures ⅝L × 2⅝W × 3⅞"H (2 × 7 × 10cm)
- Net weight: 2 oz. (57g)
- Wall mount and bench stand included


11-661-13

INCLUDES:
Two 1.5V batteries for one year of continuous service. Replacement batteries available on **www.fishersci.com**.

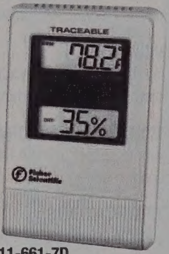
COMPLIANCE:
Cat. No. 11-661-13 meets federal requirements for CLIA Specification 493.1207 for monitoring temperature and humidity in clinical laboratories.

CERTIFICATIONS:
A certificate is provided to indicate instrument traceability to standards provided by the NIST*. Calibrated by an ISO 17025 calibration laboratory accredited by A2LA.

Description	Cat. No.	Each
Digital Humidity Meter Only	11-661-11	57.74
Digital Humidity/Temperature Meter		
Without Memory	11-661-12	61.31
With Temperature Readout and Dual Min./Max. Memory	11-661-13	65.20

Fisher Scientific* Traceable* Digital Hygrometer/Thermometer

Ideal for constantly monitoring labs, storage facilities, and plant areas


11-661-7D

Shows humidity and temperature readings at a glance on ½" (1.2cm) LED.

- Displays 25 to 95% RH with accuracy of ±2% at mid-range and ±4% at ends of range; resolution is 1% RH
- Displays temperatures from 0° to 50°C and 32° to 122°F with 0.1° resolution
- Temperature accuracy: ±1.0°C from 0° to 40°C (±2°C otherwise); ±1.8°F from 32° to 104°F (±3.6°F otherwise)
- Adjustment not necessary
- Hang on the wall or use included plastic stand
- Housed in rugged ABS case

ORDERING INFORMATION:
Measures ⅞L × 3½W × 5"H (2 × 9 × 13cm). Net weight: 6 oz. (170g).

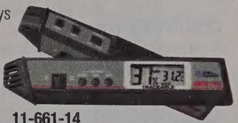
INCLUDES:
Plastic stand; "AA" battery for 1½ years of continuous operation

CERTIFICATIONS:
A certificate is provided to indicate instrument traceability to standards provided by the NIST*. Calibrated by an ISO 17025 calibration laboratory accredited by A2LA.

Cat. No.	Each
11-661-7D	68.05

Fisher Scientific* Traceable* Humidity/Temperature Pen with Memory

Ideal for monitoring RH in labs and plants


11-661-14

Continuously and simultaneously displays relative humidity and temperature (in Celsius and Fahrenheit) with dual-recall memories. Handy pocket clip makes it easy to carry.

- Relative humidity range: 25 to 98% with a resolution of 1% and an accuracy of ±3.5% (midrange) to ±5.5% (outside midrange)
- Temperature range: 0.0° to 50.0°C (32.0° to 122.0°F) with a resolution of 0.1° and an accuracy of ±1°C (±1.8°F)
- Memory displays highest and lowest readings achieved overnight or during any time period
- Display (¾" high) can be read at a glance, shows changes in less than 30 seconds, and is updated every second
- High-impact, chemical-resistant ABS plastic

ORDERING INFORMATION:
Measures ½L × 6⅝W × 1¼"H (1.2 × 17 × 3.2cm). Net weight: 1¾ oz. (50g).

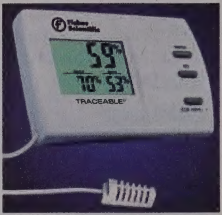
INCLUDES:
1.5V battery for continuous "always on" monitoring for one-half year

CERTIFICATIONS:
A certificate is provided to indicate instrument traceability to standards provided by the NIST*. Calibrated by an ISO 17025 calibration laboratory accredited by A2LA.

Cat. No.	Each
11-661-14	62.75

Fisher Scientific* Traceable* Remote Alarm RH/Temperature Monitor

Triple-display and remote control unit offers safety and convenience



14-649-84

For routine measurements, round-the-clock monitoring, quality control and critical experiments. Place sensor in hoods, cleanrooms, coolers, stockrooms, incubators, environmental chambers, and chemical storage areas.

- Temperature range: -50° to +70°C (-58.0° to +158.0°F) with 0.1° resolution and ±1°C accuracy
- Humidity range: 20 to 99% with 1% resolution and ±3% accuracy RH (midrange; otherwise ±5%)
- High-visibility ½" high digits simultaneously display High, Low and Current readings for temperature or humidity
- Minimum/maximum memory for temperature and humidity
- Alarm can be set in 1% RH and 1° increments; sounds when reading moves outside setpoints
- External sensor on 7' (2.13m) cable
- High-impact, chemical-resistant ABS plastic case

ORDERING INFORMATION:
Dimensions: 2¾L × 4¼W × ¾"H (7 × 10.8 × 1.9cm). Net weight: 4 oz. (113g).

INCLUDES:
Flip-open stand for benchtop; slot for wall mounting; external temperature/humidity sensor; "AAA" battery

CERTIFICATIONS:
A certificate is provided to indicate instrument traceability to standards provided by the NIST*. Calibrated by an ISO 17025 calibration laboratory accredited by A2LA.

Cat. No.	Each
14-649-84	61.20

Fisher Scientific* Traceable* Radio-Signal Hygrometer/Thermometer

Monitor humidity and temperature from up to 100' away—even outdoors

14-648-52 (right) with included remote sensor module (left)

Remote sensor displays current temperature and humidity; transmits readings over a range of 65 to 100' (20 to 30m)† to main unit. Jumbo display (1⅜" [3.5cm]) on main unit can be read up to 25' (7.6m) away.

- Temperature range: -20° to +60°C and -4° to +140°F, with 0.1° resolution and ±1°C (1.8°F)
- Relative humidity: 25 to 90% RH, with 1% resolution over entire range and accuracy of ±2% (mid-range), ±4% (ends of range)
- Readings are updated every 30 seconds
- Main unit can receive signals from up to three remote sensors on three user-selectable channels
- Trend indicators show rising or falling humidity and temperature
- Minimum and maximum memory display allows monitoring of conditions over a period of time
- An alarm can be set (in increments of 1% RH and 1°C/°F) to sound when humidity or temperature falls outside set parameters
- Manufactured from high-impact, chemical-resistant ABS plastic

ORDERING INFORMATION:
Main unit measures ¾L × 4¼W × 4½"H (2 × 11 × 11cm) and weighs 6 oz. (170g). Remote sensor module measures ¾L × 2⅓W × 3½"H (2 × 6 × 9cm) and weighs 3 oz. (85g). Operates continuously for eight months on two "AA" batteries and two "AAA" batteries.

INCLUDES:
One remote sensor module, flip-open stand, wall-mounting brackets, and Velcro* strips for attaching sensor to almost any surface, and batteries

REQUIRED ACCESSORIES:
Remote sensor unit (14-648-53); one included with meter; separate sensor required for each channel used

CERTIFICATIONS:
A certificate is provided to indicate instrument traceability to standards provided by the NIST*. Calibrated by an ISO 17025 calibration laboratory accredited by A2LA.

Cat. No.	Each
14-648-52	67.58

†*Depending on location.*

Remote Sensor Module

- Use with 14-648-52 to monitor humidity and temperature on additional channels
- Each channel requires separate remote sensor module

Cat. No.	Each
14-648-53	33.71

*Trademark. See Trademark Reference.

Fisher Scientific* Traceable* Jumbo Thermo-Humidity Meter

Fast-response, solid-state sensors show changes in relative humidity, ambient temperature, and (with probe) external temperature in under 30 seconds

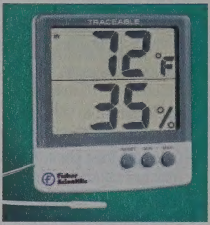
Display is updated once every second and shows temperatures in (user-settable) °F or °C. Jumbo (1⅛"H) display can be read from 35' (10.7m).

- Humidity range: 25 to 95% RH, with 1% resolution and ±2% (midrange) to ±4% (outside midrange) accuracy
- Ambient temperature range: -5° to +50°C (+23° to +122°F)
- External temperature probe (included) reads -50° to +70°C (-58° to +158°F)
- Resolution to 1° and accuracy ±1°C for both ambient and external temperature readings
- Dual-recall (minimum and maximum) memory can be displayed or cleared at the touch of a button
- Permits monitoring conditions overnight, weekends, or during any user-set time period
- External temperature sensor and cable perform accurately under water
- Unit is battery-operated, self-contained, stable, and accurate; requires no adjustment or maintenance

ORDERING INFORMATION:
Measures ¾L × 3⅞W × 4¼"H (2 × 9.8 × 10.8cm) and weighs 5.4 oz. (153g).

INCLUDES:
Chemical- and shock-resistant ABS plastic case, flip-open stand, wall mount, external temperature probe, 10' (3m) cable, and "AAA" alkaline battery

COMPLIANCE:
Meets federal requirements for CLIA specification 493.1207 for monitoring temperature and humidity



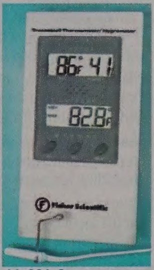
11-661-19 with supplied probe

CERTIFICATIONS:
A certificate is provided to indicate instrument traceability to standards provided by the NIST*. Calibrated by an ISO 17025 calibration laboratory accredited by A2LA.

Cat. No.	Each
11-661-19	69.16

Fisher Scientific* Traceable* Temperature and Humidity Monitor

Constantly measures humidity and temperature



11-661-9

Read ambient temperature, probe temperature, and ambient relative humidity on bright LCD; digits are ½" high.

- External temperature sensor displays from -50° to +70°C and -58° to +158°F, with 0.1° resolution and ±1°C (±1.8°F) accuracy
- Internal sensor measures ambient temperature from 0° to 50°C and 32° to 122°F with 1° resolution
- Relative humidity range is 25 to 95%, with 1% resolution and ±2% (midrange) to ±4% (outside midrange) accuracy
- Low-battery indicator
- No ON/OFF switch
- Probe and cable can be submersed in water
- Rugged ABS plastic case

ORDERING INFORMATION:
Measures 5L × 3½W × ⅞"H (13 × 9 × 2cm). Probe cable length, 10' (3m).

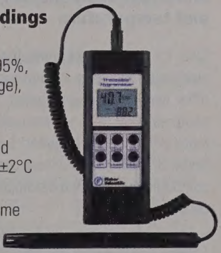
INCLUDES:
Two "AA" batteries, internal humidity sensor, external and internal temperature sensors and cable

CERTIFICATIONS:
A certificate is provided to indicate instrument traceability to standards provided by the NIST*. Calibrated by an ISO 17025 calibration laboratory accredited by A2LA.

Cat. No.	Each
11-661-9	105.21

Fisher Scientific* Traceable* Humidity Meter

Retains highest and lowest readings recorded over selected period



11-661-18

- Measures relative humidity from 10 to 95%, with 0.1% resolution and ±2% (mid-range), ±4% (ends of range) accuracy
- Reads temperatures from -18° to +93°C (0° to +199.9°F), with 0.1° resolution and accuracy of ±1°C (from 0° to 40°C) and ±2°C (at ends of range)
- Results appear on 1⅛" LCD; response time <10 seconds
- RS-232-C serial computer output
- Miniature probe
- Shockproof ABS plastic case

ORDERING INFORMATION:
Resistive-polymer probe measures 8½" (22cm). Case measures 7⅛L × 2¾W × 1¼"H (18 × 7 × 3cm). Net weight: 7.4 oz. (210g).

INCLUDES:
3' (0.9m) cable and 9V battery for 100 hours of continuous use

COMPLIANCE:
Meets Federal CLIA Requirement 493.1207

CERTIFICATIONS:
A certificate is provided to indicate instrument traceability to standards provided by the NIST*. Calibrated by an ISO 17025 calibration laboratory accredited by A2LA.

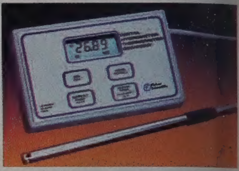
Cat. No.	Each
11-661-18	142.44

Fisher Scientific* Certified Traceable* Digital Hygrometer/Thermometers

Meet critical experimental requirements, perform routine measurements, and fulfill all quality control needs

Rugged handheld units are completely portable and designed specifically for lab, plant, and field use. Ideal for cleanrooms, hoods, environmental chambers, incubators, desiccators, and all inside/outside air monitoring.

- Temperature range: -40° to +104°C and -40° to +220°F, with ±0.4°C accuracy, 0.1°C resolution
- RH range: 10 to 95% (basic model), 5 to 95% (instant model); accuracy, ±1.5%; resolution, 0.01%
- Calculate frost point, latent heat, sensible heat, vapor pressure, moisture content, specific enthalpy, specific volume, specific humidity, mixing ratio, and vapor density from moist air
- Programmable high and low setpoints for temperature, humidity, and dew point sense out-of-specification condition, sound alarm, and flash display
- Built-in memory recalls highest and lowest readings; computer output capability† permits data to be captured, stored, and printed
- Instant model provides humidity readings in <10 seconds; basic model in up to 3½ minutes
- Bright, ½"-high, four-digit LCD is 10 times more readable than glass thermometer sling units or meter scales
- Microcomputer, solid-state construction eliminates glass breakage, mercury separation, and dial shock damage
- Tough ABS plastic cases ensure a long life—even in severe lab or harsh plant environments



11-661-7B

INCLUDES:

7" (18cm) combination probe, 54" (1.37m) cable, 9V alkaline battery (one year intermittent, 100 hour continuous), low-battery indicator, and ABS plastic carrying case.

CERTIFICATIONS:

A certificate is provided to indicate instrument traceability to standards provided by the National Institute of Standards and Technology (NIST*).

Description	Cat. No.	Each
Basic Model	**11-661-7A**	489.74
Instant Model	**11-661-7B**	589.23

† Computer output capability requires accessory data cable, available separately. Contact your Fisher Scientific Customer Service Representative for details.

Fisher Scientific* Traceable* Temperature/Humidity Meter

Simultaneously displays humidity, dew point and temperature

Ideal for use in cleanrooms, food-processing facilities, laboratories, and other humidity-sensitive areas. Datalogger captures 1000 readings manually or automatically when set between 1 and 3600 sec. Serial RS-232 output allows connection to a computer to download datalogger results for constant monitoring.

TRACEABLE
39.6

11-661-21

- Temperature range, 0° to 50°C (32° to 122°F), with 0.01° resolution, ±1°C accuracy
- Relative humidity range, 10 to 95% RH, with 0.1% resolution, 3% accuracy
- Memory recalls maximum, minimum, and average readings
- HOLD button freezes display for later reading
- Large display (1⅜"H) shows temperature and humidity simultaneously

ORDERING INFORMATION:

Measures 1¼L × 3W × 7"H (3.2 × 7.6 × 17.8cm); weighs 9.5 oz. (269g).

INCLUDES:

⅔ dia. × 8"L (1.7 × 20.3cm) probe, 40" (101.6cm) cable, and 9V alkaline battery.

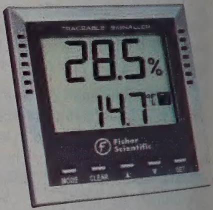
CERTIFICATIONS:

A certificate is provided to indicate instrument traceability to standards provided by the National Institute of Standards and Technology (NIST*). Calibration is performed in an ISO 17025 calibration laboratory certified by A2LA.

Cat. No.	Each
11-661-21	323.28

Fisher Scientific* Traceable* Dew-Point/ Wet-Bulb/Humidity Thermometer

Monitor shows current, minimum, and maximum displays



15-077-963

- Temperature range, -40° to +70°C (-40° to +158°F), with ±1°C accuracy and 0.1° resolution (below 100)
- Relative humidity range, 1 to 99%; accuracy, ±4% between 20 to 80% RH ; resolution, 0.1% RH
- Settable high/low alarm for all four readings (dew-point, wet-bulb, humidity, temperature)
- Alarm sounds and flashes; may be set in 0.1 increments
- Large LCD digits are 1" (2.5cm) high
- Case is high-impact, chemical-resistant ABS plastic

ORDERING INFORMATION:

Dimensions: 4⅛ × 4⅛ × 1" (10.5 × 10.5 × 2.5cm); weight: 4¼ oz.

INCLUDES:

Two "AA" alkaline batteries for continuous, one-year "always on" monitoring

COMPLIANCE:

Meets federal requirements for CLIA specification 493.1207 for monitoring temperature and humidity.

CERTIFICATIONS:

A certificate is provided to indicate instrument traceability to standards provided by the National Institute of Standards and Technology (NIST*). Calibrated by an ISO 17025 calibration laboratory accredited by A2LA.

Cat. No.	Each
15-077-963	52.43

Fisher Scientific* Traceable* Digital Humidity/Temperature Meter

Ideal for years of reliable service, even in severe lab or harsh plant environments

- Displays relative humidity from 10.0 to 95.0% with resolution of 0.1% and accuracy of 1.5%
- Temperature range: -40.0° to +104.4°C (-40.0° to +220.0°F) with resolution of 0.1° and accuracy of ±0.4°C
- Dew point range: -40.0° to +60.0°C (-40.0° to +140.0°F)
- Response time is from 30 seconds to 3½ minutes
- Reading is updated twice per second
- HOLD switch allows the display to be "frozen" to capture and record readings
- Extra-large LCD is ½" high and can be read from 10' (3m)
- Made from chemical- and shock-resistant ABS plastic and has a handy ABS carrying case

11-661-16

ORDERING INFORMATION:

Unit measures 1¼L × 5½W × 3½"H (3 × 14 × 9cm). Probe measures 1¹⁄₁₆ dia. × 7"L (1.8 × 18cm). Cable length: 54" (137cm). Net weight: 12 oz. (340g).

INCLUDES:

Precision, thin-film capacitance sensor, 9V alkaline battery, and instructions

CERTIFICATIONS:

A certificate is provided to indicate instrument traceability to standards provided by the National Institute of Standards and Technology (NIST*). Calibrated by an ISO 17025 calibration laboratory accredited by A2LA

Cat. No.	Each
11-661-16	344.68

Fisher Scientific* Traceable* Printing Hygrometer/Thermometer

Provides permanent hard copy results

Ideal for use in hoods, clean-rooms, food storage areas, drug manufacturing, all air analyses, and environmental chambers. Reliable unit monitors relative humidity and temperature in the lab, plant, and field. Printer provides hard copy for today's stringent QC documentation.

11-661-17A

- Automatically prints current humidity/temperature, temperature 2, dew point, date and time at any programmed interval or at the press of a button
- Printer can be programmed to automatically and repeatedly print any increment from 6 seconds to 59 minutes, 59 seconds
- Answers in less than 10 seconds
- Time displayed in 24-hr. military time to the minute
- Tough ABS plastic case is chemical- and shock-resistant

Relative Humidity

- Range: 10 to 95% RH
- Resolution of 0.1%
- Accuracy: ±2% to 5% RH elsewhere

T1 Temperature

- Range: -20° to +60°C (-4° to +140°F)
- Resolution of 0.1°
- Accuracy: ±1°C (±1.8°F)

T2 Temperature

- Range: -200° to +1333°C (-328° to 2431°F)
- Accuracy: ±0.2% of the reading plus 1.8°C
- Resolution: 0.1°C (from -200° to +999°C), 0.1°F (-328° to +999.9°F), otherwise 1.0°

ORDERING INFORMATION:

Measures 7½ × 3 × 1½" (19.1 × 7.6 × 3.8cm). Humidity probe, ¾" dia. × 6¼"L. Weight, 10 oz. Accessory adapter for continuous AC operation available (11-661-17C, order separately).

INCLUDES:

Humidity/T1 and T2 probes and cables, probe holder, paper, carrying case, and six "AAA" batteries.

COMPLIANCE:

Meets federal requirements for CLIA specifications.

CERTIFICATIONS:

A certificate is provided to indicate instrument traceability to standards provided by the National Institute of Standards and Technology (NIST*). Calibrated by an ISO 17025 calibration laboratory accredited by A2LA.

Description	Cat. No.	Price
Printing Hygrometer/Thermometer	11-661-17A	Ea./541.61
Printing Paper (rolls)	11-661-17B	Pk. of 6/32.57
AC Adapter	11-661-17C	Ea./34.39

Fisher Scientific* Certified Traceable* Digital Hygrometer/Thermometer

Ideal for cleanrooms, hoods, process control, and air monitoring

Completely portable, rugged, handheld, digital hygrometer and thermometer is designed for years of severe lab, field, or plant use.

- Measures relative humidity from 5.0 to 95.0%, with ±1.5% accuracy, 0.01% resolution
- Temperature range: 32.0° to 122.0°F, with ±0.4°F accurracy and resolution of 0.01°
- Simple to use: just set the selector switch, point, and read the ½" LCD
- No warmup, wicks, or swinging required
- Responds in as little as 30 seconds

11-661-8

ORDERING INFORMATION:

Measures 1½L × 2¾W × 8"H (4 × 7 × 20cm).
Net weight: 8 oz. (227g).

INCLUDES:

Integral humidity and temperature sensors, rugged ABS case, and one 9V alkaline battery for 6 months of intermittent use (about 100 hours continuous use).

CERTIFICATIONS:

A certificate is provided to indicate instrument traceability to standards provided by the National Institute of Standards and Technology (NIST*). Calibrated by an ISO 17025 calibration laboratory accredited by A2LA.

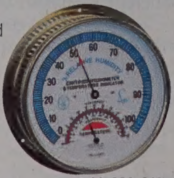
Cat. No.	Each
11-661-8	268.99

Fisher Scientific* Certified Dial Hygrometer/Thermometer

No calculations necessary; read temperature and relative humidity directly

Easy-to-read color-coded 5" (12.7cm) dial housed in a 6" (15.2cm) solid brass case.

- RH range of 0 to 100% with ±3% accuracy across the full range and 1% resolution
- RH displays with blue dial, red pointer, black numerals
- Temperature range of -20° to +100°C (-4° to +212°F) with ±1% accuracy across the full range and 1°C (1.8°F) resolution
- Temperature displays with red dial, blue pointer, black numerals


11-603-315

WARRANTY:
Five years

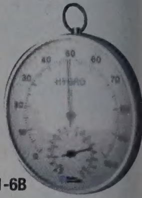
Cat. No.	Each
11-603-315	219.10

Fisher Scientific* Dial Hygrometer/ Thermometer

Ideal for use in labs, plant areas, and storage facilities

Unit is self-contained, stable and accurate without adjustment or maintenance.

- Relative humidity range: 0 to 100%, with ±2.5% accuracy at 50% RH, 1% resolution
- Temperature range: -40° to +50°C (-40° to +122°F) with ±1.5°C accuracy, 1°C/°F resolution
- Large analog display


11-661-6B

ORDERING INFORMATION:
Measures 6" dia. (15.2cm). Net weight: 8 oz. (227g).

INCLUDES:
Screw for wall mounting.

Cat. No.	Each
11-661-6B	70.14

Bacharach* Sling Psychrometer

No need to use tables or make calculations with this sling psychrometer

Thermometer holder telescopes into swivel handle, which has slide rule that lets you read relative humidity from wet-and dry-bulb temperatures.

- Built-in slide rule has wet-bulb and dry-bulb scales of 30° to 70°F and 50° to 110°F, and RH scale of 10 to 100%
- Matched 25° to 120°F mercury thermometers with 1°F scale division are mounted together in strong plastic frame with built-in water reservoir to keep wick wet
- Thermometers have magnifying front, deeply etched numerals, and thin bulbs for fast thermal response

11-664

ORDERING INFORMATION:
Instrument is 1 dia. × 7½"L (2.5 × 19cm); fits nicely in pocket. Replacemen wicks (11-664-4) and mercury thermometer (11-664-2) available separately at our Web site.

Fill Solution	Mfr. No.	Contains Mercury	Cat. No.	Eac
Mercury	12-7011	Yes	**11-664**	86.4
Red Spirit	12-7012	No	**23-284-816**	85.5

WARNING
The products indicated contain mercury. Don't put products containing mercury in the trash. Products containing mercury are to be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

ACCESSORIES

Replacement Batteries

For Fisherbrand* Hygrometers

Battery Description	For Hygrometer	Cat. No.	Each
Lithium CR2032 3V	11-661-17A	**02-440-1A**	13.62
Button Cell 375 1.5V	11-661-14	**02-440-1C**	10.66
"AAA" Alkaline 1.5V	11-661-11, 11-661-13	**02-440-3A**	10.66

LOOKING FOR MORE BATTERIES?

Visit www.fishersci.com and search for Batteries

ICE/INSULATED CONTAINERS

AEROSOL COOLANT

*Fisherbrand** Super Friendly Freeze'It*

Aerosol for cooling liquid, semisolid, and solid samples

- Rapidly cools any material without CFCs or HCFCs
- Concentrates freezing power exactly where needed
- Capable of dropping sample temperature from room temperature to -60°F in three seconds

Fisherbrand
SUPER
FRIENDLY
FREEZE'IT
23-022-524

- Triple-filtered gas prevents sample contamination and enhances cooling ability
- Deters the water crystal formation that occurs with slower refrigerants

INCLUDES:
11 oz. (312g) of noncorrosive, nonflammable, odorless, completely volatile gas; 5" (12.7cm) polyethylene "snorkel"

Size	Cat. No.	Case of 6
11 oz. (312g)	**23-022-524**	124.05

*Trademark. See Trademark Reference.

Prices subject to change.

ICE BUCKETS AND PANS

*Fisherbrand** Polyurethane Ice Buckets

or use with liquid nitrogen, dry ice, water ice, and alt solutions

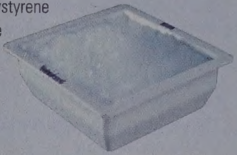
02-591-44, -45, -46

- Rigid polyurethane skinned-foam construction provides high durability and excellent insulating properties; buckets will not sweat or leak, and are unbreakable with normal use
- Resistant to acetone and easy to clean—can be chemically disinfected
- Withstand temperatures up to 95°C (203°F)
- Octagonal design will not deform; stable when full
- Molded handles enable safe handling and transport
- Flush lid with recessed handle allows stacking for convenient storage
- Internal dimensions: base diameter, 6" (15.5cm); rim diameter, 9⅝" (24.5cm); depth, 6" (15.5cm)
- External dimensions: base diameter, 7¼" (18.5cm); rim diameter (maximum, with handles), 12¾" (32.5cm); height, 7¼" (18.5cm).

apacity	Color	Cat. No.	Each
.5L	Black	**02-591-44**	71.50
.5L	Blue	**02-591-45**	71.50
.5L	Red	**02-591-46**	71.50

*Fisherbrand** Cooling Systems

Hold temperature-sensitive microbiological samples in a bed of ice or dry ice



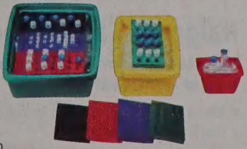
03-692 Series

- Low-profile, high-impact, white polystyrene
- Maintain storage temperature while working at lab bench
- Double-insulated tray wall is filled with expanded polystyrene
- Chemical resistant
- Easy to clean
- **Mini** tray accepts a single acrylic microcentrifuge tube rack
- **Midi** tray accommodates up to two tube racks
- **Maxi** tray will handle up to four tube racks

Description	Capacity	Exterior L × W × H	Cat. No.	Each
Mini tray	1L (1.1 qt.)	9⅝ × 6½ × 3⅛" (24.4 × 16.5 × 8cm)	**03-692-160**	190.00
Midi tray	1.6L (1.56 qt.)	10 × 9⅜ × 3⅛" (25.3 × 24 × 8cm)	**03-692-161**	286.00
Maxi tray	3L (3.2 qt.)	16¾ × 10 × 3⅛" (42.4 × 25.3 × 8cm)	**03-692-162**	364.00

agic Touch Icewares Insulated Lab Pans

r use with ice, dry ice, dry-ice alcohol slurry, and uid nitrogen



11-675 Series (rectangular test tube racks sold separately)

- xpanded polyvinyl chloride; nbreakable under normal conditions
- Vill not absorb odors
- hemically resistant to highly acidic nd basic solutions
- Vithstand temperatures from -196° to 93°C (-321° to +200°F) without weating or leaking
- arge enough to accommodate test tube racks, flasks, bottles, etc.
- tackable
- Vall thickness: ¾" (2cm)

pacity	Color	Exterior L × W × H	Cat. No.	Each
	Black	6 × 6 × 3" (15.2 × 15.2 × 7.6cm)	**11-675-129**	38.76
	Blue	6 × 6 × 3" (15.2 × 15.2 × 7.6cm)	**11-675-128**	38.76
	Green	6 × 6 × 3" (15.2 × 15.2 × 7.6cm)	**11-675-131**	38.76
	Purple	6 × 6 × 3" (15.2 × 15.2 × 7.6cm)	**11-675-133**	38.76
	Red	6 × 6 × 3" (15.2 × 15.2 × 7.6cm)	**11-675-130**	38.76
	Yellow	6 × 6 × 3" (15.2 × 15.2 × 7.6cm)	**11-675-132**	38.76
	Black	13 × 10 × 5⅛" (33 × 26 × 13cm)	**11-676-38B**	99.49
	Blue	13 × 10 × 5⅛" (33 × 26 × 13cm)	**11-676-38A**	99.49
	Green	13 × 10 × 5⅛" (33 × 26 × 13cm)	**11-676-38D**	93.95
	Purple	13 × 10 × 5⅛" (33 × 26 × 13cm)	**11-675-127**	75.07
	Red	13 × 10 × 5⅛" (33 × 26 × 13cm)	**11-675-125**	75.07
	Yellow	13 × 10 × 5⅛" (33 × 26 × 13cm)	**11-675-126**	75.07
	Black	16 × 13 × 5⅛" (41 × 33 × 13cm)	**11-675-58**	104.28
	Blue	16 × 13 × 5⅛" (41 × 33 × 13cm)	**11-675-123**	92.72
	Green	16 × 13 × 5⅛" (41 × 33 × 13cm)	**11-676-32**	108.90
	Purple	16 × 13 × 5⅛" (41 × 33 × 13cm)	**11-675-124**	92.72
	Red	16 × 13 × 5⅛" (41 × 33 × 13cm)	**11-676-31**	108.90

Magic Touch Icewares Ice Buckets

For use with liquid nitrogen, salt, ice, dry ice, and dry-ice alcohol slurry

11-676 Series Buckets; 11-675 Series Racks

- Unbreakable, expanded PVC bucket with lid
- Leak resistant
- Inert to moisture, odors, acidic, and basic solutions
- Excellent insulator for both hot and cold materials
- Resistant to temperatures from -196° to +93°C (-321° to +200°F)
- Lid can easily be cut to make openings for thermometer, culture tubes, flasks, or inlet/outlet cooling coils

REQUIRED ACCESSORIES:

Round test tube racks (see next page)

Capacity	Color	Top Dia. × H	Cat. No.	Each	Case of 12
2.5L	Black	10 × 5" (25.4 × 12.7cm)	**11-676-73**	64.66	684.89
2.5L	Blue	10 × 5" (25.4 × 12.7cm)	**11-676-70**	64.66	684.89
2.5L	Green	10 × 5" (25.4 × 12.7cm)	**11-676-75**	64.49	684.89
2.5L	Purple	10 × 5" (25.4 × 12.7cm)	**11-675-122**	57.47	----
2.5L	Red	10 × 5" (25.4 × 12.7cm)	**11-676-74**	64.66	684.89
2.5L	Yellow	10 × 5" (25.4 × 12.7cm)	**11-676-76**	64.49	684.89
4L	Black	10 × 7" (25.4 × 17.8cm)	**11-676**	90.97	966.03
4L	Blue	10 × 7" (25.4 × 17.8cm)	**11-676-35**	82.29	----
4L	Green	10 × 7" (25.4 × 17.8cm)	**11-676-37**	90.97	966.03
4L	Purple	10 × 7" (25.4 × 17.8cm)	**11-675-120**	69.65	----
4L	Red	10 × 7" (25.4 × 17.8cm)	**11-676-36**	90.97	966.03
4L	Yellow	10 × 7" (25.4 × 17.8cm)	**11-676-5**	82.29	----

Accessories on next page.

Magic Touch Icewares Insulated Lab Pans, Contd.

ACCESSORIES

Round Test Tube Racks for Magic Touch Ice Buckets

Float in water baths, melted ice, dry-ice alcohol slurry, or liquid nitrogen

- Expanded PVC round test tube racks contoured to fit inside 2.5 and 4L ice buckets
- Diameter, 8 11/16" (22cm)

Thin Round Test Tube Racks

- Thickness, ⅜" (1cm)
- Hold up to 44 × 1.5mL microcentrifuge tubes

Thick Round Test Tube Racks

- Thickness, ⅝" (1.7cm)
- Hold up to 30 × 15mL conical or 30 × 14mL Falcon* tubes

Style	Color	Cat. No.	Each	Case of 36
With Prebored Holes				
Thin (⅜")	Black	**11-675-74**	23.99	691.04
	Blue	**11-675-75**	23.99	691.04
	Green	**11-675-72**	23.99	691.04
	Purple	**11-675-135**	19.51	----
	Red	**11-675-73**	23.99	691.04
	Yellow	**11-675-71**	23.99	691.04
Thick (⅝")	Black	**11-675-60**	26.66	767.82
	Blue	**11-675-59**	26.66	767.82
	Green	**11-675-76**	26.66	767.82
	Purple	**11-675-134**	21.66	----
	Red	**11-675-61**	26.66	767.82
	Yellow	**11-675-77**	26.66	767.82
Without Holes				
Thin (⅜")	Black	**11-675-68**	22.84	657.75
	Blue	**11-675-69**	22.84	657.75
	Green	**11-675-66**	22.84	657.75
	Red	**11-675-67**	22.84	657.75
	Yellow	**11-675-70**	22.84	657.75
Thick (⅝")	Black	**11-675-63**	25.59	767.82
	Blue	**11-675-62**	25.38	730.83
	Green	**11-675-65**	24.36	730.83
	Red	**11-675-64**	24.36	730.83
	Yellow	**11-675-78**	25.38	730.83

LABTOP COOLERS

Fisher BioReagents* Cool Pak* Portable Cooler

Designed for microtube storage to -20°C (-4°F)

- Ideal for transporting temperature-sensitive samples or keeping dNTPs, primers, *Taq*, and restriction enzymes on the bench while setting up reactions
- Holds up to 12-1.5/2.0mL tubes
- Maintains temperature below 5°F (-15°C) for four hours when cover is tightly closed
- Lightweight
- Small footprint takes a minimal amount of freezer space

BP360915

Description	Cat. No.	Each
Cool Pak Portable Cooler	**BP360915**	85.00

Nalgene* Labtop Coolers, 0°C

Maintain enzymes and other solutions below 1°C (33.8°F)

15-350-53, 15-350-63

- Made of polycarbonate for break and crack resistance
- Stackable
- Lids are gridded for easy sample identification
- Rubber feet to prevent sliding
- Hold cryogenic vials
- Nonfilled clear lids except 15-350-54 which has white gel-filled lid
- Provide up to five hours of use except 15-350-53 which provides 3½ hours of use
- 15-350-63 accommodates 12 to 13mm dia. cryogenic vials; 15-350-64 holds 16 to 17mm dia. cryogenic vials

INCLUDES:

Sixteen inserts to convert holes to accept 0.2 to 0.5mL microcentrifuge tubes

L × W × H	No. of Tubes Held	Mfr. No.	Cat. No.	Each
6 3/16 × 9 9/16 × 5¾" (157 × 243 × 146mm)	32	DS5116-0032	**15-350-54**	220.32
4¼ × 5 15/16 × 4 15/16" (108 × 151 × 125mm)	12	DS5116-0012	**15-350-53**	116.73
7¾ × 5½ × 7½" (197 × 140 × 190mm)	12	5116-1300	**15-350-63**	103.39
7¾ × 5½ × 7½" (197 × 140 × 190mm)	12	5116-1600	**15-350-64**	103.39

Nalgene* Labtop Coolers, -20°C

Maintain enzymes and other solutions below -15°C (+5°F)

15-350-51

- Made of polycarbonate for break and crack resistance
- Stackable
- Lids are gridded for easy sample identification
- Rubber feet to prevent sliding
- Hold cryogenic vials and 0.2 to 2.0mL microcentrifuge tubes
- Usable to -135°C (-211°F)
- Cooler 15-350-51 has white gel-filled lid and provides two hours of use
- Cooler 15-350-61 has clear lid and provides one hour of use

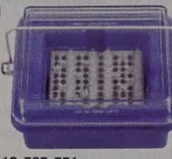
INCLUDES:

Adapters to convert holes to fit 0.2 or 0.5mL microcentrifuge tubes

L × W × H	No. of Tubes Held	Mfr. No.	Cat. No.	Each
6 3/16 × 9 9/16 × 5¾" (157 × 243 × 146mm)	32	5115-0032	**15-350-51**	160.25
4¼ × 5 15/16 × 4 15/16" (108 × 151 × 125mm)	12	5115-0012	**15-350-61**	86.75

lunc* Amplification Labtop Cooler

laintains freezer temperature on lab bench to rotect PCR and biochemical reagents


12-565-551

- Temperature is maintained between -20° and -15°C (-4° and +5°F) for two hours
- Aluminum block holds 1 to 96 Nunc 0.2mL tubes or a Nunc 96-well amplification plate
- Uses tubes individually or in 1 × 8 tube strips with matching strip caps
- Compatible with NucleoLink* and TopYield* Strips and accommodates Nunc Tube Tray
- Clear, keyed lid for proper tube orientation
- Stackable and constructed of durable polycarbonate

lfr. No.	Cat. No.	Each
55500	**12-565-551**	161.10

Nunc* -20°C Labtop Cooler

Designed specifically to protect enzymes, reagents, cells and solutions against extreme temperature fluctuations

09-740-72; vials not included.

- Maintains temperatures between -20° and -15°C (-4° to +5°F) up to four hours
- Break-resistant polycarbonate construction holds twenty 1.0 to 1.8mL microcentrifuge tubes or Nunc CryoTube* vials
- Inserts allow cooler to accept 0.2 to 0.5mL microcentrifuge tubes
- Locking handle provides safe and easy transport
- Stackable

Mfr. No.	Cat. No.	Each
355501	**09-740-72**	103.89

ppendorf* IsoTherm Systems

rotect temperature-sensitive biochemical and icrobiological samples while working at the lab bench

05-405-10

oSafe Transport Box

- Insulated
- Cover prevents frost formation on samples
- Maintains constant temperature

oPacks

- White IsoPack cold pack maintains 0°C (32°F) for over six hours
- Blue IsoPack maintains -21°C (+6°F) for up to three hours

oRack

- Holds 24 microcentrifuge tubes
- Each position is numbered for easy tube identification
- Autoclavable
- UV resistant
- Can be stored in temperatures to -200°C (-328°F)
- With lid attached, IsoRack floats in a water bath for thawing or incubating samples
- Can be used right from the freezer
- Fits 96-well rotors for centrifugation

ICLUDES:

tarter Sets include:

oSafe Transport Box, 0°C IsoPack, -21°C IsoPack, IsoRack for either 5mL tubes or 2.0 and 1.5mL tubes. Also available with just the IsoPack id IsoRack for samples that don't require the extended cooling time of e complete system.

escription	Mfr. No.	Cat. No.	Price
arter Sets			
or 0.5mL Tubes	22-51-000-2	**05-405-10**	Ea./129.00
or 1.5 and 2.0mL Tubes	22-51-005-3	**05-405-11**	Ea./129.00
oPack + IsoRack Package for 0.5mL Tubes			
°C	22-51-028-2	**05-405-19**	Ea./40.00
21°C	22-51-029-1	**05-405-20**	Ea./40.00
oPack + IsoRack Package for 1.5 and 2.0mL tubes			
°C	22-51-024-0	**05-405-21**	Ea./40.00
21°C	22-51-025-8	**05-405-22**	Ea./40.00
placement Components for IsoTherm Starter Sets			
oRack for 1.5 and 2.0mL Tubes	22-51-016-9	**05-405-13**	Pk. of 5/246.00
oPack 0°C for 1.5 and 2.0mL Tubes	22-51-018-5	**05-405-16**	Pk. of 3/235.00
oPack -21°C for 0.5mL Tubes	22-51-014-2	**05-405-15**	Pk. of 5/235.00
oPack -21°C for 1.5 and 2.0mL Tubes	22-51-020-7	**05-405-17**	Pk. of 3/235.00
oSafe Transport Box for All Tubes	22-51-022-3	**05-405-18**	Ea./124.00

Scienceware* Cryo-Safe* Cold Box

Maintains the low temperature required for safely storing and transporting enzymes and other critical samples

14-512-63

- Insulating gel keeps samples cold on the bench
- Holds twelve 1.5mL microcentrifuge tubes
- Chill unit in a -20°C (-4°F) freezer
- Maintains -15°C (+5°F) temperature for 1.5 hours
- Remains below 0°C (32°F) for four hours
- Weighs less than 1 lb. (0.45kg)

L × W × H	Mfr. No.	Cat. No.	Each
4⅝ × 4⅝ × 2¾" (11.7 × 11.7 × 7.1cm)	F18847 0002	**14-512-63**	36.22

TRANSPORT AND STORAGE

ThermoSafe* Insulated Storage and Transport Chests

Rugged polyethylene interior and exterior casing

11-676-20 (dolly sold separately, below)

- Efficient, nondeteriorating urethane foam insulation
- Resist vapor, water, rust, corrosion
- Washable
- Interior corners are rounded for easy cleanup
- Lid is hinged (except 50 lb. size) and includes support that keeps it upright

Capacity	Outside L × W × H	Inside L × W × D	Mfr. No.	Cat. No.	Each
50 lb. (22.7kg)	15 × 14 1⁄16 × 13⅜" (38 × 36 × 34cm)	11 5⁄16 × 10⅜ × 10⅝" (29 × 26 × 27cm)	304	**11-676-13**	140.74
90 lb. (40.9kg)	18¼ × 16 13⁄16 × 18¾" (46 × 41 × 48cm)	15 × 14 × 15¼" (38 × 36 × 39cm)	450	**11-676-39**	381.90
155 lb. (70.4kg)	23 × 22 × 20¾" (58 × 56 × 53cm)	17 × 16½ × 16⅜" (43 × 42 × 42cm)	302	**11-676-11**	554.34
235 lb. (106.7kg)	28⅛ × 19⅛ × 25¼" (71 × 49 × 64cm)	22 13⁄16 × 13½ × 21" (58 × 34 × 53cm)	301	**11-676-20**	722.23

Accessories on next page.

ThermoSafe* Insulated Storage and Transport Chests, Contd.

ACCESSORIES

Aluminum Dollies

Provide easy transport and handling for storage chests

- Heavy-duty aluminum construction
- Four sturdy 4" (10cm) swivel casters with brakes

11-676-24

For Chest No.	L × W	Mfr. No.	Cat. No.	Each
11-676-11	22¼ × 23¼" (56 × 59cm)	377R	**11-676-24**	175.62
11-676-20	19 × 28⅛" (48 × 71cm)	376	**11-676-22**	179.06

ThermoSafe* Storage and Transport Chests

Low temperature storage chests include a 275 lb. bursting test laminated fiberboard exterior and an expanded polystyrene foam interior; with insulated lid

11-676-15

0.44 cu. ft. (12.5L) capacity

- Store 24 lb. (10.9kg) of dry ice
- Average holding time of 1.9 days
- Net weight, 3 lb. (1.4kg)

0.6 cu. ft. (17L) capacity

- Store 33 lb. (15kg) of dry ice
- Average holding time of 2.6 days
- Net weight, 4 lb. (1.8kg)

1 cu. ft. (28L) capacity

- Store 54 lb. (24.5kg) of dry ice
- Average holding time of 5.5 days
- Net weight, 7 lb. (3.2kg)
- Includes polypropylene carrying strap (03-530-26)

1.6 cu. ft. (45.3L) capacity

- Store 87 lb. (39.5kg) of dry ice
- Average holding time of 7 days
- Net weight, 6 lb. (2.7kg)

2 cu. ft. (57L) capacity

- Store 120 lb. (54.4kg) of dry ice
- Average holding time of 11 days
- Net weight, 8 lb. (3.6kg)

2½ cu. ft. (71L) capacity

- Store 130 lb. (59kg) of dry ice
- Average holding time of 11.5 days
- Net weight, 9 lb. (4.1kg)

4¼ cu. ft. (122L) capacity

- Store 270 lb. (122.5kg) of dry ice
- Average holding time of 18 days
- Net weight, 14½ lb. (6.6kg)

Capacity	Outside L × W × H	Inside L × W × D	Mfr. No.	Cat. No.	Each
0.44 cu. ft. (12.5L)	13¾ × 10½ × 13½" (35 × 27 × 34cm)	10½ × 7¼ × 10" (27 × 18 × 25cm)	314	**03-530**	23.28
0.6 cu. ft. (17L)	15⅛ × 13⅝ × 12⅛" (38 × 35 × 31cm)	11¾ × 10 × 8⅝" (30 × 25 × 22cm)	311	**11-676-15**	38.06
1 cu. ft. (28L)	16 × 16 × 15½" (41 × 41 × 39cm)	12 × 12 × 11½" (30 × 30 × 29cm)	309	**11-676-10**	59.42
1.6 cu. ft. (45.3L)	20⅜ × 13¼ × 19½" (51.7 × 33.6 × 49.5cm)	17 × 9⅞ × 16½" (43 × 25 × 42cm)	308	**03-525-10**	71.77
2 cu. ft. (57L)	21 × 21 × 16⅜" (53 × 53 × 41cm)	17 × 16½ × 12⅝" (43 × 42 × 32cm)	307	**11-676-12**	88.53
2½ cu. ft. (71L)	21 × 21 × 19¾" (53 × 53 × 50cm)	16¾ × 16¾ × 15¾" (43 × 43 × 40cm)	306	**11-676-17**	102.69
4¼ cu. ft. (122L)	27⅞ × 19 × 28" (71 × 48 × 71cm)	23⅛ × 14⅛ × 23" (59 × 36 × 58cm)	305	**11-676-18**	140.39

ThermoSafe* U-tek* Phase Change Materials

Ideal for transporting and shipping low-temperature scientific materials

03-528C, 03-528B, 03-528-6

- Packs return to gel state after thawing—do not actually melt
- Reusable
- Laminated, metallic film exterior provides heat barrier and resists punctures
- Temperature of a pack frozen at -23°C (-10°F) and then placed in a well-insulated container typically rises about 0.5°C (1°F) per hour at an ambient temperature of 25.3°C (77.6°F)

Net Weight	L × W × Thickness	Mfr. No.	Cat. No.	Case of
Freezing Point: -1°C (+30°F)				
8 oz. (227g)	6 × 4 × ¾" (15 × 10 × 2cm)	429	**03-528-6**	36/33.68
12 oz. (340g)	6¾ × 4 × 1" (17 × 10 × 3cm)	412	**03-528B**	24/24.25
24 oz. (680g)	7½ × 6½ × 1" (19 × 17 × 3cm)	414	**03-528C**	12/18.02
Freezing Point: -23°C (-10°F)				
12 oz. (340g)	6¾ × 4 × 1" (17 × 10 × 3cm)	418	**03-528-1**	24/25.97
24 oz. (680g)	7½ × 6½ × 1" (19 × 17 × 3cm)	420	**03-528-5**	12/19.78

ThermoSafe* Polar Pack* Foam Bricks

Reusable semirigid foam blocks for temperature protection during shipping

- Freeze at 0°C (32°F)
- Long-lasting—retain temperature for an extended time
- Never change shape while in transit
- Nontoxic

03-530 Series

Net Weight	L × W × Thickness	Mfr. No.	Cat. No.	Case of
7½ oz. (212g)	4½ × 4 × ¾" (11.4 × 10.2 × 1.9cm)	FPP7B	**03-530-010**	72/46.25
15 oz. (425g)	4½ × 4 × 1½" (11.4 × 10.2 × 3.8cm)	FPP15	**03-530-011**	36/25.95
31 oz. (822g)	9 × 4 × 1½" (22.9 × 10.2 × 3.8cm)	FPP31	**03-530-012**	18/21.86
64 oz. (1814g)	10½ × 6½ × 1¾" (26.7 × 16.5 × 4.4cm)	FPP64	**03-530-013**	10/21.86

DON'T SEE THE RIGHT PRODUCT?

For more shipping containers, see the Mailers section.

LOOKING FOR MORE THERMOSAFE* INSULATED CONTAINERS?

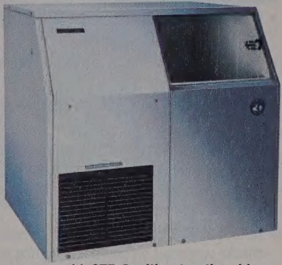
A wide selection of ThermoSafe Insulated Containers is available.

Visit www.fishersci.com and search for ThermoSafe

ICE MAKERS

oshizaki* Floor Model Ice Makers and Dispensers

movable, cleanable air filters for efficient operation and dependable performance



11-675-6 without optional legs.

- asy-to-clean stainless-steel exteriors
- lace directly on floor
- ircuit breaker protects gear motor from overload
- ermetically sealed motor runs for one minute after ice-making ends to clear ice from evaporator
- tainless-steel exterior and evaporator

odels F300BAF and 00BAF

- elf-contained units
- tore 110 lb. or 250 lb. of ice
- roduce up to 303 lb. or 478 lb. f fresh flaked ice or cubes very 24 hours

Model F450MAH/B300PF

- Two-part unit includes ice maker F450MAH and bin B300PF
- Store up to 300 lb. of ice
- Produce up to 476 lb. of cubelets or flaked ice within 24 hours

WARRANTY:
Two years parts and labor; five years on compressor

del	F300BAF	F450MAH/B300PF	F500BAF
spenses	Cubes or flaked ice	Cubelets or flaked ice	Cubes or flaked ice
-hr. Production (min. max.)†	218 to 303 lb. (98.9 to 137.4kg)	330 to 476 lb. (149.7 to 215.9kg)	335 to 478 lb. (152 to 216.8kg)
orage Capacity‡	110 lb. (49.9kg)	300 lb. (136.1kg)	250 lb. (113.4kg)
frigerant	R-404	R-404	R-404
ndenser Type	Air-cooled	Air-cooled	Air-cooled
erating Limits			
mbient Temperature Range	5° to 38°C (41° to 100°F)	7° to 38°C (45° to 100°F)	7° to 38°C (45° to 100°F)
ater Temperature Range	5° to 32°C (41° to 90°F)	7° to 32°C (45° to 90°F)	7° to 32°C (45° to 90°F)
oltage Range	104 to 127V	104 to 127V	104 to 127V
ater Pressure	10 to 113psig	10 to 113psig	10 to 113psig
wer Consumption	5.5kwh/100 lb. at 32/21°C (90/70°F); 4.2 at 21/10°C (70/50°F)	6.2kwh/100 lb. at 32/21°C (90/70°F); 4.3 at 21/10°C (70/50°F)	6.0kwh/100 lb. at 32/21°C (90/70°F); 4.3 at 21/10°C (70/50°F)
ter Consumption	12.0 gal./100 lb. at 32/21°C (90/70°F)	12.0 gal./100 lb. at 32/21°C (90/70°F)	12.0 gal./100 lb. at 32/21°C (90/70°F)
mensions (L × W × H)	24 × 36 × 33" (61 × 91 × 84cm)	32 × 22 × 68" (81 × 56 × 173cm)	29 × 36 × 36" (74 × 92 × 92cm)
ipping Weight	203 lb. (92.1kg)	195 lb. (88.5kg)	250 lb. (133kg)
ctrical Requirements	115V 60Hz, 5.6A	115V 60Hz, 10A	115V 60Hz, 9A
t. No.	**11-675-6**	**11-675-9**	**11-675-16**
ch	6683.00	6746.00	7818.00

in. at 90°F ambient and 90°F water temperature; max. at 70°F ambient, 50°F water temperature.

anitary storage in self-contained bin.

cotsman* Touchfree* Benchtop Flake Ice Maker and Dispenser

akes and dispenses true flaked ice, perfect for packing samples

- ce quickly conforms to container nd sample—even microcentrifuge tubes
- leek, easy-to-clean stainless-steel inish for laboratory and clinical use
- p to 25% less fan noise allows nstallation in the quietest labs
- ontainers up to 13"H fit within ispensing compartment; larger essels can be tilted
- ouchfree one-hand operation educes risk of cross-contamination
- hotoelectric eye allows for naximum ice storage
- ront panel switch lets you select ce only or ice and water
- orrosion-resistant stainless-teel exterior

09-540-102

RTIFICATIONS:
listed and National Sanitation Foundation approved

Model	Touchfree Benchtop 14" Ice Maker/Dispenser
Dispenses	Ice flakes; flakes and water
24-hr. Production	50°/70°: 178 to 392 lb. (80.7 to 177.8kg) ARI 70°/90°: 133 to 294 lb. (60.3 to 133.4kg)
Storage Capacity	12 lb. (6kg)
Refrigerant	R-134A
Condenser Type	Air-cooled
Operating Limits	
Ambient Temperature Range	10° to 37.7°C (50° to 100°F)
Water Temperature Range	4.4° to 37.7°C (40° to 100°F)
Voltage Range	115V (-5%/+10%)
Water Pressure Range	20 to 120 psig
Power Consumption	5.6kwh/100 lb. at 32/21°C (90/70°F)
Water Consumption	12.0 gal./100 lb. at 32/21°C (90/70°F)
Dimensions (L × W × H)	23¾ × 14 × 34¼" (60.3 × 35.6 × 87cm)
Shipping Weight	155 lb. (70kg)
Electrical Requirements	115V (-5%+/10%), 60Hz, 1 phase, 20 amp
Cat. No.	**09-540-102**
Each	5743.57

Scotsman* Modular Flaked Ice Maker and Storage Bin

NEW

Produces up to 550 lb. of flaked ice per day; bin holds up to 374 lb.

Dependable Ice Maker performs under most any conditions

- Continuous ice-making process—no harvest time delays
- Up to 66% more energy efficient than cube models
- Delivers steady flow of ice for fast recovery of ice supply
- Only one moving part under refrigeration
- Patented double-flight auger evenly distributes the load while heavy-duty direct-drive gearbox provides high reliability and long life
- AutoSentry* Monitoring System constantly checks workload on gearbox, shutting down system before a problem develops
- Freezing chamber clearing delay permits drive motor to start with no load
- Electric conductivity water sensor eliminates low- or no-water failures and cannot be affected by adverse water conditions
- Use multiple units side-by-side
- Stainless-steel construction
- Manufactured in a ISO9001:2000 approved facility

Big storage bin for ample ice reserve

- Holds 374 lb.
- NSF approved construction
- Attractive stainless steel finish
- Polyethylene liner

09-540-108

WARRANTY:

Three years parts and labor on all components; five year parts on compressor

CERTIFICATIONS:

UL listed, National Sanitation Foundation approved

Model	FME504A/BH360
Dispenses	Flakes
24-hr. Production	50°/70°: 510 lb. (232kg); ARI 70°/90°: 460 lb. (209kg)
Storage Capacity	Bin Capacity: 374 lb. (166kg)
Refrigerant	R-134A
Condenser Type	Air-cooled
Operating Limits	
Ambient Temperature Range	10° to 37.7°C (50° to 100°F)
Water Temperature Range	4.4° to 37.7°C (40° to 100°F)
Voltage Range	115V (-5%/+10%)
Water Pressure	20 to 120psig
Power Consumption	4.8kwh/100 lb. at 32/21°C (90/70°F)
Water Consumption	12.0 gal./100 lb. at 32/21°C (90/70°F)
Dimensions L × W × H†	Ice Maker: 24 × 21 × 27" (61 × 53.3 × 68.6cm) Bin: 31 × 22 × 44" (78.7 × 55.9 × 111.8cm)
Shipping Weight	440 lb. (200kg)
Electrical Requirements	115V (-5%+/10%), 60Hz, 1 phase, 15A
Cat. No.	**09-540-108**
Each	6371.07

† Height without legs; add 6" for legs.

Scotsman* Floor Model Flake Ice Makers

Self-contained units that produce and store fresh-flaked ice

- Fit under most 40" counters
- Set directly on floor or mount on adjustable 6" legs
- Front ventilation
- Can be serviced completely from the front

36" Wide Stainless-Steel Model

- Sanitary polyethylene bin
- Heavy-duty flaker mechanism with stainless-steel auger
- Low-refrigerant safety switch
- Max. 24-hour production, up to 324 lb.
- Stores up to 140 lb.

24¼" Wide Rotocast Plastic Model

- Durable three-piece gray cabinet is completely removable from the front of the machine and won't rust
- Includes 7' power cord
- Max. 24-hour production, up to 395 lb.
- Stores up to 80 lb.

09-540-103

09-540-104

CERTIFICATIONS:

UL/ULC listed, National Sanitation Foundation approved

Model	36" Wide Flake Ice Maker	24¼" Wide Flake Ice Maker
Dispenses	Flakes	Flakes
24-hr. Production	50°/70°: 147 to 324 lb. (66.7 to 147kg). ARI 70°/90°: 120 to 264 lb. (54.4 to 119.7kg)	50°/70°: 179 to 395 lb. (81.2 to 179.2kg). ARI 70°/90°: 160 to 300 lb. (72.6 to 136.1kg)
Storage Capacity	140 lb. (64kg)	80 lb. (36kg)
Refrigerant	R-134A	R-134A
Condenser Type	Air-cooled	Air-cooled
Operating Limits		
Ambient Temperature Range	10° to 37.7°C (50° to 100°F)	10° to 37.7°C (50° to 100°F)
Water Temperature Range	4.4° to 37.7°C (40° to 100°F)	4.4° to 37.7°C (40° to 100°F)
Voltage Range	115V (-5%/+10%)	115V (-5%/+10%)
Water Pressure	20 to 120psig	20 to 120psig
Power Consumption	5.6kwh/100 lb. at 32/21°C (90/70°F)	5.4kwh/100 lb. at 32/21°C (90/70°F)
Water Consumption	12.0 gal./100 lb. at 32/21°C (90°/70°F)	12.0 gal./100 lb. at 32/21°C (90°/70°F)
Dimensions (L × W × H)	24 × 36 × 33" (39"H min. with supplied 6" adjustable legs) (61 × 91.4 × 83.9 or 99cm)	24 × 24¼ × 33" (39"H min. with supplied 6" adjustable legs) (61 × 62.2 × 83.9 or 99cm)
Shipping Weight	215 lb. (98kg)	185 lb. (84kg)
Electrical Requirements	115V (-5%+/10%), 60Hz, 1 phase. 15A	115V (-5%+/10%), 60Hz, 1 phase. 15 amp
Cat. No.	**09-540-103**	**09-540-104**
Each	6580.25	5361.74

*Trademark. See Trademark Reference.

ceAssure* Water Filtration System

esigned to reduce issues associated with sediment, hlorine taste and odor, and scale buildup in :e cubers and flakers

NEW

- Premium activated carbon reduces corrosion and the chlorine smell commonly found in the ice bin
- Built-in, time-released scale inhibitor reduces the ability of calcium and magnesium to precipitate on the evaporator plates as hard scale
- The filtration media reduces sediment particles that can clog solenoid valves and distribution tubes
- Valve-in-head design simultaneously shuts off and vents water with a quarter turn for simple cartridge changes
- Cartridges are sanitary—no contact is made with the filter media during cartridge changes
- Pressure guage allows filter pressure to be monitored and indicates when cartridges are reaching the end of their service life
- FDA CFR-21 and/or NSF compliant materials make this product suitable for potable applications

IOTE:

ot recommended for high-turbidity water.

lodel	IA1-1
or Use with	Low flow cubers to 700 lb. (318kg) High flow cubers to 500 lb. (227kg) Flakers to 1200 lb. (544kg)
:apacity	10,000 gal. (37,854L)
lowrate	1.5 gal./min. (5.7L/min.)
'ore Size	1µm
nlet Connection	⅜"
utlet Connection	⅜"
:at. No.	**09-540-106**
:ach	252.68

ACCESSORIES

Replacement Cartridge

- For use with IceAssure* Water Filtration System (09-540-106)

Cat. No.	Each
09-540-107	99.08

ciencewaré* Frigimat* Junior Dry ce Maker

'roduces dry ice in flake or snow form

- Screw nozzle directly to cylinder of compressed LCO_2; cylinder must have a dip tube
- Secure bag to cone on the nozzle with the clamp
- After emptying, the bag can be immediately reattached for next filling

11-675-25

)RDERING INFORMATION:

:one, 5L × 2⁵⁄₁₆" dia. (127 × 59mm) at videst end. Bag, 6 dia. × 12"L 15 × 31cm).

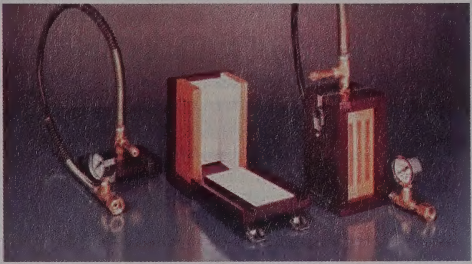
NCLUDES:

3rass nozzle with polypropylene cone, clamp, heavy-duty cloth bag.

Mfr. No.	Cat. No.	Each
38886-0000	**11-675-25**	128.80

ThermoSafe* Dry Ice Machines

Solid, commercial-grade dry ice blocks in 60 seconds



11-675-56, shown open and closed.

- Connect machine hose to liquid CO_2 cylinder with a built-in siphon
- Vapor flows through vertical filter slots as dry-ice block forms
- When vapor discharges from space between lid and body of machine, block is complete
- Machine opens by loosening latches and folding down sides
- Ideal for tissue preservation, specimen shipping, industrial processes, and metal fabrication
- Need no electrical source

INCLUDES:

Dry-ice block mold, feed hose, CO_2 supply regulator valve connected inline, fitted brass safety release valve for automatically venting excess gas pressure.

Description	Mfr. No.	Cat. No.	Each
1 lb. Ice Maker	460	**11-675-50**	461.28
1.7 lb. Ice Maker	475	**11-675-55**	532.60
3.2 lb. Ice Maker	485	**11-675-56**	601.45

Model	460	475	485
Typical Yield per 50 lb. Cylinder	9 to 11 blocks	6 to 7 blocks	3 blocks
Ice Block Size	3 × 1⅞ × 7" (7.6 × 4.8 × 17.8cm)	3⅜ × 2⅝ × 7" (8.6 × 6.7 × 17.8cm)	5¼ × 3⅜ × 7⅛" (13.34 × 8.57 × 18.1cm)
Ice Block Weight	1 lb. (0.45kg)	1.7 lb. (0.8kg)	3.2 lb. (1.4kg)
Ice Maker Size (L × W × H)	4¾ × 4¾ × 8½" (12.1 × 12.1 × 21.6cm)	6¼ × 4¾ × 9¼" (15.9 × 12 × 23.5cm)	7¼ × 5¾ × 9" (18.4 × 14.6 × 22.9cm)
Ice Maker Weight	5 lb. (2.27kg)	6 lb. (2.72kg)	8 lb. (3.63kg)

IMMUNOCHEMISTRY

ANTIBODY PURIFICATION

Millipore* Montage* Antibody Purification Kits with Prosep*-A and Prosep-G Media

Provide a centrifugal method for fast and easy purification of antibodies from serum, ascites, or cell culture supernatants

The Prosep family of media has a long history of success for large-scale bioprocessing applications including Prosep-A for industrial monoclonal antibody purification. Montage Kits deliver that same level of performance and reliability for research-scale antibody purification.

- Purify up to 10mL of sample in less than 60 minutes
- Yield up to 20mg of purified antibody
- Utilize Prosep high-capacity media, which offers rapid transport and a very high dynamic capacity for IgG

ORDERING INFORMATION:

Montage Spin Columns with Prosep media plugs are also available separately in packs of six. Each column can perform 10 purifications.

INCLUDES:

Two Media plugs, two spin columns, four centrifuge tubes, four Steriflip* Devices, four Amicon* Ultra Centrifugal Devices, Optimized buffers

STORAGE CONDITIONS:

Store media plugs at 2° to 8°C.

Media	No. of Purifications	Cat. No.	Each
Montage Antibody Purification Kits			
Prosep-A	20	**LSK2ABA20**	405.00
Prosep-G	20	**LSK2ABG20**	434.00
Montage Spin Columns (6 columns)			
Prosep-A	60	**LSK2ABA60**	731.00
Prosep-G	60	**LSK2ABG60**	782.00

montage
PROTEOM
MILLIPORE

LSK2ABG20

BINDING AFFINITIES OF PROTEIN A AND PROTEIN G

	Protein A	Protein G		Protein A	Protein G
Human IgG_1	++	++	Rat IgG_{2c}	+/-	+
Human IgG_2	++	++	Rat IgM	+/-	-
Human IgG_3	-	++	Rabbit IgG	++	++
Human IgG_4	++	++	Bovine IgG	+	+
Human IgA	+	-	Hamster IgG	+	++
Human IgD	+	-	Guinea Pig IgG	++	+
Human IgE	+	-	Chicken IgG	-	+/-
Human IgM	+	-	Sheep IgG	+/-	+
Mouse IgG_1	+	+	Goat IgG	+/-	+
Mouse IgG_{2a}	++	++	Pig IgG	++	++
Mouse IgG_{2b}	++	++	**Fragments**		
Mouse IgG_3	+	++	Human Fab	+	+
Mouse IgM	+/-	-	Human $F(ab')^2$	+	+/-
Rat IgG	++	++	Human ScFv	+	-
Rat IgG_1	+/-	+	Human Fc	+	-
Rat IgG_{2a}	+/-	++	Human K	-	-
Rat IgG_{2b}	+/-	+	Human λ	-	+

++ = Strong affinity; + = Moderate/slight affinity; +/- = Requires evaluation; - = No affinity

---

Thermo Scientific* Pierce* Imject* Maleimide Activated Carrier Protein Kits

Fast and easy Immunogens

Imject Maleimide Activated Carrier Proteins are commonly used carriers that have been preactivated with a heterobifunctional crosslinker (Sulfo-SMCC). This activation results in a stable, sulfhydryl-reactive carrier protein. This enables the maleimide-activated carrier protein to conjugate with cysteine residues on any peptide or protein, making a complete immunogen.

- No need to preactivate the carrier with Sulfo-SMCC
- Conjugation can be performed directly in the vial (because of EDTA in the buffer, gel filtration or dialysis must be performed prior to immunization)
- A hapten-carrier conjugate is formed in just two hours
- Results in a stable, covalent thio-ether linkage
- Purified proteins, activated with sulfhydryl-reactive maleimide groups
- Lyophilized in PBS, pH 7.2, containing EDTA

Imject Maleimide Activated BSA Kit

- Imject Maleimide Activated BSA (5 × 2mg)
- All Conjugation and Purification Buffers
- Prepacked Gel Filtration Columns (5 × 5mL)

Imject Maleimide Activated OVA Kit

- Imject Maleimide Activated OVA (5 × 2mg)
- Sp Conjugation and Purification Buffers
- Prepacked Gel Filtration Columns (5 × 5mL)

Imject Maleimide Activated mcKLH Kit

- Sufficient materials for five conjugation reactions
- Imject Maleimide Activated mcKLH (5 × 2mg)
- Imject Maleimide Conjugation Buffer (30mL)
- D-Salt Dextran Desalting Columns (5 × 5mL)
- Imject Purification Buffer Salts (5 × 5mL)

Description	Quantity	Cat. No.	Each
Imject Maleimide Activated BSA Kit	1 kit	**PI77112**	324.41
Imject Maleimide Activated BSA	2mg	**PI77116**	65.00
Imject Maleimide Activated BSA	10mg	**PI77115**	232.00
Imject Maleimide Activated OVA Kit	1 kit	**PI77113**	324.41
Imject Maleimide Activated OVA	2mg	**PI77126**	65.00
Imject Maleimide Activated OVA	10mg	**PI77125**	232.00
Imject Maleimide Activated mcKLH Kit	1 kit	**PI77611**	324.41
Imject Maleimide Activated mcKLH	2mg	**PI77606**	69.00
Imject Maleimide Activated mcKLH	10mg	**PI77605**	272.00

hermo Scientific* Pierce* Melon Gel Monoclonal IgG Purification Kit

st, simple protocol provides a gentle approach antibody recovery and purification

proprietary combination of ligands on the support depletes antibody-ntaining samples of most contaminant proteins while allowing IgG to w through in a highly purified form. Antibody retains activity because it is t exposed to denaturing conditions.

- Replaces tedious bind-and-release antibody isolation methods
- Delivers mAbs with quality and purity equal to or better than that btained using classical Protein A or Protein G purification methods, n half the time
- Recovers mAbs ready for downstream applications, including antibody nodification or conjugation
- Purifies monoclonal IgG from up to 1L of cell culture supernatant serum-containing and serum-free) and up to 200mL ascites fluid
- Effective for antibodies known not to bind to Protein A or G
- Support can be used for up to six purifications
- Amine-free buffer does not require removal or neutralization
- Accommodates a broad range of sample volumes
- Spin columns can be used for purifications <30mL of supernatant; filter flasks can be used for bulk processing of samples up to 1L
- Ascites: spin columns can be used for purifications up to 6mL

Cat. No.	Each
PI45214	998.00

NEED A CUSTOM ANTIBODY?

Let Affinity BioReagents* Antibody on Demand* program produce your antibody and provide a comprehensive antibody performance report. For more information, check our Web site.

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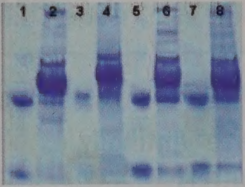
hermo Scientific* Pierce* Melon Gel IgG Purification Kits

ick and easy way to isolate IgG from serum

- ve time compared to classical Protein A or Protein G purifications without npromising the quality of the antibody.
- Simple, one-step protocol, antibodies are recovered ready-to-use without neutralizing or desalting
- Purifies antibodies from serum four to six times faster than Protein A or G methods, and antibodies retain more activity
- Antibodies from many species are recovered with greater than 90% yield and greater than 80% purity; works with a wide range of antibodies ncluding many that do not purify well on Protein A or Protein G
- The Melon Gel IgG Spin Purification Kit contains all necessary components (e.g., gel, ready-to-use purification buffer, spin columns and collection tubes) for rapid purification of up to 1mg of IgG from 100µL of Melon Gel
- The Melon Gel IgG Purification Kit contains the support, buffers and egenerant for larger scale IgG isolation applications
- This kit offers a wide range of flexibility in column volume and sample size requirements.



Purification of IgG from serum. Sera from several species were evaluated by electrophoretic separation of purification products (lanes 1, 3, 5, and 7) and eluted products (lanes 2, 4, 6, and 8) from human, goat, rabbit, and sheep serum, respectively.

- Melon Gel retains the component proteins typically found in serum and lets the IgG pass through. The resulting recovery and purity of the IgG isolated from serum rival that obtained from Protein A or Protein G

Description	Quantity	Cat. No.	Each
Melon Gel IgG Purification Kit	1 kit	**PI45212**	452.57
Saturated Ammonium Sulfate Solution	1L	**PIA45216**	106.50
Ascites Conditioning Reagent	5mL	**PIA45219**	31.19
Melon Gel IgG Spin Purification Kit	1 kit	**PI45206**	212.80

unc* ProPur* Antibody Purification Spin Columns

esigned for simple, rapid antibody purification om serum, ascites, and tissue culture supernatant

ady-to-use kits replace lengthy and expensive chromatogenic methods

ini Kits	**Midi Kits**
Based on microcentrifuge tubes	Based on 50mL centrifuge tubes
Yield up to 1mg in approximately 20 min.	Yield up to 20mg in approximately 50 min.
Working volume: 0.65mL	Working volume: 20mL

PPLICATIONS:

munostaining, immunofluorescence, cell signaling, hybridoma screening

ICLUDES:

epacked spin column plugs; Spin column barrels; Centrifuge tubes; trafiltration concentrators (UFCs); Binding, elution, and neutralization ffers; Plug insertion tool

Description	Columns per Kit	UFCs Included	Buffers Included	Mfr. No.	Cat. No.	Each
Protein A Mini Kit	2	Yes	Yes	228100	**12-656-100**	105.64
Protein A Mini Kit	16	Yes	Yes	228101	**12-656-101**	418.61
Protein A Mini Bulk Pack	48	No	No	228102	**12-656-102**	655.25
Protein A Midi Kit	4	Yes	Yes	228103	**12-656-103**	390.43
Protein A Midi Bulk Pack	12	No	No	228104	**12-656-104**	636.50
Protein G Mini Kit	2	Yes	Yes	228105	**12-656-105**	105.64
Protein G Mini Kit	16	Yes	Yes	228106	**12-656-106**	446.79
Protein G Mini Bulk Pack	48	No	No	228107	**12-656-107**	730.25
Protein G Midi Kit	4	Yes	Yes	228108	**12-656-108**	418.61
Protein G Midi Bulk Pack	12	No	No	228109	**12-656-109**	852.25
Protein A and G Mini Start	2 A and 2 G	No	No	228110	**12-656-110**	105.64

Nunc* ProPur* Antibody Purification Hands-Free Vacuum Kits

Ideal for purification of dilute cell culture supernatant

- Allow large volumes of samples to be continuously loaded into the columns, unlike centrifugal methods
- Work under high or low vacuum
- Use 50mL collection tubes; also compatible with glass bottles up to 2L when used with optional adapter (Cat. No. 12-656-127)

INCLUDES:

Preloaded resin plug; vacuum column barrel; vacuum head; 50mL collection tube; binding, elution, and neutralization buffers; ultrafiltration concentrators (UFCs).

Description	Columns per Kit	UFCs Included	Buffers Included	Mfr. No.	Cat. No.	Each
Protein A Vac Kit	4	Yes	Yes	228121	**12-656-121**	476.02
Protein A Vac Kit w/out vacuum head	4	Yes	Yes	228122	**12-656-122**	390.43
Protein A Vac Bulk Pack	12	No	No	228123	**12-656-123**	636.50
Protein G Vac Kit	4	Yes	Yes	228124	**12-656-124**	503.25
Protein G Vac Kit w/out vacuum head	4	Yes	Yes	228125	**12-656-125**	418.61
Protein G Vac Bulk Pack	12	No	No	228126	**12-656-126**	842.75

ANTIBODY REAGENTS

Thermo Scientific* Pierce* Antibody Binding and Elution Buffers

Description	Mfr. No.	Cat. No.	Each
Buffer, Binding, Protein A IgG, 1L, High-yield isolation of mouse IgG1 using Protein A columns, Premixed, Ready-to-use	21001	**PI21001**	62.31
Buffer, Elution, IgG, 1L, High-yield isolation of IgG from Immobilized Protein A and Protein G	21004	**PI21004**	56.28
Buffer, Binding, Protein A IgG, 3.75L, High-yield isolation of mouse IgG1 using Protein A columns, Premixed, Ready-to-use	21007	**PI21007**	176.66
Buffer, Elution, IgG, 3.75L, High-yield isolation of IgG from Immobilized Protein A and Protein G	21009	**PI21009**	149.56
Buffer, Binding, Protein G IgG, 3.75L, Assures maximum recovery of IgG from immobilized Protein G	21011	**PI21011**	176.66
Buffer, Binding, Gentle Ag/Ab, pH 8, 3.75L, Prefiltered, Eliminates use of harsh acidic elution conditions	21012	**PI21012**	179.67
Buffer, Elution, Gentle Ag/Ab, 3.75L, Specially formulated for neutral elutions	21013	**PI21013**	249.93
Buffer, Binding, IgM, 800mL, Specially formulated for optimal binding of mouse IgM	21016	**PI21016**	67.34
Buffer, Elution, IgM, 500mL, Specially formulated for optimal recovery of mouse IgM	21017	**PI21017**	55.28
Buffer, Column Preparation, MBP, 50mL, Specially formulated for use with Immobilized MBP and IgM Purification Kit	21018	**PI21018**	29.17
Buffer, Binding, Gentle Ag/Ab, pH 8, 1L, Prefiltered, Eliminates use of harsh acidic elution conditions	21020	**PI21020**	92.09
Buffer, Elution, Gentle Ag/Ab, 500mL, Specially formulated for neutral elutions	21027	**PI21027**	79.40
Buffer, Binding, ProteinA/G IgG, 240mL, Assures maximum recovery of IgG from Immobilized Protein A/G	54200	**PI54200**	33.20

ANTIBODY LABELING

Thermo Scientific* Pierce* DyLight* Antibody Labeling Kits

For fast, efficient labeling and recovery of antibodies

Two convenient kit formats are available to accommodate varied labeling requirements. Antibody Labeling Kit contains sufficient reagents to label and purify 3 × 1mg of IgG or similar quantities of other proteins. Microscale kit contains sufficient reagents to label and purify 5 × 10µg of IgG.

- Label and purify antibodies in approximately one hour
- Amine-reactive dyes label virtually any protein
- Pre-measured fluorescent dye eliminates the time and waste associated with weighing dye
- High-performance spin desalting columns provide exceptional dye removal and antibody recovery

549 Antibody Labeling Kits

For fast, efficient labeling and recovery of antibodies

Antibody Labeling Kit includes:

- DyLight 549 NHS Ester, 3 vials
- Reaction buffer, 1mL
- Spin columns, 6 each
- Microcentrifuge collection tubes, 12 each
- Purification resin, 5mL

Microscale Kit includes:

- DyLight 549 NHS Ester, 5 vials
- Reaction buffer, 1mL
- Spin columns, 5 each
- Microcentrifuge collection tubes, 10 each
- Purification resin, 5mL

Description	Cat. No.	Each
DyLight 549 Antibody Labeling Kit	**PI53034**	275.00
DyLight 549 Microscale Antibody Labeling Kit	**PI53035**	275.00

649 Antibody Labeling Kits

- DyLight 649 is a brighter, more photostable alternative to Alexa* 647 and Cy5* fluors

Description	Cat. No.	Each
DyLight 649 Antibody Labeling Kit	**PI53050**	275.00
DyLight 649 Microscale Antibody Labeling Kit	**PI53051**	275.00

800 Antibody Labeling Kits

- DyLight 800 is a brighter, more photostable alternative to IRDye* 800

Description	Cat. No.	Each
DyLight 800 Antibody Labeling Kit	**PI53062**	275.00
DyLight 800 Microscale Antibody Labeling Kit	**PI53063**	275.00

680 Antibody Labeling Kits

- DyLight 680 is a brighter, more photostable alternative to Alexa* 680 fluor

Description	Cat. No.	Each
DyLight 680 Antibody Labeling Kit	**PI53056**	275.00
DyLight 680 Microscale Antibody Labeling Kit	**PI53057**	275.00

LOOKING FOR THE ANTIBODIES?

You want the 2007 Antibodies Catalog. To receive a copy of the Fisher Scientific Antibodies catalog, log on to our Web site and click on "Order Catalogs".

ıvitrogen* Qdot* Antibody Conjugation Kits

ɔr fast, easy conjugation of antibodies to Qdot anocrystals

- Utilize a well-known chemistry based on the fast and efficient coupling of thiols to maleimide groups
- For use with 300µg whole IgG molecule or $F(ab')_2$ derivative
- Use a procedure that can be completed in a few hours
- Produce antibody conjugates that can be used in immunohistochemistry, tissue staining, ELISA, Western blotting, flow cytometry, and other user-designed experiments
- May also be used to couple Qdot nanocrystals to other thiol-containing molecules such as proteins, thiolated oligonucleotides and peptides, and other small molecules

ICLUDES:

)0µL Qdot nanocrystals, 2 × 60µL SMCC stock solution, 50µL DTT stock lution, 1 vial dye-labeled marker for antibody elution, 50µL β-mercap-ethanol, 75mL exchange buffer, 8mL separation media, three columns for ıal purification, one syringe for final purification, Tubing for final purifica-ɔn, four desalting columns, four ultrafiltration devices, eight centrifuge tubes

Description	Quantity	Cat. No.	Each
525nm Antibody Conjugation Kit	2 rxns	**QD-2204-1**	519.94
565nm Antibody Conjugation Kit	2 rxns	**QD-2203-1**	519.94
585nm Antibody Conjugation Kit	2 rxns	**QD-2201-1**	520.92
605nm Antibody Conjugation Kit	2 rxns	**QD-2200-1**	519.94
655nm Antibody Conjugation Kit	2 rxns	**QD-2202-1**	519.94
705nm Antibody Conjugation Kit	2 rxns	**QD-2206-1**	570.96
800nm Antibody Conjugation Kit	2 rxns	**QD-2207-1**	570.96

The Qdot Nanocrystal products and the use thereof are the subject of one or more patents owned by Quantum Dot Corporation (U.S. Patent Nos. 6,274,323; 6,500,622; 6,630,307; 6,649,138; 6,653,080; 6,682,596; 6,734,420; 6,759,235; 6,815,064 and foreign equivalents) or licensed to Quantum Dot Corporation (i) by The Regents of the University of California (including 5,990,479; 6,207,392; 6,225,198; 6,306,736; 6,423,551; 6,699,723; 6,727,065 and foreign equivalents) and (ii) by Massachusetts Institute of Technology (6,207,229; 6,251,303; 6,306,610; 6,319,426; 6,322,901; 6,326,144; 6,426,513; 6,444,143; 6,501,091; 6,576,291; 6,602,671; 6,607,829; 6,617,583; 6,696,299; 6,774,361; 6,803,719; 6,821,337; 6,861,155; and foreign equivalents).

COLORIMETRIC ASSAYS

ıhermo Scientific* Pierce* Colorimetric ELISA Kits

- Measure cytokines, chemokines, and soluble receptors for study of the immune response in human, mouse, or rat systems
- Offer easy-to-follow protocols
- Require short incubation times
- Use a small sample size

ıuman ELISA Kits

ɜst serum, plasma, and culture supernatant on the ıme plate using the same simple assay procedure

- All kits test serum and culture supernatant
- All kits except VEGF, TNF, sIL-2, sICAM, IL-12 total, and IL-16 also measure urine samples
- All kits test heparin plasma and sodium citrate plasma; all kits except IL-1β test EDTA plasma

				One 96-well Plate		Five 96-well Plates	
ɜscription	Sensitivity	Total Assay Time	Sample Size	Cat. No.	Each	Cat. No.	Each
lony Stimulating/Growth Factors							
ıman GM-CSF	<2pg/mL	4 hr.	50µL/well	**ENEHGMCSF**	444.00	----	----
ıman VEGF	<5pg/mL	4 hr.	50µL/well	**ENEHVEGF**	444.00	----	----
erferons							
ıman IFNγ	<2pg/mL	3 hr.	50µL/well	**ENEHIFNG**	444.00	**ENEHIFNG5**	1641.00
erleukins							
ıman IL-1α	<2pg/mL	3 hr.	50µL/well	**ENEH2IL1A**	444.00	----	----
ıman IL-1β	<1pg/mL	4 hr.	50µL/well	**ENEH2IL1B**	444.00	**ENEH2IL1B5**	1641.00
ıman IL-2	<6pg/mL	4 hr.	50µL/well	**ENEH2IL2**	444.00	**ENEH2IL25**	1641.00
ıman IL-4	<2pg/mL	3 hr.	50µL/well	**ENEH2IL4**	444.00	**ENEH2IL45**	1641.00
ıman IL-5	<2pg/mL	3 hr.	50µL/well	**ENEHIL5**	444.00	----	----
ıman IL-6	<1pg/mL	3 hr.	50µL/well	**ENEH2IL6**	444.00	**ENEH2IL65**	1641.00
ıman IL-8	<2pg/mL	3 hr.	50µL/well	**ENEH2IL8**	444.00	**ENEH2IL85**	1641.00
ıman IL-10	<3pg/mL	3 hr.	50µL/well	**ENEHIL10**	444.00	**ENEHIL105**	1641.00
ıman IL-12 (p70)	<3pg/mL	4 hr.	50µL/well	**ENEHIL12**	444.00	----	----
ıman IL-12 Total (p40, p70)	<5pg/mL	3 hr.	50µL/well	**ENEH2IL12T**	444.00	----	----
ıman IL-13	<7pg/mL	3 hr.	50µL/well	**ENEHIL13**	444.00	----	----
luble Receptors/Surface Markers							
ɜllFree* Human sIL-2 Receptor	<24U/mL	2.5 hr.	50µL/well	**ENEH2IL2R**	444.56	----	----
ıemokines							
ıman MCP-1	<10pg/mL	3 hr.	50µL/well, diluted 1:2	**ENEHMCP1**	444.00	----	----
ıman MIP-1α	<5pg/mL	3 hr.	100µL/well	**PIEH2MIP1A**	444.00	----	----
ıman RANTES	<2pg/mL	3 hr.	50µL/well, diluted 1:100	**ENEHRNTS**	444.00	**ENEHRNTS5**	1641.00

Contd. on next page.

Thermo Scientific* Pierce* Colorimetric ELISA Kits, Contd.

Mouse ELISA Kits

Test serum, plasma, and culture supernatant on the same plate using the same simple assay procedure

- All kits test serum and culture supernatant
- All kits except GM-CSF, TNFα, IFNα, IL-2, IL-4, IL-5, IL-10, and IL-12 (p70) test plasma; all kits except IFNγ and sICAM test sodium citrate plasma; all kits except sICAM test heparin plasma; and all kits except IFNγ test EDTA plasma

Description	Sensitivity	Total Assay Time	Sample Size	One 96-well Plate		Two 96-well Plates		Five 96-well Plates	
				Cat. No.	Each	Cat. No.	Each	Cat. No.	Each
Tumor Necrosis Factors									
Mouse TNFα	<10pg/mL	3 hr.	50µL/well	**ENEMTNFA**	444.00	**ENEMTNFA2**	581.00	**ENEMTNFA5**	1409.00
Interferons									
Mouse IFNα†	10–500pg/mL	Overnight	100µL/well	**PI421001**	500.0	----	----	----	----
Mouse IFNγ	<10pg/mL	4 hr.	50µL/well	**ENEM1001**	444.00	**ENEM10012**	581.00	**ENEM10015**	1409.00
Interleukins									
Mouse IL-1α	<6pg/mL	3 hr.	50µL/well	**ENEMIL1A**	444.56	**ENEMIL1A2**	581.0	----	----
Mouse IL-1β	<3pg/mL	3 hr.	50µL/well	**ENEMIL1B**	444.56	**ENEMIL1B2**	581.00	**ENEMIL1B5**	1409.00
Mouse IL-2	<3pg/mL	3.5 hr.	50µL/well	**ENEMIL2**	444.00	**ENEMIL22**	581.00	**ENEMIL25**	1409.00
Mouse IL-4	<5pg/mL	3.5 hr.	50µL/well	**ENEMIL4**	444.00	**ENEMIL42**	581.00	**ENEMIL45**	1409.00
Mouse IL-5	<5pg/mL	3.5 hr.	50µL/well	**ENEMIL5**	444.00	**ENEMIL52**	581.00	**ENEMIL55**	1409.00
Mouse IL-6	<7pg/mL	4 hr.	50µL/well	**ENEM2IL6**	444.00	**ENEM2IL62**	581.00	**ENEM2IL65**	1409.00
Mouse IL-12 (p40)	<2pg/mL	3 hr.	50µL/well	**ENEMIL12P40**	444.00	**EEMIL12P402**	581.01	----	----
Mouse IL-12 (p70)	<5pg/mL	4 hr.	50µL/well	**ENEMIL12**	444.56	**ENEMIL122**	581.00	----	----
Mouse IL-12 total (p40; p70)	<12pg/mL	3 hr.	50µL/well	**ENEMIL12TOT**	444.56	**EEMIL12TOT2**	581.01	----	----
Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF)									
Mouse (GM-CSF)	<5pg/mL	3.5 hr.	50µL/well	**ENEMGMCSF**	444.00	**ENEMGMCSF2**	581.01	----	----
sICAM-1 (CD54)									
Mouse sICAM-1	<5ng/mL	3.5 hr.	50µL/well	**ENEMICAM1**	444.00	**ENEMICAM12**	581.01	----	----

† Manufactured by PBL Biomedical Laboratories.

Thermo Scientific* Pierce* Human TNF-α Colorimetric ELISA Kit

Conserve samples using flexible, colorimetric ELISA

- Excellent sample recovery demonstrated for all sample types
- Test serum, plasma, and culture supernate on the same plate using a single standard curve and simple immunoassay procedure
- Small sample size generates more results and conserves precious samples
- Species: Human
- Analyte: TNF-α (tumor necrosis factor alpha)
- Format: 96-well strip plate
- Assay Range: 15.6 - 1000pg/mL
- Sensitivity: <2pg/mL
- Total Assay Time: 3 hours
- Sample Size: 50µL/well
- Sample Types: Serum; EDTA; Sodium Citrate and Heparin Plasma; Cell Culture Supernate

Description	Quantity	Cat. No.	Each
Colorimetric ELISA Kit	1 plates	**ENEH3TNFA2**	667.00
Human TNFα	2 plate	**ENEH3TNFA**	444.00
Human TNFα	5 plates	**ENEH3TNFA5**	1641.00

Thermo Scientific* Pierce* ELISA Standards

Ideal for generating standard curves in routine assays to ensure accurate and consistent results

- Calibrated to NIBSC/WHO, NIAID, NCI-BRB, or an internal reference standard when no international reference is available
- Lyophilized

Standard	Calibration	Cat. No.	Each
Human ELISA Standards			
GM-CSF	NIBSC reference lot 88/646	**ENSGMCSF**	100.50
IFNγ	NIAID reference lot Gg-01-902-535	**ENSIFNG**	100.50
IL-1β	NIBSC reference lot 86/680	**ENSIL1B**	100.50
IL-4	NIBSC reference lot 88/656	**ENSIL4**	100.50
IL-5	NIBSC reference lot 90/586	**ENSIL5**	100.50
IL-6	NIBSC reference lot 89/548	**ENSIL6**	100.50
IL-8	NIBSC reference lot 89/520	**ENSIL8**	100.50
IL-10	NIBSC reference lot 93/722	**ENSIL10**	100.50
IL-12 (p70)	NIBSC reference lot 95/544	**ENSIL12**	100.50
IL-13	NIBSC reference lot 94/622	**ENSIL13**	100.50
TNFα	NIAID reference lot 87/650	**ENSTNFA**	100.50
Mouse ELISA Standards			
IL-4	NCI-BRB reference lot 91/656	**ENSMIL4**	100.50
IL-5	Internal reference standard	**ENSMIL5**	100.50
IL-6	NIBSC reference lot 93/730	**ENSMIL6**	100.50
IL-12 (p70)	Internal reference standard	**ENSMIL12**	100.50
TNFα	NIBSC reference lot 88/532	**ENSMTNFA**	100.50

DON'T SEE THE RIGHT ELISA PRODUCT?

Thermo Scientific* Pierce* offers many more ELISA products online.

Visit www.fishersci.com and search for ELISA

*Trademark. See Trademark Reference.

Prices subject to change.

HRP-BASED ASSAYS

romega* Emax* Immunoassay Systems

ptimized for the sensitive and specific detection of variety of neurotrophic and growth factors

-)etect picogram levels of factor per milliliter of sample using an ıntibody-sandwich format
- Jtilize a ready-to-use, single-component TMB substrate and horseradish peroxidase (HRP) conjugate formulations that provide increased stability and easier dilutions for final chromogenic detection
- Provide factor-specific detection with <3% cross-reactivity with other elated neurotrophic and growth factors, except TGFβ_2 which provides <5% cross-reactivity

CLUDES:

tibodies, HRP conjugate, Standard, Buffers, TMB solution

ORAGE CONDITIONS:

ɔre at -20°C for up to six months from the date of receipt before thawing

System	Sensitivity	Range of Standard	Size	Cat. No.	Each
BDNF	15.6pg/mL	7.8–500pg/mL	2 × 96 wells	**PR-G7610**	316.75
			5 × 96 wells	**PR-G7611**	614.00
GDNF	31pg/mL	15.6–1000pg/mL	2 × 96 wells	**PR-G7620**	316.75
			5 × 96 wells	**PR-G7621**	614.00
NGF	15.6pg/mL	7.8–500pg/mL	2 × 96 wells	**PR-G7630**	316.75
			5 × 96 wells	**PR-G7631**	614.00
NT-3	9.4pg/mL	4.7–300pg/mL	2 × 96 wells	**PR-G7640**	316.75
			5 × 96 wells	**PR-G7641**	614.00
TGFβ_1	31pg/mL	15.6–1000pg/mL	2 × 96 wells	**PR-G7590**	316.75
			5 × 96 wells	**PR-G7591**	614.00
TGFβ_2	31pg/mL	15.6–1000pg/mL	2 × 96 wells	**PR-G7600**	614.00

INCUBATORS

CO_2

hermo Scientific* Napco* 8000 Series CO_2 Incubators

ater-Jacketed and Direct-Heat Models to cover a wide application range

ɔmplete Contamination Control

- Save time and money—protect your cultures from contamination
- Rapid HEPA filtration produces Class 100 air quality in under five minutes
- Coved corners throughout make for easy cleaning
- Shelves, supports and HEPA filter are easily removed without tools
- Intuitive Message Center user interface for quick and easy access to all functions
- Choice of T/C (thermal conductivity) or IR CO_2 sensors to match your requirements

ɜace of mind

- Made to highest standards of workmanship, thanks to many years of experience in manufacturing CO_2 incubators
- Unsurpassed service and technical support

odel Selection:

/ater-Jacketed (WJ) Models provide extra security

- Triple wall construction and large volume of water mean unsurpassed temperature stability and heat-loss protection
- Water-jacketed technology holds temperature for extended periods, critical during power failures, to ensure the safety of your cultures
- Fast temperature recovery keeps culture conditions very stable
- Heated, dual-pane glass inner door reduces heat loss and condensation

irect-Heat (DH) Models let you culture with confidence

- Safe, proven sterilization system ensures elimination of all microbial life inside chamber
- Automatic high-temperature decontamination cycle provides overnight sterilization and consistent sterilization time after time
- Light weight makes them easy to move to where you need them
- Advanced airflow and heating provide temperature uniformity and stability

RDERING INFORMATION:

lodels listed have 6.5 cu. ft. (184L) chamber volume, measure ɔL × 26H × 39-1/2W"H, operate on 115VAC.

Thermo
Thermo

Direct Heat Models 15-497-009 through -012

Water-Jacketed Models 15-497-001 through -008

Sensor	RH Display	O_2 Control	In-Chamber HEPA	Cat. No.	Each
Water-Jacketed (WJ) Models					
T/C	No	No	Yes	**15-497-001**	5564.00
T/C	Yes	No	Yes	**15-497-002**	6032.00
IR	No	No	Yes	**15-497-003**	6552.00
IR	Yes	No	Yes	**15-497-004**	7020.00
T/C	No	Yes	Yes	**15-497-005**	6604.00
T/C	Yes	Yes	Yes	**15-497-006**	7072.00
IR	No	Yes	Yes	**15-497-007**	7540.00
IR	Yes	Yes	Yes	**15-497-008**	8008.00
Direct-Heat (DH) Models					
T/C	No	No	Yes	**15-497-009**	5564.00
T/C	Yes	No	Yes	**15-497-010**	6354.40
IR	No	No	Yes	**15-497-011**	6552.00
IR	Yes	No	Yes	**15-497-012**	7342.40

Contd. on next page.

Thermo Scientific* Napco* 8000 Series CO_2 Incubators, Contd.

ACCESSORIES

For use with Thermo Scientific* Napco* 8000 CO_2 incubators as indicated

Description	For Use with	Cat. No.	Each
Replacement HEPA Filter	All 8000 Series models	**15-497-022**	45.16
HEPA Filter 4-Pack	All 8000 Series models	**15-497-023**	158.80
HEPA Filter Replacement Kit	All 8000 Series models	**15-497-024**	75.48
Independent Inner Glass Door Kit	All 8000 Series models	**15-497-013**	770.70
Stainless-Steel Shelf: with installation channel	All 8000 Series models	**15-497-016**	115.10
Support Stand: with leveling feet; 6½"H (16.5cm)	All 8000 Series models	**15-497-017**	352.45
Roller Base for WJ models: with 2 locking casters, 2 leveling feet; 2¾"H (7cm)	All 8000 Series models	**15-497-018**	409.44
Automatic Gas Tank Switcher: external mount; 120V 60Hz	All 8000 Series models	**15-497-019**	736.05
CO_2 Gas Regulator: 2 stage; barbed connection; shutoff valve	All 8000 Series models	**15-497-020**	310.24
Gas Line Filter Replacements; pack of 10	All 8000 Series models	**15-497-026**	85.68
Inner Door Lock	Water Jacket models only	**15-497-015**	214.22
N_2 Gas Regulator	Water Jacket models only	**15-497-021**	310.24

Fisher Scientific* Isotemp* CO_2 incubators

Water-Jacketed and Direct Heat Models with T/C or IR sensors

Selection, high capacity, heavy-duty design

- Choice of Water-Jacketed (WJ) and Direct Heat (DH) technology
- Flexibility you can depend on for growing cells
- Select Thermal Conductivity (T/C) or Infrared (IR) sensors to serve your applications
- High-capacity 6.5 cu. ft. (184L) chamber
- Heavy-duty stainless-steel shelves support a full load of samples
- Precise temperature control and stability of all culture parameters

Peace of mind

- Provide stable temperature, humidity and CO_2 level for maximum cell growth
- Low and high CO_2 alarms, plus power interruption and temperature deviation alarms

Ease of Use

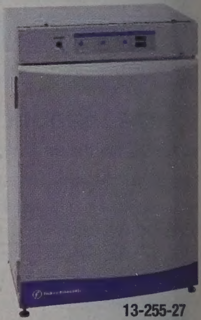
- Easy-to-clean polished stainless-steel interior with coved corners
- Shelves and supports are easily removed without tools
- Microbiological filters protect gas inlet and sample port
- Easy-to-use display and alarm settings

Water-Jacketed (WJ) Models surround cells with 12 gallons of 37°C water

- Triple wall construction and large water volume provide superb temperature stability and heat-loss protection
- Hold temperature for extended periods, critical during power failures
- Fast temperature recovery keeps culture conditions very stable
- Heated, dual-pane glass inner door reduces heat loss and condensation
- Interior door gasket is removable

Direct Heat (DH) Models let you culture with confidence

- Heating elements surround all sides of chamber wall
- Fiberglass insulation aids uniformity and fast recovery times
- Directed airflow keeps cells at optimum growth temperature
- Inner door gasket is removable
- Light weight makes them easy to move to where you need them



13-255-27

ORDERING INFORMATION:
Models listed have 6.5 cu. ft. (184L) chamber volume, measure 25L × 26⅓W × 39½"H. Operate on 115V.

WARRANTY:
One year parts and labor on incubator

Sensor	Cat. No.	Each
Water-Jacketed (WJ) Models		
T/C	**13-255-25**	4650.00
IR	**13-255-26**	5450.00
Direct Heat (DH) Models		
T/C	**13-255-27**	4650.00
IR	**13-255-28**	5450.00

ACCESSORIES

For Fisher Scientific* Isotemp* Incubators

- For CO_2 Incubators 13-255-25, -26, -27, -28

Description	Cat. No.	Each
Stainless-Steel Shelf: with installation channel	**15-497-016**	115.10
Roller Base for Water-jacketed models	**15-497-018**	409.44
Automatic Gas Tank Switcher: external mount; 120V 60Hz	**15-497-019**	736.05
CO_2 Gas Regulator: 2 stage; barbed connection; shutoff valve	**15-497-020**	310.24
Support Stand: with leveling feet; 6½"H (16.5cm)	**15-497-017**	352.45
Gas Line Filter Replacements; pack of 10	**15-497-026**	85.68

*Trademark. See Trademark Reference.

Prices subject to change.

sher Scientific* Large-Capacity Dry-Wall CO_2 Incubators

ıoice of capacities, humidity system and decontamination, with capacities of 10 or 33 cu. ft.

- Programmable decontamination in 1- to 10-hour cycles
- aminar airflow ensures consistent circulation throughout chamber
- 'ush-button digital control with high/low temperature and CO_2 deviation alarms
- Set high/low temperature deviations from ±0.5° to ±5.0°C
- Nonvolatile memory and electronic security lockout effectively protect sample

ogrammable Decontamination

- Model 910 provides decontamination at 121°C, kills all vegetative bacteria and fungal spores; independent tests show that 99% of *B. stearothermophilus* spores are killed
- arge-volume Model 933 provides decontamination temperatures up to 90°C
- Models 910 and 933 offer programmable decontamination that can be set to run for 1- to 10-hour cycles
- Economy Model 810 and refrigerated Model 810R provide decontamination program of 10 hours at 90°C, which kills off vegetative bacteria

minar Airflow

- Ensures consistent circulation of heated, humidified air throughout chamber
- Temperature range: 35° to 60°C (10° to 60°C for refrigerated Model 810R) with 0.1°C resolution
- Chamber fan produces efficient mechanical convection for tight uniformity, rapid recovery of temperature, CO_2 and humidity; low airflow speed prevents culture desiccation
- CO_2 concentration can be set from 0 to 20%, within 0.1%

Humidity Generation[1]

- Steam generator allows RH control from 80 to 96% (±2%, 96% maximum achievable) for Model 910 and Model 933; no reservoir or water pan needed[2]
- Copper water pan in Economy Models 810 and 810R continuously provides saturated humidity to chamber; copper acts as bacterial growth inhibitor

Large Volume Model 933

- Provides up to 33 cu. ft. of culturing volume
- Inner temper glass doors preserve chamber conditions when outer door is opened

11-687-810

Refrigerated Model 810R

- Can be set as low as 10°C to provide low temperature, CO_2 enriched growth environments
- Uses CFC-free R-134A refrigerant

ORDERING INFORMATION:

All models feature stainless-steel interiors with four solid stainless-steel shelves and painted stainless-steel exteriors. All except Model 933 are stackable.

CERTIFICATIONS:

Models 910 and 933 are UL listed.

pe	Steam-Generated Humidity		Water-Pan-Generated Humidity	
	High-Temperature Decontamination	Large Volume	Economy	Refrigerated
odel	**910**	**933**	**810**	**810R**
apacity (Chamber Volume)	10 cu. ft. (283L)	33 cu. ft. (934.5L)	10 cu. ft. (283L)	10 cu. ft. (283L)
mperature				
ange[3]	35° to 60°C	35° to 60°C	35° to 60°C	10° to 60°C
ontrol	0.1°C	0.1°C	0.1°C	0.1°C
niformity at 37°C	±0.15°C	±0.15°C	±0.15°C	±0.2°C
ecovery at 37°C[4]	2 min.	1.25 min.	2 min.	1.5 min.
O_2 Concentration				
ange	0 to 20%	0 to 20%	0 to 20%	0 to 20%
ontrol	0.1%	0.1%	0.1%	0.1%
umidity				
ange	80 to 96%[5]	70 to 96%[5]	Saturated	Saturated
ontrol	±2%	±2%	----	----
ource	Steam generator	Steam generator	Copper water pan	Copper water pan
xterior L × W × H	25½ × 44 × 35" (64.8 × 111.8 × 89cm)	35 × 41 × 90" (89 × 104 × 228.6cm)	25½ × 44 × 35" (64.8 × 111.8 × 89cm)	25½ × 44 × 43" (64.8 × 111.8 × 109.2cm)
terior D × W × H	21½ × 30¼ × 26¾" (54.6 × 76.8 × 68cm)	27 × 36 × 60" (68.6 × 91.4 × 152.4cm)	21½ × 30¼ × 26¾" (54.6 × 76.8 × 68cm)	21½ × 30¼ × 26¾" (54.6 × 76.8 × 68cm)
hipping Weight	400 lb. (182kg)	1100 lb. (499kg)	400 lb. (182kg)	450 lb. (204kg)
lectrical Requirements	115V 50/60Hz, 1300w, 12A	115V 50/60Hz, 2000w, 16A	115V 50/60Hz, 1260w, 11A	230V 50/60Hz, 3400w, 15A, single-phase
at. No.	**11-687-910**	**11-687-933**	**11-687-810**	**11-687-810R[6]**
ach	12,172.92	23,901.40	9665.41	13,214.89

Steam generator requires deionized water with resistivity from 20K to 1megohm and a pH level above 6.5. For more information, contact your Fisher Scientific Customer Service Representative.

Models 910 and 933 require a gravity drainline or a condensate pump to eliminate possible accumulation of condensation on chamber floor. For more information, contact your Fisher Scientific Customer Service Representative.

Based on 20°C and 35% RH ambient.

Door open for 30 seconds at ambient temperature and humidity.

Maximum achievable RH is 96%.

This unit is suitable as an International Model.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Fisher Scientific* Isotemp* CO_2 Incubator Microplate Stability Chamber

For use with Fisher Scientific Isotemp CO_2 Incubators

Reduces variations in cell-based assays by up to 50%.

Stability Chamber

- Uses incubator heat and atmosphere to create homogenous micro-environment
- High humidity within chamber eliminates evaporation from plates that creates uneven heating spots
- Thick aluminum shelf distributes heat evenly for temperature uniformity
- Includes fan

Stability Tray

- Fits inside stability chamber
- Anodized aluminum
- Capacity: six plates

INCLUDES:

Chamber and one stability tray

22-155-20

Description	Cat. No.	Each
Stability Chamber, 120V	22-155-20	720.00
Stability Chamber, 230V	22-155-21	772.00
Aluminum Tray	22-155-22	257.00

LOOKING FOR MICROPLATES?

You'll find them in a wide range of sizes, colors and materials in the Microplates section.

DON'T SEE THE RIGHT PRODUCT?

Fisher Scientific* Isotemp* CO_2 Incubators are available in water-jacketed and direct heat models. See them on p. 978-979.

New Brunswick Scientific* Innova* CO-48 and CO-170 CO_2 Incubators

Exceptional design and performance

Choice of 1.7 cu. ft. (48L) or 6 cu. ft. (170L) capacities, with wide range of options and features.

- Six-sided direct convection heating eliminates ductwork and vibration, increases usable space, allows near-ambient operation
- Extra-large display and intuitive controls simplify operation
- Programmed with help text, real-time data graphing, programmable alarms and diagnostics
- Infrared (IR) CO_2 sensor provides superior accuracy and stability
- Ergonomically-positioned controls for convenient access on or under benchtop or when stacked

Extra convenience in operation

- 72-hour data storage of CO_2 concentration, temperature, alarms and door openings with on-screen display
- Optional RS-232 port and accessory software allows data download to PC
- User-programmable auto-zero function automatically adjusts IR sensor baseline for optimum accuracy and security; no need for manual measurements or operator intervention
- Built-in system diagnostics help identify operational status and expedite maintenance or service
- On-screen help guides operator through setup, programming and diagnostics
- Space-saving size and weight compared to jacketed designs; simplifies setup, maintenance and relocation
- Seamless, deep-drawn chamber
- Stainless wire rack shelf support allows easy shelf positioning and removal without tools
- Integrated viewing window in outer door allows sample viewing without disturbing chamber conditions

Dependability and safety

- Comprehensive two-level alarm system includes audio and on-screen alarms for system status, programmable alarms for CO_2 and temperature setpoints, delays, duration and more
- Password protection ensures setting integrity
- Overtemperature cutoff prevents overheating if controls fail
- Backup microprocessor verifies main processor operation
- Nonvolatile memory guarantees data integrity
- Alarm setpoints reset automatically to ±0.5°C and 0.5% above and below new temperature/CO_2 setpoints
- HEPA filter on CO_2 inlet protects against contamination

14-286-125

Innova CO-48: for customized cell growth

- Capacity of 1.7 cu. ft. (48L)
- Sophisticated control features in a compact design
- Measures $18\frac{11}{16}$L × $19\frac{1}{16}$W × $25\frac{3}{8}$"H (47.5 × 48.4 × 64.5cm)
- Net weight, 70.6 lb. (32kg)

Innova CO-170: for higher-volume cell-culturing

- Capacity of 6 cu. ft. (170L)
- Easy access to usable space in a convenient size
- Measures $25\frac{9}{16}$ × 27 × $33\frac{3}{8}$" (65 × 68.5 × 84.8cm)
- Net weight, 165.3 lb. (75kg)

ORDERING INFORMATION:

Useful options for both models increase versatility.

- High-temperature (HT) models simplify maintenance by decontaminating chamber, sensors and humidity pan at the touch of a button, using 120°C dry heat
- Three-gas control models provide crucial subambient oxygen control for studies requiring 1 to 19% oxygen levels
- Communications package allows three-way monitoring via RS-232 port (included with software), alarm relay contacts and access port
- Stacking Stands permit floor mounting of two stacked units; both kits include floor stand to raise bottom unit to convenient height; CO-48 kit includes stacking shelf to mount second CO-48 atop first (not required for CO-170 stacking)

WARRANTY:

Two years on parts and labor

CERTIFICATIONS:

CE marked

Contd. on next page.

*Trademark. See Trademark Reference.

w Brunswick Scientific Innova* CO-48 and CO-170 $_2$ Incubators, Contd.

del	Mfr. No.	Cat. No.	Each
ova CO-48 Basic Model	M1300-0000	**14-286-125**	5255.00
ova CO-48 with HT Option	M1300-1000	**14-286-126**	5695.00
ova CO-48 with O_2 Option	M1300-0200	**14-286-127**	6400.00
ova CO-48 with mmunications Package Option	M1300-0010	**14-286-137**	5935.00
ova CO-170 Basic	M1306-0000	**14-286-129**	7645.00
ova CO-170 with gh-temperature Option	M1306-1000	**14-286-130**	8165.00
ova CO-170 with HT option, control	M1306-1200	**14-286-132**	9310.00
acking Kit for two Innova)-170 units	P0628-6270	**14-286-158**	492.62

SPECIFICATIONS

Model	**Innova CO-48**	**Innova CO-170**
Chamber		
Volume	1.7 cu. ft. (48L)	6.0 cu. ft. (170L)
Dimensions	12⅛L x 15¾W x 15¾"H (30.8 x 40.1 x 40.1cm)	17½L x 21¼W x 27¼"H (44.4 x 54.0 x 69.3cm)
Temperature		
Range	1° above ambient to 50°C	1° above ambient to 50°C
Control	±0.1°C	±0.1°C
Stability	±0.2°C	±0.2°C
Uniformity	±0.1°C	±0.1°C
CO_2 Management		
Range	0.2–20%	0.2–20%
Control	±0.1%	±0.1%
Stability	±0.2%	±0.2%
Uniformity	±0.1%	±0.1%
Recovery	>0.7% per minute	>0.7% per minute
Connections	¼" (6mm) tubing	¼" (6mm) tubing
Gas Service Pressure	5psi (0.35 bar)	5psi (0.35 bar)
Humidity		
Reservoir	0.5L stainless-steel tray	2.5L stainless-steel tray
Level†	<95% at 37°C	<95% at 37°C
Electrical Requirements		
Voltage	100–120V 50/60Hz	100–120V 50/60Hz
Maximum Watts	500w (700w with HT option)	500w (1000w with HT option)
Power Consumption	<0.1kw/hr.	<0.1kw/hr.

† Energy required to maintain chamber at 37°C

lew Brunswick Scientific Excella* CO-170 CO_2 Incubators

or basic CO_2 culturing needs at an economical price

ew Excella design

- Provides plenty of culturing space at an economical price
- Volume is 6 cu. ft. (170L); measures 25.6L x 27W x 33.1"H (65 x 68.5 x 84.8cm); weight, 165.3 lb. (75kg)
- Six-sided direct convection heating eliminates ductwork and vibration, increases usable space, allows near-ambient operation
- Simple display and easy-to-use controls with four-button keypad, CO_2 and temperature display, audible/visible alarms
- Infrared (IR) CO_2 sensor provides superior accuracy and stability
- Convenient access on or under benchtop or when stacked

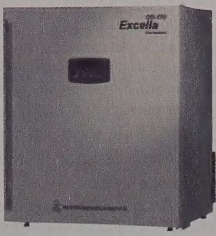
imple operation

- CO_2 auto-zero function automatically adjusts IR sensor baseline when you press a button and open door
- Space-saving size and weight compared to jacketed designs; simplifies setup, maintenance and relocation
- Stainless wire rack shelf support and four shelves; easy shelf positioning and removal without tools

ependability and safety

- User-programmable CO_2 and temperature alarms with selectable settings for setpoint, delays and durations
- Comprehensive audible and visual alarms monitor every sensor, warn of overlimit conditions
- Overtemperature cutoff prevents overheating if controls fail
- Backup microprocessor verifies main processor operation
- Nonvolatile memory guarantees data integrity
- Alarm setpoints reset automatically to ±0.5°C and 0.5% above and below new temperature/CO_2 setpoints
- HEPA filter on CO_2 inlet protects against contamination

ORDERING INFORMATION:



14-286-135

- ▸ High-temperature (HT) models simplify maintenance by decontaminating chamber, sensors and humidity pan at the touch of a button, using 120°C dry heat
- ▸ Three-gas control models provide crucial subambient oxygen control for studies requiring 1 to 19% oxygen levels
- ▸ Communications package allows three-way monitoring: via RS-232 port (included with software), alarm relay contacts and access port
- ▸ For options other than those listed below, call your Fisher Scientific Customer Service Representative

WARRANTY:

One year on parts and labor

CERTIFICATIONS:

CE marked

Model	Mfr. No.	Cat. No.	Each
Excella CO-170 Basic	M1311-0000	**14-286-135**	6190.00
Excella CO-170 with HT Option	M1311-1000	**14-286-149**	6710.00
Excella CO-170 with Communications Package option	M1311-0010	**14-286-147**	6870.00

Contd. on next page.

New Brunswick Scientific Excella* CO-170 CO_2 Incubators, Contd.

SPECIFICATIONS

Model	Excella ECO-170
Chamber Volume	6.0 cu. ft. (170L)
Chamber Dimensions	17½L × 21⅓W × 27⅓"H (44.4 × 54 × 69.3cm)
Temperature Range	1° above ambient to 50°C
Temperature Control	±0.1°C
Temperature Stability	±0.1°C
Temperature Uniformity	±0.25°C
CO_2 Management	
Range	0.2–20%
Control	±0.1%
Stability	±0.25%
Uniformity	±0.2%
Recovery	>0.7% per minute
Connections	¼" (6mm) tubing
Gas Service Pressure	5psi (0.35 bar)
Reservoir	2.5L stainless-steel tray
Humidity Level	<95% at 37°C
Electrical Reqts.	100–120V 50/60Hz
Maximum Watts	500w (1000w with HT option)
Power Consumption	<0.1kw/hr.

LOOKING FOR SHAKERS?

You'll find a complete selection of New Brunswick Scientific orbital shakers, plus rocking, rotating, rotisserie and other styles from leading suppliers in the Shakers section.

New Brunswick Scientific* Innova* CO-14 CO_2 Incubators

Personal size 0.5 cu. ft. (14L) capacity, with wide range of options and features

Innova design and performance

- Specially designed for in vitro fertilization needs
- Micro-sized, 0.5 cu.ft. (14L); measures 11⅜L × 12⁵⁄₁₆W × 17¾"H (28.5 × 31.3 × 45.1cm)
- Weight, 27.6 lb. (12.5kg)
- Six-sided direct convection heating eliminates ductwork and vibration, increases usable space, allows near-ambient operation
- Simple display and easy-to-use controls with four-button keypad, CO_2 and temperature display, audible/visible alarms
- Infrared (IR) CO_2 sensor provides superior accuracy and stability
- Convenient access on or under benchtop or when stacked

Simple operation

- CO_2 auto-zero function automatically adjusts IR sensor baseline when you press a button and open door
- Space-saving size and weight compared to jacketed designs; simplifies setup, maintenance and relocation
- Stainless wire rack shelf support and three shelves; easy shelf positioning and removal without tools

Dependability and safety

- User-programmable CO_2 and temperature alarms with selectable settings for setpoint, delays and durations
- Comprehensive audible and visual alarms monitor every sensor, warn of overlimit conditions
- Overtemperature cutoff prevents overheating if controls fail
- Backup microprocessor verifies main processor operation
- Nonvolatile memory guarantees data integrity
- Alarm setpoints reset automatically to ±0.5°C and 0.5% above and below new temperature/CO_2 setpoints
- HEPA filter on CO_2 inlet protects against contamination
- Useful options increase versatility
- Three-gas control models provide crucial subambient oxygen control for studies requiring 1 to 19% oxygen levels
- Communications package allows three-way monitoring via RS-232 port (included with software), alarm relay contacts and access port

WARRANTY:
Two years on parts and labor.

CERTIFICATIONS:
CE marked

14-286-133

Model	Mfr. No.	Cat. No.	Each
Innova CO-14 Basic	M1314-0000	**14-286-133**	3505.00
Innova CO-14 with O_2 Option	M1314-0200	**14-286-134**	4650.00
Innova CO-14 with Communications option	M1314-0010	**14-286-145**	4232.38

SPECIFICATIONS

Model	Innova CO-14
Chamber	
Volume	0.5 cu. ft. (14L)
Dimensions (L×W×H)	8³⁄₁₆ × 9⁵⁄₁₆ × 11⁹⁄₁₆" (20.8 × 23.3 × 29.4cm)
Temperature	
Range	5° above ambient to 50°C
Control	±0.1°C
Stability	±0.2°C
Uniformity	±0.1°C
CO_2 Management	
Range	0.2–20%
Control	±0.1%
Stability	±0.2%
Uniformity	±0.1%
Recovery	>1.5% per minute
Connections	¼" (6mm) tubing
Gas Service Pressure	5psi (0.35 bar)
Reservoir	0.3L stainless-steel tray
Humidity Level†	>90% at 37°C
Electrical Reqts.	100–120V 50/60Hz
Maximum Watts	700w
Power Consumption	<0.06kw/hr.

† *Energy required to maintain chamber at 37°C*

hermo Scientific* Lab-Line* CO_2 Incubators

hoose from water- or air-jacketed designs, with automatic control systems

ecise temperature and CO_2 control in wide choice of pacities

- Ideal for clinical, pharmaceutical, biotechnology and general laboratory settings
- Precise microprocessor control of CO_2 and temperature
- Hydraulic-thermostat-controlled overtemperature protector maintains setpoint temperature if microprocessor fails
- Audible/visual alarms indicate temperature deviations of ±1°C or greater, CO_2 concentration deviations of 1% or greater, or when incubator door is open for more than five minutes
- CO_2 and fan shut off automatically when door is opened
- Easy-to-read LED display shows temperature and CO_2 levels
- Feature keypad programming and security password protection

Rugged and easy to clean

- Durable stainless-steel exteriors with a powder-coated finish
- Interior and shelves of corrosion-resistant, polished stainless steel
- Perforated shelves and shelf supports can be removed and reinstalled without tools for complete decontamination and easy cleaning
- Door gaskets are made of silicone

hermo Scientific* Lab-Line* Standard Air- and Water-Jacketed CO_2 Incubators

hoose from 6.2 or 12.4 cu. ft. capacities, single- or double-chamber models with automatic control system

- Feature exclusive Smartgas* system for fast recovery rates and accurate CO_2 control
- Temperature range: 5° above ambient to 60°C with T/C sensor; to 55°C with IR sensor
- ±0.1°C control; ±0.25°C uniformity
- CO_2 concentration: 0 to 20%; ±0.1% control
- Humidity range: above ambient to 98%
- Air-Jacketed T/C-sensor models feature decontamination cycle—set temperature to 100°C for 12 hours
- Temperature-adjustable heated outer door has separate control, is insulated with fiberglass and keeps tempered-glass inner door free of condensation
- Interior has rounded corners for easy cleaning

RDERING INFORMATION:

ouble-chamber models come with independent control systems. Options nclude HEPA filter and CO_2 autochange, which switches automatically from mpty to full tanks. Factory-installed RH display option is available for Air-Jacketed IR Model 11-688-21 and for all Water-Jacketed models; contact your Fisher Scientific Customer Service Representative for details.

INCLUDES:

Five adjustable nontip shelves; built-in RS-232-C port for output of temperature and CO_2 data

WARRANTY:

Two years on parts; one year on parts and labor

CERTIFICATIONS:

CE marked

11-688-27 Single-Chamber Water-Jacketed CO_2 Incubator

ensor Type	**Thermal Conductivity (T/C) CO_2 Sensor**			**Infrared (IR) CO_2 Sensor**
hamber Type	Single Chamber	Vertical Double Chamber	Horiontal Double Chamber	Single Chamber
apacity (Chamber Volume)	6.2 cu. ft. (175.6L)	12.4 cu.ft. (351L)	12.4 cu.ft. (351L)	6.2 cu. ft. (175.6L)
emperature				
ange	5° above ambient to 60°C	5° above ambient to 60°C	5° above ambient to 60°C	5° above ambient to 55°C
ontrol	±0.1°C	±0.1°C	±0.1°C	±0.1°C
niformity	±0.25°C	±0.25°C	±0.25°C	±0.25°C
O_2 Concentration				
ange	0 to 20%	0 to 20%	0 to 20%	0 to 20%
ontrol	±0.1%	±0.1%	±0.1%	±0.1%
xterior L × W × H	26¾ × 27¼ × 34" (68 × 69 × 86cm)	26¾ × 27¼ × 68" (68 × 69 × 173cm)	26¾ × 54⅝ × 34" (68 × 139 × 86cm)	26¾ × 27¼ × 34" (68 × 69 × 86cm)
nterior D × W × H	22 × 22 × 22" (56 × 56 × 56cm)	22 × 22 × 44" (56 × 56 × 112cm)	22 × 44 × 44" (56 × 112 × 112cm)	22 × 22 × 22" (56 × 56 × 56cm)
ir-Jacketed Models				
hipping Weight	245 lb. (110kg)	490 lb. (222kg)	----	245 lb. (110kg)
lectrical Requirements	120V 50/60Hz 850w, 7.1A	120V 50/60Hz 1700w, 14.2A	----	120V 50/60Hz 850w, 7.1A
fr. No.	490	494	----	495
at. No.	**11-688-15**	**11-688-19**	----	**11-688-21**
ach	5603.00	11,114.00	----	6666.00
Vater-Jacketed Models				
Shipping Weight	230 lb. (104kg)	460 lb. (209kg)	460 lb. (209kg)	230 lb. (104kg)
Electrical Requirements	120V 50/60Hz 750w, 6.3A	120V 50/60Hz 1500w, 12.5A	120V 50/60Hz 1500w, 12.5A	120V 50/60Hz 750w, 6.3A
Mfr. No.	460	464	462	465
Cat. No.	**11-688-27**	**11-688-7**	**11-688-43**	**11-688-9**
Each	5753.00	11,323.00	11,157.00	6993.00

Thermo Scientific* Lab-Line* Large-Capacity Air-Jacketed Automatic CO_2 Incubator

With automatic control

11-695-4

Precise temperature and CO_2 control in choice of capacities

- Easy-to-read LED display shows temperature and CO_2 levels
- Feature keypad programming and security password protection
- Rugged and easy to clean
- Durable stainless steel exteriors with a powder-coated finish
- Interior and shelves of corrosion-resistant, polished stainless steel
- Perforated shelves and shelf supports can be removed and reinstalled without tools for complete decontamination and easy cleaning
- Door gaskets are made of silicon
- Feature exclusive Smartgas* system for fast recovery rates and CO_2 control
- Model 393 has built-in humidity control with ±3% accuracy from 20% above ambient to 98%
- Homogeneous vertical air-circulation system
- Fiberglass-insulated heated door with separate control

INCLUDES:

Six adjustable shelves; thermal conductivity (T/C) CO_2 sensor. Optional CO_2 autochange.

ORDERING INFORMATION:

Factory-installed options: left-hand door, 12 × 48" (30.5 × 122cm) or 30 × 60" (76.2 × 152.4cm) double-pane glass door windows.

WARRANTY:

Two years on parts; one year on parts and labor

CERTIFICATIONS:

CSA approved (Model 393); UL, cUL listed (Model 397)

Type	Automatic	
Model	397	393
Capacity (Chamber Volume)	28 cu. ft. (792.9L)	34 cu. ft. (962.8L)
Temperature Range	5° above ambient to 60°C	5° above ambient to 60°C
CO_2 Range	0 to 20%	0 to 20%
Exterior L × W × H	28¾ × 33½ × 76½" (72 × 85 × 194cm)	35 × 42 × 91" (89 × 107 × 231cm)
Interior D × W × H	26¾ × 28½ × 63½" (68 × 72 × 161cm)	25 × 36 × 65" (89 × 107 × 231cm)
Shipping Weight	900 lb. (408kg)	1020 lb. (459kg)
Electrical Requirements	120V 50/60Hz, 1400w, 11.7A	120V 50/60Hz, 1400w, 11.7A
Mfr. No.	397	393
Cat. No.	**11-695-4**	**11-688-38**
Each	12,908.00	18,591.00

Thermo Scientific* Lab-Line* Compact Air-Jacketed Automatic CO_2 Incubator

Compact size saves valuable lab space

11-688-42

Exclusive Smartgas* system provides fast recovery rates and accurate CO_2 control.

- Temperature range: 5° above ambient to 60°C; ±0.1°C control and ±0.25°C uniformity
- CO_2 concentration: 0 to 20%; ±0.1% control
- Humidity range: above ambient to 98%
- Nonvolatile memory retains setpoints in the event of power interruption or failure
- Sample port on control panel allows for CO_2 testing with Fyrite* analyzers (10-884 and 10-884-1)
- Temperature-adjustable heated outer door has separate control, is insulated with fiberglass and protects tempered-glass inner door from condensation
- Interior has rounded corners for easy cleaning
- Includes two adjustable nontip shelves
- Each chamber can accommodate five shelves

INCLUDES:

Thermal conductivity (T/C) CO_2 sensor and built-in RS-232-C port. Optional CO_2 autochange is available.

WARRANTY:

Two years on parts; one year on parts and labor

Model	314
Capacity (Chamber Volume)	1.2 cu. ft. (34L)
Temperature	
Range	5° above ambient to 60°C
Control	±0.1°C
Uniformity	±0.25°C
CO_2	
Concentration Range	0 to 20%
Control	±0.1%
Exterior L × W × H	18 × 22½ × 19" (46 × 57 × 48cm)
Interior D × W × H	12 × 14 × 12" (31 × 36 × 31cm)
Net Weight	70 lb. (32kg)
Electrical Requirements	120V 50/60Hz, 200w, 1.7A
Mfr. No.	314
Cat. No.	**11-688-42**
Each	3691.00

ACCESSORIES

Fyrite* CO_2 or O_2 Analyzers

- For CO_2 analysis with accuracy of ±0.5° of reading
- Accurate readings up to 453°C (850°F) in about 30 seconds
- Level of fluid column shows %CO_2
- With fluid, aspirator, filter, carrying case

Gas	Range	Mfr. No.	Cat. No.	Each
CO_2	0–20%	10 5000	**10-884**	465.00
CO_2	0–7.6%	10 5053	**10-884-1**	495.00
O_2	0–21%	10 5011	**10-884-10**	445.30

*Trademark. See Trademark Reference.

ACCESSORIES

Refill Kits

- Includes two bottles of fluid, top gasket screws, filtering material
- 10-884-6 consists of three bottles of fluid only

Gas	Range	Mfr. No.	Cat. No.	Each
CO_2	0–20%	11 7047	**10-884-5**	63.00
CO_2	0–7.6%	10 5100	**10-884-6**	58.52
O_2	0–21%	11 7050	**10-884-15**	84.96

STANDARD

isher Scientific* Isotemp* Forced-Air Incubators

uilt-in PID microprocessor-based controller delivers outstanding temperature niformity

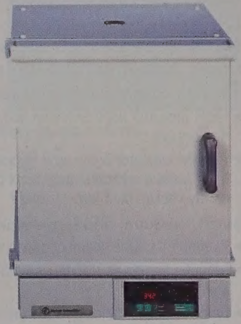
ith average temperature uniformity of ±0.3°C (±0.5°C absolute),[1] these cubators operate within much tighter tolerances than gravity convection cubators. Choose from three models: 2.2, 3.4, and 4.5 cu. ft.

- Built-in PID microprocessor-based controller for close uniformity with set temperatures
- Can set temperatures up to 75°C in 0.1°C increments using the keys on the control panel
- Actual temperature is displayed (to the nearest 0.1°C) on the bright, three-digit LED display
- If actual temperature exceeds setpoint by 3°C, a visual alarm will signal on the control panel
- Tempered glass inner door to view samples
- Temperature recovery is within two minutes (three min. on 4.5 cu. ft. model)[2]
- Heavy-duty steel/aluminum exterior; stainless-steel interior surrounded by 3" thick (7.6cm) insulation in the walls and 1½" (3.8cm) in the door
- 5-amp electrical outlet to support other apparatus

INCLUDES:
The 2.2 and 3.4 cu. ft. models supplied with one adjustable shelf; the 4.5 cu. ft. model comes with two shelves. Additional shelves may be purchased separately. All models come with a line cord and grounded NEMA 5-15P plug.

WARRANTY:
12 months

CERTIFICATIONS:
CSA approved



11-690-637F

lodel	625F	637F	650F
apacity (Chamber Volume)	2.2 cu. ft. (62.3L)	3.4 cu. ft. (96.3L)	4.5 cu. ft. (127.4L)
emperature Range[3]	5° above ambient to 75°C	5° above ambient to 75°C	5° above ambient to 75°C
verage Uniformity[1]	±0.3°C	±0.3°C	±0.3°C
bsolute Uniformity[1]	±0.5°C	±0.5°C	±0.5°C
esolution	0.1°C	0.1°C	0.1°C
ontrol Sensitivity	±0.1°C	±0.1°C	±0.1°C
ecovery Time[2]	2 min.	2 min.	3 min.
alibration Accuracy at 37°C	±0.5°C	±0.5°C	±0.5°C
ir Changes per Hour at 75°C	3–5	3–5	3–5
helves: Supplied/Max.	1/3	1/6	2/10
xterior L × W × H	26 × 23½ × 26" (66 × 60 × 66cm)	26 × 23½ × 33" (66 × 60 × 84cm)	26 × 23½ × 39" (66 × 60 × 99cm)
hamber D × W × H	17 × 18 × 12½" (43 × 46 × 32cm)	17 × 18 × 19" (43 × 46 × 48cm)	17 × 18 × 25½" (43 × 46 × 65cm)
hipping Weight	150 lb. (68.0kg)	165 lb. (74.8kg)	190 lb. (86.2kg)
lectrical Requirements	120V 60Hz, 330w, 8.3A	120V 60Hz, 330w, 8.3A	120V 60Hz, 410w, 8.9A
at. No.	**11-690-625F**	**11-690-637F**	**11-690-650F**
ach	2753.41	2811.25	3072.55

At 37°C as performed per ASTM Method E 1292-94.*
With door open 30 seconds at 37°C.
Operating temperature must be at least 5°C above ambient.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

ACCESSORIES

Extra Shelf for Fisher Scientific* Isotemp* Forced-Air Incubators

Fits all models

Description	Cat. No.	Each
Shelf with supports	**13-245-960**	77.44

Fisher Scientific* Isotemp* Standard Lab Incubators

30° to 75°C (86° to 167°F) range

Incubators with gravity flow circulation provide accurate, efficient heating for routine laboratory procedures: drying and staining of slides, paraffin embedding, tissue culture work, incubation of antibody tests, microbiological determinations, crystallization studies, and more. Electrical receptacle inside (5A at 120VAC) to plug in a stirrer, shaker, or other apparatus.

Easy to operate

- Microprocessor control
- Controls are conveniently located at the top of the incubator chamber
- Keypad with arrow keys to increase or decrease setpoint temperature in 0.1°C increments
- Overtemperature value is automatically set at 3°C above setpoint
- PID controller comes with fixed parameters so no tuning is required
- Circuit breaker protects incubator from power surges; battery backup
- Designed to stack two units

Big three-character LED display

- Digits display actual temperature to nearest 0.1°C
- Display shows current value for setpoint temperature
- HEAT indicator light cycles on and off to show when incubator heaters are on
- ALARM indicator lights up if temperature exceeds overtemperature limit; backup controller maintains temperature at 3°C above setpoint; safety backup built into software

Small, medium, and large workload capacities

- Available in three chamber capacities
- Mounting holes at 2" (5cm) intervals on the chamber walls for shelf placement
- Small incubator holds a maximum of five shelves, medium incubator holds eight, and large incubator holds 11 shelves

Low-maintenance incubators with inner and outer doors

- Cabinet has durable, enamel-coated steel exterior
- Extruded aluminum trim has acrylic powder coating
- Chamber is easy-to-clean stainless-steel
- Low-watt-density heater elements are designed for long life
- Silicone gasket on outer door and 3" thick (7.6cm) fiberglass insulation throughout prevent heat loss
- Outer door opens to 180° for unhindered access and features two grabber-type latches
- Inner door is tempered glass
- Steel shelves are 17⅜" wide and 16¾" front-to-back (44 × 42.5cm)
- Black synthetic rubber feet keep incubator from slipping and maintain a space between incubator and benchtop for ventilation

11-690-637D

Big LED display

ORDERING INFORMATION:
Available in 120V 60Hz or 240V 50/60Hz.[4]

INCLUDES:
Small (2.5 cu. ft.) and medium (3.75 cu. ft.) incubators each come with one plated-steel shelf; large (5.0 cu. ft.) incubator comes with two shelves.

WARRANTY:
One year

CERTIFICATIONS:
CSA approved.

Model	Small	Medium	Large
Capacity (Chamber Volume)	2.5 cu. ft. (70.8L)	3.75 cu. ft. (106.2L)	5.0 cu. ft. (141.6L)
Temperature Range	30° to 75°C (86° to 167°F)	30° to 75°C (86° to 167°F)	30° to 75°C (86° to 167°F)
Average Uniformity[1]	±0.7°C at 37°C	±0.7°C at 37°C	±0.7°C at 37°C
Resolution	0.1°C	0.1°C	0.1°C
Control Sensitivity	±0.1°C	±0.1°C	±0.1°C
Recovery[2]	2 min.	2 min.	2 min.
Air Changes per Hour	6	4	3
BTU per Hour (75°C)	290	360	430
Exterior L × W × H[3]	23½ × 26 × 26" (60 × 66 × 66cm)	23½ × 26 × 33" (60 × 66 × 84cm)	23½ × 26 × 39" (60 × 66 × 99cm)
Interior D × W × H	18 × 18 × 13½" (46 × 46 × 34cm)	18 × 18 × 20" (46 × 46 × 51cm)	18 × 18 × 26½" (46 × 46 × 67cm)
Shipping Weight	115 lb. (52kg)	130 lb. (59kg)	145 lb. (66kg)
Electrical Requirements[4]	120V 60Hz, 260w, 2.2A	120V 60Hz, 260w, 2.2A	120V 60Hz, 320w, 2.7A
Cat. No.	**11-690-625D**	**11-690-637D**	**11-690-650D**
Each	2096.48	2398.63	2619.31

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[1] *Rated average uniformity per ASTM* E 1292 Method.*

[2] *Door open 30 seconds at 37°C.*

[3] *Length includes thickness of door; does not include handle.*

[4] *All incubators include internal accessory outlet that will increase current usage by 5 amps if utilized at its rating.*

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

ACCESSORIES

Extra Shelves for Fisher Scientific* Isotemp* Programmable, Premium, and Standard Lab Ovens

- Chrome-plated steel, wire-frame style
- No-tip design
- With shelf supports

Dimensions (L × W)	Cat. No.	Each
16¾ × 17⅜" (42.5 × 44cm)	**13-247S**	69.01

isher Scientific* Isotemp* Economy ab Incubators

ectronic control with safety backup

- These economical incubators provide dependable, trouble-free heating for many light-duty laboratory assignments.
- Perfect for biology classrooms or as a backup for overloads in microbiology labs
- Controls are located at top of chamber within easy reach, even if unit is on the floor
- Internal electrical receptacle (5A at 120V) allows you to use a shaker or stirrer inside of the chamber

mple heating controls

- Turn on power switch and set temperature dial for any temperature between 30° and 75°C; major dial divisions are at 5°C intervals
- Electronic controller is factory calibrated
- Built-in backup controller will maintain temperature at 3°C above setpoint temperature if primary controller should fail

asy-to-see illuminated status indicators

- Green POWER indicator shows power is on
- Red HEAT indicator cycles on and off to notify when incubator heaters are operating
- When lit, yellow ALARM light means incubator is operating under backup control

ravity flow convection

- Air inlet port supplies air to plenum below chamber
- As air is heated, it generates convection that causes air to circulate gently throughout chamber in a vertical pattern
- Used air is expelled through an exhaust port at the back of the incubator

lany convenient, easy-care features

- Incubator cabinet has durable enamel-coated steel exterior
- Extruded aluminum trim has an acrylic powder coating
- Chamber is easy-to-clean stainless steel
- Low-watt-density heater elements are designed for long life
- Tempered glass door opens to 180° for unhindered access
- Wire frame shelves of chrome-plated steel are 17⅜" wide and 16¾" front-to-back (44 × 42.5cm)
- Black synthetic rubber feet keep incubator from slipping and maintain a space between incubator and benchtop for ventilation
- To maximize valuable lab space, incubators can be easily stacked

11-690-537D

Easy-to-use controls

ORDERING INFORMATION:

Order additional shelves separately (13-247S).

INCLUDES:

- Small (2.5 cu. ft.) and medium (3.75 cu. ft.) incubators each come with one chrome-plated steel, no-tip wire shelf
- Large (5.0 cu. ft.) incubator comes with two shelves
- Mounting holes at 2" (5cm) intervals on chamber walls let you place shelves where you need them; small incubator holds up to five shelves, medium incubator holds eight, large incubator holds 11 shelves
- All three models come with clips for front edge of shelf to hold a thermometer

WARRANTY:

One year

CERTIFICATIONS:

CSA approved

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

lodel	Small	Medium	Large
apacity (Chamber Volume)	2.5 cu. ft. (70.8L)	3.75 cu. ft. (106.2L)	5.0 cu. ft. (141.6L)
emperature Range	30° to 75°C (86° to 167°F)	30° to 75°C (86° to 167°F)	30° to 75°C (86° to 167°F)
verage Uniformity[1]	±1°C at 37°C	±1°C at 37°C	±1°C at 37°C
esolution	0.5°C	0.5°C	0.5°C
ontrol Sensitivity	±0.1°C	±0.1°C	±0.1°C
ecovery[2]	1 min.	1 min.	3.5 min.
ir Changes per Hour	6	4	3
TU per Hour [75°C]	290	358	427
xterior L x W x H[3]	23¾ × 25¾ × 26¾" (60.3 × 65.4 × 68cm)	23¾ × 25¾ × 33⅟₁₆" (60.3 × 65.4 × 84cm)	23¾ × 25¾ × 39½" (60.3 × 65.4 × 100.3cm)
iterior D x W x H	18 × 18 × 13½" (45.7 × 45.7 × 34.3cm)	18 × 18 × 20" (45.7 × 45.7 × 51cm)	18 × 18 × 26½" (45.7 × 45.7 × 67.3cm)
hipping Weight	85 lb. (39kg)	98 lb. (44kg)	122 lb. (55kg)
lectrical Requirements[4]	120V 60Hz, 260w, 2.2A	120V 60Hz, 260w, 2.2A	120V 60Hz, 320w, 2.7A
at. No.	**11-690-525D**	**11-690-537D**	**11-690-550D**
ach	1226.46	1477.78	1649.72

Rated average uniformity per ASTM E 1292 Method.*

Door open 30 seconds at 37°C.

Length includes thickness of door; does not include handle.

All incubators include internal accessory outlet that will increase current usage by 5 amps if utilized at its rating.

Fisher Scientific* Isotemp* Compact Incubators

Dependable, trouble-free incubation for tight budget or benchtops

- Compact, lightweight models with bottom-mounted controls for more space savings
- Ideal for biology classrooms or as backup for overloads in microbiology labs
- Handle all but the most critical laboratory incubation requirements
- Choose from two models: 0.67 and 1.3 cu. ft. (19 and 30L)

11-690-516DQ

Simple, safe operation

- Use gravity flow convection design
- Pilot light indicates when unit is turned on
- Reach maximum of 40°C or 65°C within half-hour of startup
- Set temperature on incubator dial to position that corresponds to desired thermometer temperature
- Measure chamber temperature using supplied red-spirit-filled thermometer

Built to last

- Cabinet is made of cold-rolled steel with gray powder-coated finish
- Double-wall construction with 1" (2.5cm) of impregnated fiberglass for enhanced temperature uniformity and consistency
- Aluminum inner chamber facilitates heat transfer
- Doors open 180° for unhindered access to chamber

INCLUDES:

- Both models are supplied with thermometer bracket and non-Mercury thermometer accurate to NIST* tolerances
- Small 0.67 cu. ft. model has one fixed shelf; 1.3 cu. ft. model has two adjustable perforated aluminum shelves
- 120V models come with line cord and grounded NEMA 5-15P plug and are CSA approved
- 240V models are supplied with line cord and NEMA 6-15P plug

WARRANTY:

One year

Model	506DQ	516DQ
Capacity (Chamber Volume)	0.67 cu. ft. (19L)	1.3 cu. ft. (37L)
Temperature Range	5° above ambient to 40°C (9° above ambient to 104°F)	5° above ambient to 65°C (9° above ambient to 149°F)
Temperature Uniformity	±1°C at 37°C	±1°C at 37°C
Temperature Control	±1°C at 37°C	±1°C at 37°C
No. of Shelves	1 fixed	2 adjustable
Interior D x W x H	12 × 12 × 8" (30 × 30 × 20cm)	13 × 13 × 13" (33 × 33 × 33cm)
Exterior L x W x H	14½ × 13½ × 11⅞" (37 × 34 × 30cm)	15 × 15 11/16 × 21" (38 × 40 × 53cm)
Shipping Weight	15 lb. (7kg)	51 lb. (23kg)
Electrical Requirements	120V 50/60Hz, 100w, 0.8A	120V 50/60Hz, 200w, 1.7A
Cat. No.	**11-690-506DQ**	**11-690-516DQ**
Each	767.40	960.96
Electrical Requirements	240V 50/60Hz, 100w, 0.4A	240V 50/60Hz, 200w, 0.8A
Cat. No.	**11-690-507DQ**	**11-690-517DQ**
Each	848.90	970.36

ACCESSORIES

Shelves for Fisher Scientific* Isotemp* Compact Incubators

- Chrome-plated steel
- No-tip design
- Move to any position in seconds

For Oven Model	Dimensions (L × W)	Cat. No.	Each
506G	9½ × 10¾" (24 × 27cm)	**13-245-6S**	43.17
516G	13½ × 13¾" (34 × 35cm)	**13-245-15S**	62.71

Thermo Scientific* Precision* Economy Incubators

Reliable and accurate temperature stability

Select from five models offering a wide temperature range with excellent temperature sensitivity, stability, and uniformity. Ideal for applications involving microbiological determinations; pharmaceutical stability testing; paraffin embedding; crystallization studies; drying and staining procedures; tissue culturing; and coliform determinations.

13-255-7

- Provide 11½ sq. ft. (1m^2) of usable incubation area in no more than 3½ sq. ft. (0.33m^2) of space
- All models feature tough, durable powder-coated exteriors and stainless-steel interiors that resist corrosion and contamination
- Two nontip nickel-plated wire shelves are easy to clean and simplify loading and unloading
- Interior glass door allows for sample viewing without disturbing chamber environment
- Model 13-255-1 has hydraulic temperature control
- All other models feature electronic temperature controller and temperature sensor that maintain heating cycle and ensure temperature accuracy
- Grabber door securely latches for four-point positive seal
- Adjustable exhaust port controls amount of airflow from chamber

INCLUDES:

0° to 100°C thermometer, line cord, and plug

CERTIFICATIONS:

UL listed

Contd. on next page.

*Trademark. See Trademark Reference.

Prices subject to change.

hermo Scientific* Precision* Economy Incubators, Contd.

odel	Gravity Convection			Mechanical Convection	
apacity (Chamber Volume)	**1.4 cu. ft. (39.6L)**	**2.5 cu. ft. (70.8L)**	**4.5 cu. ft. (127.4L)**	**2.5 cu. ft. (70.8L)**	**4.5 cu. ft. (127.4L)**
emperature					
niformity	±1.5°C	±1.5°C	±1.5°C	±1.5°C	±1.5°C
tability	±0.5°C	±0.5°C	±0.5°C	±0.5°C	±0.5°C
ensitivity	±0.5°C	±0.5°C	±0.5°C	±0.5°C	±0.5°C
ecovery Time to 37°C	15 min.	15 min.	15 min.	10 min.	10 min.
xterior × W × H†	19½ × 18 × 28" (49.5 × 45.7 × 71cm)	21½ × 24 × 28" (54.6 × 61 × 71cm)	21½ × 24 × 40" (54.6 × 61 × 101.6cm)	21½ × 24 × 28" (54.6 × 61 × 71cm)	21½ × 24 × 40" (54.6 × 61 × 101.6cm)
nterior × W × H	14 × 12½ × 13¾" (35.6 × 32 × 35cm)	15½ × 18½ × 15" (39.4 × 47 × 38cm)	15½ × 18½ × 27" (39.4 × 47 × 68.6cm)	15½ × 18½ × 15" (39.4 × 47 × 38cm)	15½ × 18½ × 27" (39.4 × 47 × 68.6cm)
hipping Weight	82 lb. (37kg)	126 lb. (57kg)	157 lb. (71kg)	136 lb. (62kg)	167 lb. (76kg)
lectrical Reqts.	115V 50/60Hz, 100w, 0.8A	115V 50/60Hz, 125w, 1.1A	115V 50/60Hz, 150w, 1.3A	115V 50/60Hz, 200w, 1.7A	115V 50/60Hz, 225w, 2.0A
at. No.	**13-255-1**	**13-255-3**	**13-255-5**	**13-255-7**	**13-255-9**
ach	1081.06	1421.06	1680.01	1809.47	2010.54

eight includes vent cap and adjustable feet.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

LOOKING FOR MICROBIOLOGY SUPPLIES?

You'll find media, supplements, sample prep devices and more in the Microbiology section.

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hermo Scientific* Lab-Line* L-C Benchtop Incubators

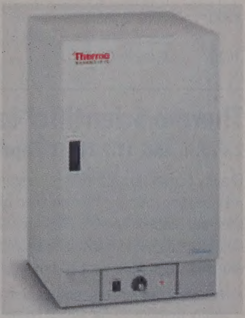
.3 and 5.1 cu. ft. capacities

conomical incubators are ideal for general laboratory incubations requiring temperature range from slightly above ambient to 65°C. Special low-watt-ensity heaters located on outside of chamber walls eliminate hazards ssociated with exposed wire heaters, create increased chamber work pace, and provide superior heat distribution to minimize temperature radient.

- Utilize radiant warm wall heating to achieve maximum temperature uniformity
- Sensitive hydraulic thermostat quickly reacts to sudden temperature changes
- Exterior walls are constructed of durable, enameled steel
- Aluminum interior provides corrosion resistance and excellent heat transfer
- Built-in pilot light indicates when unit is operating

INCLUDES:

Each model contains two removable, perforated aluminum shelves. Units are supplied with 3-wire line cord.



11-702-6Q

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

odel o.	Capacity (Chamber Volume)	Amperage	Exterior L × W × H	Interior D × W × H	No. of Shelves	Shelf Area	Shipping Weight	Electrical Requirements	Cat. No.	Each
03Q	1.3 cu. ft. (36.8L)	1.7 amps	15 × 15 × 21" (38 × 38 × 53.3cm)	13 × 13 × 13" (33 × 33 × 33cm)	2	2.1 sq. ft. (0.2m²)	51 lb. (23.1kg)	120V 50/60Hz, 200w, 1.7A	**11-702-6Q**	1009.00
03Q	5.1 cu. ft. (144.4L)	3.3 amps	21 × 21 × 33" (53 × 53 × 84cm)	18 × 18 × 27" (46 × 46 × 69cm)	2	4.2 sq. ft. (0.4m²)	90 lb. (40.8kg)	120V 50/60Hz, 400w, 3.3A	**11-702-8Q**	1503.00
03-1Q	5.1 cu. ft. (144.4L)	1.7 amps	21 × 21 × 33" (53 × 53 × 84cm)	18 × 18 × 27" (46 × 46 × 69cm)	2	4.2 sq. ft. (0.4m²)	90 lb. (40.8kg)	240V 50/60Hz, 400w, 1.7A	**11-702-9Q**	1503.00

Thermo Scientific* Lab-Line* Laboratory Benchtop Incubators

Select from three compact sizes

Benchtop incubators are specially designed to meet the demands of teaching and clinical laboratories.

All models

- Adjustable air vent and thermometer holder (thermometer included)
- Adjustable bimetallic thermostat controls temperature
- Pilot light indicates when heaters are energized
- Metal-sheathed heaters minimize hazards of open wire internal heating elements
- Exterior walls are constructed of durable, enamel-coated, heavy-gauge steel

Models 100Q, 105Q, and 120Q

- Corrosion-resistant aluminum chamber with 1" (2.5cm) of fiberglass insulation for enhanced temperature uniformity
- Models 100Q and 105Q have a temperature range of slightly above ambient to 40°C
- Model 120Q offers a temperature range from slightly above ambient to 60°C
- Models 100Q and 120Q have insulated metal door with positive latch and vinyl gasket provides an excellent seal
- Model 105Q has clear Plexiglas door; permits unobstructed view of cultures without disturbing chamber atmosphere
- Model 120Q includes removable shelf

11-702-4Q

Models 150Q and 152Q

- Ideal for educational applications
- Temperature range is from slightly above ambient to 45°C
- Clear Plexiglas* door permits unobstructed view of cultures without disturbing chamber atmosphere
- Door includes positive latch for secure seal
- Both models include two perforated aluminum shelves

INCLUDES:
120V models are supplied with grounded, 3-wire line cord.

CERTIFICATIONS:
UL listed

Model	Capacity (Chamber Volume)	Exterior L × W × H	Interior D × W × H	No. of Shelves	Shipping Weight	Electrical Requirements	Cat. No.	Each
100Q	0.67 cu. ft. (19L)	14½ × 13½ × 11¾" (37 × 34 × 30cm)	12 × 12 × 8" (30.5 × 30.5 × 20.3cm)	1, Fixed	15 lb. (6.8kg)	120V 50/60Hz, 100w, 0.8A	**11-702-1Q**	404.51
105Q	0.67 cu. ft. (19L)	14½ × 13½ × 11¾" (37 × 34 × 30cm)	12 × 12 × 8" (30.5 × 30.5 × 20.3cm)	1, Fixed	15 lb. (6.8kg)	120V 50/60Hz, 100w, 0.8A	**11-695-2Q**	408.52
120Q	1.0 cu. ft. (28.3L)	13⅞ × 13½ × 15¾" (35 × 34 × 40cm)	12 × 12 × 12" (30.5 × 30.5 × 30.5cm)	1, Removable	27 lb. (12.2kg)	120V 50/60Hz, 100w, 0.8A	**11-695-1Q**	429.54
150Q	1.3 cu. ft. (36.8L)	13⅞ × 13½ × 15¾" (35 × 34 × 40cm)	12.65 × 13.44 × 12.68" (35 × 35 × 32cm)	2, Fixed	33 lb. (14.9kg)	120V 50/60Hz, 150w, 1.3A	**11-702-4Q**	374.47
152Q	1.3 cu. ft. (36.8L)	13⅞ × 13½ × 15¾" (35 × 34 × 40cm)	12.65 × 13.44 × 12.68" (33.9 × 34.1 × 32.2cm)	2, Fixed	33 lb. (14.9kg)	240V 50/60Hz, 150w, 0.6A	**11-702-5Q**	428.54

Thermo Scientific* Lab-Line* Imperial III Standard Incubators

2.6, 5.2, and 11.2 cu. ft. capacities

Gravity convection incubators combine the advantages of radiant warm wall heating with the convenience of LED temperature display. Single-chamber models (Models 302, 305) are available in two sizes, while dual-chamber Model 310 is available in one size—all designed for work requiring controlled temperatures up to 65°C.

- Hydraulic thermostat controls temperature with a second independent safety thermostat for added protection
- Temperature control ±0.2°C
- Fiberglass-insulated body and door prevent temperature fluctuations and heat loss
- Tempered glass inner door allows inspection of samples without disturbing chamber environment
- Interior walls are fabricated from easy-to-clean, corrosion-resistant aluminum
- All models come with sturdy, nontip, chrome-plated wire shelves, adjustable on ½" (1.3cm) centers
- Convenient top-mounted controls feature large, easy-to-read LED display that continuously indicates chamber temperature

ORDERING INFORMATION:
For added convenience, Models 305 and 310 allow use of shakers, stirrers and other lab appliances inside of chamber via internal electrical outlets. Model 305 features one outlet and Model 310 has two.

INCLUDES:
All models come equipped with resettable circuit breakers for electrical protection. 120V models are supplied with 3-wire line cord and molded plug.

CERTIFICATIONS:
Model 302 is CSA approved.
UL listed.

11-702-10

Model	No. of Chambers	Temperature Uniformity at 37°C	Capacity (Chamber Volume)	Exterior L × W × H	Interior D × W × H	No. of Shelves/Shelf Area	Shipping Weight	Electrical Requirements	Cat. No.	Each
302	1	±1.5°C	2.6 cu. ft. (73.6L)	21 × 16 × 29½" (53 × 41 × 75cm)	17 × 13 × 20" (43 × 33 × 51cm)	2/2.8 sq. ft. ($0.3m^2$)	75 lb. (34kg)	120V 50/60Hz, 300w, 2.5A	**11-702-10**	2209.00
305	1	±0.8°C	5.2 cu. ft. (147.2L)	25 × 20 × 34½" (64 × 51 × 88cm)	21 × 17 × 25" (53 × 43 × 64cm)	3/6.9 sq. ft. ($0.6m^2$)	120 lb. (54.5kg)	120V 50/60Hz, 300w, 2.5A	**11-702-12**	2593.00
310	2	±0.4°C	11.2 cu. ft. (317L)	25 × 39¾ × 34½" (64 × 101 × 88cm)	21 × 37 × 25" (53 × 94 × 64cm)	6/13.8 sq. ft. ($1.3m^2$)	215 lb. (97.5kg)	120V 50/60Hz, 450w, 3.8A	**11-702-16**	4257.00

*Trademark. See Trademark Reference.

Prices subject to change.

Boekel* Digital Incubator

With digital temperature display

or incubating cultures, test kits, eggs and other biologicals in physicians' ffices, or clinical, industrial and school laboratories.

- Compact size ideal for labs restricted by low-hanging cabinetry
- Features an LCD digital temperature display with 0.1°C resolution
- Has rugged metal door, magnetic door latch; provides excellent temperature stability and uniformity
- Supplied with an integral bottom shelf plus one adjustable shelf
- Capacity: 0.8 cu. ft. (22.7L)

- ▸ Maximum temperature: 60°C (140°F). Net weight, 19 lb. (8.6kg)
- ▸ For 120VAC

11-700-107

Exterior L × W × H	Interior D × W × H	Mfr. No.	Cat. No.	Each
14 × 13 × 16¼" (35.6 × 33 × 41.3cm)	12 × 11½ × 10½" (30.5 × 29.2 × 26.7cm)	133000	**11-700-107**	602.48

DRY BATHS

Fisher Scientific* Isotemp* Digital and Analog Dry Bath Incubators

Provide controlled dry heat for a wide variety of clinical and general chemistry applications

Choice of 1- to 6-block Analog Models, 2- or 4-block Digital Models

- Exceptional temperature control and uniformity
- Temperature range of 5°C above ambient to 130°C
- Powder-coated steel body construction provides durability for demanding applications
- Compact design saves valuable bench space
- Choice of interchangeable heating blocks

Digital dry baths with microprocessor controller

- PID microprocessor control, digital temperature setting
- Just press up/down arrows to set temperature in 0.1° increments
- Effectively hold samples at constant, warm temperature
- 5°C above ambient to 130°C range; ±0.4° uniformity at 37°C; stability, ±0.2°C
- Bright LED display continuously shows actual temperature in °C
- Temperature probe in bottom of bath provides improved accuracy and control; free probe included
- Model 125DQ holds two heating blocks; Model 145DQ holds four heating blocks in 2 × 2 configuration

Analog Dry Baths with dual-thermostat controls

- Sloped control panel makes controls highly visible
- Dual bimetallic thermostat controls
- Stability is ±1.5°C, uniformity ±0.5°C at 37°C
- Use thermometer to read current temperature of blocks, then adjust control to reach desired setpoint
- Efficient design: operate at substantially lower external temperature than other models

APPLICATIONS:

deal for enzyme reactions, inactivation of sera, Rh studies, blood cross-matching and cholesterol determinations

Digital Dry Baths 11-715-125DQ, 11-715-145DQ

ORDERING INFORMATION:

All models accept 2 29⁄32L × 3¾W × 2"H (7.4 × 9.5 × 5.1cm) blocks, sold separately.

INCLUDES:

Digital Models come with temperature probe, line cord and plug. Analog Models include high and low thermostat, power switch, pilot light, line cord and plug.

REQUIRED ACCESSORIES:

Heating blocks, sold separately, hold regular tubes, microcentrifuge tubes, square cuvets, or microplates; see Fisher Scientific Isotemp Heating Blocks for Isotemp Analog and Digital Dry-Bath Incubators.

WARRANTY:

One year

CERTIFICATIONS:

Digital Models are CSA approved. Analog Models are UL listed.

Accessories on next page.

No. of Blocks	Electrical Requirements	Overall L × W × H	Shipping Weight	Cat. No.	Each
Digital Dry Baths					
2	120V 50/60Hz, 1.25A, 150w	14 7⁄16 × 8 11⁄16 × 3 5⁄16" (36.1 × 22.1 × 9.1cm)	6 lb. (3kg)	**11-715-125DQ**	807.70
2	240V 50/60Hz, 0.63A, 150w	14 7⁄16 × 8 11⁄16 × 3 5⁄16" (36.1 × 22.1 × 9.1cm)	6 lb. (3kg)	**11-715-126DQ**	819.84
4	120V 50/60Hz, 2.5A, 300w	14 7⁄32 × 10 13⁄16 × 3 5⁄16" (36.1 × 27.4 × 9.1cm)	8 lb. (4kg)	**11-715-145DQ**	1067.67
4	240V 50/60Hz, 1.25A, 300w	14 7⁄32 × 10 13⁄16 × 3 5⁄16" (36.1 × 27.4 × 9.1cm)	8 lb. (4kg)	**11-715-146DQ**	1090.02
Analog Dry Baths					
1	120V 50/60Hz, 0.83A, 100w	7⅝ × 6⅜ × 3⅜" (19.3 × 15.7 × 8.6cm)	5 lb. (2kg)	**11-718Q**	295.37
2	120V 50/60Hz, 1.25A, 150w	8 9⁄16 × 8⅜ × 3⅜" (21.8 × 21.3 × 8.6cm)	6 lb. (3kg)	**11-718-2Q**	435.73
3	120V 50/60Hz, 1.67A, 200w	9⅛ × 11¼ × 3⅜" (23.1 × 28.6 × 8.6cm)	8 lb. (4kg)	**11-718-4Q**	607.49
4	120V 50/60Hz, 2.5A, 300w	12⅜ × 8 5⁄16 × 3⅜" (31.5 × 21.1 × 8.6cm)	8 lb. (4kg)	**11-718-6Q**	729.59
6	120V 50/60Hz, 3.33A, 400w	12 15⁄16 × 11¼ × 3⅜" (32.8 × 28.6 × 8.6cm)	10 lb. (5kg)	**11-718-8Q**	992.52

Fisher Scientific* Isotemp* Digital and Analog Dry Bath Incubators, Contd.

ACCESSORIES

Heating Blocks for Fisher Scientific* Isotemp* Digital and Analog Dry-Bath Incubators

Fit Digital Models 125DQ, 145DQ and Analog Series

- Choose from blocks that hold 6 to 25mm O.D. standard tubes, 15 or 50mL conical-bottom tubes, microcentrifuge tubes
- Solid aluminum construction
- Sample wells are shaped so that heat is evenly transmitted to all parts of the sample tube
- Shape also eliminates the temperature gradient that may invalidate tests

ORDERING INFORMATION:
Dimensions: 2.9L × 3.75W × 2"H (9.5 × 7.4 × 5.1cm).

WARRANTY:
One year

Tube Size	Tubes/Block	Cat. No.	Each
Regular Tubes			
6mm	30	**11-715-305Q**	91.42
10mm	24	**11-715-307Q**	91.42
12-13mm	22	**11-715-309Q**	104.74
15-16mm	12	**11-715-313Q**	158.63
20mm	8	**11-715-317Q**	89.60
25mm	6	**11-715-319Q**	93.21
Combination†	14	**11-718-22Q**	92.05
Conical-Bottom Tubes			
15mL	12	**11-473-70**	202.98
50mL	4	**11-473-71**	202.98
Microcentrifuge Tubes			
0.5mL	30	**11-718-23Q**	100.93
1.5mL	20	**11-718-9Q**	98.20
Square Cuvets			
12.5mm	12	**11-715-321Q**	209.45
Microtiter Plate			
Microtiter Plate‡	1	**11-718-32Q**	230.27

† Combination block has six 6mm, five 13mm, and three 25mm holes.
‡ Microtiter Plate Block occupies space of two blocks.

Fisher Scientific* Isotemp* Model 147Q Dry-Bath Incubator

Holds single heating block in choice of nine well sizes

Ideal for hospitals with smaller volume of enzyme and cholesterol assays, Rh studies and dry incubations.

- Low-watt–density heater is mounted on a 3/32" thick (2.3mm) aluminum heat-distributor plate in the floor of the bath
- Aluminum blocks carry heat uniformly to all sample wells
- Tubes stay dry, minimizing cleanup problems
- Screwdriver-adjusted temperature control between ambient and 95°C; to set, observe thermometer placed in unused sample tube, adjust control through hole in front panel
- Maintains set temperature with constancy and uniformity of ±0.5°C
- Strong nylon case

11-715-102Q

ORDERING INFORMATION:
Dimensions: 6L × 6¾W × 3"H (15 × 17 × 7.6cm).

INCLUDES:
Thermostatically controlled heater, heat indicator lamp, line cord with plug, and instructions.

REQUIRED ACCESSORIES:
Heating blocks sold separately; see below.

WARRANTY:
One year

Electrical Requirements	Cat. No.	Each
120V 50/60Hz, 120w	**11-715-102Q**	307.51

ACCESSORIES

Heating Blocks for Fisher Scientific* Isotemp* Models 147Q and 145Q Dry-Bath Incubators

- Cast-aluminum alloy
- Chemical resistant
- Wells are 48mm deep
- Dimensions: 3.75L × 3W × 2"H (9.5 × 7.4 × 51cm)

WARRANTY:
One year

Tube Size	Wells/Block	Cat. No.	Each
6mm	35	**11-715-105Q**	99.56
10mm	20	**11-715-107Q**	94.62
12mm	12	**11-715-109Q**	99.32
15mm	12	**11-715-113Q**	99.25
16mm	12	**11-715-115Q**	94.44
25mm	5	**11-715-119Q**	99.44
12.5mm square cuvet	12	**11-715-121Q**	105.98

hermo Scientific* Three-Block Solid-State ontrol Modular Dri-Bath* Incubator

mbient to 110°C, ±0.1°C stability

11-716-50Q

Choose from nine interchangeable aluminum alloy heating blocks to heat all standard size test tubes

Compact 14½L × 9W × 4"H (37 × 23 × 10cm)

Convenient side handles

ICLUDES:
ne cord and plug

EQUIRED ACCESSORIES:
equires up to three modular heating ocks (not included); der separately.

CERTIFICATIONS:
UL listed

ectrical Requirements	Mfr. No.	Cat. No.	Each
20V 50/60Hz, 450w	DB16525Q	**11-716-50Q**	952.00

hermo Scientific* Single-Block hermostat-Control Modular Dri-Bath* ncubator

imetallic thermostat control

11-716-68Q

Ambient to 150°C within ±0.5°C

Hold one modular heating block for test tubes (block not included)

Compact 8L × 9W × 4"H (20 × 23 × 10cm)

Convenient side handles

ICLUDES:
ne cord and plug

EQUIRED ACCESSORIES:
equires one modular heating block ot included); order separately.

CERTIFICATIONS:
UL listed

lectrical Requirements	Mfr. No.	Cat. No.	Each
20V 50/60Hz, 90w	DB17615Q	**11-716-68Q**	306.00
30V 50/60Hz, 90w	DB17610Q	**11-716-67Q**	306.00

LOOKING FOR THERMOMETERS?

We have a large selection of Fisherbrand* digital, bimetal and mercury thermometers for virtually any application. See the Temperature section.

Thermo Scientific* Blood Bank Dri-Bath* Incubator

11-715-5Q

Blood Bank Model

Accommodates 12mm diameter tubes for tests requiring fine temperature control

- For crossmatches, indirect Coombs test, Rh titers, Du tests
- 37°C temperature (±0.5°C) is uniform from top to bottom of all 40 wells
- Dimensions: 4½L × 8¾W × 3¼"H (11.4 × 22.2 × 8.2cm)

INCLUDES:
Line cord and plug

CERTIFICATIONS:
UL listed

Electrical Requirements	Mfr. No.	Cat. No.	Each
120V 50/60Hz	DB12215E	**11-715-5Q**	737.00

ACCESSORIES

Microtube Blocks

- For 1.5 and 0.5mL microtubes
- 20-tube capacity

For Microtubes	Mfr. No.	Cat. No.	Each
0.5mL	BK165X20AQ	**11-716-61Q**	146.00
1.5mL	BK165X17AQ	**11-716-59Q**	110.00

Modular Blocks

For use with Thermo Scientific* Dri-Bath* Incubators

With Thermometer Holes

- For use with Thermo Scientific Dri-Bath Modular Incubators
- Anodized aluminum alloy
- Each hole 48mm deep

No. of Wells	Well Diameter	Mfr. No.	Cat. No.	Each
30	6.0mm	BK165X3A	**11-716-52Q**	104.00
20	10mm	BK165X4A	**11-716-54Q**	104.00
	12mm	BK165X12A	**11-716-26Q**	104.00
	13mm	BK165X5A	**11-716-56Q**	104.00
12	15mm	BK165X6A	**11-716-58Q**	104.00
	16mm	BK165X7A	**11-716-60Q**	104.00
	18mm	BK165X13A	**11-716-27Q**	104.00
	20mm	BK165X8A	**11-716-62Q**	104.00
6	25mm	BK165X9A	**11-716-64Q**	104.00

Solid Blocks

- Anodized aluminum
- For customized machining

Mfr. No.	Cat. No.	Each
BK165X2AQ	**11-716-28Q**	104.00

Eppendorf* ThermoStat Plus Interchangeable Block Heater

Compact, benchtop thermostat accurately maintains tube, microplate and vial temperatures between -5° and +99°C

05-400-210

Ideal for molecular biology, enzymatic testing, cell technology, immunological testing and general lab applications.

- Program temperature and run times individually
- 10 different exchangeable thermoblocks
- For special applications, program and store up to four temperature levels and four time phases in succession
- Clear keypad controls with digital display simplify the process
- To operate, select temperature and then press START to activate the time function
- Temperature control is accurate to ±1°C between -5° and +45°C, ±2°C between 45° and 99°C
- Unit heats up at a rate of 4°C/min.
- Cools down at 2°C/min. between 99° and 25°C, 1°C/min. between +25°C and -5°C
- Use accessory thermoblocks to incubate Eppendorf 15 or 50mL conical tubes or microplates
- For Erlenmeyer beakers and vials up to 60mm in height, use the CombiBox Universal Box

ORDERING INFORMATION:
Dimensions: 9⅞L × 8¾W × 4¾"H (25 × 22 × 12cm). Weight: 11 lb. (5kg). With RS-232-C interface. Electrical requirements: 100–240V 50/60Hz, 75w.

Description	Mfr. No.	Cat. No.	Each
ThermoStat, without block	22 67 020-4	**05-400-210**	2205.00

ACCESSORIES

Thermoblocks for Eppendorf* Incubators

- For use with Eppendorf* ThermoStat Plus Thermostat (05-400-210) and Thermomixer R (05-400-205), except CombiBox Universal Block which can only be used with 05-400-210 in a static environment.

Capacity	Mfr. No.	Cat. No.	Each
Exchangeable Thermoblocks			
24 × 0.5mL tubes	22 67 050-6	**05-400-202**	579.00
24 × 1.5mL tubes	22 67 052-2	**05-400-203**	579.00
24 × 2.0mL tubes	22 67 054-9	**05-400-204**	579.00
24 × 5 to7mL tubes, 12mm dia.	22 67 058-1	**05-400-213**	663.00
CombiBox Universal Block			
≤60mmH beakers, vials	22 67 060-3	**05-400-211**	754.00
Adapter Plate			
96 × 0.2mL PCR test tubes	22 67 057-3	**05-400-212**	249.00

Boekel* TropiCooler* Benchtop Hot/Cold Block Incubator

Store frozen restriction enzymes and perform ligations and DNA hybridizations from the bench

05-450-7

- Temperature range: -19° to +69°C (-2° to +156°F)
- Easy temperature selection (settings in 1° increments) and rapid equilibration time
- Digital microprocessor controls Peltier thermoelectric heating and cooling device for efficient, low-maintenance operation
- Dry heat and cold make unit an attractive alternative to ice buckets and water baths

ORDERING INFORMATION:
Dimensions, 11¾L × 9¾W × 7¼"H (29.8 × 24.8 × 18.4cm). Weight, 13 lb. (6kg). For 115V 60Hz, 0.8A, 100w.

INCLUDES:
Two machined aluminum blocks, holding 14 microcentrifuge tubes (1.5mL size) each (additional block configurations available); smoked acrylic plastic lid

Mfr. No.	Cat. No.	Each
260014	**05-450-7**	1820.70

ACCESSORIES

TropiCooler* Incubator Blocks

Ideal for restriction enzymes and DNA libraries

- Machined aluminum blocks with anodized finish and self-contained recessed handle
- Hold 0.5 and 1.5mL microcentrifuge tubes (13-245-114 holds seven of each tube size)
- Dimensions, 2⅛L × 3¼W × 1½"H (5.4 × 8.3 × 3.8cm)

No. of Tubes	Accommodates Tube Size	Mfr. No.	Cat. No.	Each
14	0.5mL	260052	**05-450-3**	84.10
14	1.5mL	260152	**05-450-4**	85.24
14	0.5 and 1.5mL	260055	**13-245-114**	96.60

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

LOOKING FOR SLIDES?

Clear, frosted, colored, and special-purpose microscope slides can be found in the Microscope Supplies section.

ENVIRONMENTAL TEST CHAMBERS

hermo Scientific* Revco* Steady-State Environmental Test Chambers

lanual or automatic control with digital input and display

ide range of applications

- deal for shelf life, stability, burn-in, and reliability testing
- For curing, controlled temperature storage, cleanroom and biomedical research testing and production processes
- Can be customized for specific laboratory needs
- Capacities of 10 and 32 cu. ft. available

eady environmental control system

- Accurate temperature and RH control from 0° to 99°C (32° to 210°F)
- Setpoint/actual temperature display offers resolution of 0.1°C (0.1°F)
- Operates from 20 to 96% RH under ambient conditions of 22°C and 50% RH; typical resolution of 0.1% RH and control to ±2% RH after stabilization
- Temperature uniformity of ±0.5°C throughout chamber is obtained with adjustable airflow ports
- Horizontal recirculating conditioning stream permits flexible shelf-loading patterns
- Includes various heating and cooling modes, making it ideal for multiple applications
- Process and deviation alarm modes, including audible and visual alarms
- Signals overtemperature conditions; high-limit control circuit prevents overheating
- Long-life sheathed heating elements and external power connections increase reliability
- Air-cooled, hermetic compressor provides optimal refrigeration
- CFC-free refrigerant; automatic defrost system kicks in when temperatures fall below 20°C

Sturdy cabinet construction

- Easy-to-clean powder-coated exterior
- Interior chamber of continuously welded, vapor-tight, stainless steel with rounded corners
- Chamber has 2" (51mm) access port on each side for ventilation and independent probe use
- No-tip stainless-steel shelves adjust in 3" (76mm) increments; hold up to 135 lb. (61kg)
- Solid outer door tightly seals with double silicone gasket system

13-989-421

amber Volume	Shelves (Guides)	Exterior L × W × H	Chamber D × W × H	Shipping Weight	Mfr. No.	Electrical Requirements	Cat. No.	Each
cu. ft. (283L)	2 (7 pairs of guides)	29 × 34 × 49" (74 × 86 × 124cm)	25 × 28 × 24" (64 × 71 × 61cm)	550 lb. (250kg)	RTC10-99D	208/230V 60Hz, 29A	**13-989-420**	15,114.25
cu. ft. (906L)	4 (19 pairs of guides)	32 × 39 × 91" (81 × 99 × 231cm)	28 × 33 × 60" (71 × 84 × 152cm)	1350 lb. (613kg)	RTC30-99D	208/230V 60Hz, 32A	**13-989-421**	18,464.82

HYBRIDIZATION

isherBiotech* Hybridization Incubators

eal for nucleic acid and protein hybridizations; eliminate need for water baths and heat sealers

fe and precise

- vailable in small, medium, and dual-chamber models
- ual-chamber model has independent controls, doubles capacity of edium model
- revent overheating: cut heater power in case of temperature runaway
- eat from ambient to 65°C in <20 min.
- ecovery time at 37°C, <2 min. (door open 30 sec.)
- orced-draft convection achieves ±0.5°C uniformity at 55°C
- ample-to-sample uniformity is ±0.25°C

ogram with menu-driven controls

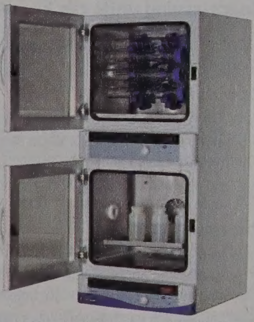
- icroprocessor-based PID controller guides programming
- et temperature from ambient +7.0° to 85.0°C via simple keypad; digital isplay shows your selection
- imple menu option lets you access temperature setpoint deviation uring run
- asy to calibrate: offset feature lets you manually adjust display to match ctual temperature

novative Rotisserie

- asy to load; accommodates tubes from 35 I.D. × 100 to 300mm long
- ual-chamber model comes with two rotisseries
- atented Gentle-Clip* grips hold tubes securely, open easily
- Variable speeds from <5 to 15rpm (±1rpm)
- Accessory rotisserie 13-247-26Q holds 70 × 300mm I.D. tubes

Built to Last

- Durable, light gray painted steel exterior; interior is stainless steel
- Tempered low-beta-emission glass window



Dual-chamber hybridization incubator 13-247-20Q, shown with accessory rocker assembly 13-247-28Q.

ORDERING INFORMATION:

Small- and medium-sized models can be stacked with accessory stacking plate. Optional under-counter mounting bracket available for small model. All models supplied with line cord and plug.

WARRANTY:

One year

CERTIFICATIONS:

CSA approved

Contd. on next page.

FisherBiotech* Hybridization Incubators, Contd.

Model	Small	Medium	Dual Chamber
Capacity (Tubes)	Eight 35 × 100mm, eight 35 × 150mm, or four 35 × 300mm	Twenty 35 × 100mm, twenty 35 × 150mm, or ten 35 × 300mm	Forty 35 × 100mm, forty 35 × 150mm, or twenty 35 × 300mm
Temperature Range	7° above ambient to 85°C	7° above ambient to 85°C	7° above ambient to 85°C
Chamber D × W × H	8 × 15 × 9½" (20 × 38 × 24cm)	12 × 15 × 13" (31 × 38 × 33cm)	12 × 15 × 13" (31 × 38 × 33cm)[1]
Exterior L × W × H	16½ × 18 × 17⅛" (42 × 46 × 43cm)	16½ × 18 × 17⅛" (51 × 46 × 52cm)	20 × 18 × 41" (51 × 46 × 104cm)
Window W × H	14 × 9" (36 × 23cm)	14 × 12" (36 × 31cm)	14 × 12" (36 × 31cm)
Net Weight	43 lb. (19.5kg)	55 lb. (24.9kg)	105 lb. (47.6kg)
Electrical Requirements	120V 60Hz, 3.4A, 308w	120V 60Hz, 3.4A, 308w	120V 60Hz, 6.8A, 616w
Cat. No.	**13-247-10Q**	**13-247-20Q**	**13-247-30Q**
Each	2262.22	3167.38	4690.94
Electrical Requirements	100V 50/60Hz, 2.9A, 214w	100V 50/60Hz, 2.9A, 214w	100V 50/60Hz, 5.8A, 428w
Cat. No.	**13-247-11Q**	**13-247-21Q**	**13-247-31Q**
Each	2280.29	3229.22	4690.94
Electrical Requirements	230V 60Hz, 1.8A, 308w	230V 60Hz, 1.8A, 308w	230V 60Hz, 3.6A, 616w
Cat. No.	**13-247-12Q**	**13-247-22Q**	**13-247-32Q**
Each	2312.31	3228.91	4759.35
Electrical Requirements	230V 50/60Hz, 1.8A, 308w	230V 50/60Hz, 1.8A, 308w	230V 50/60Hz, 3.6A, 616w
Cat. No.	**13-247-13Q**	**13-247-23Q**	**13-247-33Q**
Each	2385.33	3292.02	4864.48

[1] *Each chamber.*

FisherBiotech* Hybridization Tubes

Fit FisherBiotech Hybridization Incubator rotisseries and most rotisseries that accept standard 35 or 70mm dia. tubes

- Thick-walled borosilicate glass
- Include polypropylene cap and silicone O-ring (additional O-rings for 35mm tubes available; contact your Fisher Scientific Customer Service Representative)

Size	Cat. No.	Pack of 2	Case of 3 Pk.
35 × 100mm	**13-247-100**	84.57	----
35 × 150mm	**13-247-150**	94.81	3 Pk./251.71
35 × 300mm	**13-247-300**	103.92	3 Pk./266.46
70 × 300mm	**13-247-70**	63.47	----

ACCESSORIES

Rocker Assembly for Medium and Dual-Chamber Hybridization Incubators

- Rocks large sample containers or preheats bags of buffer
- Back-and-forth motion allows even heat distribution, keeping samples homogenized
- Speed variable from <5 to 15rpm (±1rpm)

For Use with	Cat. No.	Each
13-247-20Q Series and 13-247-30Q Series incubators	**13-247-28Q**	453.03

Thermo Scientific* Hybaid* Shake 'n' Stack Hybridization Ovens

Space-saving units can be safely stacked up to three units high

Excellent temperature uniformity provides reproducible results with low backgrounds.

Operating Features

- Digital temperature control, settable in 0.1°C increments
- Overtemperature control protects samples by pulsing power as the temperature approaches the setpoint, minimizing overshoot
- Variable-speed shaking platform provides linear rocking movement suitable for membrane washing and gel destaining

Rotisserie Features

- Adjustable-speed, Delrin* plastic rotisserie can be easily removed by hand
- Rotisserie and optional shaking platform can be used interchangeably, enabling one unit to be used for both hybridization and washing procedures
- Slipping clutch mechanism allows rotisserie to be stopped by hand, so bottles may be removed and inserted without switching off rotisserie
- Variable-axis rotisserie motion may be used with 35mm bottles for additional end-to-end fluid movement
- Rotisseries hold ten 35mm diameter hybridization bottles up to 300mm long or thirty 50mL plastic tubes up to 30mm in diameter

ORDERING INFORMATION:
120V 50/60Hz

INCLUDES:
10-bottle rotisserie and drip tray (both models); Model HBSNSRS adds shaking platform

HBSNSR

Cat. No.	Style	Each
HBSNSR	Without shaking platform	2178.00
HBSNSRS	With shaking platform	2451.00

Contd. on next page.

*Trademark. See Trademark Reference.

Prices subject to change.

ıermo Scientific* Hybaid* Shake 'n' Stack Hybridization Ovens, Contd.

PECIFICATIONS

ımperature Range	Ambient +8° to 85°C
niformity (within bottle)	±0.25°C
apacity (bottles)	Ten 35 × 250mm or 35 × 300mm bottles or twenty 35 × 150 bottles
ıaking Platform	Yes
ıaking Action	Up/Down
ıaking Platform Area	250 × 180mm
ıaking Speed	1 to 15rpm
otisserie Speed	5 to 20rpm
atform Carrying Capacity	1kg
aximum Power	250w
ıamber D × W × H	9½ × 13⅜ × 9⅝" (24 × 35 × 24.5cm)
cterior L × W × H	15 × 17⅛ × 16¾" (38 × 43.5 × 42.5cm)
eight	46½ lb. (21.1kg)

SERVICE AGREEMENTS

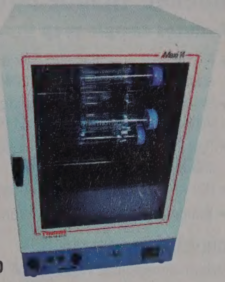
Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

hermo Scientific* Hybaid* Maxi 14 Hybridization Oven

ırge-capacity oven performs hybridization and washing simultaneously

- cellent temperature uniformity provides consistent results with v backgrounds.
- Rotisserie capacity: 14 hybridization bottles
- Digital temperature control, settable in 0.1°C increments
- Overtemperature control protects samples by pulsing power as temperature approaches setpoint
- Slipping clutch mechanism allows rotisserie to be stopped by hand, so bottles can be removed and inserted without switching off rotisserie
- Dual-action shaking platform offers choice of linear or orbital motion for optimization of washing and staining protocols
- Variable-axis motion for additional end-to-end fluid movement



HBMSOV14110

RDERING INFORMATION:

r 110V; Additional accessories are available online, including rotisseries, ttle grippers, tilting wheels, carousels and other platforms

ICLUDES:

ainless-steel rotisserie for 35mm bottles, two 35 × 250mm bottles and e bottle gripper, shaking platform, drip tray

ır	Cat. No.	Each
5mm bottles	**HBMSOV14110**	4955.00

SPECIFICATIONS

Temperature Range	Ambient +8° to 85°C
Uniformity (within bottle)	±0.25°C
Capacity (bottles)	Fourteen 35 × 250mm or 35 × 300mm bottles
Shaking Platform	Yes
Shaking Action	Orbital or linear
Shaking Platform Area	330 × 300mm
Shaking Speed	0–180rpm
Rotisserie Speed	5–15rpm
Platform Carrying Capacity	4kg
Maximum Power	250w
Chamber D × W × H	12⅝ × 13¾ × 20⅛" (32 × 35 × 51cm)
Exterior L × W × H	18 × 17¾ × 27¼" (45.6 × 45 × 69cm)
Weight	100 lb. (45.5kg)

ACCESSORIES

Bottle and Mesh Systems

For use with Thermo Scientific* Hybaid* Hybridization Oven

- Borosilicate glass hybridization bottles absorb over 90% of β-emissions
- Include screw caps with O-rings
- Mesh sheets allow easy handling of blots and permit multiple blots to be processed simultaneously in one bottle

INCLUDES:

Accessory pack includes two 35 × 250mm bottles, bottle gripper, five 23 × 23cm mesh sheets, and hybridization guide; six-position bottle rack (HBBR6) also available

Description	Cat. No.	Price
Bottles		
35 × 150mm	**HBOVBS**	Ea./45.00
35 × 300mm	**HBOVBL**	Ea./56.00
70 × 300mm	**HBOVBXL**	Ea./132.00
Mesh Sheets		
10 × 15cm	**HBOVSM5**	Pk. of 5/52.00
10 × 15cm	**HBOVSM20**	Pk. of 20/160.00
23 × 23cm	**HBOVLM5**	Pk. of 5/76.00
23 × 23cm	**HBOVLM20**	Pk. of 20/265.00
Mesh Roll		
5m × 25cm	**HBOVRM**	Ea./273.00
Rack		
For six 35mm bottles	**HBBR6**	Ea./110.21
Accessory Pack		
----	**HBSNSAP1**	Ea./289.33

Boekel* Jitterbug* Microplate Incubator Shaker

Accepts two standard microplates or strip trays

Ideal for a variety of immunoassay and research applications.

- Microprocessor allows independent control of temperature, shaking speed, and mixing duration
- Warmed inner aluminum bed with air circulation provides temperature uniformity better than ±0.4°C (with cover)
- Inner chamber cover insulates plates, reduces biohazard risk; outer tinted Plexiglas* cover adds insulation and protection from light
- Automatic circulating fan prevents condensation
- Rotating counterweight mixer offers continuous timed operation (575 to 1500rpm in 8 increments) or pulse operation (1500rpm for 3 sec.)
- Timer has 1-second resolution and range of 1 second to 99 minutes, 59 seconds
- Temperature range is ambient to 40°C with resolution of 0.1°C; warms up in 15 minutes
- ABS plastic enclosure with a metal base

11-701-13

ORDERING INFORMATION:
Dimensions: 10L × 10W × 4"H (25.4 × 25.4 × 10.2cm).
Net weight: 7 lb. (3.2kg). For 115V; supplied with 120VAC input, 12VAC 2A output adapter.

Mfr. No.	Cat. No.	Each
130000	**11-701-13**	1915.38

Boekel* InSlide Out* Hybridization Apparatus

Reduces sample prep time

- For microarray and in situ hybridization, immunohistochemistry applications, slide warming and drying
- Sealed chamber permits hybridization and single-slide temperature incubation procedures without need for sealed cover slips
- Reduces preparation time, avoids exposure to fumes from slide-sealing agents
- PID temperature controller ensures rapid heatup and temperature stability
- Temperature range: 5° above ambient to 75°C

ORDERING INFORMATION:
Overall dimensions: 17¾L × 18W × 6"H (45 × 46 × 15cm). Tray dimensions: 11½L × 7½W × ¾"H (29 × 19 × 1.9cm).

INCLUDES:
Stainless-steel slide rack holds up to twenty 1 × 3" slides; as well as various other size slides

WARRANTY:
Two years

Oven (05-450-50) shown with stainless-steel slide rack and cover and optional polycarbonate slide holder.

Mfr. No.	Cat. No.	Each
241000	**05-450-50**	2970.51

ACCESSORIES

Polycarbonate Slide Holders

- Hold up to eighteen 1 × 3" slides only
- Slides are placed in slots for ease in carrying

Mfr. No.	Cat. No.	Each
C2403765	**05-450-19**	384.30

Boekel* Incubator Shaker II

For prehybridization and hybridization of transfer membranes in Southern and Northern blotting techniques

- Eliminates mess of shaking water baths and shakers placed inside conventional incubators
- Three removable shelves each hold blots to 20 × 20cm, Tupperware*-type dishes or heat-sealed bags on supplied trays
- Microprocessor-controlled digital temperature selector; independent analog safety thermostat
- Easy-to-read LCD readout accurate to 1°C
- Shaking speed adjusts from 8 to 25 strokes/min.
- Range: 5° above ambient to 70°C; uniformity, ±1.0°C
- Accuracy: ±1.5°C at 65°C (no load); ±0.7°C at 65°C (dishes or bags)
- Gasket-sealed metal door; acrylic plastic see-through window
- Enameled steel exterior; polished aluminum interior

ORDERING INFORMATION:
Chamber dimensions, 11½D × 11½W × 10½"H (29 × 29 × 27cm). Outside dimensions, 14½L × 12½W × 16"H (36.8 × 31.7 × 40.6cm).Tray dimensions, 8L × 8½W × ½"H (20.3 × 21.6 × 1.3cm)

INCLUDES:
Three trays

11-701-37

Electrical Requirements	Mfr. No.	Cat. No.	Eac
115VAC, 230w	136400	**11-701-37**	2472.3

Boekel* Slide Moat* Incubators

For in situ hybridization from 5° above ambient to 100°C

Versatile microscope slide incubator

- At home in clinical or basic research laboratory
- Designed for in situ hybridization or denaturation, plus all slide drying and warming procedures used in histology, cytology, or pathology
- Range: 5° above ambient to 100°C
- PID controller for easy temperature selection, rapid heating (ambient to 65°C in 20 minutes), and excellent stability (typically ±0.2°C or better throughout operating range)
- Tight-fitting tempered glass lid seals to integral gasket on heating base; airtight seal maintains saturated atmosphere overnight with only a few drops of water
- Accommodates up to 30 standard (1 × 3") microscope or specially designed in situ slides in three rows of 10 each

05-540-31

ORDERING INFORMATION:

Clearance between the lid and pedestal is ⅜" (1cm). Chamber dimensions: 13¾D × 16W × 5¾"H (34.9 × 40.6 × 14.6cm). Net weight: 18 lb. (8.7kg)

Electrical Requirements	Mfr. No.	Cat. No.	Each
115VAC 60Hz	240000	**05-450-31**	1454.96
230VAC 50Hz	240000 2	**05-450-30**†	1640.08

† *International Model.*

LOW TEMPERATURE

isher Scientific* Isotemp* Large-Capacity Refrigerated Incubators

xtra-large chamber holds up to 600 BOD bottles—33% more than standard capacity models

- 30.4 cu. ft. (860L) capacity
- Holds 368 BOD bottles; up to 600 with additional shelves
- Built-in safety thermostat and power-out alarm
- Temperature range: -15° to +50°C (5° to 122°F)
- Digital LED display on door indicates actual chamber temperature
- Microprocessor-based controller helps maintain chamber temperature within 1°C of setpoint
- Sensors monitor chamber temperatures; high- or low-temperature alarm warns of over- or under-temperature condition
- Runaway-temperature guard disables heater when temperature reaches 60°C; fan shuts off when door is opened to preserve atmosphere
- Refrigeration system includes R404A refrigerant, ⅓hp compressor and thick CFC-free urethane foam insulation

ugged and convenient

- Steel interior and exterior surfaces have baked-on white enamel finish: durable, corrosion resistant, easy to clean
- Adjustable 1-½" (3.8cm) stainless-steel legs and casters included
- Door has a keylock and magnetic full-perimeter gasket
- Shelves adjust on ½" (1.3cm) slots, are coated for resilience and corrosion resistance, hold up to 100 lb. (45.3kg) each
- Interior 40w light and 2A electrical outlet inside cabinet

ectrical Reqts.	Chart Recorder	Cat. No.	Each
115V 60Hz, 15A	No	**11-679-304**	7599.67
115V 60Hz, 15A	Yes	**11-679-304RN**	9051.60

ORDERING INFORMATION:

- ▸ Available with or without built-in seven-day recorder with 6" diameter (15cm) chart
- ▸ Exterior dimensions: 33L × 35W × 74"H (83.8 × 88.9 × 188.0cm)
- ▸ Chamber dimensions: 26D × 32W × 65½"H (66 × 81.3 × 163cm)
- ▸ Shipping weight: 360 lb. (163kg)

INCLUDES:

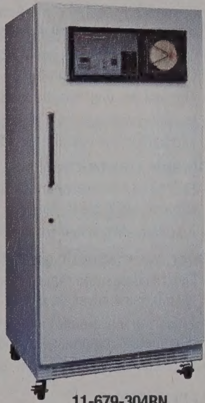
Four shelves, bottom trivet, drip pan, keyed power ON/OFF switch, line cord and plug for NEMA 5-20R outlet

WARRANTY:

One year

CERTIFICATIONS:

CSA/NRTL approved.



11-679-304RN

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

ACCESSORIES

Extra Shelves

Add up to 33% extra capacity

- ▸ Made of coated steel wire
- ▸ Large shelf fits lower half of unit, holds up to 88 BOD bottles; measures 21⁹⁄₁₆L × 31⁷⁄₁₆"W (54.8 × 79.9cm)
- ▸ Small shelf fits upper half of unit, holds up to 77 BOD bottles; measures 19⁵⁄₁₆L × 31⁷⁄₁₆"W (49 × 79.9cm)

Description	Cat. No.	Each
Large Shelf	**11-679-10L**	98.72
Small Shelf	**11-679-10SN**	98.72

Chart Recorder Paper

For 11-679-304RN

- ▸ Circular, seven-day, 6" diameter (15cm)
- ▸ Range is user determinable
- ▸ Comes in package of 60 sheets

Range	Ruled to	Pen Line Resolution to	Cat. No.	Pack of 60
-50° to +50°F/C	2°F/C	0.75°F/C	**15-074-79**	46.13
-50° to 0° or 0° to 50°F/C	1°F/C	0.5°F/C	**15-074-80**	46.13

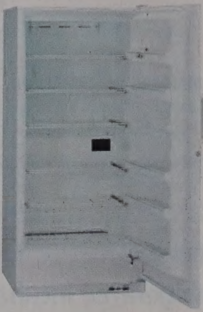
Red Recorder Pens

For 11-679-304RN

Cat. No.	Pack of 6
13-940-997	69.75

Fisher Scientific* Isotemp* Standard-Capacity Refrigerated Incubator

20.3 cu. ft. capacity—holds 300 BOD bottles


11-679-25CN

Safely maintains temperature within 0.5°C

- Microprocessor-based controller with LED display shows setpoint and actual temperature within 0.1°C; no fine tuning needed
- Temperature range: -10° to +60°C (14° to 140°F); uniformity, ±0.5°C; constancy, ±0.2°C
- Safety relay and alarm LED alert to over/under temperature
- Shielded heater and nonsparking fan: no accidental burns
- Zero switching means no RF interference

CFC-free refrigeration

- CFC-free R-134A refrigerant; 186w (¼hp) hermetically sealed compressor; compressor and fan never need lubrication
- Compressor includes energy conservation and overload relays, RTD temperature probe, protected setpoint mode to prevent accidental change
- Thermal dry-wall construction with foamed polyurethane insulation
- In-wall condenser coils distribute antifrost warmth to cabinet sides, top, and back; minimize frost buildup, avoid need for defroster

Durable construction

- Enameled steel exterior, white plastic interior resist rusting, chipping, staining; wipe clean easily
- Adjustable front feet for leveling

Door has magnetic gasket, molded ABS lining, lock and key

- Five fixed-position removable full-width chrome-plated wire shelves; six molded shelves on door
- 2A convenience outlet in chamber for auxiliary shakers, photosynthesis illuminators, recording thermometers
- Door-switched interior light, power switch in chamber, exterior pilot lamp

APPLICATIONS

BOD of sewage and waste flow (APHA method at 20°C incubation); overnight BOD sample preservation at 3° to 4°C; standard culturing at 37°C, vaccine storage at 15°C; fermentation studies, drug stability tests, entomological incubations

ORDERING INFORMATION:

Total storage area: 26 sq. ft. (2.4m^2); 8⅛" (20.6cm) distance between shelves. Dimensions: 28½L × 32W × 70"H (72.4 × 81.3 × 177.8cm). Shipping weight, 283 lb. (128kg).

INCLUDES:

Five removable shelves, one basket, six molded door shelves, moisture collection/evaporation tray, line cord and plug

WARRANTY:

One year

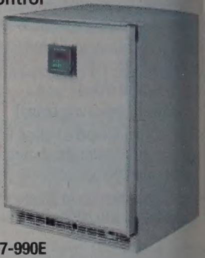
COMPLIANCE:

CSA approved

Electrical Requirements	Cat. No.	Each
115V 60Hz, 8.9A	**11-679-25CN**	4782.99

Fisher Scientific* Isotemp* Undercounter Refrigerated Incubator

6.1 cu. ft. capacity—holds 114 BOD bottles


97-990E

Broad temperature range, precise control

- Range: -10° to +60°C (14° to 140°F); stability, ±0.2°C; uniformity, ±1°C
- Door-mounted microprocessor controller, LED display with readout to 0.1°C
- Chamber safety thermostat set at 62°C; alarm LED alerts to over/under temperature
- Compressor overload relay, RTD temperature probe and protected setpoint mode
- White plastic interior/white enamel steel exterior, foamed polyurethane insulation; door opening from left
- 2A convenience outlet inside chamber
- Two bottom rollers for easy installation and leveling

ORDERING INFORMATION:

Overall dimensions: 24½L × 24W × 34½"H (62.2 × 61 × 87.6cm). Shipping weight, 126 lb. (57kg).

INCLUDES:

Two removable shelves, three molded door shelves, line cord and plug

WARRANTY:

One year

COMPLIANCE:

115V model is CSA approved.

Electrical Requirements	Cat. No.	Each
115V 60Hz, 6A	**97-990E**	3456.96
230V 50Hz, 4A	**97-995EN**	4060.41

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

LOOKING FOR BOTTLES?

You'll find bottles for biochemical oxygen demand analysis in the Bottles/Specialty-BOD section.

*Trademark. See Trademark Reference.

Prices subject to change.

hermo Scientific* Revco* BOD Refrigerated Incubators

rsatile environmental chambers in choice of two sizes

13-990-117

- grammable and nonprogrammable models available.
- deal for shelf life and life cycle testing
- seful for both general incubation and refrigerated storage
- eating/refrigeration systems offer microprocessor-based control, digital emperature display, and high-quality cabinet construction
- efrigeration system has air-cooled, hermetically sealed industrial ompressor; may be turned off when not in use
- orced-air circulation provides maximum temperature uniformity

atures:

- FC-free urethane-insulated cabinet
- orrosion-resistant seamless interior, scratch-resistant exterior acrylic inish
- eyed door lock (except BOD-10A), magnetic door gasket
- emote alarm contacts
- Auto defrost system with condensate evaporator: no drain needed
- Open-wire shelves on 10" (25.4cm) centers; over 20 square feet of shelf space plus utility basket

ogrammable Model BOD-50A features:

- ° to +60°C range with -20°C fixed-setpoint selector switch
- olid-state two-channel controller, seven-day timer programmable in wo-hour increments
- igital temperature display, keyed ON/OFF switch
- larm system: audible/visual warning on high-limit temperature deviation, isual warning on low limit deviation

Nonprogrammable Model BOD-10A features:

- Manual defrost
- 0° to +50°C temperature range

Nonprogrammable Model BOD-30A features:

- Automatic defrost
- -20° to +60°C temperature range

ORDERING INFORMATION:

For the BOD-50A and -30A, shipping weight is 300 lb. (136kg); electrical, 115V 60Hz, 10.6A. For the BOD-10A, shipping weight is 115 lb. (52kg); electrical, 115V 60Hz, 2.9A.

pacity hamber Volume)	300mL BOD Bottle Capacity	Shelves (Fixed/Adjustable)	Exterior L × W × H	Interior D × W × H	Mfr. No.	Cat. No.	Each
grammable							
cu. ft. (566L)	>400	4/0, 1 basket	29 × 33 × 72½" (74 × 84 × 184cm)	22 × 28 × 56" (56 × 71 × 142cm)	BOD 50A	**13-990-117**	5937.00
nprogrammable							
cu. ft. (173L)	92	1/1	26 × 24 × 36" (66 × 61 × 91cm)	21 × 21 × 28" (53 × 53 × 71cm)	BOD 10A	**13-990-204**	3560.00
cu. ft. (566L)	>400	4/0, 1 basket	29 × 33 × 70" (74 × 84 × 177cm)	22 × 28 × 56" (56 × 71 × 142cm)	BOD 30A	**13-990-203**	4701.00

ACCESSORIES

Temperature Recorder

Factory-installed chart recorder for Model BOD-50A Refrigerated Incubator

- Single-pen, 4" chart, seven-day chart drive
- Temperature range: -20° to +60°C (-4° to +140°F)
- Comes with one box of pressure-writing chart paper; no inking required
- Replacement chart paper comes in packs of 50 charts

Description	Mfr. No.	Cat. No.	Each
Temperature Recorder	6330	**13-990-115**	1647.15
Chart Paper	6351	**13-990-116**	77.93

LOOKING FOR CO_2 INCUBATORS?

You will find them at the beginning of the Incubators section.

Thermo Scientific* Precision* Standard Model 815 BOD Refrigerated Incubators

20 cu. ft. capacity with microprocessor control of tempeature

- -10° to +50°C range (14° to 122°F); uniformity, ±0.5°C at 20°C
- Capacity, 20 cu. ft. (566.3L); total shelf area, 15.8 sq. ft. (1.6m^2), plus 5 sq. ft. (0.5m^2) of on-door storage
- Microprocessor controlled: push-button temperature setpoint, high/low-temperature protection, easy-to-read digital display, simple front-panel calibration
- Side-mounted jacks for analog recorder output; rear port for auxiliary equipment in chamber
- Steel exterior, white powder-coated finish: porcelain-steel interior
- Ductwork allows forced air convection
- Six zinc-chromate shelves with stainless-steel supports
- Magnetic door gasket, door lock
- Interior light
- Air circulator

11-679-51

ORDERING INFORMATION:

Dimensions: 30L × 32W × 76"H (76.2 × 81.3 × 193cm). Shipping weight, 315 lb. (142.9kg). With line cord and plug.

CERTIFICATIONS:

UL listed

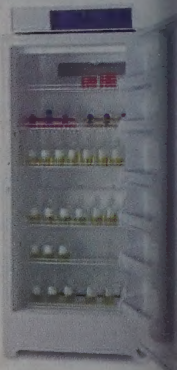
Electrical Requirements	Mfr. No.	Cat. No.	Each
115V 50/60Hz, 7.0A	51221106	**11-679-51**	3807.14
230V 50/60Hz, 3.5A†	51221105	**11-679-53**	4205.26

† *International model.*

Thermo Scientific* Precision* Dual-Program Illuminated Model 818 Plant Growth Refrigerated Incubators

17.8 cu. ft. capacity, programmable heating/light cycles

- Program two heating/light cycles per day for seven days for accurate simulation of diurnal conditions
- 17.8 cu. ft. (504L) capacity
- Temperature ranges: without light, -10° to +50°C (14° to 122°F), ±0.6°C uniformity at 20°C; with light, 10° to 50°C (50° to 122°F), with uniformity of 1.4°C uniformity at 20°C
- Software lock prevents accidental programming changes
- Same microprocessor control features, output jacks and access port as Standard Model (11-679-51)
- Powder-coated exterior, metal/plastic interior



11-679-66

ORDERING INFORMATION:

Dimensions: 30L × 32W × 76"H (76.2 × 81.3 × 193cm). Shipping weight, 350 lb. (158.9kg).

INCLUDES:

Six shelves, two 48" (122cm) fluorescent lamps, line cord and plug

CERTIFICATIONS:

UL listed

Electrical Requirements	Mfr. No.	Cat. No.	Eac
115V 60Hz, 7.5A	3751	**11-679-66**	5651.0
230V 50Hz, 3.75A†	3752	**11-679-67**	6241.9

† *International model.*

Thermo Scientific* Precision* Large-Capacity Incubators

Standard and low-temp models use mechanical convection for uniform heating or cooling of large loads

- 30 cu. ft. (849.5L) chamber volume
- Occupy less than 8 sq. ft. (0.7m^2) of floor space
- Hydraulic thermostat control
- Powder-coated steel exterior; aluminum interior
- Easy to clean and corrosion and chemical resistant
- Built-in, high-temperature safety feature

Standard Model 30M

- Operating range from 5° above ambient to 70°C, with ±0.5°C uniformity at 37°C
- Outside dimensions: 29¼L × 36W × 88½"H (74.3 × 91.4 × 224.8cm)
- Chamber dimensions: 24¼D × 30W × 72"H (61.6 × 76.2 × 182.9cm)
- Shipping weight: 685 lb. (311kg)

Model	Door	Mfr. No.	Cat. No.	Each
30M	Solid	51221095	**11-679-68**	7202.04
	Glass	51221098	**11-679-69**	7641.84
30MR	Solid	51221103	**11-679-71**	8153.06
	Glass	51221104	**11-679-70**	8538.78

Low-temp Model 30MR

- Uniformity of ±0.5°C at 37°C and ±0.4°C at 5°C
- Outside dimensions: 29¼L × 36W × 93½"H (74.3 × 91.4 × 237.5cm)
- Chamber dimensions: 24¼D × 30W × 72"H (61.6 × 76.2 × 182.9cm)
- Shipping weight: 760 lb. (344kg)

ORDERING INFORMATION:

Electrical: 120V 50/60Hz, 12.1A for 30M models; 120V 50/60Hz, 17.9A for 30MR model. Requires hardware installation.

INCLUDES:

Six rod-type cadmium-plated steel shelves, internal duplex outlet and terminal board (without line cord).

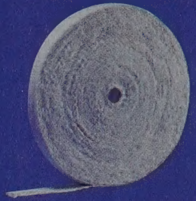
11-679-68

*Trademark. See Trademark Reference.

Prices subject to change.

INSULATION

01-475


01-472A

Fiberglass cloth and tape insulate surfaces, distillation columns and other apparatus. Usable to 538°C (1000°F).

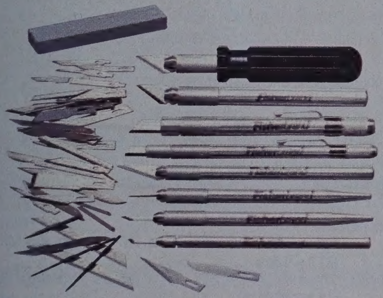
For more options, visit our Web site and search for "**Insulation**".

Description	Cat. No.	Each	Case of
Cloth	**01-475**	382.74	----
Tape, 25mm thickness	**01-472A**	70.14	36/2158.04
Tape, 51mm thickness	**01-472B**	111.28	24/2282.68

KNIVES

*Fisherbrand** General-Purpose Lab Knife Set

For slicing rubber tubing, corks, plant samples,


08-850-5

Blades
- Made of the highest-grade steel
- Ultramicro to heavy-duty cutting edges

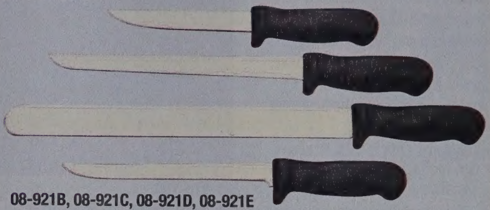
Handles
- Eight different styles
- Positive holding blade locks and nonslip grips
- Balanced for precision cutting

NCLUDES:
- 44 Blades
- 8 Handles
- Aluminum oxide wet/dry sharpening stone
- Plastic carrying case with magnets to keep blades in place

Cat. No.	Each
08-850-5	72.49

*Fisherbrand** Heavy-Duty Knives

Polypropylene handles are molded directly onto blade


08-921B, 08-921C, 08-921D, 08-921E

- Instruments of extremely hard, high-carbon, no-stain surgical-grade chromium steel (400 Series)
- Handles are chemical- and temperature-resistant
- Textured surface to ensure nonslip grip

COMPLIANCE:
Meet specifications of National Safety Foundation

Type	Blade Length	Cat. No.	Each
Skin	6" (15.2cm)	**08-921B**	102.07
General	8" (20.3cm)	**08-921E**	112.42
General	10" (25.4cm)	**08-921C**	110.20
Brain	14" (35.5cm)	**08-921D**	120.92

*Fisherbrand** Razor Blades

Single-edged carbon steel blades

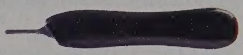
- Cutting edge on each blade protected by paper shell

Cat. No.	Pack of 100	Case of 50 Pack
12-640	24.77	967.65

BD* Surgical Blade Handles

For postmortem work, trimming light plaster casts, and similar forceful cutting

- Strong plastic handles provide secure palm-fitting grip
- Bard-Parker* brand
- Blades slide on smoothly and securely (sold separately)
- Use blade sizes 10, 11, 12, 15 for handle size 5
- Use blade sizes 20, 21, 22, 23 and 25 for handle size 6
- Use blade size 60 for handle size 8


08-915A

08-915B

08-915C

Size	Length	Mfr. No.	Cat. No.	Each	Case of 5
5	$4\frac{13}{16}$" (12.4cm)	371050	**08-915A**	22.19	92.50
6	$5\frac{3}{16}$" (13.1cm)	371060	**08-915B**	22.19	92.50
8	$5\frac{9}{32}$" (13.4cm)	371080	**08-915C**	23.87	99.50

LOOKING FOR MORE KNIVES?

A wide variety of knives and accessories can be found online.

Visit www.fishersci.com and search for Knives

Brady* LABXPERT* Handheld Labeler

Increase labeling efficiency in your lab

11-878-100

Produce professional-looking labels for your lab samples and drastically reduce labeling time. Label vials, vial tops, slides, well plates and more, quickly and easily with durable materials designed specifically for the lab environment.

- Labels will not fall off or smear, can fit more information, and are always legible
- 300dpi print head for crisp, clear printing even on the smallest labels using the smallest fonts—from 1 to 32mm
- Auto-serialization lets you produce 40 labels in less than two minutes—80% faster than handwriting
- One-touch time and date stamping
- Barcoding—2D and linear (code 39 and 128)
- Over 140 lab-specific Greek, research, and safety symbols
- PC connectivity to download print jobs
- Drop, Lock & Go Smart Cartridge combines labels and ribbon for a quick and easy change
- "AA" battery or AC power operation
- Optional IdentiLab* Software enables you to create labels on your PC and download database information in three simple steps
  - Easy interface with spreadsheets and many other programs
  - Increase your text options with more fonts, symbols and sizes
  - Work in an easy "click and drag" environment

ORDERING INFORMATION:

Variety of LABXPERT labels for numerous lab applications are available separately.

INCLUDES:

Printer, AC power supply[†], PC cable, supply cartridge, and CD with manuals and driver

Description	Mfr. No.	Cat. No.	Each
LABXPERT Printer	LABXPERT-KEY	**11-878-100**	481.00
LABXPERT Printer (Intl.)	LABXPERT-KEY-INTL	**11-878-101**[†]	480.55
LABXPERT Printer and IDENTILAB single-user software	LABXPERT-KEY-IDL	**11-878-159**	697.00
IDENTILAB Software			
Single user	IDL	**11-878-155**	295.37
Site license	IDL-SITE	**11-878-156**	995.00
Printer Accessories			
Hard case	LABXPERT-HC-KEY	**11-878-102**	75.38
AC adapter	XPERT-AC	**11-878-103**	60.25
Serial PC cable	PCCABLE-1	**11-878-107**	17.05

[†] *International model includes international AC power supply.*

ACCESSORIES

Nylon Cloth Labels

- Withstand liquid nitrogen to -196°C (-321°F), freezer to -80°C (-112°F), and autoclave to +121°C (+250°F)
- Ideal for performance and general-purpose lab labeling
- Matte white with permanent adhesive; thicker construction makes this material durable, yet easy to handle
- Style: Freestanding

NOTE:

Not suitable for use on glass in liquid nitrogen.

For Vial Size	Size	Labels/ Cartridge	Mfr. No.	Cat. No.	Each
For Centrifuge, Eppendorf*, and PCR Tubes					
0.5-0.7mL	1.0 × 0.375" (25.4 × 9.5mm)	300	X-118-499	**11-878-137**[1]	51.48
0.5-0.7mL	1.0 × 0.5" (25.4 × 12.7mm)	300	X-120-499	**11-878-136**[1]	52.62
1.0-8.0mL	1.0 × 0.5" (25.4 × 12.7mm)	300	X-117-499	**11-878-135**[2]	52.62
For Cyro Vials and Tubes					
0.6mL	0.825 × 0.375" (21 × 9.5mm)	275	X-130-499	**11-878-114**	34.74
1.0-8.0mL	1.0 × 0.5" (25.4 × 12.7mm)	225	X-131-499	**11-878-116**	53.94
14-15mL	1.25 × 1.5" (31.75 × 28.1mm)	200	X-132-499	**11-878-117**	53.77

[1] *With 0.375" label dot*
[2] *With 0.440" label dot*

FreezerBondz* Polyester Labels

- Withstand liquid nitrogen to -196°C (-321°F) , freezer to -80°C (-112°F), and autoclave to +121°C (+250°F)
- Matte white with permanent acrylic adhesive
- Will adhere to a frozen or frosted surface without the need to scrape or dry the vial before placement of the label
- Suitable for glass and polypropylene surfaces

NOTE:

To be assured that label stays secured when placed back into storage, label should wrap around the vial and slightly overlap itself.

For Vial Size	Size	Labels/ Cartridge	Mfr. No.	Cat. No.	Each
For Cryo Vials and Tubes					
0.6mL	1.25 × 0.375" (31.8 × 9.5mm)	500	X-112-490	**11-878-108**	57.20
1.0-8.0mL	0.6 × 1.8" (15.2 × 45.7mm)	225	X-126-490	**11-878-113**	46.43
1.0-8.0mL	1.0 × 1.75" (25.4 × 44.5mm)	225	X-125-490	**11-878-112**	46.43
14-15mL	1.5 × 2.2" (38.1 × 55.9mm)	175	X-113-490	**11-878-109**	60.13
For Conicals and Large Tubes					
50 conical	1.5 × 3.75" (38.1 × 95.3mm)	100	X-114-490	**11-878-110**	43.51

Polyester Slide Labels

- Withstand temperatures from -80°C to +121°C (-112°F to +250°F)
- Material offers permanent adhesion, outstanding chemical resistance, and write-on capabilities
- Resist xylene, toluene, DMSO, and ethanol

Description	Size	Labels/ Cartridge	Mfr. No.	Cat. No.	Each
Standard	0.9 × 0.9" (22.9 × 22.9mm)	350	X-97-488	**11-878-142**	47.81
Oversized	1.9 × 0.25" (48.3 × 6.4mm)	200	X-81-488	**11-878-143**	31.85

ACCESSORIES

Coated Vinyl Cloth Labels

- Withstand freezers to -80°C (-112°F) and autoclaves to +121°C (+250°F)
- Semi-gloss white with removable/repositionable adhesive
- Aggressive tack makes it ideal for use on glass flasks, plastic jugs, bottles, goblets, rough surfaces and general-purpose lab labeling

Size	Labels/ Cartridge	Mfr. No.	Cat. No.	Each
1.0 × 0.5" (25.4 × 12.7mm)	225	X-131-498	**11-878-115**	53.94
1.0 × 1.9" (25.4 × 48.3mm)	125	X-78-498	**11-878-119**	41.22

rady* Lab Pal* Label Printer

reate legible lab labels quickly

11-877-175

sy-to-use, affordable, handheld thermal nsfer printer design makes labeling more ficient.

Prints durable, nonsmearing labels that withstand liquid nitrogen (-196°C) to autoclave and chemicals such as ethanol, IPA, xylene and DMSO

Sizes specifically made for vials, slides, and well plates

0.6mL, 1.5mL, and 2.0mL vial sizes preprogrammed into printer to make labeling samples quick and simple

Features time/date stamp, banner mode, serialization for aliquotting, five font sizes, and special laboratory symbols

RDERING INFORMATION:

eight (with batteries and quick "drop-in" tape cartridge): 1¼ lb. (0.5kg).
× W × H: 9 × 4½ × 2½" (23 × 11.4 × 6.4cm).

QUIRED ACCESSORIES:

es six "AA" batteries (not included) or AC power with optional adapter ld separately).

MPLIANCE:

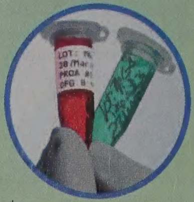
C Class A approved.

scription	Mfr. No.	Cat. No.	Each
b Pal Label Printer	LABPAL	**11-877-175**	249.99
Adapter	81002	**11-878-02**	33.92
rrying Case	81004	**11-878-03**	46.52

ACCESSORIES

Lab Pal* Printer Labels

Can be used in a wide range of temperatures—from autoclaves to freezers



- Durable, chemical-, and solvent-resistant labels for use with portable Lab Pal printer
- Oversized liner allows easy label removal
- White matte polyester and white matte nylon cloth are ideal for vial identification
- White matte polyester that is recommended for use in only freezers and autoclaves is xylene-resistant and ideal for slide identification

ORDERING INFORMATION:

Roll length: 21' (6.4m). Additional labels available. For ordering information, contact your Fisher Scientific Customer Service Representative or visit our Web site.

Material	Recommended for	Cat. No.	Each
For 0.6mL Vials; Width ⅜" (1cm)			
White Matte Polyester	F, N, A, H, L	**11-877-176**	22.50
White Matte Nylon Cloth	F, N, A	**11-878-07**	50.95
White Matte Polyester	F, A	**11-877-177**	23.58
White Glossy Polyester	F, A	**11-878-04**	39.85
Clear Glossy Polyester	F, A	**11-878-05**	39.85
White Glossy Vinyl	F	**11-878-06**	22.64
For 1.5mL Vials; Width: ½" (1.3cm)			
White Matte Polyester	F, N, A, H, L	**11-877-178**	21.87
White Matte Nylon Cloth	F, N, A	**11-878-11**	27.41
White Matte Polyester	F, A	**11-877-179**	23.58
White Glossy Polyester	F, A	**11-878-08**	39.85
Clear Glossy Polyester	F, A	**11-878-09**	21.44
White Glossy Vinyl	F	**11-878-10**	42.09
For 2.0mL Vials; Width ¾" (1.9cm)			
White Matte Polyester	F, N, A, H, L	**11-877-180**	25.95
White Matte Nylon Cloth	F, N, A	**11-878-15**	57.62
White Matte Polyester	F, A	**11-877-181**	26.45
White Glossy Polyester	F, A	**11-878-12**	44.31
Clear Glossy Polyester	F, A	**11-878-13**	23.84
White Glossy Vinyl	F	**11-878-14**	48.74

MATERIAL COMPATIBILITY CODES

F	Freezer Environment
N	Liquid Nitrogen Environment
A	Autoclave Environment
H	Hot Water (100°C [212°F]) Baths
L	Low-profile (extremely thin) Label

Brady* TLS PC Link* Thermal Labeling System

Rugged desktop/portable printer with multiple labeling capabilities

Lightweight desktop/portable printer system has thermal transfer printing, bar coding, and multiple material configuration capabilities.

- Included Windows* drivers permit labels to be printed from LabelMark software (included), as well as BradySoft*, or any software that is Windows compatible; firmware may be upgraded through the mini-Din serial jack
- Printer utilizes TLS2200 printer materials and ribbons, plus bulk rolls of material
- Works with specialty lab materials which are sized to specific vial and tube sizes
- Withstands tough lab conditions including liquid nitrogen, freezer autoclave, xylene, ethanol and DMSO
- Prints up to 500 labels between charges
- Uses AC power or rechargeable battery pack

ORDERING INFORMATION:
Replacement power supply/battery charger and rechargeable battery pack available separately.

INCLUDES:
Comes complete with: Windows* drivers, LabelMark* labeling software, rechargeable battery pack, AC power supply/battery charger, R6210 ribbon, sample labels, Quick Start Guide, manuals, and communications cable.

19-150-100

Description	Mfr. No.	Cat. No.	Ea
TLS PC Link System	TLSPC	19-150-100	595.
Battery Pack	TLSPC-BP	19-150-101	62.
Power Supply/Charger	TLSPC-AC	19-150-102	50.

Brady* TLS2200* Portable Printer

Handheld printer for toughest labeling challenges

Lightweight printer offers manual or PC-connected operation. Automatically serializes, and will also print two copies of each serialized label—one for each end of the run. Works with specialty labels sized to specific vial and tube sizes.

- Withstands tough lab conditions including liquid nitrogen, freezer autoclave, xylene ethanol and DMSO
- Thermal transfer printer delivers crisp, clear, nonsmearing labels
- Simple operation—just drop in labels and push PRINT
- Features memory for label storage, banner printing, built-in label cutter, and PC connectivity
- Provides high-quality 203 dpi resolution
- Adjustable for six different widths of labels
- Handles labels as wide as 2" (5.1cm)
- Prints over 500 labels between battery charges

ORDERING INFORMATION:
Weighs 2¾ lb. (1.2kg).

INCLUDES:
Hard case, R6210 ribbon, battery pack and charger, manual communications cable, test labels, and one cleaning card

COMPLIANCE:
FCC Class A approved

19-150-079

Description	Mfr. No.	Cat. No.	Ea
TLS2200 Portable Printer	TLS2200	19-150-079	797.
Accessories			
Battery Charger	TLS2200-BC	19-150-080	44.
Battery Pack	TLS2200-BP	19-150-081	89.
AC Adapter	TLS2200-AC	19-150-082	119.
Cleaning Kit	PCK-5	19-150-083	12.

Brady* Bradyprinter* Model 1344 Thermal Transfer Printer

Perfect for small- to medium-volume printing

- Compact and economical benchtop printer prints on a variety of materials including polyester, paper, and vinyl
- Offers 300 dpi print resolution, selectable print speeds
- Ideal for general-purpose product identification, wire and cable marking, and laboratory identification
- Prints labels from ¼ to 4¼" (6.4 to 10.8cm) wide, most linear and two-dimensional bar codes, and with many fonts
- Three-button control panel user interface and light indicators

ORDERING INFORMATION:
Net weight: 5¼ lb. (2.4kg). Electrical requirements: 90 to 264VAC, 48 to 62Hz. Optional media stand (22-500-545) available on our Web site.

INCLUDES:
A 32-bit microprocessor, 2MB RAM memory, and a 1MB flash drive

11-877-121

L × W × H	Mfr. No.	Cat. No.	Ea
9½ × 8½ × 6" (24.1 × 21.6 × 15.2cm)	BP-1344	11-877-121	845.

Contd. on next page

*Trademark. See Trademark Reference.

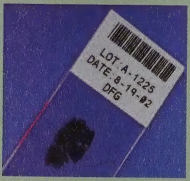
ACCESSORIES

Brady* Labels for TLS2200* and TLS PC Link* Portable Thermal Transfer Printers

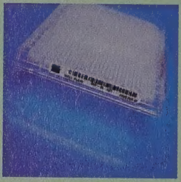
For vials, tubes, slides, dishes and more

- Durable, chemical- and solvent-resistant labels; ink will not smear or fade, and the text stays crisp and readable
- Printable labels allow more information to fit on any size legend
- Choice of materials suitable for different environments from liquid nitrogen to autoclaves
- Special self-laminating or wraparound polyester labels protect print from scratches, extreme temperatures, and chemicals and solvents including xylene, IPA, ethanol, and DMSO

ORDERING INFORMATION:
Labels available in other materials and sizes; contact your Fisher Scientific Customer Service Representative for ordering information or visit our Web site.



11-877-69



11-877-71

MATERIAL COMPATIBILITY CODES

F	Freezer Environment
N	Liquid Nitrogen Environment
A	Autoclave Environment
H	Hot Water (100°C [212°F]) Baths
S	Self-laminating Label
L	Low-profile (extremely thin) Label

Material	Size	Withstands Temperatures	Recommended for	Cat. No.	Pack of
0.5 to 8mL Vial/Tube Labels					
White Matte Nylon Cloth	¾L × ½"W (19 × 13mm)	-196° to +90°C (-320° to +194°F)	F, N, A	**11-877-43**	500/50.67
White Matte Nylon Cloth	⅞L × ½"W (23 × 13mm)	-196° to +90°C (-320° to +194°F)	F, N, A	**11-877-56**	500/52.24
White Self-laminating Polyester	1¾L × ½"W (46 × 13mm)	-70° to +120°C (-94° to +248°F)	F, N, A, H, S, L	**11-877-54**	500/64.50
White Self-laminating Polyester	1⅝L × ⅝"W (41 × 15mm)	-70° to +100°C (-94° to +212°F)	F, N, A, H, S, L	**11-877-62**	250/32.25
White Self-laminating Polyester	2⅝L × 1"W (67 × 25mm)	-70° to +100°C (-94° to +212°F)	F, N, A, H, S, L	**11-877-59**	100/31.73
Yellow Self-laminating Polyester	2⅝L × 1"W (67 × 25mm)	-70° to +100°C (-94° to +212°F)	F, N, A, H, S, L	**11-877-76**	100/31.73
Conical/Bottle/Petri Dish Labels					
White Self-laminating Polyester	3½L × 1½"W (89 × 38mm)	-70° to +100°C (-94° to +212°F)	F, N, A, H, S, L	**11-877-63**	100/42.69
White Matte Nylon Cloth	1⅞L × 1"W (48 × 25mm)	-196° to +90°C (-320° to +194°F)	F, N, A	**11-877-67**	250/72.75
Vial Top Labels					
Yellow Matte Nylon Cloth	⅜" dia. (10mm)	-196° to +90°C (-320° to +194°F)	F, N, A	**11-877-52**	500/37.33
White Matte Nylon Cloth	⅜" dia. (10mm)	-196° to +90°C (-320° to +194°F)	F, N, A	**11-877-72**	500/37.33
Yellow Matte Nylon Cloth	½" dia. (13mm)	-196° to +90°C (-320° to +194°F)	F, N, A	**11-877-00**	500/37.33
White Matte Nylon Cloth	½" dia. (13mm)	-196° to +90°C (-320° to +194°F)	F, N, A	**11-877-73**	500/37.33
White Matte Nylon Cloth	1L × ⅜"W, ⅜" dia. (25 × 10mm, 10mm)	-196° to +90°C (-320° to +194°F)	F, N, A	**11-877-01**†	500/58.25
Slide Labels					
White Polyester	⅞L × ¾"W (23 × 19mm)	-70° to +120°C (-94° to +248°F)	F, A	**11-877-69**	250/29.95
White Polyester	⅞L × ⅞"W (23 × 23mm)	-70° to +120°C (-94° to +248°F)	F, A	**11-877-70**	250/25.00
Well Plate Labels					
White Polyester	1⅞L × ¼"W (48 × 6mm)	-70° to +120°C (-94° to +248°F)	F, A	**11-877-71**	750/72.75

† Set of one Vial/Tube label and one Vial Top label.

Brady* Ribbons

Black ribbons for use with a variety of Brady label materials.

ORDERING INFORMATION:
Ribbon cartridges are 2" × 75' (51mm × 23m). To determine the best ribbon for your application, call your Fisher Scientific Customer Service Representative at **1-800-772-6733.**

Description	Mfr. No.	Cat. No.	Each
R4310 Series	R4310	**19-150-084**	34.16
R6010 Series	R6010	**19-150-085**	34.16
R6210 Series	R6210	**19-150-086**	34.16

Contd. on next page.

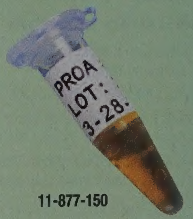
Brady* Labels for TLS2200* and TLS PC Link* Portable Thermal Transfer Printers Accessories, Contd.

ACCESSORIES

Brady* Labels for Desktop Laser Printers

- Ideal for rating plates, asset identification, and general-purpose labeling applications
- Durable, chemical- and solvent-resistant labels for use with a variety of laser printers
- Withstand extreme laboratory environments including liquid nitrogen and freezers

Material	Size	Recommended for	Cat. No.	Pack of
Well Plate Label				
White Matte Polyester	1⅞L × ¼"W (48 × 6mm)	F, A	**11-877-149**	10,000/265.55
Vial/Tube Labels				
White Self-laminating Polyester	1L × 2⅝"W (25 × 7mm)	F, N, A, H, S, L	**11-877-151**	1000/172.21
	2⅝L × ⅝"W (25 × 15mm)	F, N, A, H, S, L	**11-877-152**	2500/639.09
	1L × ½"W (25 × 13mm)	F, A	**11-877-155**	10,000/361.32
White Matte Nylon Cloth	1L × 1½"W (25 × 38mm)	F, N, A	**11-877-150**	2500/585.60
Vial Top Labels				
White Matte	⅜" dia. (10mm)	F, N, A	**11-877-153**	2500/145.24
Nylon Cloth	½" dia. (13mm)	F, N, A	**11-877-154**	2500/168.49



11-877-150

MATERIAL COMPATIBILITY CODES

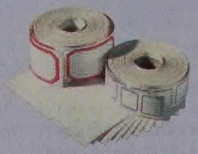
F	Freezer Environment
N	Liquid Nitrogen Environment
A	Autoclave Environment
H	Hot Water (100°C [212°F]) Baths
S	Self-laminating Label
L	Low-profile (extremely thin) Label

LABELS

*Fisherbrand** Self-Adhesive Labels

Available in three styles

- Labels with pressure-sensitive mastic stick to almost any surface without moistening
- Easily marked with pencil, pen, ballpoint or felt-tip marker
- Latex-impregnated paper with adhesive backing conforms to rounded surfaces
- Easy to remove in one piece without leaving residue



11-870 and 11-850 Series

ORDERING INFORMATION:

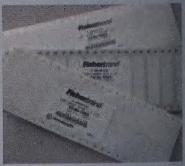
Blue border labels in roll of 1200 labels; red border labels in dispenser box; plain white labels on sheets.

L × W	Cat. No.	Pack of	Case of 10 Pk.
Labels with Blue Border			
1 × 1" (25 × 25mm)	**11-870**	1200/27.00	----
Labels with Red Border			
1 × ¾" (25 × 19mm)	**11-850F**	1080/18.35	----
1¼ × 1" (32 × 25mm)	**11-850E**	900/18.35	----
1⅜ × 1" (35 × 25mm)	**11-850D**	720/18.35	----
1⅝ × 1¼" (41 × 32mm)	**11-850C**	720/18.35	----
2 × 1½" (51 × 38mm)	11-850B	540/18.35	----
¾" (76 × 44mm)	**11-850A**	360/18.35	----
Rectangular Plain White Labels			
½ × 5⁄16" (13 × 8mm)	**11-863A**	1000/16.00	136.64
½" (19 × 13mm)	**11-863B**	1000/17.55	149.69
⅞ × ⅞" (22 × 22mm)	**11-863C**	1000/16.00	136.64
¾" (25 × 19mm)	**11-863D**	1000/16.00	136.64
" (38 × 19mm)	**11-863E**	500/16.00	136.64

*Fisherbrand** Lab-Labl Adhesive Lab Labels

Won't stick to latex or vinyl gloves

- Ideal for use in blood banks and hospitals—anywhere that gloves are used
- Permanent adhesive adheres to test tubes and other surfaces
- Labels suited for use in freezers and water baths
- Peel-off labels do not leave residue on tubes or gloves
- Smudge resistant
- Easy to reposition



Top to bottom: 15-922, 15-924, 15-923

L × W	Cat. No.	Pack of 500	Case of 4 Pk.
1½ × 7⁄16" (38 × 11mm)	**15-923**	11.57	38.89
3 × ¾" (76 × 19mm)	**15-924**	26.90	92.00
3 × 1 15⁄16" (76 × 49mm)	**15-922**	38.03	130.07

*Fisherbrand** Microscope Slide Labels

Quickly identify slides

- White peel-off labels are die-cut on paper backing

ORDERING INFORMATION:

40 labels per sheet, 25 sheets per pack (1000 labels total).

15-910

L × W	Cat. No.	Pack of 1000
⅞ × ⅞" (2.2 × 2.2cm)	**15-910**	14.78
15⁄16 × 15⁄16" (2.4 × 2.4cm)	**11-885**	39.62

*Fisherbrand** Tamper-Evident Labels

Cost-efficient means of security

- For use whenever tamper-evident seals are necessary
- Permanent adhesive
- Available in white paperstock imprinted with "Do Not Use If Protective Seal Is Broken" or blank red acetate

15-956, 15-955

Material	L × W	Cat. No.	Pack of 1000
Imprinted white paperstock	3⅞× ½" (9.8 × 1.3cm)	**15-955**	14.26
Blank red acetate	5½ × ½" (14 × 1.3cm)	**15-956**	38.67

*Fisherbrand** Lab Hazard Warning Labels with Dispenser

Printed in safety colors

- Dispenser supplied with four pressure-sensitive tape rolls preprinted with warnings in safety colors: POISON (yellow on black); CORROSIVE (black on yellow); FLAMMABLE (red on white); and RADIOACTIVE (red on yellow)
- Serrated tear-off edge for easy tape separation
- Approximately 200 imprints per roll
- Refill rolls available separately

15-925

ORDERING INFORMATION:

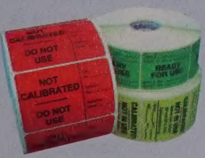
Each tape roll measures ½"W (13mm) × 22 yd.L (20m).

Description	Cat. No.	Each	Case of 4
Dispenser with Tape Rolls	**15-925**	122.29	----
Tape Refills			
Radioactive	**15-931**	18.85	64.47
Poison	**15-932**	17.73	60.65
Corrosive	**15-933**	18.24	62.39
Flammable	**15-934**	18.18	62.18

*Fisherbrand** ACA Labels

Determine equipment status at a glance

- Designed for use with Automated Clinical Analyzers (ACA)
- Brightly colored, pressure-sensitive labels allow operators to check if equipment is calibrated or not
- Color-coded labels: red for "Not Calibrated—Do Not Use"; green for "Ready for Use"; and yellow for "Calibrated—Not in Use"
- Paper labels may be written on



Left to right: 15-944, 15-946 (top), 15-945 (bottom)

Message	L × W	Cat. No.	Pack of 1000
Not Calibrated—Do Not Use	3 × 1 15/16" (7.6 × 4.9cm)	**15-944**	37.01
Calibrated—Not in Use	1⅞ × 1⅞ " (4.8 × 4.8cm)	**15-945**	63.97
Ready for Use	1½ × 1 15/16" (3.8 × 4.9cm)	**15-946**	51.10

*Fisherbrand** HMIG and NFR Write-On Labels

Ideal for adding vital hazard information to surfaces of small bottles, cans, and other containers

- **HMIG paper labels** are large enough to include the chemical name, common name and manufacturer's name
- **NFR labels** let you write in the chemical name, owner, date, and hazard rating

18-999-789 (top);
18-999-788 (bottom)

ORDERING INFORMATION:

Both labels measure 3⅞L × 1½"W (98 × 38mm).

Description	Cat. No.	Pack of 1000
HMIG	**18-999-788**	40.95
NFR	**18-999-789**	35.12

*Fisherbrand** Biohazard Labels

Quickly identify biohazards

- Hazard communication labels ensure safety and efficiency
- Identify equipment, containers, rooms, materials, experimental animals or combinations of these items that may contain potentially infectious agents
- Easy peel-off labels with pressure-sensitive adhesive

15-920 Series

NOTE:

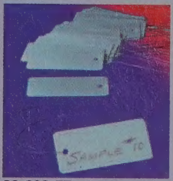
Use in accordance with applicable federal and state regulations.

L × W	Cat. No.	Pack of 1000
1 × 1" (2.5 × 2.5cm)	**15-926**	13.18
3 × 2" (7.6 × 5.1cm)	**15-927**	22.90
5 × 5" (12.7 × 12.7cm)	**15-928**	46.16

*Fisherbrand** Write-On* Metal Tags

Extremely durable aluminum tags

- Can be permanently engraved using an ordinary ballpoint pen
- Can be marked on one or both sides
- Suitable for use in hot, cold or moist environments
- Ideal for tagging samples, cylinders, valves, and tubing; come with wires



06-662-57

L × W	Cat. No.	Pack of 48
3⅛ × 1⅜" (79 × 35mm)	**06-662-57**	33.88

Micryo* Dots and Strips for Cryo Storage

Use in temperatures as low as -196°C (-320°F)

- Suitable for use on microcentrifuge tubes, cryovials, racks, boxes, and microtiter plates
- No need to self-laminate
- Thinner labels mean tubes will still fit most storage systems
- Easy to see—bold colors let you identify samples while in the box
- Unique adhesive formulation for extra staying power

ORDERING INFORMATION:
Available on rolls and laser sheets for inkjet and laser printers. Additional label sizes available at our Web site.

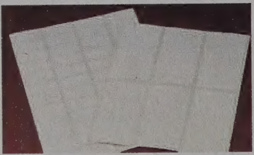
03-391-100 Series

Color	For Use with	Size	Qty.	Cat. No.	Pack
Micryo Strips					
White	1.5 to 2mL tubes	1¼ × ½" (33 × 13mm)	1000/Roll	**03-391-100**	33.95
Micryo Dots					
White	0.5 to 1.5mL tubes	⅜" dia. (9.5mm)	1000/Roll	**03-391-187**	33.95
White	0.5 to 1.5mL tubes	⅜" dia. (9.5mm)	5000/Roll	**03-391-101**	119.48
Rainbow	0.5 to 1.5mL tubes	⅜" dia. (9.5mm)	5000/Roll	**03-391-102**	119.48
White	1.5 and 2.0mL tubes	½" dia. (13mm)	1000/Roll	**03-391-189**	33.95
White	15 and 50mL tubes	¾" dia. (19mm)	1000/Roll	**03-391-103**	28.29
White	15 and 50mL tubes	¾" dia. (19mm)	5000/Roll	**03-391-104**	119.48
Micryo Strips for Laser Printers					
White	0.5mL tubes	1 × ½" (25 × 13mm)	119 Labels/Sheet (20 sheets)	**03-391-108**	67.49
White	1.5 to 2mL tubes	1¼ × ½" (33 × 13mm)	85 Labels/Sheet (20 sheets)	**03-391-106**	67.49
Rainbow	1.5 to 2mL tubes	1¼ × ½" (33 × 13mm)	85 Labels/Sheet (25 sheets)	**03-391-107**	119.48
White	Racks/boxes	2⅝ × 1" (67 × 25mm)	30 Labels/Sheet (20 sheets)	**03-391-110**	56.24
Micryo Dots for Laser Printers					
White	2.0 and 5.0mL tubes	¾" dia. (13mm)	192 Labels/Sheet (20 sheets)	**03-391-111**	78.74
White	15 and 50mL tubes	¾" dia. (19mm)	108 Labels/Sheet (20 sheets)	**03-391-105**	67.49

Nalgene* PolyPaper* Labels

Unaffected by water, UV light, or chemicals

- Spunbonded, polyethylene labels unaffected by salt or fresh water
- Resist ultraviolet light, mildew, chemicals, dirt
- Won't discolor, crack, or tear
- Pressure-sensitive adhesive backs with rounded corners remove easily from backing paper
- Adhere well to any plastic, glass, or metal surface
- Use with all writing devices



11-855A, 11-885D

NOTE:
Not intended for use in photocopiers or laser printers.

ORDERING INFORMATION:
Ten label sheets per pack.

L × W	Labels/ Sheet	Mfr. No.	Cat. No.	Pack	Case of 10 Pack
⅞ × ⅞" (22 × 22mm)	60	6309-0010	**11-855AA**	45.81	305.38
1½ × ¾" (38 × 19mm)	48	6309-0015	**11-855A**	33.92	226.09
2 × 1" (51 × 25mm)	24	6309-0020	**11-855B**	32.45	216.31
3 × 1½" (76 × 38mm)	12	6309-0030	**11-855C**	33.24	221.58
4 × 2" (102 × 51mm)	6	6309-0040	**11-855D**	33.24	221.58

Scienceware* Cleanware* Label-Off* Kit

No more sticky residue

- Removes labels quickly and easily, including gummy residue other cleaners leave behind
- Excellent for use with sample bottles

INCLUDES:
20 lint-free 4L × 4"W (102 × 102mm) wipes

04-441-5

Description	Mfr. No.	Cat. No.	Ea
2 oz. (59mL) bottle	17077-0000	**04-441-5**	19.8

*Trademark. See Trademark Reference.

Prices subject to change.

LABELING TAPES AND DISPENSERS

*Fisherbrand** Colored Label Tapes

15-901 Series

- Strong, durable, oil resistant, waterproof and acid resistant
- Withstand temperatures from -23° to +121°C (-10° to +250°F)
- Can be written on with pen, pencil or permanent marker
- Stick to most surfaces including glass, plastic and metal; remove cleanly and easily
- Come in 14- and 60-yard rolls in a variety of colors

RDERING INFORMATION:
ispensers sold separately.

		14 yd. (13m) Rolls on 1" (2.5cm) Cores			60 yd. (55m) Rolls on 3" (7.6cm) Cores	
ape Width	Color	Cat. No.	Pack of	Case of 4 Pk.	Cat. No.	Pack of
½" 13mm)	White	**15-901A**	6/31.10	110.09	**15-901-15A**	6/66.13
	Yellow	**15-901B**	6/31.10	110.09	**15-901-15B**	6/66.13
	Green	**15-901C**	6/31.10	110.09	**15-901-15C**	6/66.13
	Pink	**15-901D**	6/31.10	110.09	**15-901-15D**	6/66.13
	Red	**15-901E**	6/31.10	110.09	**15-901-15E**	6/66.13
	Orange	**15-901F**	6/31.10	110.09	**15-901-15F**	6/66.13
	Blue	**15-901G**	6/31.10	110.09	**15-901-15G**	6/66.13
	Aqua	**15-901H**	6/31.10	110.09	**15-901-15H**	6/66.13
	Copper	**15-901J**	6/31.10	110.09	**15-901-15J**	6/66.13
	Gray	**15-901K**	6/36.80	130.25	**15-901-15K**	6/69.73
	Lavender	**15-901L**	6/31.10	110.09	**15-901-15L**	6/66.13
	Lime	**15-901M**	6/31.10	110.09	**15-901-15M**	6/66.13
	Rose	**15-901N**	6/31.10	110.09	**15-901-15N**	6/66.13
	Violet	**15-901Q**	6/31.10	110.09	**15-901-15Q**	6/66.13
4" 9mm)	White	**15-901-5A**	4/26.69	94.47	**15-901-20A**	4/59.07
	Yellow	**15-901-5B**	4/26.69	94.47	**15-901-20B**	4/59.07
	Green	**15-901-5C**	4/26.69	94.47	**15-901-20C**	4/59.07
	Pink	**15-901-5D**	4/26.69	94.47	**15-901-20D**	4/59.07
	Red	**15-901-5E**	4/26.69	94.47	**15-901-20E**	4/59.07
	Orange	**15-901-5F**	4/26.69	94.47	**15-901-20F**	4/59.07
	Blue	**15-901-5G**	4/26.69	94.47	**15-901-20G**	4/59.07
	Aqua	**15-901-5H**	4/26.69	94.47	**15-901-20H**	4/59.07
	Copper	**15-901-5J**	4/26.69	94.47	**15-901-20J**	4/59.07
	Gray	**15-901-5K**	4/26.69	94.47	**15-901-20K**	4/59.07
	Lavender	**15-901-5L**	4/26.69	94.47	**15-901-20L**	4/59.07
	Lime	**15-901-5M**	4/26.69	94.47	**15-901-20M**	4/59.07
	Rose	**15-901-5N**	4/26.69	94.47	**15-901-20N**	4/59.07
	Violet	**15-901-5Q**	4/26.69	94.47	**15-901-20Q**	4/59.07
5mm)	White	**15-901-10A**	3/25.68	90.91	**15-901-25A**	3/57.09
	Yellow	**15-901-10B**	3/25.68	90.91	**15-901-25B**	3/57.09
	Green	**15-901-10C**	3/25.68	90.91	**15-901-25C**	3/57.09
	Pink	**15-901-10D**	3/25.68	90.91	**15-901-25D**	3/57.09
	Red	**15-901-10E**	3/25.68	90.91	**15-901-25E**	3/57.09
	Orange	**15-901-10F**	3/25.68	90.91	**15-901-25F**	3/57.09
	Blue	**15-901-10G**	3/25.68	90.91	**15-901-25G**	3/57.09
	Aqua	**15-901-10H**	3/25.68	90.91	**15-901-25H**	3/57.09
	Copper	**15-901-10J**	3/25.68	90.91	**15-901-25J**	3/57.09
	Gray	**15-901-10K**	3/25.68	90.91	**15-901-25K**	3/57.09
	Lavender	**15-901-10L**	3/25.68	90.91	**15-901-25L**	3/57.09
	Lime	**15-901-10M**	3/25.68	90.91	**15-901-25M**	3/57.09
	Rose	**15-901-10N**	3/25.68	90.91	**15-901-25N**	3/57.09
	Violet	**15-901-10Q**	3/25.68	90.91	**15-901-25Q**	3/57.09

Rainbow Packs

Packs with an assortment of colors, including blue, pink, green, red, yellow, orange, and white. 14 yd. (13m) rolls in three widths.

ORDERING INFORMATION:
Dispensers sold separately.

Width	Case Includes	Cat. No.	Case of
½" (13mm)	Blue (3), Pink (3), Green (3), Red (3), Orange (3), Yellow (4), White (5)	**15-901R**	24/106.14
¾" (19mm)	Blue (2), Pink (2), Green (2), Red (2), Orange (2), Yellow (2), White (4)	**15-901-5R**	16/95.14
1" (25mm)	Blue (1), Pink (2), Green (2), Red (2), Orange (1), Yellow (2), White (2)	**15-901-10R**	12/95.09

*Fisherbrand** Labeling Tape

Removes cleanly and easily

- Strong, durable, waterproof, and resistant to oil and acid
- Withstands temperature from -23° to +121°C (-10° to +250°F)
- Can be written on with pen, pencil, or permanent marker
- Will stick to most surfaces including glass, plastic, and metal

15-950 Series
(Orange not available)

Color	Width	Cat. No.	Each
Salmon	¾" (1.9cm)	**15-959**	4.58
White	1½" (3.8cm)	**15-958**	8.42
White	2" (5cm)	**15-950**	8.42
Yellow	2" (5cm)	**15-951**	8.42
Green	2" (5cm)	**15-952**	8.42
Blue	2" (5cm)	**15-953**	8.42
Red	2" (5cm)	**15-954**	8.42

*Fisherbrand** Blue Label Tape

Strong, durable, and waterproof

- Sticks to most surfaces including glass, plastic, and metal
- Removes cleanly and easily
- Resists oil and acid
- Withstands temperatures from -23°C to +121°C (-10°F to +250°F)
- Can be written on with pen, pencil, or permanent marker

15-966

W x L	Cat. No.	Each
¾" × 14 yd. (1.9cm × 127m)	**15-966**	13.95

Fisherbrand* Self-Adhesive Label Tape

All-purpose—even sticks to plastics during autoclaving

- Sticks to glass, plastic, paper, and wood from -23° to +121°C (-9° to +250°F)
- Especially suited for use in autoclave, refrigerator, deep freeze, sterilizer, and incubator
- Easily marked with pencil, pen, ballpoint, and most felt-tip markers
- Removes without residue
- Oil, water, and acid resistant

15-939

Width	Cat. No.	Each	Case of 4
14 yd. (13m) Rolls			
½" (13mm)	**15-937**[1]	21.33	75.51
¾" (19mm)	**15-938**[1]	30.40	107.59
1" (25mm)	**15-939**	20.31	71.89
1½" (38mm)	**15-940**	22.33	79.03
2" (51mm)	**15-941**	24.20	85.68
60 yd. (55m) Roll			
1" (25mm)	**15-935**[2]	55.65	197.00

[1] *Includes dispenser.*

[2] *For dispenser, see 15-936 Dispenser for 60 yd. (55m) Rolls.*

Fisherbrand* Write-On* Tape

Sticks to glass, plastic, paper and wood

- Can be used in temperatures from -23°C to +121°C (-9°F to +250°F)
- Well suited for use in autoclaves, refrigerators, deep freeze, sterilizers, and incubators
- Easily marked with pencil, pen, ballpoint, and most felt-tip markers
- Removes without residue
- Resists oil, water, and acid

15-949

W × L	Cat. No.	Each
½" × 60 yd. (1.3cm × 54.9m)	**15-949**	8.60
1½" × 14 yd. (3.8 × 12.7m)	**15-948**	10.53

Fisherbrand* Autoclave Indicator Tape

Easily distinguish between processed and unprocessed items

- White stripes turn dark during steam sterilization to indicate processing
- Universal adhesive provides secure bonding with fabric and nonwoven wraps, paper, metal, and glass
- Removes easily without any traces of residue
- Can be marked with permanent ink pen after sterilization without any bleeding

11-889-11

W × L	Cat. No.	Each	Case of 48
¾" × 60 yd. (1.9cm × 55m)	**11-889-11**	5.72	219.49

Fisherbrand* White Autoclavable Tape

For steam sterilization

- Excellent adhesive backing sticks securely
- Removes easily without leaving residue
- White steam-sensitive stripes turn black when passed through a steam sterilization cycle

15-905

ORDERING INFORMATION:

Each roll is 60 yd. (55m) long.

Width	Cat. No.	Each
½" (12.7mm)	**15-903**	4.89
¾" (19mm)	**15-904**	5.15
1" (25.4mm)	**15-905**	5.41

Fisherbrand* Color-Coded Autoclavable Identification Tape

Even sticks to PTFE

- Vinyl self-stick tapes color code autoclave items such as surgical instruments for easy identification
- Attaches securely and safely to any clean surface
- Resists water, oil, and acids
- Nontoxic

15-906 (White), 15-901-30 Series

ORDERING INFORMATION:

In 16'L × ⅜"W (5m × 9.6mm) rolls

Color	Cat. No.	Each
White	**15-906**	12.79
Yellow	**15-901-30B**	9.91
Green	**15-901-30C**	6.48
Red	**15-901-30D**	6.48
Orange	**15-901-30E**	6.48
Blue	**15-901-30F**	6.48
Brown	**15-901-30G**	6.48
Aluminum	**15-901-30H**	6.48
Black	**15-901-30K**	6.48

*Trademark. See Trademark Reference.

Fisherbrand* Inventory Label Tape

:onveniently printed for nventory control needs

15-907

- Apply to bottles, boxes, vials—anything for which inventory control must be maintained
- Each label provides space for notations after each of these printed headings: Date Received, Date Opened, Date Expired, and Reorder Number
- Labels can be easily removed after application without leaving residue
- White with dark blue imprint

RDERING INFORMATION:

abels measure 1W × 3"L (2.5 × 7.6cm). Use with 15-942 dispenser sold separately).

/ x L	Cat. No.	Pack of 12
" × 14 yd. (2.5cm × 13m)	**15-907**	144.05

isherbrand* High-Low emperature Tape

extured surface may be stamped or written on

- Withstands temperatures as high as 287.8°C (550°F) and as low as -211.7°C (-384.8°F)
- White, self adhesive

15-947

/ × L	Cat. No.	Each
× 300" (2.5cm × 7.6m)	**15-947**	26.58

isherbrand* Radioactive Tapes

pply to bottles, boxes, and vials—anything that ay be a radioactive material

- Yellow tape with bright red imprint with radiation symbol and "CAUTION RADIOACTIVE MATERIAL" message
- Also available with printed headings for Isotope, Amount, and Date followed by space for notations to identify specific material

15-967

RDERING INFORMATION:

oll size: ¾"W × 14 yd (1.9cm ×13m). Each bel is 3" long (1.9cm). Use with dispenser 5-942 (sold separately).

nprint	Cat. No.	Each
adiation symbol and Caution	**15-967**	8.80
adiation symbol and Caution, d printed headings	**15-943**	8.65

Scienceware* Protective Lab Labeling Tape

Holds up when other tapes give out

11-867 Series

- Clear polyester tape provides versatility for heavy-duty lab use
- Resists moisture, acids, alkalis and organic solvents
- Withstands liquid nitrogen at -196°C (-320°F) or boiling water
- Steam autoclavable at 121°C (250°F)

ORDERING INFORMATION:

Rolls are 36 yd. (32.9m) long. For use with Scienceware dispenser 11-867-50 (sold separately).

Width	Mfr. No.	Cat. No.	Each	Case of
1" (2.5cm)	13453-0010	**11-867A**	16.56	36/477.00
1½" (3.8cm)	13453-0015	**11-867B**	24.69	24/474.00
2" (5cm)	13453-0020	**11-867C**	30.63	24/588.00

Scienceware* Write-On* White Label Tapes

Autoclavable labels for identifying labware, bottles or samples

- For use with pencil, ballpoint pen, or solvent ink marker
- Stick to glass, metal, or plastic
- Resist moisture and most solvents
- Use from -73° to +80°C (-100° to +176°F)

ORDERING INFORMATION:

Supplied in 40 yd. (36.5m) rolls. Colored Write-on tapes available on our Web site.

Width	Mfr. No.	Cat. No.	Each	Case of 24
½" (13mm)	13463-0005	**11-865-28**	9.72	186.70
¾" (19mm)	13463-0075	**11-865-30**	12.35	246.92
1" (25mm)	13463-0010	**11-865-32**	15.32	306.38

ACCESSORIES

Dispenser with Writing Platform

For Write-On* white label tapes

- Smooth, sturdy epoxy-coated steel writing platform suitable for right- or left-handed use
- Built-in cutting edge
- Weighted base with nonskid pads
- Accepts tape rolls with a maximum diameter of 5¼" (133mm)
- Maximum tape reel width: 1" (25mm)

ORDERING INFORMATION:

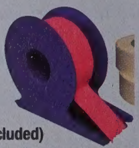
Writing platform: 4L × 6"W (10 × 15cm)

Mfr. No.	Cat. No.	Each
13461-0000	**11-865-35**	61.51

*Fisherbrand** Handheld Dispenser

For a 14 yd. (13m) tape roll

For ½, ¾, or 1" wide (13, 19, or 25mm) tapes on 1" (25mm) core. Plastic construction. Order tape separately.



15-942 (tape not included)

Cat. No.	Each
15-942	17.41

*Fisherbrand** Single-Roll Tape Dispenser

For a 60 yd. (55m) tape roll

For ½, ¾, or 1" wide (13, 19, or 25mm) tapes (see inset) on 3" (7.6cm) core. Metal construction. Order tape separately.

15-936 (tape not included)

Cat. No.	Each	Case of 4
15-936	87.94	308.99

*Fisherbrand** Multiple-Roll Tape Dispensers

Accommodate 1 and 3" cores

- For dispensing multiple rolls with either a 1" dia. (25mm) core (14 yd. [13m] of tape) or a 3" dia. (76mm) core (60 yd. [55m] of tape)
- Accommodate ½, ¾, or 1" wide (13, 19, or 25mm) tapes for a total dispensing width of 9½" (24cm)
- Dispensers stay put with bottom suction cups

15-912

ORDERING INFORMATION:

Order tapes separately.

For	Cat. No.	Each
14 yd. (13m) tape	15-912	31.23
60 yd. (55m) tape	15-909	68.04

LAMPS

Fisher Scientific* Flexible-Arm Light

Three-point articulating arm allows lamp to be moved 360° and adjusted to any position

Ideal for inspection, sample examination and electronics quality control.

- Finger control pivots, raises and lowers lamp
- Light (35w halogen) closely resembles daylight for correct color detection
- Spring counterbalance for easy movement
- Weighted metal base for stability

15-077-66

ORDERING INFORMATION:

Base diameter: 7" (17.8cm). Total weight: 8 lb. (3.63kg). Electrical Requirements: 115V.

INCLUDES:

White reflector and 35w bright halogen white light bulb

CERTIFICATIONS:

UL listed

Arm Length	Cat. No.	Ea
20" (50.8cm)	15-077-65	54.
28" (78.7cm)	15-077-66	65.

LIGHT METERS

Fisher Scientific* Traceable* Dual-Range Light Meter

Measures both lux and foot-candles at a rapid sampling rate of 0.4 seconds

Display update rate is adjustable to 1 or 2 seconds.

- Lux measurements: three ranges from 0 to 1999, 2000 to 19,990 and 20,000 to 50,000 lux; resolution from 1 to 100 lux; accuracy of ±5% plus 10-100 lux
- Foot-candle measurements: three ranges from 0 to 199.9; 200 to 1999 and 2000 to 5000 ft-c.; resolution from 0.1 to 10 ft-c; accuracy of ±5% plus 1-100 ft-c
- Push-button access to highest, lowest, and average of recorded readings
- DATA HOLD function "freezes" display while analog output allows readings to be captured by a recorder
- Photodiode and color-correction filter provide cosine- and color-corrected measurements

ORDERING INFORMATION:

Dimensions: 6½L × 3W × 1½"H (16.5 × 7.6 × 3.8cm). Net weight: 10 oz. (283g).

INCLUDES:

2" diameter (5.1cm) photocell, 40" (1m) cable, 9V alkaline battery, recorder output

REQUIRED ACCESSORIES:

Easy-Use* accessory adapter (11-661-23) is available for conversion to 115V electrical power. Adapter sold separately.

06-662

CERTIFICATIONS:

Includes certificate verifying traceability to NIST*.

Cat. No.	Ea
06-662-63	113.

*Trademark. See Trademark Reference.

isher Scientific* Traceable* Dual-Display Light Meter

arge LCD shows separate readings for lux and oot-candles in 1⅜"H digits, plus selected source laylight, tungsten, fluorescent, or mercury)

ree Ranges

- Measures lux from 0 to 1999, 2000 to 19,990, and 20,000 to 50,000 (with resolutions ranging from 1 to 100 lux)
- Measures foot-candles from 0 to 199.9, 200 to 1999 and 2000 to 5000 (with resolutions ranging from 0.1 to 10 ft.-c)
- Accuracy is ±4.5% of full scale reading

atures

- Zero reference points for daylight, tungsten, fluorescent and mercury; can report percent differential from reference point
- Photodiode and color-correction filter provide cosine- and color-corrected measurements
- Push-button access to highest, lowest, and average readings
- HOLD function freezes display to capture readings
- Optional Data Acquisition System (11-661-22) or Data Logger System 06-662-72) required to transfer readings to computer

06-662-64

INCLUDES:

2" diameter (5.1cm) photocell, 40" (1m) cable, 9V alkaline battery, RS-232-C serial output for connection to IBM*-compatible computer or datalogger.

CERTIFICATIONS:

Includes individually serial-numbered ISO 17025 certificate indicating instrument traceability to standards provided by NIST*.

DERING INFORMATION:

nensions: 7L × 3W × 1½"H (17.8 × 7.6 × 3.8cm). Net weight: 9½ oz. 9g). Easy-Use* 115V adapter (11-661-23), Data Acquisition System -661-22), and Data Logger System (06-662-72) available as accessories.

Cat. No.	Each
06-662-64	193.25

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sher Scientific* Traceable* UV Light Meter

sy-to-use meter with a wide-band UV wavelength of 320 to 390nm

ree Ranges

- to 199.9μW/cm^2 (0.1μW/cm^2 resolution)
- to 19.99mW/cm^2 (0.01mW/cm^2 resolution)
- to 1.999mW/cm^2 (0.001mW/cm^2 resolution)
- ccuracy of ±2% full-scale plus two digits

atures

- onvenient operation and data storage
- ATA HOLD button freezes display to capture readings
- recise photodiode and color-correction filter provide cosine- and color-orrected measurements
- ush-button recall of highest, lowest and average readings
- S-232 port for connection to computer, optional Data Acquisition System 6-661-22, optional Data Logger System 06-662-72 (sold separately)

06-662-65

INCLUDES:

Meter, ¾" diameter (1.9cm) photo cell, 9V battery, 40" (1m) cable, RS-232 output for connection to IBM*-compatible computer or datalogger and carrying case.

CERTIFICATIONS:

Includes individually serial-numbered ISO 17025 certificate indicating instrument traceability to standards provided by NIST*.

DERING INFORMATION:

ensions: 1¼L × 3W × 7"H (3.2 × 7.6 × 17.8cm). Weight., 9½ oz. (269g). ional accessories (available online): 115V adapter 11-661-23; DAS-4* a Logger System 06-662-72 (captures and stores up to 8000 readings); S-3 Data Acquisition System 11-661-22 (captures, displays on monitor, stores readings on any IBM*-compatible computer).

Cat. No.	Each
06-662-65	583.98

LUMINOMETERS

Promega* GloMax* 20/20 Luminometry System

Touchscreen interface simplifies operation

PR-E5311

PR-E5

Key Features

- Units are DLReady* certified for optimum results using Promega's Dual-Luciferase* Reporter Assays
- Promega protocols are preloaded into the software for easy start-up
- Optional automatic injectors enable measurement of flash reactions
- Proprietary circuitry and advanced photon-counting photomultiplier tube (PMT) provide superior signal-to-noise ratios
- Extended dynamic range permits measurement of both dim and bright samples without dilution and minimizes the chance of detector saturation

Additional Features

- Menu-driven prompts guide user through protocol setup
- Up to 18 protocols can be stored for future use
- Unit may be set to start measurement immediately after lid is closed
- Connections, priming, and flushing are simplified because optional injectors fit next to the detection module
- Completely visible plumbing allows inspection of all tubing and tips during flushing and priming
- Spreadsheet interface software allows data to be exported to Excel*
- Software can be programmed to subtract background from all measurements, calculate the average and standard deviation of replicate samples, and report kinetic measurements

ORDERING INFORMATION:

Models are available with a choice of zero, one, or two reagent injectors

Description	Cat. No.	Ea
Without injectors	**PR-E5311**	5965.
With single autoinjector	**PR-E5321**	7865.
With dual autoinjectors	**PR-E5331**	9027.

SPECIFICATIONS

Accepts	1.5mL tubes and 35mm Petri dishes
Photon Counter Spectral Range	350–650nm
Sensitivity	700 molecules of luciferase
Dynamic Range	>8 decades
Injection Volume	25–300μL in 5μL increments (up to 50μL) and 10μL increments (above 50
Measuring Time	1–10 sec. in 1 sec. increments
Interface	RS-232 port
Minimum PC Software Requirements	Windows* 98 or later
L × W × H	12⅞ × 10½ × 8⅜" (32.8 × 26.5 × 21.4cm)
Electrical Requirements	120V 50/60Hz

ACCESSORIES

Modules

Snap-in modules add fluorescence functionality to the GloMax* 20/20 Luminometry System

- Provide high sensitivity DNA, RNA, and protein quantitation
- Available for UV and blue wavelengths

GLOMAX
Fluorescent Module
LIFT KNOB TO RELEASE
Promega
BLUE

PR-E5361

Description	Excitation	Emission	Cat. No.	Each
UV Module	365–395nm	440–470nm	**PR-E5351**	1265.00
Blue Module	465–485nm	515–575nm	**PR-E5361**	1265.00

Light Standard

Quickly and easily verifies the performance of the GloMax* 20/20 Luminometry System

- Checks reproducibility, sensitivity, and linearity
- Reports the status of the instrument in less than 30 seconds

GLOMAX
Light Standard
LIFT KNOB TO RELEASE
Promega

PR-E5341

ORDERING INFORMATION:

Provides three light levels:
High (5–8 × 10^7 RLU),
Medium (5–8 × 10^6 RLU), and
Low (8 × 10^5–1.4 × 10^6 RLU)

Light Emission	Cat. No.	Ea
565nm (±10nm)	**PR-E5341**	681.

LOOKING REPORTER ASSAYS?

See Promego* Dual-Luciferase Reportor Assays in the Cell Biology section.

*Trademark. See Trademark Reference.

Promega* GloMax* 96 Microplate Luminometer

eads both the dimmest and the brightest samples without multiple sample dilutions

ey Features

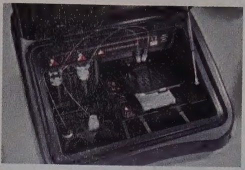
- DLReady* certified for optimum results using Promega's Dual-Luciferase* Reporter Assays
- High sensitivity and broad dynamic range are suitable for both flash- and glow-type luminescence assays
- Proprietary circuitry and advanced photon-counting photomultiplier tube (PMT) provide superior signal-to-noise ratios
- Models are available with a choice of zero, one, or two reagent injectors

dditional Features

- Preloaded protocols simplify operation
- Easy-to-use software guides user through protocol setup
- Software reports data directly to an Excel* spreadsheet
- Connections, priming, and flushing are simplified because optional injectors fit next to the detection module
- Injector arrangement minimizes dispensing problems and simplifies maintenance
- Open architecture enables user to inspect all tubing and tips during flushing and priming

NCLUDES:

ower cable; data cable; Quick Start Guide; five white 96-well microplates; ftware for instrument operation



PR-E6521

PR-E6501

Description	Cat. No.	Each
Without injectors	PR-E6501	12,910.00
With single injector	PR-E6511	15,106.00
With dual injectors	PR-E6521	17,217.00

SPECIFICATIONS

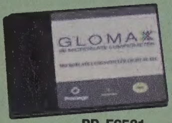
Accepts	96-well microplates
Photon Counter Spectral Range	350–650nm
Sensitivity	3×10^{-21}mol luciferase
Dynamic Range	>9 decades
Injection Volume	Selectable between 25 and 250µL (±1µL)
Measuring Time	0.5–8 sec./well
Interface	RS-232 port
Minimum PC Software Requirements	Windows* 95 or later
L × W × H	19½ × 18¾ × 9¼" (49.4 × 47.6 × 23.6cm)
Electrical Requirements	100–240V 50/60Hz

ACCESSORIES

Light Plate

Quickly and easily verifies the performance of the GloMax* 96 Microplate Luminometer

- Checks sensitivity, reproducibility, and linearity
- Consists of three highly stable light sources at signal levels spanning four decades
- Powered by an easily replaceable battery



PR-E6531

Cat. No.	Each
PR-E6531	903.00

Tubing Replacement Kit for GloMax* 96 Microplate Luminometer

- Contains parts for replacement of two complete fluid paths

INCLUDES:

Two sets of tubing; ten injector tips

Cat. No.	Each
PR-E6541	105.39

LOOKING MULTI-DETECTION MICROPLATE READERS?

To see a full range of Multi-Detection Microplate Readers, see the Microplate Instrumentation section of this book.

Zylux* FB15/Sirius Tube Luminometers

Ideal for all flash and glow assays including luciferase, ATP, aequorin (Ca^{++}), and acridium ester

12-200-18

Accommodate tubes up to 12mm in diameter and 75mm in height, microcentrifuge tubes, 35mm culture dishes, and scintillation vials up to 20mL.

Key Features

- Available with zero, one, or two automatic reagent injectors
- Use short reagent lines and pump-back option to guarantee economical use of reagents
- Begin measurement automatically when the sample door is closed
- Do not require cumbersome internal calibration or a gain switch

FB15/Sirius

- May be used with a PC or as stand alone
- Uses integral microprocessor software for instrument control, data presentation, and user interface
- Supports single- and dual-assay evaluations as well as cut-off calculations
- Provides Windows*-based PC software with the Quick Measurement function for spreadsheet output and database management

APPLICATIONS:

Ideal for all flash and glow assays including luciferase, ATP, aequorin (Ca^{++}), and acridium ester

INCLUDES:

Built-in thermal matrix printer

Description	Cat. No.	Each
With printer	**12-200-17**	6415.00
With printer and one injector	**12-200-18**	8170.00
With printer and two injectors	**12-200-19**	9260.00

SPECIFICATIONS

Type	Single-tube
Photon Counter Spectral Range	300 to 600nm
Sensitivity	Better than 1000 molecules luciferase; ATP limited only by reagents
Dynamic Range	More than 6 decades
Injectors	
Design	Microprocessor controlled bellow-type injectors
Injection Volume	20 to 300μL in 10μL increments
Precision (SD in one series)	20μL: 1%; 100μL <0.5%; 300μL <0.1%
Accuracy	±3μL
Microprocessor Mode of Operation	3 soft keys
Measuring and Delay Time	0.1 sec. increments
Interfaces	RS-232-C, 9-pin male plug
Minimum PC Software Requirements	IBM* compatible PC with Pentium* processor; serial port; Windows 95, 98, or NT 4.0; 8MB RAM (32MB recommended)
Printer	Thermal matrix printer, 40 characters/line
L × W × H	8 × 13 × 9½" (20 × 32 × 23cm); with no injectors
Net Weight	3.9kg (6.8 lb.); with 2 injectors
Electrical Requirements	12V, 2.5A supplied through main adapter (included)

ORION L-Series
NEW

Zylux* Orion L Microplate Luminometer

Provides flexibility and power

Versatile, robot compatible and compact luminometer accepts any luminescence grade 96-well microplates. Powerful and reliable, it incorporates high quality materials and advanced technologies.

- Offers high sensitivity and excellent linear range
- Available with up to two automatic reagent injectors
- Reads any combination of wells: all, columns, rows, rectangles, or individual
- Provides instrument control and data analysis through the included Simplicity PC software for Microsoft* Windows*
- Presents data as a spreadsheet that may be exported to Microsoft Excel* with a single mouse click with standard Simplicity Basic Module
- Provides qualitative and quantitative immunoassay data reduction throug the optional KIM software for Microsoft Windows
- Connects to PC via USB port

APPLICATIONS:

Suitable for all bio-and chemiluminescent applications such as: Reporter Gene Assays, DNA probe Assays, Immunoasssays, ATP Assays, Phagocyte Function Assays, Aequorin-based Ca2$^+$ Assays, Mycoplasma Contamination and Dioxin Contamination

INCLUDES:

Simplicity PC software for Microsoft Windows. Optional: KIM software for Microsoft Windows is also available; contact your Fisher Customer Service Representative.

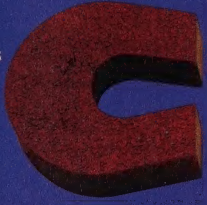
Model	Type	Cat. No.	Each
Orion L-0	No Injector	**12-200-35**	15,075.00
Orion L-1	Single Injector	**12-200-36**	17,450.00
Orion L-2	Dual Injectors	**12-200-37**	19,825.00

SPECIFICATIONS

Type	96-well microplates and strip plates; solid white or black
Photon Counter Spectral Range	300-600nm
Sensitivity	10 attomole ATP
Dynamic Range	6 decades
Injector Design	Microprocessor-controlled syringe-type pumps
Injector Volume	10-150μL per pump in 1μL increments
Mesurement Time	0.1-100s per well
Interfaces	USB, RS-232
Minimum Software Requirements	IBM* compatible PC; serial or USB port; Windows 95, 98, ME, XP, NT 4.0, or 2000 minimum 8MB RAM, 16 colors
L x W x H	15 x 16 x 12" (38.1 x 40.6 x 30.5cm)
Electrical Requirements	115V, 60Hz

MAGNETS

LNICO MAGNETS



Much more powerful than conventional horseshoe magnets
Resist demagnetization
React only slightly to shock

or more information and choices, isit our Web site and earch **Magnets.**

12-013

ize	Cat. No.	Each
-Large	**12-012**	43.10
arge	**12-013**	29.50
mall	**12-014**	17.35

MAGNIFIERS

NON-ILLUMINATED

andheld Round and ectangular Magnifiers

2 magnification

- spheric lenses magnify with awless clarity
- ound style has high-power set lenses for detailed viewing
- omfortable ErgoTouch* grip
- ngled for relaxed reading
- tabilizing edge for second and steadying

12-036 Series

gnification	Diameter	Mfr. No.	Cat. No.	Each	Pack of
R nd					
2	3" (7.6cm)	81-33-03	**12-036A**	20.84	6/106.89
2	4" (10.2cm)	81-33-04	**12-036B**	29.36	6/150.55
2	5" (12.7cm)	81-33-05	**12-036C**	41.24	3/105.75
R tangular					
2	2 × 4" (5.1 × 10.2cm)	81-33-76	**12-035A**	20.99	6/107.66

xed-Focus Magnifier

5 magnification

- r thread counting or ological applications
- ovides sharp, clear image
- ld-out, durable construction

12-064-10

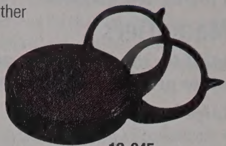
No.	Each
064-10	58.15

Double-Lens Magnifier

5X and 10X magnification

- Two lenses may be used singly or together
- Protective fold-over case
- Vulcanite mounting

ORDERING INFORMATION:
Lens dia.: 1" (2.5cm).



12-045

Cat. No.	Each	Pack of 12
12-045	23.30	237.65

Hastings Triplet Magnifiers

Available in magnifications of 7X, 10X, 14X and 20X

- Hastings lens construction
- Carefully corrected for surface and chromatic aberrations
- Wide angle of view
- Integral fold-over case to protect lens

12-032 Series

Magnification	Diameter	Focal Length	Mfr. No.	Cat. No.	Each
7X	¾" (2cm)	1½" (3.9cm)	81-61-68	**12-032A**	50.36
10X	⅝" (1.6cm)	1" (2.5cm)	81-61-71	**12-032B**	52.58
14X	½" (1.3cm)	¾" (2cm)	81-61-75	**12-032C**	61.74
20X	11⁄32" (0. 88cm)	½" (1.3cm)	81-61-81	**12-050-8**	61.74

Coddington Magnifiers

Available in magnifications of 10X and 14X

- Single glass lens with grooved diaphragm
- Integral fold-over metal case protects lens

12-025 Series

Magnification	Diameter	Focal Length	Mfr. No.	Cat. No.	Each
10X	¾" (2cm)	1" (2.5cm)	81-61-31	**12-025B**	32.83
14X	⅝" (1.6cm)	¾" (2cm)	81-61-35	**12-025C**	35.89

ILLUMINATED

Fisher Scientific* Magnifiers

Ideal for laboratory use and other precision scientific work

12-071-6A, -6B, -6C

Large Magnifier
- Illuminated 2X magnification with 4X spot
- Window is 2¾ × 2¾" (7 × 7cm)
- Overall dimensions: 8½L × 3W × 1"H (21.6 × 7.6 × 2.5cm)

Medium Magnifier
- Illuminated dual 3X and 10X magnifiers
- Window is 1¾ × 1¾" (4.4 × 4.4cm)
- Overall dimensions: 6½L × 2W × ¾"H (16.5 × 5.1 × 1.9cm)

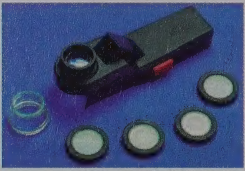
Small Magnifier
- 8X magnification
- Adjustable focusing
- Window is 1" (2.5cm) dia.

INCLUDES:
Illuminated Large and Medium models come with "AA" batteries.

Size	Weight	Cat. No.	Each
Large	7 oz. (198g)	**12-071-6A**	30.12
Medium	4 oz. (113g)	**12-071-6B**	23.03
Small	1 oz. (28g)	**12-071-6C**	15.86

Lenscope* Illuminated Magnifiers

Handheld 7X or 10X Hastings lens


12-038 Series

- Interchangeable triplet lens provides clear image
- Two angled illumination lamps, 45° or 90° from viewing angle
- Storage case

ORDERING INFORMATION:
See our Web site for optional 12-037D scale.

REQUIRED ACCESSORIES:
Two "AA" batteries

Magnification	Dia.	Focal Length	Mfr. No.	Cat. No.	Each
7X	19.8mm	1½" (3.8cm)	81 34 42	**12-038B**	74.58
10X	15.8mm	1" (2.5cm)	81 34 43	**12-038A**	74.58

Fisher Scientific* Magnifier Lamp

2X magnification

12-071-10

- Highly polished optical glass
- Convenient front handle
- Clamps vertically or horizontally to top or side of any edge
- Sliding shutter cover protects lens when not in use
- Large viewing area, 4 × 2½"

INCLUDES:
Lamp, incandescent 60w bulb

COMPLIANCE:
UL listed and CSA approved

Cat. No.	Each
12-071-10	73.16

Illuminated Desk Magnifier

1.75X magnification, 45" (114cm) reach

11-990-55

- Spring-balanced
- Illuminated magnifying lamp
- Optically ground three-diopter glass lens
- Control knobs for adjustments and locking
- Scratch-and nick-resistant polycarbonate shade

ORDERING INFORMATION:
Dia., 5" (13cm); 110V

INCLUDES:
VC-11 clamp, 22w Circline bulb

REQUIRED ACCESSORIES:
Replacement bulbs available, see 12-071-9.

Cat. No.	Each
11-990-55	217.62

Halogen Illuminated Desk Magnifier

1.75X magnification, 45" (114cm) reach

11-990-56 with optional 11-990-60A supplementary magnifier

- Suspension spring-balanced lamp
- Three-diopter glass lens, 5" (30cm)
- 9' (2.7m) three-conductor grounded cord
- Extra 110V outlet at base of lamp

ORDERING INFORMATION:
- 110V, 50/60Hz
- 100w halogen quartz bulb delivers 700 foot-candles—3000K bright white light lasting 2000 hours
- Optional supplementary lenses available: 3-diopter (11-990-60A) and 10-diopter (11-990-60B); order separately

INCLUDES:
VC-11 adjustable clamp; 100w halogen quartz bulb

Cat. No.	Each
11-990-56	231.14

*Trademark. See Trademark Reference.

HOW TO SHIP CRITICAL SAMPLES AND SUBSTANCES

Shipping Diagnostic and Infectious Substances:

In 2007, there were substantial changes regarding transport of infectious substances (UN2814 and UN2900) and biological products (UN3373). These materials are assigned to one of two categories: Biological Substance, Category A or B. In addition, the Dangerous Goods Regulations of the International Air Transport Association (IATA) apply to materials shipped by air. Ready-to-use diagnostic and infectious substance packaging, designed and certified to meet these regulations, takes the guesswork out of shipping biological and infectious substances.

Look for:

Packaging kits that are designed, tested, and certified to comply with US government and international air carrier regulations including:

- 49 CFR, Parts 171 to 178
- IATA Packing Instruction 602 or 650

Storage and Transport of Blood and Tissue Products:

Blood and tissue products have specific time and temperature requirements for operating room storage and blood bank transport, and onsite collection. Maintaining correct temperatures means the difference between usable blood and tissue products and adulterated products that must be discarded.

Look for:

- Containers that are lab pre-qualified to maintain 1°C-6°C while in storage for six hours or more, and 1°C-10°C for up to 24 hours for the temporary storage and transport of packed red blood cells
- All required components and qualification report included
- Stain and impact-resistant, lightweight, insulated storage and transport containers with polyethylene liners that simplify cleanup
- Ergonomic design features such as luggage-style wheels and retractable handle for easy mobility

As a pioneer in hazardous specimen ackaging and recognized expert in emperature assurance, ThermoSafe rands can help you identify compo-ents from our wide selection of con-ainers, foam cushioning, absorbents, nd insulated bio-shippers; or design, est and certify a custom package for ransport of almost any hazardous ubstance. That's how we make the orld ThermoSafe.*

BEFORE YOU BUY SHIPPERS & MAILERS

APPLICATION	PRODUCT MODEL(S)
Transport of UN 3373 biological substances in 95 kPa-certified tubes or 90mL containers	ThermoSafe Brands Models 472 and 473, Model 578 with specified 95 kPa-certified tubes and containers
Transport of UN 3373 biological substances in generic primary receptacles (tubes, vials, cups, etc.)	Thermosafe Brands Models 570 and 571 kits with 95 kPa-certified specimen envelopes
Pre-qualified storage and transport of blood, blood products, vaccines, specimens, medications, tissues and organs	ThermoSafe Medical Transporter Model 930
Transport of specimens and samples without specific temperature requirements	ThermoSafe Medical Transporter Models 931 and 932
Temperature Critical Shipments - +2° to +8°C for 24 up to 48 hours	Nomadic Pre-Qualified Shippers – Models E24A, E48 and E280C
Temperature Critical Shipments - Frozen temperatures for up to 48 hours	Nomadic Pre-Qualified Shippers – Models E48 and E280C

sponsored by:

ThermoSafe®
Temperature Assurance Solutions

Temperature Critical Shipments:

Products that require precise temperature protection for refrigerated and frozen pharmaceuticals, biological specimens, and samples need to be shipped in packaging that will maintain critical product temperatures for specified periods of time – regardless of the in-transit weather conditions. Universal pre-qualified packaging configurations take the guesswork out of finding the right packaging for your products.

Look for:

- Pre-qualified shipping systems that have passed comprehensive thermal and transit testing using ISTA 2A and ISTA 7D standard test protocols
- Qualification reports, including testing criteria and results
- Shipping systems that arrive complete with all components, refrigerants and easy-to-follow pack-out instructions

For a full selection of ThermoSafe® Shippers and Mailers, see pp. 1022–1025.

MAILERS

Fisher*brand** Cardboard Mailing Cartons

Heavy cardboard containers have metal bottoms and screw caps

- Water testing mailers
- For bottles and samples; can also be used for shipping medical and dental apparatus
- Fully assembled with corrugated pads in cover and bottom of tube

03-520 Series

Diameter × Height	Cat. No.	Case of
1¾ × 7" (4.4 × 18cm)	**03-520B**	24/78.00
2¼ × 5¾" (5.7 × 14cm)	**03-520A**	36/105.50
2¼ × 6¾" (5.7 × 17cm)	**03-520C**	36/131.65
3⅛ × 7½" (7.9 × 19cm)	**03-520D**	23/130.50
4 × 10" (10 × 25cm)	**03-520E**	16/132.00

Fisher*brand** Biohazard Mailers

Double-mailing containers with inner aluminum screw-cap receptacle and outer fiberboard screw-cap mailing case

- For etiologic agents, biohazard specimens, TB and HTLV-3 confirmatory test samples, laboratory and slide specimens, reagents and chemicals, glassware and bottles, urine specimen collection
- Both caps have Type SC safety edges
- Mailer 03-523-4 will accommodate different-sized containers used for specimen collection, including 50mL conical bottle and disposable, screw-cap centrifuge tubes

03-523 Series

COMPLIANCE:

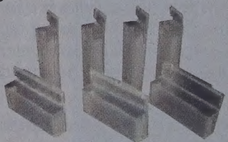
Meet static pressure test 95kPa. Conform with the Interstate Quarantine Regulations for Etiologic Agents (42CFR, Part 72.25) when appropriate labeling and absorbent packing materials are used.

Outer Mailer Size (I.D. × L)	Inner Can Size (O.D. × L)	Cat. No.	Case of
2 × 5" (5.1 × 12.7cm)	1¾ × 4¾" (4.4 × 12.1cm)	**03-523-4**	50/392.23
1¾ × 7" (4.4 × 17.8cm)	1½ × 6⅜" (3.8 × 16.2cm)	**03-523-5**	24/179.54
2³⁄₁₆ × 5¾" (5.6 × 14.6cm)	2 × 5½" (5.1 × 14.0cm)	**03-523-7**	24/174.13
2¾ × 6¼" (7.0 × 15.9cm)	2½ × 6" (6.4 × 15.2cm)	**03-523-8**	24/184.39

Fisher*brand** Five-Slide Plastic Microscope Slider Mailers and Transporters

Side-loading and top-loading models

- 50-gauge polypropylene slide containers for air conveyors and specimen slide transport
- Hold up to five 3 × 1" or 75 × 25mm slides
- Ribbed partitions keep slides apart
- Slides are not included


12-569-35 (bottom row); 12-587-17B (top row)

Description	Cat. No.	Pack of 25	Case of 200
5-Slide Holder, Side Opening	**12-569-35**	24.98	176.85
5-Slide Holder, Top Opening	**12-587-17B**	----	157.49

ThermoSafe* ShipSafe* Compliance Shippers for Hazardous Liquids

Each has all the components needed to ship dangerou liquids, excluding Classes 6.2 and 7

Available in four 2.4L (80 oz.) bottles or one 4L (1 gal.) bottle.

03-522-30

INCLUDES:

Glass bottle(s) with Teflon*-lined screw cap(s), enough absorbent material to contain all the liquid in the bottle(s), polybag with wire twist tie, expanded polystyrene foam cushion packaging, 200 lb. test corrugated shipping carton with UN markings, packing instructions.

COMPLIANCE:

Certified for transport of hazardous materials in compliance with UN recommendation Chapter 9, 4G, Packing Group 1; and repetitive shock vibration requirements DOT 49-178.608.

NOTE:

Compliance with UN/DOT regulations using these shippers is contingent upon use of all supplied components (along with packing materials not supplied) and strict adherence to packing instructions.

Bottle Shipper for	Outside L × W × H	Weight Empty	Mfr. No.	Cat. No.	Case
4 × 2.4L (80 oz.)	14 × 14 × 15¼" (36 × 36 × 38.7cm)	14 lb. (6kg)	350UN	**03-522-30**	4/265.6
1 × 4L (1 gal.)	8 × 8 × 16¾" (20.3 × 20.3 × 42.5cm)	4½ lb. (2kg)	743UN	**03-522-32**	12/440.7

ThermoSafe* Lab Mailer for Small Bottle

Lightweight EPS foam containers are shock absorbing, temperature insulating, and save mailing costs

- Molded cavity holds bottles or containers up to 118mL
- Two-piece assembly with snap-lock fasteners holds contents in place
- Rectangular shape outside for easy storage

03-525

ORDERING INFORMATION:

Inside: 5¼L × 2W × 2¼"D
(133 × 51 × 57mm)
Outside: 6¼L × 3¼W × 3⅛"H
(159 × 79 × 79mm)
Wall thickness: ½" (13mm)
Weight empty: ¾ oz. (21g)

Mfr. No.	Cat. No.	Case of 10
373	**03-525**	64.2

*Trademark. See Trademark Reference.

Prices subject to change.

hermoSafe* Lab Mailer, Specimen Tube nd Slide Mailers

hock-absorbing polystyrene foam mailers accept ample tubes with rubber or screw caps

Two-piece assembly with snap-lock fasteners holds contents in place

PPLICATIONS:

eal for mailing or transporting onhazardous blood, urine, or other b samples.

03-527, 03-531-20, 03-530-5

o. of ibes	Tube Volume	Tube Length	Tube Diameter	Tube Cavity Dimensions	Cat. No.	Case of
	3, 5, 7 or 10mL	75 to 103mm	10.25 to 16mm	110 x 16mm	**03-527**	300/119.36
	3, 5, 7 or 10mL	75 to 103mm	10.25 to 16mm	105 x 17mm	**03-528**	150/73.06
	7, 10, 15, 25mL	75 to 150mm	16mm	170 x 16mm	**03-530-35**	100/88.82
	5, 7, 10mL	75 to 103mm	10.25 to 16mm	113 x 18mm	**03-530-5**	50/43.80
	3, 5mL	75 to 103mm	10.25 to 13mm	105 x 13mm	**03-531-20**	150/72.18

ncludes slotted area for up to four slides.

ACCESSORIES

ThermoSafe* Mailing Sleeves for Tube and Slide Mailers

Sturdy white cardboard with reverse-tuck closures. 03-531-25 and 03-530-10 have blood legend printed on them; all others are plain.

For Use with Cat. No.	Mfr. No.	Cat. No.	Case of
03-527	357	**03-527A**	300/63.07
03-528	365	**03-528A**	300/56.20
03-528, 03-531-20	340	**03-531-25**	300/56.15
03-530-35	410	**03-530-40**	200/90.53
03-530-5	342	**03-530-10**	200/76.31

hermoSafe* Lab Mailer, Utility Mailer for ubes, Vials, and Swabs

olds screw-capped or rubber-capped tubes or als and swabs

Single-cavity mailer for small specimens

nterlocking-type lid

Vall thickness: ½" (13mm)

DTE:

ditional packaging may be required conform to CFR72.2 specification ee Packaging Accessories Kit 03-527E).

03-529-5A

RDERING INFORMATION:

tside: 6¾L × 2¼W × 2½"H (17 × 5.7 × 6.4cm)
ide: 5⅞L × 1½W × 1½"H (15 × 3.8 × 3.8cm)
eight empty: ½ oz. (14g)

r. No.	Cat. No.	Case of 100
5	**03-529-5A**	87.46

ThermoSafe* Insulated Shipper for Pharmaceutical Reagents

Already assembled in 200 lb. test corrugated carton—just seal and label

Two-piece shippers with extra-thick insulating walls of expanded polystyrene.

- Ideal for safe storage and delivery of pharmaceuticals, specimens, serums, vaccines, organs, and culture packs
- Economical, lightweight, reusable, recyclable

03-529-1

ORDERING INFORMATION:

Wall thickness: 1½" (38mm)
Weight empty: 3 lb. (1.4kg)

Outside L × W × H	Inside L × W × D	Mfr. No.	Cat. No.	Case of 6
14⅞ × 13⅛ × 12⅛" (38 × 33 × 31cm)	11¾ × 10 × 8⅝" (30 × 25 × 22cm)	326	**03-529-1**	100.24

ThermoSafe* Lab Mailers for Vial, Tube, and Bottle Mailers

Two-piece polystyrene mailer with 1" thick (25mm) insulated walls

- Interlocking cover and body supplied with tape grooves for adequate sealing
- U-tek* phase change material, reusable pack fits perfectly in top half for added temperature protection (see 03-528-1)
- Safely stores and delivers pharmaceutic organs, and culture packs

03-528-10

APPLICATIONS:

Ideal for transporting fragile items such as vials, tubes and bottles

ORDERING INFORMATION:

Outside: 8L × 6W × 5¼"H (20 × 15.2 × 13.3cm)
Inside: 5⅞L × 4⅜W × 3"D (15 × 11.1 × 7.6cm)
Weight empty: 2⅝ oz. (74g)

Mfr. No.	Cat. No.	Case of 24
440	**03-528-10**	67.53

ThermoSafe* Insulated PUR Shippers

Durable polyurethane-foam–molded shippers have twice the insulation value of EPS

Manufactured using a proprietary process that laminates polyurethane insulation to inner and outer walls of corrugated cardboard, forming a rigid, one-piece, three-layer container.

- Economical, lightweight, reusable, CFC- and HCFC-free
- Protect contents under all ambient temperature environments—from 48 to 72 hours for refrigerated products, 48 to 96 hours for frozen samples
- Flexible polyurethane closure seals the top, cushions and insulates contents, and vents dry ice

03-530 Seri

Outside L × W × H	Inside L × W × D	Wall Thickness	Weight Empty	Mfr. No.	Cat. No.	Case o
15¾ × 12¾ × 14¼" (40 × 32.4 × 36.2cm)	11 × 8 × 7" (27.9 × 20.3 × 17.8cm)	2" (5.1cm)	4⅛ lb. (1.9kg)	E36UPS	**03-530-000**	3/126.82
21 × 14 × 17½" (53 × 35.6 × 44.5cm)	16¼ × 9¼ × 10¼" (41.3 × 23.5 × 26)	2" (5.1cm)	7½ lb. (3.4kg)	E89UPS	**03-530-001**	2/100.42
28 × 14 × 20¾" (71.1 × 35.6 × 52.7cm)	23¼ × 9¼ × 13½" (59 × 23.5 × 34.3cm)	2" (5.1cm)	9⅜ lb. (4.3kg)	E168UPS	**03-530-002**	1/81.98
23¼ × 23 × 24" (59 × 58.4 × 61cm)	18½ × 18¼ × 16¾" (47 × 46.4 × 42.6cm)	2" (5.1cm)	14⅛ lb. (6.4kg)	E327UPS	**03-530-003**	1/86.53
14¾ × 12¾ × 16¼" (37.5 × 32.4 × 41.3cm)	8 × 6 × 8" (20.3 × 15.2 × 20.3cm)	3" (7.6cm)	5⅝ lb. (2.6kg)	E22UPS	**03-530-004**	4/186.51
18¾ × 16¾ × 21¼" (47.6 × 42.6 × 54cm)	12 × 10 × 13" (30.5 × 25.4 × 33cm)	3" (7.6cm)	10½ lb. (4.8kg)	E90UPS	**03-530-005**	2/120.06

ThermoSafe* Diagnostic Shipper, Three Tube Mailer System

Mailer secures up to three 10mL tubes

INCLUDES:

Three 10mL vial tubes, EPS foam mailer with lid, absorbent material, water-resistant tape, pressure-lock plastic bag, 200 lb. test corrugated shipping carton with lock tab and instructions.

COMPLIANCE:

Meets U.S. Postal Regulations, DOT regulations, and IATA Packaging Instruction 650; tubes and shipping system validated for the transport of diagnostic samples.

03-527D

Description	Mfr. No.	Cat. No.	Case o
3-tube Mailer System	473	**03-527D**	33/127.4
Foam Mailer Only	476	**03-528-26**	33/32.3

ThermoSafe* Multipurpose Insulated Shippers

Ideal for the safe storage and transport of most refrigerated or frozen materials

Use for culture packs, serums, vaccines, and laboratory specimens.

- Includes corrugated carton and a molded one-piece insulation expanded polystyrene core
- Shock absorbing and temperature insulating
- Water- and vapor-resistant; lightweight
- Large enough for shipping tubes, vials, and a wide assortment of lab containers with dry ice

03-525 Series Shippers

Exterior L × W × H	Interior L × W × D	Wall Thickness	Mfr. No.	Cat. No.	Case o
11 × 9 × 10¼"	6¼ × 4¼ × 5¼"	2¼"	447UPS	**03-530-72**	10/110.22
11 × 9 × 7¼"	8 × 5⅞ × 4¼"	1½"	318	**11-676-14**	12/122.30
11 × 9 × 10"	8 × 5⅞ × 7"	1½"	413	**03-525-36**	12/139.61
11 × 9 × 11⅞"	8 × 5⅞ × 8⅞"	1½"	321UPS	**03-530-52**	8/97.37
11 × 9 × 14½"	8 × 5⅞ × 11½"	1½"	324UPS	**03-530-54**	8/109.38
11 × 9 × 7¼"	8 × 5¾ × 4¼"	1½"	316	**03-530-2**[1,2]	12/91.20
11 × 9 × 11⅞"	8 × 5⅞ × 8⅞"	1½"	319	**03-525-13**[1,2]	12/102.53
11 × 9 × 14½"	8 × 5⅞ 11½"	1½"	322UPS	**03-530-53**	8/80.45
14 × 14 × 10"	10 × 10 × 7"	1¾"	448UPS	**03-530-73**	4/62.56
13¾ × 10½ × 13½"	10½ × 7¼ × 10"	1½"	317UPS	**03-530-51**	6/100.32
14 × 14 × 14⅝"	11 × 11 × 11⅝"	1½"	355	**03-530-17**	4/71.91
14⅞ × 13¼ × 10⅛"	11⅝ × 9⅞ × 7"	1½"	325UPS	**03-530-55**[1]	6/92.03
14⅞ × 13⅛ × 12⅛"	11¾ × 10 × 8⅝"	1½"	348UPS	**03-530-65**[1]	4/44.60
16 × 16 × 15½"	12 × 12 × 11½"	2"	453	**03-530-43**	3/82.69
15½ × 11½ × 8"	13⅛ × 9¼ × 6"	1"	479	**03-528-27**	8/107.55
20⅛ × 15⅜ × 15⅜"	18¾ × 11 × 12¼"	1½"	397	**03-525-32**[1,2]	2/41.88
20⅛ × 15⅜ × 15⅜"	18¾ × 11 × 12¼"	1½"	398	**03-530-32**[2]	2/48.15
22⅜ × 18⅛ × 13⅜"	19 × 14⅝ × 10⅜"	1½"	482	**03-528-28**	3/82.02
24 × 18 × 17⅞"	21 × 15⅛ × 15¼"	1⅛"	499	**03-530-46**	2/52.32

[1] *Polystyrene container only; no corrugated carton included.*

[2] *Dome-style container*

*Trademark. See Trademark Reference.

Prices subject to change.

hermoSafe* Lab Mailer Sample-Guard)mL Vial Shippers

ulated shippers with lid eliminate sample leakage d breakage

- xpanded polystyrene foam hippers secure upright twelve r forty-eight 28mm, 40mL vials
- hippers maintain required sample emperature for 72 hours or longer
- hippers are assembled in 200 lb. est corrugated cartons

11-675-47

LUDES:

e 24 oz. U-tek* phase change terial, reusable polyethylene platform.

TE:

ight empty includes refrigerant.

side L × W × H	Inside L × W × D	Weight Empty	Mfr. No.	Cat. No.	Case of 8
ls 12, 28mm vials					
× 9 × 10" × 23 × 25cm)	8 × 6 × 7" (20.3 × 15.2 × 17.8cm)	5 lb. (2.3kg)	480-413	**03-528-11**	141.00
ls 48, 28mm vials					
8 × 13¼ × 8¼" × 34 × 21cm)	12 × 10¼ × 5½" (30.5 × 26 × 14cm)	4 lb. (1.8kg)	480-490	**11-675-47**	186.04

hermoSafe* Serum Bio-Mailer sulated Shipper

xagon shape with corrugated carton, insulation core, d snug-fitting plug cover

- all thickness: 1½" (38mm)
- eal for storing or transporting ost refrigerated or frozen aterials such as pharmaceuticals, ecimens, serums, vaccines, gans, and culture packs
- hock absorbing, temperature sulating, and keeps average y ice usage to less than 3 lb. .4kg) per day

thermoSafe

03-531

DERING INFORMATION:

ghs 1 lb. (454g) empty.

TE:

en using dry ice, wrap tubes or bottles in single-face corrugated paper.

rior L × W × H	Interior Dia. × H	Mfr. No.	Cat. No.	Each	Case of
× 9⅞ × 7⅛" 1 × 25.1 × 8.1cm)	6¾ × 4¼" (17.1 × 10.8cm)	312	**03-531**	11.34	12/113.37

ThermoSafe* Diagnostic Shipper, Eight Tube Mailing System

Leak-resistant, EPS foam mailer holds 30mL bottle, eight 10mL tubes, materials for insurance testing, and other paperwork

- Tight-fitting plug cover accepts required absorbent material
- Validated for the transport of diagnostic samples

03-527C

INCLUDES:

10mL vial tubes, foam mailer with lid, absorbent material, water-resistant tape, pressure-lock plastic bag, 200 lb. test corrugated shipping carton with antitamper locking tabs, instructions.

COMPLIANCE:

Meets U.S. Postal Regulations, DOT regulations, and IATA Packaging Instruction 650; tubes and shipping system validated for the transport of diagnostic samples

8-Tube Mailer Type	Mfr. No.	Cat. No.	Case of 50
Complete mailer system	472	**03-527C**	383.88
Foam mailer only	470	**03-527B**	116.41

LOOKING FOR COOL PACKS FOR SHIPMENT?

You'll find them in the Ice/Insulated Containers section.

DON'T SEE THE RIGHT MAILER HERE?

Visit www.fishersci.com and search for Mailers

MATCHES

MATCHES

Use in a variety of applications. Strike-on-box safety matches won't ignite when only friction is applied. Find more lighters and related items at our Web site using keyword **Lighters** or **Matches.**

Fisherbrand
Safety Matches
Catalog No. 12-075

12-075

Cat. No.	Pack of 10	Case of 100 Pk.
12-075	7.26	558.22

MELTING POINT

Fisher-Johns Melting Point Apparatus

Handles materials with melting points from 20° to 300°C

- Excellent temperature control and reproducibility (±0.5°C) achieved with variable transformer graduated in percent power
- Observe melting through convenient, adjustable magnifier
- Integral lens focuses a light beam on the stage to aid observation
- Unit is heated with a replaceable 100-watt heating cartridge
- Unit doubles as a microhotplate
- Handles evaporations and small preparations of organic compounds
- Base has recess for extra beakers

ORDERING INFORMATION:
Size: 9L × 14"W (23 × 36cm)

INCLUDES:
Apparatus with 0.5g silver wool, ½ oz. (14.2g), 1⁄16" (18mm) cover glasses and instructions

REQUIRED ACCESSORIES:
Mercury thermometer (12-142T)

WARRANTY:
12 months

CERTIFICATIONS:
CSA approved

Elec. Reqts.	Cat. No.	Each
For 115V 50/60Hz	**12-144Q**	1556.05
For 230V 50/60Hz	**12-144-1Q**	1824.54

ACCESSORIES

Fisher Scientific* Thermometer

For 12-144Q and 12-144-1Q.

Graduations	Increments	Contains	Cat. No.	Each
From 20° to 300°C	1°C	Yes	**12-142T**	41.69

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

WARNING

The products indicated contain mercury. Don't put products containing mercury in the trash. Products containing mercury are to be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

Thermo Scientific* Electrothermal Mel-Temp* Digital Melting Point Apparatus

Compact, programmable units automatically determi precise melting points up to 400°C

Ideal for pharmaceutical, R&D, and QC laboratory applications—specificat for determining the identity or purity of organic compounds.

Operating Features

- Built-in temperature display
- Microprocessor-controlled temperature ramping for reproducibility to 0.2°C
- Ramp rate is selectable from 0.1°C to 10°C per minute in increments of 0.1°C
- 6X lens and integrated light for sample observation
- High-speed fan for rapid cooling
- Accepts up to three samples simultaneously using glass capillary tube
- Temporary memory for storing/recalling the melting point temperature range
- Dual digital LEDs display temperature parameters for melting point determination
- Audio-visual signals minimize instrument supervision and sample observation time
- Unit heats to 250°C in 24 minutes; cools from 400° to 100°C in three minutes—minimizing time between melts
- Touch keypad controls

Design Features

- Sturdy aluminum housing
- Precision-machined aluminum block conducts and radiates heat unifor without the use of oils or volatile heat transfer fluids
- High-tolerance capillary holes and specially designed precision capilla facilitate precise melting range determinations

INCLUDES:
Unit, power cord, and vial of 100 precision capillaries.

COMPLIANCE:
Conforms to U.S. Pharmacopeia requirements; each instrument is individu calibrated using USP-certified melting point standards.

CERTIFICATIONS:
CE marked, CSA approved

SPECIFICATIONS

Temperature Range	Ambient to 400°C
Accuracy	±0.5°C from ambient to 250°C; ±1°C from 250° to 400°C
Resolution	0.1°C
Reproducibility	±0.2°C
Capacity	Accommodates 3 capillaries simultaneously
Dimensions	6⅛L × 4⅝W × 12⅞"H (15.5 × 11.7 × 31cm)

Electrical Requirements	Mfr. No.	Cat. No.	E
120V, 100w	1401	**12-144-69**	3588

*Trademark. See Trademark Reference.

hermo Scientific* Electrothermal Mel-Temp* Manual Melting Point pparatus

rovides precise melting point determinations p to 500°C

asy-to-operate apparatus is designed for educational applications—pecifically for determining the melting point of organic compounds.

- Compact, versatile, durable and safe
- Accepts three samples at once in glass capillary tubes
- Heats to 400°C in five minutes, cools down rapidly
- Resolution to 0.1°C; reproducibility: 1°C
- Adjust the heating rate via built-in variable transformer; excellent temperature control
- Precision 6X magnifying lens and integrated light enhance viewing
- Sturdy aluminum top, compact heater housing, etched panel markings
- Aluminum casting conducts and radiates heat uniformly to capillaries and thermometer without oils or volatile fluids
- Integrated heat guard protects against hot internal components

RDERING INFORMATION:

mensions: 5½L × 4¼W × 9"H (14 × 11 × 23cm)
0V units available: see our Web site.

CLUDES:

odel 1001 is the standard unit; Model 1101D includes precision digital ermometer and stand, thermocouple kit, 100 capillaries, spare bulb and are fuses; Model 1201D includes 0° to 400°C mercury thermometer, 100 pillaries, spare bulb and spare fuses.

ERTIFICATIONS:

 marked, CSA approved.

ec. Reqts.	Mfr. No.	Cat. No.	Each
0V, 200w	1001	**12-144-63**	874.00
0V, 200w	1101D	**12-144-65**	1491.00
0V, 200w	1201D	**12-144-67**	990.00

WARNING

The products indicated contain mercury. Don't put products containing mercury in the trash. Products containing mercury are to be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

LOOKING FOR MORE?

A complete line of Melting Point Apparatus are available online.

Visit www.fishersci.com and search for Melting Point Apparatus

ACCESSORIES

Melting Point Capillaries and Tubes

12-141-1 and 12-141-8

Pyrex* Capillaries

- Made from Code 7800 glass
- I.D. range for all tubes, 1.1–1.2mm
- Packaged 100 capillaries per vial

Length	Wall Thickness	End Treatment	Mfr. No.	Cat. No.	Pack of 100	Case of 20 Vials
100mm	0.2mm	Both ends open	9530 1	**08-261-2A**	13.50	134.80
100mm	0.25mm	Both ends open	9530 2	**08-261-2B**	13.41	134.77
90mm	0.2mm	One end sealed	9530 3	**08-261-2C**	8.76	134.77
90mm	0.25mm	One end sealed	9530 4	**08-261-2D**	8.76	134.77

Kimax-51* Capillaries

- Made from Kimax-51 borosilicate glass
- Approximate O.D., 1.5 to 1.8mm
- Thickness of wall, 0.2mm
- Packaged with 100 capillaries per vial

Length	End Treatment	Mfr. No.	Cat. No.	Case of 20 Vials
100mm	Both ends open	34500 99	**12-141-1**	135.00
90mm	One end sealed	34505 99	**12-141-8**	158.40

Kimax-51* Capillaries with Smaller I.D.

- Made from Kimax-51 borosilicate glass
- Approximate I.D., 0.8 to 1.1mm
- Thickness of wall, 0.25mm
- Packaged 100 capillaries per vial

COMPLIANCE:

Comply with U.S. Pharmacopeia XXI.

Length	End Treatment	Mfr. No.	Cat. No.	Case of 20 Vials
100mm	Both ends open	34502 99	**12-141-2**	137.20
90mm	One end sealed	34507 99	**12-141-10**	160.00

Borosilicate Glass Capillaries

- Thin-walled capillaries
- O.D., 1.5 to 2.0mm
- Packed 100 capillaries per vial

Length	End Treatment	Cat. No.	Pack of 100	Case of 12 Vials
100mm	Both ends open	**12-141**	8.73	87.25
90mm	One end sealed	**12-141-5**	11.35	120.58

Millipore* Immobilon* Transfer Membranes

Choose from Immobilon-Ny+, Immobilon-NC, Immobilon-P, Immobilon-P^{SQ}, and Immobilon-FL

Select from a variety of polymeric materials with a broad range of pore sizes and surface chemistries. For membrane selection and specifications, see charts below.

Precut membrane circle

Immobilon Transfer Membrane Selection Chart

Applications	Immobilon-Ny+	Immobilon-NC	Immobilon-P	Immobilon-P^{SQ}	Immobilon-FL
Northern/Southern Blots	■	■			
Colony/Plaque Lifts	■	■			
Nucleic Acid Hybridization	■	■			
UV Fixation	■				
DNA Fingerprinting	■				
Nucleic Acid Reprobing	■				
Alkaline Transfer	■				
Dot/Slot Blots	■	■	■		■
Cell Culture		■			
Binding Assays		■	■	■	■
Western Blots		■	■	■	■
Immunodetection			■		■
HIV Detection			■		■
Glycoprotein Visualization			■		■
Lipopolysaccharide Analysis			■		■
N-terminal Protein Sequencing			■		■
Amino Acid Analysis			■	■	■
High-Yield Protein Sequencing				■	
Low MW Protein Blotting				■	

Immobilon Transfer Membrane Specifications

	Immobilon-Ny+	Immobilon-NC	Immobilon-P	Immobilon-P^{SQ}	Immobilon-FL
Protein Binding Capacity/Adsorption					
Insulin	N/A	117µg/cm^2	85µg/cm^2	262µg/cm^2	85µg/cm^2
BSA	N/A	160µg/cm^2	131µg/cm^2	340µg/cm^2	131µg/cm^2
Goat IgG	N/A	259µg/cm^2	294µg/cm^2	448µg/cm^2	294µg/cm^2
Physical Properties					
Pore Size	0.45µm	0.45µm	0.45µm	0.2µm	0.45µm
Phobicity	Hydrophilic	Hydrophilic	Hydrophobic	Hydrophobic	Hydrophobic
Composition	Web-supported charged nylon	Nitrocellulose/Cellulose acetate	PVDF	PVDF	PVDF
Primary Binding Mechanisms	Ionic, covalent after UV	Electrostatic, Hydrophobic	Electrostatic, Hydrophobic	Electrostatic, Hydrophobic	Electrostatic, Hydrophobic
Detection Method	Chemiluminescent, Fluorescent, Radioactive	Chromogenic, Fluorescent, Radioactive	Chemiluminescent, Radioactive	Chromogenic, Fluorescent, Radioactive	Fluorescent

illipore* Immobilon* Transfer Membranes, Contd.

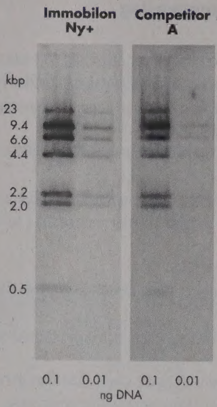
mmobilon-Ny+ and Immobilon-NC Transfer Membranes
or nucleic acid blotting and screening

mmobilon-Ny+ (Charged Nylon)

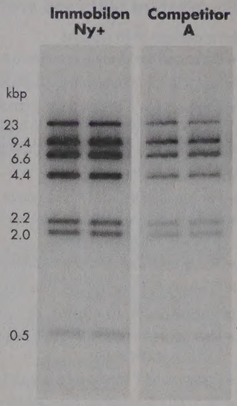
- Optimized for radioactive, chemiluminescent and fluorescent detection systems
- Perform multiple stripping and reprobing without cracking or curling
- Yield strong signals after 13 reprobing cycles
- Compatible with alkaline transfer and fixation

mmobilon-NC (Nitrocellulose/Cellulose Acetate)

- Immobilon-NC (HATF) surfactant-free membranes for colony hybridization, plaque lifts, and analysis of protein secreted from animal cells—grow 10,000 colonies per membrane
- Immobilon-NC (HAHY) for capillary blotting of DNA and RNA and electrophoretic protein transfer



Detection of picogram amounts of DNA



After 13 cycles of stripping and reprobing

			0.45µm Pore Size Immobilon-Ny+		0.45µm Pore Size Immobilon-NC (HATF)		0.45µm Pore Size Immobilon-NC (HAHY)	
ormat	**Dimensions**	**Quantity**	**Cat. No.**	**Price**	**Cat. No.**	**Price**	**Cat. No.**	**Price**
ircles	47mm	Pk. of 100	----	----	**HATF 047 00**	109.00	----	----
ircles	82mm	Pk. of 50	**INYC 082 50**	129.00	**HATF 082 50**	119.00	**HAHY 082 50**	119.00
ircles	85mm	Pk. of 50	**INYC 085 50**	147.00	**HATF 085 50**	119.00	**HAHY 085 50**	119.00
ircles	132mm	Pk. of 50	**INYC 132 50**	256.00	**HATF 132 50**	228.00	----	----
ircles	137mm	Pk. of 50	**INYC 137 50**	295.00	**HATF 137 50**	244.00	**HAHY 137 50**	244.00
heets	6 × 11cm	Pk. of 50	**INYC 611 50**	313.00	----	----	----	----
heets	9 × 12cm	Pk. of 10	**INYC 091 20**	90.00	----	----	----	----
heets	10 × 10cm	Pk. of 10	**INYC 101 00**	90.00	----	----	----	----
heets	15 × 15cm	Pk. of 10	**INYC 151 50**	129.00	----	----	----	----
heets	20 × 20cm	Pk. of 10	**INYC 202 00**	232.00	----	----	----	----
heets	22.2 × 22.2cm	Pk. of 10	**INYC 222 20**	256.00	----	----	----	----
heets	26 × 26cm	Pk. of 10	**INYC 262 60**	283.00	----	----	----	----
heets	33 × 33cm	Pk. of 10	----	----	----	----	**HAHY 304 F0**	262.00
oll	30cm × 3m	1 roll	**INYC 000 10**	271.00	----	----	----	----
oll	33cm × 3m	1 roll	----	----	----	----	**HAHY 000 10**	249.00

LOOKING FOR FILTRATION?

To filter your buffers, check out Millipore* Stericup* Vacuum Filter Units in the Filtration section.

LOOKING FOR MORE LIFE SCIENCE PRODUCTS?

See the following sections: Array Analysis, Cell Biology, Cell Culture (formerly Tissue Culture), Cloning and Expression, Electroporation, Electrophoresis, Luminometers, Microplates and Microplate Instrumentation, Nucleic Acid Research, PCR, Protein Characterization, Detection and Purification, RNA Technologies, Transfection and Transformation

Millipore* Immobilon* PVDF Transfer Membranes

For Western blots and protein sequencing

IPVH 000 10

Immobilon-P (0.45µm)

- Optimized for binding proteins transferred from a variety of gel matricies
- Suitable for chromogenic, chemiluminescent, and radioactive detection
- Compared to nitrocellulose, Immobilon-P has improved handling characteristics and staining capabilities, increased solvent resistance, and higher signal-to-noise ratio
- Rapid Immunodetection Method reduces detection time by two hours

Immobilon-P^{SQ} (0.2µm)

- For sequencing low-abundance or low-molecular weight (<20,000 Daltons) proteins
- Produce high protein sequencing yields by high internal surface area for protein adsorption (repetitive yields typically >90%)
- No contaminating support polymers or surfactants
- Eliminates "blow through" that occurs when blotting low-molecular-weight proteins with larger pore size membranes

Immobilon-FL (0.45µm)

- Low fluorescence membrane designed specifically for use with fluorescent detection systems in Western blotting applications
- Background fluorescence is approximately 10 times lower than that of other PVDF membranes and two times lower than nitrocellulose membranes
- No protocol changes required for standard Western blotting procedures
- Suitable for use with fluorescent dyes and detection and imaging systems from major manufacturers

PVDF MEMBRANES FOR WESTERN BLOTTING APPLICATIONS

Application after Western Blot	Membrane of Choice (for most proteins)†
General Immunodetection	Immobilon-P, Immobilon-FL
Low-molecular-weight protein or low-abundance protein blotting	Immobilon-P^{SQ}
Amino acid analysis	Immobilon-P, Immobilon-P^{SQ}, Immobilon-FL
Sequencing low-molecular-weight or low-abundance proteins	Immobilon-P^{SQ}

† *All proteins may not behave the same on a membrane surface; variability in properties such as charge, density, conformation, or hydrophobicity may necessitate use of another Immobilon PVDF membrane for Western blotting.*

			0.45µm Immobilon-P		0.2µm Immobilon-P^{SQ}		0.45µm Immobilon-FL	
Format	**Dimensions**	**Quantity**	**Cat. No.**	**Price**	**Cat. No.**	**Price**	**Cat. No.**	**Pric**
Sheets	7 × 8.4cm	Pk. of 50	**IPVH 078 50**	294.00	**ISEQ 078 50**	320.40	----	---
Sheets	8 × 10cm	Pk. of 10	**IPVH 081 00**	100.00	**ISEQ 081 00**	100.00	----	---
Sheets	8.5 × 13.5cm	Pk. of 10	**IPVH 081 30**	128.00	**ISEQ 081 30**	128.00	----	---
Sheets	9 × 12cm	Pk. of 10	**IPVH 091 20**	99.00	**ISEQ 091 20**	103.39	----	---
Sheets	10 × 10cm	Pk. of 10	**IPVH 101 00**	99.00	**ISEQ 101 00**	111.00	**IPFL 101 00**	119.0
Sheets	15 × 15cm	Pk. of 10	**IPVH 151 50**	144.00	**ISEQ 151 50**	164.00	----	---
Sheets	20 × 20cm	Pk. of 10	**IPVH 202 00**	207.00	**ISEQ 202 00**	226.00	**IPFL 202 00**	248.0
Sheets	26 × 26cm	Pk. of 10	**IPVH 304 F0**	285.00	**ISEQ 262 60**	300.00	----	---
Roll	26.5cm × 3.75m	1 roll	**IPVH 000 10**	266.00	**ISEQ 000 10**	292.00	**IPFL 000 10**	318.0

Millipore* Immobilon* Blotting Filter Paper

NEW

Chromatography-grade blotting filter paper pre-cut to the most popular Western blotting sizes

Size	Phobicity	Surface	Thickness	Color	Cat. No.	Pack of 100
7 × 8.4cm	Hydrophilic	Plain	550µm	White	**IBFP0785C**	63.32
8.5 × 13.5cm	Hydrophilic	Plain	550µm	White	**IBFP0813C**	79.40

LOOKING FOR MILLIPORE* ANTIBODIES?

Fisher Scientific now sells Millipore antibodies for research.

Visit www.fishersci.com and search for Antibodies

*Trademark. See Trademark Reference.

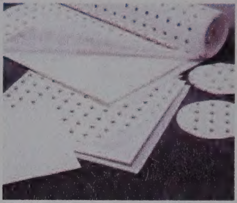
Prices subject to change.

E* Hybridization and Transfer Membranes

trocellulose Membranes

quire vacuum baking to fix DNA

kaged in a wide variety of precut circles and sheets to fit Petri dishes and transfer/hybridization apparatus. o available in rolls for cutting custom-sized membranes.



EP2HY and related series

trocellulose Unsupported Membrane (EP)

- ighest sensitivity for protein blotting and immunoblotting, or other procedures requiring optimum resolution
- asily blocked
- Vets out naturally and does not require methanol like PVDF membranes

trocellulose Supported Membrane (WP)

- igh sensitivity but with added strength of a polyester matrix
- urfactant-free membranes have no additives to interfere with binding capacity

			0.22µm, unsupported		0.22µm, supported		0.45µm, unsupported		0.45µm, supported	
mat	Dimen.	Quantity	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
cles	82mm	Pk. of 50	----	----	**WP2HY08250**	118.04	**EP4HY08250**	105.28	**WP4HY08250**	107.87
cles	85mm	Pk. of 50	----	----	----	----	**EP4HY08550**	107.87	**WP4HY08550**	108.93
cles	132mm	Pk. of 50	----	----	----	----	**EP4HY13250**	206.43	**WP4HY13250**	207.44
cles	137mm	Pk. of 50	----	----	----	----	**EP4HY13750**	209.48	**WP4HY13750**	211.51
eets	4 × 5¼"	Pk. of 10	**EP2HY3MTF0**	98.16	----	----	**EP4HY3MTF0**	90.39	**WP4HY3MTF0**	90.39
eets	15 × 15cm	Pk. of 5	**EP2HY315F5**	58.92	----	----	**EP4HY315F5**	55.30	**WP4HY315F5**	56.36
eets	20 × 20cm	Pk. of 5	**EP2HY320F5**	103.15	**WP2HY320F5**	104.98	**EP4HY320F5**	95.09	**WP4HY320F5**	95.09
eets	22 × 22cm	Pk. of 5	----	----	----	----	**EP4HY322F5**	98.16	**WP4HY322F5**	99.18
eets	30 × 30cm	Pk. of 5	----	----	----	----	**EP4HY330F5**	137.28	**WP4HY330F5**	137.48
eets	30 × 50cm	Pk. of 5	**EP2HY450F5**	216.80	----	----	**EP4HY450F5**	197.77	**WP4HY450F5**	199.31
ls	15cm × 3m	1 roll	**EP2HYB0010**	135.05	----	----	**EP4HYB0010**	124.06	**WP4HYB0010**	124.06
ls	20cm × 3m	1 roll	**EP2HYA0010**	176.53	**WP2HYA0010**	178.65	**EP4HYA0010**	158.63	**WP4HYA0010**	161.80
ls	30cm × 3m	1 roll	**EP2HY00010**	261.60	**WP2HY00010**	264.78	**EP4HY00010**	235.92	**WP4HY00010**	237.95

ufactured by GE Infrastructure Water & Process Technologies.

lon Membranes

not require prewetting or vacuum baking

probing, Charged Nylon (NP)

- ositively charged supported nylon membrane
- Vithstands multiple reprobing—won't curl, distort, shrink, crack, or tear
- igh binding capacity (450µg/cm²)
- se with both radioactive and nonradioactive probes, including hemiluminescent and biotinylated detection systems

lon, Neutral (N0)

- upported nylon membrane
- deal for colony/plaque lifts and single-probe applications
- ow background yields clear autoradiographs

			0.45µm MagnaProbe*		0.45µm† Magna* Nylon	
mat	Dimen.	Quantity	Cat. No.	Price	Cat. No.	Price
cles	82mm	Pk. of 50	**NP0HY08250**	116.98	**N00HY08250**	112.73
cles	85mm	Pk. of 50	**NP0HY08550**	121.23	**N00HY08550**	116.98
cles	132mm	Pk. of 50	**NP0HY13250**	213.74	**N00HY13250**	213.74
cles	137mm	Pk. of 50	**NP0HY13750**	225.44	**N00HY13750**	215.87
eets	4 × 5¼"	Pk. of 10	**NP0HY3MTF0**	121.23	**N00HY3MTF0**	94.30
eets	20 × 20cm	Pk. of 5	**NP0HY320F5**	95.33	----	----
eets	15 × 15cm	Pk. of 5	----	----	**N00HY315F5**	59.09
eets	22 × 22cm	Pk. of 5	**NP0HY322F5**	102.84	**N00HY322F5**	----
eets	30 × 30cm	Pk. of 5	**NP0HY330F5**	149.94	----	----
eets	30 × 50cm	Pk. of 5	**NP0HY450F5**	224.38	**N00HY450F5**	224.38
ls	15cm × 3m	1 roll	**NP0HYB0010**	132.92	**N00HYB0010**	132.92
ls	20cm × 3m	1 roll	**NP0HYA0010**	173.34	**N00HYA0010**	173.34
ls	30cm × 3m	1 roll	**NP0HY00010**	254.16	**N00HY00010**	254.16

† so available in 0.22µm pore size. Contact your Fisher Scientific Customer Service epresentative. Manufactured by GE Infrastructure Water & Process Technologies.

PVDF Membranes

Designed for Western transfers, amino acid analyses, and protein sequencing procedures

PVDF (PV) polyvinylidene fluoride

- Compatible with most commonly used stains
- Won't degrade, distort or shrink in presence of high concentrations of methanol
- Efficient protein transfer from 5 to 700kDa
- Detection limit, 0.005µg/cm²

			0.22µm		0.45µm	
Format	Dimen.	Quantity	Cat. No.	Price	Cat. No.	Price
Sheets	9 × 10cm	Pk. of 10	----	----	**PV4HY910F0**	98.88
Sheets	9 × 12cm	Pk. of 10	----	----	**PV4HY912F0**	102.96
Sheets	10 × 10cm	Pk. of 10	----	----	**PV4HY310F0**	101.97
Sheets	10 × 15cm	Pk. of 10	----	----	**PV4HY415F0**	109.53
Sheets	15 × 15cm	Pk. of 5	----	----	**PV4HY315F5**	72.10
Sheets	20 × 20cm	Pk. of 5	**PV2HY320F5**	109.53	**PV4HY320F5**	109.53
Roll	30cm × 3m	1 roll	----	----	**PV4HY00010**	258.41

Manufactured by GE Infrastructure Water & Process Technologies.

LOOKING FOR FILTRATION MEMBRANES?
See Membranes in the Filtration section.

CONSIDER ESSENTIAL QUALITY

Requirements to meet your stringent laboratory and quality standards to ensure con reproducible results

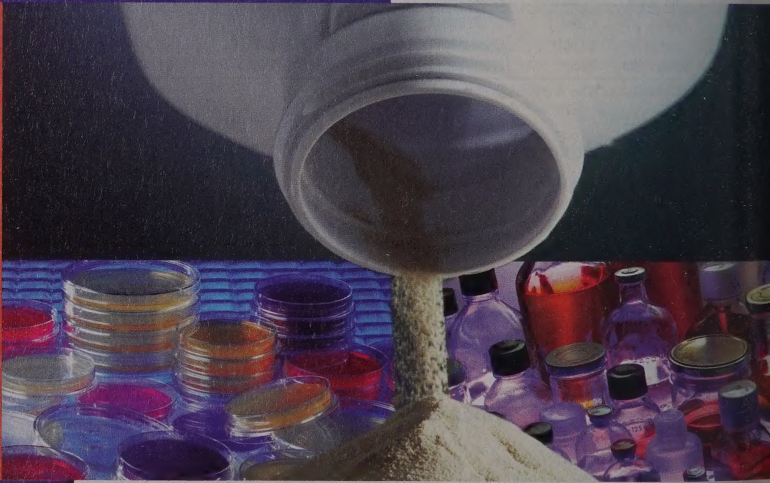
- ISO-certified manufacturing facilities
- Vendor documented quality control program and procedures
- Lot specific Certificates of Quality available upon request
- Animal product components of US origin or imported in compliance with USDA/APHIS regul
- Non-animal based products available

CONSIDER EXCELLENT SERVICE

Knowledgeable, dedicated support available to assist you from produ selection to application

- Technical sales representatives available at the local level
- Customer Service and Technical Service to assist with ordering, deliver and specific product usage
- Multiple delivery options including next-day
- 24/7 support at **www.remel.com**

BEFORE YOU BUY MICROBIOLOGY PRODUCTS



CONSIDER BREADTH OF PRODUCT LINE

Products required for microbial limits, sterility, environmental monitoring, preservative effectiveness, and pathogen testing

- Dehydrated and Prepared Culture Media (plates, bottles, tubes, and bags)
- Collection and Transport systems
- Diagnostic and Rapid Direct Specimen tests
- Quality Control products
- Environmental Monitoring products including Contact and Settling Plates
- Custom product solutions and formulations made to your specifications

sponsored by:

Part of Thermo Fisher Scientific

For a full selection of Remel products, see pp. 1034-1055, 1064, 1067-1068, 1072-1080, 1084-1 1088-1090, 1093-1094, and 1102.

MICROBIOLOGY

MEDIA

sherBiotech* Microbiology Media

et the same high-quality standards set for herBiotech reagents

- ehydrated; used to prepare icrobiological culture media
- cluded are three modifications of e Luria-Bertani formula, used for rowing molecular biology strains *E. coli*-containing recombinant lasmids

DERING INFORMATION:

formulas are available in convenient 2kg poly pails, as well as in 500g tles.

dia Type	Description/Application	Size	Cat. No.	Each
Agar, Miller anular)	Contains 10g of tryptone, 5g of yeast extract, 10g of sodium chloride, 15g of granulated agar per liter	500g 2kg	**BP1425-500** **BP1425-2**	89.33 339.40
Broth, Lennox wder)	Contains 10g of tryptone, 5g of yeast extract, 5g of sodium chloride per liter	500g 2kg	**BP1427-500** **BP1427-2**	46.01 158.94
Broth, Miller wder)	Contains 10g of tryptone, 5g of yeast extract, 10g of sodium chloride per liter	500g 2kg	**BP1426-500** **BP1426-2**	44.97 156.37

sher BioReagents* OptiGrow* eweighed Media

ur classic media, in convenient, preweighed pouches

BP1420 Series

- ptimized for superior yield of acterial culture
- reblended medium components ave time and preparation costs
- ach pouch contains enough aterial for 1L of liquid media
- o more weighing of dusty owders
- igh quality—assured by stringent esting procedures

DERING INFORMATION:

plied as 10 pouches per box.

dia Type	Cat. No.	Each
Agar Miller	**BP1425-10P1**	56.58
Broth Miller	**BP1426-10P1**	57.00
Broth Lennox	**BP1427-10P1**	57.00
rific Broth	**BP2468-10P1**	82.22

Fisher BioReagents* OptiGrow* Liquid Microbiological Media

Four classic media in ready-to-use liquid form

- Sterilized by autoclaving
- Optimized for superior yield of bacterial culture
- Save time and preparation costs
- No dusty powders to cause environmental concerns
- Fully automatic manufacturing process
- Excellent lot-to-lot consistency and traceability
- **LB Broth**-standard bacteriological nutrient medium for the propagation of *E. coli* for purposes of strain maintenance (sub-culturing), cloning, plasmid propagation, and protein expression
- **Super Broth**-specifically developed to increase the yield of high copy number plasmids derived from suspension cultures of *E. coli* strains
- **Terrific Broth**-supports higher cell densities than LB medium, increases plasmid DNA yield

Media Type	Size	Cat. No.	Each
LB Broth Miller Liquid	10 × 1L	**BP143010B1**	250.13
LB Broth Lennox Liquid	10 × 1L	**BP143110B1**	250.13
Super Broth Liquid	10 × 1L	**BP143210B1**	279.42
Terrific Broth Liquid	10 × 1L	**BP143310B1**	279.42

Remel* RapiDCM* Media

Convenient, preweighed pouches of dehydrated culture media

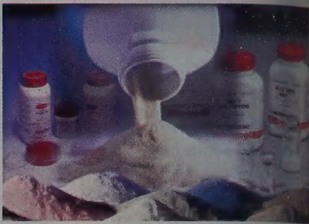
- Supplied in heavy-duty white foil pouch
- Pouch is heat sealed for maximum protection

Media Type	Rehydrates to	Cat. No.	Each
m-Endo Broth MF	3L	**R4539503**	325.29
Standard Methods Agar	1L	**R4547001**	109.30
Tryptic Soy Agar	1L	**R4550001**	143.50
Tryptic Soy Broth	1L	**R4550501**	79.71
	3L	**R4550503**	109.73
Violet Red Bile Agar	1L	**R4552801**	193.02

Remel* Dehydrated Media

Each lot of dehydrated culture media is tested against previous lot numbers to assure unformity and consistency from lot to lot

- Each raw material component is pretested before being used to manufacture the finished product
- Each medium is tested against a battery of organisms to assure that it performs as it should
- Media are supplied in bottles



Description	Size	Qty.	Cat. No.	Price
A				
A1 Medium	500g	Each	**R452012**	99.37
AC Broth w/o Dextrose	500g	Each	**R452072**	73.23
Antibiotic Medium #3	500g	Each	**R452162**	100.85
APT Agar	500g	Each	**R452302**	100.50
APT Broth	500g	Each	**R452312**	92.59
B				
BACTi* Agar, Purified	500g	Each	**R451022**	360.80
BACTi* Agar	100g	Each	**R451011**	85.91
	500g	Each	**R451012**	185.73
BACTi* Beef Extract	100g	Each	**R451051**	56.61
	500g	Each	**R451052**	145.05
BACTi* Casein Peptone, Acidic Digest of Casein	100g	Each	**R451091**	31.02
	500g	Each	**R451092**	73.23
BACTi* Casein Peptone, Pancreatic Digest of Casein	100g	Each	**R451101**	31.06
	500g	Each	**R451102**	73.24
	2.5kg	Each	**R451104**	339.18
	10kg	Each	**R451106**	1291.58
BACTi* Gelatin Peptone, Pancreatic Digest of Gelatin	100g	Each	**R451141**	31.05
	500g	Each	**R451142**	80.79
BACTi* Hemoglobin	100g	Each	**R451401**	50.77
	500g	Each	**R451402**	113.06
	2.5kg	Each	**R451404**	533.99
BACTi* Meat Casein	500g	Each	**R451162**	104.84
BACTi* Meat Peptone	100g	Each	**R451171**	37.69
	500g	Each	**R451172**	92.60
BACTi* Soy Peptone	100g	Each	**R451181**	31.02
	500g	Each	**R451182**	73.59
BACTi* Yeast Extract, Technical	100g	Each	**R451211**	16.17
	500g	Each	**R451212**	55.28
	10kg	Each	**R451216**	923.78

Description	Size	Qty.	Cat. No.	Pric
BACTi* Yeast Extract	100g	Each	**R451201**	49.3
	500g	Each	**R451202**	104.8
	2.5kg	Each	**R451204**	513.2
	10kg	Each	**R451206**	2018.9
Baird Parker Agar Base	100g	Each	**R452341**	104.3
	500g	Each	**R452342**	229.9
BHI Agar (Brain Heart Infusion Agar)	100g	Each	**R452451**	63.7
	500g	Each	**R452452**	143.3
BHI Broth	100g	Each	**R452471**	49.3
	500g	Each	**R452472**	104.8
	2.5kg	Each	**R452474**	516.8
BiGGY Agar	500g	Each	**R452392**	161.5
Bile Esculin Agar	100g	Each	**R452361**	67.0
	500g	Each	**R452362**	149.4
Bile Esculin Azide Agar	100g	Each	**R452371**	68.2
	500g	Each	**R452372**	154.6
Bismuth Sulfite Agar	100g	Each	**R452401**	56.8
	500g	Each	**R452402**	132.5
	2.5kg	Each	**R452404**	611.4
Blood Agar Base No. 2	100g	Each	**R452411**	31.0
	500g	Each	**R452412**	187.8
Bordet Gengou Agar Base	100g	Each	**R452431**	63.7
	500g	Each	**R452432**	135.8
Brilliant Green Agar Modified	500g	Each	**R452562**	104.8
Brilliant Green Agar	100g	Each	**R452551**	49.3
	500g	Each	**R452552**	105.8
Brilliant Green Bile Broth 2% w/MUG	100g	Each	**R452611**	104.8
Brilliant Green Bile Broth 2%	100g	Each	**R452601**	43.5
	500g	Each	**R452602**	92.6
Brilliant Green Sulfa Agar	500g	Each	**R452622**	118.1
Brucella Agar	100g	Each	**R452651**	37.3
	500g	Each	**R452652**	123.1
Brucella Broth	100g	Each	**R452661**	30.4
	500g	Each	**R452662**	100.3
Buffered CYE Agar Base	500g	Each	**R452352**	232.8
	2.5kg	Each	**R452354**	1127.5
Buffered Peptone Water	100g	Each	**R452671**	36.8
	500g	Each	**R452672**	87.1
	2.5kg	Each	**R452674**	410.6

Sterile dishes for media preparation can be found in the Dishes section.

*Trademark. See Trademark Reference.

Prices subject to change.

mel* Dehydrated Media, Contd.

R01563

scription	Size	Qty.	Cat. No.	Price
mpylobacter Blood Free Selective ar Base	100g	Each	R452721	31.05
	500g	Each	R452722	99.38
sman Agar Base	100g	Each	R452771	43.60
	500g	Each	R452772	143.30
rimide Selective Agar	100g	Each	R452801	62.90
	500g	Each	R452802	140.40
arcoal Agar Base	100g	Each	R452861	43.58
Agar Base	100g	Each	R452941	43.58
	500g	Each	R452942	128.00
rate Azide Agar	500g	Each	R452872	73.22
ED Agar	100g	Each	R452881	55.28
	500g	Each	R452882	257.54
umbia Agar Base	100g	Each	R452951	30.59
	500g	Each	R452952	161.84
	2.5kg	Each	R452954	401.48
umbia Broth	100g	Each	R452971	36.86
	500g	Each	R452972	118.37
umbia CNA Agar Base	100g	Each	R452961	36.82
	500g	Each	R452962	124.35
A Medium	100g	Each	R452981	24.43
	500g	Each	R452982	80.76
Neutralizing Agar	100g	Each	R453031	43.61
Neutralizing Broth	100g	Each	R453041	36.87
	500g	Each	R453042	93.12
mi-Fraser Broth Base	500g	Each	R453462	113.25
rmatophyte Test Medium	500g	Each	R453202	162.34
Medium w/MUG	100g	Each	R453311	135.89
	500g	Each	R453312	296.81
Medium, Modified	100g	Each	R453321	43.58
	500g	Each	R453322	87.94
	2.5kg	Each	R453324	413.55
	10kg	Each	R453326	1474.60
Medium	100g	Each	R453301	37.70
	500g	Each	R453302	86.35
B Agar Base	100g	Each	R453411	37.70
	500g	Each	R453412	124.42
B Agar, Levine	100g	Each	R453401	36.85
	500g	Each	R453402	80.32
	2.5kg	Each	R453404	392.90
B Agar, Modified (HHT)	500g	Each	R453392	88.87
do Agar	100g	Each	R453371	31.04
	500g	Each	R453372	104.91
jon Agar	100g	Each	R453421	31.03
	500g	Each	R453422	92.41

Description	Size	Qty.	Cat. No.	Price
Eugonic Agar w/Lecithin, Polysorbate 80	500g	Each	R458002	62.84
Eugonic Broth w/Lecithin, Polysorbate 80, Triton X-100	500g	Each	R458012	56.90
F				
Fluid Sabouraud Medium	100g	Each	R453441	24.43
	500g	Each	R453442	67.97
Fluid Thioglycollate Medium	100g	Each	R453451	24.94
	500g	Each	R453452	56.05
	2.5kg	Each	R453454	280.38
Fraser Broth Base	500g	Each	R453482	95.32
G				
GN Broth (Hajna)	100g	Each	R453511	31.04
	500g	Each	R453512	101.95
H				
HC Agar	500g	Each	R453532	55.26
HE Agar (Hektoen Enteric Agar)	100g	Each	R453571	79.03
	500g	Each	R453572	173.34
	2.5kg	Each	R453574	867.94
Heart Infusion Agar	100g	Each	R453521	61.96
	500g	Each	R453522	134.14
Heart Infusion Broth	100g	Each	R453551	61.97
	500g	Each	R453552	134.09
	2.5kg	Each	R453554	645.95
Hunt Medium Base	500g	Each	R453562	118.37
I				
Inhibitory Mold Agar	100g	Each	R453591	63.79
	500g	Each	R453592	161.50
K				
KF Strep Agar	100g	Each	R453611	31.02
	500g	Each	R453612	99.39
Kligler Iron Agar	100g	Each	R453621	31.51
	500g	Each	R453622	104.85
L				
Lactose Broth	100g	Each	R453651	31.15
	500g	Each	R453652	73.26
	2.5kg	Each	R453654	349.96
	10kg	Each	R453656	1368.57
Lauryl Tryptose Broth w/MUG	100g	Each	R453671	136.42
	500g	Each	R453672	374.14
Lauryl Tryptose Broth	100g	Each	R453661	31.04
	500g	Each	R453662	68.88
	2.5kg	Each	R453664	337.39
Letheen Agar Modified	500g	Each	R453722	123.10
Letheen Agar	500g	Each	R453702	135.93
	2.5kg	Each	R453704	638.88
Letheen Broth Modified	500g	Each	R453732	113.80
Letheen Broth	500g	Each	R453712	117.82
	2.5kg	Each	R453714	570.69
Listeria Enrichment Broth	100g	Each	R453691	31.05
	500g	Each	R453692	70.82
Lowenstein Jensen Base	100g	Each	R453751	89.72
	500g	Each	R453752	114.16
LPM Agar Base	500g	Each	R453762	179.46
Lysine Iron Agar, Modified	100g	Each	R453791	61.34
	500g	Each	R453792	151.07
Lysine Iron Agar	100g	Each	R453771	74.10
	500g	Each	R453772	167.84

Contd. on next page.

Disposable and reusable cell spreaders can be found on pp. 1101-1102.

Remel* Dehydrated Culture Media, Contd.

R01550

Description	Size	Qty.	Cat. No.	Price
M				
MacConkey Agar	500g	Each	**R453802**	80.87
MacConkey Agar Base	100g	Each	**R453811**	36.81
MacConkey Agar w/MUG	500g	Each	**R453842**	444.36
MacConkey Sorbitol Agar	100g	Each	**R453851**	31.04
Malonate Broth Modified	100g	Each	**R453881**	87.51
	500g	Each	**R453882**	479.60
Malt Extract Agar	100g	Each	**R453891**	36.87
	500g	Each	**R453892**	124.34
Mannitol Salt Agar	100g	Each	**R453901**	24.42
	500g	Each	**R453902**	55.28
	2.5kg	Each	**R453904**	255.94
M-Broth	100g	Each	**R453781**	43.59
	500g	Each	**R453782**	112.22
	2.5kg	Each	**R453784**	529.58
McClung Toabe Agar Base	500g	Each	**R453932**	154.02
m-Endo Agar LES	100g	Each	**R453941**	55.28
	500g	Each	**R453942**	118.37
m-Endo Broth MF	100g	Each	**R453951**	43.57
	500g	Each	**R453952**	92.43
M-Enterococcus Agar	100g	Each	**R456071**	44.44
	500g	Each	**R456072**	147.26
Middlebrook 7H10 Agar	500g	Each	**R453982**	143.94
Middlebrook 7H11 Agar	100g	Each	**R454001**	43.57
	500g	Each	**R454002**	136.44
Middlebrook 7H9 Broth	500g	Each	**R454012**	124.42
MRS Agar	100g	Each	**R454051**	36.84
	500g	Each	**R454052**	114.85
	2.5kg	Each	**R454054**	540.24
Mueller Hinton Agar	500g	Each	**R454082**	86.13
	2.5kg	Each	**R454084**	772.33
Mycobiotic Agar	100g	Each	**R454111**	74.88
	500g	Each	**R454112**	161.49
Mycological Agar, Low pH	500g	Each	**R454132**	119.05
Mycological Agar	100g	Each	**R454121**	36.87
Mycoplasma Broth Base, Frey	100g	Each	**R454161**	31.94
	500g	Each	**R454162**	104.90
Mycoplasma Broth Base	100g	Each	**R454171**	36.84
	500g	Each	**R454172**	106.66
N				
Nutrient Agar w/MUG	500g	Each	**R454212**	355.49
Nutrient Agar	100g	Each	**R454181**	54.83
	500g	Each	**R454182**	124.73
	2.5kg	Each	**R454184**	625.06

Description	Size	Qty.	Cat. No.	
Nutrient Broth	100g	Each	**R454201**	4
	500g	Each	**R454202**	10
	2.5kg	Each	**R454204**	53
O				
Oxford Agar Base, Modified	100g	Each	**R454231**	6
	500g	Each	**R454232**	14
	2.5kg	Each	**R454234**	74
P				
Peptone Water	100g	Each	**R454241**	3
	500g	Each	**R454242**	6
Phenol Red Agar Base	500g	Each	**R454262**	11
Phenol Red Broth Base	100g	Each	**R454271**	3
	500g	Each	**R454272**	7
Phenol Red Dextrose Broth	500g	Each	**R454282**	7
Phenylethyl Alcohol Agar (PEA)	100g	Each	**R454301**	4
	500g	Each	**R454302**	10
Potato Dextrose Agar	100g	Each	**R454311**	4
	500g	Each	**R454312**	10
	2.5kg	Each	**R454314**	51
Potato Flake Agar	100g	Each	**R454321**	4
	500g	Each	**R454322**	11
Presence-Absence Broth	500g	Each	**R454292**	9
	2.5kg	Each	**R454294**	44
Pseudomonas F Agar (FLO Agar)	100g	Each	**R454331**	7
	500g	Each	**R454332**	17
Pseudomonas Isolation Agar	100g	Each	**R454391**	3
	500g	Each	**R454392**	151
Pseudomonas P Agar (TECH Agar)	100g	Each	**R454341**	44
	500g	Each	**R454342**	14
Purple Broth Base	100g	Each	**R454351**	31
	500g	Each	**R454352**	88
R				
R2A Agar	100g	Each	**R454371**	50
	500g	Each	**R454372**	114
Rappaport-Vassiliadis R10 Broth	100g	Each	**R456091**	49
	500g	Each	**R456092**	104
S				
SABHI Agar (Sabouraud Dextrose w/BHI Agar)	100g	Each	**R454481**	49
	500g	Each	**R454482**	159.
Sabouraud Dextrose Agar (pH 5.6)	100g	Each	**R454461**	31.
	500g	Each	**R454462**	67.
	2.5kg	Each	**R454464**	340.
Sabouraud Dextrose Agar, Emmons	100g	Each	**R454471**	36.
	500g	Each	**R454472**	107.
Schaedler Agar	100g	Each	**R454521**	55.
	500g	Each	**R454522**	127.
Selenite Broth	100g	Each	**R454581**	36.
	500g	Each	**R454582**	75.
Selenite Cystine Broth	100g	Each	**R454591**	36.
	500g	Each	**R454592**	79.

Incubators for media preparation can be found in Sample Prep Devices section.

*Trademark. See Trademark Reference.

Prices subject to change.

scription	Size	Qty.	Cat. No.	Price
M Medium	100g	Each	**R454411**	31.05
	500g	Each	**R454412**	92.61
mons Citrate Agar	100g	Each	**R454651**	49.30
	500g	Each	**R454652**	106.66
ndard Methods Agar	100g	Each	**R454701**	43.58
	500g	Each	**R454702**	92.57
	2.5kg	Each	**R454704**	451.45
Broth Base	100g	Each	**R454791**	31.05
	500g	Each	**R454792**	106.66
BS Agar	100g	Each	**R454751**	50.20
	500g	Each	**R454752**	113.07
	2.5kg	Each	**R454754**	533.99
gitol 7 Agar	100g	Each	**R454801**	44.47
	500g	Each	**R454802**	146.71
athionate Broth Base	100g	Each	**R454821**	25.12
	2.5kg	Each	**R454824**	276.81
ogel Medium	100g	Each	**R454841**	49.31
	500g	Each	**R454842**	180.20
oglycollate Medium w/o Indicator	100g	Each	**R454901**	36.89
	500g	Each	**R454902**	113.42
le Sugar Iron Agar (TSI Agar)	100g	Each	**R454981**	31.05
	500g	Each	**R454982**	69.85
	2.5kg	Each	**R454984**	346.10
ptic Soy Agar	100g	Each	**R455001**	30.59
	500g	Each	R455002	67.03
	2.5kg	Each	**R455004**	310.02
	10kg	Each	**R455006**	1292.23
ptic Soy Agar w/Lecithin, ysorbate 80	500g	Each	**R455032**	92.15
ptic Soy Broth (TSB) (Soybean ein Digest)	100g	Each	**R455051**	17.18
	500g	Each	**R455052**	64.29
	2.5kg	Each	**R455054**	184.51
	10kg	Each	**R455056**	717.26
ptone Glucose Extract Agar	100g	Each	**R455091**	36.85
ptose Broth	100g	Each	**R455161**	24.44
	500g	Each	**R455162**	86.13
ptose Phosphate Broth	100g	Each	**R455191**	16.97
	500g	Each	**R455192**	54.66
Broth Base (Hajna)	100g	Each	**R454831**	31.02
a Agar Base	100g	Each	**R455201**	37.52
M Modified Listeria Enrichment th	500g	Each	**R455252**	99.39
etable Peptone Broth	500g	Each	**R455272**	43.57
et Red Bile Agar w/MUG	500g	Each	**R455292**	350.26

Remel* Prepared Media

Many media formulations available

- Plated and tubed media formulations ensure the best media possible
- For the isolation and/or differentiation of microorganisms from samples or specimens
- Most are ready for immediate use with no further preparation necessary
- Remel also manufactures media on a contract basis; for more information, contact your Fisher Scientific Customer Service Representative
- Products designated "Not Intended for IVD Use" have not been cleared by the FDA for in vitro diagnostic use

Description	Type†	Qty.	Cat. No.	Price
10B (Liquid) Broth	B - 1.8mL	100/Cs.	**R20304**	651.30
10B Arginine Broth	B - 1.8mL	100/Pk.	**R20305**	892.87
10B Broth, Lyophilized	B - 1.8mL	6/Pk.	**R20302**	39.16
A				
A.C.T.* I	16 x 125mm T	20/Pk.	**R12401**	85.07
A-7 Agar	15 x 60mm P	10/Pk.	**R20201**	85.87
	M	10/Pk.	**R20202**	110.64
A-8 Agar w/Penicillin	M	10/Pk.	**R20205**	110.60
A-8 Agar, Selective w/Cefoperazone, amphotericin B	15 x 60mm P	10/Pk.	**R20204**	89.29
Acetamide Agar	D - slant	100/Cs.	**R060010**	559.14
	D - slant	20/Pk.	**R060012**	140.07
Acetate Differential Agar (Sodium Acetate Agar)	D - slant	20/Pk	**R060022**	139.48
Agar (1.5%)	F - 10mL BT	20/Pk.	**R08007**	87.58
Alkaline Peptone Water	D - 5mL	20/Pk.	**R060052**	139.65
	E - 10mL	20/Pk.	**R07006**	148.32
Amies Transport Medium w/Charcoal	D - 9mL BT	100/Cs.	**R060070**	458.26
	D - 9mL BT	20/Pk.	**R060072**	93.64
Amies Transport Medium w/o Charcoal	D - 9mL BT	20/Pk.	**R060062**	93.52
Anaerobic Blood Agar CDC formulation	M	10/Pk.	**R01040**	47.92
	M	100/Cs.	**R01036**	480.07
	SP	15/Pk.	**R01039**	88.52
Anaerobic KV Blood Agar CDC formulation	M	10/Pk.	**R01042**	50.92
Anaerobic LKV Blood Agar CDC formulation	M	10/Pk.	**R01044**	51.06
Anaerobic LPV Blood Agar CDC formulation	M	10/Pk.	**R01052**	66.87

†For Packaging Key, please see p.1038.

Contd. on next page.

Inoculating loops and needles can be found on pp. 1101-1102.

Remel* Prepared Media, Contd.

Description	Type	Qty.	Cat. No.	Price
Anaerobic Neomycin Blood Agar CDC formulation	M	10/Pk.	**R01046**	52.15
Anaerobic Neomycin Blood Agar CDC formulation	SP	15/Pk.	**R01047**	90.58
Anaerobic CDC LKV Blood Agar	M	100/Pk	**R01045**	525.05
Anaerobic CDC KV Blood Agar	M	100/Pk	**R01043**	521.54
Anaerobic CDC LPV Blood Agar	M	100/Pk	**R01053**	2937.39
Anaerobic PEA Blood Agar CDC formulation	M	100/Cs.	**R01049**	525.67
Anaerobic PEA Blood Agar CDC formulation	M	10/Pk.	**R01048**	51.42
Anaerobic PV Blood Agar CDC formulation	M	10/Pk.	**R01050**	67.37
Anaerobic Reducible Blood Agar	M	10/Pk.	**R01060**	51.43
Anaerobic Reducible Blood Agar	M	100/Cs.	**R01059**	531.68
Anaerobic Reducible Blood Agar, Columbia Blood Agar base	SP	15/Pk.	**R01061**	74.84
Anaerobic Reducible Blood Agar // PEA w/Vitamin K	BP	10/Pk.	**R02124**	98.86
Anaerobic Reducible CNA Blood Agar, Columbia Blood Agar base	M	10/Pk.	**R01064**	73.65
Anaerobic Reducible CNA Blood Agar, Columbia Blood Agar base	SP	15/Pk.	**R01065**	88.04
Anaerobic Reducible CNA Blood Agar // Kanamycin Bile Esculin Agar (KBE)	BP	10/Pk.	**R02088**	98.09
Anaerobic Reducible CNA Blood Agar // Reducible LKV Blood Agar	BP	10/Pk.	**R02135**	93.91
Anaerobic Reducible LKV Blood Agar // Bacteroides Fragilis Isolation Agar (BBE)	BP	10/Pk.	**R02006**	96.48
Anaerobic Reducible LKV Blood Agar, Columbia Blood Agar base	M	10/Pk.	**R01068**	52.25
Anaerobic Reducible LKV Blood Agar, Columbia Blood Agar base	SP	15/Pk.	**R01069**	92.57
Anaerobic Reducible LKV Blood Agar // Kanamycin Bile Esculin Agar (KBE)	BP	10/Pk.	**R02089**	97.46
Anaerobic Reducible LKV Blood Agar // PEA w/Vitamin K	BP	10/Pk.	**R02126**	98.63
Anaerobic Reducible LKV Blood Agar // Reducible Blood Agar w/Neomycin, Vancomycin	BP	10/Pk.	**R02136**	98.50
Anaerobic Reducible Neomycin Blood Agar, Columbia Blood Agar base	M	10/Pk.	**R01072**	159.97
Andrade's Broth Base Control	D - 5mL	20/Pk.	**R060102**	139.68

Description	Type	Qty.	Cat. No.	Pr
Andrade's Broth w/1% Adonitol	D - 5mL	20/Pk.	**R060106**	134
Andrade's Broth w/1% Arabinose	D - 5mL	20/Pk.	**R060110**	134
Andrade's Broth w/1% Dextrose	D - 7mL DT	20/Pk.	**R060114**	139
Andrade's Broth w/1% Dulcitol	D - 5mL	20/Pk.	**R060118**	134
Andrade's Broth w/1% Fructose	D - 5mL	20/Pk.	**R060122**	135
Andrade's Broth w/1% Glycerol	D - 5mL	20/Pk.	**R060126**	139
Andrade's Broth w/1% Inositol	D - 5mL	20/Pk.	**R060130**	134
Andrade's Broth w/1% Inulin	D - 5mL	20/Pk.	**R060134**	139
Andrade's Broth w/1% Lactose	D - 5mL	20/Pk.	**R060138**	135
Andrade's Broth w/1% Maltose	D - 5mL	20/Pk.	**R060142**	135
Andrade's Broth w/1% Mannitol	D - 5mL	20/Pk.	**R060146**	139
Andrade's Broth w/1% Mannose	D - 5mL	20/Pk.	**R060150**	134
Andrade's Broth w/1% Raffinose	D - 5mL	20/Pk.	**R060154**	135
Andrade's Broth w/1% Rhamnose	D - 5mL	20/Pk.	**R060158**	134.
Andrade's Broth w/1% Salicin	D - 5mL	20/Pk.	**R060162**	139.
Andrade's Broth w/1% Sorbitol	D - 5mL	20/Pk.	**R060166**	134.
Andrade's Broth w/1% Sucrose	D - 5mL	20/Pk.	**R060170**	134.
Andrade's Broth w/1% Xylose	D - 5mL	20/Pk.	**R060178**	134.
Arginine Broth, lyophilized	1.8mL/Vl.	6/Pk.	**R20358**	38.
Arylsulfatase Agar	F - BT	20/Pk.	**R08026**	141.
Arylsulfatase Broth, 2-week test	D - 2mL	20/Pk.	**R060196**	139.
Arylsulfatase Broth, 3-day test	D - 2mL	20/Pk.	**R060192**	139.
Ascospore Agar	G - PT	20/Pk.	**R09046**	151.
Aspergillus Differential Medium	G - PT	20/Pk.	**R09052**	105.
ATS Medium	F - slant	100/Cs.	**R08052**	478.
ATS Medium	F - slant	20/Pk.	**R08054**	118.
B				
Bacteroides Fragilis Isolation Agar (BBE Agar)	M	10/Pk.	**R01104**	52.
BACTi* Proteose Peptone	Btl. 500g	Each	**R450652**	110.
Baird Parker Agar	M	10/Pk.	**R01108**	51.
BHI Agar (Brain Heart Infusion Agar)	M	10/Pk.	**R01130**	38.

Packaging Key

Media Packaging Type	Abbreviation	Media Packaging Type	Abbreviation
13 x 100mm Tube	**A**	**Filter**	**FL**
15 x 45mm Tube	**B**	**Hungate Cap**	**HC**
15 x 90mm Tube	**C**	**Individual Wrap Plate**	**IWP**
15 x 103mm Tube	**D**	**Monoplate**	**M**
16 x 125mm Tube	**E**	**Organism**	**Org.**
20 x 113mm Tube	**F**	**Plate**	**P**
20 x 150mm Tube	**G**	**Polypropylene Bottle**	**PB**
27 x 70mm Tube	**H**	**Pour Tube**	**PT**
Ampules	**Amp.**	**Pour Tube, Deep**	**PTD**
Biplate	**BP**	**Quadplate**	**Q**
Blood Culture Bottle	**BCB**	**Rubber Stopper**	**RS**
Borosilicate Bottle	**BB**	**Serum Bottle**	**SB**
Boston Round Bottle	**BRB**	**Single Bag**	**SBG**
Bottle	**Btl.**	**Spacesaver Plate**	**SP**
Butt (10 × 103mm Tube)	**BT**	**Thin Pour**	**TP**
Clear Square Bottle	**CSB**	**Tissue Culture Flask**	**TCF**
Double Bag	**DBG**	**Triplate**	**TRI**
Double Pour	**DP**	**Tube**	**T**
Durham Tube	**DT**	**Wide Mouth Bottle**	**WMB**
Envelope	**Env.**	**Vial**	**Vl.**

For environmental chambers for anaerobic bacteria, see Gas Generating Systems/ Environmental Chambers.

*Trademark. See Trademark Reference.

mel* Prepared Media, Contd.

R01104

scription	Type	Qty.	Cat. No.	Price
I (Brain Heart Infusion Agar) Agar	1 oz. Btl.	100/Pk.	**R10034**	556.10
I Agar Bactiflask* (Brain Heart Infusion ar)	1 oz. TCF	20/Pk.	**R10244**	145.68
I Agar w/Chloramphenicol, cloheximide Bactiflask*	1 oz. TCF	20/Pk.	**R10245**	201.19
I Agar w/Chloramphenicol, cloheximide	F - slant	100/Cs.	**R08068**	595.29
	F - slant	20/Pk.	**R08069**	149.29
I Agar w/Sheep Blood Bactiflask*	1 oz. TCF	20/Pk.	**R10246**	145.77
I Agar (Brain Heart Infusion Agar)	D - slant	100/Cs.	**R060230**	362.44
	D - slant	20/Pk.	**R060232**	82.68
	F - slant	100/Cs.	**R08060**	502.29
	F - slant	20/Pk.	**R08062**	119.14
	G - PT	20/Pk.	**R09060**	151.50
	M DP	10/Pk.	**R01132**	39.12
I Agar w/Sheep Blood	1 oz. Btl.	10/Pk.	**R10041**	90.66
	F - slant	100/Cs.	**R08064**	497.71
	F - slant	20/Pk.	**R08066**	117.92
	M DP	10/Pk.	**R01136**	43.79
	M DP	100/Cs.	**R01139**	449.63
I Agar w/Sheep Blood, oramphenicol, Cycloheximide	F - slant	20/Pk.	**R08073**	149.32
	M DP	10/Pk.	**R01142**	66.82
I Agar w/Sheep Blood, oramphenicol, Gentamicin Bactiflask*	1 oz. TCF	20/Pk.	**R10248**	179.76
I Agar w/Sheep Blood, oramphenicol, Gentamicin, cloheximide Bactiflask*	1 oz. TCF	20/Pk.	**R10250**	181.67

Description	Type	Qty.	Cat. No.	Price
BHI Agar w/Sheep Blood, Chloramphenicol, Gentamicin, Cycloheximide	1 oz. Btl.	10/Pk.	**R10049**	91.19
	F - slant	100/Cs.	**R08078**	594.42
BHI Agar w/Sheep Blood, Chloramphenicol, Gentamicin, Cycloheximide	F - slant	20/Pk.	**R08080**	147.53
	M DP	10/Pk.	**R01148**	65.51
	1 oz. Bottle	100/Cs.	**R10048**	908.30
BHI Agar w/Sheep Blood, Chloramphenicol, Gentamicin	1 oz. Btl.	10/Pk.	**R10045**	89.93
	1 oz. Btl.	100/Cs.	**R10044**	911.16
	F - slant	100/Cs.	**R08070**	584.22
	F - slant	20/Pk.	**R08072**	149.14
	M DP	10/Pk.	**R01144**	64.83
BHI Agar w/Sheep Blood, Chloramphenicol	M DP	10/Pk.	**R01140**	52.26
BHI Agar w/Sheep Blood, Penicillin, Streptomycin, Cycloheximide	M DP	10/Pk.	**R01156**	66.83
BHI Agar w/Sheep Blood, Penicillin, Streptomycin, Yeast Extract	M DP	10/Pk.	**R01160**	66.80
BHI Agar w/Chloramphenicol, Cycloheximide	1 oz. Btl.	10/Pk.	**R10038**	90.99
BHI Agar w/Sheep Blood, Penicillin, Streptomycin	M DP	10/Pk.	**R01152**	66.78
	F - slant	20/Pk.	**R08092**	149.09
BHI Agar w/Vancomycin	M	10/Pk.	**R01176**	50.63

Contd. on next page.

LOOKING FOR THE TISSUE CULTURE SECTION?

It has moved and is now called Cell Culture.

LOOKING FOR THE MICROARRAYS SECTION?

It has moved and is now called Array Analysis.

More formulations, formats and sizes can be found on our Web site.

Remel* Prepared Media, Contd.

Description	Type	Qty.	Cat. No.	Price
BHI Broth	BB - 100mL	Each	**R20011**	20.39
	BB - 500 ml	10/Pk.	**R112022**	251.96
	D - 0.5mL FL	100/Cs.	**R060250**	372.38
	D - 0.5mL FL	20/Pk.	**R060252**	82.86
	D - 2mL	100/Cs.	**R060258**	363.29
	D - 2mL	20/Pk.	**R060260**	82.01
	D - 4mL	100/Cs.	**R060264**	369.08
	D - 4mL	20/Pk.	**R060266**	82.91
	D - 5mL	100/Cs.	**R060270**	354.99
	D - 5mL	20/Pk.	**R060272**	82.69
	F - 10mL	100/Cs.	**R08130**	393.79
	F - 10mL	20/Pk.	**R08132**	87.29
BHI Broth w/6.5% NaCl	D - 4.5mL	100/Cs.	**R060284**	414.61
	D - 4.5mL	20/Pk.	**R060286**	93.37
BHI Broth w/Fildes Enrichment	D - 5mL	100/Cs.	**R060280**	560.79
	D - 5mL	20/Pk.	**R060282**	139.52
BHI Broth w/Hemin, Vitamin K	D - 5mL	100/Cs.	**R060276**	469.38
	D - 5mL	20/Pk.	**R060278**	111.90
	E - 10mL	20/Pk.	**R07019**	118.63
BHI Broth w/X & V Factors	D - 5mL	20/Pk.	**R060290**	165.54
BiGGY Agar (Bismuth Sulfite Glucose Glycine Yeast) (Nickerson Agar)	1 oz. Btl.	10/Pk.	**R10136**	90.78
BiGGY Agar (Nickerson Agar)	F - slant	20/Pk.	**R08152**	147.50
	M	10/Pk.	**R01180**	66.78
Bile Esculin Agar // BHI Agar w/6.5% NaCl	BP	10/Pk.	**R02010**	93.83
Bile Esculin Agar	M	10/Pk.	**R01190**	41.82
	D - slant	100/Cs.	**R060292**	414.61
	D - slant	20/Pk.	**R060294**	93.45
Bile Esculin Azide Agar w/Vancomycin	M	10/Pk.	**R01186**	50.63
Bile Esculin Azide Agar	M	10/Pk.	**R01194**	43.37
	D - slant	20/Pk.	**R060298**	93.33
	SP	15/Pk.	**R01195**	68.72
Bile Esculin Azide Broth	D - 2mL	100/Cs.	**R060300**	415.27
	D - 2mL	20/Pk.	**R060302**	93.22
Birdseed Agar	F - slant	20/Pk.	**R08172**	149.29
	G - PTD 25mL	20/Pk.	**R09176**	151.44
	M	10/Pk.	**R01192**	66.67
Bile Esculin Azide Agar	M	100/Pk.	**R01189**	436.23
Blood Agar (TSA 5% Sheep Blood) // Chocolate Agar	BP	10/Pk.	**R02030**	41.55
	BP	100/Cs.	**R02029**	431.58
Blood Agar (TSA 5% Sheep Blood) // SXT Blood Agar	BP	10/Pk.	**R02053**	81.30
Blood Agar (TSA 5% Sheep Blood) // EMB Agar (Levine)	BP	10/Pk.	**R02040**	42.82
	BP	100/Cs.	**R02041**	426.44
Blood Agar (TSA 5% Sheep Blood) // MacConkey Agar	BP	10/Pk.	**R02050**	42.70

Description	Type	Qty.	Cat. No.	Price
Blood Agar (TSA 5% Sheep Blood) // MacConkey Agar	BP	100/Cs.	**R02049**	417.38
Blood Agar (TSA w/10% Sheep Blood)	M	10/Pk.	**R01204**	66.61
Blood Agar (TSA w/5% Rabbit Blood)	M	10/Pk.	**R01210**	66.07
Blood Agar (TSA w/5% Sheep Blood)	D - slant	100/Cs.	**R060310**	468.55
	D - slant	20/Pk.	**R060312**	109.75
	M	10/Pk.	**R01200**	33.77
	M	100/Cs.	**R01202**	340.35
	SP	15/Pk.	**R01201**	54.05
	SP	150/Cs.	**R01198**	526.94
Blood Agar // Blood Agar (TSA w/5% Sheep Blood)	BP	10/Pk.	**R02020**	43.77
	BP	100/Cs.	**R02019**	437.04
Blood Agar w/Ampicillin (TSA w/5% Sheep Blood)	M	10/Pk.	**R01226**	43.46
Blood Agar w/GCHI Enrichment (TSA w/5% Horse Blood)	M	10/Pk.	**R01208**	39.72
Blood Agar w/Gentamicin (TSA w/5% Sheep Blood)	M	10/Pk.	**R01227**	150.61
Blood Agar w/Neomycin 10 mcg (TSA w/5% Sheep Blood)	M	10/Pk.	**R01231**	39.72
Blood Agar w/Neomycin 30 mcg (TSA w/5% Sheep Blood)	M	10/Pk.	**R01228**	44.84

Packaging Key

Media Packaging Type	Abbreviation	Media Packaging Type	Abbreviation
13 x 100mm Tube	A	Filter	FL
15 x 45mm Tube	B	Hungate Cap	HC
15 x 90mm Tube	C	Individual Wrap Plate	IWP
15 x 103mm Tube	D	Monoplate	M
16 x 125mm Tube	E	Organism	Org.
20 x 113mm Tube	F	Plate	P
20 x 150mm Tube	G	Polypropylene Bottle	PB
27 x 70mm Tube	H	Pour Tube	PT
Ampules	Amp.	Pour Tube, Deep	PTD
Biplate	BP	Quadplate	Q
Blood Culture Bottle	BCB	Rubber Stopper	RS
Borosilicate Bottle	BB	Serum Bottle	SB
Boston Round Bottle	BRB	Single Bag	SBG
Bottle	Btl.	Spacesaver Plate	SP
Butt (10 × 103mm Tube)	BT	Thin Pour	TP
Clear Square Bottle	CSB	Tissue Culture Flask	TCF
Double Bag	DBG	Triplate	TRI
Double Pour	DP	Tube	T
Durham Tube	DT	Wide Mouth Bottle	WMB
Envelope	Env.	Vial	Vl.

Media for water quality testing can be found on pp. 1086-1087.

*Trademark. See Trademark Reference.

R nel* Prepared Media, Contd.

R01200

E cription	Type	Qty.	Cat. No.	Price
E od Agar w/o GCHI Enrichment (A w/5% Horse Blood)	M	10/Pk.	**R01207**	39.32
E det Gengou Agar w/Blood	15 x 150mm Plate	10/Pk.	**R110810**	89.74
	M	10/Pk.	**R01240**	65.48
	G - PT	20/Pk.	**R09192**	127.28
E det Gengou Agar w/Methicillin v lood	M	10/Pk.	**R01242**	63.55
E ine Albumin Fraction V 0.2%	F - 10mL	20/Pk.	**R08194**	149.29
	PB - 5mL	Each	**R20018**	11.96
E iant Green Agar w/Novobiocin	M	10/Pk.	**R01247**	67.09
E iant Green Agar	M	10/Pk.	**R01246**	51.07
E iant Green Agar w/Sulfa	Monoplate	10/Pk.	**R110112**	110.16
E iant Green Agar	G - PT	20/Pk.	**R119040**	151.42
E iant Green Bile Broth 2%	E - DT	100/Cs.	**R07020**	593.72
	E - DT	20/Pk.	**R07022**	148.32
E cella Agar w/5% Sheep Blood, H hin, Vitamin K	15 x 150mm P	10/Pk.	**R04011**	88.16
	M	10/Pk.	**R01254**	43.29
	M	100/Cs.	**R01255**	433.11
E cella Agar w/5% Sheep Blood, T ethoprim, Vancomycin, F ymyxin B (Skirrow)	M	10/Pk.	**R01258**	52.14
E cella Agar w/5% Sheep Blood	M	10/Pk.	**R01252**	52.14
E cella Agar w/Laked Blood, H hin, Vitamin K	15 x 150mm P	10/Pk.	**R04012**	89.11
E cella Agar, LKV	M	10/Pk.	**R01262**	100.50
E cella Broth w/0.16% Agar, 1 Potassium Nitrate	D - 5mL	20/Pk.	**R060362**	139.68
E cella Broth w/0.16% Agar, 1 Glycine	D - 5mL	20/Pk.	**R060354**	139.68

Description	Type	Qty.	Cat. No.	Price
Brucella Broth w/0.16% Agar	Monoplate	100/Pk.	**R110113**	589.75
Brucella Broth w/0.16% Agar, 3.5% NaCl	D - 5mL	20/Pk.	**R060358**	139.68
Brucella Broth w/0.16% Agar	D - 5mL	20/Pk.	**R060342**	139.68
Brucella Broth	D - 5mL	100/Cs.	**R060320**	393.83
	D - 5mL	20/Pk.	**R060322**	93.37
Buffered CYE Agar (Buffered Charcoal Yeast Extract) (BCYE)	G - PT 22mL	20/Pk.	**R09300**	151.44
Buffered CYE Agar (BCYE)	M	10/Pk.	**R01342**	65.47
	E - slant	20/Pk.	**R07092**	148.32
Buffered CYE Agar, Non-supplemented (BCYE)	M	10/Pk.	**R01334**	63.52
Buffered CYE Differential Agar w/BTB, BCP (BCYE w/Dyes)	M	10/Pk.	**R01343**	63.55
Buffered CYE Differential Agar w/BTB, BCP, Polymyxin B, Anisomycin, Vancomycin (BCYE w/Dyes & PAV)	M	10/Pk.	**R01333**	63.52
Buffered CYE Selective Agar w/Dyes, Glycine, Vancomycin, Polymyxin B (BCYE w/DGVP)	M	10/Pk.	**R01338**	61.73
Buffered CYE Selective Agar w/Polymyxin B, Anisomycin, Cefamandole (BCYE w/PAC)	M	10/Pk.	**R01339**	65.94
Buffered CYE Selective Agar w/Polymyxin B, Anisomycin, Vancomycin. (BCYE w/PAV)	M	10/Pk.	**R01341**	65.58
Burkholderia Cepacia Selective Agar (BCSA)	M	10/Pk.	**R01245**	65.43
C				
Campy Blood Agar w/Trimethoprim, Vancomycin, Polymyxin B, Cephalothin, Amphotericin B. (Blaser)	M	10/Pk.	**R01280**	50.94
Campy Blood Agar w/Trimethoprim, Vancomycin, Polymyxin B, Cephalothin, Amphotericin B. (Blaser)	M	100/Cs.	**R01284**	518.62
Campy Blood Agar w/Trimethoprim, Vancomycin, Polymyxin B, Cephalothin, Amphotericin B. (Blaser)	SP	15/Pk.	**R01281**	88.58
Campy Thioglycollate Medium w/ 0.16% Agar, Trimethoprim, Vancomycin, Polymyxin B, Cephalothin and Amphotericin B, w/o Indicator	D - 9mL	20/Pk.	**R060372**	138.43
Campy Thioglycollate Medium w/ 0.16% Agar, Trimethoprim, Vancomycin, Polymyxin B, Cephalothin and Amphotericin B, w/o Indicator	D - 9mL	100/Cs.	**R060370**	551.02
Campylobacter Selective Medium w/Laked Horse Blood, Vancomycin, Polymyxin B, Trimethoprim, Cefaperazone	M	10/Pk.	**R01274**	52.17
Candida BCG Agar	M - DP	10/Pk.	**R01282**	136.53
CandidaTube* (BiGGY Agar) (Nickerson Agar)	H	10/Pk.	**R241035**	39.05
Carbon Assimilation Broth Base Control (Wickerham Broth)	D - 5mL	20/Pk.	**R060382**	139.48

Contd. on next page.

More formulations, formats and sizes can be found on our Web site.

Remel* Prepared Media, Contd.

Description	Type	Qty.	Cat. No.	Price
Carbon Assimilation Broth w/Cellobiose (Wickerham Broth)	D - 5mL	20/Pk.	**R060386**	139.48
Carbon Assimilation Broth w/Galactose (Wickerham Broth)	D - 5mL	20/Pk.	**R060398**	139.68
Carbon Assimilation Broth w/Dextrose (Wickerham Broth)	D - 5mL	20/Pk.	**R060390**	144.02
Carbon Assimilation Broth w/Maltose (Wickerham Broth)	D - 5mL	20/Pk.	**R060410**	134.85
Carbon Assimilation Broth w/Raffinose (Wickerham Broth)	D - 5mL	20/Pk.	**R060418**	139.48
Carbon Assimilation Broth w/Trehalose (Wickerham Broth)	D - 5mL	20/Pk.	**R060430**	139.48
Carbon Assimilation Broth w/Xylose (Wickerham Broth)	D - 5mL	20/Pk.	**R060434**	139.68
Cary-Blair Transport Medium	D - 9mL	10/Pk.	**R060450**	560.44
	D - 9mL	20/Pk.	**R060452**	139.70
Cary-Blair w/Indicator	SP	SP	**R21620**	34.51
Casamino Acid Solution 1%	D - 0.5mL	20/Pk.	**R060462**	138.37
Casein Agar (Casein Hydrolysis Agar)	F - PT	10 Sets/ Pk.	**R08210**	147.58
Casman Agar w/5% Sheep Blood	M	10/Pk.	**R01212**	39.63
Casman Agar, Modified	M	10/Pk.	**R01618**	49.32
CCFA Modified Agar w/Cefoxitin, Cycloserine, Fructose	M	10/Pk.	**R01268**	64.88
CCFA Modified Agar w/Horse Blood w/Cefoxitin, Cycloserine, Fructose	M	10/Pk.	**R01266**	175.88
Cellulose-Czapek Agar	15 x 100 mm Plate	10/Pk.	**R110024**	66.77
Cetrimide Selective Agar	BB - 200 ml	10/Pk	**R112040**	186.16
	D - slant	100/Cs.	**R060470**	561.47
	D - slant	20/Pk.	**R060472**	139.43
	M	10/Pk.	**R01292**	64.90
	M	100/Pk.	**R110131**	656.94
Cetrimide Selective Agar // Vogel Johnson Agar	BP	10/Pk.	**R02150**	92.83
Charcoal Selective Medium w/ Vancomycin, Cycloheximide, Cefoperazone	M	10/Pk.	**R01294**	95.70
C-H-O Medium Base Control	C - 7mL	20/Pk.	**R07030**	146.27
C-H-O Medium w/1% Arabinose	C - 7mL	20/Pk.	**R07034**	146.27
C-H-O Medium w/1% Cellobiose	C - 7mL	20/Pk.	**R07036**	143.16
C-H-O Medium w/1% Dextrose	C - 7mL	20/Pk.	**R07038**	142.88
C-H-O Medium w/1% Fructose	C - 7mL	20/Pk.	**R07042**	146.27
C-H-O Medium w/1% Galactose	C - 7mL	20/Pk.	**R07044**	146.27
C-H-O Medium w/1% Lactose	C - 7mL	20/Pk.	**R07052**	142.81
C-H-O Medium w/1% Maltose	C - 7mL	20/Pk.	**R07054**	142.71
C-H-O Medium w/1% Mannitol	C - 7mL	20/Pk.	**R07056**	146.27
C-H-O Medium w/1% Mannose	C - 7mL	20/Pk.	**R07058**	143.16
C-H-O Medium w/1% Raffinose	C - 7mL	20/Pk.	**R07062**	143.16
C-H-O Medium w/1% Rhamnose	C - 7mL	20/Pk.	**R07064**	146.27
C-H-O Medium w/1% Salicin	C - 7mL	20/Pk.	**R07066**	144.11
C-H-O Medium w/1% Sucrose	C - 7mL	20/Pk.	**R07070**	142.83
C-H-O Medium w/1% Trehalose	C - 7mL	20/Pk.	**R07072**	146.27
C-H-O Medium w/1% Xylose	C - 7mL	20/Pk.	**R07074**	143.16

Description	Type	Qty.	Cat. No.	Price
Chocolate Agar, Enriched	D - slant	100/Cs.	**R060480**	462.88
	D - slant	20/Pk.	**R060482**	109.71
	M	10/Pk.	**R01300**	31.83
	M	100/Cs.	**R01302**	332.92
	SP	15/Pk.	**R01301**	51.73
	SP	150/Cs.	**R01293**	519.73
Chocolate Agar	F - slant	20/Pk.	**R08240**	100.36
	M	100/Pk.	**R-01303**	343.99
Chocolate Agar w/Bacitracin	M	10/Pk.	**R01291**	464.14
	M	10/Pk.	**R01304**	44.66
Chocolate Agar w/Vancomycin	M	10/Pk.	**R-01306**	45.81
Chocolate Agar w/Yeast Extract, Hemin, Vitamin K	M	10/Pk.	**R01308**	59.00
Chocolate Agar // Chocolate Agar	BP	10/Pk.	**R02055**	44.18
Chocolate Agar // Thayer Martin Agar Improved	BP	10/Pk.	**R02058**	91.97
	BP	100/Cs.	**R02083**	899.41

Packaging Key

Media Packaging Type	Abbreviation	Media Packaging Type	Abbreviation
13 x 100mm Tube	A	Filter	FL
15 x 45mm Tube	B	Hungate Cap	HC
15 x 90mm Tube	C	Individual Wrap Plate	IWP
15 x 103mm Tube	D	Monoplate	M
16 x 125mm Tube	E	Organism	Org.
20 x 113mm Tube	F	Plate	P
20 x 150mm Tube	G	Polypropylene Bottle	PB
27 x 70mm Tube	H	Pour Tube	PT
Ampules	Amp.	Pour Tube, Deep	PTD
Biplate	BP	Quadplate	Q
Blood Culture Bottle	BCB	Rubber Stopper	RS
Borosilicate Bottle	BB	Serum Bottle	SB
Boston Round Bottle	BRB	Single Bag	SBG
Bottle	Btl.	Spacesaver Plate	SP
Butt (10 × 103mm Tube)	BT	Thin Pour	TP
Clear Square Bottle	CSB	Tissue Culture Flask	TCF
Double Bag	DBG	Triplate	TRI
Double Pour	DP	Tube	T
Durham Tube	DT	Wide Mouth Bottle	WMB
Envelope	Env.	Vial	Vl.

Cell spreaders can be found in Sample Prep Devices on pp. 1101-1102.

*Trademark. See Trademark Reference.

emel* Prepared Media, Contd.

R01304

scription	Type	Qty.	Cat. No.	Price
A Base Control	D - 4mL	100/Cs.	**R060570**	415.01
	D - 4mL	20/Pk.	**R060572**	93.33
A Base Control w/Ascitic Fluid	D - 4mL	20/Pk.	**R060682**	139.65
A w/1% Adonitol	D - 4mL	20/Pk.	**R060576**	139.68
A w/1% Arabinose	D - 4mL	20/Pk.	**R060580**	139.85
A w/1% Cellobiose	D - 4mL	20/Pk.	**R060584**	134.46
A w/1% Dextrose	D - 4mL	100/Cs.	**R060586**	415.42
	D - 4mL	20/Pk.	**R060588**	93.33
A w/1% Dextrose w/Ascitic Fluid	D - 4mL	20/Pk.	**R060686**	136.61
A w/1% Dulcitol	D - 4mL	20/Pk.	**R060592**	139.65
A w/1% Fructose	D - 4mL	20/Pk.	**R060596**	139.65
A w/1% Fructose w/Ascitic Fluid	D - 4mL	20/Pk.	**R060690**	134.69
A w/1% Inositol	D - 4mL	20/Pk.	**R060608**	119.62
A w/1% Inulin	D - 4mL	20/Pk.	**R060612**	134.42
A w/1% Lactose	D - 4mL	20/Pk.	**R060616**	88.83
A w/1% Lactose w/Ascitic Fluid	D - 4mL	20/Pk.	**R060694**	139.65
A w/1% Lactose	D - 4mL	100/Cs.	**R060614**	412.78
A w/1% Maltose	D - 4mL	100/Cs.	**R060618**	412.78
	D - 4mL	20/Pk.	**R060620**	88.83
A w/1% Maltose w/Ascitic Fluid	D - 4mL	20/Pk.	**R060698**	142.51
A w/1% Mannitol	D - 4mL	20/Pk.	**R060624**	93.33
A w/1% Mannose	D - 4mL	20/Pk.	**R060628**	142.51
A w/1% Melibiose	D - 4mL	20/Pk.	**R060632**	224.32
A w/1% Raffinose	D - 4mL	20/Pk.	**R060636**	158.19
A w/1% Rhamnose	D - 4mL	20/Pk.	**R060640**	136.61
A w/1% Ribose	D - 4mL	20/Pk.	**R060644**	142.51
A w/1% Salicin	D - 4mL	20/Pk.	**R060648**	136.61
A w/1% Sorbitol	D - 4mL	20/Pk.	**R060652**	136.61
A w/1% Starch	D - 4mL	20/Pk.	**R060656**	111.41
A w/1% Sucrose	D - 4mL	100/Cs.	**R060658**	413.04
	D - 4mL	20/Pk.	**R060660**	93.26
A w/1% Sucrose w/Ascitic Fluid	D - 4mL	20/Pk.	**R060710**	141.21
A w/1% Trehalose	D - 4mL	20/Pk.	**R060664**	141.21
A w/1% Xylose	D - 4mL	20/Pk.	**R060668**	142.51
A Medium (Cefoperazone, Van- mycin, Amphotericin B) w/Sheep Blood	M	10/Pk.	**R01270**	50.80
	M	100/Pk.	**R01272**	522.18
stine Heart Agar w/Rabbit Blood, tibiotics	D - slant	20/Pk.	**R060730**	139.68
	M	10/Pk.	**R01346**	63.50
stine Tellurite Blood Agar	D - slant	20/Pk.	**R060734**	139.73
	M	10/Pk.	**R01348**	63.55

Description	Type	Qty.	Cat. No.	Price
CLED Agar (Cystine-Lactose-Electrolyte Deficient)	M	10/Pk.	**R01312**	50.37
Clostridium Difficile Agar	M	10/Pk.	**R01310**	66.87
Columbia Blood Agar w/5% Sheep Blood	M	10/Pk.	**R01215**	32.42
	M	100/Cs.	**R01217**	332.35
	SP	15/Pk.	**R01216**	50.90
Columbia CNA w/5% Sheep Blood w/Colistin, Nalidixic Acid	M	10/Pk.	**R01320**	38.93
	M	100/Cs.	**R01322**	382.57
	SP	15/Pk.	**R01321**	59.50
Columbia CNA w/5% Sheep Blood, Vancomycin, 6mcg/mL	M	10/Pk.	**R01316**	66.80
Columbia CNA//EMB Agar, Levine	BP	10/Pk.	**R02060**	44.21
Columbia CNA//MacConkey Agar	BP	10/Pk.	**R02065**	42.79
	BP	100/Cs.	**R02066**	422.76
Columbia Horse Blood Bi-Layer Medium	M	10/Pk.	**R01477**	66.00
Columbia Blood Agar w/5% Sheep Blood	SP	150/Pk.	**R01218**	476.83
Columbia CNA w/5% Sheep Blood w/Colistin, Nalidixic Acid	SP	150/Pk.	**R01323**	590.79
Cooked Meat Medium w/Glucose, Hemin, Vitamin K	E - 10mL, HC	100/Pk.	**R07084**	587.02
	E - 10mL, HC	20/Pk.	**R07086**	148.42
Cooked Meat Medium w/Glucose	D - 7mL	100/Cs.	**R060544**	548.36
Cooked Meat Medium w/Glucose, Hemin, Vitamin K	D - 7mL	100/Cs.	**R060540**	559.95
Cooked Meat Medium w/Glucose	D - 7mL	20/Pk.	**R060546**	138.37
Cooked Meat Medium w/Glucose, Hemin, Vitamin K	D - 7mL	20/Pk.	**R060542**	138.57

LOOKING FOR THE LAB AUTOMATION SECTION?

It has moved and is now called Microplate Instrumentation.

LOOKING FOR THE TISSUE CULTURE SECTION?

It has moved and is now called Cell Culture.

LOOKING FOR THE MICROARRAYS SECTION?

It has moved and is now called Array Analysis.

More formulations, formats and sizes can be found on our Web site.

Remel* Prepared Media, Contd.

Description	Type	Qty.	Cat. No.	Price
Cooked Meat Medium w/Glucose, Hemin, Vitamin K	F - 15mL	100/Cs.	**R08260**	595.93
	F - 15mL	20/Pk.	**R08262**	149.09
Cornmeal Agar w/1% Dextrose	G - PT	20/Pk.	**R09286**	127.25
Cornmeal Agar w/Tween* 80, Trypan Blue	M	10/Pk.	**R01330**	66.68
Cornmeal Agar w/Tween 80	G - PT	20/Pk.	**R09290**	127.25
	M	10/Pk.	**R01328**	51.02
	Monoplate DP	10/Pk.	**R01354**	168.03
Cornmeal Agar	G - PT	20/Pk.	**R09282**	127.19
	M DP	10/Pk.	**R01326**	66.78
Cottonseed Agar	F - slant	20/Pk.	**R08298**	148.95
Czapek Medium	G - PT	20/Pk.	**R09322**	151.59
	Monoplate DP	10/Pk.	**R01350**	63.55
D				
D/E Neutralizing Agar	M	10/Pk.	**R01362**	39.13
	G - PT	20/Pk.	**R09332**	145.07
D/E Neutralizing Broth	D - 5mL	100/Cs.	**R060770**	466.64
	G - 9mL	20/Pk.	**R09334**	151.55
Decarboxylase Broth Arginine (Arginine Broth) Moeller	D - 5mL	100/Cs.	**R060754**	412.78
	D - 5mL	20/Pk.	**R060756**	93.33
Decarboxylase Broth Base Control, Moeller	D - 5mL	100/Cs.	**R060750**	412.41
	D - 5mL	20/Pk.	**R060752**	93.33
Decarboxylase Broth Lysine (Lysine Broth) Moeller	D - 5mL	100/Cs.	**R060758**	413.21
	D - 5mL	20/Pk.	**R060760**	93.33
Decarboxylase Broth Ornithine (Ornithine Broth) Moeller	D - 5mL	20/Pk.	**R060764**	93.33
	D - 5mL	100/Cs.	**R060762**	417.15
Dermatophyte Test Medium (DTM)	1 oz. Btl.	10/Pk.	**R10067**	90.82

Description	Type	Qty.	Cat. No.	Pric
Dermatophyte Test Medium (DTM)	F - slant	20/Pk.	**R08352**	147.4
	M - DP	10/Pk.	**R01365**	66.7
Dermatophyte Test Medium Bactiflask* (DTM)	1 oz. TCF	20/Pk.	**R10254**	181.5
DermaTube* (DTM) (Dermatophyte Test Medium)	H	10/Pk.	**R241045**	39.0
Dextrose Ascitic Fluid	D - 5mL	100/Cs.	**R060776**	698.0
Diamond's Medium Modified	E - 10mL	100/Cs.	**R07096**	581.6
	E - 10mL	20/Pk.	**R07097**	146.9
DNase Test Agar w/Methyl Green	F - slant	20/Pk.	**R08342**	149.2
	Monoplate	10/Pk.	**R01376**	66.7
DNase Test Agar w/Toluidine Blue	Monoplate	10/Pk.	**R01377**	63.5
	G - PT	20/Pk.	**R09340**	151.5
DNase Test Agar	Monoplate	10/Pk.	**R01375**	52.1
Dubos Oleic Agar w/Tween 80 Control	D - 5mL butt	20/Pk.	**R060848**	139.6
Dubos Oleic Agar w/Tween 80	D - 5mL butt	20/Pk.	**R060852**	139.6
Dubos Tween Albumin Broth	D - 5mL	100/Cs.	**R060854**	560.4
	D - 5mL	20/Pk.	**R060856**	139.8
E				
EC Medium w/MUG	E - 10mL	20/Pk.	**R07655**	148.1
EC Medium	E - 10mL DT	20/Pk.	**R07102**	118.6
EE Broth Mossel	PB - 100 ml	10/Pk.	**R112280**	110.7
EMB Agar, Levine	M	10/Pk.	**R01400**	32.3
	M	100/Cs.	**R01402**	335.4
	SP	15/Pk.	**R01401**	52.0
EMB Agar, Levine//MacConkey Agar	BP	10/Pk.	**R02068**	48.6
EMB Agar, Modified (HHT) w/Lactose, Sucrose	M	10/Pk.	**R01406**	47.2
	M	100/Cs.	**R01405**	389.61
Endo Agar	M	10/Pk.	**R01420**	66.7
Esculin Broth w/0.07% Agar	D - 5mL	20/Pk.	**R060872**	93.5

Packaging Key

Media Packaging Type	Abbreviation	Media Packaging Type	Abbreviation
13 x 100mm Tube	**A**	**Filter**	**FL**
15 x 45mm Tube	**B**	**Hungate Cap**	**HC**
15 x 90mm Tube	**C**	**Individual Wrap Plate**	**IWP**
15 x 103mm Tube	**D**	**Monoplate**	**M**
16 x 125mm Tube	**E**	**Organism**	**Org.**
20 x 113mm Tube	**F**	**Plate**	**P**
20 x 150mm Tube	**G**	**Polypropylene Bottle**	**PB**
27 x 70mm Tube	**H**	**Pour Tube**	**PT**
Ampules	**Amp.**	**Pour Tube, Deep**	**PTD**
Biplate	**BP**	**Quadplate**	**Q**
Blood Culture Bottle	**BCB**	**Rubber Stopper**	**RS**
Borosilicate Bottle	**BB**	**Serum Bottle**	**SB**
Boston Round Bottle	**BRB**	**Single Bag**	**SBG**
Bottle	**Btl.**	**Spacesaver Plate**	**SP**
Butt (10 x 103mm Tube)	**BT**	**Thin Pour**	**TP**
Clear Square Bottle	**CSB**	**Tissue Culture Flask**	**TCF**
Double Bag	**DBG**	**Triplate**	**TRI**
Double Pour	**DP**	**Tube**	**T**
Durham Tube	**DT**	**Wide Mouth Bottle**	**WMB**
Envelope	**Env.**	**Vial**	**VI.**

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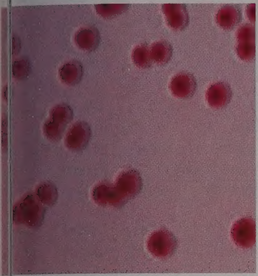
Incubators can be found on pp. 977–1000.

*Trademark. See Trademark Reference.

nel Prepared Media, Contd.



R 447

cription	Type	Qty.	Cat. No.	Price
ulin Hydrolysis Agar	D - slant	100/Cs.	**R060876**	466.16
	D - slant	20/Pk.	**R060878**	112.09
	SP	15/Pk.	**R01440**	100.08
on Urea Broth	D - 1mL	100/Cs.	**R060894**	466.02
	D - 1mL	20/Pk.	**R060896**	112.50
onic Broth	E - 10mL	100/Cs.	**R07104**	581.64
	E - 10mL	20/Pk.	**R07105**	148.15
tidious Broth	E - 10mL	100/Cs.	**R07664**	595.29
d A w/ 0.1% Peptone (ptone Fluid)	PB - 1000 mL	Each	**R112314**	59.82
d Thioglycollate Medium ndicator, Dextrose	D - 9mL	100/Cs.	**R064690**	357.17
	D - 9mL	20/Pk.	**R064692**	82.19
	E - 10mL	100/Cs.	**R07172**	383.43
	E - 10mL	20/Pk.	**R07174**	86.02
	F - 18mL	100/Cs.	**R08846**	389.80
	F - 15mL	20/Pk.	**R118821**	100.70
	E - 10mL HC	20/Pk.	**R117800**	118.63
	BB Septum - 100mL	10/Pk.	**R112646**	246.59
	BB Septum-500mL	10/Pk.	**R112642**	233.84
	WMB Screw - 100mL	10/Pk.	**R112640**	134.02
	SB-100mL	10/Pk.	**R112641**	110.67
ser Broth w/Ferric monium Citrate	E - 10mL	20/Pk.	**R07671**	141.15
	G - 10mL	20/Pk.	**R09358**	151.57
Medium	E - 10mL	100/Cs.	**R07674**	592.46
	E - 10mL	20/Pk.	**R07676**	148.39

Description	Type	Qty.	Cat. No.	Price
G				
GC Agar Base, w/1% GCHI w/o Hemoglobin	15 x 150mm Plate	10/Pk.	**R04030**	89.00
	M	10/Pk.	**R01460**	52.23
GC Agar Base	Btl. - 10kg	Each	**R453506**	1250.32
	Btl. - 100g	Each	**R453501**	31.04
	Btl. - 500g	Each	**R453502**	67.06
	Btl. - 2.5kg	Each	**R453504**	319.52
Gelatin Broth 0.4%	D - 5mL	20/Pk.	**R060942**	139.68
Gelatin Infusion Medium	D - 5mL	20/Pk.	**R060956**	112.09
Gelatin Medium (Nutrient Gelatin) (12%)	D - 5mL	20/Pk.	**R060952**	93.33
GN Broth (Hajna)	D - 5mL	100/Cs.	**R060990**	378.08
	D - 5mL	20/Pk.	**R060992**	82.29
	F - 10mL	100/Cs.	**R08380**	392.60
	F - 10mL	20/Pk.	**R08382**	87.42
H				
Haemophilus Isolation Agar w/Bacitracin, Horse Blood	M	10/Pk.	**R01470**	44.32
	SP	15/Pk.	**R01471**	65.59
Haemophilus Test Medium Broth	E - 10mL	20/Pk.	**R07681**	148.32
Haemophilus Test Medium (HTM)	15 x 150mm Plate	10/Pk.	**R04033**	83.10
	15 x 100mm Plate	10/Pk.	**R01503**	44.26
Heart Infusion Agar	D - slant	100/Cs.	**R061010**	414.24
	D - slant	20/Pk.	**R061012**	102.64
HBT Bilayer Medium (Human Blood-Tween 80)	M	10/Pk.	**R01478**	65.34
Heart Infusion Broth	D - 5mL	100/Cs.	**R061030**	511.16
	D - 5mL	20/Pk.	**R061032**	93.62
Heart Infusion Broth w/BCP, 1% Inulin	D - 5mL	20/Pk.	**R061092**	140.82
Heart Infusion Broth w/BCP, 1% Lactose	D - 5mL	20/Pk.	**R061096**	140.26
Heart Infusion Broth w/BCP, 1% Mannitol	D - 5mL	20/Pk.	**R061104**	134.51
Heart Infusion Broth w/BCP, 1% Mannose	D - 5mL	20/Pk.	**R061108**	134.61
Heart Infusion Broth w/BCP, 1% Raffinose	D - 5mL	20/Pk.	**R061116**	138.59
Heart Infusion Broth w/BCP, 1% Salicin	D - 5mL	20/Pk.	**R061124**	135.07
Heart Infusion Broth w/BCP, 1% Sorbitol	D - 5mL	20/Pk.	**R061128**	140.26
Heart Infusion Broth w/BCP, 1% Sucrose	D - 5mL	20/Pk.	**R061132**	134.37
Heart Infusion Broth w/BCP, 1% Trehalose	D - 5mL	20/Pk.	**R061136**	134.37
Heart Infusion Broth w/BCP, 1% Xylose	D - 5mL	20/Pk.	**R061140**	134.37
Heart Infusion Broth w/6.5% NaCl w/Brom Cresol Purple (Salt Broth)	D - 5mL	100/Cs.	**R061044**	468.78
	D - 5mL	20/Pk.	**R061046**	111.85

More formulations, formats and sizes can be found on our Web site.

Remel* Prepared Media, Contd.

Description	Type	Qty.	Cat. No.	Price
Heart Infusion Broth w/BCP Base Control (Brom Cresol Purple)	D - 5mL	20/Pk.	**R061052**	139.74
Heart Infusion Broth w/BCP, 1% Adonitol (Brom Cresol Purple)	D - 5mL	20/Pk.	**R061056**	134.75
Heart Infusion Broth w/BCP, 1% Arabinose (Brom Cresol Purple)	D - 5mL	20/Pk.	**R061060**	134.37
Heart Infusion Broth w/BCP, 1% Cellobiose (Brom Cresol Purple)	D - 5mL	20/Pk.	**R061064**	110.79
Heart Infusion Broth w/BCP, 1% Dextrose (Brom Cresol Purple)	D - 5mL	20/Pk.	**R061068**	134.53
Heart Infusion Broth w/BCP, 1% Dulcitol (Brom Cresol Purple)	D - 5mL	20/Pk.	**R061072**	142.68
Heart Infusion Broth w/BCP, 1% Fructose (Brom Cresol Purple)	D - 5mL	20/Pk.	**R061076**	191.69
Heart Infusion Broth w/BCP, 1% Galactose (Brom Cresol Purple)	D - 5mL	20/Pk.	**R061080**	142.68
Heart Infusion Broth w/BCP, 1% Glycerol (Brom Cresol Purple)	D - 5mL	20/Pk.	**R061084**	135.59
Heart Infusion Broth w/BCP, 1% Inositol (Brom Cresol Purple)	D - 5mL	20/Pk.	**R061088**	134.75
Herrolds Medium	F - slant	20/Pk.	**R08387**	149.54
Herrolds Medium w/Mycobactin	F - slant	100/Cs.	**R08384**	597.71
	F - slant	20/Pk.	**R08391**	149.31
Herrolds Medium w/Mycobactin, Pyruvate	F - slant	20/Pk.	**R08385**	148.99
HE Agar (Hektoen Enteric Agar)	M	10/Pk.	**R01480**	44.12
	SP	15/Pk.	**R01481**	66.74
HE Agar w/Novobiocin	M	10/Pk.	**R01484**	83.22
HE Agar//SS Agar	BP	10/Pk.	**R02082**	92.65
HE Agar//XLD Agar	BP	10/Pk.	**R02086**	92.58
Hippurate Broth, Sodium Hippurate	D - 3mL	100/Cs.	**R061150**	413.35
	D - 3mL	20/Pk.	**R061152**	93.67
I				
Indole Broth (Tryptone Broth)	D - 4mL	20/Pk.	**R061172**	93.60
Indole Nitrate Medium (Tryptone Nitrate Medium)	D - 5mL	20/Pk.	**R061184**	111.85
Inhibitory Mold Agar w/ Chloramphenicol	F - slant	20/Pk.	**R08412**	99.76
	BTL - 1 oz.	100/Cs.	**R10070**	731.75
	1 oz Btl.	10 Pk.	**23-246-903**	80.84
	M - 26mL	10/Pk.	**R01505**	64.53
Inhibitory Mold Agar w/ Gentamicin; w/Chloramphenicol	M - DP	10/Pk.	**R01506**	61.84
Inhibitory Mold Agar w/ Chloramphenicol	M - 35mL	10/Pk.	**R01508**	66.54
J				
Jembec System w/Thayer Martin Agar Modified w/Nystatin	Jembec Plate	10/Pk.	**R10310**	72.16
Jones Kendrick Transport w/Cephalexin	D - slant	20/Pk.	**R061196**	139.74
Jordans Tartrate Agar	D - 5mL BT	20/Pk.	**R061202**	139.73
K				
KBE Agar (Kanamycin Bile Esculin Agar)	M	10/Pk.	**R01510**	76.08

Description	Type	Qty.	Cat. No.	Pri
KBE Agar (Kanamycin Bile Esculin Agar)	SP	15/Pk.	**R01511**	88.4
KCN Broth Base	D - 5mL	20/Pk.	**R061216**	111.8
Kliglers Iron Agar	D - slant	20/Pk.	**R061242**	93.5
	D - slant	100/Pk.	**R061240**	573.5
L				
Lactose Broth	WMB Lug	10/Pk	**R112402**	105.4
	WMB Lug	10/Pk.	**R112404**	110.6
	BB - 990mL	4/Pk.	**R112409**	177.1
	WMB Screw-90mL	10/Pk.	**R112401**	110.1
Lauryl Tryptose Broth (1X) (LST Broth) (Lauryl Sulfate Tryptose)	G - 10mL DT	20/Pk.	**R09447**	151.4
	G - 10mL DT	100/Cs.	**R09446**	1196.5
Lauryl Tryptose Broth w/ MUG (2X)	G - 10mL DT	20/Pk.	**R09455**	151.4
Lauryl Tryptose Broth, 1X	E - 1X, 10mL DT	100/Pk.	**R117260**	539.2
LB Agar w/ Ampicillin 100µg/mL (Luria-Bertani)	15 x 100mm Plate	10/Pk.	**R110217**	66.0
	M	10/Pk.	**R110228**	66.0
LB Agar	15 x 150mm Plate	10/Pk.	**R110845**	48.2
LB Agar w/Chloramphenicol	M - DP	10/Pk.	**R110220**	66.7
LB (Luria-Bertani) Agar w/Tetracycline	M	10/Pk.	**R110205**	39.3
LB Agar (Luria-Bertani)	M	10/Pk.	**R110203**	34.1
LB Agar w/Kanamycin	M - DP	10/Pk.	**R110226**	66.0
	M	10/Pk.	**R110238**	116.5
LB Agar w/Kanamycin, 20µg	M	10/Pk.	**R110216**	66.7
LB Agar w/Tetracycline	M - DP	10/Pk.	**R110227**	66.7
Letheen Broth	BRB - 90mL	Each	**R112420**	126.6
	WMB Lug - 99mL	Each	**R112423**	99.1
	E - 9mL	100/Pk.	**R117259**	813.7

Packaging Key

Media Packaging Type	Abbreviation	Media Packaging Type	Abbreviation
13 x 100mm Tube	A	Filter	FL
15 x 45mm Tube	B	Hungate Cap	HC
15 x 90mm Tube	C	Individual Wrap Plate	IWP
15 x 103mm Tube	D	Monoplate	M
16 x 125mm Tube	E	Organism	Org.
20 x 113mm Tube	F	Plate	P
20 x 150mm Tube	G	Polypropylene Bottle	PB
27 x 70mm Tube	H	Pour Tube	PT
Ampules	Amp.	Pour Tube, Deep	PTD
Biplate	BP	Quadplate	Q
Blood Culture Bottle	BCB	Rubber Stopper	RS
Borosilicate Bottle	BB	Serum Bottle	SB
Boston Round Bottle	BRB	Single Bag	SBG
Bottle	Btl.	Spacesaver Plate	SP
Butt 10 x 103mm	BT	Thin Pour	TP
Clear Square Bottle	CSB	Tissue Culture Flask	TCF
Double Bag	DBG	Triplate	TRI
Double Pour	DP	Tube	T
Durham Tube	DT	Wide Mouth Bottle	WMB
Envelope	Env.	Vial	Vl.

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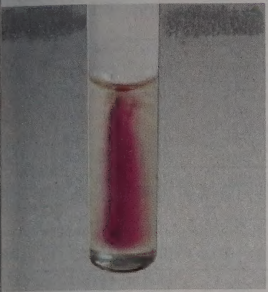
Handheld and electronic colony counters can be found on pp. 1103–1104.

*Trademark. See Trademark Reference.

mel* Prepared Media, Contd.



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scription	Type	Qty.	Cat. No.	Price
theen Agar	BB - 500mL	10/Pk.	**R112418**	225.30
	BB - 350mL	10/Pk.	**R112417**	1143.54
	Monoplate	10/Pk.	**R110212**	220.82
theen Agar Modified	Monoplate	10/Pk.	**R110214**	378.96
theen Broth	E - 10mL	20/Pk.	**R07700**	148.32
steria Enrichment Broth	E - 10mL	20/Pk.	**R07089**	99.05
mus Milk Medium	D - 9mL	20/Pk.	**R061276**	139.68
tman Oxgall Agar w/Streptomycin	F - slant	20/Pk.	**R08462**	114.73
	G - PT	20/Pk.	**R09466**	151.42
efflers Medium	D - slant	20/Pk.	**R061288**	139.73
wenstein-Jensen Gruft. (LJ) Penicillin, Nalidixic Acid	1 oz. Btl.	100/Cs.	**R10102**	906.65
	1 oz. Btl.	10/Pk.	**R10103**	143.85
	F - slant	100/Cs.	**R08520**	494.64
	F - slant	20/Pk.	**R08522**	118.93
wenstein-Jensen Medium (LJ)	F - slant	100/Cs.	**R08500**	433.73
	F - slant	20/Pk.	**R08502**	100.44
	G - 5mL BT	20/Pk.	**R09512**	151.50
	G - slant	100/Cs.	**R09504**	517.43
	G - slant	20/Pk.	**R09506**	127.65
	1 oz. Btl.	10/Pk.	**R10101**	90.93
	1 oz. Btl.	100/Cs.	**R10100**	729.65
wenstein-Jensen Medium w/5% rric Ammonium Citrate	F - slant	20/Pk.	**R08526**	149.29
wenstein-Jensen Medium w/5% Cl (LJ)	F - slant	20/Pk.	**R08518**	149.09
wenstein-Jensen Mycobactocel J) w/Cycloheximide, Lincomycin, lidixic Acid	1 oz. Btl.	10/Pk.	**R10105**	90.85

Description	Type	Qty.	Cat. No.	Price
Lowenstein-Jensen Mycobactocel (LJ) w/Cycloheximide, Lincomycin, Nalidixic Acid	F - slant	100/Cs.	**R08530**	502.94
	F - slant	20/Pk.	**R08532**	119.14
LPM Agar (Lithium Chloride, Phenylethyl Alcohol, Moxalactam)	M	10/Pk.	**R01525**	66.78
LSM Agar (Lipase Salt Mannitol)	M	10/Pk.	**R01540**	128.09
Lysine Iron Agar (LIA)	D - slant	100/Cs.	**R061300**	412.12
	D - slant	20/Pk.	**R061302**	93.45
Lysozyme Broth	D - 5mL	20/Pk.	**R061308**	138.37
Lysozyme Control Broth (Glycerol Broth)	D - 5mL	20/Pk.	**R060972**	138.30
M				
MacConkey Agar	D - slant	20/Pk.	**R061322**	112.32
	M	10/Pk.	**R01550**	31.83
	M	100/Cs.	**R01552**	332.92
	SP	15/Pk.	**R01551**	51.73
	SP	150/Cs.	**R01562**	515.81
	BB - 500mL	10/Pk.	**R112450**	315.57
MacConkey Agar w/Sorbitol, Cefixime, Tellurite	M	10/Pk	**R110241**	65.02
MacConkey Agar w/MUG	M	10/Pk.	**R01554**	52.13
MacConkey Agar w/o Crystal Violet	G - PT	20/Pk.	**R09538**	151.50
	M	10/Pk.	**R01558**	44.73
MacConkey Agar w/Sorbitol (SMAC)	G - PT	20/Pk.	**R09548**	151.42
	M	10/Pk.	**R01556**	49.78
	M	100/Cs.	**R01561**	510.98
MacConkey Agar w/Sorbitol, MUG	SP	15/Pk.	**R01563**	119.11
MacConkey Agar//MacConkey Agar w/Sorbitol	BP	10/Pk.	**R02095**	92.66
MacConkey Agar//Mannitol Salt Agar	BP	10/Pk.	**R02092**	85.67
MacConkey Agar//PEA Sheep Blood Agar	BP	10/Pk.	**R02096**	88.32
MacConkey Broth	D - 5mL	20/Pk.	**R061336**	93.41
Malonate Broth, Ewing Modification	D - 5mL	100/Cs.	**R061324**	453.61
	D - 5mL	20/Pk.	**R061326**	111.95
Malt Extract Agar	M	10/Pk.	**R01567**	44.53
	M - DP	10/Pk.	**R01565**	44.65
Mannitol Salt Agar w/Oxacillin	M	10/Pk.	**R01583**	64.72
Mannitol Salt Agar	M	10/Pk.	**R01580**	38.58
	SP	15/Pk.	**R01581**	60.18
Mannitol Agar	M	10/Pk	**R110248**	85.82
McCarthy Agar	M	10/Pk.	**R01590**	62.99
McClung-Toabe Agar w/Neomycin (Modified McClung-Toabe Agar) (Anaerobic Lecithin-Lipase Agar) (Egg Yolk Agar)	M	10/Pk.	**R01056**	51.57
m-ENDO Agar LES	15 x 60mm P	10/Pk.	**R01425**	64.05
	M	10/Pk.	**R01426**	66.07
m-Enterococcus Agar	M	10/Pk.	**R01430**	66.78

For more Media, visit our Web site.

Remel* Prepared Media, Contd.

Description	Type	Qty.	Cat. No.	Price
MEP Agar (Mannitol, Egg Yolk, Polymyxin Agar)	M	10/Pk.	**R01584**	66.71
m-HPC Agar (Heterotrophic Plate Count Agar)	M	10/Pk.	**R01500**	99.75
MI Control Medium (Motility Indole Medium)	D - 5mL	20/Pk.	**R061362**	93.42
Middlebrook 7H9 Broth w/Glycerol	D - 2mL	100/Cs.	**R061344**	561.47
	D - 2mL	20/Pk.	**R061346**	138.57
Middlebrook 7H9 Broth with Tween* 80 Tellurite Reduction Medium	G - 5mL	100/Cs.	**R09556**	636.85
	G - 5mL	20/Pk.	**R09558**	151.38
Middlebrook 7H10 Agar	F - slant	100/Cs.	**R08560**	504.25
	F - slant	20/Pk.	**R08562**	119.12
	M - DP	10/Pk.	**R01600**	62.97
	G - PT	20/Pk.	**R09565**	151.38
Middlebrook 7H11 Agar Thin Pour	SP	15/Pk.	**R01606**	100.50
Middlebrook 7H11 Agar	1 oz. Btl.	10/Pk.	**R10111**	86.52
	1 oz. Btl.	100/Cs.	**R10110**	728.02
	15 x 60mm P	10/Pk.	**R01603**	65.94
	F - slant	100/Cs.	**R08570**	493.97
	F - slant	20/Pk.	**R08572**	118.93
	M - DP	10/Pk.	**R01605**	64.92
Middlebrook 7H11 Agar // Middlebrook 7H11 Agar	BP	10/Pk.	**R02110**	98.76
Middlebrook 7H11 Agar // Mitchison 7H11 Selective	BP	10/Pk.	**R02112**	96.75
MIL Medium (Motility Indole Lysine Medium)	D - 5mL	20/Pk.	**R061350**	93.18
MILS Medium (Motility Indole Lysine Sulfide Medium)	D - 5mL	20/Pk.	**R061354**	125.47
MIO Medium (Motility Indole Ornithine Medium)	D - 5mL	100/Cs.	**R061364**	416.84
	D - 5mL	20/Pk.	**R061366**	93.86
Mitchison 7H11 Selective Agar w/Carbenicillin, Polymyxin B, Amphotericin B, Trimethoprim	15 x 60mm P	16/Pk.	**R01612**	102.87
	F - slant	100/Cs.	**R08574**	583.87
	F - slant	20/Pk.	**R08576**	149.29
	M - DP	10/Pk.	**R01610**	65.34
Modified Oxford Agar (MOX)	M	10/Pk.	**R01613**	63.50
Motility B Medium w/TTC Indicator	D - 5mL	20/Pk.	**R061394**	139.42
Motility B Medium	D - 5mL	100/Cs.	**R061390**	415.87
	D - 5mL	20/Pk.	**R061392**	93.37
Motility GI Medium	D - 5mL	100/Cs.	**R061398**	685.06
	D - 5mL	20/Pk.	**R061400**	111.85
Motility S Medium	D - 5mL	20/Pk.	**R061404**	139.58
Motility Test Medium w/TTC	D - 5mL	100/Cs.	**R061412**	463.04
	D - 5mL	20/Pk.	**R061414**	109.75
Motility Test Medium	D - 5mL	100/Cs.	**R061408**	466.36
Motility Test Medium	D - 5mL	20/Pk.	**R061410**	111.90
MRS Agar (Man, Rogosa, Sharpe Agar)	M	10/Pk.	**R01585**	66.78
MRS Broth	D - 2mL	20/Pk.	**R061428**	139.62
	D - 7mL DT	20/Pk.	**R061426**	139.68
MRVP Broth	D - 2mL	100/Cs.	**R061430**	429.19
	D - 2mL	20/Pk.	**R061432**	93.22
	D - 5mL	100/Cs.	**R061434**	412.41
	D - 5mL	20/Pk.	**R061436**	93.37
Mucate Medium D14	D - 4mL	20/Pk.	**R061462**	139.50
Mueller Hinton Agar w/1% Hemoglobin, 1% GCHI Enrichment (Chocolate Mueller Hinton)	15 x 150mm P	10/Pk.	**R04059**	88.93
	15 x 100mm P	10/Pk.	**R01627**	44.64
Mueller Hinton Agar w/2% NaCl	M	10/Pk.	**R01621**	48.18
Mueller Hinton Agar w/4% NaCl, 6 mcg/mL Oxacillin (MRSA Screen Agar)	M	10/Pk.	**R01626**	64.92
Mueller Hinton Agar w/5% Sheep Blood	15 x 100mm P	10/Pk.	**R01622**	39.32
	15 x 100mm P	100/Cs.	**R01623**	397.25
	15 x 150mm P	10/Pk.	**R04055**	68.27
	15 x 150mm P	40/Pk.	**R04057**	275.59
Mueller Hinton Agar	15 x 100mm P	10/Pk.	**R01620**	37.99
	15 x 100mm P	100/Cs.	**R01624**	391.85
	15 x 150mm P	10/Pk.	**R04050**	52.72
	15 x 150mm P	40/Pk.	**R04052**	210.95
	G - PT	20/Pk.	**R09592**	127.25
Mueller Hinton Broth w/2% Fildes Enrichment	D - 5mL	20/Pk.	**R061496**	139.68
Mueller Hinton Broth w/Cations (Ca, Mg)	E - 10mL	20/Pk.	**R07128**	146.89
Mueller Hinton Broth	D - 1mL	100/Cs.	**R061470**	414.25

Contd. on next page.

Packaging Key

Media Packaging Type	Abbreviation	Media Packaging Type	Abbreviation
13 x 100mm Tube	A	Filter	FL
15 x 45mm Tube	B	Hungate Cap	HC
15 x 90mm Tube	C	Individual Wrap Plate	IWP
15 x 103mm Tube	D	Monoplate	M
16 x 125mm Tube	E	Organism	Org.
20 x 113mm Tube	F	Plate	P
20 x 150mm Tube	G	Polypropylene Bottle	PB
27 x 70mm Tube	H	Pour Tube	PT
Ampules	Amp.	Pour Tube, Deep	PTD
Biplate	BP	Quadplate	Q
Blood Culture Bottle	BCB	Rubber Stopper	RS
Borosilicate Bottle	BB	Serum Bottle	SB
Boston Round Bottle	BRB	Single Bag	SBG
Bottle	Btl.	Spacesaver Plate	SP
Butt (10 x 103mm)	BT	Thin Pour	TP
Clear Square Bottle	CSB	Tissue Culture Flask	TCF
Double Bag	DBG	Triplate	TRI
Double Pour	DP	Tube	T
Durham Tube	DT	Wide Mouth Bottle	WMB
Envelope	Env.	Vial	Vl.

Quality Control organisms for media evalution begin on p. 1072.

mel* Prepared Media, Contd.

scription	Type	Qty.	Cat. No.	Price
eller Hinton Broth	D - 1mL	20/Pk.	**R061472**	93.42
	D - 4mL	100/Pk.	**R061478**	413.56
	D - 4mL	20/Pk.	**R061480**	93.33
	F - 10mL	100/Cs.	**R08594**	437.11
	F - 10mL	20/Pk.	**R08596**	100.73
	BB - 500mL	4/Pk.	**R112474**	96.33
eller Hinton Broth w/Cations, 3 (Lysed Horse Blood)	CSB - 100mL	Each	**R112478**	29.57
eller Hinton Broth w/Cations , Mg)	BB - 500mL	4/Pk.	**R112475**	253.66
cobiotic Agar (Mycocel Agar) Chloramphenicol, Cycloheximide	1 oz. Btl.	10/Pk.	**R10131**	89.93
	1 oz. Btl.	100/Cs.	**R10130**	728.31
	F - slant	100/Cs.	**R08600**	428.87
	F - slant	20/Pk.	**R08602**	99.62
	M - DP	10/Pk.	**R01630**	51.66
cobiotic Agar, Bactiflask* /cocel Agar) w/Chloramphenicol, loheximide	1 oz. TCF	20/Pk.	**R10264**	179.80
cological Agar	F - slant	20/Pk.	**R08608**	118.93
coTube* (Mycobiotic)	H	10/Pk.	**R241055**	39.05
cological Agar, Low pH	BB - 350mL	10/Pk.	**R112457**	1104.18
ate Agar	D - slant	20/Pk.	**R061526**	93.33
ate Broth	D - 5mL	20/Pk.	**R061532**	93.33
	D - 5mL	100/Cs.	**R061530**	414.31
	D - 7mL DT	20/Pk.	**R061536**	106.59
	D - 7mL DT	100/Pk.	**R061534**	466.73

ckaging Key

edia Packaging Type	Abbreviation	Media Packaging Type	Abbreviation
x 100mm Tube	A	Filter	FL
x 45mm Tube	B	Hungate Cap	HC
x 90mm Tube	C	Individual Wrap Plate	IWP
x 103mm Tube	D	Monoplate	M
x 125mm Tube	E	Organism	Org.
x 113mm Tube	F	Plate	P
x 150mm Tube	G	Polypropylene Bottle	PB
x 70mm Tube	H	Pour Tube	PT
npules	Amp.	Pour Tube, Deep	PTD
plate	BP	Quadplate	Q
ood Culture Bottle	BCB	Rubber Stopper	RS
rosilicate Bottle	BB	Serum Bottle	SB
ston Round Bottle	BRB	Single Bag	SBG
ttle	Btl.	Spacesaver Plate	SP
tt (10 x 103mm)	BT	Thin Pour	TP
ear Square Bottle	CSB	Tissue Culture Flask	TCF
uble Bag	DBG	Triplate	TRI
uble Pour	DP	Tube	T
rham Tube	DT	Wide Mouth Bottle	WMB
velope	Env.	Vial	Vl.

Description	Type	Qty.	Cat. No.	Price
Nutrient Agar	G - 22mL PT	20/Pk.	**R09626**	127.47
	M	10/Pk.	**R01640**	39.07
Nutrient Broth	D - 5mL	20/Pk.	**R061582**	93.13
	D - 5mL	100/Cs.	**R061580**	410.93
	WMB - 100mL	10/Pk.	**R112482**	98.47
O				
OF King Medium w/1% Xylose	D - 5mL	20/Pk.	**R061999**	137.00
OF Medium Base Control (Hugh-Liefson)	D - 4mL	20/Pk.	**R061902**	111.85
OF Medium w/1% Arabinose (Hugh-Liefson)	D - 4mL	20/Pk.	**R061910**	134.61
OF Medium w/1% Dextrose (Hugh-Liefson)	D - 4mL	100/Cs.	**R061916**	467.15
	D - 4mL	20/Pk.	**R061918**	111.85
OF Medium w/1% Dulcitol (Hugh-Liefson)	D - 4mL	20/Pk.	**R061922**	138.88
OF Medium w/1% Fructose (Hugh-Liefson)	D - 4mL	20/Pk.	**R061926**	134.80
OF Medium w/1% Galactose (Hugh-Liefson)	D - 4mL	20/Pk.	**R061930**	138.88
OF Medium w/1% Glycerol (Hugh-Liefson)	D - 4mL	20/Pk.	**R061934**	138.88
OF Medium w/1% Lactose (Hugh-Liefson)	D - 4mL	20/Pk.	**R061946**	111.85
OF Medium w/1% Maltose (Hugh-Liefson)	D - 4mL	20/Pk.	**R061950**	111.85
OF Medium w/1% Mannitol (Hugh-Liefson)	D - 4mL	20/Pk.	**R061954**	111.85
OF Medium w/1% Mannose (Hugh-Liefson)	D - 4mL	20/Pk.	**R061958**	138.88
OF Medium w/1% Sucrose (Hugh-Liefson)	D - 4mL	20/Pk.	**R061990**	111.85
OF Medium w/1% Xylose (Hugh-Liefson)	D - 4mL	20/Pk.	**R061998**	134.37
OF Medium w/10% Dextrose (Hugh-Liefson)	D - 4mL	20/Pk.	**R062012**	138.88
OF Medium w/10% Maltose (Hugh-Liefson)	D - 4mL	20/Pk.	**R062020**	138.88
OF King Medium Base Control	D - 15mL	20/Pk.	**R061903**	134.59
OF King Medium w/1% Dextrose	D - 5mL	20/Pk.	**R061919**	134.59
OF King Medium w/1% Lactose	D - 5mL	20/Pk.	**R061947**	138.88
OF King Medium w/1% Mannitol	D - 5mL	20/Pk.	**R061955**	136.11
OF King Medium w/1% Maltose	D - 5mL	20/Pk.	**R061951**	138.88
OF King Medium w/1% Sucrose	D - 5mL	20/Pk.	**R061991**	136.11

LOOKING FOR THE LAB AUTOMATION SECTION?

It has moved and is now called Microplate Instrumentation.

More formulations, formats and sizes can be found on our Web site.

Remel* Prepared Media, Contd.

Description	Type	Qty.	Cat. No.	Price
OFPBL Medium w/Polymyxin B, Bacitracin, Lactose	M	10/Pk.	**R01653**	51.63
ONPG Broth	D - 1mL	100/Cs.	**R062030**	443.73
	D - 1mL	20/Pk.	**R062032**	93.13
Oxichrome Reagent	15mL Btl.	Each	**R8309009**	23.75
Oxford Agar	M	10/Pk.	**R110300**	66.73
P				
Peptone Yeast Glucose Broth (PYG) w/Hemin & Vitamin K	D - 9mL	20/Pk.	**R062150**	111.83
Peptone (0.1%) Fluid A	PB - 99mL	10/Pk.	**R113055**	413.13
Peptone Fluid	SB - 100mL	10/Pk.	**R112490**	110.78
	SB - 400mL	10/Pk.	**R112493**	233.85
Peptone Saline	PB - 90mL	10/Pk.	**R112504**	110.65
Phenol Red Agar Base Control	D - slant	20/Pk.	**R062502**	133.14
Phenol Red Agar w/1% Dextrose	D - slant	20/Pk.	**R062510**	131.82
Phenol Red Agar w/10% Lactose	D - slant	20/Pk.	**R062564**	138.88
Phenol Red Broth Base Control	D - 5mL	20/Pk.	**R062202**	139.60
Phenol Red Broth w/1% Adonitol	D - 5mL	20/Pk.	**R062212**	139.96
Phenol Red Broth w/1% Arabinose	D - 5mL	20/Pk.	**R062222**	134.59
Phenol Red Broth w/1% Cellobiose	D - 5mL	20/Pk.	**R062232**	147.30
Phenol Red Broth w/1% Dextrose	D - 7mL DT	20/Pk.	**R062242**	134.59
Phenol Red Broth w/1% Dulcitol	D - 5mL	20/Pk.	**R062252**	134.27
Phenol Red Broth w/1% Erythritol	D - 5mL	20/Pk.	**R062262**	138.88
Phenol Red Broth w/1% Fructose	D - 5mL	20/Pk.	**R062272**	142.45
Phenol Red Broth w/1% Galactose	D - 5mL	20/Pk.	**R062282**	136.11
Phenol Red Broth w/1% Glycerol	D - 5mL	20/Pk.	**R062292**	136.11
Phenol Red Broth w/1% Inositol	D - 5mL	20/Pk.	**R062302**	136.11
Phenol Red Broth w/1% Lactose	D - 5mL	20/Pk.	**R062322**	134.42
	D - 7mL DT	20/Pk.	**R062326**	135.00
Phenol Red Broth w/1% Maltose	D - 5mL	20/Pk.	**R062332**	138.88
Phenol Red Broth w/1% Mannitol	D - 5mL	20/Pk.	**R062342**	136.11
Phenol Red Broth w/1% Mannose	D - 5mL	20/Pk.	**R062352**	138.88
Phenol Red Broth w/1% Melibiose	D - 5mL	20/Pk.	**R062362**	137.00
Phenol Red Broth w/1% Raffinose	D - 5mL	20/Pk.	**R062372**	138.84
Phenol Red Broth w/1% Rhamnose	D - 5mL	20/Pk.	**R062382**	138.84
Phenol Red Broth w/1% Salicin	D - 5mL	20/Pk.	**R062402**	147.30
Phenol Red Broth w/1% Sorbitol	D - 5mL	20/Pk.	**R062412**	135.20
Phenol Red Broth w/1% Sucrose	D - 5mL	20/Pk.	**R062432**	146.11
Phenol Red Broth w/1% Trehalose	D - 5mL	20/Pk.	**R062442**	133.14
Phenol Red Broth w/1% Xylose	D - 5mL	20/Pk.	**R062452**	138.88
Phenylalanine Agar	D - slant	100/Cs.	**R062180**	412.79
	D - slant	20/Pk.	**R062182**	93.78
Phenylethyl Alcohol Agar w/5% Sheep Blood (PEA Agar w/Sheep Blood)	M	10/Pk.	**R01660**	38.22
	M	100/Cs.	**R01662**	387.47
	SP	15/Pk.	**R01661**	59.76
Phosphate Buffer w/1% Peptone (Buffered Peptone Water)	Plastic - 400mL	10/Pk.	**R112033**	503.22
	PB - 90mL	10/Pk.	**R112088**	110.78
Phosphate Buffer w/MgCl pH 7.2 (Buffered Water) APHA Formulation	F - 9mL	100/Pk.	**R118610**	436.97

Description	Type	Qty.	Cat. No.	Price
Plate Count Agar (Standard Methods Agar) (TGY: Tryptone/Glucose/ Yeast Extract)	M	10/Pk.	**R01685**	43.16
	G - PT	20/Pk.	**R09642**	105.50
	G - PT	100/Cs.	**R09640**	460.04
	D - slant	20/Pk.	**R062602**	93.37
	D - slant	100/Cs.	**R062600**	413.04
PLET Agar	M	10/Pk.	**R110322**	59.30
Porphyrin Test Agar	M	10/Pk.	**R01688**	66.73
Potassium Chloride Solution	D - 4.5mL	100/Pk.	**R062620**	466.80
	D - 4.5mL	20/Pk.	**R062621**	111.86
Potassium Nitrate Assimilation Agar	E - slant	20/Pk.	**R07774**	148.32
Potato Dextrose Agar pH 3.5	M - DP	10/Pk.	**R01697**	66.08
Potato Dextrose Agar pH 5.6	F - slant	20/Pk.	**R08652**	100.65
	G - PT	100/Cs.	**R09654**	526.98
	BB - 200mL	10/Pk	**R112534**	151.45
	G - PT	20/Pk.	**R09656**	127.25
	M - DP	10/Pk.	**R01695**	42.78
	M - DP	100/Cs.	**R01693**	518.77
Potato Dextrose Agar Slide Culture Plate	10 Plates	10/Pk. IWP	**R20532**	89.28
	10 Plates	10/Pk. IWP	**R20533**	89.28
Potato Flake Agar	F - slant	20/Pk.	**R08659**	149.30
	G - PT	20/Pk.	**R09658**	151.50
	M - DP	10/Pk.	**R01702**	51.40
Potassium Tellurite	25mL Btl.	Each	**R21254**	38.17
PPLO w/Serum w/Inhibitor	15 x 60mm P	10/Pk.	**R20260**	89.29
PPLO Agar w/Horse Serum, Amphotericin B, Penicillin, Thallium Acetate	M	10/Pk.	**R20261**	146.82
	15 x 60mm P	10/Pk.	**R20262**	90.03
PPLO Broth w/Horse Serum, Yeast Extract	D - 5mL	20/Pk.	**R20360**	195.44
PPLO Broth, Selective w/Horse Serum, Yeast Extract, Penicillin, Thallium Acetate, Amphotericin B	D - 5mL	20/Pk.	**R20362**	195.79
PRAS BHI Broth (VPI) (Pre-reduced Anaerobic System Brain Heart Infusion Broth)	E - 5mL RS	20/Pk.	**R05027**	151.07
	D - 7mL HC	100/Cs.	**R05024**	614.26
	D - 7mL HC	20/Pk.	**R05025**	151.16
PRAS Chopped Meat Broth	D - 7.5mL HC	20/Pk.	**R05035**	150.47
PRAS Chopped Meat Carbohydrate	E - 7.5mL RS	20/Pk.	**R05045**	150.95

Contd. on next page.

LOOKING FOR THE LAB AUTOMATION SECTION?
It has moved and is now called Microplate Instrumentation.

Dehydrated Media begins on p. 1032.

el* Prepared Media, Contd.

ription	Type	Qty.	Cat. No.	Price
P S Chopped Meat Carbohydrate; VI	D - 7.5mL HC	20/Pk.	**R05047**	150.74
P S Cooked Meat Glucose	D - 7.5mL HC	20/Pk.	**R05055**	150.84
P S Indole Nitrate Medium	E - 5mL RS	20/Pk.	**R05059**	150.71
P S Gelatin Medium	E - 5mL RS	20/Pk.	**R05065**	148.89
P S PY Glucose w/Tween* 80 (V)	D - 10mL	20/Pk.	**R05198**	150.64
	E - 3mL RS	20/Pk.	**R05197**	151.13
P S PY Glycerol (VPI)	E - 3mL RS	20/Pk.	**R05199**	151.27
P S PY Glycogen (VPI)	E - 3mL RS	20/Pk.	**R05201**	162.84
P S PY Inositol	E - 3mL RS	20/Pk.	**R05205**	162.88
P S PY Lactate (VPI)	E - 3mL RS	20/Pk.	**R05211**	150.64
P S PY Lactose (VPI)	E - 3mL RS	20/Pk.	**R05213**	150.64
P S PY Maltose (VPI)	E - 3mL RS	20/Pk.	**R05217**	150.67
P S PY Mannitol (VPI)	E - 3mL RS	20/Pk.	**R05219**	150.64
P S PY Mannose (VPI)	E - 3mL RS	20/Pk.	**R05221**	151.06
P S PY Melezitose (VPI)	E - 3mL RS	20/Pk.	**R05223**	151.27
P S PY Melibiose (VPI)	E - 3mL RS	20/Pk.	**R05225**	169.67
P S PY Raffinose (VPI)	E - 3mL RS	20/Pk.	**R05231**	162.88
P S PY Rhamnose (VPI)	E - 3mL RS	20/Pk.	**R05233**	150.75

kaging Key

dia Packaging Type	Abbreviation	Media Packaging Type	Abbreviation
x 100mm Tube	**A**	**Filter**	**FL**
x 45mm Tube	**B**	**Hungate Cap**	**HC**
x 90mm Tube	**C**	**Individual Wrap Plate**	**IWP**
x 103mm Tube	**D**	**Monoplate**	**M**
x 125mm Tube	**E**	**Organism**	**Org.**
x 113mm Tube	**F**	**Plate**	**P**
x 150mm Tube	**G**	**Polypropylene Bottle**	**PB**
x 70mm Tube	**H**	**Pour Tube**	**PT**
npules	**Amp.**	**Pour Tube, Deep**	**PTD**
plate	**BP**	**Quadplate**	**Q**
ood Culture Bottle	**BCB**	**Rubber Stopper**	**RS**
rosilicate Bottle	**BB**	**Serum Bottle**	**SB**
ston Round Bottle	**BRB**	**Single Bag**	**SBG**
ttle	**Btl.**	**Spacesaver Plate**	**SP**
tt (10 x 103mm)	**BT**	**Thin Pour**	**TP**
ear Square Bottle	**CSB**	**Tissue Culture Flask**	**TCF**
uble Bag	**DBG**	**Triplate**	**TRI**
uble Pour	**DP**	**Tube**	**T**
rham Tube	**DT**	**Wide Mouth Bottle**	**WMB**
velope	**Env.**	**Vial**	**VI.**

Description	Type	Qty.	Cat. No.	Price
PRAS PY Ribose (VPI)	E - 3mL RS	20/Pk.	**R05235**	150.61
PRAS PY Salicin (VPI)	E - 3mL RS	20/Pk.	**R05241**	150.44
PRAS PY Sorbitol (VPI)	E - 3mL RS	20/Pk.	**R05243**	151.27
PRAS PY Starch (VPI)	E - 3mL RS	20/Pk.	**R05245**	151.27
PRAS PY Sucrose (VPI)	E - 3mL RS	20/Pk.	**R05247**	150.67
PRAS PY Threonine (VPI)	E - 3mL RS	20/Pk.	**R05249**	150.64
PRAS PY Trehalose (VPI)	E - 3mL RS	20/Pk.	**R05251**	143.38
PRAS (VPI) PY Xylan-3 Ml	E - 3mL RS	20/Pk.	**R05255**	109.54
PRAS PY Xylose (VPI)	E - 3mL RS	20/Pk.	**R05257**	143.38
PRAS PY Base Control	E - 3mL RS	20/Pk.	**R05161**	150.64
PRAS PY Arabinose	E - 3mL RS	20/Pk.	**R05171**	150.44
PRAS PY Bile	E - 3mL RS	100/Pk.	**R05175**	150.50
PRAS PY Esculin	E - 3mL RS	20/Pk.	**R05181**	150.67
PRAS PY Glucose w/Formate, Fumarate	D - 10mL HC	20/Pk.	**R05186**	150.67
PRAS PY Galactose	E - 3mL RS	20/Pk.	**R05189**	151.27
PRAS PY Glucose	E - 3mL RS	20/Pk.	**R05191**	150.75
PRAS PY Glucose Agar	E - slant RS	20/Pk.	**R05192**	150.81
PRAS PY Glucose	D - 10mL HC	20/Pk.	**R05194**	150.71
PRAS PY Lactose	E - 3mL RS	100/Pk.	**R05214**	733.19
PRAS PY Maltose	E - 3mL RS	100/Pk.	**R05218**	733.19
PRAS PY Mannitol	E - 3mL RS	100/Pk.	**R05220**	733.19
PRAS PY Mannose	E - 3mL RS	100/Pk.	**R05222**	732.76
PRAS PY Salicin	E - 3mL RS	100/Pk.	**R05242**	733.19
PRAS PY Sucrose	E - 3mL RS	100/Pk.	**R05248**	837.89
Presence-Absence Broth	BB - 50mL	10/Pk.	**R112511**	216.68
Pseudomonas Cepacia Agar (PC Agar) w/Ticarcillin	M	10/Pk.	**R01709**	52.21
Pseudomonas F Agar (FLO Agar)	M	10/Pk.	**R01710**	66.73
	D - slant	20/Pk.	**R062632**	111.85
Pseudomonas Isolation Agar	M	10/Pk.	**R01712**	66.73
Pseudomonas P Agar (TECH Agar)	M	10/Pk.	**R01714**	66.78
	D - slant	20/Pk.	**R062638**	111.85
Purple Broth Base Control	D - 7mL DT	20/Pk.	**R062756**	147.30
Purple Broth w/1% Adonitol	D - 7mL DT	20/Pk.	**R062766**	134.82
Purple Broth w/1% Arabinose	D - 7mL DT	20/Pk.	**R062776**	134.27
PYR Broth	D - 0.5mL	100/Cs.	**R062084**	467.60
	D - 0.5mL	20/Pk.	**R062085**	112.00
Pyrazinamidase Agar	D - 5mL BT	20/Pk.	**R07138**	146.89

LOOKING FOR THE MICROARRAYS SECTION?

It has moved and is now called Array Analysis.

LOOKING FOR THE TISSUE CULTURE SECTION?

It has moved and is now called Cell Culture.

More formulations, formats and sizes can be found on our Web site.

Remel* Prepared Media, Contd.

Description	Type	Qty.	Cat. No.	Price
R				
R2A Agar	15 x 60mm P	10/Pk.	**R01723**	67.65
	M	10/Pk.	**R01722**	43.99
	BB - 200mL	10/Pk.	**R112542**	225.89
Rapid Fermentation Agar Base Control	D - 0.7mL	20/Pk.	**R064002**	138.88
Rapid Fermentation Agar w/2% Dextrose	D - 0.7mL	20/Pk.	**R064022**	138.50
Rapid Fermentation Agar w/2% Fructose	D - 0.7mL	20/Pk.	**R064032**	138.50
Rapid Fermentation Agar w/2% Lactose	D - 0.7mL	20/Pk.	**R064042**	138.88
Rapid Fermentation Agar w/2% Maltose	D - 0.7mL	20/Pk.	**R064052**	138.88
Rapid Fermentation Agar w/2% Sucrose	D - 0.7mL	20/Pk.	**R064072**	138.88
Rapid Tributyrin	D - 0.7mL	20/Pk.	**R064854**	139.70
Rappaport-Vassiliadis Broth	10mL	100/Pk	**R117660**	2949.64
Rapid Trehalose Assimilation Broth	0.2mL Tube	20/Pk.	**R064856**	81.51
Regan-Lowe Medium w/Cephalexin (Charcoal Blood Agar)	M	10/Pk.	**R01298**	64.81
Regan-Lowe Semi-Solid Transport Medium	D - 5mL	20/Pk.	**R064141**	137.23
Rice Extract Agar w/o Dextrose, 0.3% Tween* 80	G - PT	20/Pk.	**R09672**	151.42
RIOT Agar (Rice Infusion, Oxgall, Tween 80)	G - PT	20/Pk.	**R09680**	151.42
S				
SABHI Agar (Sabouraud Dextrose w/Brain Heart Infusion Agar)	F - slant	20/Pk.	**R08692**	117.65
	M - DP	10/Pk.	**R01750**	51.86
SABHI Agar w/Chloramphenicol	M - DP	20/Pk.	**R01749**	512.89
	F- slant	20/Pk.	**R08691**	581.86
SABHI Agar w/Blood, Gentamicin	F - slant	20/Pk.	**R08703**	108.46
SABHI Agar w/Blood (Sabouraud Dextrose w/Brain Heart Infusion Agar) (5% sheep blood)	F - slant	20/Pk.	**R08696**	148.95
	M - DP	10/Pk.	**R01752**	63.55
Sabouraud Dextrose Agar (pH 5.6)	M - DP	10/Pk.	**R01768**	50.62
	1 oz. Btl.	10/Pk.	**R10156**	86.47
	G - slant	20/Pk.	**R09747**	149.98
Sabouraud Dextrose Agar Bactiflask* (pH 5.6)	1 oz. TCF	20/Pk.	**R10268**	181.82
Sabouraud Dextrose Agar, Emmons Bactiflask*	1 oz. TCF	20/Pk.	**R10270**	144.16
Sabouraud Dextrose Agar, Emmons w/Chloramphenicol, Cycloheximide	F - slant	20/Pk.	**R08730**	149.01

LOOKING FOR THE MICROARRAYS SECTION?
It has moved and is now called Array Analysis.

Description	Type	Qty.	Cat. No.	Pri
Sabouraud Dextrose Agar, Emmons	1 oz. Btl.	10/Pk.	**R10151**	69.
	1 oz. Btl.	100/Cs.	**R10150**	570.
	15 x 150mm P	10/Pk.	**R04070**	88.
	D - slant	20/Pk.	**R064422**	111.
	D - slant	100/Cs.	**R064420**	466.
	F - slant	20/Pk.	**R08722**	86.
	F - slant	100/Cs.	**R08720**	386.
	M - DP	10/Pk.	**R01760**	40.
	M - DP	100/Cs.	**R01763**	440.
Sabouraud Dextrose Agar, Emmons w/Chloramphenicol	1 oz. Btl.	10/Pk.	**R10158**	90.
	F - slant	20/Pk.	**R08726**	119.4
Sabouraud Dextrose Agar, Emmons w/Chloramphenicol	F - slant	100/Cs.	**R08724**	503.8
	M - DP	10/Pk.	**R01770**	51.8
Sabouraud Dextrose Agar, Emmons w/Chloramphenicol, Gentamicin	M - DP	10/Pk.	**R01772**	66.8
	F - slant	20/Pk.	**R08742**	147.5
Sabouraud Dextrose Agar, Emmons w/Cycloheximide	F - slant	20/Pk.	**R08734**	149.2
Sabouraud Dextrose Agar, Emmons w/Gentamicin	F - slant	20/Pk.	**R08738**	118.9
	M - DP	10/Pk.	**R01776**	66.8
Sabouraud Dextrose Agar, Emmons w/Penicillin, Streptomycin	F - slant	20/Pk.	**R08715**	149.1
Sabouraud Dextrose Agar, Emmons w/Yeast Extract	M - DP	10/Pk.	**R01780**	66.6
	F - slant	20/Pk.	**R08746**	119.0

Contd. on next page

Packaging Key

Media Packaging Type	Abbreviation	Media Packaging Type	Abbreviation
13 x 100mm Tube	A	Filter	FL
15 x 45mm Tube	B	Hungate Cap	HC
15 x 90mm Tube	C	Individual Wrap Plate	IWP
15 x 103mm Tube	D	Monoplate	M
16 x 125mm Tube	E	Organism	Org.
20 x 113mm Tube	F	Plate	P
20 x 150mm Tube	G	Polypropylene Bottle	PB
27 x 70mm Tube	H	Pour Tube	PT
Ampules	Amp.	Pour Tube, Deep	PTD
Biplate	BP	Quadplate	Q
Blood Culture Bottle	BCB	Rubber Stopper	RS
Borosilicate Bottle	BB	Serum Bottle	SB
Boston Round Bottle	BRB	Single Bag	SBG
Bottle	Btl.	Spacesaver Plate	SP
Butt (10 x 103mm)	BT	Thin Pour	TP
Clear Square Bottle	CSB	Tissue Culture Flask	TCF
Double Bag	DBG	Triplate	TRI
Double Pour	DP	Tube	T
Durham Tube	DT	Wide Mouth Bottle	WMB
Envelope	Env.	Vial	Vl.

Inoculating loop and needles can be found on pp. 1101-1102.

*Trademark. See Trademark Reference.

mel* Prepared Media, Contd.

Description	Type	Qty.	Cat. No.	Price
ouraud Dextrose Agar, pH 5.6	BB - 200mL	10/Pk.	**R112550**	158.18
ouraud Dextrose Agar (pH 5.6) // e Count Agar	BP	10/Pk.	**R110504**	354.68
ouraud Dextrose Agar, pH 5.6	BB - 500mL	10/Pk.	**R112551**	233.84
ouraud Dextrose Broth 2%	BB - 990mL	4/Pk.	**R112558**	276.14
	WMB - 90mL	10/Pk.	**R112559**	159.55
ouraud Dextrose Agar hloramphenicol, pH 5.6	BB - 500mL	10/Pk.	**R112552**	444.36
ouraud Dextrose Agar, Emmons enicillin, Streptomycin	M - DP	10/Pk.	**R01773**	121.06
ouraud Dextrose Agar, pH 5.6	M - DP	100/Pk.	**R01766**	520.23
ouraud Dextrose Agar, w/ oramphenicol, Cycloheximide	M - DP	10/Pk.	**R01771**	51.56
ouraud Dextrose Broth 2% 5.6) (Fluid Sabouraud Medium)	D - 5mL	100/Cs.	**R064410**	414.07
	D - 5mL	20/Pk.	**R064412**	93.33
ouraud Dextrose Broth 4% 5.6)	D - 5mL	20/Pk.	**R064416**	111.85
monella Shigella Agar	D - slant	20/Pk.	**R064582**	139.65
monella Shigella Agar (SS Agar)	G - PT	20/Pk.	**R119756**	756.53
	M	10/Pk.	**R01840**	38.96
	SP	15/Pk.	**R01841**	60.03
aedler Agar w/Blood, Hemin, min K	M	10/Pk.	**R01800**	105.18
aedler Broth 2X w/10% Fildes ichment	E - 10mL	20/Pk.	**R07159**	148.33
aedler Broth	D - 5mL	100/Cs.	**R064480**	468.24
	D - 5mL	20/Pk.	**R064482**	112.09
aedler KV Agar (Kanamycin, icomycin) w/Blood, Hemin, min K	M	10/Pk.	**R01804**	110.09
aedler LKV Agar (Kanamycin, icomycin) w/Laked Blood, Hemin, min K	M	10/Pk.	**R01806**	52.20
ective Rapid Urea	0.5mL Vl.	24/Pk.	**R20389**	155.71
enite Broth w/Cystine	BB - 100mL	10/Pk.	**R454502**	110.78
	E - 10mL	100/Cs.	**R07841**	593.89
	D - 9mL	100/Cs.	**R064506**	554.05
	D - 9mL	20/Pk.	**R064508**	139.98
enite Broth	D - 9mL	100/Cs.	**R064500**	459.52
	D - 9mL	20/Pk.	**R064502**	110.01
lers Agar	D - slant	20/Pk.	**R064522**	132.95
Broth	D - 5mL	100/Cs.	**R064530**	468.04
	D - 5mL	20/Pk.	**R064532**	111.83
nal Blood Culture System	BB	20/Pk.	**R65410**	239.05
Medium (Sulfide, Indole, tility)	D - 5mL	100/Cs.	**R064540**	415.27
	D - 5mL	20/Pk.	**R064542**	93.33
mons Citrate Agar	D - slant	100/Cs.	**R060494**	414.61
	D - slant	20/Pk.	**R060496**	93.64
m Milk Medium 2X	D - 5mL	20/Pk.	**R064548**	139.42
	G - 20mL	20/Pk.	**R09776**	151.42
SP4 Glucose Agar w/Thallium Acetate, Penicillin	15 x 60mm P	10/Pk.	**R20276**	84.12
SP4 Glucose Broth w/Thallium Acetate, Penicillin	CSB - 90mL	Each	**R20057**	54.19
	CSB - 100mL	10/Pk.	**R112585**	60.18
	D - 5mL	20/Pk.	**R20376**	170.22
Spectra UTI	M	10/Pk.	**23246900**	38.48
Spectra UTI//TSA 5% Sheep Blood	BP	10/Pk.	**23246902**	42.86
Staph 110 Agar	M	10/Pk.	**R01845**	52.14
Starch Agar	G - PT	20/Pk.	**R09784**	151.38
Starch Agar w/Brom Cresol Purple	M	10/Pk.	**R01850**	52.26
Starch Hydrolysis Agar	D - slant	20/Pk.	**R064588**	139.65
	M	10/Pk.	**R01854**	52.14
Strep Selective Agar w/RNA, Maltose, Neomycin, Polymyxin B	M	10/Pk.	**R01857**	43.91
	SP	15/Pk.	**R01867**	68.19
Strep Selective II Agar w/colistin, oxolinic acid	M	10/Pk.	**R01858**	39.13
Strep A Isolation Agar	M	100/Cs.	**R01855**	441.18
	M	10/Pk.	**R01856**	43.89
Stuart Transport Medium	D - 9mL BT	20/Pk.	**R064622**	94.26
SXT Blood Agar w/Sulfamethoxazole, Trimethoprim	M	10/Pk.	**R01860**	43.84
	SP	15/Pk.	**R01861**	68.63
T				
TAT Broth, w/Polysorbate 20	WMB - 90mL	10/Pk.	**R112611**	110.20
	PB - 1000mL	Each	**R112612**	118.48
TCBS Agar (Thiosulfate, Citrate, Bile Salts, Sucrose)	G - PT	20/Pk.	**R09832**	125.94
	M	10/Pk.	**R01865**	51.03
TCH Agar, 5mcg/mL	F - slant	20/Pk.	**R08816**	146.07
TCH Agar	F - slant	20/Pk.	**R08812**	149.09
Tergitol 7 Agar w/TTC	M	10/Pk.	**R01875**	39.32
Tergitol 7 Agar w/TTC//Blood Agar	BP	10/Pk.	**R02144**	67.34
Tetrathionate Broth	E - 10mL	20/Pk.	**R07162**	118.65
	WMB Screw - 90mL	10/Pk.	**R112630**	110.78
	BB - 1000mL	10/Pk.	**R112634**	101.39
Tetrathionate Broth w/Brilliant Green	BB - 100mL	10/Pk.	**R112632**	110.67
Thayer Martin Agar Modified w/ Nystatin, Colistin, Vancomycin, Trimethoprim	M	10/Pk.	**R01880**	36.58
	SP	100/Pk.	**R01881**	62.01
Thayer Martin Agar Improved (Martin-Lewis) w/Anisomycin, Colistin, Vancomycin, Trimethoprim	M	10/Pk.	**R01884**	44.00
	1 oz Btl. w/CO_2	10/Pk.	**R10211**	88.88
Thermonuclease Agar w/Toluidine Blue	M	10/Pk.	**R01895**	39.05
	G - PT	20/Pk.	**R09884**	151.42

More formulations, formats and sizes can be found on our Web site.

Remel* Prepared Media, Contd.

Description	Type	Qty.	Cat. No.	Price
Thayer Martin Agar Modified w/ Nystatin, Colistin, Vancomycin, Trimethoprim	M	100/Pk.	**R01882**	388.16
Thayer Martin Agar Improved (Martin-Lewis), w/Anisomycin, Colistin, Vancomycin, Trimethoprim	Pill - Pocket	10/Pk.	**R10325**	72.67
Thioglycollate Gelatin Medium	C - 5mL	20/Pk.	**R064668**	111.90
Thioglycollate Medium w/Dextrose w/o Indicator	D - 9mL	100/Cs.	**R064700**	618.28
	E - 10mL	100/Cs.	**R07176**	381.07
	D - 9mL	20/Pk.	**R064702**	83.38
	E - 10mL	20/Pk.	**R07178**	85.86
Thioglycollate Medium w/Dextrose, Hemin, Vitamin K w/o Indicator	D - 5mL	100/Cs.	**R064730**	521.19
	D - 9mL	100/Cs.	**R064720**	403.47
	E - 10mL	100/Cs.	**R07180**	425.49
Thioglycollate Medium w/Dextrose, Hemin, Vitamin K w/o Indicator, CDC Formulation	D - 9mL	20/Pk.	**R064722**	92.64
	E - 10mL	20/Pk.	**R07182**	97.73
	C - 7mL	100/Cs.	**R05152**	757.87
	C - 7mL	20/Pk.	**R05153**	156.34
Thioglycollate Medium w/Dextrose, w/o Indicator	F - 10mL	100/Cs.	**R08850**	663.53
	F - 10mL	20/Pk.	**R08852**	87.40
	F - 18mL	100/Cs.	**R08856**	394.17
Thioglycollate Medium w/o Dextrose, w/o Indicator	D - 5mL	100/Cs.	**R064710**	409.76
	D - 5mL	20/Pk.	**R064712**	88.82
Thioglycollate Medium w/Dextrose w/o Indicator	F - 18mL	20/Pk.	**R08858**	75.60
Thioglycollate Medium w/Dextrose, Hemin, Vitamin K w/o Indicator, CDC Formulation	D - 5mL	20/Pk.	**R064732**	93.51
Tinsdale Agar Base	G - PT	20/Pk.	**R09897**	151.38
TOC Agar (Tween* 80, Oxgall, Caffeic Acid)	G - PT	20/Pk.	**R09892**	151.79
Todd Hewitt Broth w/0.1% Tween* 80 (Positive Inoculum Broth)	D - 0.5mL	100/Pk.	**R14302**	130.87

Description	Type	Qty.	Cat. No.	Price
Todd Hewitt Broth w/Colistin, Nalidixic Acid (LIM Broth)	D - 3mL	100/Cs.	**R064810**	544.62
	D - 3mL	20/Pk.	**R064812**	138.78
Todd Hewitt Broth w/Gentamicin, Nalidixic Acid	D - 5mL	100/Cs.	**R064840**	544.75
	D - 5mL	20/Pk.	**R064842**	138.37
Todd Hewitt Broth w/Gentamicin, Nalidixic Acid, Blood (Trans-Vag Broth)	D - 5mL	100/Cs.	**R064844**	550.64
	D - 5mL	20/Pk.	**R064846**	138.22
Todd Hewitt Broth	D - 0.5mL	20/Pk.	**R064802**	93.47
	D - 0.5mL	100/Cs.	**R064800**	413.21
	D - 5mL	20/Pk.	**R064805**	93.33
	D - 5mL	100/Cs.	**R064804**	416.21
	D - 3mL	20/Pk.	**R064808**	93.39
Trichophyton Agar #1	F - slant	20/Pk.	**R08901**	141.88
	G - PT	20/Pk.	**R09903**	151.42
Trichophyton Agar #2	F - slant	20/Pk.	**R08905**	149.29
	G - PT	20/Pk.	**R09907**	151.42
Trichophyton Agar #3	F - slant	20/Pk.	**R08909**	149.29
	G - PT	20/Pk.	**R09911**	151.42
Trichophyton Agar #4	F - slant	20/Pk.	**R08913**	148.95
	G - PT	20/Pk.	**R09915**	151.42
Trichophyton Agar #5	F - slant	20/Pk.	**R08917**	141.88
	G - PT	20/Pk.	**R09919**	151.42
Trichophyton Agar #6	G - PT	20/Pk.	**R09923**	151.42
	F - slant	20/Pk.	**R08921**	148.95
Trichophyton Agar #7	G - PT	20/Pk.	**R09927**	151.42
	F - slant	20/Pk.	**R08925**	149.29
Triple Sugar Iron Agar (TSI)	E - slant	100/Cs.	**R07200**	428.88

LOOKING FOR THE LAB AUTOMATION SECTION?

It has moved and is now called Microplate Instrumentation.

LOOKING FOR THE TISSUE CULTURE SECTION?

It has moved and is now called Cell Culture.

Packaging Key

Media Packaging Type	Abbreviation	Media Packaging Type	Abbreviation
13 × 100mm Tube	A	Filter	FL
15 × 45mm Tube	B	Hungate Cap	HC
15 × 90mm Tube	C	Individual Wrap Plate	IWP
15 × 103mm Tube	D	Monoplate	M
16 × 125mm Tube	E	Organism	Org.
20 × 113mm Tube	F	Plate	P
20 × 150mm Tube	G	Polypropylene Bottle	PB
27 × 70mm Tube	H	Pour Tube	PT
Ampules	Amp.	Pour Tube, Deep	PTD
Biplate	BP	Quadplate	Q
Blood Culture Bottle	BCB	Rubber Stopper	RS
Borosilicate Bottle	BB	Serum Bottle	SB
Boston Round Bottle	BRB	Single Bag	SBG
Bottle	Btl.	Spacesaver Plate	SP
Butt (10 × 103mm Tube)	BT	Thin Pour	TP
Clear Square Bottle	CSB	Tissue Culture Flask	TCF
Double Bag	DBG	Triplate	TRI
Double Pour	DP	Tube	T
Durham Tube	DT	Wide Mouth Bottle	WMB
Envelope	Env.	Vial	Vl.

Contd. on next page.

Handheld and electronic colony counters are on pp. 1103-1104.

*Trademark. See Trademark Reference.

emel* Prepared Media, Contd.

escription	Type	Qty.	Cat. No.	Price
riple Sugar Iron Agar (TSI)	E - slant	20/Pk.	**R07202**	98.85
	D - slant	100/Cs.	**R064850**	413.06
	D - slant	20/Pk.	**R064852**	92.90
ryptic Soy Agar (TSA)	M	10/Pk.	**R01920**	33.68
	SP	15/Pk.	**R01921**	51.90
	M - DP	10/Pk.	**R01922**	159.74
	15 x 150mm P	10/Pk.	**R04080**	88.12
	D - slant	20/Pk.	**R064862**	92.64
	F - slant	100/Cs.	**R08930**	437.11
	F - slant	20/Pk.	**R08932**	100.54
	F - 10mL PT	100/Cs.	**R08934**	437.01
	F - 10mL PT	20/Pk.	**R08936**	100.61
	G - 22mL PT	20/Pk.	**R09940**	105.25
	15 × 100 mm	100/Pk.	**R110092**	445.61
ryptic Soy Agar w/5% Blood nd Esculin	M	100/Cs.	**R110427**	813.57
ryptic Soy Agar w/Lecithin, olysorbate 80 (Microbial ontent Test Agar)	M - DP	100/Pk.	**R119841**	2971.12
	M - DP	10/Pk.	**R110426**	341.42
	M	10/Pk.	**R01919**	39.11
ryptic Soy Agar (TSA)	BB - 500mL	10/Pk.	**R112700**	229.52
	BRB - 100mL	10/Pk.	**R112703**	110.67
ryptic Soy Broth Agar (TSBA)	M	10/Pk.	**R110430**	110.16
ryptic Soy Broth (TSB)	BB Septum-100mL	10/Pk.	**R112745**	110.78
	BB - 1000mL	4/Pk.	**R112740**	101.34
	D - 1mL	20/Pk.	**R064882**	83.04
	D - 2mL	20/Pk.	**R064892**	83.29
	D - 4mL	20/Pk.	**R064902**	82.69
	D - 4.5mL	20/Pk.	**R065002**	83.01
	D - 1mL	100/Cs.	**R064880**	361.67
	D - 4.5mL	100/Cs.	**R065000**	536.20
	E - 5mL	20/Pk.	**R07224**	85.01
	E - 9mL	100/Pk.	**R117832**	878.63
	E HC - 10mL	20/Pk.	**R117834**	98.73
	E - 10mL	20/Pk.	**R07228**	98.85
	E - 10mL	100/Cs.	**R07226**	426.17
	F - 10mL	20/Pk.	**R08944**	100.81
	F - 15mL	20/Pk.	**R118881**	100.67
	F - 15mL	100/Pk.	**R08943**	437.19
	F - 18mL	20/Pk.	**R08948**	119.36
	G - 20mL	100/Pk.	**R119880**	635.11
	SB - 25mL	10/Pk.	**R112758**	61.37
	SB - 100mL	10/Pk.	**R112731**	110.77
	SB - 40mL	10/Pk.	**R112744**	180.13
	WMB Screw - 90mL	10/Pk.	**R112728**	120.44
Description	**Type**	**Qty.**	**Cat. No.**	**Price**
Tryptic Soy Broth (TSB)	PB - 1000mL	Each	**R112737**	60.97
	WMB Lug - 100mL	10/Pk.	**R112730**	102.16
	WMB Lug - 200mL	10/Pk.	**R112748**	233.84
	WMB Lug - 90mL	10/Pk.	**R112733**	200.19
Tryptic Soy Broth w/15% Glycerol	B - 1.5mL	100/Cs.	**R065025**	403.80
	D - 1.5mL	20/Pk.	**R065026**	112.23
Tryptic Soy Broth w/0.5% Bovine Albumin	D - 2mL	20/Pk.	**R065006**	139.78
Tryptic Soy Broth w/6.5% NaCl	D - 5mL	20/Pk.	**R065032**	88.82
Tryptic Soy Broth w/Polysorbate 8	WMB Screw - 90mL	10/Pk.	**R112755**	110.65
TT Broth Base (Hajna)	BB - 1000mL	4/Pk.	**R112370**	96.50
Tyrosine Agar	G - 25mL PT	20/Pk.	**R09960**	151.42
U				
Uni-OF* Maltose Tube	Constricted Tube	20/Pk.	**R7310062**	58.95
Uni-OF Lactose Tube	Constricted Tube	20/Pk.	**R7310061**	58.95
Uni-OF Glucose Tube	Constricted Tube	20/Pk.	**R7310060**	58.95
Uni-OF Mannitol	Constricted Tube	20/Pk.	**R7310063**	58.96
Urea Agar (Christensen's)	D - slant	100/Cs.	**R065210**	504.68
	D - slant	20/Pk.	**R065212**	111.65
Urea Broth (Stuart's)	D - 2mL	20/Pk.	**R065232**	139.84
Urea Broth for AFB	D - 1.5mL	20/Pk.	**R065222**	139.47
Urea Broth, Rapid (Lyophilized)	V - 3mL	Each	**R20388**	5.57
UVM Mod. Listeria Enrichment Broth	BB - 225mL	10/Pk.	**R112850**	151.50
V				
V Agar	M	10/Pk.	**R01950**	51.22
	M	100/Cs.	**R01960**	508.20
V Agar Selective w/Colistin, Nalidixic Acid, Nystatin	M	10/Pk.	**R01952**	68.12
V Agar // Starch Agar w/Brom Cresol Purple	Biplate	10/Pk.	**R02148**	92.59
Vegetable Peptone Agar	BB - 500g	Each	**R455261**	23.47
Violet Red Bile Agar w/Glucose	15 x 100mm Plate	10/Pk.	**R110097**	63.52
Violet Red Bile Agar	BB - 200mL	10/Pk.	**R112871**	233.84
	BB - 500mL	10/Pk.	**R112872**	819.03
Vogel Johnson Agar	M	10/Pk.	**R01970**	52.14
X				
Xanthine Agar	G - 25mL PT	20/Pk.	**R09974**	149.96
XLD Agar	M	10/Pk.	**R01980**	38.38
Y				
Yeast Fermentation (YF) Broth w/ Bromthymol Blue (BTB), Galactose	D - 7mL DT	20/Pk.	**R065318**	139.68
Yeast Malt Extract Agar	F - slant	20/Pk.	**R08988**	149.29
Yeast Nitrogen Agar w/Brom Cresol Purple	G - PT	20/Pk.	**R09996**	151.38
Yersinia Selective Agar (CIN Agar)	G - 25mL PT	20/Pk.	**R09999**	151.38
YF Broth w/ BTB, Lactose	D - 7mL DT	20/Pk.	**R065326**	139.68

More formulations, formats and sizes can be found on our Web site.

Oxoid* Dehydrated Culture Media

High-quality dehydrated media

STORAGE CONDITIONS:

The sealed, unopened containers should be stored at room temperature from 15° to 20°C (59° to 68°F). Opened containers should have the cap carefully and securely replaced and be stored in a cool dry place away from direct sunlight. Shelf life: one to five years.

NOTE:

Many media require or can be used with supplements; see Oxoid Selective Supplement and Sterile Reagents for more information.

Description	Size	Cat. No.	Price
A			
Aeromonas Medium Base (Ryan)	500g	**OXCM0833B**	164.35
Anaerobe Basal Agar	500g	**OXCM0972B**	207.00
Anaerobe Basal Broth	500g	**R669572**	337.71
Antibiotic Medium #1 (Seed Agar)	500g	**OXCM0327B**	110.35
Azide Blood Agar Base	500g	**OXCM0259B**	137.35
B			
Bacillus cereus Selective Agar Base	500g	**OXCM0617B**	145.75
Baird-Parker Agar Base, RPF	500g	**R669612**	160.12
Baird-Parker Agar Base	500g	**OXCM0275B**	164.95
BiGGY Agar (Nickerson Medium)	500g	**OXCM0589B**	128.35
Bile Aesculin Agar	500g	**OXCM0888B**	213.25
Bismuth Sulphite Agar (Modified Wilson & Blair Medium)	500g	**OXCM0201B**	130.35
Blood Agar Base	500g	**OXCM0055B**	88.90
Blood Agar Base #2	500g	**OXCM0271B**	98.65
Bolton Broth Base	500g	**OXCM0983B**	123.05
Brain Heart Infusion Agar	500g	**OXCM0375B**	140.35
Brain Heart Infusion Broth	500g	**OXCM0225B**	94.05
Brilliant Green Bile 2%	500g	**OXCM0031B**	96.55
Brilliant Green Agar (Kaufmann Medium)	500g	**OXCM0263B**	104.45
Brilliant Green Agar (Modified Edel-Kampelmacher Medium)	500g	**OXCM0329B**	87.75
Brucella Medium Base	500g	**OXCM0169B**	98.45
Brucella Agar (USA Formulation)	500g	**OXCM0691B**	113.75
Buffered Peptone Water	500g	**OXCM0509B**	87.75
Buffered *Listeria* Enrichment Broth	500g	**OXCM0897B**	103.95
Burkholderia cepacia Medium	500g	**OXCM0995B**	193.35

Description	Size	Cat. No.	Pric
C			
Campylobacter Agar Base	500g	**OXCM0689B**	108.0
Campylobacter Selective Agar Base, Blood-free	500g	**OXCM0739B**	125.1
Campylobacter Agar Base (Karmali)	500g	**OXCM0935B**	136.8
Cary Blair Transport Medium	500g	**OXCM0519B**	140.2
Cetrimide Agar	500g	**OXCM0579B**	102.0
Charcoal Agar	500g	**OXCM0119B**	124.3
Cholera Medium TCBS	500g	**OXCM0333B**	90.0
Clausen/Dithionate Thioglycollate (HS-T) Medium	500g	**OXCM0353B**	103.0
Clostridium difficile Agar Base	500g	**OXCM0601B**	196.3
Cooked Meat Medium	500g	**OXCM0081B**	229.2
Corn Meal Agar	500g	**OXCM0103B**	208.6
Czapek Dox Agar, Modified	500g	**OXCM0097B**	65.8
Czapek Dox Liquid Medium	500g	**OXCM0095B**	55.0
D			
Demi-Fraser Broth	500g	**OXCM1053B**	117.75
	2.5kg	**OXCM1053R**	542.50
Desoxycholate Agar	500g	**OXCM0163B**	86.65
Desoxycholate Citrate Agar	500g	**OXCM0035B**	109.15
Dextrose Tryptone Broth	500g	**OXCM0073B**	97.15
Dextrose Tryptone Agar	500g	**OXCM0075B**	107.70
Dichloran-Glycerol (DG18)	500g	**OXCM0729B**	143.65
DNase Agar	500g	**OXCM0321B**	140.45
DRBC Agar Base	500g	**OXCM0727B**	158.65
E			
EC Broth w/MUG	100g	**OXCM0979A**	134.15
	500g	**OXCM0979B**	263.45
EC Broth (Reduced bile salts)	500g	**OXCM0990B**	77.00
EC Broth, Modified	500g	**OXCM0853B**	77.00
EE Broth (Buffer Glucose/Brilliant Green Bile Broth)	500g	**OXCM0317B**	98.05
Endo Agar Base	500g	**OXCM0479B**	73.25
Edwards Medium, Modified	500g	**OXCM0027B**	152.00
Eosin-Methylene Blue Agar (Levine)	500g	**OXCM0069B**	82.65
F			
Fluid Thioglycollate Medium (USP)	500g	**OXCM0173B**	54.45
Fraser Broth	500g	**OXCM0895B**	102.65

Contd. on next page.

For media supplements, see pp. 1067-1072.

*Trademark. See Trademark Reference.

Prices subject to change.

oid* Dehydrated Culture Media, Contd.

cription	Size	Cat. No.	Price
Agar Base	500g	**OXCM0367B**	73.00
emophilus Test Medium (HTM) Base	500g	**OXCM0898B**	134.80
ktoen Enteric Agar	500g	**OXCM0419B**	173.35
h Sulphate Agar	500g	**OXCM0079B**	105.05
-Sensitest Broth	Each	**OXCM0473B**	138.55
-Sensitest Agar	500g	**OXCM0471B**	136.35
Streptococcus Agar	500g	**OXCM0701B**	111.50
ler Iron Agar	500g	**OXCM0033B**	87.20
-Lemco Agar (Nutrient Agar, U.S. Formulation)	500g	**OXCM0017B**	108.65
-Lemco Broth (Nutrient Broth, U.S. mulation)	500g	**OXCM0015B**	88.25
tose Broth	500g	**OXCM0137B**	69.95
	2.5kg	**OXCM0137R**	682.00
ryl Tryptose Broth (Lauryl Sulphate Broth)	500g	**OXCM0451B**	68.85
ionella CYE Agar Base	500g	**OXCM0655B**	133.05
teria Selective Agar Base (Oxford)	500g	**OXCM0856B**	168.45
teria Enrichment Broth	500g	**OXCM0862B**	83.55
teria Enrichment Broth Base (UVM formulation)	500g	**OXCM0863B**	110.25
er Broth	500g	**OXCM0077B**	108.70
ine Iron Agar	500g	**OXCM0381B**	126.25
ine Medium	500g	**OXCM0191B**	132.95
7 Agar	500g	**OXCM0785B**	112.45
7 Broth	500g	**OXCM0817B**	89.95
cConkey Agar	500g	**OXCM007B**	90.40
cConkey Agar #2 (contains Bile Salts #2)	500g	**OXCM0109B**	101.20
cConkey Agar #3 (U.S. formulation with Bile ts #3)	500g	**OXCM0115B**	73.35
	5kg	**OXCM0115T**	639.85
cConkey Agar (without salt, CM7b)	500g	**OXCM0507B**	87.20
cConkey Broth	500g	**OXCM0005B**	81.75
cConkey Broth Purple (U.S. formulation, 5a)	500g	**OXCM0505B**	97.70
CP Agar Base	500g	**OXCM0992B**	130.55
lt Extract Agar	500g	**OXCM0059B**	121.00
lt Extract Broth	500g	**OXCM0057B**	123.30
ximum Recovery Diluent (MRD, Peptone t Broth)	500g	**OXCM0733B**	57.00
mbrane Endo Agar LES	500g	**OXMM0551B**	108.85
mbrane FC Agar	500g	**OXMM0747B**	122.25
mbrane Lauryl Sulphate	500g	**OXMM0615B**	119.25
k Agar	500g	**OXCM0021B**	128.55
k Plate Count Agar (with antibiotic-free mmed milk)	500g	**OXCM0681B**	136.30
CB Agar	500g	**OXCM0783B**	102.25
dified Lauryl Tryptose Broth w/MUG	500g	**OXCM0967B**	218.45
dified Letheen Broth	2.5kg	**OXCM0955R**	500.15
dified Lysine Iron Agar (MLIA)	500g	**OXCM0886B**	139.65
dified Semi-solid Rappaport Vassiliadis dium (MSRV)	500g	**OXCM0910B**	108.10

Description	Size	Cat. No.	Price
Modified Tryptone Soy Broth	500g	**OXCM0989B**	56.85
MRS Agar	500g	**OXCM0361B**	101.75
MRS Broth	500g	**OXCM0359B**	96.55
MRVP Medium (Clarks & Lubs Medium)	500g	**OXCM0043B**	79.55
Mueller Hinton Agar	500g	**OXCM337B**	85.15
Mycoplasma Agar Base	500g	**OXCM0401B**	106.95
Mycoplasma Broth Base	500g	**OXCM0403B**	89.00
MYP Agar	500g	**OXCM0929B**	147.75
N			
Nutrient Agar	500g	**OXCM0003B**	90.05
Nutrient Broth	500g	**OXCM0001B**	78.80
Nutrient Broth #2	500g	**OXCM0067B**	77.95
Nutrient Gelatin (CM135a)	500g	**OXCM0635B**	88.85
O			
ONE Broth-Listeria	500g	**OX661662**	128.75
Orange Serum Agar	500g	**OXCM0657B**	148.25
Oxacillin Resistance Screening Agar Base	500g	**OXCM1008B**	125.15
Oxytetracycline Glucose Yeast Extract Agar Base	500g	**OXCM0545B**	88.05
P			
PALCAM Agar Base	500g	**OXCM0877B**	176.50
Perfringens Agar Base (OPSP)	500g	**OXCM0543B**	131.75
Peptone Water	500g	**OXCM0009B**	65.05
Plate Count Agar	500g	**OXCM0325B**	91.25
Presence-Absence Broth	500g	**OXCM0851B**	81.09
Potato Dextrose Agar	500g	**OXCM0139B**	119.75
Pseudomonas Agar Base	500g	**OXCM0559B**	108.85
R			
R2A Agar	500g	**OXCM0906B**	139.65
Raka-Ray Agar Base	500g	**OXCM0777B**	118.95
Rappaport-Vassiliadis (RV) Enrichment Broth	500g	**OXCM0669B**	54.75
Rappaport Vassiliadis Soya (RVS) Peptone Broth	500g	**OXCM0866B**	58.25
Reinforced Clostridial Agar	500g	**OXCM0151B**	90.05
Reinforced Clostridial Medium (RCM, semisolid)	500g	**OXCM0149B**	85.05
Rogosa Agar	500g	**OXCM0627B**	126.25
S			
Sabouraud Dextrose Agar	500g	**OXCM0041B**	82.65
Sabouraud Liquid Medium	500g	**OXCM0147B**	57.45
Salmonella Chromogenic Agar	500g	**OXCM1007B**	477.65
Salmonella Rapid Test Elective Medium (STREM)	500g	**OXCM0857B**	119.55
Schaedler Anaerobe Broth	500g	**OXCM0497B**	101.75
Selenite Cystine Broth Base	500g	**OXCM0699B**	67.90
Selenite Broth Base	500g	**OXCM0395B**	45.00
Sheep Blood Agar Base	500g	**OXCM0854B**	103.85
SIM Medium	500g	**OXCM0435B**	98.65
Simmons Citrate Agar	500g	**OXCM0155B**	104.75
Slanetz & Bartley Medium (*Enterococcus* Agar)	500g	**OXCM0377B**	118.35
Sorbitol MacConkey Agar	500g	**OXCM0813B**	122.45
Sorbitol MacConkey Agar w/BCIG	500g	**OXCM0981B**	429.75
SS Agar, Modified	500g	**OXCM0533B**	94.05
SS Agar	500g	**OXCM0099B**	94.05
Standard Plate Count Agar APHA	500g	**OXCM0463B**	85.85
	2.5kg	**OXCM0463R**	403.55
Staphylococcus Medium #110	500g	**OXCM0145B**	82.95

More formulations, formats and sizes can be found on our Web site.

Oxoid* Dehydrated Culture Media, Contd.

Description	Size	Cat. No.	Price
Stuart Transport Medium	500g	**OXCM0111B**	111.05
T			
Tergitol-7 Agar	500g	**OXCM0793B**	105.05
Tetrathionate Broth Base	500g	**OXCM0029B**	54.65
Tetrathionate Broth (USA)	500g	**OXCM0671B**	103.00
Thioglycollate Medium (Brewer)	500g	**OXCM0023B**	86.85
Thioglycollate Broth (USP alternative)	500g	**OXCM0391B**	84.85
Tinsdale Agar Base, requires Tinsdale Supplement (OXSR0065A)	500g	**OXCM0487B**	140.75
Todd-Hewitt Broth	500g	**OXCM0189B**	113.65
Tomato Juice Agar	500g	**OXCM0113B**	277.35
Trichomonas Medium Base	500g	**OXCM0161B**	174.85
Triple Sugar Iron Agar	500g	**OXCM0277B**	72.05
Tryptone Glucose Extract Agar	500g	**OXCM0127B**	113.25
Tryptone Soy Agar	500g	**OXCM0131B**	67.60
	2.5kg	**OXCM0131R**	325.80
	5kg	**OXCM0131T**	643.35
Tryptone Soy Broth (USP)	500g	**OXCM0876B**	67.95
	2.5kg	**OXCM0129R**	245.74
	25kg	**OXCM0129K**	2474.85
Tryptone Soy Broth (Gamma Irradiated)	5kg	**OXCM1016T**	703.25
Tryptone Soy Broth (Soybean Casein Digest Medium USP)	500g	**OXCM0129B**	52.20
	5kg	**OXCM0129T**	499.95
Tryptose Blood Agar Base	500g	**OXCM0233B**	87.75
Tryptose Phosphate Broth	500g	**OXCM0283B**	101.65
Tryptone Water	500g	**OXCM0087B**	106.00
U			
Universal Beer Agar	500g	**OXCM0651B**	111.65
Urea Agar Base (Christensen Agar Base)	500g	**OXCM0053B**	78.55
Urea Broth Base (Christensen Agar Base)	500g	**OXCM0071B**	57.45
UVM (Complete)	500g	**OXCM1054B**	196.65
V			
Vegetable Peptone #1	500g	**OXVG0100B**	53.85
Vegetable Peptone Broth	500g	**OXVG0101B**	67.60
Violet Red Bile Glucose Agar	500g	**OXCM0485B**	102.45
Violet Red Bile Lactose Agar	500g	**OXCM0107B**	77.45
Violet Red Bile Agar w/MUG	500g	**OXCM0978B**	243.65
Vogel-Johnson Agar	500g	**OXCM0641B**	98.65
W			
Wilkins-Chalgren Anaerobe Agar	500g	**OXCM0619B**	138.25
Wilkins-Chalgren Anaerobe Broth	500g	**OXCM0643B**	126.95
WL Nutrient Agar	500g	**OXCM0309B**	62.15
WL Nutrient Broth	500g	**OXCM0501B**	60.72
Wort Agar	500g	**OXCM0247B**	119.00
X			
XLD Medium	500g	**OXCM469B**	122.35

BD* Dehydrated Culture Media

More than 400 different media formulations in convenient dehydrated form

- Media with a proven record of performance backed by over 180 years of combined Difco* and BBL* expertise
- Manufactured with ISO 9000:2001-certified processes

Description	Size	Cat. No.	Pri
2A Agar	100g	**DF1826-15-3**	49.
2xYT	500g	**DF0440-17**	38.
A			
A-1 Medium, Difco	500g	**DF1823-17-4**	84.8
AC Broth, Difco	500g	**DF0317-17-9**	128.0
Acetate Differential Agar, Difco	500g	**DF0742-17-4**	167.8
Actinomycete Isolation Agar, Difco	500g	**DF0957-17-4**	179.6
AK Agar #2, Sporulating Agar, BBL	500g	**L10912**	149.0
Anaerobe Broth MIC, Difco	500g	**DF1815-17-4**	176.6
Anaerobic Agar, Difco	500g	**DF0536-17-4**	125.1
Antibiotic Assay Broth (Antibiotic Medium D), BBL	500g	**B10932**	102.3
Antibiotic Medium 1 (Penassay Seed Agar), Difco	500g	**DF0263-17-3**	101.9
Antibiotic Medium 2 (Penassay Seed Agar), Difco	500g	**DF0270-17-4**	105.0
Antibiotic Medium 3 (Penassay Broth), Difco	500g	**DF0243-17-8**	82.8
Antibiotic Medium 4 (Yeast Beef Agar), Difco	500g	**DF0244-17-7**	119.3
Antibiotic Medium 5 (Streptomycin Assay Agar), Difco	500g	**DF0277-17-7**	117.4
Antibiotic Medium 8, Difco	500g	**DF0667-17-5**	103.7
Antibiotic Medium 9 (Polymyxin Base Agar), Difco	500g	**DF0462-17-2**	103.7
Antibiotic Medium 10 (Polymyxin Seed Agar), Difco	500g	**DF0463-17-1**	103.7
Antibiotic Medium 11 (Erythromycin/Neomycin Agar), Difco	500g	**DF0593-17-4**	82.8
Antibiotic Medium 12, Difco	500g	**DF0669-17-3**	119.4
Antibiotic Medium 19, Difco	500g	**DF0043-17-0**	104.9
APT Agar (All-purpose Agar w/Tween* 80), Difco	500g	**DF0654-17-0**	92.4
APT Broth (All-purpose Broth w/Tween* 80), Difco	500g	**DF0655-17-9**	73.7
Azide Blood Agar Base, Difco	500g	**DF0409-17-8**	152.0
Azide Dextrose Broth, Difco	500g	**DF0387-17-4**	70.6
B			
B_{12} Assay Medium USP, Difco	100g	**DF0457-15-1**	59.4
B_{12} Culture Agar USP, Difco	100g	**DF0541-15-9**	69.0
B_{12} Inoculum Broth USP, Difco	100g	**DF0542-15-8**	59.9
Baird-Parker Agar Base	500g	**DF0768-17-3**	201.5

Contd. on next page

Look for single-channel pipetters in the Pipetters section.

*Trademark. See Trademark Reference.

* Dehydrated Culture Media, Contd.

cription	Size	Cat. No.	Price
d-Parker Agar Base, Difco*	2kg	**DF0768-07**	736.90
/E Agar Base, BBL*	500g	**B12327**	404.50
Sulfa Agar (Brilliant Green), Difco	500g	**DF0717-17-5**	100.30
GY Agar, BBL	500g	**B11027**	175.00
tin Assay Medium, Difco	100g	**DF0419-15-8**	50.00
muth Sulfite Agar, Difco	500g	**DF0073-17-3**	108.85
in Heart CC Agar	500g	**B11057**	223.00
in Heart Infusion, BBL	500g	**B11059**	110.00
	5 lb.	**B11060**	519.58
in Heart Infusion, Difco	500g	**DF0037-17-8**	88.45
in Heart Infusion, Bacto*	100g	**DF0037-15-0**	39.33
	2kg	**DF0037-07-0**	354.05
	10kg	**DF0037-08-9**	1724.25
in Heart Infusion Agar, BBL	500g	**B11065**	161.58
in Heart Infusion Agar, Difco	100g	**DF0418-15-9**	55.78
	500g	**DF0418-17-7**	127.10
	2kg	**DF0418-07-9**	495.35
in Heart Infusion Agar, Modified, BBL	500g	**L99069**	202.00
in Heart Infusion Broth, Modified, BBL	500g	**B99070**	155.00
in Heart Infusion with PAB and Agar, Difco	500g	**DF0499-17-9**	130.30
in Heart Infusion, Porcine, Bacto	500g	**DF0561-17**	107.10
wer Anaerobic Agar, Difco	500g	**DF0279-17-5**	103.85
liant Green Agar, Difco	500g	**DF0285-17-7**	89.35
liant Green Bile 2%, Difco	100g	**DF0007-15-6**	58.29
	2kg	**DF0007-07-6**	327.16
	500g	**DF0007-17-4**	87.00
liant Green Bile Agar, Difco	500g	**DF0014-17-5**	127.50
cella Agar	500g	**B11086**	149.14
cella Broth	500g	**B11088**	120.00
fered Listeria Enrichment Broth Base, Difco	500g	**DF090717**	48.65
fered Peptone	500g	**B12367**	93.70
fered Peptone Water, Difco	2kg	**DF1810-07**	284.85
	10kg	**DF1810-080**	1351.75
fered Peptone Water, BBL	5 lb.	**B12345**	413.00
fered Peptone Water, Difco	500g	**DF1810-17-9**	75.00
fered Peptone Water II, Difco	500g	**DF1840-17**	73.90
hnell Haas Broth, Difco	500g	**DF0578-17-3**	133.55

Description	Size	Cat. No.	Price
C			
Campylobacter Agar Base, Difco	2kg	**DF1820-07-9**	403.40
Candida BCG Agar Base, Difco	500g	**DF0835-17-2**	136.65
Cary and Blair Transport Medium	500g	**B11102**	129.00
Cetrimide Agar Base, Difco	500g	**DF0854-17-8**	118.50
Chapman Stone Medium, Difco	500g	**DF0313-17-3**	112.40
Charcoal Agar, Difco	500g	**DF0894-17-0**	155.70
Choline Assay Medium	100g	**B2420-10**	88.00
CLED Agar (Cystine Lactose Electrolyte Deficient Agar), BBL	500g	**L4312-21-8**	153.00
Coagulase Mannitol Agar, BBL	500g	**L11116**	174.00
Columbia Agar Base	500g	**B11124**	98.00
	5 lb.	**B11125**	492.00
Columbia Blood Agar Base, BBL	500g	**DF0792-17-3**	73.70
Columbia Blood Agar Base, Difco	2kg	**DF0792-07-5**	280.05
Columbia Blood Agar Base, EH, Difco	500g	**DF0790-17-5**	83.50
Columbia Broth, Difco	500g	**DF0944-17-0**	90.60
Columbia CNA Agar	500g	**B12104**	127.80
	5 lb.	**B94221X**	637.00
Cooke Rose Bengal Agar	500g	**DF0703-17-1**	132.45
Cooked Meat Medium, Difco	500g	**DF0267-17-9**	278.10
Corn Meal Agar	500g	**B11132**	193.00
CTA Agar	500g	**B11094**	139.00
CTA Medium	500g	**B11096**	80.00
Cystine Heart Agar, Difco	500g	**DF0047-17-6**	150.91
Cystine Tryptic Agar, Difco	500g	**DF0523-17-9**	80.05
CzaPEK Solution Agar, Difco	500g	**DF0339-17-3**	89.00
CzaPEK-Dox Broth, Difco	500g	**DF0338-17-4**	60.60
D			
D/E Neutralizing Agar (Disinfectant Testing), Difco	500g	**DF0686-17-2**	118.70
D/E Neutralizing Broth, Difco	500g	**DF0819-17-2**	79.85
DCLS Agar	500g	**L11144**	123.00
Decarboxylase Medium Base, Difco	500g	**DF0872-17-6**	99.00
Demi-Fraser Broth Base, Difco	500g	**DF0653-17-0**	64.72
	10kg	**DF0653-08**	947.60
Dermatophyte Test Medium Base	500g	**L12330**	286.00
Desoxycholate Agar, Difco	500g	**DF0273-17-1**	72.15
Desoxycholate Citrate Agar, Difco	500g	**DF0274-17-0**	113.00
Desoxycholate Lactose Agar, Difco	500g	**DF0420-17-3**	72.15
Dextrose Agar, Difco	500g	**DF0067-17-1**	132.00
Dextrose Agar Emmons (Sabouraud Agar Modified), Difco	500g	**DF0747-17-9**	90.90
Dextrose Broth, Difco	500g	**DF0063-17-5**	88.00
Dextrose Starch Agar, Difco	500g	**DF0066-17-2**	108.70
Dextrose Tryptone Agar, Difco	500g	**DF0080-17-4**	93.25
DNase Test Agar (Deoxyribonuclease Test), Difco	500g	**DF0632-17-7**	103.25
DNase Test Agar with Methyl Green, Difco	500g	**DF0220-17-5**	132.15
DRBC Agar, Difco	500g	**DF0587-17**	87.05
Dubos Broth Base, Difco	500g	**DF0385-17-6**	134.25
Dubos Oleic Agar Base, Difco	500g	**D0373-17**	171.00

For Media Supplements, see pp. 1067-1072.

BD* Dehydrated Culture Media, Contd.

Description	Size†	Cat. No.	Price
E			
EC Medium, Difco	100g	**DF0314-15-4**	58.00
	500g	**DF0314-17-2**	104.25
EC Medium with MUG, Difco	100g	**DF0022-15-7**	147.30
	500g	**DF0022-17-5**	364.60
EC Medium, Modified, Difco	500g	**DF0340-17**	92.40
EE Broth Mossel, Difco	500g	**DF0566-17-7**	114.85
Elliker Broth (Lactobacilli Broth), Difco	500g	**DF0974-17-3**	129.25
EMB Agar Levine without Lactose	500g	**B11191**	179.00
Enteric Fermentation Base, Difco	500g	**DF1828-17-9**	114.85
Enterococcosel Agar	500g	**B12205**	175.30
Enterococcosel Broth	500g	**B12207**	196.20
Eosin Methylene Blue Agar, Levine	500g	**B11221**	87.81
Eosin Methylene Blue Agar, Modified (Holt-Harris & Teague)	500g	**B11215**	101.51
Esculin Iron Agar, Difco*	100g	**DF0488-15-4**	76.60
Eugon Agar, Difco	500g	**DF0589-17-0**	106.70
Eugon Broth (Bacto*)	500g	**DF0590-17-7**	102.80
EVA Broth (Ethyl Violet Azide Broth), Difco	500g	**DF0606-17-9**	84.50
F			
Fluid Thioglycollate Medium, Difco	100g	**DF0256-15-4**	25.55
	500g	**DF0256-17-2**	54.25
	10kg	**DF0256-08-3**	948.85
Fluid Thioglycollate Medium with Beef Extract, Difco	500g	**DF0697-17-9**	106.60
Fluid Thioglycollate Medium, Alternative, Difco	500g	**DF0257-17-1**	76.75
Fletcher Medium Base, Difco	500g	**DF0987-17-8**	171.75
Fluid Lactose Medium, Difco	100g	**DF0004-15-9**	26.66
	500g	**DF0004-17-7**	60.15
	10kg	**DF0004-08-8**	1110.90
Fluid Sabouraud Medium USP, Difco	500g	**DF0642-17-5**	56.15
Fluid Selenite Cystine Medium, Difco	500g	**DF0687-17-1**	67.00
	2kg	**DF0687-07-3**	267.00
Folic Acid Assay Medium, Difco	100g	**DF0318-15-0**	42.60
Folic Acid Casein Medium, Difco	100g	**DF0822-15-9**	59.95
Folic AOAC Medium, Difco	100g	**DF0967-15-4**	57.35
Fraser Broth Base, Difco	500g	**DF0219-17-8**	80.30
	2kg	**DF0219-07-0**	320.55
FTA Hemagglutination Buffer, pH 7.2 (Phosphate Buffered Saline)	500g	**B11248**	64.21
G			
GC Medium Base (Chocolate Agar Base),, Difco	500g	**DF0289-17-3**	64.10
Giolitti-Cantoni Broth Base, Difco	500g	**DF1809-17-2**	65.80
GN Broth	500g	**B11279**	113.62
GN Broth Hajna, Difco	500g	**DF0486-17-4**	85.05
H			
HC Agar Base	500g	**DF0685-17-3**	80.80
Heart Infusion Agar (Blood Agar Base, Infusion pH 7.4), Difco	500g	**DF0044-17-9**	112.65
Heart Infusion Broth (Bacto)	500g	**DF0038-17-7**	112.65
Hektoen Enteric Agar, Difco	500g	**DF0853-17-9**	159.10
Hinton Medium, Difco	10kg	**DF0252-08-7**	1366.95

Description	Size	Cat. No.	Pri
I			
Inhibitory Mold Agar	500g	**14-910-95**	132.
Inositol Assay Medium, Difco	100g	**DF0995-15-0**	62.5
ISP Medium 1 (International Streptomyces Project Tryptone Yeast Extract Broth), Difco	500g	**DF0769-17-2**	127.
ISP Medium 2 (Yeast Malt Extract Agar), Difco	500g	**DF0770-17-9**	169.
ISP Medium 4, Difco	500g	**DF0772-17-7**	145.
K			
KF Streptococcus Agar, Difco	500g	**DF0496-17-2**	113.
KF Streptococcus Broth, Difco	500g	**DF0997-17-6**	90.
King Medium A (Pseudomonas Agar P), Difco	500g	**DF0449-17-0**	119.
Kligler Iron Agar	500g	**B11317**	119.
Koser Citrate Medium, Difco	500g	**DF0015-17-4**	89.
L			
Lactobacilli Agar AOAC, Difco	100g	**DF0900-15-4**	67.
Lactobacilli Broth AOAC, Difco	100g	**DF0901-15-3**	57.5
Lactobacilli MRS Agar, Difco	500g	**DF0882170**	90.6
Lactobacilli MRS Broth, Difco	500g	**DF0881-17-5**	78.
Lauryl Sulfate Broth with MUG	500g	**B98076**	410.7
Lauryl Sulfate Broth, BBL*	500g	**B11338**	84.7
	5 lb.	**B11339**	449.
Lauryl Sulfate Broth, Difco	100g	**DF0241-15-2**	58.2
	500g	**DF0241-17-0**	77.1
Lauryl Tryptose Broth with MUG, Difco	100g	**DF0021-15-8**	170.6
	500g	**DF0021-17-6**	385.7
LB Agar, Lennox, Difco	500g	**DF0401-17**	74.
LB Agar, Miller (Luria-Bertani), Difco	500g	**DF0445-17-4**	74.5
LB Broth Base, Select Alternative Protein Source (APSTM), Difco	10kg	**B4312-48-4**	771.3
LB Broth, Lennox, Difco	500g	**DF0402-17-0**	37.0
LB Broth, Miller (Luria-Bertani), Difco	500g	**DF0446-17-3**	50.1
LBS* Broth	500g	**B11331**	162.5
LBS Agar	500g	**B11327**	125.3
Legionella Agar Base, Difco	500g	**DF1830-17-5**	206.2
Leptospira Medium Base EMJH, Difco	500g	**DF0794-17-1**	110.0
Letheen Agar, Difco	500g	**DF0680-17-8**	119.8
Letheen Agar, Modified (AOAC), Difco	2kg	**14-910-96**	466.5
	500g	**DF0631-17-0**	108.0
Letheen Broth, Difco	500g	**DF0681-17-7**	109.9
Lima Bean Agar, Difco	500g	**DF0117-17-1**	578.2
Listeria Enrichment Broth, Difco	500g	**DF0222-17-3**	55.7
	10kg	**DF0222-08-4**	1031.6
Listeria Enrichment Broth, Modified, Difco	2kg	**DF0205-07-6**	238.6
	500g	**DF0205-17-4**	63.0
Litmus Milk, BBL	500g	**B11343**	149.2
Litmus Milk, Difco	500g	**DF0107-17-3**	66.1
Liver Infusion Agar, Difco	500g	**DF0052-17-8**	222.5
Liver Infusion Broth, Difco	500g	**DF0269-17-7**	129.0
Liver Veal Agar, Difco	500g	**DF0059-17-1**	148.7
Loeffler Blood Serum, Difco	500g	**DF0070-17-6**	113.8

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More formulations, formats and sizes can be found on our Web site.

*Trademark. See Trademark Reference.

Prices subject to change.

)* Dehydrated Culture Media, Contd.

scription	Size	Cat. No.	Price
wenstein Medium Base, Difco*	500g	**DF0444-17-5**	100.45
M Agar Base, use with Moxalactam, Difco	2kg	**DF0221-07-6**	624.05
	500g	**DF0221-17-4**	155.55
ria Agar Base, Miller. Difco	2kg	**DF0413-07-4**	309.25
	500g	**DF0413-17-2**	78.55
ria Broth Base, Miller, Difco	500g	**DF0414-17-1**	142.68
	2kg	**DF0414-07-3**	157.85
sine Assay Medium, Difco	100g	**DF0422-15-3**	67.15
sine Decarboxylase Broth, Difco	500g	**DF0215-17-2**	216.36
sine Iron Agar, BBL*	500g	**B11363**	185.19
sine Iron Agar, Difco	500g	**DF0849-17-6**	141.00
Brilliant Green Broth, Difco	500g	**DF0494-17-4**	112.35
Broth (Bacto*)	500g	**DF0940-17-4**	100.45
E Agar, Difco	100g	**DF0333-15-1**	59.00
	500g	**DF0333-17-9**	163.55
Endo LES Agar, Difco	100g	**DF0736-15-4**	72.70
	500g	**DF0736-17-2**	150.25
Endo Broth MF-Millipore* (Millipore Filter), co	100g	**DF0749-15-9**	55.20
FC Agar, Difco	100g	**DF0677-15-5**	54.40
	500g	**DF0677-17-3**	135.51
FC Broth Base, use with Rosolic Acid, Difco	100g	**DF0883-15-5**	58.00
	500g	**DF0883-17-3**	130.59
Plate Count Broth (m TGY Broth), Difco	500g	**DF0751-17-2**	98.55
TEC Agar, Difco	100g	**DF0334-15-0**	70.45
cConkey Agar, Difco	2kg	**DF0075-07-3**	254.15
cConkey Agar Base, Difco	500g	**DF0818-17-3**	93.15
cConkey II Agar with Sorbitol	500g	**08757190**	99.65
cConkey Sorbitol Agar, Difco	500g	**DF0079-17-7**	96.55
lonate Broth, Difco	500g	**DF0395-17-4**	185.95
lonate Broth Ewing	500g	**L11399**	296.39
lonate Broth, Modified, Difco	500g	**DF0569-17-4**	181.60
lt Agar, Difco	500g	**DF0024-17-3**	95.35
lt Extract Agar, Difco	500g	**DF0112-17-6**	98.15
lt Extract Broth, Difco	500g	**DF0113-17-5**	76.80
nnitol Salt Agar, BBL	500g	**B11407**	56.37
rine Agar 2216, Difco	500g	**DF0979-17-8**	142.00
rine Broth 2216, Difco	500g	**DF0791-17-4**	128.50
Clung Toabe Agar Base, use with Egg Yolk ichment 50%, Difco	500g	**DF0941-17-3**	118.00
Enterococcus Agar (m Azide Agar), Difco	100g	**DF0746-15-2**	84.52
m-Enterococcus Agar (m Azide Agar), Difco	500g	**DF0746-17-0**	155.95
M-Green Yeast and Mold Broth, BBL	500g	**B11287**	94.98
m-HPC Agar (Heterotrophic Plate Count), Difco	500g	**DF0752-17-1**	106.35
Micro Assay Culture Agar	500g	**DF0319-17-7**	200.45
Micro Inoculum Broth, Difco	500g	**DF0320-17-4**	154.00
Microbial Content Test Agar	500g	**DF0553-17-2**	81.75
Middlebrook 7H10 Agar, Difco	500g	**DF0627-17-4**	121.40
Middlebrook 7H9 Broth, Difco	500g	**DF0713-17-9**	107.25
Minimal Agar Davis, Difco	500g	**DF0544-17-4**	155.00
Minimal Broth Davis without Dextrose, Difco	500g	**DF0756-17-7**	114.38
Mitis Salivarius Agar, Difco	500g	**DF0298-17-2**	113.75
Moeller Decarboxylase Base, Difco	500g	**DF0890-17-4**	179.95
Motility GI Medium, Difco	500g	**DF0869-17-1**	92.50
Motility Indole Lysine (MIL) Medium, Difco	500g	**DF1804-17-7**	102.80
Motility Indole Ornithine (MIO) Medium, Difco	500g	**DF0735-17-3**	96.50
Motility Test Medium, BBL	500g	**B11436**	149.02
M-PA-C Agaro	500g	**B98153**	178.51
M-R-VP Broth	500g	**B11383**	88.65
MR-VP Medium (Methyl Red-Voges Proskauer) (Buffered Glucose Broth), Difco	500g	**DF0016-17-3**	89.95
MSRV Medium	500g	**D1868-17**	117.09
M-Staphylococcus Broth	500g	**DF0649-17-8**	106.20
Mycophil Agar, with Low pH	500g	**B11450**	127.50
Mycoplasma (PPLO) Broth without CV, Difco	10kg	**DF055408**	1930.15
Mycoplasma Broth Base (Frey), BBL	5 lb.	**L12347**	482.42
Mycoplasma Broth Base (Frey), Difco	500g	**B12346**	126.09
Mycoplasma Broth Base (PPLO Broth Base without Crystal Violet)	500g	**B11458**	113.62
Mueller Hinton Broth, BBL	500g	**B11443**	114.21
Mueller Hinton Broth, Difco	500g	**DF0757-17-6**	91.20
Mueller Hinton II Agar (Cation-adjusted)	500g	**B11438**	101.25
	5 lb.	**B11441**	470.64
Mueller Hinton Medium, Difco	500g	**DF0252-17-6**	70.60
Mycobacteria 7H11 Agar, Difco	500g	**DF0838-17-9**	112.85
Mycophil Agar	500g	**B11445**	216.27
Mycosel Agar	500g	**B11462**	171.33
MYP Agar (Mannitol Yolk Polymyxin), Difco	500g	**DF0810-17-1**	111.95
N			
Niacin Assay Medium, Difco	100g	**DF0322-15-4**	45.50
Nitrate Broth, Difco	500g	**DF0268-17-8**	103.75
Nutrient Agar, Difco	100g	**DF0001-15-2**	46.25
Nutrient Agar pH 6.0, Difco	500g	**DF0634-17-5**	173.90
Nutrient Agar with MUG, Difco	500g	**DF0023-17-4**	408.16
Nutrient Broth, Difco	500g	**DF0003-17-8**	93.72
Nutrient Gelatin, Difco	500g	**DF0011-17-8**	71.30
NZCYM Broth, Difco	500g	**DF0404-17-0**	44.70
NZYM Broth without Casamino Acids, Difco	500g	**DF0415-17**	123.55

For sterile dishes, see the Dishes section on pp. 596–605.

BD* Dehydrated Culture Media, Contd.

Description	Size	Cat. No.	Price
O			
Oatmeal Agar	500g	**DF0552-17-3**	130.00
OF Basal Medium (Oxidation/Fermentation)	500g	**DF0688-17-0**	81.25
OGYE Agar Base (Oxytetracycline Glucose Yeast Extract)	500g	**DF1811-17-8**	67.00
Orange Serum Agar	500g	**B11486**	143.37
Oxford Medium Base	500g	**DF0225-17-0**	131.00
	2kg	**DF0225-07-2**	494.40
P			
PALCAM Medium Base	500g	**DF0636-17**	78.80
	2kg	**DF0636-07**	282.10
Pantothenate Assay Medium	100g	**DF0604-15-3**	54.85
Pantothenate Medium AOAC USP	100g	**DF0816-15-7**	62.10
Peptone Iron Agar	500g	**DF0089-17-5**	154.05
Peptone Water	500g	**DF1807-17-4**	59.00
Phenol Red Agar Base, BBL	500g	**B11502**	200.00
Phenol Red Broth Base, BBL	500g	**B11506**	167.00
Phenol Red Lactose Broth, BBL	500g	**B11519**	159.00
Phenol Red Mannitol Agar	500g	**DF0103-17-7**	140.60
Phenol Red Sucrose Broth	500g	**B11533**	235.46
Phenylalanine Agar, BBL	500g	**B11537**	220.84
Phenylalanine Agar, Difco*	500g	**DF0745-17-1**	164.05
Phenylethyl Alcohol Agar, BBL	500g	**B11539**	109.00
Phytone Yeast Extract Agar, BBL	500g	**B11546**	113.00
Plate Count Agar, Difco	10kg	**DF0479-08-4**	1364.40
Plate Count Agar (Standard Methods Agar), Difco	100g	**DF0479-15-5**	39.70
	500g	**DF0479-17-3**	73.90
Potato Dextrose Agar, Difco	100g	**DF0013-15-8**	39.95
	500g	**DF0013-17-6**	88.15
	2kg	**DF0013-07-8**	352.70
Potato Dextrose Broth, Difco	500g	**DF0549-17-9**	97.55
Potato Infusion Agar	500g	**DF0051-17-9**	217.25
PPLO Agar	500g	**DF0412-17-3**	110.50
PPLO Broth without CV	500g	**DF0554-17-1**	87.50
Presence-Absence Broth	2kg	**DF0019-07-2**	335.85
Proteose No. 3 Agar	500g	**DF0065-17-3**	140.53
Pseudomonas Agar F	500g	**DF0448-17-1**	138.37
Pseudomonas Isolation Agar	500g	**DF0927-17-1**	127.25
Purple Agar Base	500g	**DF0228-17-7**	139.25
Purple Broth Base	500g	**DF0227-17-8**	76.75
Pyridoxine Y Medium	100g	**DF0951-15-2**	65.00
R			
R2A Agar	500g	**DF1826-17-1**	101.80
Raka-Ray No. 3	500g	**DF1867-17-0**	101.40
Rappaport-Vassiliadis	500g	**D1858-17**	80.00
Regan-Lowe Charcoal Agar Base	500g	**L98123**	195.00
Reinforced Clostridial Medium	500g	**DF1808-17-3**	88.15
Riboflavin Assay Medium	100g	**DF0325-15-1**	66.66
Rice Extract Agar	100g	**L11567**	116.00
Rogosa SL Agar	500g	**DF0480-17-0**	107.55
Rogosa SL Broth	500g	**DF0478-17-4**	170.45
Rose Bengal Agar Base	500g	**DF1831-17-4**	128.90

Description	Size	Cat. No.	Price
S			
Sabhi* Agar Base (Sabouraud—Brain Heart Infusion), Difco	500g	**DF0797-17-8**	154.90
Sabouraud Dextrose Agar, BBL	500g	**B11584**	76.00
	5 lb.	**B11585**	360.00
Sabouraud Dextrose Agar, Difco	100g	**DF0109-15-3**	25.75
	500g	**DF0109-17-1**	58.25
	2kg	**DF0109-07-3**	232.80
	10kg	**DF0109-08-2**	1134.40
Sabouraud Dextrose Broth (Sabouraud Liquid Medium), Difco	100g	**DF0382-15-1**	31.25
	500g	**DF0382-17-9**	47.35
Sabouraud Liquid Broth, Modified	500g	**B10986**	152.24
Sabouraud Maltose Agar, Difco	500g	**DF0110-17-8**	112.40
Sabouraud Maltose Broth, Difco	500g	**DF0429-17-4**	126.85
Salmonella Shigella (SS) Agar, BBL	500g	**B11597**	115.11
Salmonella Shigella (SS) Agar, Difco	500g	**DF0074-17-2**	84.00
Schaedler Agar Base	500g	**B12189**	148.60
Schaedler Broth	100g	**B12191**	55.45
Selenite Broth, Difco	500g	**DF0275-17-9**	61.60
SFP Agar Base (Shahidi Ferguson perfringens), Difco	500g	**DF0811-17-0**	111.45
SIM Medium	500g	**B11578**	95.00
Simmons Citrate Agar, BBL	500g	**B11620**	120.00
Snyder Test Agar (BCG Dextrose Agar)	500g	**DF0247-17-4**	138.50
SOB Medium	500g	**DF0443-17**	90.75
Soy Broth (Soybean-Casein Digest Medium)	100g	**DF0370-15-5**	22.55
Special Yeast and Mold Medium	500g	**DF0108-17-2**	108.95
Spirit Blue Agar	100g	**DF0950-15-3**	102.00
	500g	**DF0950-17-1**	231.60
Spirolate Broth	500g	**L11636**	117.00
SPS Agar (Sulfite Polymyxin, Sulfadiazine)	500g	**DF0845-17-0**	117.40
Standard Methods Agar (Tryptone Glucose Yeast Agar)	100g	**B12455**	51.75
	500g	**B11638**	102.00
	5 lb.	**B11641**	469.00
Standard Methods Agar with Lecithin and Polysorbate 80	500g	**B11643**	125.00
Staphylococcus; Medium 110	500g	**DF0297-17-3**	75.60
Stock Agar	500g	**DF0054-17-6**	150.50
	500g	**DF0072-17-4**	113.25
Streptococcus; faecalis (SF) Medium, Difco	500g	**DF0315-17-1**	124.40
Sulfite Agar	500g	**DF0972-17-5**	159.60
Super Broth Base, Select APSI (Alternative Protein Source)	10kg	**B4312-48-6**	863.55
Super Broth Base, Select APSI (Alternative Protein Source)	500g	**B4312-48-5**	67.45
Synthetic Broth AOAC	500g	**DF0352-17-5**	197.60

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For water baths for media preparation, see the Baths section on pp. 111-146.

Dehydrated Culture Media, Contd.

cription	Size	Cat. No.	Price
Broth Base	500g	**DF0984-17-1**	98.00
Broth Base, Difco*	500g	**14-910-97**	402.00
BS Agar, Difco	500g	**DF0650-17-4**	97.35
urite Glycine Agar, Difco	500g	**DF0617-17-0**	128.10
ific Broth, Difco	500g	**DF0438-17**	44.90
athionate Broth Base, Difco	500g	**DF0104-17-6**	47.05
	2kg	**DF0104-07-8**	187.75
rmoacidurans Agar, Difco	500g	**DF0303-17-5**	163.30
amine Assay Medium	100g	**DF0326-15-0**	58.45
amine Assay Medium LV, Difco	100g	**DF0808-15-7**	64.00
oglycollate Medium Brewer Modified	500g	**B11716**	96.04
oglycollate Medium Fluid	500g	**B11260**	59.84
	5 lb.	**B11263**	301.47
	25 lb.	**B11264**	1499.00
oglycollate Medium Fluid, without Dextrose or Indicator	500g	**B11727**	193.33
oglycollate Medium without Dextrose, Difco	500g	**DF0363-17-2**	123.10
oglycollate Medium without Dextrose or icators, Difco	500g	**DF0432-17-9**	122.00
oglycollate Medium without Indicator -135°C	500g	**B11720**	148.96
oglycollate Medium without Indicator, Difco	500g	**DF0430-17-1**	101.65
ol Broth, Difco	500g	**D0434-17**	215.00
sdale Base, use with Tinsdale Enrichment, iccated, Difco	500g	**DF0786-17-1**	145.55
d Hewitt Broth Bacto*	500g	**DF0492-17-6**	84.45
	2kg	**DF0492-07-8**	336.45
	10kg	**DF0492-08-7**	1636.90
nato Juice Agar, Difco	500g	**DF0031-17-4**	172.30
nato Juice Agar, Special, Difco	500g	**DF0389-17-2**	182.85
nato Juice Broth, Difco	500g	**DF0517-17-7**	174.30
nsport Medium Amies, Difco	500g	**DF0996-17-7**	99.65
nsport-Medium (Stuart, Toshach, & Patsula)	500g	**B11743**	181.37
hophyton Agar 1, Difco	500g	**DF0877-17-1**	155.35
hophyton Agar 2, Difco	500g	**DF0874-17-4**	155.95
hophyton Agar 4, Difco	500g	**DF0197-17-4**	153.35
hophyton Agar 6, Difco	500g	**DF0524-17-8**	146.70
hophyton Agar 7, Difco	500g	**DF0955-17-6**	156.00
hosel Broth, Modified	500g	**L11747**	246.64
ptic Soy Agar, Difco	100g	**DF0369-15-8**	28.15
	500g	**DF0369-17-6**	52.75
	2kg	**DF0369-07-8**	210.35
ptic Soy Blood Agar Base EH, Difco	500g	**DF0028-17-9**	75.98
ptic Soy Blood Agar Base No. 2, Difco	500g	**DF0027-17-0**	70.60
ptic Soy Broth, Difco	500g	**DF0370-17-3**	46.35
	2kg	**DF0370-07-5**	133.10
ptic Soy Broth without Dextrose, Bacto	500g	**DF0862-17-8**	64.75
pticase Nitrate Broth (Indole Nitrite Medium)	500g	**B11299**	133.42
pticase Soy Agar (Soybean Casein Digest r, USP)	500g	**B11043**	68.84
	5 lb.	**B11046**	325.74
pticase Soy Agar (Soybean-Casein Digest r Medium)	25 lb.	**B11047**	1679.08

Description	Size	Cat. No.	Price
Trypticase Soy Agar (TSA II)	500g	**B12305**	75.08
Trypticase Soy Agar with Lecithin and Polysorbate 80	500g	**B11764**	105.87
	5 lb.	**B12263**	507.49
Trypticase Soy Broth	500g	**B11768**	42.48
	5 lb.	**B11771**	205.80
Tryptone Glucose Extract Agar, Difco	500g	**DF0002-17-9**	106.60
Tryptose Agar, Difco	500g	**DF0064-17-4**	87.20
Tryptose Blood Agar Base	500g	**DF0232-17-1**	92.00
Tryptose Broth, Difco	500g	**DF0062-17-6**	68.50
Tryptose Phosphate Broth, Bacto	500g	**DF0060-17-8**	49.85
TSN Agar (Trypticase Sulfite Neomycin)	500g	**B11690**	146.00
TT Broth Base, Hajna, Difco	500g	**DF0491-17-7**	66.95
U			
UBA Medium	500g	**DF0856-17-6**	89.65
Universal Preenrichment Broth	500g	**DF0235-17-8**	55.65
Urea Agar Base, BBL*	500g	**B11795**	95.80
Urea Agar Base, Difco	500g	**DF0272-17-2**	60.20
UVM Modified Listeria Enrichment Broth	500g	**DF0223-17-2**	82.65
V			
Veal Infusion Agar	500g	**DF0343-17-7**	212.00
Veal Infusion Broth	500g	**DF0344-17-6**	186.65
Veillonella Agar	500g	**DF0111-17-7**	91.65
Violet Red Bile Agar	500g	**DF0012-17-7**	72.80
Violet Red Bile Agar w/MUG	500g	**DF0029-17-8**	278.40
Violet Red Bile Glucose Agar	500g	**D186617**	104.90
Vitamin B12 Assay Medium	100g	**DF0360-15-7**	60.30
VJ Agar	500g	**DF0562-17-1**	108.15
W			
Wilkins-Chalgren Agar	500g	**DF1805-17-6**	124.45
WL Differential Medium	500g	**DF0425-17-8**	74.70
WL Nutrient Broth	500g	**DF0471-17-1**	83.10
WL Nutrient Medium	500g	**DF0424-17-9**	85.35
X			
XLD Agar, Difco	500g	**DF0788-17-9**	111.90
XLT4 Agar Base	500g	**DF0234-17-9**	118.15
Y			
Yeast Carbon Base	100g	**DF0391-15-0**	45.20
Yeast Nitrogen Base	100g	**DF0392-15-9**	50.90
Yeast Nitrogen Base w/o Amino Acids	100g	**DF0919-15-3**	79.60
Yeast Nitrogen Base w/o Amino Acids and Ammonium Sulfate	100g	**DF0335-15-9**	80.30
Yersinia Selective Agar Base (CIN Agar Base, Modified), Difco	500g	**DF1817-17-2**	105.35
YM Agar	500g	**DF0712-17-0**	139.95
YM Broth	500g	**DF0711-17-1**	108.55
YPD Agar	500g	**DF0427-17-6**	90.30
YPD Broth	500g	**DF0428-17-5**	50.60

For environmental chambers for anaerobic bacteria, see pp. 1097-1100.

Remel* Contact and Settling Plates

Monitor surfaces, air, and personnel in clean areas

Standard Contact I (single bag), Contact II (double bag), and Settling Plates (single and double bag) have a validated Sterility Assurance Level (SAL) of at least 10^{-3}. Sterile Pack Contact Plates and Settling Plates receive an additional validated gamma ray irradiation treatment such that the resulting Sterility Assurance Level (SAL) is better than 10^{-6}, which is the pharmaceutical industry's operationally accepted definition of sterility.

R11805

- Manufactured in a cleanroom environment to ensure the highest level of sterility without compromising growth characteristics
- Each lot is tested to ensure consistent, reproducible results
- Sterile Pack contact plates and settling plates are double bagged and come with a third bag for customer use
- Validated sterile by gamma radiation

INCLUDES:
Lot-specific certificates of quality.

LOOKING FOR MORE MONITORING PRODUCTS?

Remel's Sanicult* Transport Swabs can be used to sample almost any surface or substance. The ready-to-use kits are sterile and individually wrapped — ideal for environmental monitoring, cleaning validation or personnel surface monitoring. To order

Visit www.fishersci.com and search for Sanicult

Description	Type	Cat. No.	Pric
Contact I Plates			
D/E-Neutralizing Agar, Sterile Pack	Double + Bag	R111803	Pk. of 10/97.1
		R111804	Cs. of 100/1642.2
D/E-Neutralizing Agar	Single Bag	R111103	Pk. of 20/118.7
		R111104	Cs. of 100/588.1
Letheen Agar	Single Bag	R111019	Pk. of 20/179.1
Sabouraud Dextrose Agar w/Lecithin, Polysorbate 80 (pH 5.6), Sterile Pack	Double + Bag	R111805	Pk. of 10/74.5
		R111806	Cs. of 100/782.2
Soy Agar w/Lecithin, Polysorbate 80, Sterile Pack	Double + Bag	R111800	Pk. of 10/81.3
		R111802	Cs. of 100/667.9
Tryptic Soy Agar, Sterile Pack	Monoplate-Double + Bag	R111870	Pk. of 10/41.1
		R111872	Cs. of 100/1816.9
Tryptic Soy Agar, Sterile Pack	15×150mm-Double + Bag	R111875	Pk. of 20/330.2
		R111682	Pk. of 10/159.4
Malt Extract Agar	Single Bag	R111021	Pk. of 20/135.2
Mycological Agar w/Lecithin, Polysorbate 80 (Mycophil Agar) Low pH	Single Bag	R111030	Pk. of 20/340.7
Potato Dextrose Agar	Single Bag	R111045	Pk. of 20/135.9
Rose Bengal Agar w/Chloramphenicol	Single Bag	R111042	Pk. of 20/137.9
Sabouraud Dextrose Agar w/Lecithin, Polysorbate 80, (pH 5.6)	Single Bag	R111105	Pk. of 20/179.1
		R111106	Cs. of 100/664.7
Tryptic Soy Agar	Single Bag	R111083	Pk. of 20/137.9
Tryptic Soy Agar w/Lecithin, Polysorbate 80	Single Bag	R111101	Pk. of 20/164.51
		R111102	Cs. of 100/1499.9
Contact II Plates			
D/E-Neutralizing Agar	Double Bag	R111203	Pk. of 20/172.8
		R111204	Cs. of 100/751.9
Sabouraud Dextrose Agar w/Lecithin, Polysorbate 80 (pH 5.6)	Double Bag	R111205	Pk. of 20/207.5
		R111206	Cs. of 100/821.2
Tryptic Soy Agar w/Lecithin, Polysorbate 80	Double Bag	R111201	Pk. of 20/287.5
		R111202	Cs. of 100/627.8
Settling Plates			
Tryptic Soy Agar	Monoplate-Single Bag	R111570	Pk. of 10/29.62
		R111572	Cs. of 100/1404.71
Tryptic Soy Agar	Monoplate-Double Bag	R111670	Pk. of 10/34.8
		R111672	Cs. of 100/833.37
Tryptic Soy Agar	15×150 mm-Double Bag	R111675	Pk. of 10/357.11
	15×150 mm-Single Bag	R111575	Pk. of 10/389.96

Note: Not intended for IVD use.

For analytical and precision balances, see pp. 59-80.

*Trademark. See Trademark Reference.

Prices subject to change.

koid* Dry-Bags

e-weighed dehydrated media in transparent plastic g—just add water

- lo need to weigh, measure, and prepare media in individual bottles
- imply add 20L deionized water through attached filter and media is ady to use
- liminates the need for glassware, saving time and improving lab safety
- ledia is supplied sterile—no autoclaving required
- mpty bags are disposable with regular laboratory waste

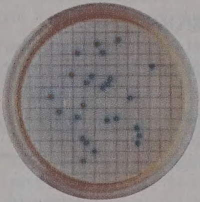
OXDB0509M

Description	Cat. No.	Pack of 10
Buffered Peptone Water	OXDB0509M	1483.68

)* BBL*/Difco* Chromogenic Media

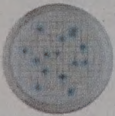
lture media tests water with the membrane ration method

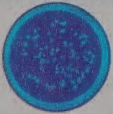
ects degree of water quality erioration in drinking distribution em enumerates, and monitors the gress in remediation. Provides ise and quantifiable results; also time-consuming and costly than er techniques.



co MI Agar

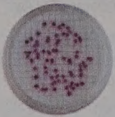
- hromogenic-fluorogenic medium r detecting total coliforms and *scherichia coli* in 24 hours or less
- se for ambient and potable water, treatment plant ffluents, and beverage and pharmaceutical anufacturing
- nder ambient light, *E. coli* exhibits a bluish-gray ppearance; under long-wave UV light, it displays a ue-green fluorescence
- oliform are cream under ambient light, and display ue-white fluorescence under long-wave UV light
- onforms to EPA Method 1604 for monitoring drinking ater under the Total Coliform Rule and source water nder the Surface Water Treatment Rule





co Modified mTEC Agar

- se for testing and monitoring thermotolerant *coli* in fresh and recreational waters
- ny colonies present will exhibit a red or magenta olor within 24 hours of the test
- onforms to EPA Method 1603



Difco mEI Agar

- Tests for *Enterococci* as an indication of fecal pollution and presence of enteric pathogens in fresh and salt waters
- Any colonies present will exhibit a blue halo within 24 hours of the test
- Conforms to EPA Method 1600
- Store at 5° to 25°C (41° to 77°F)

ORDERING INFORMATION:

Available dehydrated or in prepared 15 × 60mm plates

STORAGE CONDITIONS:

Plates must be stored at 2° to 8°C (36° to 46°F). Store mEI Agar at 5° to 25°C (41° to 77°F) up to one year.

Medium	Quantity	Cat. No.	Each
MI Agar	100g	B14882	339.94
	500g	B14883	1557.66
	Pack of 20 plates	B14986	61.00
	Pack of 100 plates	B14985	300.00
Modified mTEC Agar	100g	B14884	358.01
	500g	B14880	1656.55
	Pack of 20 plates	B15044	86.00
	Pack of 100 plates	B15046	411.08
mEI Agar	100g	B14885	258.17
	500g	B14881	1703.88
	Pack of 20 plates	B15045	86.00
	Pack of 100 plates	B15047	395.85

Media for water quality testing can be found on pp. 1086-1088.

BD* BBL* Isolator Pack Plated Media

Plated media in gamma-irradiated packs for isolator systems

Multiwrap packaging protects media from vaporized hydrogen peroxide exposure. Plate types include Rodac* (Replicate Organism Detection and Counting) for surface sampling and Finger Dab* for sampling gloved hands.

B29 Series

To use:

- Place wrapped package of plates in the isolator before running the vaporized hydrogen peroxide decontamination cycle
- When the isolator aeration cycle has finished, remove the two outermost wrappings, then the sterile inner wrapping
- Use the included inner bag to transport plates from your critical environment

STORAGE CONDITIONS:

Store at 2° to 8°C (36° to 46°F).

COMPLIANCE:

For performance and sterility according to Association for the Advancement of Medical Instrumentation (AAMI) guidelines

Medium	Plate Type	Cat. No.	Pack of
D/E Neutralizing Agar	Rodac	**B292645**	10/111.46
Sabouraud Dextrose Agar, w/Lecithin & Polysorbate 80	Rodac	**B299937**	10/38.66
	Rodac	**B4392337**	100/331.33
	100 × 15mm Finger Dab	**B292653**	10/35.58
Trypticase Soy Agar	150 × 15mm Finger Dab	**B292272**	5/22.24
	100 × 15mm Finger Dab	**B292652**	100/329.62
Trypticase Soy Agar, w/Lecithin & Polysorbate 80	Rodac	**B299896**	10/53.83
	Rodac	**B4392335**	100/319.86
	100 × 15mm Finger Dab	**B292649**	100/324.35

BD* BBL* Sterile Pack Plated Media

- Validated to 10^{-5} SAL
- Outer Tyvek*/polyethylene wrapping minimizes risk of false contamination, provides fiber-free bacterial barrier, and allows for gas exchange
- To use, remove the outer wrapping in the noncritical environment; then remove the sterile inner wrapping in the clean area—the included inner bag may be used to transport plates from your critical environment

Available in many formulations and plate types

- Rodac* (Replicate Organism Detection and Counting) for personnel and surface sampling
- Settling for active and passive air sampling
- Finger Dab* for sampling gloved hands
- Contact for direct surface sampling

STORAGE CONDITIONS:

Storage temperature: 2° to 8°C (36° to 46°F).

COMPLIANCE:

Plated media in gamma-irradiated packs are validated for performance and sterility according to Association for the Advancement of Medical Instrumentation (AAMI) guidelines

Medium	Plate Type	Mfr. No.	Cat. No.	Pack of
CDC Anaerobe Agar	Rodac	292229	**B4392229**	10/60.32
D/E Neutralizing Agar	Contact	221944	**B21944X**	10/55.94
	Rodac	221232	**L21232**	10/58.97
	Rodac	222209	**08-757-186**	100/495.90
Rose Bengal Agar	Rodac	292225	**B4392225**	10/55.52
Sabouraud Dextrose Agar	Contact	221988	**L21988**	10/60.70
	Rodac	221235	**L21235**	10/87.51
Sabouraud Dextrose Agar w/Lecithin & Polysorbate 80	Contact	221989	**L4321989**	10/55.67
	Rodac	221233	**L21233**	10/58.97
Trypticase* Soy Agar	100 × 15mm Settling	221236	**B21236X**	10/54.06
	100 × 15mm Settling	222205	**08-757-188**	100/495.89
	150 × 15mm Settling	221237	**B21237X**	5/31.50
	150 × 15mm Settling	222206	**08-757-189**	45/228.66
Trypticase Soy Agar	100 × 15mm Settling, Heavy fill	292396	**B4392396**	100/307.27
Trypticase Soy Agar	150 × 15mm Settling, Triple-bagged	292268	**B4392268**	45/403.88
Trypticase Soy Agar w/Lecithin & Polysorbate 80	Contact	221961	**B21961X**	10/58.38
	Contact	222208	**08-757-185**	100/515.98
	150 × 15mm Finger Dab	292305	**B4392305**	5/60.73
	Rodac	221238	**B21238X**	10/56.70
	Rodac	222207	**08-757-187**	100/495.89
Trypticase Soy Agar w/Lecithin & Polysorbate 80 & Penicillinase	Contact	221987	**L21987**	10/57.81
	Rodac	221234	**L21234**	10/55.37
Trypticase Soy Agar w/Penicillinase	150 × 15mm Settling	221837	**B4321837**	5/29.30

[†] *Contains one polyvinyl bag, one nylon bag and one closable bag.*

For analytical and precision balances, see pp. 59–80.

ADDITIVES/SUPPLEMENTS

emel* Reagents for Microbiology

oad offerings for a variety of procedures

- 0% Formalin is ideal for preservation, concentration, and recovery f intestinal parasites
- elatin Reagent is used in detection of gelatinase activity of micro-rganisms
- Mineral Oil is recommended for biochemical test procedures requiring il overlay
- xalic Acid reduces contamination in mycobacterial cultures
- odium Citrate is used for digestion and decontamination procedures for FB and fungal cultures
- B Base Digestant is suitable for decontamination procedures for FB cultures
- riton X-100 is a mucolytic reagent for fecal concentration procedures

DERING INFORMATION:

% Formalin is supplied as single vials packaged in partioned boxes with ent collection instructions. Caps are colot coded to match industry ndards colors, and have an attached spork. Triton X-100 is supplied in a yproplene dropper dispenser vial.

scription	Type	Cat. No.	Price
malin, 10%	15mL/Vl.	**R21640**	Cs. of 12/34.48
atin Reagent	25mL/Btl.	**R21226**	Ea./30.48
ieral Oil	50mL/Btl.	**R21237**	Ea./26.06
alic Acid	250mL/Btl.	**R21285**	Ea./32.39
dium Citrate	250mL/Btl.	**R21262**	Ea./30.45
Digestant	250mL/Btl.	**R21266**	Ea./30.78
Base Digestant	50mL/Btl.	**R21268**	Ea./10.16
Base Digestant	100mL/Btl.	**R21270**	Ea./16.75
Base Digestant	50mL/Btl.	**R21368**	Pk. of 10/74.09
Base Digestant	250mL/Btl.	**R21369**	Pk. of 5/108.97
Base Digestant	100mL/Btl.	**R21370**	Pk. of 10/118.95
on X-100, 10%	15mL/Vial	**R21902**	Pk. of 50/18.76

emel* Phosphate Buffers r Microbiology

r use as a diluent in microbial limit testing of armaceutical products and food testing

scription	Type	Qty.	Cat. No.	Price
sphate Buffer	500mL/Btl.	Each	**R21248**	40.79
sphate Buffer	250mL/Btl.	Each	**R21249**	25.78
sphate Buffer	50mL/Btl.	10/Pk.	**R21256**	147.54
sphate Buffer, 0.1M; pH 7.0	100mL/Btl.	Each	**R21300**	22.52
sphate Buffer w/MgCl pH 7.2 ffered Water) APHA Formulation	E - 9mL	100/Cs.	**R07770**	493.30
sphate Buffer, Butterfield's .1% Peptone	E - 9mL	100/Cs.	**R07601**	431.25
sphate Buffered Saline	D - 5mL	100/Cs.	**R062580**	467.47
sphate Buffered Saline	D - 5mL	20/Pk.	**R062582**	111.85

Remel* Saline Solution

Type	Qty.	Cat. No.	Price
1.8mL, 12 × 75mm	100/Cs.	**R064462**	351.59
D - 1mL	20/Pk.	**R064432**	82.74
D - 1mL	100/Cs.	**R064430**	357.24
D - 2mL	20/Pk.	**R064436**	82.91
D - 2mL	100/Cs.	**R064434**	359.42
D - 2.5mL	100/Cs.	**R064438**	362.39
D - 4mL	20/Pk.	**R064444**	83.04
D - 4mL	100/Cs.	**R064442**	364.42
D - 5mL	20/Pk.	**R064448**	83.04
D - 5mL	100/Cs.	**R064446**	357.42
D - 6mL	100/Cs.	**R064450**	364.90
E - 9.9mL	20/Pk.	**R07142**	86.08
E - 9.9mL	100/Pk.	**R07140**	383.93
F - 9mL	100/Cs.	**R118520**	393.10
G - 18mL	20/Pk.	**R119750**	276.01

Packaging Key

Media Packaging Type	Abbreviation	Media Packaging Type	Abbreviation
13 x 100mm Tube	A	Filter	FL
15 x 45mm Tube	B	Hungate Cap	HC
15 x 90mm Tube	C	Individual Wrap Plate	IWP
15 x 103mm Tube	D	Monoplate	M
16 x 125mm Tube	E	Organism	Org.
20 x 113mm Tube	F	Plate	P
20 x 150mm Tube	G	Polypropylene Bottle	PB
27 x 70mm Tube	H	Pour Tube	PT
Ampules	Amp.	Pour Tube, Deep	PTD
Biplate	BP	Quadplate	Q
Blood Culture Bottle	BCB	Rubber Stopper	RS
Borosilicate Bottle	BB	Serum Bottle	SB
Boston Round Bottle	BRB	Single Bag	SBG
Bottle	Btl.	Spacesaver Plate	SP
Butt (10 × 103mm Tube)	BT	Thin Pour	TP
Clear Square Bottle	CSB	Tissue Culture Flask	TCF
Double Bag	DBG	Triplate	TRI
Double Pour	DP	Tube	T
Durham Tube	DT	Wide Mouth Bottle	WMB
Envelope	Env.	Vial	Vl.

For analytical and precision balances, see pp. 59–80.

Remel* Dehydrated Media Supplements

R450000 Series

Description	Type	Qty.	Cat. No.	Price
ADC Enrichment	10mL	10/Pk.	**R450591**	96.85
	20mL	10/Pk.	**R450592**	149.47
Buffered CYE Supplement (L-Cysteine HCl) Lyophilized	1mL/Vial	10/Pk.	**R45005**	38.56
	5mL/Vial	10/Pk.	**R450041**	148.88
CCFA Supplement, Lyophilized	1mL/Vial	10/Pk.	**R45010**	38.55
CN Selective Supplement (Cefsulodin, Novobiocin) Lyophilized	10mL	10/Pk.	**R450031**	116.22
	1mL	10/Pk.	**R45050**	38.56
Egg Yolk Suspension, 50%	100mL	10/Pk.	**R450291**	368.37
	100mL	Each	**R450290**	45.40
Egg Yolk Tellurite, 100%	100mL	10/Pk.	**R450331**	286.86
	100mL	Each	**R450330**	38.39
	10mL	10/Pk.	**R450332**	39.25
Fildes Enrichment	100mL	Bottle	**R45039**	116.23
	12.5mL	20/Pk.	**R45038**	287.68
	5mL	20/Pk.	**R45037**	125.99
Fraser Broth Additive	10mL	10/Pk.	**R450361**	137.42
GCHI Enrichment (Lyophilized) w/Rehydrating Solution	10mL	5/Pk.	**R450411**	129.25
Moxalactam Selective Supplement	10mL	10/Pk.	**R450551**	148.87
OADC Enrichment	2mL	10/Pk.	**R450600**	25.44
	10mL	10/Pk.	**R450601**	78.42
	20mL	10/Pk.	**R450602**	158.84
	100mL	10/Pk.	**R450604**	685.54
	100mL	Each	**R450603**	76.18
	500mL	Each	**R450605**	214.43
PAC Supplement (Polymyxin B, Anisomycin, Cefamandol)	1mL/Vial	10/Pk.	**R45006**	38.54
PAV Supplement (Polymyxin B, Anisomycin, Vancomycin)	1mL/Vial	10/Pk.	**R45007**	70.74
Polysorbate 20	100mL	10/Pk.	**R450851**	149.14
Tergitol 4	100mL	Each	**R450880**	31.68
Tetrathionate Broth Base	500g	500g	**R454822**	55.80
Tinsdale Enrichment	3.3mL	10/Pk.	**R45045**	38.56
VCNT Selective Supplement	10mL	10/Pk.	**R450921**	121.31
Vitamin K, Hemin Solution	10mL	20/Pk.	**R450951**	177.14

Oxoid* Selective Supplements and Sterile Reagents

Add supplements to broth or agar base for the isolation of specific organisms

- Supplied as dehydrated powder in vials unless otherwise specified
- Supplements quantities as specified in table

STORAGE CONDITIONS:
Store supplements and reagents away from light in temperatures from 2° to 8°C (36° to 46°F).

OXSRO Series

Description	Supplements	Cat. No.	Pri
A			
Ampicillin	500mL	**OXSR0136E**	Pk. of 10/73.
B			
Bacillus cereus	500mL	**OXSR0099E**	Pk. of 10/130.
BCYE w/o L-Cysteine	500mL	**OXSR0175A**	Pk. of 10/126.
Bolton's	500mL	**OXSR0183E**	Pk. of 10/148.
Bordetella	500mL	**OXSR0082E**	Pk. of 10/67.
Broad Spectrum Beta Lactamase Mixture	500mL	**OXSR0113E**	Pk. of 10/481.
Brucella	500mL	**OXSR0083A**	Pk. of 10/90.
Burkholderia cepacia	500mL	**OXSR0189E**	Pk. of 10/213.
C			
Campylobacter (Blaser-Wang)	500mL	**OXSR098E**	Pk. of 10/140.
Campylobacter (Butzler)	500mL	**OXSR0085E**	Pk. of 10/141.
Campylobacter (Karmali)	500mL	**OXSR0167E**	Pk. of 10/109.
Campylobacter (Preston)	500mL	**OXSR0117E**	Pk. of 10/96.
Campylobacter (Skirrow)	500mL	**OXSR0069E**	Pk. of 10/141.
	2L	**OXSR0069H**	Pk. of 10/393.
Campylobacter Growth Supplement (FBP)	500mL	**OXSR0084E**	Pk. of 10/112.
CAT	500mL	**OXSR0174E**	Pk. of 10/131.
CCDA	500mL	**OXSR0155E**	Pk. of 10/143.
	2L	**OXSR0155H**	Pk. of 10/373.
CDMN	500mL	**OXSR0173E**	Pk. of 10/175.
Cefixime/Tellurite (CT)	500mL	**OXSR0172E**	Pk. of 10/169.
	2L	**OXSR0172H**	Pk. of 10/400.
CFC	500mL	**OXSR0103E**	Pk. of 10/118.
Chloramphenicol	500mL	**OXSR0078E**	Pk. of 10/90.
	2L	**OXSR0078H**	Pk. of 10/149.
Clostridium difficile	500mL	**OXSR0096E**	Pk. of 10/175.
CN	500mL	**OXSR0102E**	Pk. of 10/62.
E			
Egg Yolk Emulsion	100mL	**OXSR0047C**	Ea./42.
Egg Yolk Tellurite Emulsion	100mL	**OXSR0054C**	Ea./43.
F			
Fildes Extract, 100mL	----	**OXSR0046C**	Ea./49.
Fraser	500mL	**OXSR0156E**	Pk. of 10/90.
G			
Gentamycin	500mL	**OXSR0185E**	Pk. of 10/104.

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*Trademark. See Trademark Reference.

Prices subject to change.

oid* Selective Supplements and Sterile Reagents, Contd.

scription	Supplements	Cat. No.	Pack of
lf Fraser	500mL	**OXSR0166E**	10/88.90
licobacter pylori (Dent)	500mL	**OXSR0147E**	10/79.90
rse Serum, 100mL	----	**OXSR0035C**	1/40.50
namycin Sulphate	500mL	**OXSR0092E**	10/111.05
ctic Acid 10%, 1mL vials	----	**OXSR0021H**	10/24.25
ked Horse Blood, 100mL	----	**OXSR0048C**	1/36.00
gionella BCYE	100mL	**OXSR0110A**	10/115.85
	500mL	**OXSR0110C**	10/429.60
gionella BMPA	100mL	**OXSR0111E**	10/133.90
	500mL	**OXSR0111B**	10/595.55
gionella MWY	100mL	**OXSR0118E**	10/143.05
	500mL	**OXSR0118B**	10/500.40
gionella (GVPC)	500mL	**OXSR0152E**	10/124.45
teria Enrichment	500mL	**OXSR0141E**	10/89.10
teria (Oxford)	500mL	**OXSR0140E**	10/123.85
teria Enrichment (modified h 10mg/L Acriflavine)	2.5L	**OXSR0149A**	10/297.25
teria Primary (UVM-I)	500mL	**OXSR0142E**	10/87.20
	2.25L	**OXSR0142B**	10/276.15
teria Secondary Enrichment VM-II)	500mL	**OXSR0143E**	10/91.20
CP	500mL	**OXSR0188E**	10/159.55
dified Bolton Broth	500mL	**OXSR0208E**	10/155.75
dified *Brucella*	500mL	**OXSR0209E**	10/90.80
dified *Listeria* (Oxford)	500mL	**OXSR0206E**	10/126.25
dified Preston *mpylobacter*	500mL	**OXSR0204E**	10/97.40
RV/MLIA	500mL	**OXSR0161E**	10/83.55
coplasma Supplement G	80mL	**OXSR0059C**	10/132.40
coplasma Supplement P	80mL	**OXSR0060C**	10/132.40
omycin	2L	**OXSR0163H**	10/97.15
vobiocin	500mL	**OXSR0181E**	10/126.30
YE	500mL	**OXSR0073A**	10/77.30
SAB	500mL	**OXSR0195E**	10/108.55
LCAM	500mL	**OXSR0150E**	10/103.75
	2.5L	**OXSR0150B**	10/310.10
rfringens (OPSP) A	500mL	**OXSR0076E**	10/70.45
rfringens (OPSP) B	500mL	**OXSR0077E**	10/70.45
rfringens (SFP)	500mL	**OXSR0093E**	10/83.55
rfringens (TSC)	500mL	**OXSR0088E**	10/239.25
tassium Lactate 50%	2mL vials	**OXSR0037H**	10/30.65
tassium Tellurite 3.5%	----	**OXSR0030J**	10/25.60
P; 2mL vials	500mL	**OXSR0122A**	10/435.15
monella	500mL	**OXSR0194E**	10/90.30
phylococcus/Streptococcus lumbia CNA)	500mL	**OXSR0070E**	10/116.20
eptococcus listin-Oxolinic Acid)	500mL	**OXSR0126E**	10/58.55
lphamandelate	500mL	**OXSR0087E**	10/70.50

Description	Supplements	Cat. No.	Pack of
T			
Tinsdale	200mL	**OXSR0065A**	10/98.75
TTC Solution (0.05%)	——	**OXSR0148A**	10/56.40
U			
Urea 40% Solution	——	**OXSR0020K**	10/29.45
V			
Vancomycin	500mL	**OXSR0186E**	10/49.55
VCC	225mL	**OXSR0190A**	10/53.95
Vitox*	——	**OXSR0090A**	10/67.90
Y			
Yeast Autolysate	500mL	**OXSR0105B**	10/83.00
Yersinia	500mL	**OXSR0109E**	10/86.55

BD* BBL*/Difco* Media Additives/Ingredients/Reagents

Description	Size	Cat. No.	Price
A			
Acidicase* Peptone (BBL)	500g	**L11843**	Ea./83.82
Adonitol (Difco)	10g	**DF0157-12-7**	Ea./92.00
Aesculin (Difco)	10g	**DF0158-12-6**	Ea./150.95
Agar (Bacto*)	100g	**DF0140-15-4**	Ea./76.00
	1 lb.	**DF0140-01-0**	Ea./157.00
	2kg	**DF0140-07-4**	Ea./658.00
	10kg	**DF0140-08-3**	Ea./3263.00
Agar, Grade A (BBL)	454g	**B12304**	Ea./209.54
Agar, Granulated (Difco)	500g	**DF0145-17-0**	Ea./102.40
	2kg	**DF0145-07-0**	Ea./408.95
	10kg	**DF0145-08-0**	Ea./1993.05
Agar Noble (Difco)	100g	**DF0142-15-2**	Ea./131.00
	500g	**DF0142-17-0**	Ea./297.00
Agar, Select (BBL)	500g	**B99340**	Ea./196.60
	5 lb.	**B99341**	Ea./858.54
Agar, Technical (Difco)	500g	**DF0812-17-9**	Ea./80.00
	2kg	**DF0812-07-1**	Ea./316.00
Antimicrobic Vial A Chlortetracycline (Difco)	10mL	**DF3333-60-9**	Pk. of 6/111.11
Antimicrobic Vial K Kanamycin (Difco)	10mL	**DF3339-60-3**	Pk. of 6/132.61
Antimicrobic Vial Oxytetracycline (Difco)	10mL	**DF3267-59-2**	Ea./31.85
Antimicrobic Vial P Polymyxin B (Difco)	10mL	**DF3268-60-8**	Pk. of 6/95.20
L-Arabinose (Difco)	25g	**DF0159-13-4**	Ea./84.00
	100g	**DF0159-15-2**	Ea./173.00
L-Arginine HCl (Difco)	10g	**DF0583-12-1**	Ea./14.75
Asparagine (Difco)	500g	**DF0144-17-8**	Ea./261.00
B			
Beef Extract Paste (Difco)	500g	**DF0126-17-0**	Ea./135.00
Beef Extract Powder (BBL)	500g	**B12303**	Ea./153.32
Beef Extract, Desiccated (Bacto)	500g	**DF0115-17-3**	Ea./103.00
Beef Heart for Infusion (Difco)	500g	**DF0132-17-2**	Ea./261.00
Bile Salts No. 3 (Difco)	100g	**DF0130-15-6**	Ea./140.00
	500g	**DF0130-17-4**	Ea./318.00
Biosate* Peptone (BBL)	454g	**B11862**	Ea./110.24
	25 lb.	**B94312**	Ea./1115.24
Bovine Albumin 0.2% in 0.85% Saline (BBL)	10mL	**B11968**	Pk. of 10/35.23
Bovine Albumin, 5% (Difco)	20mL	**DF0668-64-6**	Pk. of 12/135.00
C			
Casamino Acids, Acid Hydrolized Casein (Bacto)	500g	**DF0230-17-3**	Ea./163.00
	2kg	**DF0230-07-5**	Ea./532.45
	10kg	**DF0230-08-4**	Ea./2728.00
Casamino Acids, Technical† (Bacto)	500g	**DF0231-17-2**	Ea./60.10
	10kg	**DF0231-08-3**	Ea./1080.20
Casamino Acids, Vitamin Assay (Bacto)	100g	**DF0288-15-6**	Ea./73.87
	500g	**DF0288-17-4**	Ea./259.15
Casein Digest (Difco)	500g	**DF0116-17-0**	Ea./124.47
Casitone, Pancreatic Digest of Casein (Bacto)	500g	**DF0259-17-9**	Ea./90.25
Cellobiose (Difco)	25g	**DF0160-13-1**	Ea./107.00
Chicken Pancreas (Difco)	10g	**DF0459-12-2**	Ea./369.00

Description	Size	Cat. No.	Pr
D			
Dextrose Glucose (Difco)	500g	**DF0155-17-4**	Ea./29.
Dubos Medium Albumin (Difco)	20mL	**DF0309-64-1**	Pk. of 12/132.
Dulcitol Galactitol (Difco)	100g	**DF0162-15-7**	Ea./143.
E			
EY Tellurite Enrichment (Difco)	100mL	**DF0779-73-1**▽	Pk. of 6/197.
Egg Yolk Enrichment 50% (Difco)	100mL	**DF3347-73-8**▽	Pk. of 6/247.
Egg Yolk Tellurite Solution (BBL)	100mL	**B12357**▽	Pk. of 6/162.
F			
Fildes Enrichment (BBL)	5mL	**L11866**▽	Pk. of 10/54.
Fraser Broth Supplement	10mL	**DF0211-60-2**	Pk. of 6/65.
G			
D-Galactose (Difco)	500g	**DF0163-17-4**	Ea./98.
Gelatin (Difco)	500g	**DF0143-17-9**	Ea./54.
Gelysate Peptone, BBL	454g	**B11870**	Ea./80.
Glycerol (Difco)	500g	**DF0282-17-0**	Ea./82.
H			
Hemoglobin Solution 2% (BBL)	100mL	**B11874**	Pk. of 10/82.
I			
Inositol (Difco)	100g	**DF0164-15-5**	Ea./43.
IsoVitaleX* Enrichment, Lyophilized (BBL)	10mL, with 10mL diluent	**B11876**	Pk. of 5/115.
L			
L-Lysine HCl (Difco)	5g	**DF0705-11-5**	Ea./14.
Lactose Monohydrate (Difco)	500g	**DF0156-17-3**	Ea./29.
Legionella Agar Enrichment (Difco)	5mL	**DF3390-57-4**▽	Pk. of 6/78.
Leptospira Enrichment, Lyophilized (BBL)	10mL	**B11883**	Pk. of 10/278.
Leptospira Enrichment EMJH (Difco)	100mL	**DF0795-73-1**	Pk. of 6/577.
Lipase Reagent (Difco)	20mL	**DF0431-63-3**	Pk. of 6/61.
Liver (Difco)	500g	**DF0133-17-1**	Ea./150.
M			
Malt Extract	500g	**DF0186-17-7**	Ea./34.
D-Mannose (Difco)	25g	**DF0171-13-8**	Ea./51.
D-Mannitol (Difco)	500g	**DF0170-17-5**	Ea./46.
Maltose (Difco)	500g	**DF0168-17-9**	Ea./95.
Melibiose (Difco)	10g	**DF0173-12-7**	Ea./63.
Middlebrook OADC Enrichment (BBL)	500mL	**B12351**▽	Ea./179.
	20mL	**B11886**▽	Pk. of 10/131.
Modified Oxford Antimicrobic Supplement (Difco)	10mL	**DF0218-60-5**	Pk. of 6/105.
Moxalactam, *Listeria* Selective Supplement (BBL)	2mL	**B12402**▽	Pk. of 10/157.
Mycoplasma Enrichment w/o Penicillin, Lyophilized (BBL)	30mL	**L12292**	Pk. of 10/514.
Mycoplasma Supplement (Difco)	30mL	**DF0836-68-9**	Pk. of 6/188.
N			
Neopeptone (Bacto)	500g	**DF0119-17-9**	Ea./164.
Neutralizing Buffer (Difco)	100g	**DF0362-15-5**	Ea./34.
Novobiocin Antimicrobic Supplement (Difco)	10mL	**DF3197-60**▽	Pk. of 6/80.

▽ *Requires refrigeration.*

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*Trademark. See Trademark Reference.

* BBL*/Difco* Media Additives/Ingredients/Reagents, Contd.

cription	Size	Cat. No.	Price
rinthine HCl (Difco)	25g	**DF0293-13-1**	Ea./101.00
all (Difco)	500g	**DF0128-17-8**	Ea./224.00
F CAM Antimicrobic Supplement	10mL	**DF0637-57**	Pk. of 3/68.00
F ase, Penicillinase 1,000,000 s/2,000 I.U. (Difco)	20mL	**DF0345-63-8**▽	Pk. of 6/107.00
F ase, Penicillinase Concentrate 1 00,000 units/20,000 I.U. (Difco)	20mL	**DF0346-63-7**▽	Pk. of 6/128.00
	100mL	**DF0346-72-6**▽	Ea./123.00
	100mL	**DF0346-73-5**▽	Pk. of 6/574.00
F icillinase, 1,000,000 units/mL (BBL)	20mL	**B11897**▽	Pk. of 10/182.00
F icillinase Concentrate, 10,000,000 s/mL (BBL)	20mL	**B11898**▽	Pk. of 10/225.00
	100mL	**B11899**▽	Ea./94.00
F tone (Bacto), Fine Powder	500g	**DF0118-17-0**	Ea./69.55
	2kg	**DF0118-07-2**	Ea./289.00
	10kg	**DF0118-08-1**	Ea./1403.00
F sin 1:10,000 (Difco)	500g	**DF0151-17-8**	Ea./415.00
F sphate Buffer APHA, pH 7.2 (BBL)	500g	**B11544**	Ea./96.00
F sphate Buffer M/15, pH 6.8 (BBL)	10mL	**L12056**	Pk. of 10/35.50
F sphate Buffered Saline, pH 7.2 FA	10g	**DF2314-33-8**	Pk. of 6/34.85
E er, Dried (Difco)	100g	**DF2314-15-0**	Ea./27.80
F tone* Peptone (BBL)	454g	**B11906**	Ea./84.77
F tone Peptone UF (Difco)	500g	**DF2109-31**	Ea./84.95
F peptone* Peptone	454g	**B11910**	Ea./112.66
F sorbate 20 (BBL)	100mL	**B12223**	Ea./29.00
F sorbate 80 (BBL)	100mL	**B11925**	Ea./18.60
P eose Peptone (Bacto*)	500g	**DF0120-17-6**	Ea./129.00
	10kg	**D0120-08**	Ea./2916.00
P eose Peptone No. 2 (Bacto)	500g	**DF0121-17-5**	Ea./249.00
P eose Peptone No. 3 (Bacto)	500g	**DF0122-17-4**	Ea./108.00
	2kg	**DF0122-07-6**	Ea./399.00
	10kg	**DF0122-08-5**	Ea./2157.75
R inose (Difco)	100g	**DF0174-15-3**	Ea./133.15
R mnose (Difco)	25g	**DF0175-13-4**	Ea./148.00
	100g	**DF0175-15-2**	Ea./272.00
R olic Acid, use with mFC Broth B e and mFC Agar (Difco)	1g	**DF3228-09-1**	Pk. of 6/68.75
D orbitol (Difco)	500g	**DF0179-17-6**	Ea./53.00
S Sulfa Enrichment (Difco)	500g	**DF0715-17-7**	Ea./168.65
S charose (Difco)	500g	**DF0176-17-9**	Ea./27.30
S cin (Difco)	100g	**DF0177-15-0**	Ea./410.95
S n Milk (Difco)	500g	**DF0032-17-3**	Ea./26.00
S ium Desoxycholate (Difco)	100g	**DF0248-15-5**	Ea./142.00
S ium Thioglycollate (BBL)	100g	**B12081**	Ea./103.00
S ible Starch (Difco)	500g	**DF0178-17-7**	Ea./45.35
S one (Bacto)	500g	**DF0436-17-5**	Ea./62.00
	10kg	**DF0436-08-6**	Ea./1210.00
S plement B with Reconstituting Fl (Difco)	10mL	**DF0276-60-4**▽	Pk. of 6/155.90
S			
Supplement B with Reconstituting Fluid (Difco)	100mL	**DF0276-72-0**▽	Ea./199.00
Supplement C (Difco)	5mL	**DF0527-57-6**▽	Pk. of 6/108.00
Supplement VX with Reconstituting Fluid (Difco)	10mL	**DF3354-60-3**▽	Pk. of 6/132.45
T			
Tellurite Solution 1% (BBL)	20mL	**B11917**▽	Ea./27.86
Thiotone E Peptone (BBL)	500g	**B12302**	Ea./90.44
Tinsdale Enrichment, Desiccated, use with Tinsdale Base (Difco)	15mL	**DF0342-33-8**▽	Pk. of 6/98.45
Trehalose (Difco)	10g	**DF0180-12-8**	Ea./84.00
Trypsin (Difco)	10mL	**DF0153-61-1**▽	Pk. of 12/173.30
Trypsin 1:250 (Difco)	100g	**DF0152-15-9**▽	Ea./143.45
	500g	**D015217**▽	Ea./540.92
Trypticase* Peptone (BBL)	454g	**B11921**	Ea./76.52
	5 lb.	**B11922**	Ea./354.16
	25 lb.	**B11923**	Ea./1598.00
Tryptone (Bacto)	500g	**DF0123-17-3**	Ea./60.75
	2kg	**DF0123-07-5**	Ea./263.90
	10kg	**DF0123-08-4**	Ea./1217.87
Tryptose (Bacto)	500g	**DF0124-17-2**	Ea./103.28
	10kg	**DF0124-08-3**	Ea./2127.85
Tween* 80 (Polysorbate 80 USP) (Difco)	100g	**DF3118-15-6**	Ea./17.80
V			
VCAT Inhibitor, Martin and Lewis (BBL)	10mL	**L12404**	Pk. of 10/358.71
VCN Inhibitor (Thayer and Martin), antibiotic mixture of Vancomycin, Colistin, and Nystatin, Lyophilized (BBL)	2mL	**B12227**▽	Pk. of 10/121.22
	10mL	**B12228**▽	Pk. of 10/135.28
VCNT Inhibitor (Thayer and Martin) (BBL)	10mL	**B12408**	Pk. of 10/165.03
Vitamin K1-Hemin Solution (BBL)	10mL	**B12354**	Pk. of 10/122.00
X			
D-Xylose (Difco)	25g	**DF0181-13-6**	Ea./43.10
XLT4 Agar Supplement (Difco)	100mL	**DF0353-72-6**	Ea./31.30
Y			
Yeast Extract (BBL)	454g	**B11929**	Ea./128.12
Yeast Extract (Bacto)	500g	**DF0127-17-9**	Ea./81.10
	2kg	**DF0127-07-1**	Ea./326.50
Yeast Extract (BBL)	5 lb.	**B11930**	Ea./522.79
Yeast Extract (Bacto)	10kg	**DF0127-08-0**	Ea./1588.10
Yeast Extract (BBL)	25 lb.	**B11931**	Ea./2457.37
Yeast Extract, LD (Bacto)	500g	**DF2109-33**	Ea./101.20
	10kg	**DF2109-41**	Ea./1707.10
Yeast Extract, Technical (Bacto)	500g	**DF0886-17-0**	Ea./42.95
	10kg	**DF0886-08-1**	Ea./839.15
Yeast Extract, UF (Bacto)	500g	**DF2109-29**	Ea./96.00
	10kg	**DF2109-34**	Ea./1844.68
Yersinia Antimicrobic Supplement CN (Cefsulodin, Novobiocin)	10mL	**DF3196-60-5**	Pk. of 6/64.25

▽*Requires refrigeration.*

LAB PREPARATIONS

Remel* Equivalence Turbidity Standards

Used as standards to adjust densities of bacterial suspensions

STORAGE CONDITIONS:

Store in original container at room temperature, 20° to 25°C.

Description	O.D. × L	Qty.	Cat. No.	Price
Colorimeter Standard Set for use with Vitek*	12×75mm	Set	**R20343**	74.99
McFarland Equivalence Turbidity Standard 0.5 (Latex)	15×103mm	Each	**R20410**	21.99
McFarland Equivalence Turbidity Standard 1.0	15×103mm	Each	**R20411**	28.51
McFarland Equivalence Turbidity Standard 2.0	15×103mm	Each	**R20412**	28.49
McFarland Equivalence Turbidity Standard 3.0	15×103mm	Each	**R20413**	28.49
McFarland Equivalence Turbidity Standard 4.0	15×103mm	Each	**R20414**	28.49
McFarland Equivalence Turbidity Standard 5.0	15×103mm	Each	**R20415**	28.49
McFarland Equivalence Turbidity Standard Set. (Latex) 0.5, 1.0, 2.0, 3.0, 4.0	15×103mm	5/Pk.	**R20421**	117.71

Oxoid* Laboratory Preparations

Range of peptones, hydrolysates, and biological extracts manufactured for those who wish to create their own media or supplement existing formula

STORAGE CONDITIONS:

Store in closed containers, in a cool, dry place, and away from direct light.

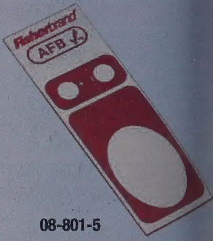
OXPL00 Series

Description	Size	Cat. No.	Each
Agar Bacteriological (Agar No. 1)	500g	**OXLP0011B**	140.75
	5kg	**OXLP0011T**	1392.15
Agar Bacteriological (Agar No. 3)	500g	**OXLP0013B**	122.05
Bile Salts	250g	**OXLP0055J**	78.65
Casein Hydrolysate (Acid)	500g	**OXLP0041B**	81.05
Dextrose Bacteriological	500g	**OXLP0071B**	24.00
Gelatin Bacteriological	500g	**OXLP0008B**	50.95
Hemoglobin Powder	500g	**OXLP0053B**	90.90
Lab-Lemco Powder (Meat Extract)	500g	**OXLP0029B**	84.75
Lactalbumin Hydrolysate	500g	**OXLP0048B**	101.10
Lactose Bacteriological	500g	**OXLP0070B**	28.50
Malt Extract	500g	**OXLP0039B**	70.15
Peptone Bacteriological	500g	**OXLP0037B**	66.65
Peptone Bacteriological Neutralized	500g	**OXLP0034B**	67.15
Peptone Mycological	500g	**OXLP0040B**	206.55
Peptone P	500g	**OXLP0049B**	124.75
Peptone Special	500g	**OXLP0072B**	90.40
Peptonized Milk	250g	**OXLP0032J**	35.05
Proteose Peptone	500g	**OXLP0085B**	91.15
Purified Agar	500g	**OXLP0028B**	225.75
Skim Milk Powder	500g	**OXLP0031B**	21.60
Sodium Biselenite (L121)	100g	**OXLP0121A**	75.15
Sodium Chloride Bacteriological	500g	**OXLP0005B**	25.00
Soya Peptone Neutralized	500g	**OXLP0044B**	83.75
Tryptone	500g	**OXLP0042B**	70.65
Tryptose	500g	**OXLP0047B**	179.75
Yeast Extract Powder	500g	**OXLP0021B**	62.35
	2.5kg	**OXLP0021R**	359.05
	5kg	**OXLP0021T**	581.95

QUALITY CONTROL

*Fisherbrand** AFB√* Control Slides

Help ensure accurate control results from acid-fast testing procedures



08-801-5

- Acid-fast positive organisms will stain red
- Acid-fast negative organisms will stain blue or green, depending on counterstain used
- The positive control will contain red-stained, rod-shaped or coccobacillary bacteria (measuring from 0.5 to 5.0 × 0.2 to 0.6µm)
- The negative control will have no red-stained bacteria
- Use an oil immersion lens when examining under a microscope

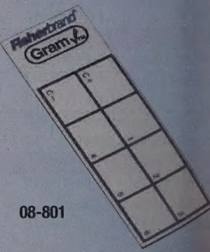
Slide contains:

- Circle-shaped area (+) heat-fixed with a positive control (*Mycobacterium kansasii*)
- Circle-shaped area (-) heat-fixed with a negative control (*Escherichia coli*)
- Blank oval area for the specimen to be examined

Description	Cat. No.	Pack of 50
AFB√ Control Slides	**08-801-5**	90.17

*Fisherbrand** Gram√* Control/Test Slides

Each slide can do the work of six regular slides through its grid of eight separate staining sections



08-801

- Six sections are blank, for staining unknowns
- Two sections contain fixed smears of gram-positive *Staphylococcus aureus* and gram-negative *Escherichia coli*
- Function with **any** standard Gram stain reagent set

ORDERING INFORMATION:

Packaged in individual foil envelopes with instructions.

Description	Cat. No.	Pack of 50
Gram√ Control/Test Slides	**08-801**	128.71

LOOKING FOR THE LAB AUTOMATION SECTION?

It has moved and is now called Microplate Instrumentation.

*Trademark. See Trademark Reference.

Prices subject to change.

emel* Quality Control RapID* Panels

nventional chromogenic substrates contained in ique multiple well panels

ture one-step inoculations, distinctive color reactions, and definitive ults within four hours.

ailable panels include:

- **apID CB Plus** panel with 18 substrates for identification of over 0 organisms such as *Corynebacterium, Actinomyces,* and other regular, gram positive coryneform bacteria
- **apID NF Plus** with 17 substrates for identification of over 70 organ- sms such as *Aeromonas, Burkholderia, Oligella,* and *Pseudomonas*
- **apID NH** (Neisseria/Haemophilus) with 13 substrates for identification f over 30 organisms, such as *Neisseria, Haemophilus, Moraxella* nd *Kingella*
- **apID ONE** (Oxidase Negative Enterobacteriaceae) with 19 substrates r identification of over 70 organisms, such as *Citrobacter, Escherichia, lebsiella* , and *Proteus*
- **apID SS/u** panel with 11 substrates for identification of over 12 ommonly isolated urinary tract microorganisms from human specimens
- **apID STR** panel with 14 substrates for identification of over 33 beta emolytic and viridans streptococci.
- **apID Yeast Plus** panel with 18 substrates for identification of over 40 rganisms such as *Candida, Cryptococcus,* and *Rhodotorula*

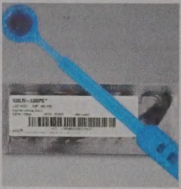
cription	Mfr. No.	Cat. No.	Pack of
Plus Panel	4653048	**R4653048**	3/281.83
Plus Panel	4653054	**R4653054**	4/344.47
Panel	4653051	**R4653051**	4/344.45
E Panel	4653056	**R4653056**	4/219.22
u Panel	4653053	**R4653053**	5/573.22
R Panel	4653052	**R4653052**	4/297.49
st Plus Panel	4653060	**R4653060**	5/587.18

LOOKING FOR THE MICROARRAYS SECTION?
It has moved and is now called Array Analysis.

LOOKING FOR THE TISSUE CULTURE SECTION?
It has moved and is now called Cell Culture.

Remel* Culti-Loops* Organisms and Kits

Ready-to-use, disposable inoculating loops containing stabilized, preserved, viable microorganisms



R4607050

Recommended for use in performance testing of media, stains, reagents, and identification kits, for maintenance of stock cultures, and for the evaluation of bacteriological procedures.

- Patented, gentle-gel organism preservation provides enhanced recovery of over 600 reference strains
- Derived from ATCC® isolates
- Loop contents may be dissolved in re-hydration fluid or streaked directly onto an appropriate media
- Safe to transport and use for both Quality Control and Proficiency testing
- CLIA '88 Kits contain positive and negative control organisms
- Supplied as five loops/organism; sets contain several organisms, five loops/organism
- Also available for many manual and automated I.D. systems; contact your Fisher Scientific Customer Service Representative

Individual Organisms

Description	Cat. No.	Pack of 5
A. alternata TX ATCC® 8025™†	**R4601016**	117.42
A. baumannii ATCC® 19606™†	**R4601007**	62.64
A. baumannii ATCC® BAA-747™†	**R4601009**	91.69
A. caviae ATCC® 15468™†	**R4601021**	93.93
A. faecalis subsp. faecalis ATCC® 35655™†	**R4601011**	93.94
A. faecalis subsp. faecalis ATCC® 8750™†	**R4601006**	93.93
A. fumigatus KM 8001	**R4601018**	117.42
A. hydrophila ATCC® 35654™†	**R4601013**	93.93
A. hydrophila ATCC® 49140™†	**R4601003**	93.93
A. hydrophila ATCC® 7966™†	**R4601020**	93.93
A. lwoffii ATCC® 17925™†	**R4600503**	117.44
A. niger ATCC® 16404™†	**R4601100**	117.42
A. odontolyticus ATCC® 17929™†	**R4600500**	117.43
A. oryzae ATCC® 10124™†	**R4601017**	117.42
A. pyogenes ATCC® 19411™†	**R4600504**	93.93
A. pyogenes ATCC® 49698™†	**R4600502**	93.93
A. veronii ATCC® 9071™† biogroup sobria	**R4601005**	93.93
A. viridans ATCC® 11563™†	**R4601019**	93.93
A. xylosoxydans subsp. xylosoxydans ATCC® 27061™†	**R4601012**	93.93
Acinetobacter species ATCC® 49139™†	**R4600501**	93.94
Acinetobacter species ATCC® 49466™†	**R4601008**	117.42
B		
B. agri ATCC® 51663™†	**R4607217**	114.62
B. bronchiseptica ATCC® 10580™†	**R4601224**	93.94
B. bronchiseptica ATCC® 4617™†	**R4601223**	117.42
B. cepacia ATCC® 25416™†	**R4605220**	93.93
B. cepacia ATCC® 25608™†	**R4601232**	93.93
B. cereus ATCC® 11778™†	**R4601220**	62.63
B. cereus ATCC® 14579™†	**R4601217**	117.42
B. circulans ATCC® 61™†	**R4601216**	114.62
B. diminuta ATCC® 11568™†	**R4607219**	117.42
B. diminuta ATCC® 19146™†	**R4607200**	117.42
B. distasonis ATCC® 8503™†	**R4601226**	93.93

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Contd. on next page.

Remel* Culti-Loops* Organisms and Kits, Contd.

Description	Cat. No.	Pack of 5
B. fragilis ATCC® 23745™†	**R4601251**	93.92
B. fragilis ATCC® 25285™†	**R4601250**	62.64
B. laterosporus ATCC® 64™†	**R4607228**	114.62
B. licheniformis ATCC® 12759™†	**R4601233**	117.42
B. ovatus ATCC® 8483™†	**R4601222**	93.93
B. pertussis ATCC® 9340™†	**R4601225**	117.43
B. sphaericus ATCC® 4525™†	**R4601229**	117.40
B. stearothermophilus ATCC® 12980™†	**R4601219**	117.42
B. stearothermophilus ATCC® 7953™†	**R4601218**	117.43
B. subtilis ATCC® 6633™†	**R4601221**	62.62
B. thetaiotaomicron ATCC® 29741™†	**R4601260**	62.64
B. uniformis ATCC® 8492™†	**R4601259**	93.93
B. ureolyticus ATCC® 33387™†	**R4601201**	93.93
B. vulgatus ATCC® 8482™†	**R4601261**	93.93
C		
C. albicans ATCC® 10231™†	**R4601503**	117.42
C. albicans ATCC® 14053™†	**R4601501**	117.42
C. albicans ATCC® 60193™†	**R4601502**	117.42
C. albicans ATCC® 66027™†	**R4601495**	117.43
C. albicans CL ATCC® 310™†	**R4601500**	117.43
C. albidus ATCC® 66030™†	**R4601710**	117.43
C. albidus var. albidus ATCC® 10666™†	**R4601811**	117.42
C. albidus var. albidus ATCC® 34140™†	**R4601813**	117.43
C. difficile ATCC® 9689™†	**R4601610**	93.93
C. diversus KM ATCC® 11012™†	**R4601508**	93.93
C. freundii ATCC® 8090™†	**R4601800**	62.64
C. geochares ATCC® 36852™†	**R4601401**	93.94
C. glabrata ATCC® 15126™†	**R4601513**	117.42
C. glabrata ATCC® 2001™†	**R4601504**	117.42
C. glabrata ATCC® 66032™†	**R4601511**	117.42
C. glabrata ATCC® MYA-2950™†	**R4601505**	172.64
C. guilliermondii ATCC® 6260™†	**R4601521**	117.43
C. histolyticum ATCC® 19401™†	**R4601601**	93.93
C. humicolus ATCC® 9949™†	**R4601101**	117.43
C. jeikeium ATCC® 43734™†	**R4601901**	93.92
C. jejuni subsp. jejuni ATCC® 33291™†	**R4601400**	93.06
C. jejuni subsp. jejuni ATCC® 33292™†	**R4607070**	93.93
C. kefyr ATCC® 204093™†	**R4608013**	117.42
C. kefyr ATCC® 2512™†	**R4601507**	117.42
C. kefyr ATCC® 66028™†	**R4601512**	117.43
C. krusei ATCC® 14243™†	**R4601510**	117.42
C. laurentii ATCC® 18803™†	**R4601241**	117.43
C. laurentii ATCC® 66036™†	**R4601711**	117.42
C. laurentii ATCC® 76483™†	**R4601910**	117.43
C. lusitaniae ATCC® 34449™†	**R4601243**	117.44
C. meningosepticum ATCC® 13253™†	**R4602002**	93.92
C. minutissimum ATCC® 23348™†	**R4601904**	93.92
C. neoformans ATCC® 14116™†	**R4601812**	117.42
C. neoformans ATCC® 204092™†	**R4608016**	117.42
C. neoformans ATCC® 34877™†	**R4601544**	110.24
C. neoformans ATCC® 34877™†	**R4601714**	111.28
C. neoformans ATCC® 66031™†	**R4601712**	117.43
C. neoformans ATCC® 76484™†	**R4601912**	117.42
C. novyi ATCC® 7659™†	**R4601605**	117.44

Description	Cat. No.	Pack of 5
C. parapsilosis ATCC® 22019™†	**R4601518**	117.43
C. parapsilosis ATCC® 34136™†	**R4601515**	117.42
C. perfringens ATCC® 13124™†	**R4601600**	93.93
C. pseudodiphtheriticum ATCC® 10700™†	**R4601902**	93.93
C. pseudodiphtheriticum ATCC® 10701™†	**R4601903**	93.93
C. renale ATCC® 19412™†	**R4601906**	110.24
C. septicum ATCC® 12464™†	**R4601650**	93.93
C. sordellii ATCC® 9714™†	**R4601602**	93.92
C. sporogenes ATCC® 11437™†	**R4601703**	93.93
C. sporogenes ATCC® 19404™†	**R4601700**	93.93
C. sporogenes ATCC® 3584™†	**R4601701**	93.93
C. tropicalis ATCC® 201380™†	**R4601244**	117.44
C. tropicalis ATCC® 66029™†	**R4601517**	117.43
C. tropicalis ATCC® 750™†	**R4601240**	117.42
C. uniguttulatus ATCC® 66033™†	**R4601713**	117.41
C. utilis ATCC® 9950™†	**R4608012**	117.42
C. xerosis ATCC® 373™†	**R4601905**	117.43
Curvularia sp. KM 8023	**R4601705**	117.43
E		
E. aerogenes ATCC® 13048™†	**R4607080**	62.64
E. aerogenes ATCC® 35028™†	**R4607081**	62.64
E. aerogenes ATCC® 35029™†	**R4607082**	62.63
E. aurantiacum ATCC® 49676™†	**R4601900**	93.95
E. avium ATCC® 14025™†	**R4607028**	93.93
E. avium ATCC® 49464™†	**R4601994**	117.43
E. casseliflavus ATCC® 700327™†	**R4607099**	93.93
E. cloacae ATCC® 13047™†	**R4607090**	46.99
E. cloacae ATCC® 23355™†	**R4607091**	62.64
E. cloacae ATCC® 35030™†	**R4601945**	62.64
E. cloacae ATCC® 700323™†	**R4607094**	62.62
E. coli ATCC® 11229™†	**R4601997**	62.65
E. coli ATCC® 11775™†	**R4601989**	93.92
E. coli ATCC® 25922™†	**R4607050**	46.54
E. coli ATCC® 29194™†	**R4601986**	46.99
E. coli ATCC® 35218™†	**R4601971**	46.97
E. coli ATCC® 35421™†	**R4607084**	93.92
E. coli ATCC® 4157™†	**R4607088**	93.93
E. coli ATCC® 43888™† serotype O157:H7	**R4601965**	89.02
E. coli ATCC® 51446™†	**R4607097**	93.94
E. coli ATCC® 51755™†	**R4601998**	93.94
E. coli ATCC® 8739™†	**R4607085**	62.64
E. durans ATCC® 11576™†	**R4601957**	93.93
E. durans ATCC® 49135™†	**R4607086**	93.92
E. durans ATCC® 49479™†	**R4601952**	93.93
E. durans ATCC® 6056™†	**R4607032**	93.93
E. faecalis ATCC® 19433™†	**R4601990**	93.93
E. faecalis ATCC® 29212™†	**R4607030**	46.97
E. faecalis ATCC® 51299™†	**R4601996**	93.91
E. faecium ATCC® 35667™†	**R4601956**	93.94
E. floccosum ATCC® 52066™†	**R4601977**	117.42
E. gergoviae ATCC® 33028™†	**R4601940**	117.42
E. jeanselmei ATCC® 10224™†	**R4601980**	117.42
E. lenta ATCC® 43055™†	**R4601951**	93.94

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Prices subject to change.

scription	Cat. No.	Pack of
rhusiopathiae ATCC® 19414^{TM}†	**R4601978**	5/93.94
tarda ATCC® 15947^{TM}†	**R4601973**	5/117.42
ozemanae ATCC® 33217^{TM}†	**R4603951**	5/117.43
mortiferum ATCC® 9817^{TM}†	**R4602009**	5/93.93
ucleatum subsp. nucleatum ATCC® 25586^{TM}†	**R4602010**	5/93.94
xysporum ATCC® 48112^{TM}†	**R4601983**	5/117.43
capitatum ATCC® 10663^{TM}†	**R4606800**	5/117.43
capitatum ATCC® 2857^{TM}†	**R4606805**	5/117.43
morbillorum ATCC® 27824^{TM}†	**R4602100**	5/93.93
stearothermophilus ATCC® 12978^{TM}†	**R4603011**	5/114.62
vaginalis ATCC® 14018^{TM}†	**R4602050**	5/93.93
vaginalis ATCC® 49145^{TM}†	**R4602051**	5/93.93
aphrophilus ATCC® 19415^{TM}†, X factor not required.	**R4603002**	5/93.92
haemolyticus ATCC® 33390^{TM}†	**R4603790**	5/117.46
influenzae ATCC® 10211^{TM}† Type b- Beta-lactamase +	**R4603810**	5/62.64
influenzae ATCC® 33930^{TM}† Beta-lactamase +	**R4603903**	5/62.64
influenzae ATCC® 35056^{TM}† Beta-lactamase +	**R4603840**	5/117.42
influenzae ATCC® 49144^{TM}† Beta-lactamase +	**R4603801**	5/93.92
influenzae ATCC® 49247^{TM}†	**R4603830**	5/93.93
influenzae ATCC® 49766^{TM}†	**R4603806**	5/93.94
influenzae ATCC® 9006^{TM}† Type a	**R4603805**	5/62.64
influenzae R 386	**R4603852**	5/93.93
influenzae Type a ATCC® 9006^{TM}†	**R19032**	10/130.48
influenzae Type b ATCC® 10211^{TM}†	**R19257**	10/130.48
influenzae Type b ATCC® 33533^{TM}†	**R4603900**	5/62.63
arahaemolyticus ATCC® 10014^{TM}†	**R4603003**	5/93.92
arainfluenzae ATCC® 7901^{TM}†	**R4604000**	5/93.93
araphrophilus ATCC® 49146^{TM}†	**R4603901**	5/93.93
araphrophilus ATCC® 49917^{TM}†	**R4603902**	5/93.94
rientalis ATCC® 6258^{TM}†	**R4601520**	5/117.43
xytoca ATCC® 43086^{TM}†	**R4603006**	5/93.93
xytoca ATCC® 49131^{TM}†	**R4607019**	5/93.93
xytoca ATCC® 700324^{TM}†	**R4603912**	5/93.93
xytoca ATCC® 8724^{TM}†	**R4603009**	5/117.42
neumoniae C6	**R4603935**	5/62.62
neumoniae subsp. pneumoniae ATCC® 10031^{TM}†	**R4603930**	5/93.93
neumoniae subsp. Pneumoniae ATCC® 13882^{TM}†	**R19152**	10/93.48
neumoniae subsp. pneumoniae ATCC® 13882^{TM}†	**R4607022**	5/46.98
neumoniae subsp. pneumoniae ATCC® 13883^{TM}†	**R4607037**	5/46.99
neumoniae subsp. pneumoniae ATCC® 27736^{TM}†	**R4607031**	5/62.64
neumoniae subsp. pneumoniae ATCC® 33495^{TM}†	**R4607021**	5/117.43
neumoniae subsp. pneumoniae ATCC® 35657^{TM}†	**R4603922**	5/93.93
neumoniae subsp. pneumoniae ATCC® 700603^{TM}†	**R4603074**	5/93.93
neumoniae subsp. pneumoniae ATCC® 9997^{TM}†	**R4603915**	5/117.43
osea ATCC® 186^{TM}†	**R4603440**	5/117.42
cidophilus ATCC® 314^{TM}†	**R4603050**	5/117.43
cidophilus ATCC® 4356^{TM}†	**R4603007**	5/117.43
decarboxylata ATCC® 23216^{TM}†	**R4603926**	5/93.93
decarboxylata ATCC® 700325^{TM}†	**R4603927**	5/93.93
asei subsp. casei ATCC® 393^{TM}†	**R4603008**	5/117.42
rayi ATCC® 25401^{TM}†	**R4603959**	5/62.64
nocua ATCC® 33090^{TM}†	**R4609005**	5/117.42

Description	Cat. No.	Pack of
L. innocua VC 32293	**R4603960**	5/117.43
L. mesenteroides subsp. mesenteroides ATCC® 8293^{TM}†	**R4603953**	5/117.42
L. monocytogenes ATCC® 7644^{TM}†	**R4603970**	5/117.43
L. monocytogenes ATCC® BAA-751^{TM}†	**R4603971**	5/110.74
L. pneumophila subsp. pneumophila ATCC® 33152^{TM}†	**R4603950**	5/93.93
M		
M. canis ATCC® 11621^{TM}†	**R4604100**	5/117.42
M. catarrhalis ATCC® 23246^{TM}†	**R4601236**	5/93.94
M. catarrhalis ATCC® 25238^{TM}†	**R4601230**	5/93.94
M. catarrhalis ATCC® 25240^{TM}†	**R4601231**	5/93.94
M. catarrhalis ATCC® 49143^{TM}†	**R4601227**	5/93.94
M. catarrhalis ATCC® 8176^{TM}†	**R4601228**	5/93.94
M. fortuitum subsp. fortuitum ATCC® 6841^{TM}†	**R4610012**	5/62.63
M. furfur ST 8036	**R4604023**	5/117.44
M. kansasii ATCC® 12478^{TM}†	**R4610014**	5/62.63
M. luteus ATCC® 10240^{TM}†	**R4604071**	5/93.94
M. luteus ATCC® 4698^{TM}†	**R4604085**	5/93.93
M. luteus ATCC® 49732^{TM}†	**R4604080**	5/93.94
M. luteus ATCC® 9341^{TM}†	**R4604075**	5/62.64
M. morganii subsp. morganii ATCC® 25830^{TM}†	**R4604029**	5/62.64
M. odoratum ATCC® 4651^{TM}†	**R4602003**	5/93.93
M. testaceum ATCC® 15829^{TM}†	**R4604040**	5/110.24
M. tuberculosis ATCC® 25177^{TM}†	**R4610020**	5/62.63
Micrococcus spp. ATCC® 700405^{TM}†	**R4604086**	5/93.93
N		
N. asteroides ATCC® 19247^{TM}†	**R4604111**	5/117.43
N. asteroides CL ATCC® 11014^{TM}†	**R4609010**	5/117.43
N. brasiliensis ATCC® 19296^{TM}†	**R4609011**	5/117.42
N. brasiliensis ATCC® 19297^{TM}†	**R4604110**	5/117.43
N. gonorrhoeae ATCC® 19424^{TM}†	**R4607041**	5/62.64
N. gonorrhoeae ATCC® 31426^{TM}† Beta-lactamase +	**R4607042**	5/93.92
N. gonorrhoeae ATCC® 43069^{TM}†	**R4607043**	5/93.93
N. gonorrhoeae ATCC® 43070^{TM}†	**R4607044**	5/62.64
N. gonorrhoeae ATCC® 49226^{TM}†	**R4609006**	5/93.93
N. gonorrhoeae ATCC® 49926^{TM}†	**R4609019**	5/117.43
N. gonorrhoeae ATCC® 49981^{TM}† Beta-lactamase +	**R4607075**	5/93.94
N. lactamica ATCC® 23970^{TM}†	**R4607045**	5/93.95
N. lactamica ATCC® 23971^{TM}†	**R4607145**	5/93.93
N. lactamica ATCC® 49142^{TM}†	**R4604027**	5/93.94
N. lactamica ATCC® 49142^{TM}†	**R19294**	10/170.81
N. meningitidis ATCC® 13077^{TM}† serogroup A	**R4607048**	5/62.63
N. meningitidis ATCC® 13090^{TM}† serogroup B	**R4607049**	5/62.62
N. meningitidis ATCC® 13102^{TM}† serogroup C	**R4609007**	5/62.63
N. meningitidis ATCC® 35561^{TM}† serogroup Y	**R4607155**	5/117.43
N. mucosa ATCC® 19695^{TM}†	**R4607150**	5/93.92
N. sicca ATCC® 9913^{TM}† (atypical)	**R4607047**	5/93.93
N. subflava ATCC® 14799^{TM}†	**R4607046**	5/93.94
O		
O. anthropi ATCC® 49687^{TM}†	**R4604151**	5/93.93
O. anthropi ATCC® BAA-74^{TM}†	**R4604152**	5/91.69
O. ureolytica ATCC® 43534^{TM}†	**R4604175**	5/93.92
O. urethralis ATCC® 17960^{TM}†	**R4604022**	5/93.94
P		
P. acnes ATCC® 11827^{TM}†	**R4607052**	5/93.94
P. acnes ATCC® 6919^{TM}†	**R4607101**	5/93.93
P. aerogenes ATCC® 27883^{TM}†	**R4607103**	5/93.92
P. aeruginosa ATCC® 10145^{TM}†	**R4607065**	5/46.97

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Contd. on next page.

Remel* Culti-Loops* Individual Organisms, Contd.

Description	Cat. No.	Pack of 5
P. aeruginosa ATCC® 15442™†	**R4607210**	93.93
P. aeruginosa ATCC® 27853™†	**R4607060**	46.97
P. aeruginosa ATCC® 35032™†	**R4607062**	62.64
P. aeruginosa ATCC® 9027™†	**R4605210**	62.64
P. aeruginosa ATCC® 9721™†	**R4607068**	46.99
P. alcalifaciens ATCC® 51902™†	**R4605169**	93.94
P. anaerobius ATCC® 27337™†	**R4607051**	93.93
P. asaccharolyticus ATCC® 29743™†	**R4605001**	93.93
P. chrysogenum ATCC® 10106™†	**R4607202**	117.43
P. fluorescens ATCC® 13525™†	**R4607216**	62.63
P. hauseri ATCC® 13315™†	**R4607057**	62.64
P. levii ATCC® 29147™†	**R4601263**	117.43
P. magnus ATCC® 29328™†		
P. melaninogenica ATCC® 25845™†	**R4601255**	93.94
P. micros ATCC® 33270™†	**R4607203**	93.93
P. mirabilis ATCC® 12453™†	**R4607059**	93.93
P. mirabilis ATCC® 25933™†	**R4607061**	62.64
P. mirabilis ATCC® 29245™†	**R4607054**	62.60
P. mirabilis ATCC® 35659™†	**R4607077**	93.94
P. mirabilis ATCC® 43071™†	**R4607073**	62.64
P. mirabilis ATCC® 7002™†	**R4607053**	62.64
P. multocida ATCC® 43137™†		
P. polymyxa ATCC® 7070™†	**R4604600**	114.62
P. polymyxa ATCC® 842™†	**R4601235**	93.92
P. putida ATCC® 49128™†	**R4607074**	93.92
P. shigelloides ATCC® 14029™†	**R4605035**	117.42
P. shigelloides ATCC® 51903™†	**R4607218**	93.94
P. stuartii ATCC® 33672™†	**R4605170**	62.64
P. stuartii ATCC® 49809™†	**R4605171**	62.64
P. verrucosa ATCC® 28181™†	**R4607204**	117.42
P. vulgaris ATCC® 49132™†	**R4605151**	62.62
P. vulgaris ATCC® 6380™†, OX19 Strain.	**R4607069**	62.64
P. vulgaris ATCC® 8427™†	**R4607058**	62.64
P. wickerhamii ATCC® 16529™†	**R4608014**	117.42
P.gingivalis ATCC® 33277™†	**R4609008**	93.94
S		
S. agalactiae ATCC® 13813™† Group B	**R4608250**	62.63
S. agalactiae CL 810 Group B	**R4607005**	117.42
S. albus ATCC® 17900™†	**R4609024**	117.42
S. aureus subsp. aureus ATCC® 12600™†	**R4606507**	93.94
S. aureus subsp. aureus ATCC® 25178™†	**R4607015**	93.93
S. aureus subsp. aureus ATCC® 25923™†	**R4607010**	46.97
S. aureus subsp. aureus ATCC® 29213™†	**R4607011**	46.97
S. aureus subsp. aureus ATCC® 29247™†	**R4607009**	46.99
S. aureus subsp. aureus ATCC® 33862™†	**R4607008**	62.62
S. aureus subsp. aureus ATCC® 43300™† MRSA	**R4609022**	93.94
S. aureus subsp. aureus ATCC® 49444™†	**R4609023**	93.94
S. aureus subsp. aureus ATCC® 49476™†	**R4606510**	93.92
S. aureus subsp. aureus ATCC® 51153™†	**R4606508**	117.42
S. aureus subsp. aureus ATCC® 6538™†	**R4607016**	62.64
S. aureus subsp. aureus ATCC® 6538P™†	**R4609002**	93.93
S. aureus subsp. aureus ATCC® 33591™†	**R4607003**	93.93

Description	Cat. No.	Pack of
S. aureus subsp. aureus ATCC® 33862™†	**R19254**	10/130.48
S. aureus subsp. aureus ATCC® BAA-977™†	**R4606513**	5/111.28
S. aureus subsp. aureus ATCC® 12600™†	**R4606512**	5/111.28
S. bovis ATCC® 49133™† Group D	**R4607079**	5/93.94
S. bovis ATCC® 49475™† Group D	**R4608175**	5/93.94
S. boydii ATCC® 9207™† Group C, serotype 1	**R4608110**	5/93.93
S. capitis subsp. capitis ATCC® 35661™†	**R4608207**	5/62.64
S. cerevisiae ATCC® 4098™†	**R4606900**	5/117.43
S. cerevisiae ATCC® 9763™†	**R4608201**	5/117.42
S. dysenteriae ATCC® 13313™† Group A	**R4608115**	5/117.44
S. dysgalactiae subsp. equisimilis ATCC® 9542™†	**R4608011**	5/93.93
S. enterica subsp. enterica serotype Choleraesuis ATCC® 10708™†	**R4609001**	5/93.94
S. enterica subsp. enterica serotype Enteritidis ATCC® 13076™† Group D	**R4608200**	5/93.93
S. enterica subsp. enterica serotype Montevideo ATCC® 8387™† Group C	**R4606004**	5/93.93
S. enterica subsp. enterica serotype Newport ATCC® 6962™† Group C2	**R4606005**	5/93.93
S. enterica subsp. enterica serotype Paratyphi A ATCC® 11511™† Group A	**R4606002**	5/93.93
S. enterica subsp. enterica serotype Paratyphi B ATCC® 8759™† Group B	**R4606003**	5/93.93
S. enterica subsp. enterica serotype Typhi ATCC® 6539™†	**R4608203**	5/93.93
S. enterica subsp. enterica serotype Typhimurium ATCC® 14028™†	**R4606000**	5/93.94
S. enterica subsp. enterica serovar Anatum ATCC® 9270™†	**R4606006**	5/93.93
S. enterica subsp. enterica serovar Typhimurium ATCC® 14028™†	**R4716000**	10/274.12

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epidermidis ATCC® 49461™†	R4608224	62.64
equi subsp. equi ATCC® 9528™† Group C	R4601001	93.93
equi subsp. zooepidemicus ATCC® 43079™†	R4608237	88.59
equi subsp. zooepidemicus ATCC® 700400™† oup C	R4608225	93.93
equisimilis ATCC® 12388™† Group C	R4607035	62.64
equisimilis ATCC® 35666™† Group C	R4608217	93.93
flexneri ATCC® 12022™† Group B, serotype 2B	R4608101	93.93
gallolyticus ATCC® 49147™†	R4607078	93.92
gallolyticus ATCC® 9809™†	R4607025	93.93
griseus subsp. griseus ATCC® 10137™†	R4609013	117.43
haemolyticus ATCC® 29970™†	R4608210	117.42
hominis ATCC® 27844™†	R4608211	117.42
lentus ATCC® 700403™†	R4606511	93.94
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lugdunensis ATCC® 700328™†	R4608229	93.93
maltophilia ATCC® 13637™†	R4607067	62.62
maltophilia ATCC® 17666™†	R4607072	93.95
maltophilia ATCC® 49130™†	R4609009	93.92
maltophilia ATCC® 51331™†	R4607064	62.64
marcescens ATCC® 13880™†	R4608002	117.42
marcescens ATCC® 14756™†	R4609004	117.42
marcescens ATCC® 8100™†	R4608001	62.64
multivorum ATCC® 35656™†	R4602004	93.94
mutans ATCC® 35668™†	R4607002	93.93
odorifera ATCC® 33077™†	R4602000	93.92
oralis ATCC® 9811™†	R4608220	117.43
pneumoniae ATCC® 27336™†	R4607033	62.63
pneumoniae ATCC® 49136™†	R4607004	93.93
pneumoniae ATCC® 49150™†	R4606901	62.62
pneumoniae ATCC® 49619™†	R4609015	93.05
pneumoniae ATCC® 6301™†	R4606909	93.93
pneumoniae ATCC® 6303™†	R4608221	62.62
pneumoniae ATCC® 6305™†	R4607024	62.62
pneumoniae CL 811	R4606700	117.42
putrefaciens ATCC® 49138™†	R4601004	93.94
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pyogenes ATCC® 19615™† Group A	R4607000	62.03
salivarius ATCC® 13419™† serotype II	R4608222	93.94
sanguis ATCC® 10556™† type 1	R4607023	93.92
saprophyticus ATCC® 15305™†	R4607014	62.64
saprophyticus ATCC® 49453™†	R4608214	117.42
saprophyticus ATCC® 49907™†	R4609020	117.43
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sonnei ATCC® 9290™† Group D	R4608151	62.63

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Novobiocin	R4651110	2/180.06
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Oxidase	R4651103	2/140.92
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MicroScan* Kits		
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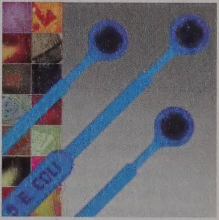
Gram Positive Panel	R4661001	4/281.85
Rapid Anaerobe ID Panel	R4661003	4/344.45
HNID Panel	R4661004	5/469.70

Remel* Culti-Loop* Kits for Vitek* Test Cards

Designed for use with Vitek and Vitek 2 instruments

INCLUDES:

Five loops per package of each organism required to QC a specific Vitek card.



RH6252 Series

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Anaerobe ID Card (ANI)	R4652005	6/563.67
Bacillus	R4653067	2/342.22
Gram Negative ID (GNI)	R4652011	7/501.06
Gram Negative ID Plus Card (GNI+)	R4652014	8/663.64
Gram Negative ID, Vitek 2 (ID-GNB)	R4652015	9/771.63
Gram Negative (GNS-)	R4652007	4/187.90
Gram Positive ID (GPI)	R4652010	7/542.81
Gram Positive ID, Vitek 2 (ID-GPC)	R4652016	8/657.61
Gram Positive Susceptibility (GPS-)	R4652008	4/187.88
Gram Positive, Vitek 2 (AST-GP)	R4652019	5/375.78
Neisseria/Haemophilus ID (NHI)	R4652006	6/501.05
Yeast Biochemical Card (YBC)	R4652009	4/469.75
Yeast, Vitek 2 (ID-YST)	R4652017	7/822.02

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Lyophilized mixtures of charcoal, gelatin, and microorganisms in a stable disk format

Disk is dissolved in 0.1mL of appropriate culture broth, inoculated onto an appropriate culture medium, and incubated at the appropriate temperature, atmosphere, and time.

- Recommended for use in performance testing of media, stains, reagents, and identification kits, for maintenance of stock cultures, and for the evaluation of bacteriological procedures
- Packaged 10 disks/vial

R19000 Series

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A		
A. baumannii ATCC® 19606™†	R19000	130.48
A. faecalis subsp. faecalis ATCC® 35655™†	R19247	170.81
A. faecalis subsp. faecalis ATCC® 8750™†	R19001	170.82
A. hydrophila ATCC® 35654™†	R19248	170.81
A. hydrophila ATCC® 7965™†	R19107	170.81
A. pyogenes ATCC® 19411™†	R19364	170.81
A. pyogenes ATCC® 49698™†	R19310	170.81
A. sp. genomospecies 9 ATCC® 9957™†	R19304	170.82
A. species ATCC® 49139™†	R19283	170.83
A. viridans ATCC® 11563™†	R19329	170.81
B		
B. bronchiseptica ATCC® 10580™†	R19153	170.81
B. cepacia ATCC® 17765™†	R19307	170.81
B. cepacia ATCC® 25416™†	R19224	170.81
B. cereus ATCC® 11778™†	R19097	130.48
B. distasonis ATCC® 8503™†	R19238	170.82
B. fragilis ATCC® 23745™†	R19173	170.81
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B. pertussis ATCC® 12742™†	R19318	170.83
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B. subtilis ATCC® 6633™†	R19003	130.48
B. thetaiotaomicron ATCC® 29741™†	R19005	130.48
B. uniformis ATCC® 8492™†	R19200	170.82
B. ureolyticus ATCC® 33387™†	R19240	170.81
B. vulgatus ATCC® 8482™†	R19010	170.82
C		
C. albicans ATCC® 10231™†	R19505	214.64
C. albicans ATCC® 14053™†	R19510	214.64
C. albicans ATCC® 60193™†	R19528	214.65
C. albidus var. albidus ATCC® 10666™†	R19522	214.64
C. albidus var. albidus ATCC® 34140™†	R19518	214.64
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C. humicolus ATCC® 9949™†	R19532	214
C. jejuni subsp. jejuni ATCC® 33291™†	R19253	169
C. krusei ATCC® 14243™†	R19504	214
C. laurentii ATCC® 18803™†	R19516	214
C. meningosepticum ATCC® 13253™†	R19154	170
C. neoformans ATCC® 14116™†	R19523	214
C. neoformans ATCC® 32045™†	R19517	214
C. novyi ATCC® 19402™† Type A	R19013	214
C. perfringens ATCC® 13124™†	R19014	170
C. perfringens ATCC® 3626™†	R19176	170
C. pseudodiphtheriticum ATCC® 10700™†	R19312	170
C. pseudodiphtheriticum ATCC® 10701™†	R19363	170.
C. sordellii ATCC® 9714™†	R19128	170
C. sporogenes ATCC® 11437™†	R19330	170.
C. sporogenes ATCC® 19404™†	R19195	170.
C. tropicalis ATCC® 13803™†	R19511	214.
E		
E. aerogenes ATCC® 13048™†	R19138	130.
E. aurantiacum ATCC® 49676™†	R19311	170.
E. cloacae ATCC® 13047™†	R19125	93.
E. cloacae ATCC® 49141™†	R19286	170.
E. coli ATCC® 11775™†	R19201	170.
E. coli ATCC® 25922™†	R19020	93.
E. coli ATCC® 35218™†	R19258	93.
E. coli ATCC® 51446™†	R19376	170.
E. coli ATCC® 8739™†	R19331	130.
E. coli ATCC® 9339™† Alkalescens-dispar Type 01	R19160	170.
E. durans ATCC® 49135™†	R19287	170.
E. durans ATCC® 49479™†	R19354	170.
E. durans ATCC® 6056™†	R19192	170.
E. faecalis ATCC® 19433™†	R19077	130.
E. faecalis ATCC® 29212™†	R19071	170.
E. faecalis ATCC® 33012™†	R19078	170.
E. faecalis ATCC® 51299™†, vancomycin-resistant	R19337	170.
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E. gallinarum ATCC® 700425™†	R19372	170.
E. lenta ATCC® 43055™†	R19336	170.
E. rhusiopathiae ATCC® 19414™†	R19316	170.
F		
F. mortiferum ATCC® 25557™†	R19024	170.8
F. necrophorum ATCC® 25286™†	R19023	170.8
G		
G. vaginalis ATCC® 14018™†	R19026	170.8
H		
H. influenzae ATCC® 49144™† Beta-lactamase +	R19290	170.8
H. influenzae ATCC® 49247™†	R19303	170.8
H. influenzae ATCC® 49766™†	R19320	170.8
H. influenzae R 386	R19031	170.8
H. parahaemolyticus ATCC® 10014™†	R19036	170.8
H. parainfluenzae ATCC® 7901™†	R19035	170.8
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K		
K. oxytoca ATCC® 49131™†	R19164	170.8
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grayi ATCC® 25401™†	R19365	130.48
micdadei ATCC® 33204™†	R19044	214.64
monocytogenes ATCC® 7646™†	R19046	214.64
. catarrhalis ATCC® 25238™†	R19157	170.83
. catarrhalis ATCC® 25240™†	R19100	170.82
. catarrhalis ATCC® 49143™†	R19293	170.81
. catarrhalis ATCC® 8176™†	R19009	170.82
. hominis ATCC® 23114™†	R19313	253.40
. luteus ATCC® 4698™†	R19047	130.48
. luteus ATCC® 49732™†	R19324	170.81
. luteus ATCC® 533™†	R19234	130.48
. odoratum ATCC® 4651™†	R19022	170.82
. pneumoniae ATCC® 15531™†	R19314	253.40
icrococcus spp. ATCC® 700405™†	R19370	170.82
gonorrhoeae ATCC® 19424™†	R19052	130.48
gonorrhoeae ATCC® 31426™† Beta-lactamase +	R19243	170.83
gonorrhoeae ATCC® 35541™†	R19226	170.81
gonorrhoeae ATCC® 43069™†	R19259	170.82
gonorrhoeae ATCC® 43070™†	R19050	130.48
gonorrhoeae ATCC® 49226™†	R19279	170.81
gonorrhoeae ATCC® 49981™† Beta-lactamase +	R19323	170.83
lactamica ATCC® 23971™†	R19242	170.81
meningitidis ATCC® 13077™† serogroup A	R19093	130.48
meningitidis ATCC® 13090™† serogroup B	R19055	130.48
meningitidis ATCC® 13102™† serogroup C	R19049	130.50
mucosa ATCC® 19695™†	R19244	170.81
sicca ATCC® 29256™†	R19281	170.82
subflava ATCC® 14799™†	R19054	170.82
ureolytica ATCC® 43534™†	R19309	170.81
urethralis ATCC® 17960™†	R19261	170.81
acnes ATCC® 11827™†	R19130	170.81
acnes ATCC® 6919™†	R19059	170.80
aeruginosa ATCC® 10145™†	R19126	93.49
aeruginosa ATCC® 27853™†	R19060	93.49
aeruginosa ATCC® 9027™†	R19333	130.48
aeruginosa ATCC® 9721™†	R19151	93.49
anaerobius ATCC® 27337™†	R19142	170.82
gingivalis ATCC® 33277™†	R19239	170.81
hauseri ATCC® 13315™†	R19061	130.48
magnus ATCC® 29328™†	R19295	170.83
melaninogenica ATCC® 25845™†	R19241	170.82
micros ATCC® 33270™†	R19317	170.82
mirabilis ATCC® 12453™†	R19168	170.81
mirabilis ATCC® 25933™†	R19141	130.48
mirabilis ATCC® 35659™†	R19237	170.81
mirabilis ATCC® 43071™†	R19338	130.48

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Description	Cat. No.	Pack of 10
P. mirabilis ATCC® 7002™†	R19094	130.48
P. pentosaceus ATCC® 33314™†	R19355	170.81
P. polymyxa ATCC® 842™†	R19362	170.81
P. vulgaris ATCC® 49132™†	R19165	130.48
P. vulgaris ATCC® 6380™†, OX19 Strain	R19149	130.48
S		
S. agalactiae ATCC® 12386™† Group B	R19072	130.48
S. agalactiae ATCC® 13813™† Group B	R19067	130.50
S. aureus subsp. aureus ATCC® 25923™†	R19064	93.49
S. aureus subsp. aureus ATCC® 29213™†	R19065	93.46
S. aureus subsp. aureus ATCC® 33591™† MRSA	R19232	170.81
S. aureus subsp. aureus ATCC® 49476™†	R19326	170.82
S. aureus subsp. aureus ATCC® 6538™†	R19334	130.48
S. bovis ATCC® 49133™† Group D	R19300	170.81
S. boydii ATCC® 9207™† Group C, serotype 1	R19083	170.81
S. capitis subsp. capitis ATCC® 35661™†	R19206	130.48
S. cohnii subsp. cohnii ATCC® 35662™†	R19207	130.48
S. dysenteriae ATCC® 11835™† Group A	R19099	170.82
S. enterica subsp. enterica serotype Typhimurium ATCC® 14028™†	R19194	170.81
S. epidermidis ATCC® 12228™†	R19136	130.48
S. epidermidis ATCC® 14990™†	R19062	130.48
S. epidermidis ATCC® 49134™†	R19298	170.81
S. equi subsp. equi ATCC® 9528™† Group C	R19267	170.81
S. equisimilis ATCC® 12388™† Group C	R19088	130.48
S. flexneri ATCC® 12022™† Group B, serotype 2b	R19147	170.82
S. gallolyticus ATCC® 49147™†	R19212	170.81
S. gallolyticus ATCC® 9809™†	R19075	170.81
S. maltophilia ATCC® 13637™†	R19156	130.48
S. maltophilia ATCC® 51331™†	R19367	130.48
S. marcescens ATCC® 8100™†	R19133	130.48
S. pastorianus ATCC® 2366™†	R19562	214.64
S. pneumoniae ATCC® 27336™†	R19089	130.49
S. pneumoniae ATCC® 49136™†	R19301	170.83
S. pneumoniae ATCC® 49150™†	R19235	130.48
S. pneumoniae ATCC® 49619™†	R19321	170.82
S. pneumoniae ATCC® 6303™†	R19070	130.48
S. pneumoniae ATCC® 6305™†	R19255	130.49
S. putrefaciens ATCC® 49138™†	R19285	170.81
S. pyogenes ATCC® 12384™† Group A	R19319	170.82
S. pyogenes ATCC® 19615™† Group A	R19074	130.48
S. pyogenes ATCC® 21547™† Group A	R19190	130.48
S. salivarius ATCC® 13419™† serotype II	R19169	170.82
S. sanguis ATCC® 10556™† type 1	R19174	170.81
S. saprophyticus ATCC® 15305™†	R19098	130.48
S. saprophyticus ATCC® 35552™†	R19222	170.82
S. sonnei ATCC® 11060™† Group D	R19084	170.80
S. sonnei ATCC® 25931™† Group D	R19193	170.81
S. spp. ATCC® 12394™† Group G	R19188	170.81
S. spp. ATCC® 9328™† Group F, type 4	R19177	130.48
S. xylosus ATCC® 29971™†	R19191	130.48
S.spp. ATCC® 35664™†	R19204	170.81
U		
U. urealyticum ATCC® 27618™†	R19315	253.40
V		
V. alginolyticus ATCC® 17749™†	R19249	253.39

Contd. on next page.

For culturing anaerobes, look to the Gas Generating Systems on pp. 1097-1100.

Remel* Culti-Loops* Organism Sets, Contd.

Description	Cat. No.	Pack of 10
V. parahaemolyticus ATCC® 17802™†	R19082	214.64
V. parvula ATCC® 10790™†	R19081	170.81
Y		
Y. enterocolitica ATCC® 23715™†	R19110	170.81
Y. kristensenii ATCC® 33639™†	R19346	170.82
Y. lipolytica ATCC® 9773™†	R19529	214.65

ACCESSORIES

Aerobic Set Rehydration Fluid

For rehydration of Culti-Loop* organisms

Cat. No.	Pack of
R4631000	16

Remel* CFUrine Kit* Quality Control Kits

Quality control for determination of urine colony counts for dipslides, tube screening methods, and calibrated loops

- ▸ Film of preserved microorganisms on inside of cap on plastic vial
- ▸ Ready for rehydration

INCLUDES:

One preserved organism vial with high CFU count; one preserved organi
vial with low CFU count; two rehydration vials; two × 99mL dilution bla

Description	Cat. No.	E
E. coli ATCC® 25922™†	R4701000	69
P. mirabilis ATCC® 12453™†	R4702000	69
S. aureus ATCC® 25923™†	R4703000	69

Remel* Quanti-Cult* and Quanti-Cult Plus*

Unique systems in which a film of preserved microorganisms is attached to the inside of a cap on a plastic vial

R4730000 Series

The film contains a specific number of organisms and when rehydrated is used in quality control procedures, eliminating the need to perform serial dilutions.

- ▸ Easy: 15-minute preparation time
- ▸ Quantitative: delivers specific range of colony-forming units (CFUs)
- ▸ Economical: saves time and money, eliminates growth period, no more dilution of suspensions, and eliminates stock culture maintenance
- ▸ Quanti-Cult delivers 10-100 CFU per 0.3mL in a single inoculum and is supplied 10 vials per kit, 1 test per vial, 10 tests per kit
- ▸ Quanti-Cult Plus delivers 10-100 CFU per 0.1mL inoculum and is supplied as 10 vials per kit, 10 tests per vial, 100 tests per kit

INCLUDES:

Ten preserved organism vials and 10 rehydration vials per kit

STORAGE CONDITIONS:

18-month shelf life from date of manufacture for most organisms when stored at 2-8°C

Description	Cat. No.	Pack
Quanti-Cult		
A. niger ATCC® 16404™†	R4731100	2
B. subtilis ATCC® 6633™†	R4731221	2
C. albicans ATCC® 10231™†	R4731503	2
C. sporogenes ATCC® 11437™†	R4731703	2
E. coli ATCC® 8739™†	R4737085	2
E. coli ATCC® 25922™†	R4737050	2
P. aeruginosa ATCC® 9027™†	R4735210	2
P. aeruginosa ATCC® 27853™†	R4737060	2
S. aureus ATCC® 6538™†	R4737016	2
S. aureus ATCC® 25923™†	R4737010	2
S. epidermidis ATCC® 12228™†	R4736500	2
Quanti-Cult Plus		
A. niger ATCC® 16404™†	R4711100	3
B. subtilis ATCC® 6633™†	R4711221	3
B. cepacia ATCC® 25416™†	R4715220	3
C. albicans ATCC® 10231™†	R4711503	3
C. sporogenes ATCC® 11437™†	R4711703	3
C. sporogenes ATCC® 19404™†	R4711700	3
E. faecalis ATCC® 29212™†	R4717030	3
E. coli ATCC® 8739™†	R4717085	3
K. rhizophilia ATCC® 9341™†	R4714075	3
P. aeruginosa ATCC® 9027™†	R4715210	3
S. enterica subsp. enterica serovar Choleraesuis ATCC® 10708™†	R4719001	3
S. choleraesuis subsp. choleraesuis serotype Typhimurium ATCC® 13311™†	R4716100	3
S. enterica subsp.enterica serovar Typhimurium; ATCC® No.: 14028™†	R4716000	2
S. aureus ATCC® 6538™†	R4717016	3
S. aureus ATCC® 6538P™†	R4719002	3
S. aureus ATCC® 29737™†	R4717020	3
S. epidermidis ATCC® 12228™†	R4716500	3
S. pyogenes ATCC® 19615™†	R4717000	3

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*Trademark. See Trademark Reference.

Prices subject to change.

licroBioLogics* QA/QC Organisms

selection of microorganisms commonly used for quality control, lucation, personnel proficiency programs, and regulatory compliance. simple hydration step is all that is needed before use. It comes with a lection of microorganism strains and requires no pre-incubation.

Organisms listed are derivatives of strains from the American Type Culture Collection (ATCC®)

Shelf life of 10–24 months

Certificate of Analysis included

Traceable to reference cultures

Other strains and packaging options are available; for details, contact your Fisher Scientific Customer Service Representative

icroorganisms Preparations in Kwik-Stik* Canisters

clude 10 self-contained units with a lyophilized icroorganism

ch Kwik-Stik unit comes in a f-contained package that includes yophilized microorganism pellet, ervoir of hydrating fluid, and culating swab.

Kwik-Stik unit

scription	ATCC® No.	Cat. No.	Pack of 10
pergillus niger	16404™†	**23-264448**	205.92
subtilis subsp. spizizenii	6633™†	**23-00136**	125.00
mpylobacter jejuni subsp. jejuni	33291™†	**23-264530**	201.08
ndida albicans	10231™†	**23-264495**	172.69
stridium perfringens	12915™†	**23-001337**	172.69
obacillus stearothermophilus	12980™†	**23-001454**	125.00
terococcus faecalis	29212™†	**23-264424**	128.50
cherichia coli	25922™†	**23-264397**	101.78
cherichia coli Serotype O157:H7	35150™†	**23-021198**	141.80
bsiella pneumoniae subsp. pneumoniae	4352™†	**23-00172**	125.00
bsiella pneumoniae subsp. pneumoniae	10031™†	**23-00174**	125.00
curia rhizophilia	9341™†	**23-00194**	140.64
teria innocua	33090™†	**23-00183**	172.69
teus mirabilis	25933™†	**23-001123**	125.00
udomonas aeruginosa	90279™†	**23-001106**	125.00
udomonas aeruginosa	10145™†	**23-264472**	128.50
udomonas aeruginosa	27853™†	**23-264414**	104.64
stonia pickettii	49129™†	**23-001116**	154.56
monella enterica subsp. enterica ovar Typhimurium	13311™†	**23-001183**	154.56
monella enterica subsp. enterica ovar Typhimurium	14028™†	**23-264421**	158.27
phylococcus aureus subsp. aureus	6538™†	**23-001284**	154.56
phylococcus aureus subsp. aureus	25923™†	**23-264419**	101.78
phylococcus epidermidis	12228™†	**23-264429**	125.00
ptococcus pyogenes (Designated up A)	19615™†	**23-264441**	128.50

▽ *frigerate as detailed on label.*

Microorganism Preparations in Kwik-Stik* DuoPacks

Two self-contained units of a single microorganism

Description	ATCC® No.	Cat. No.	Pack of 2▽
Acinetobacter baumannii	19606™†	**23-021102**	28.21
Aspergillus niger	16404™†	**23-021122**	42.42
Bacillus cereus	10876™†	**23-001605**	28.21
B. subtilis subsp. spizizenii	6633™†	**23-021181**	28.21
Bacteroides vulgatus	8482™†	**23-021156**	35.98
Burkholderia cepacia	25416™†	**23-045322**	33.39
Campylobacter jejuni	33291™†	**23-021176**	42.42
Candida albicans	10231™†	**23-021155**	35.98
Clostridium sporogenes	11437™†	**23-021182**	35.98
Clostridium perfringens	12915™†	**23-001336**	35.98
Enterobacter aerogenes	13048™†	**23-021065**	28.21
Enterococcus faecalis	29212™†	**23-021108**	28.21
Escherichia coli	8739™†	**23-021178**	33.39
Escherichia coli	25922™†	**23-021087**	23.89
Escherichia coli (Designated as O157:H7)	35150™†	**23-021197**	28.01
Geobacillus stearothermophilus	7953™†	**23-001449**	28.21
Klebsiella pneumoniae subsp. pneumoniae	4352™†	**23-00173**	28.21
Klebsiella pneumoniae subsp. pneumoniae	10031™†	**23-001319**	28.21
Kocuria rhizophilia	9341™†	**23-00195**	33.39
Lactobacillus fermentum	9338™†	**23-00182**	33.39
Listeria innocua	33090™†	**23-00184**	35.98
Listeria ivanovii subsp. ivanovii	19119™†	**23-00187**	35.98
Listeria monocytogenes	7644™†	**23-021123**	35.98
Listeria monocytogenes	19115™†	**23-001323**	35.98
Listeria welshimeri	35897™†	**23-00193**	32.72
Propionibacterium acnes	11827™†	**23-021139**	35.98
Proteus mirabilis	25933™†	**23-001124**	28.21
Pseudomonas aeruginosa	9027™†	**23-021179**	28.21
Pseudomonas aeruginosa	10145™†	**23-021137**	28.21
Pseudomonas aeruginosa	27853™†	**23-021098**	24.35
Ralstonia pickettii	49129™†	**23-021223**	33.39
Saccharomyces cerevisiae	2601™†	**23-001151**	35.98
Salmonella enterica subsp. enterica serovar Choleraesuis	10708™†	**23-001156**	33.39
Salmonella enterica subsp. enterica serovar Typhimurium	13311™†	**23-021140**	33.39
Staphylococcus aureus subsp. aureus	25923™†	**23-021104**	24.35
Staphylococcus epidermidis	12228™†	**23-021111**	28.21
Streptococcus pyogenes (Designated Group A)	19615™†	**23-021118**	28.21
Yersinia enterocolitica	27729™†	**23-001199**	33.39

▽ *Refrigerate as detailed on label.*

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Contd. on next page.

For more MicroBioLogics QA/QC organisms, visit our Web site.

MicroBioLogics* QA/QC Organisms, Contd.

Microorganism Preparations in Kwik-Stik Plus

Offers a challenge microorganism with no more than two passages from an ATCC® reference culture

Microorganism	ATCC® No.	Cat. No.	Pack of 5
Aspergillus niger	16404™†	**23-039-2X**	93.65
Bacillus cereus	10876™†	**23-099-8X**	93.65
B. subtilis subsp. spizizenni	6633™†	**23-048-6X**	93.65
Brevundimonas diminuta	19146™†	**23-080-5X**	93.65
Burkholderia cepacia	25416™†	**23-048-8X**	93.65
Candida albicans	10231™†	**23-044-3X**	93.65
Clostridium perfringens	12915™†	**23-080-1X**	93.65
Enterobacter aerogenes	13048™†	**23-030-6X**	93.65
Enterococcus faecalis	29212™†	**23-036-6X**	93.65
Escherichia coli	8739™†	**23-048-3X**	93.65
Escherichia coli	25922™†	**23-033-5X**	93.65
Proteus mirabilis	25933™†	**23-069-0X**	93.65
Pseudomonas aeruginosa	9027™†	**23-048-4X**	93.65
Pseudomonas aeruginosa	27853™†	**23-035-3X**	93.65
Salmonella typhimurium	13311™†	**23-042-1X**	93.65
Salmonella typhimurium	14028™†	**23-036-3X**	93.65
Staphylococcus aureus	6538™†	**23-048-5X**	93.65
Staphylococcus aureus	25923™†	**23-036-0X**	93.65
Staphylococcus epidermidis	12228™†	**23-037-1X**	93.65
Streptococcus pyogenes (Group A)	19615™†	**23-038-5X**	93.65

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Microorganism Preparations in Lyfo Disk* Vials

Contain 10 pellets each of a single microorganism

- Lyfo Disk* desiccant vials contain 10 pellets each of a single microorganism
- Lyophilized pellets must be hydrated in 0.5mL of sterile water, saline or tryptic soy broth

Microorganism	ATCC® No.	Cat. No.	Pack of 10
Acinetobacter baumannii	19606™†	**23-264617**	150.5
Aspergillus niger	16404™†	**23-264647**	192.8
Bacillus cereus	10876™†	**23-001607**	120.1
B. subtilis subsp. spizizenii	6633™†	**23-264730**	120.1
Bacteroides vulgatus	8482™†	**23-264691**	160.3
Brevundimonas diminuta	19146™†	**23-00142**	134.4
Burkholderia cepacia	25416™†	**23-264732**	136.4
Campylobacter jejuni	33291™†	**23-264725**	192.8
Candida albicans	10231™†	**23-264689**	160.3
Clostridium perfringens	12915™†	**23-001338**	160.3
Clostridium sporogenes	11437™†	**23-264731**	162.7
Cryptococcus albidus	34140™†	**23-264697**	160.3
Enterobacter aerogenes	13048™†	**23-264571**	122.3
Enterococcus faecalis	29212™†	**23-264623**	122.3
Escherichia coli	25922™†	**23-264593**	81.7
Escherichia coli (Designated as 0157:H7)	35150™†	**23-278422**	114.8
Klebsiella pneumoniae	10031™†	**23-294838**	120.1
Lactobacillus fermentum	9338™†	**23-00180**	123.5
Listeria innocua	33090™†	**23-001347**	160.3
Listeria ivanovii	19119™†	**23-00185**	160.3
Listeria monocytogenes	19115™†	**23-294841**	160.3
Micrococcus luteus	9341™†	**23-294842**	134.4
Neisseria Gonorrhoeae	43069™†	**23-264678**	137.7
Propionibacterium acnes	11827™†	**23-264669**	160.3
Proteus mirabilis	25933™†	**23-294844**	120.1
Pseudomonas aeruginosa	10145™†	**23-264666**	122.3
Ralstonia pickettii	49129™†	**23-281742**	136.4
Saccharomyces cerevisiae	2601™†	**23-294852**	160.3
Salmonella abaetetuba	35640™†	**23-001135**	134.4
Salmonella c. subsp. choleraesuis	10708™†	**23-294856**	134.4
Salmonella enterica subsp. enterica serovar Typhimurium	13311™†	**23-264671**	136.4
Shigella sonnei	25931™†	**23-264570**	134.4
Staphylococcus aureus subsp. aureus	25923™†	**23-264618**	83.1
Staphylococcus epidermidis	12228™†	**23-264628**	122.3
Streptococcus pyogenes (Designated Group A)	19615™†	**23-264640**	120.1

∇ *Refrigerate as detailed on label.*

[1] *c. subsp. = Salmonella choleraesuis subspecies.*

For QC organisms for water quality testing , see p. 1086-1088.

icroBioLogics* Epower* Microorganisms

L phililized pellets add convenience to special projects a d internal proficiency plans

M roorganism preparations manufactured at a predetermined c centration for versatile laboratory testing requirements.

- ocess controls from one hundred to over a billion CFU/preparation
- aceable to reference cultures

O ERING INFORMATION:
A lable in vials containing 10 lyophilized pellets, with a range of c centration from 102 to 109 per pellet

I LUDES:
P uct warranty and peel-off certificate of assay

S RAGE CONDITIONS:
S f life of 10 to 20 months

M oorganism	ATCC® No.	Conc.	Cat. No.	Each
A ergillus niger	16404™†	10^3	**23-003-3396**	111.78
A ergillus niger	16404™†	10^6	**23-003-3397**	111.78
B llus cereus	10876™†	10^3	**23-003-3620**	112.20
B ubtilis subsp. spizizenni	6633™†	10^3	**23-003-3415**	111.78
C dida albicans	10231™†	10^3	**23-003-3405**	111.78
C dida albicans	10231™†	10^7	**23-003-376**	111.78
C tridium sporogenes	11437™†	10^3	**23-003-3416**	112.20
C tridium sporogenes	19404™†	10^3	**23-003-3356**	111.78
E robacter cloacae	35030™†	10^8	**23-003-3395**	111.78
E rococcus faecalis	7080™†	10^3	**23-003-3422**	95.12
E rococcus faecalis	29212™†	10^3	**23-003-3385**	95.12
E erichia coli	8739™†	10^7	**23-003-384**	88.91
E erichia coli	25922™†	10^3	**23-003-3362**	111.78
E erichia coli	51813™†	10^3	**23-003-3479**	111.78
E erichia coli	51813™†	10^4	**23-003-3480**	111.78
G bacillus stearothermophilus	7953™†	10^3	**23-003-3549**	95.12
K siella pneumoniae	10031™†	10^7	**23-003-3456**	111.78
L obacillus fermentum	9338™†	10^3	**23-003-3499**	111.78
P domonas aeruginosa	9027™†	10^7	**23-003-377**	88.91
P domonas aeruginosa	27853™†	10^3	**23-003-3377**	95.12
S onella typhimurium	13311™†	10^3	**23-003-3402**	111.78
S onella typhimurium	14028™†	10^3	**23-003-3384**	112.20
S hylococcus aureus	6538™†	10^3	**23-003-3413**	111.78
S hylococcus aureus	6538™†	10^7	**23-003-378**	111.78
S hylococcus aureus	6538P™†	10^3	**23-003-3515**	112.20
S hylococcus aureus	25923™†	10^3	**23-003-3381**	111.78
S hylococcus aureus	25923™†	10^4	**23-003-3382**	111.78
S hylococcus epidermidis	12228™†	10^3	**23-003-3389**	111.78
Y nia enterocolitica	27729™†	10^2	**23-003-3584**	112.20
Z saccharomyces rouxii	28253™†	10^3	**23-003-3489**	111.78

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MicroBioLogics* EZ-CFU* One Step Microorganism Preparations

Assayed microorganism preparations for USP quantitative microorganism challenges

Lyophilized microorganism preparations delivering the desired 10 to 100CFU/0.1mL of challenge material (following hydration and dilution of 1.0mL of hydrated suspension in 9.0mL of pH 7.2 phosphate buffer).

- Traceable to reference cultures

ORDERING INFORMATION:
Supplied as two vials of a single assayed microorganism (10 lyophilized pellets in each vial) and 10 vials of hydrating fluid (2.0mL in each vial)

INCLUDES:
Product warranty and have a peel-off certificate of assay

STORAGE CONDITIONS:
Shelf life of 10 to 20 months

Microorganism	ATCC® No.	Cat. No.	Pack of 10
Aspergillus niger	16404™†	**23-001-264**	239.22
Bacillus cereus	10876™†	**23-001-603**	239.22
B. subtilis subsp. spizizenni	6633™†	**23-001-285**	239.22
Burkholderia cepacia	25416™†	**23-001-287**	246.40
Candida albicans	10231™†	**23-001-899**	274.61
Clostridium sporogenes	11437™†	**23-001-286**	239.22
Clostridium sporogenes	19404™†	**23-002-611**	239.22
Enterobacter aerogenes	13048™†	**23-001-248**	239.22
Enterococcus faecalis	7080™†	**23-003-3421**	232.91
Enterococcus faecalis	29212™†	**23-001-258**	239.22
Escherichia coli	8739™†	**23-001-279**	244.00
Geobacillus stearothermophilus	7953™†	**23-002-812**	239.22
Geobacillus stearothermophilus	12980™†	**23-002-813**	239.22
Kocuria rhizophila	9341™†	**23-001-324**	239.22
Lactobacillus fermentum	9338™†	**23-001-345**	239.22
Listeria monocytogenes (Type 4b)	19115™†	**23-001-321**	239.22
Pseudomonas aeruginosa	27853™†	**23-001-251**	239.22
Salmonella choleraesuis	10708™†	**23-001-521**	239.22
Salmonella typhimurium	13311™†	**23-001-269**	244.00
Salmonella typhimurium	14028™†	**23-001-257**	239.22
Staphylococcus aureus	6538™†	**23-001-282**	239.22
Staphylococcus aureus	6538P™†	**23-001-351**	239.22
Staphylococcus aureus	25923™†	**23-001-255**	239.22
Staphylococcus epidermidis	12228™†	**23-001-260**	239.22
Streptococcus pyogenes (Group A)	19615™†	**23-001-262**	239.22

For more MicroBioLogics organisms, visit our Web site.

MicroBioLogics* EZ-FPC* Microorganism Preparations

Lyophilized microorganism preparations delivering a predetermined assay value for qualitative or quantitative daily process controls

- Available in 100 to 1000 CFU per preparation (qualitative) or 1000 to 10,000 CFU per preparation (quantitative)
- Traceable to reference cultures
- Daily process controls for food quality labs

ORDERING INFORMATION:

Packaged in a vial of a single assayed microorganism (10 lyophilized pellets in each vial), with an attached certificate of assay.

INCLUDES:

Product warranty and peel-off certificate of assay

STORAGE CONDITIONS:

Shelf life of 10 to 20 months

Microorganism	ATCC® No.	Cat. No.	Each
Arthrobacter psychrolactophilus	700733™†	**23-003-373**	82.66
Aspergillus niger	16404™†	**23-001-265**	88.51
Bacillus cereus	10876™†	**23-001-604**	88.51
Enterobacter aerogenes	13048™†	**23-002-301**	88.51
Enterococcus faecalis	7080™†	**23-002-406**	87.60
Lactobacillus fermentum	9338™†	**23-001-346**	88.51
Listeria innocua	33090™†	**23-002-801**	88.51
Listeria monocytogenes (Type 4b)	19115™†	**23-001-322**	88.51
Saccharomyces cerevisiae	2601™†	**23-001-330**	88.51
Salmonella abaetetuba	35640™†	**23-001-350**	88.51
Staphylococcus aureus	6538™†	**23-001-283**	88.51
Yersinia enterocolitica	27729™†	**23-002-828**	88.51

MicroBioLogics* EZ-PEC* Microorganism Preparations

Add convenience to pharmaceutical and cosmetic testing labs needing to meet antimicrobial effectiveness or preservative efficacy testing

- Predetermined mean assay value results in a final challenge concentration of 100,000 to 1,000,000CFU/1.0mL of product tested.
- Traceable to reference cultures

ORDERING INFORMATION:

Supplied as two vials of a single assayed microorganism strain (10 lyophilized pellets in each vial) of 100 to 1000CFU/preparation or 1000 to 10,000 CFU/preparation plus two vials of a single assayed microorganism strain (10 lyophilized pellets in each vial)

INCLUDES:

Product warranty and peel-off certificate of assay

STORAGE CONDITIONS:

Shelf life of 10 to 20 months

Microorganism	ATCC® No.	Cat. No.	Pk. of
Candida albicans	10231™†	**23-002-628**	376.0
Escherichia coli	8739™†	**23-002-640**	376.0
Pseudomonas aeruginosa	9027™†	**23-002-641**	372.2
Staphylococcus aureus	6538™†	**23-002-642**	376.0

† *The ATCC Licensed Derivative Emblem, the ATCC Licensed Derivative word mark, and the ATCC catalog marks are trademarks of ATCC. MicroBioLogics Inc. is licensed to use these trademarks and to sell products derived from ATCC® cultures.*

RAPID TEST KITS

Remel* XPect* Test Kits

Detection of constantly shed antigen reduces number of specimens required

- Three-step procedure provides results within 15 minutes
- Two-reagent system requires less than one-minute hands-on time
- Sensitivity: 95.8–97.9%
- Specificity: 97.1–98.5%
- Specimen/Transport: fresh, formalin, SAF, Cary-Blair
- CLIA Complexity: Non-waived

ORDERING INFORMATION:

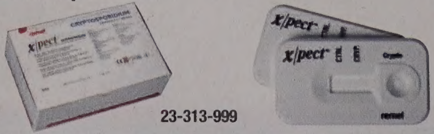
Positive and negative controls available separately

STORAGE CONDITIONS:

12 month shelf-life if stored at 2° to 8°C

Cryptosporidium Test Kit

Rapid detection of Cryptosporidium antigens direct from stool specimens

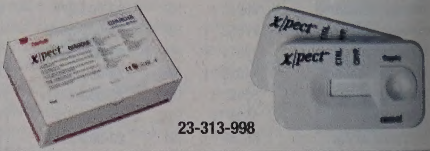


23-313-999

Mfr. No.	Cat. No.	Pack of 20
R2451020	**23-313-999**	433.97

Giardia Test Kit

CPT Code: 87329



23-313-998

Mfr. No.	Cat. No.	Pack of 2
R2450020	**23-313-998**	433.9

Giardia/Cryptosporidium Test Kit

Single or dual testing

- CPT Code: 87328, 87329

x/pect
x/pect
x/pect
x/pect
1
2
3

23-313-997

Mfr. No.	Cat. No.	Pack of 2
2450520	**23-313-997**	601.7

*Trademark. See Trademark Reference.

Prices subject to change.

mel* Coagulase Plasma

F detection of coagulase enzyme in Staphylococci

- ophilized
- bbit plasma with EDTA

T	Cat. No.	Pack of
5 /Vial	R21050	1/23.76
	R21060	6/60.40
1 L/Vial	R21051	1/28.82
2 L/Vial	R21052	1/37.83

oid* Dryspot Tests

N refrigeration needed; can be shipped and stored o r a wide temperature range

U ue dried latex slide agglutina- ti tests on disposable cards pro- vi rapid culture confirmation with re ble performance in the clinical or dustrial microbiology lab.

OXDR Series

- IA Complexity: Non-waived
- ear results in one minute or less
- ilt-in controls
- mping of latex particles icates a positive result
- liquid reagents needed
- ique blue latex on white cards provides clear end point and easy visual erpretation of results
- ch card contains three test and three control areas
- action cards and test sticks are packaged in resealable moisture-proof uches

IN UDES:

Co ols to ensure correct test performance; moisture-absorbent sachet; pl ic pouch clip; buffers (except OXDR0100M, 120M) and mixing paddles; (ex pt OXDR0100M), instruction leaflet

ST RAGE CONDITIONS:

St at 2° to 25°C (36° to 77°F). If stored in a cold environment, all pouches to reach room temperature before opening to prevent co ensation. No refrigeration needed; can be shipped and stored over a v e temperature range. Reagents have a two-year shelf life from the ate of manufacture.

De ription	Cat. No.	Pack of
Dr ot *L. pneumophila 1*	OXDR0200M	60/318.00
Dr ot Strep Grouping Kit, a rapid latex ag tination test for the identification of Strep Gr ps A, B, C, D, F and G	OXDR0400M	60/590.00
Dr ot Staphytect Plus, a test for identifying *St lococcus aureus*	OXDR0100M	1/230.20
Dr ot *E. coli* 0157, a test for identifying *E. coli* se roup 0157	OXDR0120M	120/223.60
Dr ot Staphytect Plus, a test for identifying *St lococcus aureus*	OXDR0300M	1/132.40
Dr ot SeroCheck 026, for identifying *E. coli* se roup 026	OXDR0310M	1/78.85
Dr ot SeroCheck 0111, for identifying *E. coli* se roup 0111	OXDR0340M	1/78.85

Oxoid* Industrial Dip Slides

Rapidly measure the microbial load in industrial fluids, including those not miscible with water

OXDS Series

Plastic paddle coated with two different agar-based media for the simultaneous determination of bacteria and/or fungal growth; paddles have raised edges to ensure an even thickness of media and a molded grid to simplify colony counting. Paddle is attached to the cap of a screw-capped container for easy, contaminant-free handling.

- Eliminate need for swabs and transport medium
- Colonies will appear as red dots on an otherwise clear and colorless medium for easy identification
- Transparent container allows colonies to be viewed and counted safely
- Terminal spike facilitates sample draining
- Nutrient Agar with TTC/Nutrient Agar with TTC has nonselective media for isolation of relatively all bacteria
- Nutrient Agar with TTC/Malt Extract supports the growth of fungi and yeasts

APPLICATIONS:

Test water, water-soluble paints, oil and lubricants, cooling agents, environmental samples, viscous raw materials, or end products in the cosmetic and beverage industries; monitor the efficacy of biocides and bacteriostatic components; surface monitoring required of health, safety, quality assurance and HACCP programs.

ORDERING INFORMATION:

Slide dimensions: 19 × 50mm (950mm^2 surface area)

Description	Cat. No.	Pack of 10
Nutrient Agar with TTC (both sides)	OXDS146	26.15
Nutrient Agar with TTC (side one) plus Malt Extract (side two)	OXDS154	26.10

Oxoid* Toxin Detection Kits

Simple-to-use kits detect toxins in food, fecal, or culture samples

OXTD Series

Manual assays rely on Reversed-Passive Latex Agglutination (RPLA) to identify various enterotoxins direct from food or culture filtrates.

- For use in industrial and clinical applications
- No special equipment required; include built-in controls

STORAGE CONDITIONS:

Should be stored at 2° to 8°C (36° to 46°F); bring all components and reagents to room temperature before use.

Description	Detects	Cat. No.	Pack
Reversed-Passive Latex Agglutination (RPLA)			
BCET-RPLA	*Bacilus cereus* enterotoxin (diarrheal type)	**OXTD0950A**	20/395.0
SET-RPLA	Staph enterotoxins	**OXTD0900A**	20/584.5
TST-RPLA	Staph toxic-shock syndrome toxin (TST)	**OXTD0940A**	20/355.0
VET-RPLA	*E. coli* heat-labile enterotoxin and *V. cholerae* entertoxin	**OXTD0920A**	20/350.0
PET-RPLA	*Clostridium perfringens* enterotoxin	**OXTD0930A**	20/360.0
Competitive Enzyme Immunoassay			
E. coli ST EIA	*E. coli* heat-stable enterotoxin (ST)	**OXTD0700A**	93/1166.1
Other			
C. difficile Toxin A	*Clostridium difficile* Toxin A	**OXTD0970A**	20/467.9
C. difficile Toxin A Stool Filtration System	Toxin A from fecal samples for use with *C. difficile* test	**OXTD0975A**	20/209.8

Oxoid* Rapid Food Tests

Rapidly identify various food pathogens from a wide range of samples—results provided in two days

Left: OXFT0203A Right: OXFT0401A

- Reliable and easy to use with minimal handling and no automation required
- Choice of tests available

Listeria Rapid Tests

- Sample cultured in two sequential enrichments
- Lateral flow immunoassay test takes 42 hours to complete
- Consist of a Listeria test panel with a line of antibody specific to *Listeria flagella* antigen
- Contain 50 vials of Half Fraser Selective Supplement (choice of 2.25L or 225mL batches), 50 of Clearview Devices, and three vials of positive controls

Salmonella Rapid Test

- Designed for the detection of Salmonella in raw foods, finished food products, factory environmental samples, and for culture screening or confirmation

Salmonella Latex Test

- Latex agglutination test for the confirmation of Salmonella from colonies grown on culture or selective media
- Includes comprehensive somatic (O) and flagellar (H) polyvalent latex reagent for accurate screening of a greater number of *Salmonella*
- 12-month shelf life (refrigerator storage) from date of manufacturing
- Includes test latex, control latex, positive control suspension, and test cards for 30 tests

LOCATE *Salmonella Test*

- 96-well ELISA-based test
- Can detect one Salmonella in 25g of raw and processed food
- Results available in 42 hours
- Consist of a microtiter plate with eight breakable strips to allow flexibil for use in many applications
- Results can be read visually or automatically

INCLUDES:

One 96-well microtiter plate, two freeze-dried conjugates, one positive control, one negative control, two wash buffer concentrates, one conjugat diluent buffer, one TMB reagent, one stopping solution, one record sheet

CERTIFICATIONS:

AOAC-RI approved

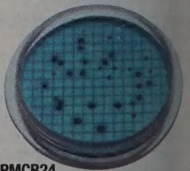
Description	Quantity	Cat. No.	Ea
Listeria Rapid Test (for 2.25L batches)	50 tests/kit	**OXFT0401A**	558.
Supplementary Clearview Devices	50 units	**OXFT0405M**	495.4
Salmonella Latex Test	30 tests/kit	**OXFT0203A**	144.3
Salmonella Rapid Test	50 tests/kit	**OXFT0201A**	593.6

WATER QUALITY TESTING

Millipore* m-ColiBlue24* Broth Culture Media

Simultaneously detects total coliforms and *E. coli* in water and beverages using standard membrane filtration equipment[1]

- Ready-to-use medium comes prepared and packaged in single-test 2mL plastic ampules
- Combination of enzymatic indicators in the medium differentiates *E. coli*, which form blue colonies, from non-*E. coli* coliforms, which form red colonies



M00PMCB24

ORDERING INFORMATION:

Come prepared and packaged in single-test 2mL plastic ampules.

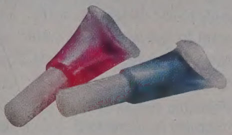
Description	Cat. No.	Pack of 5
m-ColiBlue24 Broth1	**M00PMCB24**	102.

[1] Is a patented product of Hach Company, U.S. Patents 5,650,290 and 5,849,515.

▽ Refrigerate as detailed on label.

llipore* Nutrient Media

D veloped specifically for culturing microorganisms on m mbrane filters; select media type to match organism ty e and analytical test needs



- ch dry powder lot for media eparation assayed for purity and mpared to satisfactory lot
- ch m-Endo broth for total iform lot and m-FC broth for al coliform analysis lot tified in accordance with the fe Drinking Water Act
- QC certificates included in each package as added assurance for ical procedures
- trient media comes in liquid form, packaged in plastic or glass pules, vials, or glass test tubes

OI ERING INFORMATION:

Lic d media packaged in plastic ampules.

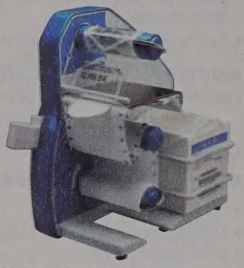
Ty	Application	Packaging	Cat. No.	Pack of 50
Ba ria				
To Count: St lard Plate Br (TGE)	Enumerating bacteria in water, milk, and other fluids	2mL plastic ampule	**MHA000P2T▽**	62.00
To Count: St lard Plate Br with Inc ator (TGE wit TC)	Same as above, with red indicator TTC added	2mL plastic ampule	**MHA00P2TT▽**	68.00
m- C and To Count Br for Total Ba ria	Growth of total bacteria, including aerobic or facultative anaerobic bacteria, in treated waters	2mL plastic ampule	**MHA000P2S▽**	62.00
Ps domonas Se tive Broth	Purified water	2mL plastic ampule	**MHA000P2P▽**	62.00
Bre nomyces Se tive Broth	For detection of *Brettanomyces*	2mL plastic ampule	**MHA00BSM2▽**	50.00
Wa rstein Dif ential Br for Ba ria	Testing fermented fluids, or beer, wine, and soft drinks that contain yeast	2mL plastic ampule	**MHA000P2D▽**	62.00
m- en (Ye /Mold) Se ive	Testing soft drinks and other beverages for growth of yeast and mold in pH 4.5 range	2mL plastic ampule	**MHA000P2M▽**	62.00
Yea Mold Se ive	Recover yeast and mold in food/beverage industry; suppress background bacteria	2mL plastic ampule	**MHA00P2SM▽**	68.00
oli ms and Fecal Streptococci				
m- lo Total Col rm Broth	Presumptive and confirming	2mL plastic ampule	**MHA000P2E▽**	62.00
m- Broth	Waste or effluent waters	2mL plastic ampule	**MHA000P2F**	62.00
m- Broth w/o osolic Aci	Fecal coliforms in waste and effluent waters	2mL plastic ampule	**MHA00FCR2▽**	55.00

▽ R gerate as detailed on label.

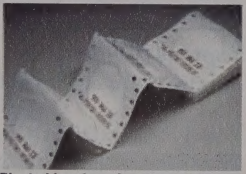
Millipore* EZ-Pak* Membranes and Dispenser

Sterile, ready-to-use membranes eliminate contamination risk, save time

Press lever to uncover half of membrane surface for easy retrieval with forceps; other half remains in protective packaging. Unused membranes remain safely packed in pleated band.



09-719-9 Dispenser with EZHAWG474 membranes.



Pleated band carries 150 individually sealed EZ-Pak membranes.

Dispenser

- Stainless-steel casing with epoxy-based paint finish and Ultem* rollers; cast-aluminum
- Eliminates contamination risk of opening and detaching peel-back envelopes of sterile membranes
- Membranes load easily
- Dispenser dimensions (L × W × H): $9^1/_4 \times 6^1/_3 \times 9^1/_2$" (23.5 × 16 × 24cm); weight: $5^1/_2$ lb. (2.4kg)

EZ-Pak Membranes

- Mixed ester cellulose membranes are 47mm in diameter with 0.45 or 0.8µm pore sizes
- White membranes ideal for particle counting
- Black membranes facilitate colony counting by improving contrast of lactic bacteria colonies in beer and wine analysis and yeast colonies in soft drink testing
- Suitable for testing according to international standards for drinking, bottled, and mineral water analysis
- No special precautions needed, even for extended times between uses
- Used packaging film and paper are collected on spool for easy discarding

ORDERING INFORMATION:

Membranes are individually wrapped and come in pleated-band formatted cartridges of 150. Each pack includes four cartridges (600 membranes in all). Membrane catalog number, lot number, sterilization date, pore size, and sequential number from 1 to 150 for each membrane cartridge are printed on clear, protective cover.

COMPLIANCE:

Meet guidelines for *Standard Methods for the Examination of Water and Wastewater.*

Description	Type	Cat. No.	Price
Membrane Dispenser	----	**09-719-9**	Ea./1099.00
Membranes			
0.45µm	White gridded	**EZHAWG474**	Pk. of 600/264.00
0.45µm	Black gridded	**MSP000814**	Pk. of 600/277.00
0.45µm	Green gridded	**EZHAGG474**	Pk. of 600/317.00
0.22µm	White gridded	**EZGSWG474**	Pk. of 600/317.00
0.7µm (asymm.)	White gridded	**EZHCWG474**	Pk. of 600/301.00
0.8µm	White gridded	**EZAAWG474**	Pk. of 600/313.00
0.8µm	Black	**EZAABG474**	Pk. of 600/313.00

Millipore* Samplers

Self-contained dip testers

- Mixed cellulose filter mounted on a polyethylene paddle
- 0.45µm pore size filter is gridded to facilitate colony counting
- Easy to use—simply sample, incubate and count

REQUIRED ACCESSORIES:
Incubator

STORAGE CONDITIONS:
Stable for 12 months from date of manufacture if stored at 15° to 30°C

Coli Count*

Monitor coliforms in liquids

- Color: Blue
- Coliform colonies are blue or blue/green; non-coliform colonies may be green, gray, or cream
- Requires 22 to 24 hour incubation

Cat. No.	Pack of 25
MC0010025	104.39

Yeast and Mold Samplers

Monitor yeasts and molds in food, beverages

- Color: Yellow
- Results after 24 to 72 hours of incubation

Cat. No.	Pack of 25
MY0010025	104.00

Corning* Coliform Sample Container

Automatically dechlorinates sample

- Sterile-by-process, disposable container comes with a tablet of sodium thiosulfate for dechlorination
- Snap-tight lid with locking arrow assures sterility has not been compromised; leaktight when sealed properly
- Tie-down leash on the cap assures it will stay closed during transit

09-730-91

ORDERING INFORMATION:
Also available without the sodium thiosulfate tablet for samples that do not require dechlorination

INCLUDES:
Labels (09-730-91 only)

COMPLIANCE:
Fill line meets U.S. EPA tolerance requirements

Description	Mfr. No.	Cat. No.	Case of 100
With Tablet	1700 100	**09-730-91**	60.96
Without Tablet	1705 100	**09-730-91A**	55.82

ATCC Licensed Derivative* † *The ATCC Licensed Derivative Emblem, the ATCC Licensed Derivative word mark, and the ATCC catalog marks are trademarks of ATCC® and used under licence.*

Colitag* Presence/Absence (P/A) Water Test Kit

Definitive water test system for coliforms and *E. coli*

Ready-to-use dehydrated media packet for use with 100mL water sample; yields results after just 22 hours of incubation

- Patented system of injury cell recovery resuscitates *E. coli* injured by chlorination, eliminates false negatives
- ONPG/MUG-based test detects 1 CFU of total coliform or *E. coli* bacteria per 100mL sample
- Dramatic yellow color change indicates the presence of coliform bacteria
- Bright blue fluorescence eliminates questionable positive *E. coli* results
- Dramatic yellow color change indicates positive result
- Provides selectivity with growth inhibitors
- Time-saving alternative to traditional membrane filtration
- Color reference standard (Comparator) is available to confirm *E. coli* positive results
- USEPA approved for both Presence-Absence and MPN enumerations

STORAGE CONDITIONS:
May be stored at 4° to 30°C; however, recommended storage is 4° to 7°C. Store away from light. Shelf life: 12 months.

COMPLIANCE:
EPA approved for TCR Compliance Monitoring

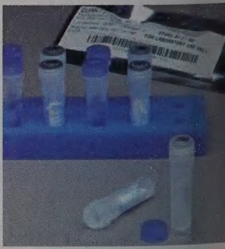
Description	Cat. No.	Price
Colitag P/A Test Kit	**4600-0013**	Pk. of 100/510.00
Color Comparator	**4600-0040**	Ea./6.06

Remel* WaterBugs*

Water/wastewater quality control testing microorganisms in Quanti-Cult* format

Organism vials deliver >50 CFUs in a single inoculum to mimic water samples; one test per reconstituted vial.

INCLUDES:
One rehydration vial per organism vial



R475 Series

Organism	Cat. No.	Pack of 10
E. cloacae ATCC® 13047$^{\text{TM}\dagger}$	**R4757090**	240.79
E. coli Strain C1	**R4751985**	246.20
K. pneumoniae Strain C6	**R4753935**	246.20
P. aeruginosa ATCC® 27853$^{\text{TM}\dagger}$	**R4757060**	241.83
P. mirabilis ATCC® 12453$^{\text{TM}\dagger}$	**R4757059**	277.18

emel* Microbial Identification Reagents

cription	Packaging	Cat. No.	Each
Solubility Reagent (10%)	25mL/Btl.	**R21206**	44.88
Solubility Reagent (2%)	25mL/Btl.	**R21209**	30.78
ulin Hydrolysis Reagent	25mL/Btl.	**R21215**	22.42
ic Ammonium Citrate	25mL/Btl.	**R21216**	22.42
ic Chloride	25mL/Btl.	**R21218**	16.16
purate Hydrolysis Reagent	25mL/Btl.	**R21221**	22.42
ate Reagent A for AFB	25mL/Btl.	**R21243**	22.41
ate Reagent B for AFB	25mL/Btl.	**R21244**	22.41
Reagent	25mL/Btl.	**R21258**	30.78
ium Carbonate	25mL/Btl.	**R21267**	22.42
en* 80 (10%)	10mL/Btl	**R21275**	7.79
en 80 Hydrolysis Substrate centrate	5mL/Tube	**R21276**	28.55

emel* BACTi STAPH* Latex Test Kit

lizes protein-coated latex particles capable of tecting both clumping factor and Protein A nultaneously

id slide latex agglutination test provides qualitative detection to inguish *Staphylococcus aureus* from other species of staphylococci.

PT Code: 87147

IA Complexity: Non-waived

se-with suspected *S. aureus* colonies

ur step procedure

esults in 60 seconds

eady to use; no further preparation necessary

omplete with latex reagent, positive and negative controls, sposable slides, and stirring sticks

r in vitro diagnostic use

RAGE CONDITIONS:

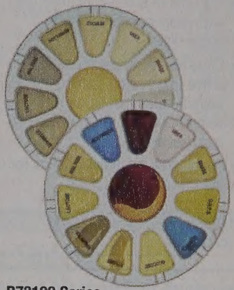
e all reagents at 2° to 8°C (35.6° to 46.4°F).

of Tests	Mfr. No.	Cat. No.	Each
	21144	**R21144**	153.27
	21143	**R21143**	374.75

Remel* N/F System

For presumptive identification of medically important glucose-nonfermenting, gram-negative bacteria which do not belong to the family *Enterobacteriaceae*

System requires the use of three components: two N/F Screen* tubes, GNF and 42P, and a Uni-N/F Tek* Plate.



R73100 Series

- Tubes contain solid media for the determination of five reactions and are intended for the identification of pigmented strains of *Pseudomonas aeruginosa* and *P. Fluorescens*/putida group
- The Uni-N/F-Tek plate is composed of 11 independently sealed wells and a central well, all containing solid media for the determination of 13 different biochemical parameters
- All components are supplied ready-to-use

ORDERING INFORMATION:

System components are sold separately. GNF and 42P tubes are supplied in packs of 20; plates are supplied in packs of 10.

REQUIRED ACCESSORIES:

Inoculating loops/needle and collection containers; Incubators or alternative environmental system; Supplemental media; Quality control organisms; Kovacs Indole Reagent, R21522; Oxidase Reagent, R21540; Longwave ultraviolet light

STORAGE CONDITIONS:

Store components at 2° to 8°C as directed on the label.

Description	Cat. No.	Pack of
GNF Tube	**R7310055**	20/56.92
42P Tube	**R7310056**	20/56.92
Uni-N/F-Tek Plate	**R7310050**	10/119.68

Remel* r/b* Enteric Differential System

Provides rapid characterization of members of the family *Enterobacteriaceae*

Basic system requires r/b_1* and r/b_2* tubed media. After sample inoculation and incubation, organism identification is interpreted by the location and type of color reaction.

- Presence or absence of gas formation and motility are observable from physical changes in the media
- The Cit/Rham expander tubes contain carbohydrates, casein digest, magnesium sulfate, and a pH indicator for further organism differentiation

ORDERING INFORMATION:

Components are sold separately. Each is supplied 20 tubes per pack.

REQUIRED ACCESSORIES:

Inoculating Needle; Incubator; Oxidase test reagents

STORAGE CONDITIONS:

Store tubes upright at 2 to 8°C.

Description	Cat. No.	Pack of 20
r/b_1	**R7310010**	75.73
r/b_2	**R7310011**	75.72
Citi/Rham Expander	**R7310003**	75.72

Remel* Micro-ID* Listeria System

Rapid biochemical test kit designed to identify *Listeria* isolates to genus level in four hours, and to the species level in 24 hours

- Consists of a self-contained unit with reagent impregnated paper disks
- Color reactions correspond to a five- digit code; species identification can be derived using the Micro ID Code Book (sold separately)
- Enables 15 biochemical tests for identification of *Listeria*

MICRO-ID Listeria

R38370

ORDERING INFORMATION:
Supplied 10 units/pack

Cat. No.	Pack of 10
R38370	187.71

ACCESSORIES

Remel* Micro-ID* Code Book

Used to interpret the color reactions obtained in various Micro-ID systems to derive species identification

R3814

Cat. No.	Each
R38146	95.08

Remel* Uni-Yeast Tek* Plate

For identification of yeast

- Contains 11 sealed peripheral wells of solid media for urea, carbohydrate assimilation and nitrate tests
- Central well contains Cornmeal-Tween* agar for the morphological examination of yeast

R7310040

Cat. No.	Pack of 1
R7310040	118.5

Oxoid* Identification Disks

Reagent-impregnated disks for the detection and differentiation of various microorganisms

ORDERING INFORMATION:
Supplied 50 disks/cartridge

Description	Differentiates	Concentration	Cat. No.	E
0129	*Vibrio spp.*	10µg	R65014	13
0129	*Vibrio spp.*	150µg	R65015	24
ONPG	Lactose fermenters	----	R65013	20
X Factor	*Haemophilus spp.*	----	R65016	9
V Factor	*Haemophilus spp.*	----	R65017	12
X and V Factor	*Haemophilus spp.*	----	R65018	9

BD* BBL* Taxo* Differentiation Discs and Strips

Detect, differentiate, and identify microorganisms

- Discs and strips impregnated with various chemical agents
- Reactions or responses to agents indicate taxonomy of organisms being studied

ORDERING INFORMATION:
Choose from vials or cartridges of 50 each

STORAGE CONDITIONS:
Store as detailed on label.

Description	Cat. No.	Pri
Vials		
A Discs, for differentiating Group A Streptococci	B31040	Ea./19.
	B31041	Pk. of 6/68.
N Discs, for identifying *Neisseria* and *Pseudomonas*	B31044	Ea./19.
	B31045	Pk. of 6/68.
ONPG Discs, for detecting lactose fermenters	B31248	Ea./69.
	B31249	Pk. of 6/347.
P Discs, for differentiating Pneumococci	B31046	Ea./19.
	B31047	Pk. of 6/68.
X and V Factor Strips	B31104	Ea./54.
	B31105	Pk. of 6/291.
X Factor Strips	B31106	Ea./54.
	B31107	Pk. of 6/291.
V Factor Strips	B31108	Ea./54.
	B31109	Pk. of 6/291.
Cartridges		
A Discs, for differentiating Group A Streptococci	B31042	Ea../18.7
	B31552	Pk. of 10/89.4
Nystatin (Mycostatin*) Discs, for inhibiting yeasts	B31550	Ea../60.3
	L31553	Pk. of 10/312.9
P Discs, for differentiating Pneumococci	B31048	Ea./18.7
	B31554	Pk. of 10/89.4
Urea 1/4" Discs, for rapid detection of urease production	B4331737	Ea./28.4
	B4331738	Pk. of 10/193.2

ACCESSORIES

Blank Taxo Test Discs

- Supplied 50 discs per vial; six vials per pack

Diameter	Cat. No.	Pack of 6
¼" (6mm)	B31039	29.65
½" (12.7mm)	B31122	102.83

*Trademark. See Trademark Reference.

Prices subject to change.

)* Difco* Adjuvants

e to prepare antigen-adjuvant emulsions for use in munological studies with laboratory animals

djuvants are mixed with aqueous antigen solution or suspension

nce injected, they provide a pool of emulsified antigen at the injection te and allow the antigen to be released over an extended period of me; thus, the immune response to antigens (especially soluble antigens) enhanced and prolonged

se incomplete adjuvant (DF0639-60-6) to avoid the use of acid-fast acilli; however, the antibody response is not as marked as with the mplete adjuvant

TE:

intended for human or therapeutic use.

Description	Quantity	Cat. No.	Pack of 6
Dropper Adjuvants			
Complete Freund	10mL	**DF0638-60-7**	64.37
Incomplete Freund	10mL	**DF0639-60-6**	49.85
Complete H37Ra	10mL	**DF3113-60-5**	104.00
Desiccated Adjuvants			
Mycobacterium butyricum, Desiccated	100mg	**DF0640-33-7**▽	183.44
Mycobacterium tuberculosis H37Ra, Desiccated	100mg	**DF3114-33-8**▽	242.75

▽ *Refrigerate as detailed on label.*

)* Diagnostic Reagent and ain Droppers

ntify microorganisms without mixing or measuring gents and stains

14-910 Series

erform tests, squeeze the dropper ush the ampule. Invert the per for convenient drop-by- dispensing.

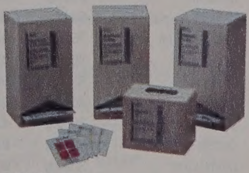
opper contains one-day supply reagent or stain, hermetically aled inside an ampule

ict quality controls assure iformity and accuracy

ription	Application	Mfr. No.	Cat. No.	Pack of 50
ent Droppers				
ase	Catalase	261203	**14-910-75**	62.75
xycholate	*Pneumococci*	261183	**14-910-59**	80.60
CA Indole	Tryptophanase	261187	**B4361187**	53.75
: Chloride	Phenylalanine deaminase	261190	**14-910-14**	80.40
lla Stain	Flagella	261206	**14-910-77**	91.40
e	Tryptophanase	261185	**14-910-12**	53.75
10%	Fungal smears	261191	**14-910-65**	53.75
ylene Blue	Loeffler	261204	**14-910-76**	80.40
/drin	Hydrolyze hippurate	261201	**14-910-64**	99.00
e A	Nitrate	261197	**14-910-61**	80.40
e B	Reduction to nitrite	261198	**14-910-62**	80.40
e Reagent C	Nitrate	261207	**14-910-78**	88.55
ise	Oxidase	261181	**14-910-16**	53.75
	Group A strep	261196	**14-910-60**	80.40
s-Proskauer A	Acetyl methyl	261192	**14-910-20**	53.75
s-Proskauer B	Acetylmethylcarbinol	261193	**14-910-22**	53.75
Droppers				
ine Orange	Fluorescence microscopy	261182	**14-910-66**	87.65
fluor White	Fluorescence fungal smears	261195	**14-910-67**	80.40
l and nnor's Iodine	Staining parasite cysts and eggs and ova in feces	261189	**14-910-17**	53.75
Ink	Staining *Cryptococcus neoformans* in CSF	261194	**14-910-56**	55.40
phenol Cotton	Wet mounts in fungal examinations	261188	**14-910-15**	53.75

BD* DrySlide* Reagent Slides

A convenient method for bacterial biochemical analysis



B43317 Series

Self-contained, ready-to-use test slides consist of coated, 35mm film or impregnated paper, which operates as a carrier matrix for microbiological testing reagents.

- One-step procedure—no need for rehydrating
- No thin paper strips to manipulate and no glass slides are involved
- Each individual slide contains four reaction areas
- **DrySlide Indole** is a 30-second, spot indole test that uses DMABA (5% p-dimethylaminobenzaldehyde) formulation to test for indole-producing bacteria
- **DrySlide Nitrocefin** is a qualitative test to detect the presence of bacteria that produces β-lactamase and meets NCCLS guidelines; each slide contains a reagent cassette impregnated with nitrocefin
- **DrySlide Oxidase** with each slide is film-coated with an oxidase reagent (N, N, N′,N′-tetramethyl-p-phenylenediamine dihydrochloride) to test for the presence of cytochrome C oxidase activity in bacteria; a positive result produces a purple color within 20 seconds
- **DrySlide PYR Kit** has L-pyrrolidonyl-β-naphthylamide that is used for the rapid presumptive identification of Group D *Enterococci* and Strep Group A; includes 15 slides and 15, 0.5mL crush ampules

ORDERING INFORMATION:

Slides are individually wrapped and supplied in convenient dispenser packs

Description	Cat. No.	Pack of
Indole	**B4331748**	75/135.50
Nitrocefin	**B4331749**	25/133.25
Oxidase	**B4331746**	75/130.75
PYR Kit	**B4331747**	1/94.85

DON'T SEE THE RIGHT PRODUCT?

Fisher Scientific carries a variety of specimen collection devices, including swabs for sampling and transport. For more information or to order...

Visit www.fishersci.com and search for Transport Swabs

SUSCEPTIBILITY TESTING

BD* BBL* Sensi-Disc* Susceptibility Test Discs

- Supplied as 50 discs per cartridge

Antibiotic/ Antimicrobial Agent	Conc.	Cat. No.	Each▽	Cat. No.	Pack of 10▽
Amikacin	30mcg	B31596	16.48	B31597	94.32
Amoxicillin with Clavulanic Acid	30mcg	B31628	16.48	B31629	94.32
Ampicillin	2mcg	----	----	B31263	101.08
	10mcg	B30705	16.32	B31264	93.41
Ampicillin with Sulbactam*	10/10mcg	B31659	16.32	B31660	94.32
Azlocillin	75mcg	----	----	B31625	104.94
Bacitracin	2 units	----	----	B31267	104.97
	10 units	B30721	17.16	B31268	102.12
Carbenicillin	100mcg	B31235	16.48	B31555	94.32
Cefaclor	30mcg	B31652	16.95	B31653	94.32
Cefazolin	30mcg	B31592	16.48	B31593	94.32
Cefixime	5mcg	B31663	16.48	----	----
Cefoperazone	75mcg	B31612	16.95	B31613	94.32
Cefotaxime	30mcg	B31606	16.48	B31607	94.32
Cefotetan	30mcg	B31655	16.48	B31656	94.32
Cefoxitin	30mcg	B31590	16.48	B31591	94.32
Ceftazidime	30mcg	B31632	16.48	B31633	94.32
Ceftriaxone	30mcg	B31634	16.48	B31635	94.32
Cefuroxime	30mcg	B31620	16.48	B31621	94.32
Cephalothin	30mcg	B30725	16.48	B31271	94.32
Chloramphenicol	5mcg	B30729	17.00	----	----
	30mcg	B30733	16.32	B31274	93.41
Ciprofloxacin	5mcg	B31657	16.48	B31658	94.32
Clindamycin	2mcg	B31213	16.32	B31275	93.41
Cloxacillin	1mcg	----	----	B31276	104.97
Colistin	10mcg	B30749	17.16	B31278	102.04

▽ *Refrigerate as detailed on label.*

Antibiotic/ Antimicrobial Agent	Conc.	Cat. No.	Each▽▽	Cat. No.	Pack of 10▽
Doxycycline	30mcg	B30777	16.98	B31286	101.52
Erythromycin	2mcg	----	----	B31289	100.59
	15mcg	B30793	16.24	B31290	92.96
Furazolidone	100mcg	B30809	17.08	----	----
Gatifloxacin	5mcg	----	----	B31760	87.00
Gentamicin	10mcg	B31227	16.24	B31299	92.96
Imipenem	10mcg	B31644	16.40	B31645	93.86
Kanamycin	30mcg	B30829	16.87	B31301	93.86
Lincomycin	2mcg	----	----	B31302	104.46
Mezlocillin	75mcg	B31614	16.87	B31615	93.86
Minocycline	30mcg	B31250	17.39	B31251	101.52
Moxalactam	30mcg	----	----	B31611	104.43
Nafcillin	1mcg	----	----	B31309	104.43
Nalidixic Acid	30mcg	B30874	16.98	B31311	101.52
Neomycin	5mcg	----	----	B31312	101.55
	30mcg	B30882	17.56	B31313	101.55
Netilmicin	30mcg	----	----	B31603	96.54
Nitrofurantoin	100mcg	----	----	B31292	101.55
	300mcg	B31149	16.40	B31293	93.86
Novobiocin	5mcg	B30886	17.08	B31314	101.55
	30mcg	B30890	17.56	B31315	101.55
Oxacillin	1mcg	B30906	16.24	B31319	92.96
Oxolinic Acid	2mcg	B31566	16.73	----	----
Oxytetracycline	30mcg	----	----	B31342	101.55

▽ *Refrigerate as detailed on label.*

Sensi-Disc Cartridges

Antibiotic/ Antimicrobial Agent	Conc.	Cat. No.	Each▽	Cat. No.	Pack of 10▽
Penicillin	2 units	B30914	17.00	B31320	101.08
	10 units	B30918	16.32	B31321	93.41
Piperacillin	100mcg	B31608	16.48	B31609	94.32
Polymyxin B	300 units	B30926	17.16	B31324	102.04
Rifampin	5mcg	B31541	16.57	B31544	94.41
Streptomycin	10mcg	B30942	16.48	B31328	94.32
Sulfachloropyridazine	1mg	----	----	B31326	99.96
Sulfadiazine	0.25mg	----	----	B31331	104.97
Sulfamethizole	0.25mg	----	----	B31345	104.97
Sulfamethoxazole with Trimethoprim	25mcg	B31536	16.32	B31539	93.41
Sulfathiazole	0.25mg	----	----	B31337	99.96
Sulfisoxazole	0.25mg	B30813	17.56	B31296	94.32
	1mg	----	----	B31297	99.96
	2mg	----	----	B31298	104.97
Tetracycline	5mcg	----	----	B31343	101.08
	30mcg	B30998	16.32	B31344	93.41
Ticarcillin	75mcg	B31618	16.95	B31619	94.32
Tobramycin	10mcg	B31568	16.48	B31569	94.32
Trimethoprim	5mcg	B31600	16.95	B31601	94.32
Triple Sulfa	0.25mg	----	----	B31349	102.04
	1mg	----	----	B31350	104.97
Vancomycin	5mcg	B31030	17.00	B31352	101.08
	30mcg	B31034	16.32	B31353	93.41

▽ *Refrigerate as detailed on label.*

BD* BBL* Sensi-Disc* Susceptibility Test Discs for Veterinary Laboratory Use

- Supplied as 50 discs per cartridge

Antibiotic/Antimicrobial Agent	Conc.	Cat. No.	Each
Ceftiofur	30mcg	L4391255	16.9
Enrofloxacin	5mcg	B4331717	17.0
Sulfadimethoxine with Ormetoprim	24/1mcg	B94867	16.9
Tilmicosin	15mcg	B4391387	17.5

▽ *Refrigerate as detailed on label.*

*Trademark. See Trademark Reference.

Prices subject to change.

xoid* 0129 Discs

m discs impregnated with compounds that aid in
e differentiation of vibrios from other gram-negative
ds particularly from aeromonads when placed on
ar surfaces or into organism suspensions

upplied in single cartridge format with 50 discs

RAGE CONDITIONS:
re at 2° to 8°C (36° to 46°F; discs may also be stored in deep freeze
°C [-4°F]). Allow discs to reach room temperature before use.

cription	Cat. No.	Each
g per Disc (DD14)	**OXDD0014T**	19.00
µg per Disc (DD15)	**OXDD0015T**	31.00

DON'T SEE THE RIGHT PRODUCT?

Fisher Scientific offers a full range of susceptibility tests from Remel*. For a complete description,

Visit www.fishersci.com and search for Remel Susceptibility

STAINS/DYES AND INDICATORS

emel* Bactidrop* Reagents

agents and stains in 0.75mL crushable ampules encased in protective plastic sheath with convenient dropper
penser tip

cription	Application[s]	Mfr. No.	Cat. No.	Pack of 50
gent Droppers				
oxycholate	For bile solubility reaction	21508	**R21508**	83.42
ric Chloride	For detection of phenylalanine deamination	21514	**R21514**	83.42
ole, Ehrlich's	For detection of the tryptophan enzyme. Recommended for use with nonfermenters and anaerobes grown in Indole Broth.	21520	**R21520**	83.42
ole, Kovacs	For determination of the ability of microorganisms, primarily *Enterobacteriaceae,* to split indole from the tryptophan molecule. For use with Indole Broth.	21522	**R21522**	83.42
hydrin	For detection of sodium hippurate hydrolysis	21534	**R21534**	83.42
ate A	For determination of the ability of microorganisms to reduce nitrate to nitrite or free nitrogen gas. Used in conjunction with Nitrate Reagent B.	21536	**R21536**	83.42
ate B	For determination of the ability of microorganisms to reduce nitrate to nitrite or free nitrogen gas. Used in conjunction with Nitrate Reagent A.	21538	**R21538**	83.42
dase	For detection of the presence of the oxidase enzyme	21540	**R21540**	83.41
assium Hydroxide	For preparation of clinical specimens for microscopic examination of fungal elements	21524	**R21524**	83.41
R	For rapid, presumptive identification of group A *streptococci* and *enterococci.* Used with PYR Broth, PYR/Esculin Disk, or LAP Disk.	21544	**R21544**	83.42
t Indole	For determination of the ability of microorganisms to split indole from the tryptophan molecule by spot test method	21550	**R21550**	83.41
es-Proskauer A	For detection of acetylmethylcarbinol from glucose fermentation. Used in conjunction with VP-B. For use with MRVP Broth.	21560	**R21560**	83.42
es-Proskauer B	For detection of acetylmethylcarbinol from glucose fermentation. Used in conjunction with VP-A. For use with MRVP Broth.	21562	**R21562**	83.42
n Droppers				
dine Orange	Fluorescent stain for detecting bacteria in body fluids	21502	**R21502**	83.42
ofluor White	Fluorescent stain for fungi, *Microsporidium, Acanthamoeba* and *Pneumocystis*	21507	**R21507**	83.43
ell & O'Connor Iodine	For staining protozoa	21510	**R21510**	83.44
a Ink	For staining encapsulated microorganisms	21518	**R21518**	83.41
ophenol Aniline Blue	For staining fungal elements	21526	**R21526**	83.42

Remel* Microbiological Stains

Comprehensive offering for bacteriology, mycology, mycobacteriology and parasitology

- Traditional, stabilized and enhanced Gram stains
- Fluorescent stains

Description	Type	Qty.	Cat. No.	Price
Acid Ethanol (90%)	250mL/Btl.	Each	**R40134**	19.66
Acridine Orange	250mL/Btl.	Each	**R40010**	36.81
Brom Thymol Blue, 1%	25mL/Btl.	Each	**R21203**	22.40
Calcofluor White Stain Kit	2×50mL	Set	**R40015**	140.20
Ethanol (95%)	250mL/Btl.	Each	**R40132**	15.46
Ethanol (70%)	250mL/Btl.	Each	**R40135**	15.44
Flagella Stain	50mL/Vial	Each	**R40041**	39.23
Gram Crystal Violet, Enhanced	1 gal.	Each	**R40226**	122.43
	5×250mL Btl.	Set	**R40225**	67.75
Gram Crystal Violet	1 gal.	Each	**R40073**	122.44
	250mL/Btl.	5/Pk.	**R40053**	67.75
	250mL/Btl.	Each	**R40052**	19.68
Gram Decolorizer	1 gal.	Each	**R40075**	122.44
	250mL/Btl.	5/Pk.	**R40055**	58.72
	250mL/Btl.	Each	**R40054**	16.08
Gram Decolorizer/Fixative, Enhanced	1 gal.	Each	**R40229**	122.45
	5×250mL Btl.	Set	**R40228**	58.72
Gram Enhancer	1 gal.	Each	**R40232**	122.45
	5×250mL Btl.	Set	**R40231**	67.75
Gram Iodine PVP, Stabilized	1 gal.	Each	**R40222**	155.28
	5×250mL Btl.	Set	**R40061**	73.35
Gram Iodine, Enhanced	1 gal.	Each	**R40235**	140.80
	5×250mL Btl.	Set	**R40234**	62.29
Gram Iodine	1 gal.	Each	**R40077**	140.79
	5×250mL Btl.	Set	**R40057**	62.31
	250mL/Btl.	Each	**R40056**	19.16
Gram Safranin, Enhanced	1 gal.	Each	**R40238**	122.45
	5×250mL Btl.	Set	**R40237**	69.47
Gram Safranin	1 gal.	Each	**R40079**	122.44
	5×250mL Btl.	Set	**R40059**	69.48
	250mL/Btl.	Each	**R40058**	21.60
Gram Stain Kit, Enhanced	5×250mL Btl.	Set	**R40240**	75.44
Gram Stain Set Tray	Tray	Each	**R40081**	10.81
Gram Stain Set	4×250mL Btl.	Set	**R40080**	52.80
Lactophenol Aniline Blue	25mL/Btl.	Each	**R40028**	24.64
Light Green	250mL/Btl.	Each	**R40123**	42.99
Lugol's Iodine	25mL/Btl.	Each	**R40029**	30.53
Mayer's Albumin	25mL/Btl.	Each	**R21235**	29.23
Methanol	250mL/Btl.	Each	**R40121**	18.66
Phenolic Acridine Orange Decolorizer	250mL/Btl.	Each	**R40181**	36.63
Phenolic Acridine Orange	250mL/Btl.	Each	**R40180**	56.72
Sulfuric Acid 1%	250mL/Btl.	Each	**R40124**	18.68
Sulfuric Acid 5%	250mL/Btl.	Each	**R40125**	18.69
Sulfuric Acid 10%	250mL/Btl.	Each	**R40126**	18.68

Description	Type	Qty.	Cat. No.	Pri
TB Auramine O Stain Set	6×250mL Btl.	Set	**R40094**	126.
TB Auramine O	250mL/Btl.	Each	**R40086**	42.
	5×250mL Btl.	Set	**R40186**	137.
TB Auramine-Rhodamine T	5×250mL Btl.	Set	**R40190**	217.
	250mL/Btl.	Each	**R40090**	57.
TB Brilliant Green	5×250mL Btl.	Set	**R40200**	95.
	250mL/Btl.	Each	**R40100**	28.
TB Decolorizer (3% Acid Alcohol)	5×250mL Btl.	Set	**R40206**	59.
	250mL/Btl.	Each	**R40106**	18.
TB Decolorizer, Truant-Moore. (5% Acid Alcohol)	5×250mL Btl.	Set	**R40207**	60.
	250mL/Btl.	Each	**R40107**	18.
TB Kinyoun AFB Stain Set	6×250mL Btl.	Set	**R40112**	135.
TB Kinyoun Carbolfuchsin	5×250mL Btl.	Set	**R40204**	128.
	250mL/Btl.	Each	**R40104**	35.
TB Malachite Green	5×250mL Btl.	Set	**R40208**	95.
	250mL/Btl.	Each	**R40108**	28.
TB Methylene Blue	5×250mL Btl.	Set	**R40210**	128.
	250mL/Btl.	Each	**R40110**	42.
TB Potassium Permanganate	5×250mL Btl.	Set	**R40192**	103.
	250mL/Btl.	Each	**R40092**	37.
TB Ziehl-Neelsen Carbolfuchsin	5×250mL Btl.	Set	**R40202**	92.
	250mL/Btl.	Each	**R40102**	31.
Trichrome Blue	250mL/Btl.	Each	**R40213**	143.
Trichrome. (Wheatley)	250mL/Btl.	Each	**R40025**	136.
Trichrome Quick Stain Set	Set	Each	**R40219**	166.
Trichrome Stain Set	Set	Each	**R40217**	315.
Xylene-S	250mL/Btl.	Each	**R40133**	28.

Fisher Diagnostics PROTOCOL* Gram Stain Sets

Reusable tray provides secure bottle storage

Decolorizer is acetone/isopropanol (1:4) unless otherwise specified as 1:1

- Manufactured with traditional formulations used by most laboratories
- Complete stain sets provide convenient staining

ORDERING INFORMATION:
All sizes come in polyethylene bottles, except for the gallon-size Lugols Iodine, which comes in a glass bottle. Dispenser caps are provided with the 8 oz. and 16 oz. sizes. Gallon-size Iodine is available as traditional diluent/concentrate or as ready-to-use Lugols (23-270-184)

Description	Cat. No.	Pri
Set with 16 oz. bottle of each: Gram Crystal Violet, Iodine, Decolorizer and Safranin	**23-255-959**	Cs. of 4/63.
Set with 8 oz. bottle of each: Crystal Violet, Iodine, Decolorizer and Safranin	**23-291-471**	Cs. of 4/45.
Set with one 250mL bottle of each: Gram Crystal Violet, Stabilized Iodine, Decolorizer and Safranin	**23-005-83**	Ea./54.

*Trademark. See Trademark Reference.

Prices subject to change.

sher Diagnostics PROTOCOL* Individual am Stains

nufactured with traditional formulations used by st laboratories

ecolorizer is acetone/isopropanol (1:4) unless otherwise specified as 1:1

ispenser caps are provided with the 8 oz. and 16 oz. sizes

allon-size Iodine is available as traditional diluent/concentrate or as ady-to-use Lugol's

DERING INFORMATION:

sizes come in polyethylene bottles, except for the gallon-size Lugol's ne, which comes in a glass bottle.

	Cat. No.	Each	Case of 4
tal Violet			
.	**23-291-472**	----	48.73
oz.	**23-255-960**	----	71.02
l.	**23-270-180**	118.04	414.15
e			
.	**23-291-473**	----	48.73
oz.	**23-255-961**	----	74.02
l.	**23-270-181**	112.10	385.27
e, Stabilized			
.	**23-005-84**	----	142.17
l.	**23-005-85**	101.18	347.74
lorizer			
.	**23-291-474**	----	46.02
z.	**23-255-962**	----	60.13
l.	**23-270-182**	106.40	469.19
lorizer (1:1)			
.	**23-291-475**	----	51.50
z.	**23-265-691**	----	74.02
l.	**23-278-651**	132.90	385.27
nin			
	23-291-476	----	41.16
z.	**23-255-963**	----	70.38
.	**23-270-183**	112.10	385.27
s Iodine			
.	**23-270-184**	142.17	----

* BBL* Gram Stain Kits

usable tray/workstation provides a secure place for tle storage

UDES:

250mL bottle each of Gram al Violet, Iodine, Gram lorizer and Gram Safranin

B12539

iption	Cat. No.	Each
Stabilized Iodine	**B12539**	54.46
Unstabilized Iodine	**B12524**	50.78

ACCESSORIES

Replacement Reagents for BD* BBL* Gram Stain Kits

- Available in packs of four 250mL bottles or individual one-gallon bottles

	250mL Size		1 gal. size	
Description	**Cat. No.**	**Pack of 4**	**Cat. No.**	**Each**
Crystal Violet	**B12525**	51.81	**B12526**	127.25
Iodine (Stabilized)	**B12542**	55.93	**B12543**	167.08
Iodine (Traditional)	**B12529**	48.15	**B12530**	137.12
Decolorizer	**B12527**	48.49	**B12528**	87.34
Safranin	**B12531**	49.20	**B12532**	121.26
Basic Fuchsin	**B12544**	68.34	**B12545**	181.43

BD* BBL*/Difco* TB Acid Fast Stains

Each set contains one 250mL bottle of each component; stains are available separately in packs of three or four 250mL bottles

Stain Sets

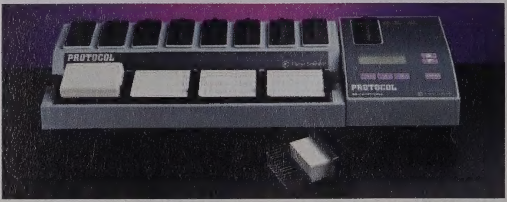
- **TB Fluorescent Stain Kit M.** One 250mL bottle each: Auramine M, Decolorizer and Potassium Permanganate
- **TB Fluorescent Stain Kit T.** One 250mL bottle each: Auramine – Rhodamine T, Decolorizer TM and Potassium Permanganate
- **TB Quick Stain* Kit.** One 250mL bottle each: Quick Stain Carbolfuchsin and Quick Stain Methylene Blue
- **TB Stain Kit K.** One 250mL bottle each: Carbolfuchsin KF, Decolorizer and Brilliant Green K
- **TB Stain Kit ZN.** One 250mL bottle each: Carbolfuchsin ZN, Decolorizer and Methylene Blue

Left to right: B12515, B12512, B12513

Description	Mfr. No.	Cat. No.	Price
Stain Kits			
Fluorescent Stain Set M	212519	**B12519**	84.09
Fluorescent Stain Set T	212521	**B12521**	87.69
Quick Stain Kit	212315	**B12315**	80.53
Stain Set K	212522	**B12522**	89.35
Stain Set ZN	212520	**B12520**	75.01
Individual Stains—4 × 250mL Stain Packs			
Auramine M	212514	**B12514**	107.16
Auramine-Rhodamine T	212515	**B12515**	138.41
Brilliant Green K	212523	**B12523**	68.00
Carbolfuchsin KF	212518	**B12518**	183.25
Carbolfuchsin ZN	212511	**B12511**	167.54
Decolorizer	212517	**B12517**	46.54
Decolorizer TM	212512	**B12512**	41.87
Methylene Blue	212516	**B12516**	70.63
Potassium Permanganate	212513	**B12513**	66.75
Individual Stains—3 × 250mL Stain Packs			
Carbolfuchsin, Quick Stain	212316	**B12316**	114.88
Methylene Blue, Quick Stain	212317	**B12317**	76.27
Control Slides—50 Slides			
AFB QC Slides	231391	**B231391**	140.50

Fisher Diagnostics PROTOCOL* MicroProbe* Staining System

Allows for multi-step staining procedures on up to 20 slides simultaneously



Probe-On Plus* slides fit securely into the patented slide holder, creating the precise gap required for capillary action. The technology ensures complete and consistent staining by exposing all tissue samples to the same volume of fresh reagents and identical incubation conditions.

- Compact unit occupies minimal bench space and can perform all tissue processing and staining steps, including deparaffination, hydrating, staining and counterstaining
- Spent reagents and stain can be removed from the capillary gap by blotting the slides on the absorbent pads

Probe-On Plus Slides

- High-quality microscope slides are painted at the upper and lower ends to a specified thickness
- When pressed together the painted surfaces create a capillary gap that easily accommodates tissue sections up to 5µm thick on each slide
- Placing a control slide with a specimen ensures that the tissues receive identical treatment throughout the staining and incubating process
- Enhanced Probe-On Plus slides provide superior tissue adhesion, eliminating the need for water bath additives or polylysine pretreatments

Isolon* Reagent Isolators

- Wells in reusable, silicon rubber isolators hold reagents in proper alignment for contact with the capillary gap of the slide pairs in the holder
- Available with three wells for milliliter volumes (each well treating slides with the same reagent) or with 30 smaller wells for microliter volumes of antibodies or DNA probes (each well treats a slide pair individually)
- Disposable, 30-well glass are available for hybridization procedures requiring a flatter surface

Slide Holder

- Features a lightweight, chemical-resistant handle with numbered positions and an indexing bump
- Clips, located on the underside of the holder, securely hold slide pairs in the vertical position
- For immunostaining and special stain procedures, insert the prepared Probe-On Plus slides face-to-face to form the capillary gap and touch the ends of the slides to the reagent buckets or Isolon reagent isolators; For traditional staining procedures, use standard slides with the specimens facing outward and dip the slide into the reagent buckets

Staining Station

- Eight reagent buckets with removable lids are arranged along the back of the stainer
- Removable tray in the front of the system holds up to four plastic holders that accept the Isolon Reagent Isolators or absorbent blotting pads

MicroProbe Incubator

- Using advanced microprocessor technology, incubator provides tight control of temperature between 30° and 110°C (±0.5°C) [86° and 230°F (±0.5°F)]
- Anodized aluminum incubation chamber is designed so that the top of the slide holder completely covers the opening, maintaining the desired temperature and humidity
- Cork-lined lid is also provided to reduce the preheating times
- Removable tray beneath the chamber catches any drips from the slides
- Incubator control panel allows the user to program three temperature settings into memory for later access; display panel shows the operating mode, actual temperature and any error messages
- Calibration block, which holds a calibrated thermometer, is also provided to recalibrate the incubator if needed

INCLUDES:

Eight reagent buckets and lids, a locator tray for the Isolon holders, four Isolon holders, five 30-well and five 3-well Isolon plates, six blotting pads, one slide holder, 72 Probe-On Plus microscope slides, an incubator with lid, calibration block, a power cord, a user's manual, and an application guide

WARRANTY:

One year

Description	Cat. No.	Price
Workstations		
Complete Staining System, USA†	**FD-188-10A**	Ea./2735.29
Staining Station, Complete‡	**FD-188-20**	Ea./986.70
Staining Station Only	**FD-188-40**	Ea./429.79
Incubator and Incubator Accessories		
Drip Tray	**15-188-34**	Ea./34.48
Incubator Calibration Block	**15-188-35**	Ea./38.60
Incubator Chamber Lid	**15-188-36**	Ea./18.17
Incubator Module, 120/230 Volts	**FD-188-30A**	Ea./1743.94
General Accessories		
Slide Holder	**FD-188-50**	Ea./306.26
Plastic Reagent Buckets	**FD-188-41**	Pk. of 4/83.63
General Accessories - Isolon Plates/Holders		
Isolon Plates, 30-well, Rubber	**FD-188-45**	Pk. of 5/73.04
Isolon Plates, 3-well, Rubber	**FD-188-46**	Pk. of 5/74.11
Isolon Plate Holders	**FD-188-44**	Pk. of 4/124.86
Locator Tray for Isolon Plates	**FD-188-42**	Ea./132.20

† Includes rack w/eight reagent buckets and lids, locator tray for the Isolon plates, four Isolon holders, five 30-well and five 3-well Isolon plates, six blotting pads, one slide holder, 72 Probe-On Plus microscope slides, Incubator Module, Calibration Block, Power Cord and an Applications Guide.

‡ Includes rack w/ eight reagent buckets and lids, locator tray for the Isolon plates, four Isolon holders, five 30-well and five 3-well Isolon plates, six blotting pads, one slide holder, 72 Probe-On Plus microscope slides and a Staining Station Guide.

†† Includes dip tray, lid, calibration block and user's manual.

SPECIFICATIONS

Capacity	20 slides in holder
Control Point Memory	3 programmable temperatures
Temperature Set Range	30° to 110°C (86° to 230°F)
Temperature Regulation	±0.5°C
Display Accuracy	±1.0°C
Heating Time	30° to 110°C <10 min.
Cooling Time	110° to 30°C <10 min.
Power Consumption	120W Max.
Voltage	100/120/220/240V ±10%, 50/60Hz
Dimensions (W × D × H)	7 × 11 × 5" (18 × 28 × 13cm)

*Trademark. See Trademark Reference.

GAS GENERATING SYSTEMS

oid* Atmosphere Generating Systems

ange of dry gas generating systems designed to fely and speedily create optimum conditions for the owth of a variety of organisms

- reate the desired atmospheric nditions without the dangerous ccumulation of hydrogen: no water catalyst needed
- esulting carbon dioxide level ill be within 9% to 13%, an portant element when performing aerobic sensitivities
- vailable in two convenient rmats: For use in a jar (2.5 and 5L sizes), or for use in a bag naeroGen*, CampyGen*, and $_2$Gen Compact products)

Top (left to right): OXCN0052A, OXAG0025A, OXAN0025A; Bottom (left to right): OXAN0020C, OXCD0025A, OXAN0010C, OXCD0020C

custom-designed jar (AnaeroJar*), along with a number of pouch oducts, provide incubation of small numbers of Petri dishes.

RAGE CONDITIONS:

e in a cool, dry place between 2° and 25°C (36° to 77°F).

aeroGen* System

ates a carbon dioxide level between 9% and % in a sealed jar

cription	Mfr. No.	Cat. No.	Pack of 10
eroGen, 2.5L	6525	**OXAN0025A**	43.25
eroGen, 3.5L	6535	**OXAN0035A**	43.25

aeroGen* Compact System

system generates an anaerobic atmosphere for one four plates or an identification panel

cription	Mfr. No.	Cat. No.	Pack of 20
roGen Compact†	AN0010C	**OXAN0010C**	52.20
roGen Compact‡	AN0020C	**OXAN0020C**	60.15

ludes sachets and bags.
gs only.

ACCESSORIES

Oxoid* Anaerobic Indicator (Resazurin)

- Store at 2° to 8°C (36° to 46°F)

fr. No.	Cat. No.	Pack of 100
R0055B	**OXBR0055B**	42.55

CO_2Gen* System

A CO_2 generating system suitable for CO_2–dependent organisms

Mfr. No.	Cat. No.	Pack of 10	Case of 10 Pk.
CD0025A	**OXCD0025A**	42.42	362.60

CO_2Gen* Compact System

A CO_2 generating system for bags

- Suitable for two plates
- Includes sachets

Mfr. No.	Cat. No.	Pack of 50
652020	**OXCD0020C**	51.15

CampyGen* System

Produces an atmosphere suitable for microaerophilic *Campylobacter*

Description	Mfr. No.	Cat. No.	Pack of 10
CampyGen, 2.5L	CN0025A	**OXCN0025A**	46.05
CampyGen, 3.5L	CN0035A	**OXCN0035A**	46.05

CampyGen* Compact System

A microaerophilic atmosphere-generating system for bags

- Suitable for two plates
- Includes sachets only

Description	Mfr. No.	Cat. No.	Pack of 20
CampyGen Compact	65027	**OXCN0020C**	63.00

Oxoid* AnaeroJar* 2.5L System and Components

Jar provides an anaerobic environment for up to 12 plates

- Components are compatible with the 2.5L AnaeroGen*, CampyGen*, and CO_2Gen* systems
- Complete Jar System includes 2.5L capacity polycarbonate jar base with lid secured to base by four self-venting clips
- Lid has a carrying handle and vacuum release feature

INCLUDES:

Complete system is supplied with plate carrier.

Description	Mfr. No.	Cat. No.	Each
AnaeroJar Complete System	651025	**OXAG0025A**	280.65
Components			
Base	651026	**OXAG0026A**	105.70
Lid	651027	**OXAG0027A**	83.40
Handle	651028	**OXAG0028A**	21.55
O-Ring	651030	**OXAG0030A**	23.25
Clips	651031	**OXAG0031A**	30.55

Oxoid* AnaeroJar* 3.5L System and Components

Provides an anaerobic environment for up to 15 plates

- Complete Jar System connects to a vacuum pump and gas cylinder—Schrader valve chucks and clips are also required
- Low temperature catalyst stays cooler than traditional catalysts

INCLUDES:
Complete Jar System includes 3.5L capacity polycarbonate jar, O-ring, self-centering cast lid and clamp, input and output Schrader valves, automatic safety valve, pressure gauge, Oxoid Low Temperature Catalyst, and Plate Carrier. Holds up to 15 plates.

REQUIRED ACCESSORIES:
For connection to a vacuum pump and gas cylinder, Schrader valve chucks and clips are also required.

Description	Mfr. No.	Cat. No.	Pack of
Complete Jar System, 3.5L	6511	**OXHP0011A**	1/796.00
Components			
Low Temperature Catalyst; Anaerobic	6542	**OXBR0042A**	5/98.85
Replacement O-rings	6518	**OXHP0018A**	5/48.75
Modified Jar, 3.5L	6531	**OXHP0031A**	1/585.40
Schrader Valve Chuck w/clip	HP0020A	**OXHP0020A**	2/102.95

BD* BBL* GasPak 100* Jar Systems

Choice of vented and nonvented models

Nonvented model for anaerobic procedures; vented model can be used with evacuation-replacement systems that use tank gases (nonvented model [and vented model if tank system is not used] require a disposable gas generator envelope)

- Hold twelve 100 × 15mm Petri dishes or 13 culture tubes
- Vented and nonvented

CampyPak Plus
BBL GasPak Plus

Vented GasPak 100 System (11-814-22) and nonvented GasPak 150 System (11-816) with 11-816-15 and B71040 gas generator envelopes.

APPLICATIONS:
Use the economical nonvented model for anaerobic procedures; vented model can be used with evacuation-replacement systems that use tank gases.

INCLUDES:
5 O.D. × 9"H (13 × 23cm) polycarbonate jar; lid with O-ring gasket (vented or nonvented depending on model); clamp and thumbscrew assembly; catalyst reaction chamber; two catalyst charges; autoclavable, stainless-steel Petri dish rack with clips; and culture tube holder; vented model also supplied with rubber hose and tubing clamp

REQUIRED ACCESSORIES:
Gas generator envelopes

Model	Mfr. No.	Cat. No.	Each
Vented	260627	**11-814-22**	664.65
Nonvented	260626	**11-814-21**	514.70

Mitsubishi* AnaeroPack*

Stackable and reusable

Complete atmospheric gas generating systems for microbiology.

- Use 1 sachet per 2.5L jar; use 3 sachets per 7L jar

Pack-Anaero

- New system to generate anaerobic environment without water or cataly

Pack MicroAero

- Gas generator for cultivation of microaerophilic microorganisms without addition of water

Pack CO₂

- Generator for CO₂ enriched aerobic environments

INCLUDES:
Rectangular plastic jars

Description	Mfr. No.	Cat. No.	Pack
Gas Generators			
Pack-Anaero	681001	**23-246-376**	20/64.
Pack-MicroAero	681004	**R681005**	20/66.
Pack-CO_2	681007	**23-246-378**	20/65.
Pack-Rectangular* Jars			
0.4L Jar	684004	**23-246-384**	1/71.
2.5L Jar	685025	**23-246-385**	1/85.
7L Jar	685070	**23-246-387**	1/143.

Mitsubishi* AnaeroPouch*

Disposable pouch bags

Pouch-Keep is a compact atmospheric system designed to store prepared media in an individual Pouch-Bag in which oxygen is reduced to less than 0.1% in eight hours.

Description	Mfr. No.	Cat. No.	Pack
AnaeroPouch Systems			
Pouch-Anaero	682001	**23-246-379**	20/54.
Pouch-MicroAero	682005	**R682005**	20/56.
Pouch-CO_2	682007	**23-246-381**	20/54.
Accessories			
Pouch-Keep	682015	**23-246-382**	20/54.
Pouch-Bags	686001	**23-246-388**	20/12.
Pouch-Clips	686005	**23-246-389**	10/13.
Pouch-Bag, Double Zip	686010	**23-246-390**	20/16.

LOOKING FOR ACCESSORIES?

For anaerobic indicators and replacement parts for Mitsubishi* Gas Generating Systems,

Visit www.fishersci.com and search for Mitsubishi AnaeroPack

*Trademark. See Trademark Reference.

Prices subject to change.

D* BBL* GasPak 150* Jar Systems

ame as GasPak 100 Systems, but with larger jar

olds thirty-six 100 × 15mm Petri dishes, twelve 0 × 15mm Petri dishes, or 13 culture tubes.

ICLUDES:

0½ O.D. × 11"H (27 × 28cm) lycarbonate jar; lid with O-ring asket (vented or nonvented depending amp and thumbscrew assembly; ree catalyst reaction chambers;) catalyst charges; autoclavable, ainless-steel Petri dish rack with ips; culture tube holder; vented odel also supplied with rubber se and tubing clamp

Vented GasPak 100 System (11-814-22) and nonvented GasPak 150 System (11-816) with 11-816-15 and B71040 gas generator envelopes.

EQUIRED ACCESSORIES:

as generator envelopes

odel	Mfr. No.	Cat. No.	Each
nted	260629	**11-816-2**	869.40
onvented	260628	**11-816**	772.50

ACCESSORIES

For BD* BBL* GasPak* Jar Systems

Disposable Anaerobic Indicator

- Consists of a foil envelope containing a pad saturated with methylene blue solution
- Pad changes from blue to colorless in the absence of oxygen

Mfr. No.	Cat. No.	Pack of 100
270504	**11-814-36**	83.70

Disposable Gas Generator Envelopes

- Use in GasPak Jar Systems to produce anaerobic, microaerophilic, or CO_2-supplemented aerobic atmospheres
- Each specially designed foil envelope emits its gases when 10mL of water is added

GasPak Plus* Hydrogen + CO_2

- Comes with Safety-Shielded Integral Palladium Catalyst Strip
- For CO_2-enriched anaerobic environment
- Assures accurate quantities of fresh, active catalyst for every run
- Identical contents to 11-814-32, plus palladium catalyst strip

CampyPak Plus* Hydrogen + CO_2

- Comes with Integral Palladium Catalyst
- Produces microaerophilic environment for growth of *Campylobacter* and *Campylobacter-like* strains
- Assures accurate quantities of fresh, active catalyst for every run
- Produces atmosphere approximately 5 to 12% CO_2; residual atmosphere approximately 5 to 15% oxygen
- Safety ensured by delayed release of hydrogen gas via a paper wick system

Description	Mfr. No.	Cat. No.	Pack of 10
GasPak Plus Hydrogen + CO_2	271040	**B71040**	30.40
CampyPak Plus Hydrogen + CO_2	271045	**11-816-15**	38.50

** Because Campylobacter jejuni produces hydrogen sulfide that poisons the palladium catalyst, fresh catalyst should be placed in the catalyst chambers of the GasPak lid each time the jar is used with a CampyPak* envelope.*

ACCESSORIES

Replacement Parts for BD* BBL* GasPak* Jar Systems

Description	Mfr. No.	Cat. No.	Price
For GasPak 100			
Polycarbonate Jar	260463	**11-814-42**	Ea./192.00
Lid Assembly	260411	**11-814-25†**	Ea./326.00
O-ring Gasket	260413	**11-814-46**	Ea./15.50
Clamp/Thumbscrew Assembly	260414	**11-814-45**	Ea./90.00
Lid w/ O-ring gasket for GasPak 100; does not include clamp screw, catalyst reaction chamber or catalyst charges	260637	**L60637**	Ea./248.50
Rack	260619	**11-814-15**	Ea./120.00
For GasPak 150			
Large Anaerobic Jar	260607	**11-816-4**	Ea./266.30
Lid Assembly	260610	**11-816-7‡**	Ea./493.00
O-Ring Gasket	260614	**L60614**	Ea./46.00
Rack	260618	**11-816-9**	Ea./120.55
General Accessories			
Catalyst Reaction Chamber, screw threaded, w/catalyst	260412	**11-814-44**	Ea./69.00
Catalyst Replacement Charges	270303	**11-814-30**	Pk. of 10/111.50
Envelopes with Palladium Catalyst	271041	**11-816-18**	Pk. of 100/325.85
Tube Holder	260630	**L60630**	Ea./64.60

† Includes two catalyst charges.

‡ With three catalyst reaction chambers and six catalyst charges.

Dry Anaerobic Indicator Strip

Recommended for use with BD* BBL* GasPak Plus* B71040 anaerobic envelopes

- Also usable in gas-generating pouch systems
- Convenient strips change from blue to colorless in the absence of oxygen

STORAGE CONDITIONS:

No refrigeration needed

Mfr. No.	Cat. No.	Pack of 100
271051	**B71051**	86.40

BD* BBL* Bio-Bag* Environmental Chambers

Disposable systems for cultivation and isolation of specific bacteria and cultures

- Create anaerobic, microaerophilic, or CO_2-enriched aerobic environments, depending on bag type
- Transparent pouches allow observation without disturbing the environment

Bio-Bag Type A

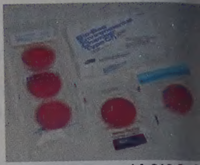
- Maintains anaerobic conditions for 96 hours
- 100 Pack comes with 100 anaerobic generators, 100 anaerobic indicators, 100 palladium catalyst containers, and 100 Type A bags; holds one 100 × 15mm Petri dish or MIC microdilution plate
- 25 Pack comes with 25 anaerobic generators, 25 anaerobic indicators, 25 palladium catalyst containers, and 25 Type A bags, ideal for smaller workloads
- Type A Multi-Plate holds three 100 x 15mm multi-plate dishes or two API ID strips

Bio-Bag Type C

- Maintains CO_2-enriched aerobic environment for 48 hours
- Holds one 100 × 15mm Petri dish or MIC plate
- Comes with 50 CO_2 gas generators and 50 Type C bags
- Gas generators (14-910-33, also sold separately) have a two-year shelf life

Bio-Bag Type Cfj

- For microaerophilic environment
- Supports growth and isolation of *Campylobacter jejuni*
- 100 Pack comes with 100 microaerophilic generators and 100 Type Cfj bags; holds one or two 100 × 15mm Petri dishes or MIC plates
- 25 Pack comes with 25 microaerophilic generators and 25 Type Cfj bags for smaller workloads; media and plates not included



14-910 Seri

REQUIRED ACCESSORIES:

Media and plates

Description	Mfr. No.	Cat. No.	Pack
Bio-Bag Type A	261214	**14-910-5**	100/461.3
	261215	**14-910-6**	25/129.4
Bio-Bag Type A Multi-Plate	4361216	**14-910-7**	50/375.1
Bio-Bag Type C	261510	**14-910-54**	50/80.1
Bio-Bag Type Cfj	261211	**14-910-58**	100/437.
	261212	**14-910-55**	25/117.
CO_2 Indicator Strip	4371055	**B4371055**	50/57.

SAMPLE PREP DEVICES

Fisher Scientific* Inoculating Turntables

Choice of two sizes fits 100 and 150mm Petri dishes

- Hand-operated turntables produce nearly concentric circles of evenly distributed bacterial colonies from edge of dish to center.
- Baked-on acrylic enamel finish with black enamel weighted base
- Raised gripper lip and recessed center disc covered with nonskid rubber
- Choose from two sizes: 4½" dia. (11cm) with tripod (included) for 100mm Petri dishes, and 6" dia. (15cm) (tripod not included) for 100 and 150mm Petri dishes
- 1¼" (3cm) high turntable allows you to steady your forearm on the work surface while plating

08-758Q

8-758-10Q

Diameter × Height	Cat. No.	Each
4¹/2 × 3" (11 × 8cm)	**08-758Q**	181.44
6 × 1¹/4" (15 × 3cm)	**8-758-10Q**	176.25

LOOKING FOR SPREADERS?

We carry a wide variety of cell lifters and spreaders including new Fisherbrand* L-shaped spreaders. For more details,

Visit www.fishersci.com and search for 03392150

*Fisherbrand** Disposable Loops and Needles

No need to flame metal loops and expose to airborne pathogens

13-075 Ser

- Disposable, sterile plastic loops and needles for quantitative procedures such as sampling, serial dilutions and urine counts, as well as for bacterial inoculation
- Molded from biologically inert polymer
- Flexible enough to facilitate streaking, yet rigid enough to penetrate the media for subsurface inoculation
- Gamma-irradiated for sterility in accordance with U.S. Pharmacopoeia, Volume XX
- Combi Loop has a 10μL loop on one end and a 1μL loop on the othe
- All loops and needles are 9" (23cm) long
- Color coded for easy identification

ORDERING INFORMATION:

Loops available individually wrapped or in zip-seal packs of 10; needles are available in zip-seal 10-packs only

Type	I.D.	Color	Packaging	Cat. No.	Pack of	Ca
10μL Loop	3.5mm	Yellow	10/Pk.	**13-070-3**	960/187.00	10 Pk./17
			Individually Wrapped	**13-075-1**	250/48.20	
1μL Loop	0.58mm	Blue	10/Pk.	**13-070-1**	960/193.00	10 Pk./17
			Individually Wrapped	**13-075**	250/54.11	
Combi Loop (10/1μL)	3.5/0.5 8mm	Natural	10/Pk.	**13-075-3**	500/51.00	10 Pk./4
			Individually Wrapped	**13-075-2**	250/48.20	
	0.91/0. 91mm	Natural (clear)	25/Bag	**13-070-4**	----	1000/1
	3.5/0.5 8mm	Light blue	25/Bag	**13-070-5**	----	1000/1
Needle	----	Natural	10/Pk.	**13-070-2**	960/175.36	10 Pk./14

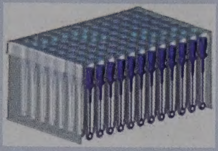
*Trademark. See Trademark Reference.

Prices subject to change.

*Fisherbrand** Astral* Inoculation Device System

Economical, disposable inoculation system designed for safety and dependable sterility

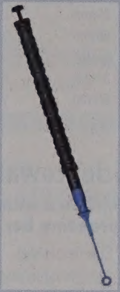
- Calibrated using Evans Blue Dye spectrophotometric procedure and gravimetric method
- Free of DNA, RNase, DNase, Pyrogens, and PCR inhibitors
- Astral loops, needles, and Clone-Piks are packaged static-free into individual tubular chambers, which are then hermetically sealed with aluminum film
- A dust cover is heat-shrunk onto the unit before it is irradiation-sterilized
- Use on an individual basis; or for quantitative procedures such as sampling, urine counts, or serial dilutions



Rack with 10µL Loops (05-664-81)

o use:

- Puncture aluminum film with the handle, pushing down until it attaches to the loop, needle, or Clone-Pik
- Withdraw handle; inoculation device is ready for many applications



05-664-81 Loop with 05 664-83 Handle

RDERING INFORMATION:

vailable 96 to a rack and 10 racks to a case

INCLUDES:

utoclavable handle with every case

Type	Color	Cat. No.	Case of
Astral Loop, 1µL	Yellow	**05-664-80**	960/230.45
Astral Loop, 10µL	Blue	**05-664-81**	960/230.45
Streaking Needle	White	**05-664-82**	960/230.45
Clone-Pik	White	**05-664-84**	960/248.08
Handle	----	**05-664-83**	1/15.22

Oxoid* Disposable Inoculating Loops and Spreaders

Designed for most inoculating applications

Loops

- Available in 1 or 10µL sizes
- Color coded to differentiate between flexible or rigid styles
- Plastic, sterilizable by gamma radiation
- 7 1/2" (19.1cm) in length
- Packaged 25 per resealable bag in packs of 1000

Spreaders

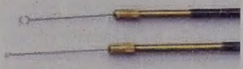
- L-shaped, violet blue plastic, sterilizable by gamma radiation
- 5 1/2" (14cm) in length
- Packaged five per unresealable peel bag in packs of 1000

Type	Color	Packaging	Cat. No.	Pack of 1000
1µL Flexible Loop	Light Green	25 per bag	**OXCOPS1**	89.46
1µL Rigid Loop	Dark Green	25 per bag	**OXCOPH1**	89.46
10µL Flexible Loop	Light Blue	25 per bag	**OXCOPS10**	89.46
10µL Rigid Loop	Dark Blue	25 per bag	**OXCOPH10**	89.46
Spreaders	Violet Blue	5 per bag	**OXCOP174CS0**	181.35

Decon* LeLoop* Inoculating Loops

More economical than platinum or disposable plastic loops

Reusable loops are made of high-quality twisted nichrome wire.



22-032-088 (top); 22-032-089

- Loops slide smoothly across agar surfaces without tearing or gouging
- The nichrome wire cools rapidly, saving time
- Loops are available calibrated or noncalibrated
- Calibrated in accordance with ASM/APHA via Evan's Blue Test and include calibration certificates
- LeLoop loops come without holders, which are available separately

Type	Cat. No.	Pack of	Case of
1µL, Calibrated	**22-032-089**	5/198.50	5 Pk./848.28
10µL, Calibrated	**22-032-088**	5/189.05	5 Pk./807.89
Small, Noncalibrated	**22-032-090**	25/65.17	----
Medium, Noncalibrated	**22-032-092**	25/65.17	----
Large, Noncalibrated	**22-032-091**	25/65.17	----

LOOKING FOR MORE INOCULATING LOOPS AND NEEDLES ?

For a wide range of Remel* sample prep products, including calibrated, reusable, and disposable inoculating loops and needles and colony spreaders,

Visit www.fishersci.com and search for Remel Loops

Decon* LeLoop* Holder

For LeLoop Inoculating Loops

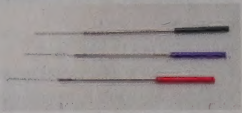
- Nickel-plated brass with insulated handles
- Available in 6 and 8" lengths

Description	Cat. No.	Each	Case of 10
6" Loop Holder	**22-032-093**	37.92	324.08
8" Loop Holder	**22-032-095**	54.07	462.13

Decon* LeStreak* Microstreakers

Perfect for inoculating or transferring microbiological samples

- Use to inoculate or transfer microbiological samples
- Made of high-quality twisted nichrome wire permanently attached to lightweight insulated aluminum handles
- Slide smoothly across agar surfaces without tearing or gouging
- Nichrome wire cools rapidly after flaming
- 1 and 10µL loops are individually calibrated in accordance with ASM/APHA via Evan's Blue Dye Test
- Noncalibrated microstreakers are color coded for easy identification



22-032098 Blue; 22-032097 Green; 22-032096 Red

CERTIFICATIONS:

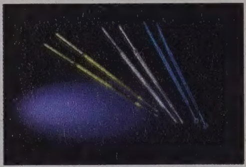
Calibration certificates provided for 1 and 10µL loops

Description	Color	Cat. No.	Each	Pack of 5
1µL, Calibrated	----	**22-032100**	45.33	193.72
10µL, Calibrated	----	**22-032101**	39.27	167.81
Small, Noncalibrated	Blue	**22-032098**	----	47.93
Medium, Noncalibrated	Green	**22-032097**	----	47.93
Large, Noncalibrated	Red	**22-032096**	----	25.61

Nunc* Disposable Loops and Needles

Ideal for semiquantitative inoculating procedures

- Disposable polystyrene loops and needles are radiation-sterilized, eliminating need for flame sterilization
- Hydrophilic treatment is applied to loops and needles during manufacturing to give them liquid adherence properties which prevent accidental discharge of droplets
- Loops are available in 10 and 1µL sizes and color coded for easy identification



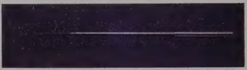
Left to right: Needles, 1µL Loops, 10µL Loops

Type	Color	Mfr. No.	Cat. No.	Pack of	Case of 4 Pk.
10µL Loop	Blue	251586	**13-075-4A**	1000/125.12	427.75
10µL Loop	Blue	254437	**13-075-4C**	600/110.78	378.75
1µL Loop	Clear	253287	**13-075-4B**	1000/125.12	427.75
1µL Loop	Clear	254410	**13-079C**	600/110.78	378.75
Needle	Yellow	253988	**13-079A**	1000/125.12	427.75
Needle	Yellow	254399	**13-079B**	600/110.78	378.75

Decon* LeStab* Microneedles

Perfectly balanced for easy manipulation

- For inoculating or transferring microbiological samples.
- Made of a high-quality Nichrome* wire permanently attached to a lightweight, insulated handle
- Nichrome wire cools quickly after flaming



22-032-099

Cat. No.	Pack of 5
22-032-099	48.10

*Fisherbrand** Cell Spreaders

Nonbreakable and reusable polypropylene spreaders available in 30 and 60mm bar widths

- Use 30mm wide spreaders for prepared biplates; 60mm for 100 to 150mm prepared plates
- Autoclavable

08-100-11 (top), 08-100-10

ORDERING INFORMATION:

Available sterile (individually wrapped) or nonsterile

Size	Color	Cat. No.	Pack of 25	Case of 4 Pack
Nonsterile				
30mm	Blue	**08-100-10**	25.51	84.94
60mm	Yellow	**08-100-11**	24.39	80.96
Sterile				
30mm	Blue	**08-100-12**	112.66	385.16
60mm	Yellow	**08-100-13**	112.66	385.16

Scienceware* Bacterial Cell Spreaders

Feature a smooth triangular end with straight spreading bar

- Stainless steel
- Autoclavable and flame sterilizable

08-769-2A (left), 09-769-2B (right)

Handle Length	Blade Length	Mfr. No.	Cat. No.	Eac
20cm	1.6cm	37736 0006	**08-769-2A**	11.3
20cm	2.5cm	37736 0009	**08-769-2B**	11.3

DILUTION VIALS

Remel* Dilution Bottles NEW

Leakproof, break-proof wide mouth bottles

- Accurate testing assured by pre-filled, buffered (pH 7.2 ±0.2) solution
- Convenient hinged cap opens and closes with one hand
- Sterile contents ensured by gamma sterilization and shrink wrap seal
- Color-coded labels provide quick recognition
- Capacity: 150mL
- Manufactured using ISO 9001:2000-certified processes

INCLUDES:

Certificate of Quality with each box

Description	Label Color	Media Volume	Cat. No.	Case of 7
Butterfield's Medium	Green	90mL	**R23700**	57.58
Butterfield's Medium	Blue	99mL	**R23701**	57.58
Phosphate Buffer w/MgCl	Orange	90mL	**R23702**	57.58
Phosphate Buffer w/MgCl	Red	99mL	**R23703**	57.58

ilu-Lok* Dilution Vials

esigned for testing in the food, dairy, pharmaceutical, ater and cosmetic industries

02-686-200 Series

efilled dilution vials with either 90 or mL of Butterfield's Buffer, Peptone ater (1%), or Phosphate Buffer.

Hinged lid provides leak-resistant, airtight seal and allows for easy one-handed opening

Tamper-evident seal ensures sample integrity

Flat surface on cap top ideal for marking sample identification

All diluents have a pH of 7.2 ±0.2

Wide 45mm opening accommodates larger samples and utensils

Made with optically clear polypropylene allowing for easy visualization of sample

Each lot meticulously tested for sterility, fill volume, pH and toxicity

Certificates of Analysis are available

MPLIANCE:

ution vials meet APHA, AOAC, FDA and USDA guidelines

scription	Volume	Cat. No.	Case of 50
tterfield's Buffer	90mL	**02-686-201A**	91.00
	99mL	**02-686-201B**	91.00
ptone Water, 1%	90mL	**02-686-200A**	172.00
	99mL	**02-686-200B**	172.00
osphate Buffer MgCl$_2$	90mL	**02-686-202A**	91.00
	99mL	**02-686-202B**	91.00

COLONY COUNTERS

sher Scientific* Touch Counter

mbination marker and digital counter

07-905-1

ach time an item is touched, it's utomatically marked by the felt-tip en and counted by the built-in 9999-igit counter

urable aluminum unit has audible lick and zero reset knob

pring-actuated ink reservoir valve eals felt tip when pen is not in use to prevent ink from drying out

ounter supplied with one black disposable pen

ounter length, 7" (18cm)

t Weight	Cat. No.	Each
z. (170g)	**07-905-1**	98.91

LOOKING FOR PLATINUM LOOPS?

To find platinum loops in several sizes,

visit www.fishersci.com and search for Platinum Loops

Reichert* Darkfield Quebec* Colony Counter

Counts bacterial colonies quickly and accurately

RE-3325

Exclusive darkfield design provides even, glare-free illumination. Contrasted against darkfield background, colonies are bright—readily distinguished from other structures in agar. Each probing action into the colony completes a circuit and is automatically recorded (Electronic Register model only).

Key Features:

- Highly polished, annular reflector spreads light from 40-watt bulb uniformly over entire culture plate
- Operating switch conveniently mounted on front of instrument case
- Hinged door provides easy access to change light bulb—just remove two screws
- Container holder adapts for centering round dishes up to 100mm diameter or square culture plates up to 100 × 100mm
- Adjustable focusing rod allows 1.5X lens to be raised or lowered for magnified viewing
- Lens rotates 360° for ready access to culture plates
- Reset bar provides immediate zeroing of five-digit counter
- Built-in tilt leg may be mounted in front or rear; allows convenient tilt angle or may be locked flat to instrument base
- Electronic register model is operated by needle-point probe with magnetic ground; when ground and counting probes both touch conductive agar in dish or plate, an electrical circuit is completed through the integral amplifier to activate the digital counter.

ORDERING INFORMATION:

Dimensions (L × W × H), 10$^{1}/_{2}$ × 9$^{1}/_{4}$ × 10" (27 × 23 × 25cm). Net weight: 12 lb. (5.5kg). With three-wire cord and 1.5X lens,115V 60Hz.

INCLUDES:

White-ruled Wolffheugel guide plate; three-wire cord and 1.5X lens; Electronic Register model also includes probe and ground

CERTIFICATIONS:

UL listed

Model	Mfr. No.	Cat. No.	Each
Standard	13332500	**RE-3325**	842.00
Electronic Register	13332700	**07-908-7**	1728.00

Bel-Art* ScienceWare* Electronic Colony Counter System

Convenient and economical unit — small enough to store in a drawer between uses

- Touch an item, and it's marked by pen and counted at the same time—electronic beep verifies each entry
- Cumulative total appears on easy-to-read, four-digit 1" (25mm) LCD
- Selector switch can be set to count up or down, letting you correct errors or back-count to check total

INCLUDES:

System includes: 7-910-15 Colony Counter, plus Mini Light Box with one counting grid (07-910-11); Mini Magnifier (07-910-13); one 3V battery; Two oil- and water-resistant pen tips (one black, one red) that work on plastic or glass (use ethyl alcohol for easy cleanup); AC Adapter (07-910-20) to provide a convenient, economical system

Description	Mfr. No.	Cat. No.	Each
Colony Counter	37862 0000	**07-910-15**	224.84
Colony Counter System	37863-2000	**01-816-23**	475.59

ACCESSORIES

Scienceware* Replacement Parts for Electronic Colony Counter

Description	Mfr. No.	Cat. No.	Each
3V Battery	37862 0200	**07-910-16**	9.06
Black Pen Tip	37862 0100	**07-910-17**	10.56
Red Pen Tip	37862 0150	**07-910-18**	10.56

EQUIPMENT

BD* BBL* Crystal ID* Systems

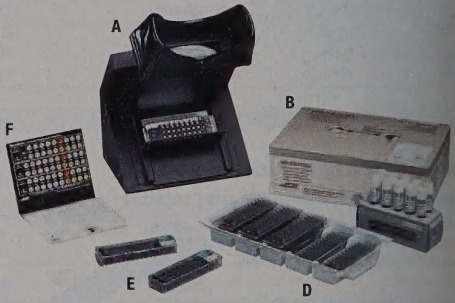
Miniaturized microbial ID systems use modified conventional, fluorogenic and chromogenic substrates

Intended for identification of clinically significant aerobic and anaeorobic gram-negative and gram-positive bacterial pathogens isolated from human specimens. During incubation, the stackable 10-device trays save space and prevent incubator mess. Following incubation, distinct chromogenic and fluorogenic reactions generate a profile number, which is keyed directly into the BBL Crystal MIND Software installed on a laboratory computer.

- Onscreen display identifies the organism, reports on epidemiology, and conveys other pertinent information
- Easy-to-use systems require no pipetting or reagent addition
- Culture colonies are suspended in Crystal Broth; then inoculum suspension is poured directly into the Crystal device
- Wells fill automatically by rocking base
- Lid is snapped onto the device for safety and handling ease
- **Enteric/Non-Fermenter (E/NF) Kit** performs overnight identification of clinically significant aerobic gram-negative *Enterobacteriaceae* isolates, as well as frequently isolated glucose nonfermenting gram-negative bacilli from human origin
- **Anaerobe ID (ANR) Kit** is a four-hour test that identifies clinically significant anaerobes. Separate databases for Schaedler Blood Agar, CDC Anaerobe Blood Agars are included for improved specificity and increased flexibility
- ***Neisseria/Haemophilus* (N/H) ID Kit** identifies *Neisseria, Haemophilus, Moraxella, Gardnerella vaginalis* and other fastidious bacteria in a four-hour test
- **Gram-Positive (GP) Kit** identifies 121 gram-positive bacteria isolated from clinical specimens including both cocci and bacilli in an overnight test
- **Rapid Gram-Positive (RGP) Kit** identifies gram-positive bacteria isolated from clinical specimens including both cocci and bacilli in a four-hour test

INCLUDES:

Lids, bases, inoculum fluid and incubation trays sufficient for 20 determinations



[A] Crystal Panel Viewer [B] BD Crystal Kit [C] Inoculum Fluid [D] Panel Lids and Bases [E] Report Pad (Contact your Fisher Scientific Customer Service Representative to order.) [F] Color Reaction Chart (Contact your Fisher Scientific Customer Service Representative to order.)

STORAGE CONDITIONS:

All systems except the Enteric/Nonfermenter should be refrigerated at 2° to 8°C (36° to 46°F).

Description	Cat. No.	Pack of 20
Enteric/Nonfermenter Kit	**B4345000**	158.07
Anaerobe Kit	**14-910-71**	210.01
Neisseria/Haemophilus Kit	**B4345130**	203.04
Gram-Positive Kit	**B4345240**	151.33
Rapid Gram-Positive Kit	**B4345250**	171.54

LOOKING FOR ACCESSORIES?

For a complete listing of BD* BBL* Crystal ID* accessories, including manual codebooks, fluids, components and software, visit us online.

Visit www.fishersci.com and search for BBL Crystal ID

xoid* Turbidometer

oculum density standardization device for use in disc
sceptibility testing (Kirby-Bauer)

OXAU0108A

s in improving reproducibility of
culum suspension and in acquiring
urate and reliable Antimicrobial
sceptibility Testing (AST) results.

/leasures optical density of a
acterial suspension using 620nm
nfrared light source, comparing
ensity to a 0.5 McFarland turbidity
tandard

ccepts clear glass or plastic 10 to
5mm I.D. tubes

ne-button calibration using prepared McFarland standard—illuminated
isplay will confirm calibration

asy to operate, just insert prepared bacterial suspension into reading
/ell—display will indicate inoculum density

ilute or concentrate inoculum and repeat steps as necessary until
ensity is equivalent to the 0.5 McFarland standard

DERING INFORMATION:

ensions (L × W × H): 7¼ × 5⅜ × 3½" (18 × 13.5 × 9cm). Weight:
2 lb. (0.7kg). Electrical requirements: 110-220V; 47 to 63Hz; output
age: 5V

LUDES:
r manual

COMPLIANCE:
UL listed. CSA approved.

No.	Each
U0108A	1616.98

ew Brunswick Scientific MP-1000
ourMatic* Plate Pourers

itomatic dish fillers aseptically pour and stack up to
0 plates in 20 minutes without operator intervention

14-282 Series

ninate storage and delivery
blems, and need for refrigerated
tes and large inventories.

\djustable dispensing volume
5 to 40mL)

/lembrane-touch keypad

)ptical dish position sensor

'rogrammable plate vibrations

;hoice of carousel sizes to hold
i0 or 100mm plates for cooling

ielectable carousel speed allows
jentle plate transfer for larger working volumes

;am-action pump lever for loading tubing

iermicidal lamp eliminates contamination; dust cover protects
lispense area

\udible alarms signal end of process

DERING INFORMATION:

ight: 80 lb. (36.3kg). Overall dimensions (L × W × H): 24 × 20¼ × 34"
× 51.8 × 86.4cm). 20" (52cm) footprint. Electrical requirements:
)V 60Hz, 4 amps.

ousel Size	Mfr. No.	Cat. No.	Each
nm	M1224 0001	**14-282-18**	16,795.00
mm	M1224 0002	**14-282-19**	16,795.00

Bacti-Cinerator* IV Sterilizer

Safely sterilizes loops and needles by infrared heat

02-544-157

Complete sterilization occurs in only five to seven seconds at optimum temperature of 1500°F. Heat is contained in deep ceramic tube to safeguard laboratory personnel—no open flame. No need to wait for instruments to turn red.

- Prevents infectious spatter and/or cross-contamination
- Ideal for use in anaerobic chambers
- Base is weighted for stability and provides convenient storage for six needle holders

Mfr. No.	Cat. No.	Each
8889004002	**02-544-157**	282.51

Argos* Nova Microcinerator

Burner assembly can be adjusted to five different positions for improved user comfort

03-391-190

- Unit sterilizes metal inoculating loops or needles in five to seven seconds, after reaching optimum sterilization temperature, 815°C (1500°F)
- Infrared heat inside a ceramic tube eliminates the need for dangerous gases and flames, as well as the aerosaling of microorganisms
- Stainless-steel cowl protects the heating element
- Suction cup feet secure the base from moving or tipping

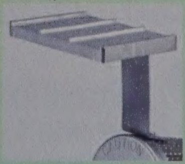
CERTIFICATIONS:
UL listed

Electrical Requirements	Cat. No.	Each
120V	**03-391-190**	275.66
220V	**03-391-191**	275.66

ACCESSORIES

Argos* Nova Three-Place Slide Dryer

Safely dry a variety of samples using the heat from your incinerator



- Aluminum
- Dries slides, sputums, exudates, and other thick mucous fluids
- No morphological distortions
- Easily attaches to the to the top of the burner face plate
- Also dissolves epithelium using the KOH mycology technique

Mfr. No.	Cat. No.	Each
S3012	**03-391-445**	56.22

Replacement Heater Element

For use with the Argos Microcinerator

Electrical Requirements	Mfr. No.	Cat. No.	Each
120V	S3001H	**03-391-192**	107.95
220V	S3022H	**03-391-193**	107.95

Kontes* Williamson Microchemistry Kits

For experiments developed by Kenneth L. Williamson and described in Macroscale and Microscale Organic Experiments (D.C. Heath and Company, Lexington, MA)

Thermoplastic connections without threads or standard taper joints for fast connections.

ORDERING INFORMATION:

In 10L × 13½W × 2½"H (25.4 × 34 × 6cm) storage case with foam insert.

Catalog numbers for all kit components are listed in the accompanying chart; call your Fisher Scientific Customer Service Representative to order replacement parts.

11-304-1

Description	Mfr. No.	Cat. No.	Each
Standard Kit	748100 0000	**11-304-1**	222.15
Intermediate Kit	748110 0000	**11-304-2**	112.67

Component	Mfr. No.	Cat. No.	Standard Kit Quantity	Intermediate Kit Quantity
Connecting Adapter	748001-1000	**K748001-1000**	1	1
Filter Adapter, Pluro Stopper	748002-0000	**K748002-0000**	1	1
Thermometer Adapter	748003-1000	**K748003-1000**	1	1
Centrifuge Tube	411800-1015	**K411800-1015**	1	1
Chromatography Column with Disc	420166-1001	**K420166-1001**	1	1
One-way Stopcock, PE/Nylon	420163-1500	**K420163-1500**	1	1
Viton* Connector	748005-1651	**11-304-17**	1	1
Connector with Support Rod	748005-1000	**K748005-1000**	1	1
Connector only	248005-1001	**K248005-1001**	1	1
Distillation Column	748006-1100	**K748006-1100**	1	1
Distillation Head	748007-1060	**11-304-18**	1	1
Short-neck Flask, 5mL	748008-1005	**K748008-1005**	1	1
Long-neck Flask, 5mL	748009-1005	**K748009-1005**	1	----
Erlenmeyer Flask, 10mL	882300-0010	**K882300-0010**	1	----
Filtering Flask, 25mL	748010-1025	**K748010-1025**	1	1
Hirsch Funnel with Disc	748012-1000	**K748012-1000**	1	1
Reaction Tube, 100mm long	748013-1000	**K748013-1000**	5	2
Pipet, 1mL	764100-1001	**K764100-1001**	1	----
Micro Stir Bar	791145-0021	**K791145-0021**	1	----
Stainless-steel Spatula	748014-1000	**K748014-1000**	1	----
Plastic Syringe	748019-0001	**K748019-0001**	1	1
PTFE Tubing for 20-gauge Needle	420823-0116	**K420823-0116**	2' (0.6m)	2' (0.6m)
Foam Insert	748001-0003	**11-304-16**	1	1
Storage Case	746001-0001	**K746001-0001**	1	1

KONTES* MICROCHEMISTRY KIT COMPONENTS

Available in larger quantities

Visit www.fishersci.com and search for K4201661001

*Trademark. See Trademark Reference.

ontes* Microflex* Microscale Kit $ 14/10 Connection

mponents have threaded $ 14/10 connections for fast assembly

experiments described in *Organic Laboratory Techniques: A Microscale Approach* (Saunders llege Publishing, Troy, MO) and *Microscale Organic Laboratory* (John Wiley & Sons, New York). e Standard Kit (Cat. No. K746000-0000) is required to perform all experiments in those texts. s feature high-temperature-resistant blue nylon connectors ideal for use in nperatures to 200°C (392°F).

K746000-0000

DERING INFORMATION:

10L × 13 ½W × 2 ½"H (25.4 × 34 × 6cm) storage case with foam insert.

talog numbers for all kit components are listed in the accompanying chart; contact ır Fisher Scientific Customer Service Representative to order replacement items. ms without a catalog number in the chart are not available separately.

Description	Mfr. No.	Cat. No.	Each
ndard Kit	746000 0000	**K746000-0000**	331.31
sic Kit	746220 0000	**K746220-0000**	209.46

mponent	Mfr. No.	Cat. No.	Standard Kit Quantity	Basic Kit Quantity
isen Adapter	746010-0000	**K746010-0000**	1	1
nnecting Adapter	746020-0000	**K746020-0000**	1	----
rmometer Adapter	746030-0000	**K746030-0000**	1	----
keted Condenser	746050-0000	**K746050-0000**	1	1
Condenser	746060-0000	**K746060-0000**	1	----
kman Distillation Head	746080-0000	**K746080-0000**	1	1
ig Recrystallization Tube, 2 mL	747332-0002	**K747332-0002**	1	1
ig Recrystallization Plug	747331-0001	**K747331-0001**	1	1
ing Tube	746090-0000	**K746090-0000**	1	1
r Shape Flask, 5 mL, Thin-Wall	746110-0005	**K746110-0005**	1	----
ınd Bottom Flask, 10 mL	746120-0010	**K746120-0010**	1	1
ro Vial, 0.1 mL	60710-110	----	1	----
ro Vial, 3 mL	746100-0003	**K746100-0003**	1	1
ro Vial, 5 mL	746100-0005	**K746100-0005**	1	1
Collection Tube with O-Ring	746130-0000	----	1	----
n Vane	749060-0003	**K749060-0003**	1	----
npression Cap, 20-400	410119-2015	**K410119-2015**	12	7
ing, E.P., Size 112	758292-0112	**K758292-0112**	8	5
tum	774161-0020	**K774161-0020**	4	2
inge, Polyethylene	748019-0001	**K748019-0001**	1	----
Delivery Tube	746140-1020	**K746140-1020**	1	----
ıtrifuge Tube, 15 mL	411800-1015	**K411800-1015**	1	----
uum Adapter	746035-0814	**K746035-0814**	1	1
m Insert Set	746001-0002	----	1	1
rage Case	746001-0001	**K746001-0001**	1	1

Kontes* Standard Threaded Microscale Kit

Features versatile threaded chaste connections which can be assembled "rightside up" or "upside down"

K747000-0000

Contains all components necessary to perform experiments described in the following texts: *Organic Laboratory Techniques: A Microscale Approach*, Pavia, Lampman, Kriz, Engel, Saunders College Publishing: and *Microscale Organic Laboratory*, Mayo, Pike, Butcher, John Wiley and Sons

- Fits easily into lab bench drawers
- Also available in EKONO-CASE*, a low-cost corrugated cardboard alternative to plastic
- With high temperature resistant blue nylon/PTFE connectors
- Ideal for use to 200°C

ORDERING INFORMATION:

Kits are packed in a rugged polyethylene storage case (10"D × 13½" W × 2½"H) with a die cut foam insert

Kit components are listed in the chart below. Contact your Fisher Scientific Customer Service Representative to order replacement items. Items without a catalog number in the chart are not available separately.

Mfr. No.	Cat. No.	Each
747000-0000	**K747000-0000**	406.20

Component	Mfr. No.	Cat. No.	Quantity
Claisen Adapter, 13-425	747100 0000	----	1
Connecting Adapter, 13-425	747120 0000	**K747120-0000**	2
Vacuum Adapter, 13-425, 20-400	747140 0000	----	1
Connector, 13-425 to ¼" - 28	747160 0000	----	1
Connector, 13-425 to Hose Connector	747185 0013	**K747185-0013**	2
Micro Beaker, 10mL	747190 0010	----	2
Connector, 13-425 to 13-425	747205 1313	**K747205-1313**	4
Connector, 13-425 to 20-400	747205 1320	**K747205-1320**	1
Connector, 20-400 to 20-400	747205 2020	**K747205-2020**	1
Water Jacketed Condenser, 13-425	747250 0000	----	1
Drying Tube/Chromatography Column, 50mm, 13-425	747300 0050	**K747300-0050**	2
Air Condenser/Chromatography Column, 100mm, 13-425	747300 0100	----	1
Hickman Distillation Head	747350 0000	**K747350-0000**	1
PTFE Filter, 30 to 60 microns, 13mm	747400 2313	----	6
PTFE Filter Support, 13mm	747405 0013	----	6
Cylindrical Flask, 10mL, 20-400	747500 0010	**K747500-0010**	2
Micro Vial, 1mL, 13-425	60700 1	**06100C**	2
Micro Vial, 3mL, 20-400	60700 3	**06100E**	2
Micro Vial, 5mL, 20-400	60700 5	**06100F**	2
PTFE Spin Vane, 13	749060 0000	**K749060-0000**	2
PTFE Spin Vane, 20	749060 0003	**K749060-0003**	2
Micro Spinbar, 2 × 7mm	791140 0020	**K791140-0020**	2
Compression Cap, 13-425	410119 1307	----	1
Cap O-Ring, Viton*, Size 107	758252 0107	**K758252-0107**	2
Foam Insert Set	747001 0002	----	1
Storage Case	746001 0001	**K746001-0001**	1

*Trademark. See Trademark Reference.

imax* Organic Chemistry Kits

clude an assortment of items required for basic organic laboratory experiments

For education and research

All joints in a kit are the same ＄ size, making it easy to set up a number of procedures

RDERING INFORMATION:

components are listed in the chart below; contact your Fisher Scientific Customer Service Representative orderreplacement items.

K26932-0000

t Description	＄ 14/20 Kit	＄ 19/22 Kit
r. No.	269320-0000	269800-0000
t. No.	**K269320-0000**	**K269800-0000**
ch	426.53	416.37

	＄ 14/20 Kit			＄ 19/22 Kit		
mponent	**Mfr. No.**	**Cat. No.**	**Quantity**	**Mfr. No.**	**Cat. No.**	**Quantity**
eed Adapter	273410-0000	**K273410-0000**	1	273410-0000	**K273410-0000**	1
aisen Adapter	273750-0000	**K273750-0000**	1	272760-0000	**K272760-0000**	1
nnecting Adapter	274950-0000	**K274950-0000**	1	275060-0000	**K275060-0000**	1
tlet Adapter	275410-1420	**K275410-1420**	1	275410-1922	**K275410-1922**	1
cuum Adapter	276400-0000	**K276400-0000**	1	276410-0000	**K276410-0000**	1
ndenser, West	282550-0000	**K282550-0000**	1	282460-0200	**K282460-0200**	1
stillation Column	286820-0110	**K286820-0110**	1	286810-0200	**K286810-0200**	1
sk, 25mL	294000-0025	**K294000-0025**	1	294010-0025	**K294010-0025**	1
sk, 50mL	294000-0050	**K294000-0050**	1	294010-0050	**K294010-0050**	1
sk, 100mL	294000-0100	**K294000-0100**	1	294010-0100	**K294010-0100**	1
sk, 250mL	294000-0250	**K294000-0250**	1	294010-0250	**K294010-0250**	1
sk, 500mL	294000-0500	**K294000-0500**	1	294010-0500	**K294010-0500**	1
nnel, 125mL PTFE	298281-0125	**K298281-0125**	1	295290-0125	**K295290-0125**	1
opper	850500-1420	**K850500-1420**	1	850500-1922	**K850500-1922**	1

ACCESSORIES

Kontes* PTFE Tubing

Chemically inert; suitable for low pressure applications

- 1⁄16 O.D. × 0.030"I.D. × 10'L **K420823-0116**
- Outer diameter tolerances of the 1⁄16" O.D. tubing is held at ±0.001", assuring a good connection with flangeless nuts and ferrules
- Tubing designed for easy connection to Flex-Columns*

Mfr. No.	Cat. No.	Each
420823-0116	**K420823-0116**	18.12

Kontes* Volumetric Class A Heavy-Duty Flask

Wide mouth design with larger neck for easier pipet access

- Tolerance: ±0.05mL
- Supplied with #13 glass stopper
- Large numbers make it easy to identify volume from a distance
- Calibrated to Class A tolerances

K621700-0050

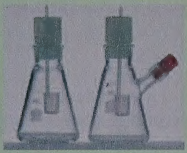
Capacity	Mfr. No.	Cat. No.	Case of 6
50mL	621700-0050	**K621700-0050**	181.50

LOOKING FOR MORE KIMAX* ORGANIC CHEMISTRY KITS?

Visit www.fishersci.com and search for 11-301-20

Kontes* Incubation Flasks

For metabolic studies of biological materials



K882300-0010 (left), K882360-0010 (right)

Ideal for measuring $C_{14}O_2$ yields following incubation, in vitro incubations, insulin bioassays, persulfate oxidations, and distillation of any volatile acid or base. Also suitable for use with phosphate or bicarbonate buffers when acid or alkali is introduced at the end of a reaction.

- Available with or without sidearm
- Flask with sidearm enables syringe needle entry without disturbing established conditions

ORDERING INFORMATION:

Stoppers and center well sold separately.

Capacity	Approx. O.D. × H	Cat. No.	Pack of 12
Without sidearm			
10mL	31 × 50mm	**K882300-0010**	69.15
25mL	40 × 60mm	**K882300-0025**	86.04
With sidearm			
10mL	31 × 50mm	**K882360-0010**	142.65
25mL	40 × 60mm	**K882360-0025**	148.71

Pyrex* Microchemistry Kits

Microchemistry requires smaller volumes than traditional organic chemistry, produces faster reactions and results in less waste

11-300-Series

Kit 11-300-71 has components with $ 5/5, $ 7/10, $ 14/10 and $ 14/20 joints for experiments described in the first edition of *Microscale Organic Laboratory* by Drs. Mayo, Pike and Butcher (John Wiley & Sons, New York). Components in kit have $ 14/10 threaded joints for experiments in that text's second edition. Both kits are foam-packed in 11L × 14½W × 2½"H (28 × 37 × 6cm) sturdy, drawer-size cases.

ORDERING INFORMATION:

Catalog numbers for all kit components are listed in the chart; contact your Fisher Scientific Customer Service Representative to order replacement parts. Items without a catalog number in the chart are not available separately. Case color, orange.

Kit Description	Mfr. No.	Cat. No.	Each
Deluxe Kit with $ 5/5, $ 7/10, $ 14/10 and $ 14/20 Joints	6949M 1	**11-300-71**	383.70
Deluxe Kit with $ 14/10 Threaded Joints	6949M 4	**11-300-74**	323.58

			Deluxe Kit with $ 5/5, $ 7/10, $ 14/10 and $ 14/20 Joints	**Deluxe Kit with $ 14/10 Threaded Joints**
Component	**Mfr. No.**	**Cat. No.**	**Quantity**	**Quantity**
Jacketed Condenser				
$ 7/10 joints	2405 7	----	1	----
$ 14/10 and 7/10 joints	2405 14	**07-721-1B**	1	----
$ 14/10 Threaded joints	2405 20	**11-300-83**	----	1
Air Reflux Condenser				
$ 7/10 joints	2850 7	**11-300-77**	1	----
$ 14/10 and 7/10 joints	2850 14	----	1	----
$ 14/10 Threaded joints	2850 20	**11-300-76**	----	1
Hickman Still Head				
$ 14/10 and 14/20 joints	3570 14	**09-153-4**	1	----
$ 14/10 threaded joints	3570 20	----	----	1
Pyrex Brand Erlenmeyer Flask, 10mL	4980 10	**10-040A**	1	----
Claisen Head				
$ 14/10 and 7/10 joints	9055 14	----	1	----
$ 14/10 threaded joints	9055 20	----	----	1
Capillary Gas Delivery Tube				
$ 7/10 joints	9070 7	**11-301-1**	1	----
$ 14/10 threaded joints	9070 14	**11-300-87**	----	1
GC Collection Tube, $ 5/5 joint	9080	**05-566-33**	2	2
Drying Tube				
$ 7/10 joints	9090 7	**09-214**	2	----
$ 14/10 threaded joints	9090 14	**11-300-88**	----	1
Craig Recrystallization Tube with Glass Plug				
1mL	9100 1	**15-323M**	1	----
2mL	9100 2	**15-323N**	1	----
Craig Receiver Only				
1mL	9100 1A	**11-300-93**	----	1
2mL	9100 2A	**11-300-94**	----	1
Craig Tube Plug, PTFE Fluorocarbon Resin	9100 3	**11-300-95**	----	1
Conical Reaction Vial				
$ 0.1mL, 5/5 joint	9900 1X	----	2	2
0.3mL, $ 7/10	9900 3X	----	1	----
1mL, $ 7/10	9900 1	----	1	----
3mL, $ 14/10	9900 3	**03-338-8**	2	2
5mL, $ 14/10	9900 5	**03-338-10**	1	1

*Trademark. See Trademark Reference.

MICROPLATE INSTRUMENTATION

MICROPLATE DISPENSERS

ioTek* NanoQuot* Microplate Dispenser

ow volume dispensing solution for life science
esearch and drug discovery

ıb-microliter dispensing provides increased assay throughput and lower agent expense.

eatures:

- Non-contact dispensing
- Precise dispensing down to 100nL
- Multiple formats: 96-, 384-, and 1536-well microplates
- Small footprint conserves benchtop space
- Variable microplate heights
- Organic solvent compatible including 100% DMSO
- Simple setup
- Ideal for handling buffers, protein solutions and cells
- Compatible with Bio-Stack* microplate handler (Cat. No. BTBIOSTACK)

PPLICATIONS:

ISA, Cell-based assays, PCR setups, Diluent dispensings, Compound orage

MPLIANCE:

TL Safety Agency marked.

odel	Cat. No.	Each
ANOQUOT	**BTNANOQUOT**	13,900.00

SPECIFICATIONS

Processing Speed	1uL into 384 wells = 35 seconds; 1uL into 1536 wells = 65 seconds
Volume Range	100nL to 40uL with aqueous solutions
Fluid Delivery	Precision solenoid valves with pressurized dispense system
Dispense Accuracy	±5% at volumes ≥1uL; ±10% at 500nL; ±10% at 100nL
Dispense Precision	<5% at volumes ≥1uL; <10% at 500nL; <10% at 100nL
Number of Channels	8
Number of Reagents	1
Dead Volume	<2mL
Sterilization	Chemical
Interface	RS-232
Electrical Requirements	115/230V 50/60Hz
W × D × H	12 × 12.5 × 8" (31 × 32 × 20.3cm)
Weight	15.7 lb. (7.1kg)

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ioTek* µFill* 96-/384-well licroplate Dispensers

tandard and autoclavable models provide accurate
nd precise dispensing without time-consuming
ecalibration and maintenance

BT-AF1000

eliable, economical dispensing unit incorporates a microprocessor-ontrolled syringe pump for optimal performance. Dispense flowrates e user controlled, allowing low- to high-velocity dispensing for any pplication. Robot-compatible carrier accommodates 24-, 96- or 384-well icroplates in standard or deepwell formats. Small footprint allows easy fit thin a laminar flow cabinet.

ey Features

- Volume range is selectable in 1µL increments from 5 to 6000µL per well
- 20µL can be dispensed into a 384-well plate in 12 seconds; into a 96-well plate in four seconds
- Multi-language memory stores up to 75 programs at the touch of a button
- User interface has 2 × 24 LCD character screen, 25 alphanumeric soft keys

odel BT-AF1000A

- Includes autoclavable fluid path for guaranteed sterility

ICLUDES:

-channel manifold for 96- and 384-well microplates, Aerosol cover, perator's Manual, Priming trough self-draining kit

Description	Cat. No.	Each
µFill Microplate Reagent Dispenser	**BT-AF1000**	6600.00
µFill Autoclavable Microplate Reagent Dispenser	**BT-AF1000A**	8229.17

SPECIFICATIONS

Accommodates	24-, 96- and 384-well standard and deepwell microplates; 1 × 8 and 1 × 16 microstrips; flat, U-bottom, and V-bottom microwells
Volume Range (selectable in 1µL increments)	384-well plates, 5 to 1500µL per well; 96-well plates, 10 to 3000µL per well; 24-well plates, 20 to 6000µL per well
Dispense Precision	For 100µL, ≤2% CV typical; for 20µL, ≤5% CV typical
Dispense Accuracy	±1µL typical
Net Weight	20 lb. (8.9kg)
Dimensions (L × W × H)	18 × 15 × 7" (46 × 38 × 18cm)
Electrical Requirements	100–250VAC 50/60Hz, 40A

BioTek* Precision* Microplate Pipetting System

Innovative replacement for manual pipetting

Features

- Available with multichannel manifold for continuous reagent dispensing
- Ideal for routine liquid deliveries such as reagent addition, plate replication, serial dilutions, sample transfer, and mixing within a well
- Configurable multistation platform and XY transport design provide effortless 96- to 384-well plate transfers
- Proprietary pipet technology provides reliable way to pick up and seal standard tips with controlled force
- Open design guarantees compatibility with robotic plate handlers
- Accommodates BioTek and other standard 50 to 250µL pipet tips; and 96- and 384-well flat-, round-, and V-bottom plates

Software

- Preinstalled software enables user to copy existing demonstration protocol and modify it; memory stores up to 80 program files
- User can create, edit, copy, and delete files using external keypad and 24-character LCD—virtually any liquid transfer parameter can be customized
- Configurable aspiration depth ensures that tips don't touch bottom of wells while performing sensitive cell assays
- Programs can be created and run from a PC, or downloaded and run from onboard microprocessor

COMPLIANCE:

CAN/CSA approved

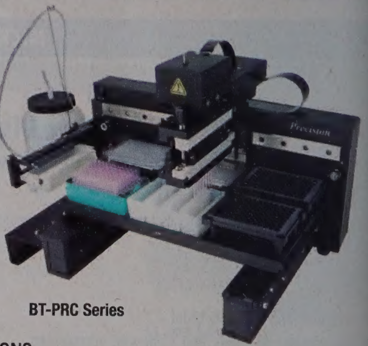
Description	Cat. No.	Each
8-channel Precision	**BT-PRC384**	14,800.00
8-channel Precision (w/manifold)	**BT-PRC384M**	17,708.33
Universal Precision (w/8- and 12-channel capability and manifold)	**BT-PRC384U**	21,041.67

ACCESSORIES

Pipet Tip Adapter

Fit on the deck of the Precision* system to accommodate Fisherbrand* pipet tip box

Cat. No.	Each
BT-7112111	110.41



BT-PRC Series

SPECIFICATIONS

Dispense Precision	≤2%[1]
Dispense Accuracy	≤2%[1]
Throughput	
Pipet Speed	≤100 seconds to dispense 100µL per well of fluid to all wells of a standard 96-well microplate
Manifold Speed[2]	≤50 seconds to dispense 50µL per well of fluid to all wells of a standard 384-well microplate
Pipet Type	Eight-channel, 1–120µL per channel
Manifold Type[2]	Eight-channel, 10–9999µL per channel
Supply Bottle Volume	2L
User Interface	External membrane keypad with 25 alphanumeric keys and a two-line × 24-character LCD
Operating Conditions	15° to 40°C (59° to 104°F)
Relative Humidity	10 to 85% (noncondensing)
Dimensions (L × W × H)	
Instrument only	15 × 21 × 16" (38 × 53 × 41cm)
Instrument w/ optional cabinet	17½ × 23 × 17½" (44 × 58 × 44cm)
Electrical Requirements	100 to 240VAC 50/60Hz, ≤0.7A

[1] *When dispensing 100µL per well of deionized water with 0.1% Tween* 20 with FD&C No. 1 blue dye.*

[2] *Applies only to models that are equipped with manifold.*

BUT WHAT ABOUT THE ASSAY PLATES?

A selection of assay plates and specialty plates is available in the Microplates section of this book.

*Trademark. See Trademark Reference.

Prices subject to change.

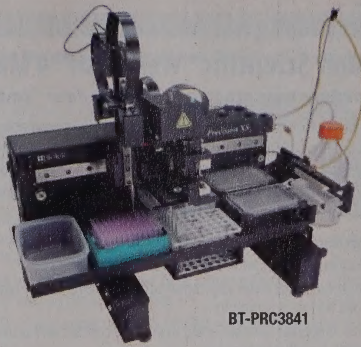
ioTek* Precision* XS Microplate Sample Processor

ur liquid transfer technologies in one instrument

mbines a single-channel pipetting/dispense head, an 8-channel pipetting ad, and an 8-channel bulk reagent dispenser in one compact unit.

y Features

- ffordable alternative to high-end liquid handlers
- Jser-configurable, multi-station platform provides flexible experiment design
- ntuitive Precision Power* PC software simplifies programming of applications from hit-picking to multi-well serial dilutions
- Compatible with a variety of labware including test tubes, reagent eservoirs, and microplates
- /olume ranges from 1µL
- Fits into most biological safety cabinets and chemical fume hoods



BT-PRC3841

scription	Cat. No.	Each
ngle- and 8-channel pipets w/Precision wer software	BT-PRC3841	26,500.00
ngle- and 8-channel pipets w/autoclavable bulk agent dispenser and Precision Power software	BT-PRC3841M	29,900.00

LOOKING FOR PIPETTER TIPS?

For a full selection of tips, see the Pipetter Tips Section.

SPECIFICATIONS

Accommodates	Any test tube, microplate (up to 384 well), or reservoir
Precision	<1%[1]
Accuracy	<1.5%[1]
Throughput	
Single-channel	<22 minutes to aspirate/dispense 100µL per well of fluid to all wells of a standard 96-well microplate; <4 minutes for dispense only
8-channel	3 minutes to aspirate/dispense 100µL per well of fluid to all wells of a standard 96-well microplate; 14 seconds for dispense only
Pipet Type	Single- (5µL–200µL) or 8-channel (1µL–120µL)
Dispenser Type	Single- (5µL–10mL) or 8-channel (10µL–10mL)
Supply Bottle Volume	Single-channel, 125mL; 8-channel, 1L
Dimensions (L × W × H)	
Instrument only	16 × 21 × 16" (41 × 53 × 41cm)
Electrical Requirements	100 to 240VAC 50/60Hz, ≤0.7A

[1] *When pipetting/dispensing 100µL per well of deionized water with 0.1% Tween* 20 with FD&C No. 1 blue dye*

---

ioTek* Bio-Stack* Microplate Stacker

mpact, flexible unit is compatible with BioTek's icroplate washers, dispensers, and detection systems

ndles up to 30 standard-height microplates in the interchangeable input d output stacks; plates can be added to the input stack while the unit is nning for continuous operation. To ensure reliable transport, sensors rify microplate presence and gripper mechanism lifts plates from below. livers or retrieves a microplate in eight seconds.

y Features

- Restacking feature allows plates to be placed in the output stack in their original order instead of the reverse order
- Can be operated without an external computer when used with the ELx405* Microplate Washer, µFill* Microplate Dispenser, or NanoQuot* Microplate Dispenser
- Vhen used as a batch processor for detection equipment, interfaces seamlessly with BioTek's Gen5* Data Analysis Software
- Small footprint fits easily in most standard laboratory hoods

RDERING INFORMATION:

mensions with microplate stacks: 18½L × 7W × 25"H .9 × 17.8 × 63.5cm). Weight: 24 lb. (10.9kg).

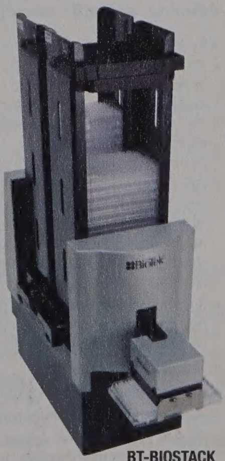
ease indicate desired accessory kit when ordering.

INCLUDES:

Communication cable; two microplate stacks (30-plate capacity); operator's manual; one instrument accessory kit

CERTIFICATIONS:

CE marked, ETL Listed



BT-BIOSTACK

Electrical Requirements	Cat. No.	Each
100–250 VAC 50/60Hz	BT-BIOSTACK	12,500.00

MICROPLATE WASHERS

Fisher Scientific* Wellwash* 4 Mk2 Automatic Microplate Washer

Complete user programmability—four "smart cards" for routine protocols

Compatible with all styles of 96-well plates. Programmable card enables user to set volume, wash cycles, wash type, soak time, and mode of dispensing in as little as 10 seconds. Allows up to three no-soak washes after processing program. Or select one of the four standard program cards with routine protocols, included.

Unique coaxial wash-head design

- Ensures washing with low residual volumes
- Large-diameter outer aspiration tubes improve liquid removal from the walls and well periphery
- Inner dispense needles avoid microwell contact and provide a clean profile to reduce carryover
- "Top washing" capability allows removal of proteinaceous material; vortex effect increases effective dilution and removal of floating conjugate

Inexpensive, plastic 8- and 12-way wash heads

- Interchangeable
- Wash/Waste bottle caps release quickly for easy buffer changes
- Unit is completely sealed against spills
- Inline liquid trap helps prevent washing solvents from reaching the pump
- Shut off automatically if a leak is detected or if not in use for more than 30 seconds

LOOKING FOR A FILTER BOTTOM PLATE WASHER?

BioTek ELx50 Filter Microplate Washer.

Visit www.fishersci.com and search for 12-566-700

INCLUDES:

8- and 12-way wash heads; Two wash/waste bottles; Four standard program cards; One programmable card; One replacement tubing pack; Spare fuses; Operation manual

14-386-29

Model	**4 Mk2**
Wash/Waste Bottle Capacity	2L each
Priming Consumption	15 to 20mL
Operating Pressure (Self limiting)	6.5psi
Precision	<5% CV
Residual Volume	<5mL
User-programmable Card	
Volume	0 to 750µL (50µL increments)
Washes	1 to 16
Soak Time	0 to 10 min. (½ min. increments)
Pause	0 to 60 sec.
Weight	22 1/16 lb. (10kg)
Dimensions	28L × 8⅝W × 6¼"H (71 × 22 × 16cm)
Power Consumption	300w
Cat. No.	**14-386-29**
Each	5047.00

[1] *Manufacturer recommends use with flat-bottom microplates for best results.*

BioTek* ELx405* Microplate Washers

Reliable, versatile microplate washers for applications from basic ELISA to cell and bead washing

Key Features

BT-ELX405 Series

- All models include overfill protection, priming trough (no prime plate is needed), unique fluid/flow detection, crosswise aspiration, and a built-in positive displacement pump
- Flexible software provides 75 programs with Pre/AutoPrime, 10 cycles/wash, and control of dispense height, aspiration height, aspiration delay, soak, shake, aspiration rate, and horizontal aspirate and dispense position
- Built-in positive displacement pump requires no pressure containers and features a sealed pump, unlimited reservoir options (standard or user-supplied), and variable dispense volumes and flowrates
- Vacuum pump is external
- Can be interfaced into standard robotic systems with ActiveX component
- Valve modules available for connection of up to four buffer solutions
- Models with Ultrasonic Advantage* offer an ultrasonic self-cleaning feature for effortless washer manifold maintenance

Auto Plate Washers

- Superior, cost-effective 96-well plate washing
- Features lower background absorbance values and higher signal-to-noise ratio than typical ELISA assays

ELx405 Select Plate Washers

- Unique design washes both 96- or 384-well plates without hardware changes
- Ideal for hard to wash or loosely adherent cell-based assays
- Dual-Action manifold provides independent control of both dispense and aspirate manifolds

ELx405 HT Plate Washer

- High-speed washer designed for 384-well microplates
- Dual-Action manifold provides independent control of aspirate and dispense positions
- Customized routines provide simple maintenance, true overfill washing and overflow protection capability
- Angled dispense tubes and variable dispense rates allow gentle cell washing

ELx405 Magna Plate Washer

- Washes 96-well plates for standard protocols, but is also specially designed for use with magnetic bead assays
- Second carrier positions the magnet plate close to the microplate bottom, holding beads tightly during the aspiration step
- Fully programmable washer provides controlled shaking and soaking for superior magnetic bead washing; can be integrated into automated systems

CERTIFICATIONS:

CE marked, ETL listed

Contd. on next page.

*Trademark. See Trademark Reference.

oTek* ELx405* Microplate Washers, Contd.

PECIFICATIONS

ate Type	Flat-, round-, or V-bottom plates/strips in 96-well array; Select and HT models, also 384-well array
ispense Volume	25–3000µL/well
ispense Precision	<3% CV (96 wells)
esidual Volume	<2µL/well (average, 96 wells)
rocessing Time	<30 sec. (3 cycles, 300µL/well, 96 wells); <80 sec. (3 cycles, 100µL/well, 384 wells)
oak Time	1–600 sec.
terfaces	RS-232
ectrical Requirements	100–240VAC 50/60Hz
× W × H	17 × 14 × 9" (43.2 × 35.6 × 22.9cm)

odel	Cat. No.	Each
to Plate (96-well)		
tandard	**BT-ELX405R**	6800.00
/Valve module	**BTELX405VR**	8000.00
/Ultrasonic Advantage	**ELX405RS**	8800.00
/Valve module and Ultrasonic Advantage	**ELX405VRS**	10,000.00
lect (switchable 96- and 384-well)		
tandard	**BT-ELX405U**	12,200.00
/Valve module	**BT-ELX405UV**	13,400.00
/Ultrasonic Advantage	**ELX405US**	14,200.00
/Valve module and Ultrasonic Advantage	**ELX405UVS**	15,400.00
lect, optimized for Cell Washing		
tandard	**BT-ELX405UCW**	12,700.00
/Ultrasonic Advantage	**ELX405UCWS**	14,700.00
/Valve module and Ultrasonic Advantage	**ELX405UCWVS**	15,900.00
(switchable 96- and 384-well)		
/Ultrasonic Advantage	**ELX405HTS**	16,900.00
/Valve module and Ultrasonic Advantage	**ELX405HTVS**	18,100.00
tandard	**ELX405HT2**	16,300.00
/Valve module	**ELX405HT2S**	18,300.00
/Ultrasonic Advantage	**ELX405HTV2**	17,500.00
/Valve module and Ultrasonic Advantage	**ELX405HTV2S**	17,500.00
agna (magnetic bead)[†]		
tandard	**BT-ELX405MR**	11,200.00
/Valve module	**BT-ELX405MVR**	12,400.00

Compatible with 96-well plates only

ACCESSORIES

Waste/Dispense Systems

For Biotek* ELx405 Microplate Washers

- Include tubing, bottles, vacuum pump

ORDERING INFORMATION:

Electrical requirements: 110V.

For Use With	Cat. No.	Each
Standard models	**BT-7100547**	1300.00
Valve module models	**BT-7100529**	1100.00

BioTek* ELx50* Microplate Strip Washer

Syringe-drive fluid delivery system for precise control

Key Features

BT-ELX508

- Washes single strips or full plates
- Efficient washing ensures low background absorbance and small residue volumes
- Self-contained and programmable
- Micro-controlled, syringe-drive positive-displacement pump fluid delivery system for precise control
- Safety features include aerosol cover, built-in decontamination routine, and isolation of electronics from fluidics
- Choice of 8-, 12-, 16-channel manifold models with and without valves

APPLICATIONS:

Suitable for EIA, fluorescence, chemiluminescence, RIA, DNA probe, and cellular assays

INCLUDES:

QC report and Performance Verification Data Sheet; Aerosol cover; Built-in pumps; Accessory package including bottles, tubing, and maintenance kit

CERTIFICATIONS:

CE marked, ETL listed

For in vitro diagnostic use

SPECIFICATIONS

Accommodates	8-well models accept all 96-well plates, 1 × 8 strips; 12-well models accept all 96-well plates, 1 × 12 strips; 16-well models accept all 384- or flat bottom 96-well plates, 1 × 8 flat-bottom strips
Manifold Type	8-, 12-, or 16-channel
Residual Volume	4µL/well
Variable Fluid Flowrates	150 to 1000µL/well/sec.
Soak Times	1 to 600 sec.
Dispense Volumes	25 to 3000µL/well
Wash Cycles	1 to 10
Display	2 × 24-character LCD
Software	Field upgradable
User-programmable protocols	75
Functions	Wash, prime, dispense, aspirate, rinse, maintenance routines
Interface	RS-232
Net Weight	20 lb. (8.9kg)
Dimensions (L × W × H)	16 × 14 × 6½" (40 × 35 × 16.25cm)
Electrical Requirements	100–250VAC 50/60Hz

Description	Cat. No.	Each
Standard Washer		
8-Well Strip	**BT-ELX508**	4800.00
12-Well Strip	**BT-ELX5012**	4800.00
16-Well Strip	**BT-ELX5016**	5800.00
Washer with valves and automatic buffer switching		
8-Well Strip	**BT-ELX508V**	5900.00
12-Well Strip	**BT-ELX5012V**	5900.00
16-Well Strip	**BT-ELX5016V**	6900.00

Nunc-Immuno* Washers

Economical, low-maintenance, and adjustable—manually clean many different well types and shapes

- Coaxial design eliminates overfilling and cross-contamination
- Three sizes available: 8- and 12-channel versions for 96-well plates; 16-channel version for 384-well plates
- Autoclavable at 121°C (250°F)

12-565-380 Series

ORDERING INFORMATION:

Dimensions, 10¼L × 4½W × 3¾"H (26 × 11.5 × 9.5cm).

INCLUDES:

Two thumbscrews and one ruler when required adjustments for washing alternative well types; rack for secure storage support; spare parts kit for routine maintenance; cleaning wire

Description	Mfr. No.	Cat. No.	Each
8-Channel Washer	470174	**12-565-380**	620.00
12-Channel Washer	470175	**12-565-381**	726.00
16-Channel Washer	470176	**12-565-382**	823.15

MICROPLATE READERS

Fisher Scientific* Multiskan* Microplate Readers

Advanced photometric readers provide fast measurements and excellent response

Units can be computer controlled or run with the onboard Windows*-based Ascent* software. Software also allows you to set up assays and manipulate the results with curve-fitting, user-defined spreadsheets, and automatic data processing tools.

- Read 96-well plates in only five seconds
- Can be easily connected to a robotic system for increased throughput
- Provide onboard shaking for added flexibility
- Utilize a high-quality optical system that ensures excellent accuracy and reproducibility

Additional Features

- Accept up to eight filters
- Available with an integral printer (Model MCC/340)

Software Features

- Offers limitless assay and data storage capabilities
- Features endpoint, kinetic, and agglutination reading modes
- Allows flexible cutoff calculations and curve-fit algorithms for data manipulation
- Stores up to 64 assay protocols in extended memory

14-386-26

SPECIFICATIONS

Model	Multiskan Plus	Multiskan MCC/340
Spectral Range	400 to 750nm	340 to 750nm
Readout Range	0–3.5Abs	0–3.5Abs
Measurement Range	0–2.5Abs at 405nm	0–2.5Abs at 405nm
Accuracy	±2% or 0.002Abs	±2% or 0.002Abs
Typical Accuracy	±1% [0–2.0Abs]	±1% [0–2.0Abs]
Precision	CV <0.5% or 0.007Abs	CV <0.5% or 0.007Abs
Typical Precision	CV <0.2%	CV <0.2%
Linearity	±2% or 0.007Abs	±2% or 0.007Abs
Typical Linearity	±1.5%	±1.5%
Filter Arrangement	Filter wheel, 3 filters: 405, 450, 620nm	Filter wheel, 8 filters: 340, 405, 414, 450, 492, 540, 620, 690nm
Onboard Software		
Measurement Modes	Single wavelength, dual wavelength, two-point, kinetic, multiwavelength	Single wavelength, dual wavelength, two-point, kinetic, multiwavelength
Curve Fits	Linear regression, point-to-point	Linear regression, point-to-point, cubic spline
Cut-off Calculations	Fixed	Fixed and floating
Shaking	Onboard	Onboard
Built-in Printer	----	Yes[2]
Interface Connections	Serial, Parallel	Serial, Parallel
L × W × H	12⅝ × 16½ × 5½" (32 × 42 × 14cm)	12⅝ × 16½ × 5½" (32 × 42 × 14cm)
Electrical Requirements	110V 50/60Hz	110V 50/60Hz
Cat. No.	**14-386-27**	**14-386-26**
Each	5245.00	6277.00

[1] Specifications are set for flat-bottomed microplates; the manufacturer recommends their use for best results.

[2] For use with onboard software only.

ioTek* Synergy* 2 Multi-Detection Microplate Reader

esigned for life science and drug discovery applications

luorescence Intensity, Time Resolved Fluorescence, Fluorescence
olarization, Glow and Flash Luminescence, UV-Vis Absorbance, FRET,
R-FRET, BRET, area scanning, spectral scanning

)ptical system includes a narrow band monochromator, optimized
ilter/dichroic mirror pairing, and three broad spectrum light sources, SQ
enon Flash, Tungsten Halogen and High Energy DPR Xenon Flash

)edicated optical elements optimized for each specific modality for low
mits of detection in one compact instrument

lodular design allows for easily upgrading elements

)ptimized throughput for screening assays in 6- to 1536-well plates
uminescence in 6- to 384-well plates) and PCR plates

ien5* Software included and controlled through USB or serial port

emperature control from 4° above ambient to 50°C

LFPTAD includes two syringe pumps with dispensing volume of
-1000µL in 1µL increments

PLICATIONS:

eening assays (e.g. fluorescence polarization, TR-FRET, luminescence);
ding assays; Ion channel assays; Quantitative assays (DNA, protein);
etic assays; Gene expression assays (GFP, Luciferase); ELISA assays;
 proliferation, Cytotoxicity

MPLIANCE:

 in vitro diagnostic use (Except in the European Union); CE and NRTL
ety Agency marked

del	Mfr. No.	Cat. No.	Each
th luminescence	BTSL	**11-120-518**	14,500.00
th luminescence and dual reagent ector	SLD	**11-120-519**	19,900.00
th fluorescence and luminescence	SLF	**11-120-520**	22,900.00
th luminescence, fluorescence, sorbance and injector	SLFAD	**11-120-517**	37,400.00
th fluorescence intensity and larization, luminescence, UV-visible sorbance	SLFPA	**11-120-522**	32,500.00
th fluorescence intensity and larization, luminescence, UV-visible sorbance, dispenser	SLFPAD	**11-120-523**	39,400.00
th all detection modes	SLFPTA	**11-120-514**	39,900.00
th all detection modes and injector	SLFPTAD	**11-120-515**	46,500.00

11-120-514

SPECIFICATIONS

Wavelength Range	200-999nm, 1nm increments
Bandpass	2.4nm
Dynamic Range	0 - 4.0 O.D.
Resolution	0.001 O.D.
Pathlength Correction	Yes
Monochromator Wavelength Accuracy	±2nm
Monochromator Wavelength Repeatability	±0.2nm
O.D. Accuracy	<1% at 2.0 O.D. typical <3% at 3.0 O.D. typical
O.D. Linearity	<1% from 0 to 3.0 O.D. typical
O.D. Repeatability	<0.5% at 2.0 O.D. typical
Stray Light	0.03% at 230nm typical
Reading Speed	96: 11 seconds 384: 22 seconds 1536: 42 seconds
Fluorescence Intensity	
Sensitivity	Fluorescein 1pM typical
Wavelength Range	200-700nm (900nm option)
Dynamic Range	>6 decades
Luminescence	
Sensitivity	30 amol ATP typical (flash)
Wavelength Range	300-700nm
Dynamic Range	>6 decades
Fluorescence Polarization	
Sensitivity	3mP at 1nM fluorescein typical
Wavelength Range	200-700nm (900nm option)
Time-Resolved Fluorescence	
Sensitivity	Europium 60fM typical
Wavelength Range	200-700nm (900nm option)
Physical Characteristics	
Electrical Requirements	250 Watts max.
W x D x H	17 × 17.5 × 14.5" (43.5 × 44.5 × 37.3cm)
Weight	60 lb. (27kg)

LOOKING FOR MORE?

Looking for BioTek Synergy 4 Multi-Detection
Microplate Readers? Find them at...

12-566-701

Visit www.fishersci.com and search for Synergy 4 Multi-Detection

LOOKING FOR ASSAY SYSTEMS?

Check out Promega* Dual-Luciferase Reporter (DLR) Assay Systems in
the Cell Biology section.

BioTek* Gen5* Data Collection and Analysis Software

Compatible with BioTek microplate readers

- Contemporary interface provides easy access to all major functions of the software including reading parameters, plate layout, data reduction, online help, wizards, tutorials and sample protocols
- Quick launch buttons on the welcome screen provide links to recently used files, pre-programmed protocols and other key functions such as Quick Read and System Test
- StepWise* tools allow limitless combinations of procedural steps and data reduction criteria for a wide variety of applications in a logical and clearly defined sequence that is easily viewed on the screen
- Analyze data on a single plate or across multiple plates in an experiment
- Report and PowerExport* builders are fast and flexible output tools to produce publication-ready reports using data matrices, statistics tables, protocols and plate information
- For compliance to 21 CFR Part 11, Gen5 Secure provides system, data and protocol protection
- Multiple user definitions and permission levels make it easy to comply with laboratory policies.

ORDERING INFORMATION:

System Requirements:

- Windows* XP or Windows 2000 (Professional Editions)
- Pentium* III-Class PC (or compatible) processor (500MHz or higher)
- 512 MB RAM or higher
- 2 GB hard drive space or higher
- Designed for XGA resolution at 1024 × 768 or higher
- CD-ROM readable drive
- Keyboard
- Mouse
- Microsoft* Internet Explorer* v 5.0 or higher (for online help)
- Microsoft Excel* 2000 or later (for PowerExport feature)

Model	Application	Cat. No.	Each
Gen5	For all life science research needs	**11-120-510**	2500.00
Gen5 ELISA	For basic routine assays	**11-120-511**	1500.00
Gen5 RC	For fast, easy data collection and export	**11-120-512**	750.00
Gen5 Secure	For 21 CFR Part 11 Compliance	**11-120-513**	3500.00

BioTek* Synergy* HT Multidetection Microplate Reader

Integrates fluorescence, time-resolved fluorescence, absorbance, and luminescence

Key Features

- Reads 6- to 384-well plate formats, including PCR trays and Terasaki plates
- Offers automatic top and bottom epifluorescence read modes, user-controlled shaking, 4-Zone* temperature incubation to 50°C, and optional reagent dispensers
- Adjusts probe height automatically
- Scans entire well to provide accurate quantification of cellular contents on 6-, 12-, 24-, or 48-well plates
- Utilizes user-specified optical matrix to provide data appropriate to well size
- Compatible with automated systems

Additional Features

- Fluorescence determinations performed using a tungsten halogen lamp and PMT detector, increasing sensitivity and repeatability
- Interference filters prevent light leakage from excitation to emission wavelengths, increasing wavelength specificity—ideal for compounds with small Stoke's shifts
- Powerful Gen5* reader control and data analysis software automatically runs the reader, analyzes results, and generates a customized report—all with one mouse click
- Optional Gen5 Secure software meets 21 CFR Part 11 requirements for electronic signatures and audit-trail documentation, such as multilevel user password protection and protocol/data audit trails and is available at an additional charge
- Unit conforms to regulatory requirements for in vitro diagnostic use

INCLUDES:

Four default excitation filters (360/40, 485/20, 530/25, 590/20); Four default emission filters (460/40, 528/20, 590/35, 645/40), Gen5 software; Serial cable (null modem, 9- to 25-pin female)

NOTE:

Default wavelength filters other than those listed can be specified at ordering

CERTIFICATIONS:

CE marked, ETL Listed

BioTek
Synergy HT

BT-SIAFR Series

Features	Cat. No.	Each
3mm top probe, 5mm bottom probe, incubation to 50°C, time-resolved fluorescence capability	**BT-SIAFRT**	27,605.00
3mm top probe, 5mm bottom probe, incubation to 50°C, time-resolved fluorescence capability, two reagent dispensers	**BT-SIAFRTD**	34,687.50

SPECIFICATIONS

Excitation Range	200–700nm
Emission Range	300–700nm (800nm with red extended option)
Dynamic Range	0–99,999 (fluorescence, luminescence); 0–4.0 O.D. (absorbance)
Absorbance Range	200–999nm (1nm increments)
Accuracy	±1% at 2 O.D., typical
Linearity	<1% from 0–3.0 O.D., typical
Repeatability	<0.5% at 2 O.D., typical
Bandpass	2.4nm (absorbance)
Sensitivity	2.5pg/mL SF, typical
Filter Wheel	4-position wheel with four excitation filters (360/40, 485/20, 530/25, 590/20) and four emission filters (460/40, 528/20, 590/35, 645/40)
Detection Method	Fluorescence, time-resolved fluorescence, absorbance, luminescence
Read Methods	Endpoint, kinetic, well-area scanning
Light Source	Tungsten halogen and xenon lights
Interface Connections	Bidirectional RS-232
L × W × H	16 × 15 × 10" (41 × 38 × 25cm)
Electrical Requirements	100–240V 50/60Hz

LOOKING FOR MICROPLATES?

Check out the Microplates section for a wide selection of microplates, including assay plates.

ioTek* FLx800* Microplate Fluorescence Readers

ioose from models with top probe or top and bottom probes

- All models read 6-, 12-, 24-, 48-, 96-, and 384-well plates
- Onboard software stores 55 programmable protocols, up to 75 custom programs, and eight microplate assay results
- Two-line, 24-character LCD and menu-driven software simplify operation and programming
- Onboard diagnostic testing utilizes three methods—an optical self-test, a universal test plate, and a "wet test"—to check instrument performance and optical specifications, and provides either soft or hardcopy results
- Fiber-optic probes provide excellent sensitivity over a wide range
- All units feature convenient front-panel access to accessories

ftware Features

- Make the microplate reader fully computer controllable with optional BioTek Gen5* software (for more information about Gen5 software, see page 1118, at left.)
- Onboard data analysis provides curve-fitting options, including linear egression, polynomial, point-to-point, cubic spline, and four-parameter ogistic curve fits

odel Features

- Top probe is ideal for reading solid black plates
- Bottom probe reads covered plates
- Combination of top and bottom probes offers the most flexibility and ncludes automated probe switching for added convenience
- Extended-range photomultiplier tube (PMT) extends emission ange to 800nm
- Shaking and incubation options are ideal for temperature-sensitive assays
- Single reagent injector is suitable for ion-uptake assays and lash luminescence

RDERING INFORMATION:

tional Gen5* software (11-120-510) automatically runs the reader, alyzes the results, and generates a customized report. Or choose Gen5 cure software (11-120-513) to meet requirements of 21 CFR Part 11.

CLUDES:

5 and 360nm excitation filters, 528 and 460nm emission filters, rial and printer cables, Power cord

MPLIANCE:

nforms to UL 3101-1

RTIFICATIONS:

marked and ETL Listed. Certified to CAN/CSA C22.2 No. 1010.1-92 and 61010-1, including amendments 1 and 2.

BT-FLx800 Series

NOTE:

Supplied filters can be exchanged for other filters at time of purchase at no extra cost so that you can configure the unit to meet your specific application.

Model	Features	Cat. No.	Each
FLx800T	Top probe	**BT-FLX800T**	12,700.00
FLx800TB	Top and bottom probes	**BT-FLX800TB**	14,300.00
FLx800TBI	Top and bottom probes, incubation to 50°C, and shaking	**BT-FLX800TBI**	15,300.00
FLx800TBID	Top and bottom probes, incubation to 50°C, shaking, and single reagent dispenser	**BT-FLX8TBID**	18,000.00
FLx800TBIE	Top and bottom probes, incubation to 50°C, shaking and (extended range PMT)	**FLX800TBIE**	15,347.00

SPECIFICATIONS

Excitation Range	300–650nm
Emission Range	340–650nm (340–800nm for FLX800TBIE)
Dynamic Range	5 decades (0–99,999)
Sensitivity (Top)	160pg/mL methylumbelliferone (0.13 picomoles/well)
Sensitivity (Bottom)	10pg/mL sodium fluorescein (5.3 femtomoles/well)
Microplate Capability	6-, 12-, 24-, 48-, 96- and 384-well
Filter Arrangement	4-position wheel; 485 and 360 excitation filters, 528 and 460 emission filters supplied
Detection Method	Fluorescence, luminescence
Light Source	Quartz halogen, 1000-hour life
Display	Two-line, 24-character LCD
Program Capacity	55 programmable protocols (up to 75 custom programs) and 8 assay results
Curve Fits	Linear regression, polynomial, point-to-point, cubic spline, and 4-parameter logistic curve fits
Interface Connections	RS-232-C serial interface; parallel printer interface
L × W × H	16 × 15½ × 9" (41 × 39 × 23cm)
Electrical Requirements	100-240VAC 50/60Hz, 24V external transformer

BioTek* PowerWave* Microplate Spectrophotometers

Designed to run 24 hours a day, seven days a week

Key Features

- Suitable for any UV/Vis application between 200 to 999nm including direct DNA/RNA quantitation, and DNA purity
- Feature monochromator with xenon flash lamp, 5nm bandpass, user-programmable shake timing and frequency, and 4-Zone* natural convection incubation to 50°C
- Quickly and accurately read 96- or 384-well microplates, depending on model
- With PowerWave and Gen5* software, use automatic pathlength correction for direct nucleic acid quantification or to convert cuvet-based assays into microplate format
- Also accept 1cm Bio-Cell* vessels for standard spectrophotometer uses when used with optional adapter (BT-7270512)

Additional Features

- Select wavelengths in 1nm increments—without the use of filters
- Read endpoint, kinetic and spectral scans, and well scans in three read modes (normal, rapid, and sweep)
- Quickly perform spectral scans and analysis of multiple wells with overlay scans for fast comparisons
- Allow automatic pathlength correction to 1cm values for high throughput nucleic acid analysis
- Compatible with automated systems
- Conforms to regulatory requirements for in vitro diagnostic use

Software Features

- Powerful Gen5 control and analysis software automatically runs the reader, analyzes the results and generates a customized report, all with one mouse click
- Choose optional Gen5 Secure software (11-120-513) when compliance to 21 CFR Part 11 is essential

INCLUDES:

Gen 5 data analysis software, Serial cable (null modem, 9- to 95-pin female), Bidirectional RS-232 interface

BT-RPRWI

CERTIFICATIONS:

CE marked, ETL Listed

SPECIFICATIONS

Absorbance Range	0–4.0Abs
Wavelength Range	200 to 999nm (PowerWave HT and PowerWave); 340 to 999nm (PowerWave HT 340 and PowerWave 340)
Accuracy	<1% ±0.10 O.D. typical
Linearity	±1% typical
Repeatability	0.5% ±0.005 O.D. typical
Bandpass	5nm
Read Methods	Endpoint, kinetic, spectral and linear scanning
Read Speeds	Normal: 96 wells in 20 seconds; 384 wells in 384 seconds Rapid: 96 wells in 11 seconds; 384 wells in 23 seconds Sweep: 96 wells in 5 seconds; 384 wells in 11 seconds
Light Source	Xenon flash lamp
Interface Connections	Bidirectional RS-232
L × W × H	16 × 8½ × 8½" (41 × 22 × 22cm)
Electrical Requirements	100–240VAC 50/60Hz

Model	PowerWave HT	PowerWave	PowerWave HT 340	PowerWave 340
Absorbance Range	200–999nm	200–999nm	340–999nm	340–999nm
For Microplate Type	96- and 384-well	96-well	96- and 384-well	96-well
Temperature Control	Ambient +4° to 50°C	Ambient +4° to 50°C	Ambient +4° to 50°C	Ambient +4° to 50°C
Software Included	Gen5	Gen5	Gen5	Gen5
Cat. No.	**BT-RPRWI**	**BT-RPRWI96**	**BT-RPRWI340**	**BT-RPRW34096**
Each	24,687.50	19,600.00	14,400.00	12,900.00

ACCESSORIES

Bio-Cell* Vessel and Adapter

For use with PowerWave* HT, PowerWave XS, and µQuant* Microplate Spectrophotometers

- Adapter accepts up to eight Bio-Cell vessels

Description	Cat. No.	Each
Bio-Cell Vessel	**BT-7272051**	160.60
Bio-Cell Plate Adapter	**BT-7270512**	95.48

*Trademark. See Trademark Reference.

Prices subject to change.

ioTek* PowerWave* XS Spectrophotometer

rformance and versatility in an economical unit

BT-MQX200R

y Features

- rovides 4-Zone* temperature control, user-programmable shaking, robotic ompatibility, and ultrafast sweep read mode as standard features
- ccepts any microplate type from 6- to 384-well plates
- lso accepts 1cm Bio-Cell* vessels for standard spectrophotometer uses vhen used with optional adapter (BT-7270512), at left
- onserves bench space through its compact design

ditional Features

- ffers tunable wavelength selection from 200 to 999nm in 1nm increments vithout the need for filters
- ncorporates a natural-convection heating system to reduce evaporation rom the microplate
- urrounds the microplate with four independently controlled heaters in ne reading chamber to allow no more than ±5°C variation across the nicroplate at 37°C
- llows access from three sides of the microplate for robot compatibility
- owerful GEN5* data analysis software (included) enables automatic athlength correction for direct nucleic acid quantification or to convert uvet-based assays into microplate format
- leets 21 CFR Part 11 requirements when used with optional GEN5 ecure software (11-120-513)

CLUDES:

n5 software, Serial cable, Power cord

RTIFICATIONS:

marked, ETL listed

in vitro diagnostic use (except in the European Union)

t. No.	Each
-MQX200R	15,500.00

SPECIFICATIONS

Wavelength Range	200–999nm
Accuracy	1% ±0.01 O.D. typical
Linearity	±1% typical
Repeatability	0.5% ±0.005 O.D. typical
Bandpass	2.4nm
Read Methods	Endpoint, kinetic, spectral, and well-area scanning
Reading Speeds	Normal: 96 wells in 49 sec., 384 wells in 150 sec.; Rapid: 96 wells in 40 sec., 384 wells in 112 sec.; Sweep: 96 wells in 14 sec., 384 wells in 26 sec.
Light Source	Xenon flash lamp
Temperature Control	Ambient +4° to 50°C
Shaking	User-programmable duration and intensity (low, medium, high, and variable)
L × W × H	8½ × 8½ × 16" (21.6 × 21.6 × 40.6cm)
Electrical Requirements	100–240VAC 50/60Hz

LOOKING FOR A DIFFERENT SPECTROPHOTOMETER?

Make sure you see our Spectrophotometers section for even more choices.

---

ioTek* µQuant* Microplate Spectrophotometer

ads 6-, 12-, 24-, 48-, 96-, 384-well, and Terasaki plates

BT-MQX200

- uitable for all UV/Vis applications
- unable in 1nm increments throughout its broad wavelength range
- eatures automatic pathlength correction, automated determination of rotein and nucleic acid quantitation, and spectral scanning, which finds eak absorbance in any microwell
- reprogrammed to perform over 25 routine biological assays, ncluding 260/280 ratio, oligo quantitation, protein concentration, nd enzyme assays
- Jtilizes a xenon flash lamp for high power with excellent reproducibility n low UV applications

RDERING INFORMATION:

tional Gen5* data analysis software (11-120-510) provides simple, t data collection, calculation, exporting and reporting. Or choose Gen5 cure software (11-120-513) to meet requirements for 21 CFR Part 11.

RTIFICATIONS:

marked

t. No.	Each
-MQX200	11,900.00

SPECIFICATIONS

Absorbance Range	0.000 to 4.000Abs
Wavelength Range	200 to 999nm
Accuracy	±1%, 0.010Abs from 0 to 2.000Abs; ±3%, 0.010Abs from 2.000 to 3.000Abs
Linearity	±1% from 0 to 2.000Abs; ±3% from 2.000 to 3.000Abs
Repeatability	±1%, 0.005Abs from 0 to 2.000Abs; ±3%, 0.005Abs from 2.000 to 3.000Abs
Bandpass	2.4nm
Read Methods	Endpoint, spectral scanning, kinetic (via computer control)
Reading Speed	45 sec.
L × W × H	16 × 15 × 7" (41 × 38 × 18cm)
Weight	25 lb. (11.3kg)

BioTek* ELx808* Absorbance Microplate Readers

Store up to 55 user-programmable protocols

Key Features

- Precise, accurate, and repeatable units read 96-well microplates
- Readers can perform multiple assays per plate
- On-board diagnostic self-test may be used with an optional calibration test plate to easily confirm and document performance
- Kinetic rate, R^2, or onset time is reported without a PC
- Linear well scanning is ideal for agglutination assays

Additional Features

- Staggered optical design eliminates channel-to-channel crosstalk
- Reference channel rolls optical signal for uniform channel-to-channel signal
- Curve fitting options include linear, 4-P, 2-P (logit/log), cubic, quadratic, cubic spline, and point-to-point
- Measurements can be read in intervals as short as six seconds
- ETL listed

Model ELx808

- Data analysis options include data transformation formulas, assay validation, and control validation
- Optional 4-Zone* Temperature Control improves reproducibility in enzyme kinetic reactions

Models ELx808IU and EL808IU-PC

- Additional data analysis options include cutoff formulas, endpoint and kinetic analysis
- Supplied with 4-Zone Temperature Control
- Extended dynamic range
- EL808IU-PC includes Gen5* data analysis software

BTELX808 Series

ORDERING INFORMATION:

Optional Gen5 Data Analysis Software (11-120-510) provides simple, fast data collection, calculation, exporting and reporting. Or select Gen5 Secure software to meet requirements of 21 CFR Part 11.

INCLUDES:

Filters (see chart), tungsten halogen light source, parallel printer cable, null modem serial cable

CERTIFICATIONS:

CE marked

Model	ELx808	ELx808IU	EL808IU-PC
Wavelength Range	380 to 900nm	340 to 900nm	340 to 900nm
Dynamic Range	0 to 4.0 O.D.	0 to 4.0 O.D.	0 to 4.0 O.D.
Accuracy	<1% at 2.5 O.D., <2% at 3.5 O.D.	<1% at 2.5 O.D., <2% at 3.5 O.D.	<1% at 2.5 O.D., <2% at 3.5 O.D.
Linearity	<1% at 2.5 O.D. (typical)	<1% at 2.5 O.D. (typical)	<1% at 2.5 O.D. (typical)
Repeatability	<0.5% at 2.5 O.D.; <1.5% at 3.5 O.D.	<0.5% at 2.5 O.D.; <1.5% at 3.5 O.D.	<0.5% at 2.5 O.D.; <1.5% at 3.5 O.D.
Bandpass	10nm (typical, filter dependent)	10nm (typical, filter dependent)	10nm (typical, filter dependent)
Read Method	Endpoint, kinetic, linear scanning	Endpoint, kinetic, linear scanning	Endpoint, kinetic, linear scanning
Reading Speed	96 wells in 12 seconds (single wavelength), 20 seconds (dual wavelength), or 6 seconds (kinetic single wavelength)	96 wells in 12 seconds (single wavelength), 20 seconds (dual wavelength), or 6 seconds (kinetic single wavelength)	96 wells in 12 seconds (single wavelength), 20 seconds (dual wavelength), or 6 seconds (kinetic single wavelength)
Filter Arrangement	6-position wheel; 405, 450, 490, and 630nm supplied	6-position wheel; 340, 405, 450, 490, and 630nm supplied	6-position wheel; 340, 405, 450, 490, and 630nm supplied
Temperature Control	----	From ambient +4° to 50°C	From ambient +4° to 50°C
Shaking	Linear; low, medium, high, and variable speeds	Linear; low, medium, high, and variable speeds	Linear; low, medium, high, and variable speeds
L × W × H	16 × 15½ × 8¾" (40.6 × 39.4 × 22.2cm)	16 × 15½ × 8¾" (40.6 × 39.4 × 22.2cm)	16 × 15½ × 8¾" (40.6 × 39.4 × 22.2cm)
Electrical Requirements	100–240VAC 50/60Hz	100–240VAC 50/60Hz	100–240VAC 50/60Hz
Software	----	----	Gen5 software
Cat. No.	**BTELX808**	**BTELX808IS**	**BTEL808IUPC**
Each	6979.17	7700.00	8200.00

ioTek* ELx800* Absorbance Microplate Readers

ore up to 75 custom assay definitions and eight test results

y Features

- × 24-character LCD and convenient soft-keys for easy use
- nboard data analysis offers extensive curve fitting options: linear, cubic, uadratic, 4-P, log-logit, cubic-spline, and point-to-point, plus endpoint nd kinetic measurement
- hree modes of performance and optical specifications testing: optical elf-test, a calibration test plate, and a "wet test"

ditional Features

- uto or manual plate layout for blanks, controls, standards, and samples
- ompatible with optional Gen5* software
- S-232-C bidirectional serial and parallel printer external outputs

dels

- Lx800 has 6-, 12-, 24-, 48-, and 96-well microplate read modes
- Lx800NB features software to read 384-well and 60-/72-/96-well erasaki plates
- Lx800UV contains optics to extend wavelength range down to 340nm
- L800-PC includes Gen5 ELISA Software

BTELX800 Series

DERING INFORMATION:

ional Gen5 Data Analysis Software (11-120-510) provides simple, fast a collection, calculation, exporting and reporting. Or choose Gen5 Secure tware to meet requirements for 21 CFR Part 11 (11-120-513).

COMPLIANCE:
ETL listed

CERTIFICATIONS:
CE marked

del	ELx800	ELx800NB	ELx800UV	EL800-PC
ctral Range	400 to 750nm	400 to 750nm	340 to 750nm	400 to 750nm
sorbance Range	0.000 to 3.000Abs	0.000 to 3.000Abs	0.000 to 3.000Abs	0.000 to 3.000Abs
curacy	±1%, ±0.010Abs (from 0 to 2.000Abs @405nm)	±1%, ±0.010Abs (from 0 to 2.000Abs @405nm)	±1%, ±0.010Abs (from 0 to 2.000Abs @405nm)	±1%, ±0.010Abs (from 0 to 2.000Abs @405nm)
solution	0.001Abs	0.001Abs	0.001Abs	0.001Abs
earity	±1% (from 0 to 2.000Abs @405nm), ±3% (from 2.000 to 3.000Abs @405nm)	±1% (from 0 to 2.000Abs @405nm), ±3% (from 2.000 to 3.000Abs @405nm)	±1% (from 0 to 2.000Abs @405nm), ±3% (from 2.000 to 3.000Abs @405nm)	±1% (from 0 to 2.000Abs @405nm), ±3% (from 2.000 to 3.000Abs @405nm)
peatability	±0.5%, ±0.005Abs (from 0 to 2.000Abs @405nm)	±0.5%, ±0.005Abs (from 0 to 2.000Abs @405nm)	±0.5%, ±0.005Abs (from 0 to 2.000Abs @405nm)	±0.5%, ±0.005Abs (from 0 to 2.000Abs @405nm)
roplate Capability	6-, 12-, 24-, 48-, 96-well	6-, 12-, 24-, 48-, 96-, 384-well and 60-/72-/96-well Terasaki	6-, 12-, 24-, 48-, 96-well	6-, 12-, 24-, 48-, 96-well
er Arrangement	5-cavity wheel; 405, 450, 490, and 630nm supplied	5-cavity wheel; 405, 450, 490, and 630nm supplied	5-cavity wheel; 340, 405, 450, 490, and 630nm supplied	5-cavity wheel; 405, 450, 490, and 630nm supplied
nning Speed	96 wells in 30 seconds	96 wells in 30 seconds	96 wells in 30 seconds	96 wells in 30 seconds
ctrical Requirements	100-240VAC 50/60Hz	100-240VAC 50/60Hz	100-240VAC 50/60Hz	100-240VAC 50/60Hz
tware	----	----	----	Gen5 ELISA software
. No.	**BTELX800**	**BTELX800NB**	**BTELX800UV**	**BTEL800PC**
h	5200.00	5700.00	5700.00	5700.00

NEED A LUMINOMETER FOR YOUR LIFE SCIENCE APPLICATION?

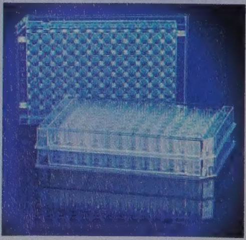
Check out the Luminometers section.

MICROPLATES

ASSAY PLATES — 96-WELL CLEAR

*Fisherbrand** 96-Well Plates

For EIA and other applications


21-377-204

- Polystyrene
- Results with CV of <5% between wells and replicate values within ±10% of the mean
- Background of wells is within 0.005 absorbance units from mean
- Small lip at each well top and ridges between wells prevent well-to-well contamination
- Flat well bottom surface provides greater area for binding
- Rows and columns are labeled alphanumerically; plates stack for easy storage
- Specially treated to ensure high binding of hydrophobic or partially hydrophobic molecules like viral antigens and proteins

ORDERING INFORMATION:
Nonsterile microplates are supplied in bulk packs of 50 plates. Sterile microplates come individually wrapped with lids in packs of 40 plates.

CERTIFICATIONS:
Cat. No. 21-377-203 is supplied with a certificate attesting to its high-binding capabilities.

Color	Well Volume	Sterile	Certified	Cat. No.	Case of
Clear	450µL	Yes	No	**21-377-205**	40/164.50
Clear	450µL	No	Yes	**21-377-203**	50/125.00
Clear	450µL	No	No	**21-377-204**	50/125.00

*Fisherbrand** Clear Polystyrene 96-Well Plates

Designed for compatibility with automated equipment

12-565-501

- Polystyrene
- Plates stack easily with or without lids
- Available in flat or round well shapes
- Nonsterile
- Untreated, provides uniform surface properties
- Use 12-565-511 lid (sold separately)

Description	Well Shape	Working Volume	Cat. No.	Case of
Clear polystyrene plate	Round	250µL	**12-565-500**	80/110.53
Clear polystyrene plate	Flat	350µL	**12-565-501**	80/115.10
Lid	----	----	**12-565-511**	180/199.62

Costar* 96-Well EIA/RIA Plates

Provide uniform binding, high optical clarity, and low background absorption

07-200-35

- Medical-grade polystyrene
- Available with Easy-Wash*, flat, or round well shapes
- Easy-Wash wells have tapered bottoms, eliminating the "dead zone" that can be missed by automatic plate washers
- High- or medium-binding surfaces

NOTE:
For information on Corning* EIA Certification, see below.

Well Shape	Well Volume	Packaging	Mfr. No.	Cat. No.	Case
Medium Binding					
Easy-Wash	360µL	25/pack	3368	**07-200-641**	100/200.6
Flat	360µL	1/tray	3591	**07-200-36**	50/138.7
Flat	360µL	25/pack	9017	**07-200-98**	100/132.9
Round	360µL	25/pack	3797	**07-200-105**	100/133.0
High Binding (with Corning Certified Surface Chemistry)					
Easy-Wash	360µL	25/pack	3369	**07-200-642**	100/269.6
Flat	360µL	1/tray	3590	**07-200-35**	100/280.8
Flat	360µL	25/pack	9018	**07-200-39**	100/269.5
Round	360µL	25/pack	3366	**07-200-640**	100/289.6

Corning* EIA Certification

Costar* EIA/RIA plates and strip plates have surface chemistries designed for research and in vitro diagnostic assays; are treated for uniform binding and provide consistent, reproducible results. High-binding surface has 500ng mouse IgG/cm^2 capacity; medium-binding surface, 250ng IgG/cm^2. Strip plates are certified to have the properties shown below.

Binding Property	Well-to-Well Coefficient of Variation	Average High and Low Wells from the Mean	Background Absorbance Units from the Mean
High	≤3%	±8%	±0.005
Medium	≤5%	±15%	±0.005

Costar* Clear Polystyrene 96-Well Plates

Ideal for serial dilutions, hemagglutination, or precipitation assays

07-200-656

- Medical-grade polystyrene
- Flat, round, or V-shaped bottoms
- Untreated or tissue culture treated

Well Shape	Lid	Sterile	Packaging	Mfr. No.	Cat. No.	Case of
Untreated						
Flat	Yes	Yes	20/pack	3370	**07-200-656**	100/228.24
Round	Yes	Yes	20/pack	3788	**07-200-760**	100/223.55
Round	No	Yes	Individual	3367	**07-200-704**	50/146.25
Round	No	Yes	25/pack	3795	**07-200-103**	100/167.28
Round	No	Yes	25/pack	3798	**07-200-106**[1]	100/195.98
V-shaped	No	Yes	Individual	3896	**07-200-107**	48/163.03
V-shaped	No	No	25/pack	3897	**07-200-108**	100/167.37
V-shaped	No	No	25/pack	3898	**07-200-109**[1]	100/238.58
Tissue Culture Treated						
Flat	Yes	Yes	20/pack	3628	**07-200-706**	100/287.04
Round	Yes	Yes	20/pack	3358	**07-200-720A**	100/325.43
Round	No	Yes	25/pack	3360	**07-200-720**	100/210.96

[1] *Processed to improve hydrophilicity; for example, for hemagglutination assays.*

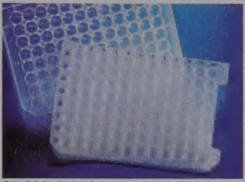
rning* Clear Polypropylene 96-Well Expanded-Volume Plates

fer reduced space requirements while maintaining full trument compatibility

-bottom wells

tandard height format fully onforms to SBS standards

ntreated



07-202-503 shown with 08-202-504 (sold separately)

DERING INFORMATION:
kaged in bags of 10

RTIFICATIONS:
tified DNase- and RNase-free

or	Well Volume	Sterile	Mfr. No.	Cat. No.	Case of 50
ar	450µL	Yes	3343	**07-202-502**	216.24
ar	450µL	No	3344	**07-202-503**	248.68

ACCESSORIES

Sealing Mat for 96-Well Polypropylene Microplates

Firm seal prevents evaporation and gas exchange

- Precise fit for Corning* 96-well expanded-volume polypropylene microplates (07-202-502, -503)
- Solvent-resistant polypropylene provides compatibility with many common organic solvents including DMSO, ethanol, and methanol
- Ideal for use in long-term, low temperature compound storage

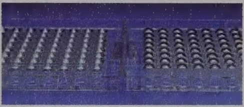
Fits	Mfr. No.	Cat. No.	Case of 50
Corning 96-Well Expanded-Volume Microplates	3346	**07-202-504**	384.47

star* 96-Well General Assay Plates

onomical general rpose plate

lexible untreated PVC

deal for serial dilutions, emagglutination or precipitation ssays, and other procedures



07-200-100, 07-200-99

ORDERING INFORMATION:
Lids are not available.
Supplied in packs of 25.

Well Shape	Well Volume	Sterile	Mfr. No.	Cat. No.	Case of 100
Flat	250µL	No	2595	**07-200-33**	147.99
Round	260µL	No	2797	**07-200-99**	147.97
V-shaped	260µL	No	2897	**07-200-100**	147.97

unc-Immuno* 96-Well Plates

signed for quantitative and qualitative solid-phase munoassays

olystyrene

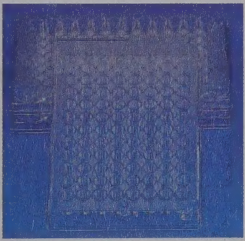
elect C-shaped, flat-bottom, or U-shaped wells

abeled with rows and columns

it standard equipment

laxiSorp* treated surface provides igh protein affinity for biochemical nd immunological applications

olySorp* treated surface provides igh hydrophobic molecule affinity nd is particularly suited to ntigens, including viral antigens



12-565-136

DERING INFORMATION:
side dimensions: 86 × 128mm

RTIFICATIONS:
. Nos. 12-565-135 and -267 are certified for adsorption of IgG; CV of % between wells; all results ±10% from mean; and background of all lls ±0.005 absorbance units from mean.

ll Shape	Well Volume	Mfr. No.	Cat. No.	Case of 60
iSorp Surface Treatment				
haped	350µL	430341	**12-565-261**	183.25
haped	350µL	446612	**12-565-267†**	207.25
t-bottom	400µL	442404	**12-565-136**	183.25
t-bottom	400µL	439454	**12-565-135†**	207.25
haped	300µL	449824	**12-565-137**	183.25
/Sorp Surface Treatment				
haped	350µL	446140	**12-565-266**	179.50
t-bottom	400µL	475094	**12-565-138**	179.50
haped	300µL	475434	**12-565-139**	179.50

ith certificate.

Nunc* Immunology Transferable Solid Phases (TSP)

Similar to a microplate lid but with 96 sterile, built-in pins

- Polystyrene
- Position of pins matches well positions in 96-well microplate or module
- Usable when replating and screening microplates of transformants or library clones, screening hybridoma cultures or expression libraries, or adsorbing mixed proteins or antibodies directly from cultures
- Precoat pins with antigen or antibodies to assay specific analyte from cultures
- With reservoir tray

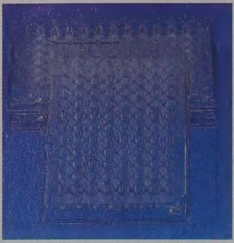
12-565-143 (microplate not included)

Mfr. No.	Cat. No.	Case of 50
445497	**12-565-143**	299.62

Nunc* MicroWell* 96-Well Plates

Untreated polystyrene plates

- Feature conical, flat-bottomed, or V-shaped wells
- Available with sterilized or nonsterilized wells
- Stackable



12-565 Series

ORDERING INFORMATION:

Dimensions: 86 × 128mm

Well Shape	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of
Conical-bottom	300µL	Yes	Yes	249935	**12-565-481**	80/216.21
Conical-bottom	300µL	Yes	Yes	249952	**12-565-460**	160/439.50
Conical-bottom	300µL	No	Yes	249662	**12-565-215**	50/130.55
Conical-bottom	300µL	No	Yes	249940	**12-565-487**	80/181.01
Conical-bottom	300µL	No	No	249570	**12-565-216**	180/282.50
Flat-bottom	400µL	Yes	Yes	266120	**12-566-202**	100/275.84
Flat-bottom	400µL	Yes	Yes	243656	**12-565-311**	108/296.25
Flat-bottom	400µL	No	Yes	269787	**12-565-210**	50/131.41
Flat-bottom	400µL	No	No	269620	**12-565-226**	60/96.30
Round-bottom	300µL	Yes	Yes	268200	**12-565-331**	160/440.00
Round-bottom	300µL	No	Yes	262162	**12-565-212**	50/131.13
Round-bottom	300µL	No	No	262146	**12-565-213†**	135/209.75
Round-bottom	300µL	No	No	268152	**12-565-214**	180/280.00

† *Bulk pack.*

Nunc* MicroWell* F96 Plates for Automation

Skirt design facilitates manipulation by robotic arm

- Clear polystyrene
- High plate flange and identical lid height allow automated handling without changing the setting
- Lids feature condensation rings to reduce evaporation and prevent well-to-well crosstalk (not available with all plates)
- Bar coding available
- 96 flat-bottom wells, except Cat. No. 12-565-720, which features round-bottom wells
- Working range: 50–250µL/well
- Plates available treated or untreated
    - **Untreated plates** for enzymatic determinations, storage, dilutions, and general applications
    - **Collagen I**, **Nunclon*Δ**, and **Poly-D-Lysine** plates optimized for cell based assays
    - **MaxiSorp***, **MediSorp***, **MultiSorp***, and **PolySorp*** for solid phase immunoassays

12-565 Series

ORDERING INFORMATION:

Dimensions: 86 × 128mm

CERTIFICATIONS:

Cat. Nos. specified in chart are certified for adsorption of IgG; CV of <5% between wells; all results ±10% from mean; and background of all wells ±0.005 absorbance units from mean.

Lid	Sterile	Bar Code	Mfr. No.	Cat. No.	Case of
Untreated					
Yes	Yes	Yes	260887	**12-565-364**	160/499.25
Yes	Yes	No	260860	**12-565-363**	160/439.50
Yes	No	No	260895	**12-565-365**	160/329.00
No	No	Yes	260844	**12-565-362**	180/418.00
No	No	No	260836	**12-565-361**	180/292.00
Collagen I					
Yes	No	No	152038	**12-565-908**	20/146.20
Nunclon Δ					
Yes	Yes	No	167008	**12-565-66†**	50/179.25
Yes	Yes	No	161093	**12-565-383†**	160/498.00
Yes	Yes	No	168136	**12-565-720‡**	160/498.00
No	Yes	No	168055	**12-565-64†**	50/145.50
Poly-D-Lysine					
Yes	No	No	152039	**12-565-901**	20/146.20
MaxiSorp					
No	No	No	456537	**12-565-377†**	180/620.25
MediSorp					
No	No	No	467320	**12-565-730†**	60/207.25
MultiSorp					
No	No	No	467340	**14-962-23†**	60/207.75
PolySorp					
No	No	No	456529	**12-565-376**	180/537.25

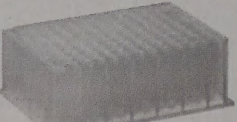
† *With certificate.*
‡ *Round-bottom wells.*

Thermo Scientific* Microtiter* 96-Well Deep Well Microplates

NEW

Ideal for use with Thermo Scientific* KingFisher* 96 Purification Systems

- Virgin-grade polypropylene
- Chemical resistant and biologically inert
- Temperature range: -196° to +121°C
- V-shaped wells
- Automation friendly



14-387-91

Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 50
Clear	2mL	No	Yes	95040460	**14-387-91**	245.00
Clear	2mL	No	No	95040450	**14-387-90**	235.00

ACCESSORIES

Cap Mats for Deep Well 96-Well Plates

NEW

For use with Cat. Nos. 14-387-90 and 14-387-91

14-387-94 shown with 14-387-91 sold separately

Sterile	Mfr. No.	Cat. No.	Case of
Yes	9503233	**14-387-94**	25/96.00
No	9503230	**14-387-93**	50/164.00

*Trademark. See Trademark Reference.

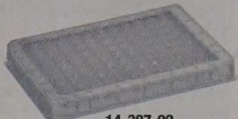
Prices subject to change.

hermo Scientific* Microtiter* olypropylene 96-Well Microplates

NEW

eal for sample collection, storage, combinatorial emistry, and library applications

- /irgin-grade polypropylene
- hemical resistant nd biologically inert
- emperature range: -196° o +121°C
- /-shaped wells
- utomation friendly



14-387-92

or	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 50
ar	500µL	No	No	95040410	**14-387-92**	129.00

hermo Scientific* Microtiter* 96-Well nmunoassy Plates

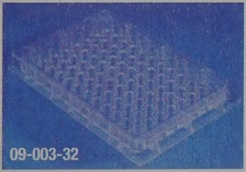
ffer excellent optical and binding precision

- igid polystyrene
- aised-rim wells prevent cross-contamination
- lat bottoms
- ach well offers 3.2cm² of binding surface
- ompatible with all common instruments
- **nhanced binding surface** provides a high-binding irradiated surface or increased binding affinity for hydrophilic proteins and complexes; uaranteed coefficient of variation (CVs) surface for most applications
- **Iniversal binding surface** provides consistent medium binding affinity or hydrophobic complexes and proteins

or	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of
anced Binding						
ar	450µL	No	No	95029330	**21-377-270**	50/125.00
versal Binding						
ar	450µL	Yes	Yes	95029780	**21-377-315**	40/158.00
ar	450µL	No	No	9502227	**21-377-269**	50/96.00

hatman* UNIPLATE* 96-Well lear Microplates

e-piece molded collection plates designed to suit a riety of applications



09-003-32

- olystyrene
- Vithstand low temperatures 20°C) for long-term storage
- lat or V-shaped well bottoms
- onform to ANSI/SBS (American lational Standards Institute, ociety of Biomolecular Screening) tandards for compatibility with ost microplate readers and automated plate-handling devices
- Intreated

TE:

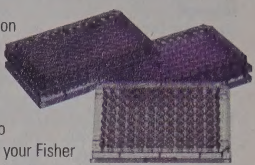
ck and white UNIPLATE microplates are also available on p. 1131.

ll Shape	Well Volume	Mfr. No.	Cat. No.	Pack of
	300µL	7701-1350	**09-003-32**	50/110.57
	650µL	7701-1651	**PF77011651**	50/114.42
	800µL	7701-1800	**09-003-35**	25/111.04
hape	250µL	7701-1250	**PF77011250**	50/143.21

BD Falcon* 96-Well Assay Plates

Consistent dimensions and binding characteristics

- Clear polystyrene
- Low well-to-well coefficient of variation
- Maximum working volume: 250µL
- Untreated surface



08-772 Series

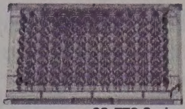
NOTE:

BD Falcon 96-Well Assay Plates are also available tissue culture treated; contact your Fisher Scientific Customer Service Representative for details

Well Shape	Well Volume	Lid	Sterile	Pkg.	Mfr. No.	Cat. No.	Case of
Flat	300µL	No	No	10/bag	353228	**08-772-3C**	60/130.93
U-bottom	300µL	No	Yes	5/bag	353918	**08-772-7**	50/108.80
U-bottom	300µL	No	No	5/bag	353910	**08-772-5**	50/102.80

BD Falcon* 96-Well Assay Plates for Immunology

Choice of polystyrene or polyvinyl chloride



08-772 Series

Polystyrene Plates

- Feature consistent dimensions and binding characteristics for low well-to-well % CVs
- Lids (08-772-113) sold separately

Flexible Polyvinyl Chloride (PVC) Plates

- Easy to cut apart
- Optional one-way locking PVC lid minimizes evaporation

Color	Well Shape	Sterile	Packaging	Mfr. No.	Cat. No.	Case of 50
Polystyrene						
Clear	Flat	No	5/bag	353915	**08-772-5A**	118.79
PVC						
Clear	Flat	No	25/box	353912	**08-772-9**	63.30
Clear	Round	No	25/box	353911	**08-772-8**	60.68

ACCESSORIES

Assay Plate Sealing Film

Nonsterile, precut, clear film with adhesive. Not recommended for cell-based assays.

Mfr. No.	Cat. No.	Case of 200
353073	**08-772-2D**	150.46

ASSAY PLATES — 96-WELL CLEAR BOTTOM

Costar* 96-Well Black or White Clear-Bottom Plates

For fluorescent and luminescent assays; ideal for performing cell-based and molecular assays

07-200-567, 07-200-568

- Molded polystyrene with opaque walls and optically clear bottoms
- Flat 6.4mm diameter wells
- Surface area per well: 0.32cm²
- Available in either solid black or white wall colors
- Choose from untreated, high-binding, or tissue culture-treated plates

Contd. on next page.

Costar* 96-Well Clear Microplates Contd.

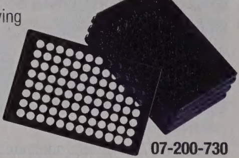
Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of
Untreated						
Black/clear bottom	360μL	No	No	3631	**07-200-567**[1]	100/458.87
White/clear bottom	360μL	No	No	3632	**07-200-568**[1]	100/481.67
High Binding						
Black/clear bottom	360μL	No	No	3601	**07-200-625**[1]	100/540.19
Tissue Culture-Treated						
Black/clear bottom	360μL	Yes	Yes	3603	**07-200-565**[2]	48/285.89
Black/clear bottom	360μL	Yes	Yes	3904	**07-200-588**[3]	100/527.88
White/clear bottom	360μL	Yes	Yes	3610	**07-200-566**[2]	48/285.89
White/clear bottom	360μL	Yes	Yes	3903	**07-200-587**[3]	100/554.17

[1] *Supplied in four packs of 25.* [2] *Individually wrapped.* [3] *Supplied in five packs of 20.*

Corning* 96-Well Special Optics Low Fluorescence Assay Plates

Ideal for spectroscopy, polarization, and imaging

- Clear well bottoms are 60% thinner than conventional plates for direct viewing from either top or bottom
- Black opaque walls emit minimal background for sharp, clear images of fluorescent cells
- Available untreated or with tissue culture-treated surfaces



07-200-730

Surface Treatment	Lid	Sterile	Mfr. No.	Cat. No.	Case of
Untreated	No	No	3615	**07-200-730**	100/656.06
Tissue Culture	Yes	No	3720	**07-200-805**	25/181.90
Tissue Culture	No	Yes	3614	**07-200-729**	100/690.51

ACCESSORIES

DMSO-Resistant Lid

- Universal-fit rigid lid with extended skirt is 100% resistant to DMSO and tinted brown to protect light-sensitive samples
- Robotics-friendly, nonsterile

Mfr. No.	Cat. No.	Case of 50
3085	**07-201-200**	141.22

Lids and Sealing Tape

- Lids are sterile, rigid styrene; 07-200-703, 07-200-597, and -598 have corner notch
- Sealing tape is precut, pressure-sensitive, nonsterile acetate

For Plate	Packaging	Mfr. No.	Cat. No.	Case of
Lids				
07-200-31, -32, -37	25/Pack	3931	**07-200-598**	50/55.69
07-200-31, -32, -37	100/Case	3930	**07-200-597**	100/149.39
All plates, blocks	25/Pack	3098	**07-200-694**	100/147.90
96-, 384-well, half area	25/Pack	3099	**07-200-703**	50/71.52
Tape				
All 96-well	100/Case	3095	**07-200-375**	100/38.94

Corning* 96-Well Clear-Bottom Nonbinding Surface (NBS*) Microplates

Enhanced signal-to-noise ratio

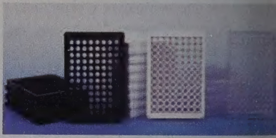
07-200-779 (top), 07-200-73

- Ideal for homogenous assays such as Scintillation Proximity Assays (SPA) and fluorescent assays
- Modified polymer surface is nonionic hydrophilic, minimizing bio-interaction within wells to reduce nonspecific binding and reagent costs
- Significantly reduces protein and nucleic acid binding to polymers, maintains enzyme activity, and inhibits adhesion of a number of cell lines
- Stable to aqueous solutions containing EtOH
- Use at temperature range of 4° to 37°C (39° to 99°F)
- Flat-bottom wells
- Compatible with a wide range of plate readers, liquid handlers, and robotic systems

Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 100
Black/clear bottom	360μL	No	No	3651	**07-200-770**	627.52
White/clear bottom	360μL	No	No	3604	**07-200-732**	629.55

Nunc* MicroWell* 96-Well Optical-Bottom Plates

Provide optimum clarity for viewing well contents



12-566-35, 12-566-3

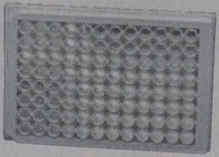
- Polystyrene upper structures (available in white or black) with either a #1.5 cover glass or polystyrene base
- Flat bottom provides easy access for plate reader
- Culture area, 0.32cm^2
- With alphanumeric markings and 96-well footprint
- Cell culture surface is ideal for cell-based assays
- CC^{2}* surface modification closely mimics Poly-D-Lysine and is superior fo attachment and growth of fastidious cells

Color	Surface	Lid	Sterile	Mfr. No.	Cat. No.	Case of 30
#1.5 Cover Glass Bottom						
Black/clear bottom	Cell Culture	Yes	Yes	164588	**12-566-35**	937.25
Black/clear bottom	CC^2	Yes	Yes	160376	**12-565-607**	1287.50
White/clear bottom	Cell Culture	Yes	Yes	164590	**12-566-37**	937.25
Polystyrene Bottom						
Black/clear bottom	Cell Culture	Yes	Yes	165305	**12-566-70**	175.75
White/clear bottom	Cell Culture	Yes	Yes	165306	**12-566-71**	175.75

*Trademark. See Trademark Reference.

D Falcon* Optilux* 96-Well lear-Bottom Plates

eal for bottom-reading fluorometers and direct icroscope viewing



- eature a single, optically clear base
- lat-bottom wells
- Vorking volume: 100–250µL
- 3lack or white
- issue culture treated

08-772-103

or	Surface Area/Well	Lid	Sterile	Mfr. No.	Cat. No.	Case of
ck/clear bottom	0.29cm^2	Yes	Yes	353948	**08-772-104**	50/257.55
ck/clear bottom	0.29cm^2	Yes	Yes	353220	**08-772-215**	80/400.30
ite/clear bottom	0.29cm^2	Yes	Yes	353947	**08-772-103**	50/319.36

ACCESSORIES

Lids

Fit clear polystyrene 96-well plates. Individually wrapped. Sterile.

Mfr. No.	Cat. No.	Case of 50
353071	**08-772-2B**	96.80

ASSAY PLATES — 96-WELL SOLID

rning* Black and White 96-Well lypropylene Assay Plates

wer compound sticking and higher solvent resistance an polystyrene plates

- leal for fluorescence and iminescence assays and for ompound storage
- ound-bottom wells
- ntreated surface

07-200-761, 07-200-762

or	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 100
ck	360µL	No	No	3356	**07-200-762**	298.53
ite	360µL	No	No	3355	**07-200-761**	298.53

star* 96-Well Black or White Solid Plates

t tested for opacity and low orescent/luminescent background

- olystyrene
- 1inimal well-to-well crosstalk
- ecommended working volumes of 75 to 200µL
- vailable **untreated** for solution-based ssays, with **high binding** for immunoassay pplications, or **tissue culture treated** for cell growth

07-200-589, 07-200-590

or	Well Shape	Well Volume	Lid	Mfr. No.	Cat. No.	Case of 100
eated						
ck	Flat	360µL	No	3915	**07-200-590**	297.07
ck	Round	360µL	No	3792	**06-443-2**	297.07
ite	Flat	360µL	No	3912	**07-200-589**	297.07
ite	Round	360µL	No	3789	**07-200-336**	319.36
1 Binding						
ck	Flat	360µL	No	3925	**07-200-592**	364.29
ite	Flat	360µL	No	3922	**07-200-591**	311.68
ue Culture Treated						
ck	Flat	360µL	Yes	3916	**07-200-627**	357.41
ite	Flat	360µL	Yes	3917	**07-200-628**	341.45

Corning* 96-Well Nonbinding Surface (NBS*) Microplates

Enhanced signal-to-noise ratio

- Ideal for homogenous assays such as Scintillation Proximity Assays (SPA) and fluorescent assays
- Modified polymer surface is nonionic hydrophilic, minimizing bio-interaction within wells to reduce nonspecific binding and reagent costs
- Significantly reduces protein and nucleic acid binding to polymers, maintains enzyme activity, and inhibits adhesion of a number of cell lines
- Stable to aqueous solutions containing EtOH
- Use at temperature range of 4° to 37°C (39° to 99°F)
- Compatible with a wide range of plate readers, liquid handlers, and robotic systems

Color	Well Shape	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 100
Clear	Flat	360µL	No	No	3641	**07-200-777**	321.05
Black	Flat	360µL	No	No	3650	**07-200-778**	477.84
White	Flat	360µL	No	No	3600	**07-200-731**	489.79
White	Round	330µL	No	No	3605	**07-200-791**	489.79

Costar* 96-Well Half-Area Plates

Save on expensive reagents—4.5mm bottom diameter uses less reagent per well

07-200 Series

- Polystyrene
- Flat wells
- Surface area per well: 0.16cm^2
- Alphanumeric grid
- Standard external dimensions compatible with most plate readers
- Choice of four surfaces: **untreated** for homogenous assays, **high-binding** for EIA applications, **non-binding surface (NBS*)** for the minimization of protein and nucleic acid binding, or **tissue culture treated** for cell growth

Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of
Untreated						
Clear	190µL	No	No	3695	**07-200-339**	100/270.87
Black	190µL	No	No	3694	**07-200-329**	100/332.48
White	190µL	No	No	3693	**07-200-326**	100/332.48
High Binding						
Clear	190µL	No	No	3690	**07-200-37**	100/282.82
NBS						
Black	190µL	No	No	3686	**07-200-340**	100/501.60
Tissue Culture Treated						
Clear	190µL	Yes	Yes	3696	**07-200-93**†	50/194.82
Clear	190µL	Yes	Yes	3697	**07-200-334**	100/311.45
Black	190µL	Yes	Yes	3875	**07-200-735**	100/382.36
White	190µL	Yes	Yes	3688	**07-200-309**	100/382.36

† *Individually wrapped.*

Nunc* 96-Well Polystyrene Plates

Ideal for fluoroimmunoassay (FIA) and immunofluorometric assay (IFMA) techniques

- Available with flat-bottom or C-shaped wells
- Black format reduces back scatter light which may be encounteredin epifluorescence
- White format gives highest possible signal reflection with low background fluorescence; recommended for epifluorescence and luminescence
- Transparent or clear format for Time Resolved Fluorescence applications only
- **Untreated**, **MaxiSorp*** (high protein affinity), **Nunclon* Δ** (anchorage dependent cell attachment), or **PolySorp*** (high hydrophobic molecule affinity) surfaces

12-565-290A, 12-566-07

CERTIFICATIONS:

Cat. Nos. 12-565-290A and -290D are certified for adsorption of IgG; CV of <5% between wells; all well results ±10% from mean; and background of all wells ±0.005 absorbance units from mean.

Color	Well Shape	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of
Untreated							
Black	Flat-bottom	400µL	Yes	Yes	237105	**12-566-09**	50/164.11
Black	Flat-bottom	400µL	Yes	Yes	237107	**12-566-22**	160/522.75
Black	Flat-bottom	400µL	No	No	237108	**12-566-23**	180/512.25
MaxiSorp							
Clear	C-shaped	350µL	No	No	437958	**12-565-290D**†	60/240.15
Black	Flat-bottom	400µL	No	No	437111	**12-566-24**	80/281.60
White	C-shaped	350µL	No	No	437796	**12-565-290A**†	60/240.15
Nunclon Δ							
Black	Flat-bottom	400µL	Yes	Yes	137101	**12-566-07**	50/185.19
Black	Flat-bottom	400µL	Yes	Yes	137103	**12-566-08**	160/548.50
PolySorp							
Black	Flat-bottom	400µL	No	No	437112	**12-566-30**	80/264.58
White	C-shaped	350µL	No	No	437842	**12-565-290B**	60/227.35

† With certificate.

Nunc* White 96-Well Polystyrene Plates

Emit minimum autoluminescence and autofluorescence while providing maximum reflection

- Special white polystyrene is optimized for fluorescent and luminescent detection
- Wells permit minimal light transfer through walls
- Designed to reduce the risk of cross-contamination
- Dimensions fit standard equipment
- Available untreated and with three surface treatments
  - **MaxiSorp*** (high protein affinity)
  - **Nunclon* Δ** (anchorage-dependent cell attachment)
  - **PolySorp*** (high hydrophobic molecule affinity)

12-566-00

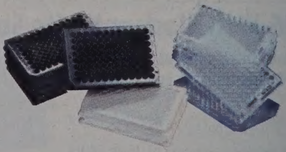
Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of
Untreated						
White	400µL	Yes	Yes	236105	**12-566-02**	50/166.11
White	400µL	No	No	236108	**12-566-04**	180/512.25
MaxiSorp						
White	400µL	No	No	436110	**12-566-05**†	80/294.82
Nunclon Δ						
White	400µL	Yes	Yes	136101	**12-566-00**†	50/191.19
White	400µL	Yes	Yes	136102	**12-566-26**	160/548.50
PolySorp						
White	400µL	No	No	436111	**12-566-06**	80/275.45

† With certificate.

Nunc* Immobilizer* Amino Plates and Modules

Provide instant covalent coupling of peptides, proteins, enzymes and antibodies

- Choice of polystyrene 96-well plates or 8-well × 12 strip modules
- Ideal for antigen ELISA, FIA, LIA, NA hybridization assays
- Ready to use—no activation steps or blocking steps
- Long-term stability at room temperature (two years)
- Reaction site easily accessible
- Form covalent bond with nucleophilic groups, e.g., amines
- Immobilize molecules that bind poorly to passive surfaces
- Low reagent consumption
- High signal-to-noise ratio



12-567-1 Series

Color	Well Shape	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 30
96-Well Plates							
Clear	Flat	400µL	No	No	436006	**12-567-12**	353.50
Black	Flat	400µL	No	No	436008	**12-567-11**	387.50
White	Flat	400µL	No	No	436007	**12-567-10**	387.50
8 × 12-Well Modules							
Clear	Curved	400µL	No	No	436023	**12-567-14**	470.00
Clear	Flat	400µL	No	No	436013	**12-567-13**	470.00

The manufacture and use of synthetic materials for solid phase immunoassays as covered under E.U. Patent 0126392 and U.S. Patent 4,980,299 is licensed to Nunc A/S.

unc* 96-Well Immobilizer* Plates

r rapid coupling of tagged fusion proteins

- o blocking or activation steps required
- igh signal-to-noise ratio produces xtremely sensitive assays
- 15ng/mL detection limit
- niform binding
- o steric hindrance or denaturation of ound protein
- at-bottom wells
- vailable in white, black, or clear
- hoice of glutathione surface for GST-tagged fusion proteins or ckel-chelate surface for 6xHis-tagged fusion proteins

12-566-9 and 12-567-1 Series

PLICATIONS:

alent immobilization

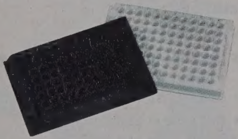
Cr	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 15
athione Surface						
Cr	400µL	No	No	436032	**12-566-91**	302.63
Bk	400µL	No	No	436034	**12-566-93**	319.40
Vte	400µL	No	No	436033	**12-566-92**	319.40
el-Chelate Surface						
Cr	400µL	No	No	436024	**12-566-94**	408.51
Bk	400µL	No	No	436027	**12-566-96**	428.53
Vte	400µL	No	No	436026	**12-566-95**	428.53

manufacture and use of synthetic materials for solid phase immunoassays as covered r E.U. Patent 0126392 and U.S. Patent 4,980,299 is licensed to Nunc A/S.

ermo Scientific* Microfluor* 96-Well ack and White Microtiter* Plates

signed specifically for fluorescence applications

- lystyrene
- **ack plates** reduce background improve assay sensitivity, inimize crosstalk, and prevent ht piping between wells
- **hite plates** minimize crosstalk, duce background, offer higher flectivity to enhance signal, and prove dynamic range and gnal-to-noise ratio; designed for ultraviolet assays
- e **Microfluor 1** with medium-binding surface for polyclonal antibodies, munoglobins, lipid-containing compounds, whole cells, synthetic peptides, man interferon beta, *Staphylococcus* protein A, and ovalbumin
- e irradiated **Microfluor 2** with high-binding surface for onoclonal/polyclonal antibodies, proteins, peptides, glycopeptides, nino acids, purified antigens, DNA, immunoglobins, whole cells, d haptens



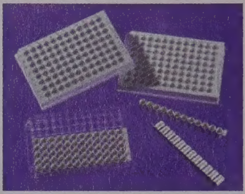
14-245-177, 14-245-178

Cr	Well Shape	Mfr. No.	Cat. No.	Case of 50
ofluor 1				
Bk	Flat	7605	**14-245-197A**	120.00
Bk	U-shaped	7005	**14-245-194B**	120.00
Vte	Flat	7705	**14-245-197B**	120.00
Vte	U-shaped	6905	**14-245-194A**	120.00
ofluor 2				
Bk	Flat	7805	**14-245-177**	145.00
Bk	U-shaped	7205	**14-245-176**	145.00
Vte	Flat	7905	**14-245-178**	145.00
Vte	U-shaped	7105	**14-245-175**	145.00

Thermo Scientific* Microlite* White Microtiter* Plates

Maximum sensitivity white increases signal reflectivity without increasing crosstalk and background

- Polystyrene plates with flat-wells designed for use in luminescence reactions
- Available in three formulations:
  - Nonirradiated **Microlite 1** provides medium binding, high reflectivity, and low crosstalk for use in PCR quantitation, reporter gene detection, phagocytosis, and luminescent immunoassay applications
  - Irradiated **Microlite 2** provides high binding, high reflectivity, and low crosstalk for use in PCR quantitation, reporter gene detection, phagocytosis, and luminescent immunoassay applications
  - Sterile **Microlite TCT** for use in luminescent tissue culture assays
- Available in plates or 12-well Removawell Strips



12-245 Series

NOTE:

Other configurations are available in Microlite 1 and 2 formulations; contact your Fisher Scientific Customer Service Representative.

Format	No. of Wells	Sterile	Mfr. No.	Cat. No.	Case of
Microlite 1					
Plate	96	No	7416	**14-245-180**	50/120.00
Microlite 2					
Plate	96	Yes	7417	**14-245-181**	50/141.00
Removawell Assembly	12/Strip	Yes	7400	**14-245-196A**	100/469.00
Microlite TCT					
Plate	96	Yes	7418	**14-245-182**	50/167.00

Whatman* 96-Well Black or White UNIPLATE* Microplates

One-piece molded collection plates

- Polystyrene
- Designed for fluorescence and chemiluminescense applications
- Withstand low temperatures (-20°C) for long-term storage
- Conforms to ANSI/SBS (American National Standards Institute, Society of Biomolecular Screening) standards for compatibility with most microplate readers and automated plate-handling devices
- Untreated

NOTE:

Clear UNIPLATE microplates also available, see p. 1127

Color	Well Shape	Well Volume	Mfr. No.	Cat. No.	Pack of 50
Black	Flat	300µL	7701-2350	**09-003-34**	105.57
Black	V-shaped	250µL	7701-2250	**PF77012250**	143.21
White	Flat	300µL	7701-3350	**09-003-33**	147.04
White	V-shaped	250µL	7701-3250	**PF77013250**	142.42

BD Falcon* Solid Opaque 96-Well Tissue Culture Plates

For cell-based bioluminescent, chemiluminescent, or fluorescent assays

- Polystyrene
- Nonpyrogenic
- Flat-bottom wells
- Choice of black or white solid
- Tissue culture treated

08-771-26

ORDERING INFORMATION:
Bulk packaged five per tray

Color	Well Volume	Surface Area/Well	Lid	Sterile	Mfr. No.	Cat. No.	Case of 50
Black	300µL	0.29cm²	Yes	Yes	353945	**08-772-102**	232.17
White	300µL	0.25cm²	Yes	Yes	353296	**08-771-26**	156.99

ASSAY PLATES — UV-TRANSPARENT

Corning* UV-Transparent Microplates

Ideal for determining protein and/or nucleic acid concentrations

- Usable in place of expensive quartz cuvets for reading down to 220nm
- Well-to-well uniformity, consistent low background, and zero crosstalk
- Performance certified at 260 and 280nm

07-200-623

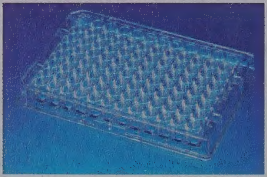
No. of Wells	Well Volume	Mfr. No.	Cat. No.	Pack of 25	Case of
96	370µL	3635	**07-200-623**	312.11	2 Pk./410.00
384	100µL	3675	**07-200-532**	412.30	----

BD Falcon* UV-Transparent Microplates

Ideal for DNA, RNA, and protein quantification

- Feature low UV absorbance in the 260/280nm range
- Flat-bottom well shape
- Automation-friendly—usable in 96- and 384-well UV spectrophotometer

ORDERING INFORMATION:
Available in case of 40, 10 per pack



08-772-135

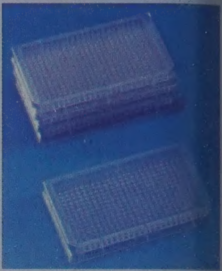
No. of Wells	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 40
96	370µL	No	No	353261	**08-772-135**	418.86
384	120µL	No	No	353262	**08-772-136**	1182.00

ASSAY PLATES — 384-WELL

*Fisherbrand** Clear Polystyrene 384-Well Plates

Process four times as many samples as standard 96-well plates

- Highly specified polystyrene
- Ideal for low-volume assays such as colorimetric, enzymatic, cloning, replication, and array, as well as storage
- Feature rounded square wells for reduced wicking
- Working volume: 10–100µL
- Compatible with robotics, automated readers, and liquid-handling systems
- Untreated



12-565-506, 12-565-511

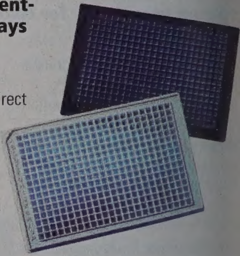
ORDERING INFORMATION:
Accommodates 12-565-511 lid (sold separately)

Description	Color	Sterile	Cat. No.	Case of
384-Well Plate	Clear	No	**12-565-506**	90/338.82
Lid	Clear	No	**12-565-511**	180/199.62

Corning* Polystyrene 384-Well Clear-Bottom Plates

Recommended for fluorescent- and luminescent-based assays and SPA

- One-piece polystyrene
- Readable from top or bottom for direct microscope viewing and CCD camera-based detectors
- Available in white or black formats
- Untreated or tissue culture-treated surfaces



07-200-649, 07-200-654

Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case o 10
Untreated						
Black/clear bottom	125µL	No	No	3711	**07-200-654**	698.50
White/clear bottom	125µL	No	No	3706	**07-200-649**	710.17
Tissue Culture-Treated						
Black/clear bottom	125µL	Yes	Yes	3712	**07-200-655**	802.59
White/clear bottom	125µL	Yes	Yes	3707	**07-200-650**	816.01

*Trademark. See Trademark Reference.

rning* Clear Polypropylene 384-Well ep-Well Plates

al for high-throughput applications requiring ded volume

- olvent-resistant polypropylene provides compatibility with many mmon organic solvents including DMSO, ethanol, and methanol
- nproved sample recovery through specially designed wells featuring square geometry that tapers to a V-bottom point
- ntreated

DERING INFORMATION:
kaged in bags of 10

CERTIFICATIONS:
Certified DNase- and RNase-free

or	Well Volume	Sterile	Mfr. No.	Cat. No.	Case of 50
r	240µL	Yes	3342	**07-202-501**	286.52
r	240µL	No	3347	**07-202-505**	237.98

ACCESSORIES

Sealing Mat for 384-Well Polypropylene Storage Plates

Ideal for use in long-term, low temperature compound storage

- Precise fit for Corning 384-well deep-well polypropylene storage plates (07-202-501, -505)
- Solvent-resistant polypropylene provides compatibility with many common organic solvents including DMSO, ethanol, and methanol
- Firm seal prevents evaporation and gas exchange
- Nonsterile

Mfr. No.	Cat. No.	Case of 50
3341	**07-202-500**	400.68

rning* 384-Well Universal Optics Plate

bottom plates ideal for bottom reading

- ra clear proprietary polymer reduces background polarization
- S* treatment increases assay sensitivity

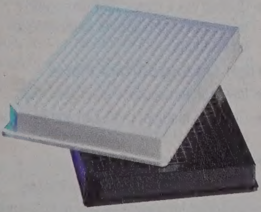
r	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 100
l	125µL	No	No	3723	**07-200-849**	1447.23

rning* 384-Well Low-Flange t-Bottom Plates

NEW

anced flatness provides low intra- and er-plate CVs

- lystyrene
- uare wells with flat bottoms
- orking volume: 20–80µL
- rface area/well: 0.06cm²
- nform to standard microplate otprint and dimensions
- ailable in black or white for orescent or luminescent assays



07-201-321, 09-761-85

eated surface binds olecules through passive interac- ; **nonbinding surface** (NBS*) creates a nonionic hydrophilic surface minimizes molecular interactions; **tissue culture-treated** surface ides optimal cell attachment.

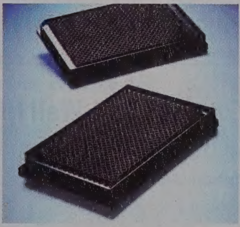
r	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 50
ated						
k	112µL	No	No	3573	**09-761-85**	202.64
e	112µL	No	No	3572	**07-201-321**	215.57
inding (NBS) Surface						
k	112µL	No	No	3575	**09-761-86**	282.19
e	112µL	No	No	3574	**07-201-322**	300.42
e Culture Treated						
k	112µL	Yes	Yes	3571	**07-200-852**	233.65
e	112µL	Yes	Yes	3570	**07-201-320**	248.13

Corning* Low-Volume 384-Well Polystyrene Plates

NEW

High-base design is compatible with automation and barcoding

- Validated for the FLIPR* TETRA system—outer wells aligned for proper viewing with the FLIPR system
- 2.8mm distance between well bottoms and plate bottom
- Round wells with flat bottoms
- Working volume: 5–45µL



07-202-625

Untreated surface binds biomolecules through passive interactions; **nonbinding surface** (NBS*) creates a nonionic hydrophilic surface that minimizes molecular interactions; **tissue culture-treated** surface provides optimal cell attachment.

Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 50
Untreated						
Black/clear bottom	50µL	No	No	3540	**07-202-625**	450.91
Nonbinding (NBS) Surface						
Black/clear bottom	50µL	No	No	3544	**09-761-84**	563.35
Tissue Culture Treated						
Black/clear bottom	50µL	Yes	Yes	3542	**07-202-626**	517.71

Corning* Polystyrene 384-Well Solid Plates

Suitable primarily for the immobilization of large molecules

07-200-648

- Compatible with all leading 384-well readers and detectors
- Not treated (or medium binding) polystyrene surface is hydrophobic in nature and binds biomolecules through passive interactions
- Available in untreated, high-binding, or tissue culture-treated surfaces

Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 10
Untreated						
Clear	112µL	Yes	No	3680	**07-201-157**	401.2
Clear	112µL	No	No	3702	**07-200-645**	354.8
Black	112µL	No	No	3710	**07-200-653**	404.7
White	112µL	No	No	3705	**07-200-648**	430.4
High Binding						
Clear	112µL	No	No	3700	**07-200-643**	429.8
Black	112µL	No	No	3708	**07-200-651**	437.4
White	112µL	No	No	3703	**07-200-646**	465.1
Tissue Culture-Treated						
Clear	112µL	Yes	Yes	3701	**07-200-644**	408.0
Black	112µL	Yes	Yes	3709	**07-200-652**	465.8
White	112µL	Yes	Yes	3704	**07-200-647**	495.3

Corning* Black 384-Well Polypropylene Assay Plate

Lower compound sticking and higher solvent resistance than polystyrene plates

07-200-765

- Ideal for fluorescence assays and for compound storage
- Round-bottom wells
- Untreated

Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 100
Black	95µL	No	No	3658	**07-200-765**	404.74

Corning* 384-Well Nonbinding Surface (NBS*) Microplates

Enhanced signal-to-noise ratio

07-201-102

- Ideal for homogenous assays such as Scintillation Proximity Assays (SPA) and fluorescent assays
- Modified polymer surface is nonionic hydrophilic, minimizing bio-interaction within wells to reduce nonspecific binding and reagent costs
- Significantly reduces protein and nucleic acid binding to polymers, maintains enzyme activity, and inhibits adhesion of a number of cell lines
- Stable to aqueous solutions containing EtOH
- Use at temperature range of 4° to 37°C (39° to 99°F)
- Flat-bottom wells
- Compatible with a wide range of plate readers, liquid handlers, and robotic systems

Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 100
Black	112µL	No	No	3654	**07-201-104**	564.44
Black/clear bottom	112µL	No	No	3655	**07-200-779**	941.21
White	112µL	No	No	3652	**07-201-102**	600.46
White/clear bottom	112µL	No	No	3653	**07-201-105**	982.59

Corning* 384-Well Low-Volume Solid Microplates

Same low reagent volumes as 1536-well plates without the need for new instrumentation.

Polystyrene plates feature a unique square-to-round well design with a conical-shaped bottom that provides easier access and imaging for superior assay performance.

12-565-461 (top), 07-200-331

- Bottom reduces fluid and air entrapment, greater signal-to-noise ratio and reduced FP signal (mP) when working with very low volumes
- Each well has a raised rim to reduce cross-contamination during assay and liquid-handling process
- Choose black plates for fluorescence applications or white for luminescence applications

High-Binding Surface Plates

- Ideal for immunoassays
- Can bind medium (>10kDa) and large biomolecules that possess ionic groups and/or hydrophobic regions
- Working volume: 2 to 20µL

Medium-Binding Surface Plates

- Designed for a wide variety of HTS applications, including TR-FRET, HEFP and receptor binding
- Working volume: 2 to 20µL

Nonbinding surface (NBS*) Plates

- Designed for fluorescence polarization, scintillation proximity assay (SPA), and any assay that requires enhanced signal-to-noise ratio
- Coating allows for increased signal-to-noise ratio and remains stable with aqueous solutions containing up to 20% ethanol, 20% isopropyl alcohol, 20% DMSO, 1% SDS, or 10M urea
- Working volume: 2 to 15µL

Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 10
High Binding						
Black	35µL	No	No	3678	**07-201-169**	674.3
Medium Binding						
Black	35µL	No	No	3677	**12-595-461**	601.8
White	35µL	No	No	3674	**07-200-331**	638.5
Nonbinding (NBS)						
Black	35µL	No	No	3676	**12-595-460**	749.3
White	35µL	No	No	3673	**07-200-330**	831.1

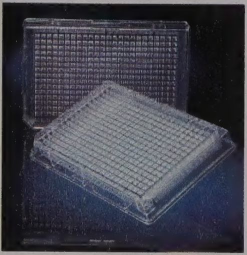
*Trademark. See Trademark Reference.

Prices subject to change.

unc* 384-Well Polystyrene Plates

r DNA library manipulation or HTS applications in gh-volume laboratories

- Vorking volume of 10–100µL
- nside well bottom features ounded square-well geometry, educing the risk of well-to-well ontamination
- ame external dimensions as a tandard 96-well plate saves space n incubators, freezers, and on enchtops
- Jsable with robotics, automated eaders, and liquid-handling systems
- elect untreated, cell culture, or AaxiSorp* surfaces


12-565-295

DERING INFORMATION:

tes packaged 10 per sleeve (12-565-295 is packaged individually). Lids d separately.

or	Lid	Sterile	Mfr. No.	Cat. No.	Case of
reated					
ar	Yes	Yes	242765	**12-565-295†**	30/155.25
ar	Yes	Yes	242757	**12-565-294**	30/124.25
ar	Yes	Yes	265202	**12-567-150**	100/366.96
ar	No	Yes	265203	**12-567-151**	100/364.95
ar	No	No	262160	**12-568-53**	100/363.50
Culture					
ar	Yes	Yes	164688	**12-565-342**	30/124.25
ar	No	Yes	164555	**12-568-50**	100/363.25
ck	Yes	Yes	164564	**12-565-344**	30/138.00
ite	Yes	Yes	164610	**12-565-343**	30/140.80
ite	No	Yes	165195	**12-568-52**	100/393.94
iSorp					
ar	No	No	464718	**12-565-347**	30/130.75
ck	No	No	460518	**12-565-346**	30/153.50
ite	No	No	460372	**12-565-345**	30/155.00

lividually packaged.

ACCESSORIES

Clear Polystyrene Lids

eature cut-off corners on bottom left and right for easy orientation and evaporation barrier to reduce edge effects.

RDERING INFORMATION:

xternal Dimensions: 128 × 86mm

fr. No.	Cat. No.	Case of
erile		
54611	**12-565-603**	60/99.30
54616	**12-565-610**	180/241.17
nsterile		
55625	**12-566-4**	60/70.50
54612	**12-565-604**	180/211.04

Nunc* 384-Well ShallowWell Standard Height Plates

Standard height provides optimal handling and barcoding

NEW

- Polystyrene
- Conical flat-bottom wells for cell culture or assays
- Working volume: 2–20µL/well
- 25µL total volume saves reagents
- ANSI* (SBS) standard footprint
- Clear, black or white for colorimetric, fluorescent and luminescent assays

09-741-83, 09-741-84, 09-741-85

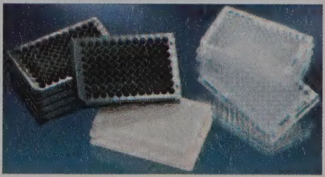
Color	Lid	Sterile	Mfr. No.	Cat. No.	Case of 100
Untreated					
Clear	No	No	264704	**09-741-83**	570.50
Black	No	No	264705	**09-741-84**	595.75
White	No	No	264706	**09-741-85**	595.75
Cell Culture Treated					
Clear	Yes	Yes	164701	**09-741-80**	647.00
Black	Yes	Yes	164702	**09-741-81**	672.75
White	Yes	Yes	164703	**09-741-82**	672.75

Nunc* Immobilizer* 384-Well Plates

Available with a choice of surface coatings for rapid coupling of biomolecules

NEW

- Polystyrene
- Optimized for scintillation counting
- Rounded-square wells eliminate wicking
- Flat-bottom wells for optical reading
- Working volume: 10–100µL/well
- Available in clear, black, and white for colorimetric, fluorescence, and luminescence assays
- Amino surface enables rapid coupling of peptides and proteins
- Streptavidin surface rapidly couples biotinylated biomolecules such as peptides, antibodies, oligonucleotides, and haptens

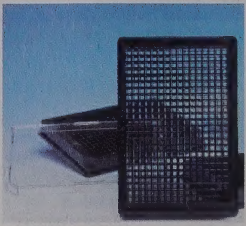

12-565-658, 12-565-657, 12-565-656

Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of
Amino Coated						
Clear	120µL	No	No	436009	**12-565-656**	30/631.25
Black	120µL	No	No	436012	**12-565-658**	30/708.00
White	120µL	No	No	436011	**12-565-657**	30/708.00
Streptavidin Coated						
Clear	120µL	No	No	436017	**12-565-659**	15/444.49
Black	120µL	No	No	436019	**12-565-661**	15/444.49
White	120µL	No	No	436018	**12-565-660**	15/444.49

Nunc* 384-Well Optical Bottom Plates

Choice of three surfaces for assay flexibility

- Polystyrene upper structure (available in black or white) with either a #1.5 cover glass or polystyrene base
- Rounded-square wells provide maximum access for dispensers and readers
- Working volume: 10 to 100µL
- Choose **nontreated** plates for use in liquid phase or bead assays or **cell culture-treated** plates for cell-based assays

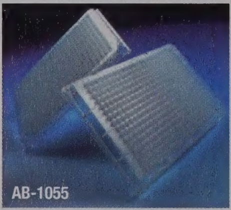


12-566

Color	Surface Treatment	Lid	Sterile	Mfr. No.	Cat. No.	Case of 3
#1.5 Cover Glass Bottom						
Black/clear bottom	Nontreated	No	No	240074	**12-566-281**	870.0
Polystyrene Bottom						
Black/clear bottom	Nontreated	No	No	242764	**12-566-2**	245.0
Black/clear bottom	Cell culture treated	Yes	Yes	142761	**12-566**	264.0
Black/clear bottom	Cell culture treated	No	Yes	164730	**12-565-473**	233.5
White/clear bottom	Nontreated	No	No	242763	**12-565-355**	245.0
White/clear bottom	Cell culture treated	Yes	Yes	142762	**12-566-1**	265.0
White/clear bottom	Cell culture treated	No	Yes	164735	**12-565-850**	242.3

Thermo Scientific* ABgene* 384-Well Microarray Plates

Ideal source plates for arraying and other low-volume liquid-handling applications (down to 5µL)



AB-1055

- Virgin polypropylene
- Raised well rims for effective sealing and reduced cross-contamination risk
- Cleanroom produced
- Flat profile and strengthening ribs
- Cut-away corner and alphanumeric grid
- Within SBS (Society for Biomolecular Screening) footprint recommendations
- Fully skirted for compatibility with automated systems

Color	Well Shape	Well Volume	Cat. No.	Case of 50
Natural	Cylindrical	70µL	**AB-1055**	298.00
Natural	V-shaped	55µL	**AB-1056**	298.00
Black	V-shaped	55µL	**AB-1056K**	341.76

Whatman* 384-Well UNIPLATE* Microplates

Untreated to suit a variety of laboratory applications including HTS, ELISA, and cell culture

09-923-17C

- Withstand low temperatures (polystyrene: -20°C, polypropylene: -80°C) for long-term storage
- Conform to SBS (Society of Biomolecular Screening) standards for compatibility with most microplate readers and automated plate-handling devices

Color	Well Shape	Well Volume	Material	Mfr. No.	Cat. No.	Pack of 50
Natural	V-shaped	80µL	Polypropylene	7701-5101	**PF77015101**	170.94
Clear	Flat	100µL	Polystyrene	7701-1100	**09-923-17A**	143.21
Black	Flat	100µL	Polystyrene	7701-2100	**09-923-17B**	143.21
White	Flat	100µL	Polystyrene	7701-3100	**09-923-17C**	171.85

BD Falcon* 384-Well Plates

Innovative well design minimizes liquid wicking and air entrapment

- Beveled-edge square wells
- Available in untreated or tissue culture-treated (cell attachment) surfaces

Clockwise from top left:
08-772-115, -129, 02-683-130, -13

Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case o
Untreated						
Clear	120µL	No	No	353233	**02-683-132**	100/330.9
Black	120µL	No	No	353231	**02-683-130**	100/400.5
Tissue Culture Treated						
Clear	120µL	Yes	Yes	353961	**08-772-114**	50/216.3
Black/clear bottom	120µL	Yes	Yes	353962	**08-772-115**	50/399.2
White	120µL	Yes	Yes	353988	**08-772-129**	50/258.1
White/clear bottom	120µL	Yes	Yes	353963	**08-772-116**	50/399.2

ACCESSORIES

Clear lid

For 384-well (PS) and polyvinyl chloride (PVC) plates

For	Mfr. No.	Cat. No.	Case of 50
120µL Plates	353958	**08-772-113**	41.55

*Trademark. See Trademark Reference.

Prices subject to change.

ASSAY PLATES — 1536-WELL

rning* 1536-Well Polystyrene Plates

perior flatness minimizes variability within a plate d between plates

07-202-510, 07-202-511

cellent signal dynamic range due to w background fluorescence and hanced signal intensity

at bottom wells are compatible with tomated dispensers including the rkinElmer FlexDrop*

orking volume of up to 10µL

ailable untreated, withnonbinding rface (NBS*), or tissue culture treated

BS microplates are ideal for mogeneous assays with "sticky" zymes or for reducing nonspecific nding to microplate wells

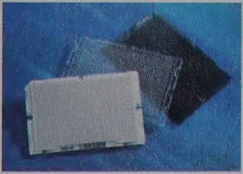
DERING INFORMATION:

aged in bags of ten

r	Lid	Mfr. No.	Cat. No.	Case of 50
eated				
k	No	3724	**07-202-510**	775.22
k/clear bottom	No	3793	**05-539-31**	1572.90
e	No	3725	**07-202-511**	775.22
inding (NBS)				
k	No	3728	**05-400-01**	1235.85
e	No	3729	**05-400-02**	1235.85
e Culture Treated				
k	Yes	3726	**07-202-512**	891.95
k/clear bottom	Yes	3891	**05-539-30**	1460.55
e	Yes	3727	**07-202-513**	891.95

rning* 2.0µL 1536-Well say Microplates

ture eight extra wells on both the left and right es of the plate to run controls


Left, 7-201-162; right 07-201-161

marcated in an 8 × 12 array, th 16 wells per square

me with area for applying a bar de label

ries of notches allow stacked tes to be easily separated from e another

t bottoms without lids; top plate rves as lid for plate underneath

commended working volume of µL

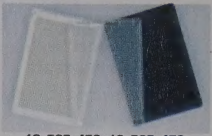
ailable with untreated surfaces that are hydrophobic in nature and bind molecules through passive interactions

r	Lid	Sterile	Mfr. No.	Cat. No.	Case of 100
k	No	No	3851	**07-201-161**	1895.65
te	No	No	3852	**07-201-162**	1573.15

Nunc* 1536-Well Assay Plates

Available in clear, black and white

- Polystyrene
- Skirted plate rims allow labeling and bar coding
- Less than 0.25mm total variance in flatness across plate
- Rounded-square well with flat bottom measures 2.25mm center to center with a depth of 5mm
- Working well volume, 1 to 10µL
- Standard ANSI* plate footprint
- Untreated


12-565-452, 12-565-453, 12-565-451

ORDERING INFORMATION:

Bottom outside flange, 2.4mm; height, 7.4mm; bottom, 1.5mm from resting plane

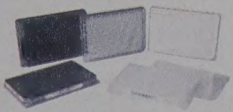
Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 90
Clear	13µL	No	No	253614	**12-565-453**	1394.01
Black	13µL	No	No	253601	**12-565-451**	1418.01
White	13µL	No	No	253607	**12-565-452**	1418.01

Nunc* 1536-Well High Base Plates

Skirt designed for optimal barcoding and robotic handling

Available nontreated for assays or cell culture treated.

- Polystyrene
- Small volume saves reagents
- Working range: 2–10µL/well
- ANSI* (SBS) standard footprint
- Clear, black or white forcolorimetric, fluorescent and luminescent assays


03-150-14, 03-150-13, 03-150-15

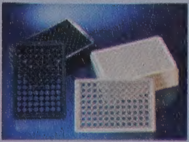
Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 100
Untreated						
Clear	13.4µL	No	No	264710	**03-150-13**	1527.00
Black	13.4µL	No	No	264711	**03-150-14**	1553.00
White	13.4µL	No	No	264712	**03-150-15**	1553.00
Cell Culture Treated						
Clear	13.4µL	Yes	Yes	164707	**03-150-10**	1682.00
Black	13.4µL	Yes	Yes	164708	**03-150-11**	1708.00
White	13.4µL	Yes	Yes	164709	**03-150-12**	1708.00

STORAGE PLATES AND ASSAY BLOCKS

*Fisherbrand** Round-Bottom 96-Well Polypropylene Plates

Ideal for storage—feature generous 500µL well volumes

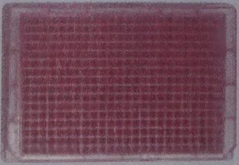
- Polypropylene
- Minimum binding
- Resistant to many reagents
- Withstand temperatures from -80° to +121°C
- Automation-friendly design optimized for HTS


12-565-504

Color	Well Volume	Sterile	Cat. No.	Case of 80
Natural	500µL	No	**12-565-502**	192.00
Blue	500µL	No	**12-565-505**	192.00
Red	500µL	No	**12-565-503**	192.00
Yellow	500µL	No	**12-565-504**	192.00

*Fisherbrand** 384-Well Polypropylene Plates

Feature higher well density for economical use of expensive reagents

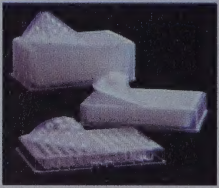

12-565-508

- Ideal for storage of compounds and nucleic acid libraries
- Chemical-resistant
- Withstand temperatures from -80° to +80°C
- Conform to ANSI*-standard footprint for optimal use in automated handling and liquid-dispensing systems

Color	Well Volume	Sterile	Cat. No.	Case of 120
Natural	120µL	No	**12-565-507**	529.81
Red	120µL	No	**12-565-508**	545.69
Yellow	120µL	No	**12-565-509**	545.69

*Fisherbrand** Silicone Plate Seals

Excellent chemical compatibility and resistance to tearing and coring

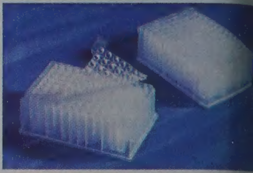

03-396 Series

- Nonslit seals reseal after multiple penetrations to prevent sample evaporation and cross-well contamination
- Preslit seals are easy to penetrate and reduce well vacuum
- Apply by hand or with an applicator
- Remain flexible at ambient temperatures and in the absence of chlorinated solvents
- Autoclavable

Fits	Seal Type	Cat. No.	Pack of 10
Costar* 96-Well Polypropylene Plates and Assay Blocks, Whatman* 96-Well Multi-Chem* Microplates	Nonslit Preslit	**03-396-49** **03-396-50**	87.18 94.34
Fisherbrand Round-Bottom 96-Well Polypropylene Plates and Assay Blocks, Nunc* 96-Well Storage Plates	Nonslit Preslit	**03-396-51** **03-396-52**	87.18 94.34
Fisherbrand 96-Well 2.2mL Assay Blocks, Whatman 96-Well Polypropylene Storage Plates (Square-Well Plate)	Nonslit Preslit	**03-396-53** **03-396-54**	94.34 100.32
Fisherbrand 384-Well Polypropylene Plates, Costar Brand 384-Well Polypropylene Storage Block (Square-Well Plate)	Nonslit Preslit	**03-396-55** **03-396-56**	100.31 104.98

Costar* 96-Well Assay Blocks

Ideal for compound storage, assay, and cell-growth applications


07-200-723 (Sealing mat not included)

- Clarified polypropylene for optical clarity
- Standard 96-well footprint
- Rigid, flat sidewalls for use in automated laboratories

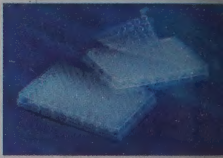
CERTIFICATIONS:

Certified DNase- and RNase-free

Well Shape	Well Volume	Sterile	Mfr. No.	Cat. No.	Case o
Round	1mL	Yes	3958	**09-761-116**	25/116.46
Round	1mL	No	3959	**09-761-116A**	100/442.54
V-bottom	500µL	Yes	3956	**07-200-723**	50/232.79
V-bottom	500µL	No	3957	**07-200-724**	100/436.49
V-bottom	2mL	Yes	3960	**07-200-700**	25/147.79
V-bottom	2mL	No	3961	**07-200-701**	100/558.85

Costar* Polypropylene Plates

Excellent choice for transport and long-term storage


07-200-745 (Sealing mat not included)

- Offer optimal clarity and solvent resistance
- Designed for automation with rigid, flat side walls and industry standard footprint
- Manufactured to tight dimensional tolerances in an ISO 9002-registered facility

ORDERING INFORMATION:

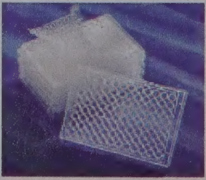
96-well plates seal with Storage Mat III (sold separately, below).

Well Shape	Well Volume	Sterile	Mfr. No.	Cat. No.	Case of 10
96-Well Plates					
Flat	330µL	No	3364	**07-200-696**	201.56
Round	360µL	Yes	3359	**07-200-745**	212.79
Round	360µL	No	3365	**07-200-697**	201.56
Round	360µL	No	9667	**07-200-344**†	275.80
V-bottom	320µL	Yes	3357	**07-200-698**	212.65
V-bottom	320µL	No	3363	**07-200-695**	201.56
384-Well Plates					
Round	95µL	Yes	3656	**07-200-747**	323.61
Round	95µL	No	3657	**07-200-748**	291.07

† *Feature white marking area.*

Corning* ClearPro* 96-Well Polypropylene Plate

Almost as clear as polystyrene, allowing visual inspection of samples in each well


07-201-156 (Sealing mat not included)

- Lowered perimeter ridge for easy viewing
- Withstands automation handling

Well Shape	Well Volume	Sterile	Mfr. No.	Cat. No.	Case of 100
Round	360µL	No	3371	**07-201-156**	211.53

ACCESSORIES

Storage Mat III

- Seals wells and limits moisture exchange
- Made from a special copolymer that offers a high vapor barrier effective from -70° to +40°C
- Designed to minimize well penetration, allowing at least 200µL sample volume per well

For use with	Mfr. No.	Cat. No.	Case of 100
96-Well Plates	3080	**07-200-744**	213.21

ACCESSORIES

Storage Mat Applicator

Quickly applies Storage Mat III to 96-well plates

deal for high-volume sample processing.

09-761-150

r. No.	Cat. No.	Each
81	**09-761-150**	1198.73

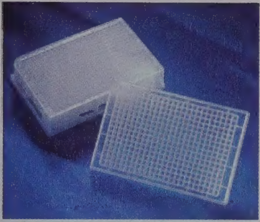
star* 384-Well Polypropylene rage Block

id sidewalls for imal performance in omated handling

allow wells for entry by et tips

unded wells for precise liquid ndling and reduced wicking

andard footprint

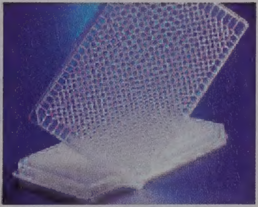


07-200-749

Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of
180µL	No	Yes	3964	**07-200-749**	25/146.09
180µL	No	No	3965	**07-200-750**	100/448.48

rning* 384-Well Low-Volume lypropylene Microplate

al for use as a source roplate for roarray printing



v volume design for minimal gent use

sistant to many common anic solvents including ISO, ethanol, methanol

nical/round bottom NA Print) wells

rking volume 2 to 20µL

07-200-538

v-profile geometry and rigid side walls for full automation npatibility

TIFICATIONS:

fied DNase- and RNase-free

Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 50
35µL	No	No	3672	**07-200-538**	222.73

Nunc* 96-Well Polypropylene MicroWell* Plates

Ideal for combinatorial chemistry, liquid-phase assays, library storage and more

- Chemical resistant
- Withstand temperatures from -80° to +121°C
- Autoclavable
- Automation-friendly standard plate format
- Black and white plates are available for fluorescent- and luminescent-based applications

12-565 Series

Color	Well Volume	Sterile	Mfr. No.	Cat. No.	Case of
Round Bottom					
Natural	500µL	Yes	267334	**12-565-369**	120/310.00
Natural	500µL	No	267245	**12-565-368**	120/256.08
Black	500µL	No	267342	**12-565-370**	120/329.75
Blue	500µL	No	267385	**12-565-373**	120/329.25
Red	500µL	No	267369	**12-565-372**	120/329.25
White	500µL	No	267350	**12-565-371**	120/329.75
Yellow	500µL	No	267407	**12-565-374**	120/329.25
Conical Bottom					
Natural	300µL	No	442587	**12-565-263**	60/173.50
Natural	450µL	Yes	249946	**12-565-438**	120/297.25
Natural	450µL	No	249944	**12-565-436**	120/250.45
Black	450µL	No	249945	**12-565-437**	120/329.25
Blue	450µL	No	249950	**12-565-441**	120/329.25
Red	450µL	No	249943	**12-565-435**	120/329.25
White	450µL	No	249949	**12-565-440**	120/329.25
Yellow	450µL	No	249947	**12-565-439**	120/329.25

Nunc* Standard 96 DeepWell* Plates

Ideal for sample collection, library storage, combinatorial chemistry, and HTS applications

- Polystyrene
- Round-bottom wells for optimal sample recovery
- Alphanumeric grid provides quick and easy sample identification
- Standard 96-well footprint compatible with automation and robotic handling equipment, bar code placement
- Untreated

12-565-552

Color	Well Volume	Working Volume	Sterile	Mfr. No.	Cat. No.	Case of 32
Transparent	1.0mL	0.9mL	Yes	278606	**12-565-553**	153.80
Transparent	1.0mL	0.9mL	No	278605	**12-565-552**	137.25

Nunc* DeepWell* Plates with Shared-Wall Technology

Compressed design saves storage space

- Polypropylene
- Ideal for sample storage and growth of bacteria or yeast
- Cylindrical, round-bottom wells
- Cut-off corner and alphanumeric grid
- Standard 96-well footprint
- Automation friendly

ORDERING INFORMATION:
Five per pack

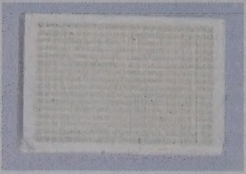
12-565-394

Color	Well Volume	Sterile	Mfr. No.	Cat. No.	Case o
Natural	1mL	Yes	260251	**12-565-395**	50/231.7
Natural	1mL	No	260252	**12-565-394**	50/206.1
Natural	2mL	Yes	278743	**12-565-605**	60/325.0
Natural	2mL	No	278752	**12-565-606**	60/293.7

Nunc* 384-Well Polypropylene Plates

Resist many alcohols and solvents and offer minimal binding properties

- Polypropylene
- Withstand low-speed centrifugation
- Rounded square-well geometry for reduced wicking
- Working volume range: 10 to 100µL/well
- Conform to ANSI*-standard footprint
- Compatible with robotics and automated systems



12-565-386

- Opaque plates for fluorescence and luminescence applications
- White plates provide maximum reflection of signal
- Black plates offer low background and minimize backlight scatter

Color	Sterile	Mfr. No.	Cat. No.	Case of 120
Natural	Yes	264574	**12-565-385**	590.50
Natural	No	264573	**12-565-384**	528.00
Black	Yes	240182	**12-575-340**	590.50
Black	No	264576	**12-565-387**	553.67
Blue	No	264579	**12-565-390**	549.74
White	No	264575	**12-565-386**	553.67

Nunc* DeepWell* 384-Well Plates

Store samples containing DMSO, ethanol, or other strong chemicals and solvents

- Chemical-resistant polypropylene
- Wells have square openings with conical bottoms
- Raised rims are ideal for heat or adhesive sealing
- Withstand exposure to temperatures from -80° to +80°C
- Footprint conforms to SBS (Society of Biomolecular Screening) standards
- Automation compatible

12-565-229

Color	Well Volume	Working Volume	Sterile	Mfr. No.	Cat. No.	Case of 60
Natural	252µL	5–240µL	No	269390	**12-565-229**	368.50

Nunc* Sealing Tapes

Effectively seal all microplate formats

- Withstand temperatures from below freezing to 100°C
- Thin, lightweight tapes are sealed onto the plate with a convenient, handheld applicator (available separately, 12-565-463)
- Pressure-sensitive adhesive is not tacky to the touch, but forms a strong bond to the plate upon application of pressure

12-565 Series

Material	Color	Sterile	Pierceable	Temperature Range	L × W	Mfr. No.	Cat. No.	Case of
Aluminum	Silver	No	Yes	-80°C to +150°C	127 × 78mm	232698	**12-565-398**	100/50.00
Aluminum	Silver	No	Yes	-80°C to +150°C	137 × 83mm	232699	**12-565-399**	100/52.06
Aluminum	Silver	No	Yes	-70°C to +100°C	120 × 79mm	276014	**12-565-475**	100/87.94
Polyester	White	No	No	-70°C to +100°C	120 × 79mm	235305	**12-565-514**	100/74.67
Polyester	Clear	No	No	-70°C to +100°C	134 × 80mm	236370	**12-567-90**	100/129.57
Advanced Polyethylene	Clear	No	Yes†	-70°C to +100°C	120 × 79mm	235306	**12-565-512**	100/239.14
Polyolefin	Clear	No	No	-70°C to +100°C	120 × 79mm	232701	**12-565-492**	100/64.12
Polyolefin‡	Clear	No	No	-70°C to +100°C	120 × 79mm	232702	**12-565-491**	100/62.01
Advanced Polyolefin	Clear	No	No	-70°C to +100°C	120 × 79mm	235307	**12-565-513**	100/215.81
Rayon	White	No	No	-20°C to +80°C	121 × 79mm	249720	**12-249-720**	50/66.73

† Repeatable self-sealing.
‡ Amplification tape.

*Trademark. See Trademark Reference.

unc* MicroWell* 96 DeepWell* Plates aling Tape

aling tape for use with mL polypropylene and lystyrene plates

iation sterilized.

12-565-71

erial	Color	Sterile	Pierceable	Mfr. No.	Cat. No.	Case of
ester	Clear	Yes	No	236366	**12-565-71**	200/156.49

nc* Well Caps

ilable in 96-well format

oice of thermoplastic elastomer, preslit silicone, and ethylene-vinyl etate

ermoplastic elastomer is pierceable, chemical-resistant, and thstands -80°C temperatures

eslit silicone permits pipet tip to repeatedly enter the well without mage to the cap

E:

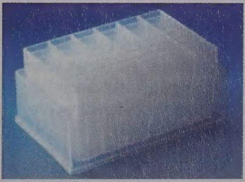
ot use preslit silicon with 100% DMSO.

rial	Color	Sterile†	Pierceable	Mfr. No.	Cat. No.	Case of
6-Well Polypropylene DeepWell* Plates with Shared Wall Technology‡						
moplastic omer	Natural	Yes	Yes	276000	**12-565-560**	50/180.25
	Natural	No	Yes	276002	**12-565-559**	50/164.00
	Blue	No	Yes	276005	**12-565-556**	50/180.25
lit silicone	Natural	No	Yes††	276011	**12-565-570**	50/313.25
tandard 96-Well Polystyrene DeepWell Plates						
ene-vinyl ite	Natural	Yes	No	278616	**12-565-563**	25/98.80

ile mats are individually wrapped.
fit standard-height polypropylene 96-well MicroWell plates.*
eatable.

ermo Scientific* ABgene* 48-Well orage Plate

amidal well bottom for y sample retreival



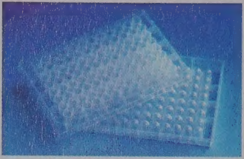
AB-0988

- square wells with 6.0mL rking volume when sealed with hesive or heat seals
- atures support and stacking ribs
- al with heat or adhesive, s-permeable adhesive, or mats

	Well Volume	Cat. No.	Case of 50
ue White	6.0mL	**AB-0988**	239.05

Thermo Scientific* ABgene* 96-Well Standard Microplates

Supporting ribs aid stacking, improve centrifugation performance



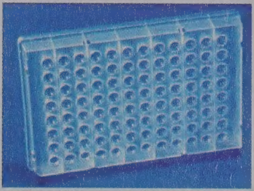
AB-0796

- Virgin polypropylene
- Highly polished for good well visibility
- Raised rim design
- U-shaped well bottoms
- Alphanumeric grid referencing
- SBS (Society for Biomolecular Screening) footprint

Color	Well Volume	Cat. No.	Case of 100
Natural	370µL	**AB-0796**	147.19
Blue	370µL	**AB-0796B**	147.19
Purple	370µL	**AB-0796P**	147.19
White	370µL	**AB-0796W**	181.64

Thermo Scientific* ABgene* 96-Well V-Bottom Storage Plate

Raised rim design



AB-1058

- Reinforced skirt for robotic manipulation
- Seal with heat or adhesive

Color	Well Volume	Cat. No.	Case of 100
Natural	200µL	**AB-1058**	229.04

Thermo Scientific* ABgene* 96-Well 0.8mL Storage Plates

Conical well bottom eases sample retrieval

AB-0859

- Virgin polypropylene
- Raised rim
- 800µL maximum well volume when sealed with adhesive or heat seals
- Alphanumeric grid
- SBS (Society for Biomolecular Screening) footprint
- Robot compatible
- Cleanroom-produced, contamination-free

Color	Well Volume	Cat. No.	Case of 50
Individually Wrapped			
Natural	800µL	**AB-0765**	196.62
Bulk Packed			
Natural	800µL	**AB-0859**	196.62
Blue	800µL	**AB-0859B**	196.62
Green	800µL	**AB-0859G**	196.62
Red	800µL	**AB-0859R**	196.62
White	800µL	**AB-0859W**	270.91
Yellow	800µL	**AB-0859Y**	196.62

Thermo Scientific* ABgene* 96-Well 1.2mL Storage Plates

U-shaped well bottom aids resuspension

- Contamination-free polypropylene
- Raised rim
- 1.2mL maximum well volume when sealed with adhesive or heat seals
- SBS (Society for Biomolecular Screening) footprint
- Robot compatible
- Cleanroom produced

AB-0564

Color	Well Volume	Cat. No.	Case of 50
Individually Wrapped			
Natural	1.2mL	**AB-0564**	196.62
Green	1.2mL	**AB-0564G**	196.62
Red	1.2mL	**AB-0564R**	196.62
Bulk Packed			
Natural	1.2mL	**AB-0787**	196.62
Amber	1.2mL	**AB-0787A**	196.62
Green	1.2mL	**AB-0787G**	196.62

Thermo Scientific* ABgene* 96-Well 1.2mL Polystyrene Storage Plate

Cost-effective option for sample collection, storage and high-throughput screening applications

AB-1068

- Round wells with U-shaped well bottoms to aid resuspension
- 1.2mL maximum well volume when sealed with adhesive or heat seals
- Alphanumeric grid
- SBS (Society for Biomolecular Screening) footprint
- Extremely rigid—ideal for robotic processors and automated liquid handling systems
- Cleanroom produced

Color	Well Volume	Cat. No.	Case of 50
Natural	1.2mL	**AB-1068**	298.00

Thermo Scientific* ABgene* 96-Well 1.2mL Square-Well Storage Plate

Square-well geometry promotes sample aeration—ideal for bacterial growth applications

AB-1127

- Virgin polypropylene
- Low profile maximizes centrifuge capacity, allowing more plates to be loaded per run
- U-shaped well bottom to aid resuspension
- 1.2mL maximum well volume when heat sealed
- Raised-rim design
- Alphanumeric grid
- SBS (Society for Biomolecular Screening) footprint
- Cleanroom produced

Color	Well Volume	Cat. No.	Case of 50
Natural	1.2mL	**AB-1127**	196.62

ACCESSORIES

Thermo Scientific* ABgene* Individual Caps for Storage Plates

AB-1179

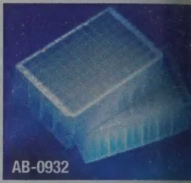
End tabs for easy removal

- Compatible with microplates, 0.8mL storage plates, 1.2mL round-well storage plates, 1.2mL cluster tube ranges
- Low profile for increased well volume

Cat. No.	Case of 960
AB-1179	49.32

Thermo Scientific* ABgene* 96-Well Mark II Storage Plates

Conical well bottom for ease of sample retrieval

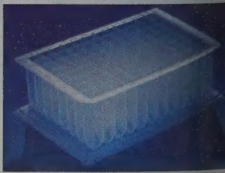

AB-0932

- Virgin polypropylene
- Support and stacking ribs
- Square wells
- 2.2mL working volume when sealed with adhesive or heat seals; 1.8mL when sealed with a 96-cap sealing mat
- SBS (Society for Biomolecular Screening) footprint
- Cleanroom produced

Description	Well Volume	Cat. No.	Case of 50
Natural	2.2mL	**AB-0932**	282.37
Opaque Black	2.2mL	**AB-0932K**	292.79
Blue	2.2mL	**AB-0932B**	282.37
Green	2.2mL	**AB-0932G**	282.37
Opaque White	2.2mL	**AB-0932W**	292.79

Thermo Scientific* ABgene* 96-Well 2.2mL Storage Plates

In addition to storage and screening applications, recommended for growth of bacterial cultures when used in conjunction with Gas Permeable Adhesive Seals (AB-0718)


AB-0661

- Virgin polypropylene
- Raised rim design
- Square wells with U-shaped well bottom
- 2.2mL working volume when sealed with adhesive or heat seals; 1.8mL when sealed with a 96-cap sealing mat
- Alphanumeric grid
- SBS (Society for Biomolecular Screening) footprint
- Automation compatible
- Cleanroom produced

Color	Well Volume	Cat. No.	Case of 50
Natural	2.2mL	**AB-0661**	282.37
Blue	2.2mL	**AB-0661B**	282.37
White	2.2mL	**AB-0661W**	282.49
Yellow	2.2mL	**AB-0661Y**	282.37

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

hermo Scientific* ABgene* 96-Cap Sealing Mats

6 round- or square-capped mats for sealing 96-well torage plates

- Alphanumeric grid-referencing
- Autoclavable or pierceable formats
  - Pierceable are solvent resistant (including DMSO)
  - Autoclavable are not DMSO resistant

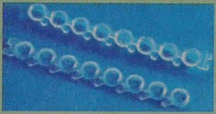
AB-0566 shown with microplate (sold separately)

escription	Closure	Cat. No.	Case of 50
ierceable, nonautoclavable	Round	AB-0566	136.75
erceable, nonautoclavable	Square	AB-0662	130.79
utoclavable	Round	AB-0674	153.45
utoclavable	Square	AB-0675	153.45

hermo Scientific* Storage Plate Cap Strips

ermit simultaneous sealing of eight wells

- Strips of eight caps for sealing storage plates and racked cluster tubes
- Each cap individually numbered, with low profile for increased well volume and end tabs for easy removal



AB-0981

- Use with microplates, 0.8mL storage plates, 1.2mL round-well storage plates, or 1.2mL cluster tube range

t. No.	Case of 120
-0981	49.32

ermo Scientific* Plate Covers

revent contamination or spillage of samples

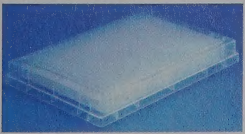
- Polystyrene covers are suitable for all 96-well plates
- Polypropylene covers are suitable for use with Thermo-Fast* 384 plates
- Nonridged covers are for use with automated systems
- Ridged covers permit stacking of covered plates

aterial	With Stacking Ridge	Cat. No.	Case of 50
lystyrene	No	AB-0751	51.26
	Yes	AB-0752	51.26
lypropylene	No	AB-0754	51.27
	Yes	AB-0755	51.26

ermo Scientific* ABgene* 384-Well rage Plates, 120µL

ot compatible

- are wells with pyramidal well tom for easy sample retrieval
- crete raised rims around each l for effective sealing also uce risk of cross-contamination
- litional raised corner rims ect edges of seals
- l with heat or adhesive



AB-0781

	Well Volume	Cat. No.	Case of 50
al	120µL	AB-0781	270.94

Thermo Scientific* ABgene* 384-Square, Deep-Well Storage Plates, 250µL

With alphanumeric grid referencing

- Square wells with conical bottom for ease of sample retrieval
- Discrete raised rims for effective sealing also reduce risk of cross-contamination
- Higher raised corner rims protect edges of seals
- Seal with heat or adhesive
- Maximum well volume of 250µL

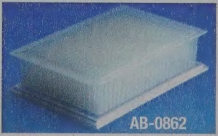
AB-1178

Color	Well Volume	Cat. No.	Case of 50
Clear	250µL	AB-1178	428.24

Thermo Scientific* ABgene* 384-Square, Deep-Well Storage Plates, 300µL

Seal with heat or adhesive

- Pyramid well bottom for ease of sample retrieval
- Discrete raised rims around each rim for effective sealing also reduce the risk of cross-contamination
- Higher raised corner rims protect edges of seals



AB-0862

Color	Well Volume	Cat. No.	Case of 50
Natural	300µL	AB-0862	380.31

Thermo Scientific* Grid-Referenced Twist-Lock Tube Rack

For sample collection and storage of DNA, blood, cell lines, and tissue

- Suitable for storage at -20°C; -80°C and in vapor phase liquid nitrogen
- Alphanumeric grid reference corresponding to tube position in the 96-format rack, facilitating sample tracking and identification
- Encapsulated 2D Matrix* code on each tube base provides robust sample management and tracking; all codes guaranteed to be unique
- Tube features dual seal—"locks in" with the cap in two distinct positions
- Low profile maximizes freezer space
- Caps made of a proprietary inert polymer that increases seal strength at cold temperatures
- Caps can be applied and removed from tubes while in the rack with Twist-Lock Cap-It (included) or Twist-Lock Tool (available separately through your Fisher Scientific Representative)
- Working volume 900µL when capped (810µL recommended when freezing)
- Complies with SBS guidelines
- All components cleanroom produced and contamination free

AB-1258

Cat. No.	Pack of 10
AB-1258	509.19

WARNING

Immersion of tubes and racks in liquid nitrogen introduces safety and contamination risks. Racks should be stored in vapor-phase liquid nitrogen only.

Whatman* 24- and 48-Well UNIPLATE* Microplates

Natural polypropylene plates with 24- or 48-well formats

- High chemical resistance
- Withstand low temperatures (-80°C) for long-term storage
- Conform to ANSI*/SBS standards for compatibility with most microplate readers and automated plate-handling devices

No. of Wells	Well Shape	Well Capacity	Mfr. No.	Cat. No.	Pack of 25
24	Round	10mL	7701-5102	**PF77015102**	170.31
48	Flat (Rectangular Well)	5mL	7701-5500	**PF77015500**	170.95

Whatman* 96-Well UNIPLATE* Microplates

Withstand temperatures to -80°C for long-term storage

- Chemical-resistant polypropylene
- One-piece molded collection plates
- Choose from V-shaped or round well shapes
- Conform to SBS (Society of Biomolecular Screening) standards for compatibility with most microplate readers and automated plate-handling devices
- Untreated

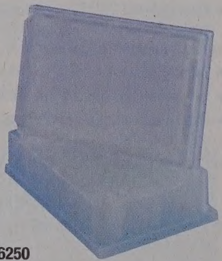
PF77015250

Color	Well Shape	Well Volume	Mfr. No.	Cat. No.	Pack of
Natural	Round	750µL	7701-5750	**PF77015750**	25/142.42
Natural	Round	2mL	7701-5200	**09-003-36**	25/132.46
Natural	V-shaped	250µL	7701-5250	**PF77015250**	50/171.89

Whatman* Multi-Chem* Microplates

Ideal for use with aggressive organic solvents including DMF, TFA, acetonitrile, chloroform, and methylene chloride

- Made from chemically-resistant Multi-Chem material
- Suitable for -80C° storage
- Autoclavable
- Nonbinding


PF77016250

No. of Wells	Well Shape	Well Volume	Cat. No.	Pack of 10
24	Round	10mL	**PF77016102**	256.20
96	Round	750µL	**PF77016750**	213.79
96	Round	2mL	**PF77016200**	288.93
96	V-bottom	250µL	**PF77016250**	133.68
384	V-bottom	80µL	**PF77016101**	224.14

Whatman* Deep 384-Well UNIPLATE* Microplates

Unique "square-to-round" wells

- Manufactured from chemically-resistant and inert natural polypropylene
- Usable for both compound storage and cell cultivation
- Autoclavable
- Well design maximizes volume-to-height ratio for efficient sample recovery
- Wicking is restricted by slightly rounded well corners
- Meet SBS (Society for Biomolecular Screening) standard dimensions

PF77015400

Color	Well Volume	Cat. No.	Pack of 2
Natural	400µL	**PF77015400**	181.7

BD Falcon* Deep 96-Well Plates

Innovative conical-well bottom design localizes sample volume

- Chemical-resistant polypropylene
- Well design improves sample concentration, reconstitution, and centrifugation
- Both 1 and 2mL volume plates have identical external footprints (86 × 128mm) for minimal equipment adjustments between runs
- Designed for flexibility and use in automated liquid-handling equipment

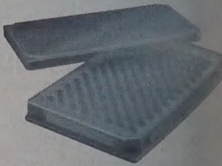
08-772 Series

Well Volume	Sterile	Mfr. No.	Cat. No.	Case of 5
1mL	No	353964	**08-772-117**	195.60
2mL	No	353966	**08-772-118**	227.01

BD Falcon* Multiwell Library Storage Plate and Lid

Ideal for storing, archiving, and transporting of pharmaceutical drug candidates

- Plate and lid are manufactured from high-quality medical-grade polypropylene formulated for low DMSO extractables
- 96-well plate with round-bottom well shape
- Solvent-resistant lid has a generous stacking ring—keeps plates stable during use or storage
- Comes with white marking area for sample identification; usable with ink-jet bar coding
- Usable with robotic equipment


08-790, 08-789

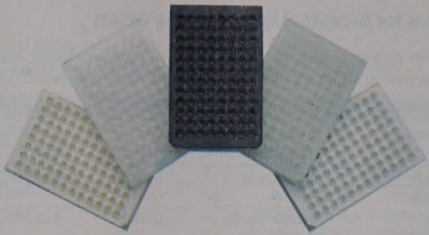
Description	Well Volume	Sterile	Mfr. No.	Cat. No.	Pack of 100
Plate	250µL	No	351190	**08-789**	214.54
Lid	----	No	351191	**08-790**	191.92

*Trademark. See Trademark Reference.

Prices subject to change.

SPECIALTY PLATES—FILTERING

llipore* MultiScreen* 96-Well Assay Plates



atile separation system combines a microplate with Millipore's
brane filtration to simplify and optimize drug discovery techniques,
emical assays, and traditional sample preparation.

e with a vacuum manifold, automated liquid-handling system, or
croplate scintillation counter—entire assays can be performed on
e plate

embrane-to-plate seal ensures no reagent crosstalk and limited optical
sstalk

tented underdrain support structure allows liquid volumes to be maintained for incubation times of up to 21 days; also ensures quantitative
rate transfer to a receiver plate placed in bottom of manifold

ice of filter materials

high protein binding applications, use plates with Immobilon*-P
DF or mixed cellulose esters

high nucleic acid binding, use plates with mixed cellulose esters,
ss fiber, or positively charged DEAE membranes

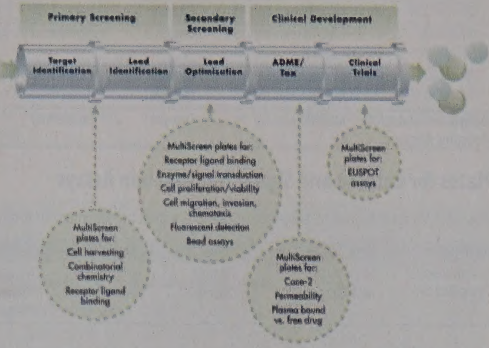
charged biomolecule separations, choose from positively charged
AE or negatively charged phosphocellulose membranes

low biomolecule binding, use plates with hydrophilic Durapore*
DF, Biopore* PTFE, or polycarbonate membranes

assays that require **solvent resistance**, use plates with hydrophilic
FE membranes

E:

microporous membrane interacts distinctly with different proteins or
olecules, therefore, it may be necessary to test different membrane
for each assay.


Primary Screening
Secondary Screening
Clinical Development
Target Identification
Lead Identification
Lead Optimization
ADME/ Tox
Clinical Trials
MultiScreen plates for: Cell harvesting Combinatorial chemistry Receptor ligand binding
MultiScreen plates for: Receptor ligand binding Enzyme/signal transduction Cell proliferation/viability Cell migration, invasion, chemotaxis Fluorescent detection Bead assays
MultiScreen plates for: Caco-2 Permeability Plasma bound vs. free drug
MultiScreen plates for: ELISPOT assays

tes for ADME Assays

de tools to perform high-throughput studies of ADME processes—the investigation of the adsorption, distribution, metabolism, and excretion of
tial drugs.

cation	Description	Color	Material	Membrane Type	Pore Size	Sterile	Cat. No.	Pack of
PA	MultiScreen-IP w/Underdrain	Clear	Acrylic	Immobilon*-P PVDF	0.45µm	No	**MAIP N45 50**	50/701.00
	MultiScreen 96-well Transport Receiver Plate	Clear	Styrene	----	----	No	**MATRNPS50**	50/265.33
eability	MultiScreen Permeability	Clear	Styrene	Polycarbonate	0.45µm	No	**MPC4 NTR 10**	10/520.00
	MultiScreen Acceptor Plate	White	PTFE	----	----	No	**MSSACCEPTOR**	1/453.00
-2	Two Growth Plates, 2 × 96-well Feeder Trays, two Transport Trays with Lids	Clear	Polystyrene	Polycarbonate	0.4µm	Yes	**MACA C02 S2**	2/583.00
						Yes	**MACA C02 S5**	5/1456.00
d vs. Drug	MultiScreen Ultracel-10	Opaque	Polyolefin	Regenerated Cellulose	10,000NMWL	No	**MAUF 010 10**	10/557.00
	Microcon*-96 Filtrate Assembly w/U-Bottom Receiver Plate	Opaque	PP, PTFE	Ultracel*-YM	10,000NMWL	No	**UFMY 010 U2**	2/359.00
						No	**UFMY 010 U8**	8/1341.00

tes for ELISPOT Assays

optimal results in immunological ELISPOT (enzyme-linked immunospot) assays by providing high protein-binding capacity with low background staining.

cation	Description	Color	Material	Membrane Type	Pore Size	Sterile	Cat. No.	Pack of
POT	MultiScreen-IP w/Underdrain	Clear	Acrylic	Immobilon*-P PVDF	0.45µm	Yes	**MAIP S45 10**	10/184.00
	MultiScreen-HA	Clear	Styrene	Mixed Cellulose Esters	0.45µm	Yes	**MAHA S45 10**	10/184.00
	MultiScreen-IP	White	Acrylic	Immobilon-P PVDF	0.45µm	Yes	**S2EM 004 M99**	10/186.00
	MultiScreen$_{HTS}$-IP w/Underdrain†	White	Acrylic	Immobilon-IP PVDF	0.45µm	Yes	**MSIP S4W 10**	10/165.00
	MultiScreen$_{HTS}$-IP w/Underdrain†	White	Acrylic	Immobilon-IP PVDF	0.45µm	No	**MSIP N4W 50**	50/608.00

Screen$_{HTS}$ version features a recessed underdrain and rigid sidewalls.

Contd. on next page.

Millipore* MultiScreen* 96-Well Assay Plates, Contd.

Plates for Receptor Ligand Binding Assays

Ideal for performing receptor binding assays involving whole cells, membrane fragments, or purified receptors; also suitable for Scatchard analysis, as has been demonstrated in numerous receptor-binding assays including Interleukin I, Angiotensin II, and C5a studies. Nontoxic.

Application	Description	Color	Material	Membrane Type	Pore Size	Sterile	Cat. No.	Pack of
Cell Harvest	MultiScreen Harvest-B1	Opaque	Barex/TiO_2	FB Glass Fiber	1.0µm	No	**MAHF B1H 60**	60/591.00
	MultiScreen Harvest-C1	Opaque	Barex/TiO_2	FC Glass Fiber	1.2µm	No	**MAHF C1H 60**	60/591.00
Receptor Ligand Binding	MultiScreen-FB	Opaque	Barex/TiO_2	FB Glass Fiber	1.0µm	No	**MAFB NOB 10**	10/166.00
						No	**MAFB NOB 50**	50/801.00
	MultiScreen-FC	Opaque	Barex/TiO_2	FC Glass Fiber	1.2µm	No	**MAFC NOB 10**	10/166.00
						No	**MAFC NOB 50**	50/801.00
	MultiScreen-GV	Opaque	Barex/TiO_2	Durapore* PVDF	0.22µm	No	**MAGV NOB 10**	10/162.00
	MultiScreen-GV	Opaque	Barex/TiO_2	Durapore PVDF	0.22µm	No	**MAGV NOB 50**	50/726.00
	MultiScreen-HV	Clear	Styrene	Durapore PVDF	0.45µm	No	**MAHV N45 10**	10/142.00
						No	**MAHV N45 50**	50/663.00
	MultiScreen-DV	Opaque	Barex/TiO_2	Durapore PVDF	0.65µm	No	**MADV NOB 50**	50/747.00
	MultiScreen-BV	Opaque	Barex/TiO_2	Durapore PVDF	1.2µm	No	**MABV NOB 50**	50/747.00
Detergent Solubilized Receptor Assays	MultiScreen-GV	Opaque	Barex/TiO_2	Durapore PVDF	0.22µm	No	**MAGV NOB 50**	50/726.00

Plates for Enzyme and Signal Transduction Assays

Provide a 96-well format to separate or capture signaling enzymes for analysis in both basic research and drug discovery programs.

Application	Description	Color	Material	Membrane Type	Pore Size	Sterile	Cat. No.	Case of 50
Enzyme/Signal Transduction	MultiScreen-HV	Opaque	Barex/TiO_2	Durapore* PVDF	0.45µm	No	**MHVB N45 50**	699.00
	MultiScreen-PH	Opaque	Barex/TiO_2	Negatively Charged Phosphocellulose Membrane	----	No	**MAPH NOB 50**	844.00

Plates for Cell-based Assays

Offer formats that allow a wide range of functional cell-based and whole-organism assays to be performed. Ideal for cell viability and proliferation, migration, invasion, and chemotaxis assays.

Application	Description	Color	Material	Membrane Type	Pore Size	Sterile	Cat. No.	Pack of
Migration, Invasion, Chemotaxis	MultiScreen-MIC	Clear	Styrene	Tissue Culture-treated Polycarbonate	3µm	Yes	**MAMI C3S 10**	10/565.00
	MultiScreen-MIC	Clear	Styrene	Tissue Culture-treated Polycarbonate	5.0µm	Yes	**MAMI C5S 10**	10/552.00
	MultiScreen-MIC	Clear	Styrene	Tissue Culture-treated Polycarbonate	8µm	Yes	**MAMI C8S 10**	10/552.00
Fluorescent Receptor/Suspension Cell Assays	MultiScreen-FL	Black	Styrene	Isopore* PC	0.4µm	Yes	**MAFL S40 10**	10/326.00
Cell Proliferation/Viability	MultiScreen-HV	Opaque	Barex/TiO_2	Durapore* PVDF	0.45µm	Yes	**MHVB S45 10**	10/174.65
	MultiScreen-HV	Clear	Styrene	Durapore PVDF	0.45µm	Yes	**MAHV S45 10**	10/186.00
	MultiScreen-FL	Black	Styrene	Isopore PC	0.4µm	Yes	**MAFL S40 10**	10/326.00
Organism Culture	MultiScreen Mesh	Clear	Styrene	Nylon Mesh	11µm	No	**MANM N11 50**	50/1637.00
					20µm	No	**MANM N20 50**	50/1637.00
					60µm	No	**MANM N60 50**	50/1637.00

Contd. on next page.

ipore* Multiscreen HTS* 96-Well Filter Plates, Contd.

tes for Sample Preparation

he isolation, purification, and preparation of samples prior to testing in drug discovery processes and protein and DNA applications.
ats are suitable for removal of large particulates, resin-based separations, solvent applications, and protein/DNA concentration or purification.

cation	Description	Color	Material	Membrane Type	Pore Size	Sterile	Cat. No.	Pack of
-Based Assays	MultiScreen-BV	Clear	Styrene	Durapore* PVDF	1.2µm	No	**MABV N12 50**	50/684.00
	MultiScreen-FL	Black	Styrene	Isopore* PC	0.4µm	Yes	**MAFL S40 10**	10/326.00
in Concentration	MultiScreen Ultracel*-10	Opaque	Polyolefin	Regenerated Cellulose	10,000NMWL	No	**MAUF 010 10**	10/557.00
ble Preparation	MultiScreen-GV	Clear	Acrylic	Durapore PVDF	0.22µm	Yes	**MAGV S22 10**	10/186.00
	MultiScreen-HV	Clear	Styrene	Durapore PVDF	0.45µm	No	**MAHV N45 10**	10/142.00
						No	**MAHV N45 50**	50/663.00
	MultiScreen-DV	Clear	Styrene	Durapore PVDF	0.65µm	No	**MADV N65 50**	50/684.00
nid DNA Purification	MultiScreen$_{HTS}$-PLASMID†	Clear	Polystyrene	Ultrafiltration	----	No	**MANU PSD 50**	50/1461.00
in Binding	MultiScreen-HA	Clear	Styrene	Mixed Cellulose Esters	0.45µm	No	**MAHA N45 10**	10/145.00
						No	**MAHA N45 50**	50/675.00
	MultiScreen-HA	Opaque	Barex/TiO_2	Mixed Cellulose Esters	0.45µm	No	**MHAB N45 50**	50/693.00
	MultiScreen-IP	Opaque	Barex/TiO_2	Immobilon*-P PVDF	0.45µm	No	**MAIP N0B 50**	50/741.00
ng Bacterial Lysates	MultiScreen-NA	Clear	Proprietary	Non-Nucleic Acid Binding Material	----	No	**MANA NLY 50**	50/728.00

Screen$_{HTS}$ version features a recessed underdrain and rigid sidewalls.

ACCESSORIES

acuum Manifold Basic Kit

ilters to drain standard multiwell plate, deep-well late, or undersized plate

- Has no internal parts subject to wear or damage
- Automation-friendly—robotic arm can remove ring, access the plate, and then replace ring

RDERING INFORMATION:

imensions (without MultiScreen* plate; with standard ring):
13⁄16L × 6W × 2⅝"H (12.2 × 15.2 × 6.6cm)

NCLUDES:

ase, standard ring, gasket pair, support grid, vacuum gauge, N/OFF valve, vacuum control, and external tubing

escription	Cat. No.	Each
acuum Manifold Basic Kit	**MAVM 096 0R**	1250.00
eplacement Parts		
eep-well ring with gaskets	**MAVM 096 0T**	232.00
eplacement gasket set (1 each, top and bottom)	**MAVM XXA 04**	78.00
eplacement support grid	**MAVM XXA 05**	232.00
eplacement tubing set	**MAVM XXA 06**	62.00
eplacement ON/OFF valve, acuum control valve, and tee assembly	**MAVM XXA 07**	217.00
eplacement standard ring	**MAVM XXA 08**	149.00

entrifuge Alignment Frame

llows easy and accurate transfer of samples

- Transfer samples filtrate to the wells of a 96-well collection plate
- Prevents spillage or cross-contamination

or Application Type	Cat. No.	Each
queous	**MACF 096 04**	38.23

Column Loaders

No need to pipet slurries, gels, or resins

- Load all 96 wells simultaneously and uniformly
- Constructed of aluminum with an abrasion-resistant, chemically inert, nonstick coating
- Beveled acrylic scraper is tailored to fill wells and remove excess material back to a loading tray

Description	Cat. No.	Price
25µL Column Loader	**MACL 096 25**	Ea./301.38
45µL Column Loader	**MACL 096 45**	Ea./301.38
80µL Column Loader	**MACL 096 80**	Ea./301.38
100µL Column Loader	**MACL 096 00**	Ea./301.38
Replacement Scraper for all Column Loaders	**MACL OSC 03**	Pk. of 3/72.75

Sealing Tape

Choose from opaque or clear

- Opaque sealing tape is used to seal 100µL plate bottoms read in TopCount* instruments
- Clear sealing tape can be used to seal all manufacturers' 300µL plate tops and plate bottoms for MicroBeta* readers
- Precut to size

Description	Qty.	Cat. No.	Each
Opaque Sealing Tape	100	**MATA HOP 00**	42.25
Clear Sealing Tape	100	**MATA HCL 00**	42.25

LOOKING FOR MILLIPORE* MULTISCREEN* CACO-2 96-WELL ASSAY SYSTEMS?

The MultiScreen Caco-2 System is ideal for performing growth, feeding, and analysis in one plate. For complete details, see the Cell Culture section.

Millipore* MultiScreen$_{HTS}$* Solubility Filter Plate

96-well filter plate designed and optimized for aqueous solubility assays

- High throughput system to classify or quantify the aqueous solubility of compound libraries stored in solvent as a concentrated solution
- Analysis time in under four hours using <100µg of sample per test
- Automation compatible, with space for barcoding
- Validated for high drug recovery
- Low-binding membrane and low-binding plate materials

Filter Material	Cat. No.	Pack of
Polycarbonate	**MSSL BPC 10**	10/270.34
Polycarbonate	**MSSL BPC 50**	50/1248.00

MSSL BPC 10

Millipore* MultiScreen$_{HTS}$* 96-Well Filter Plates

Innovative plate design for full automation compatibility

Ideal for use in a broad range of drug discovery and life science applications, including receptor-ligand binding, general sample preparation, ELISPOT, enzyme activity, bead-based assays, whole organism visualization, and radioisotope detection.

- Standardized dimensions allow full compatibility with automated gripper arms, stackers, barcode labels, and plate readers; aligned, rigid sidewalls permit easy handling by robotic gripper arms
- Unique two-piece plate design eliminates surface contact with individual well "drip directors," prevents crosstalk between wells, and provides easy, contamination-free stacking and improved seal with vacuum manifolds
- Extended skirt enables stacking directly with collection plates, protects recessed underdrain, provides ample surface for barcode labels, and improves vacuum seal
- Removable underdrain allows membrane access for ELISPOT assays, whole organism visualization, and radioisotope detection
- Isolated well design and individually sealed filter discs eliminate potential for reagent flow from well to well
- Meet ANSI*/SBS 2004 plate specifications
- Available in clear, or opaque plastic to prevent light transfer between wells during direct scintillation counting

MSGV and MSHV Series

Application	Color	Material	Membrane Type	Pore Size	Sterile	Cat. No.	Pack of
Low Protein/Nucleic Acid Binding							
Receptor binding assays on whole cells and cell fragments, protein kinase/phosphatase precipitation assays, bead/resin-based assays	Clear	Styrene	Durapore* PVDF	0.22µm	No	**MSGVN2210**	10/128.00
	Clear	Styrene	Durapore PVDF	0.22µm	No	**MSGVN2250**	50/597.00
	Opaque	Barex/TiO_2	Durapore PVDF	0.22µm	No	**MSGVN2B50**	50/654.00
	Clear	Styrene	Durapore PVDF	0.22µm	Yes	**MSGVS2210**	10/164.00
	Clear	Styrene	Durapore PVDF	0.45µm	No	**MSHVN4510**	10/128.00
	Clear	Styrene	Durapore PVDF	0.45µm	No	**MSHVN4550**	50/597.00
	Opaque	Barex/TiO_2	Durapore PVDF	0.45µm	No	**MSHVN4B10**	10/145.00
	Opaque	Barex/TiO_2	Durapore PVDF	0.45µm	No	**MSHVN4B50**	50/654.00
	Clear	Styrene	Durapore PVDF	0.45µm	Yes	**MSHVS4510**	10/164.00
	Opaque	Barex/TiO_2	Durapore PVDF	0.45µm	Yes	**MSHVS4B10**	10/171.00
	Opaque	Styrene	Durapore PVDF	0.45µm	No	**MZHVN0W10**	10/367.46
	Opaque	Styrene	Durapore PVDF	0.45µm	No	**MZHVN0W50**	50/1632.00
	Clear	Styrene	Durapore PVDF	0.65µm	No	**MSDVN6510**	10/131.00
	Clear	Styrene	Durapore PVDF	0.65µm	No	**MSDVN6550**	50/615.00
	Opaque	Barex/TiO_2	Durapore PVDF	0.65µm	No	**MSDVN6B50**	50/672.00
	Clear	Styrene	Durapore PVDF	0.65µm	Yes	**MSDVS6510**	10/164.62
Sample prep/bead-based assays	Clear	Styrene	Durapore PVDF	1.2µm	No	**MSBVN1210**	10/131.00
	Clear	Styrene	Durapore PVDF	1.2µm	No	**MSBVN1250**	50/615.00
	Opaque	Styrene	Durapore PVDF	1.2µm	No	**MSBVN1B50**	50/672.00
	Clear	Styrene	Durapore PVDF	1.2µm	Yes	**MSBVS1210**	10/159.00
High Protein/Nucleic Acid Binding							
Protein interaction assays, avidin-biotin linkages, DNA-binding proteins	Clear	Acrylic	Immobilon*-P PVDF	0.45µm	No	**MSIPN4510**	10/131.00
	Clear	Acrylic	Immobilon-P PVDF	0.45µm	No	**MSIPN4550**	50/608.00
	Opaque	Barex/TiO_2	Immobilon-P PVDF	0.45µm	No	**MSIPN4B10**	10/149.00
	Opaque	Barex/TiO_2	Immobilon-P PVDF	0.45µm	No	**MSIPN4B50**	50/666.00
ELISPOT assays	Clear	Acrylic	Immobilon-P PVDF	0.45µm	Yes	**MSIPS4510**	10/165.00
Plates with Glass Fiber Filter							
Receptor/ligand binding assays, sample prep, enzyme assays with precipitation, DNA purification	Opaque	Barex/TiO_2	Glass fiber filter	1.0 + 0.65µm	No	**MSFBN6B10**	10/150.00
	Opaque	Barex/TiO_2	Glass fiber filter	1.0 + 0.65µm	No	**MSFBN6B50**	50/720.00
	Opaque	Barex/TiO_2	Glass fiber filter	1.2 + 0.65µm	No	**MSFCN6B10**	10/150.00
	Opaque	Barex/TiO_2	Glass fiber filter	1.2 + 0.65µm	No	**MSFCN6B50**	50/720.00

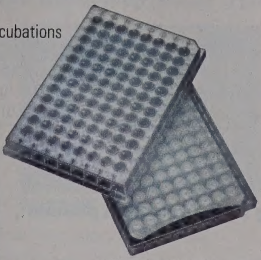
*Trademark. See Trademark Reference.

Prices subject to change.

llipore* MultiScreen* Solvinert Filter Plates

vent-compatible plates optimized for drug discovery applications

- ear polyolefin base plate offers broad solvent compatibility
- e-piece design eliminates aking and allows for extended incubations
- w binding and low extractables
- commodate aqueous and naqueous samples with emically resistant hydrophilic hydrophobic membranes
- tomation compatible
- ailable in 96-well deep well nL) format (with or without filter) and standard (500µL) mat



MSRP and MSRL series

Membrane Type	Well Volume	Pore Size	Sterile	Cat. No.	Pack of
MultiScreen Deep Well Solvinert Filter Plates					
Hydrophobic PTFE	2mL	0.45µm	No	**MDRP N04 05**	5/214.80
			No	**MDRP N04 10**	10/454.00
Hydrophilic PTFE	2mL	0.45µm	No	**MDRL N04 10**	10/454.00
MultiScreen Deep Well Solvinert Filter Plates with Prefilter					
Hydrophobic PTFE	2mL	0.45µm	No	**MDRP NP4 05**	5/241.90
			No	**MDRP NP4 10**	10/512.00
MultiScreen Solvinert Filter Plates					
Hydrophobic PTFE	500µL	0.45µm	No	**MSRP N04 10**	10/211.00
			No	**MSRP N04 50**	50/1018.00
Hydrophilic PTFE	500µL	0.45µm	No	**MSRL N04 10**	10/211.00
			No	**MSRL N04 50**	50/937.00

rning* Filtr*EX** Filter Plates

vidual filter discs eliminate liquid cross-contamination

- ented plate design features rigid, virgin polystyrene construction
- al for automated liquid handling, centrifugation and vacuum filtration
- de skirt easily accommodates bar code labels
- ividual filter discs are sealed in the wells to ensure 100% integrity of h well
- nchtop-safe design prevents contamination of bottom filtration nings while allowing plates to rest on the lab bench
- well plates hold a standard 350µL per well; high-throughput 384-well tes feature a 180µL working volume that simplifies protocol transition n the 96-well format
- ltiple filter media and pore sizes available to meet a variety of lications
- rophilic PVDF membrane in 0.2–0.45µm pore sizes for omatography support
- ss fiber membrane in 0.25–0.66mm thickness for PCR purifications
- ier membrane can be used for Plasmid DNA purification and n-throughput screening such as receptor-ligand binding and -based assays
- S standard dimensions

ORDERING INFORMATION:

Sterile plates are wrapped in packs of 5; 10 packs per case. Lids are not included, but may be ordered separately.

07-201-142

Color	Membrane Type	Pore Size/ Membrane Thickness	Sterile	Mfr. No.	Cat. No.	Case of
96-Well Plates						
Clear	PVDF	0.2µm	No	3508	**07-202-507**	50/698.53
White	PVDF	0.2µm	Yes	3505	**07-201-142**	50/721.82
White	PVDF	0.2µm	No	3504	**07-200-754**	50/698.18
White	Glass Fiber	0.25mm	No	3510	**07-200-763**	50/764.42
White	Glass Fiber	0.66mm	No	3511	**07-200-764**	50/764.42
384-Well Plates						
White	PVDF	0.45µm	No	3531	**05-539-106**	25/692.65

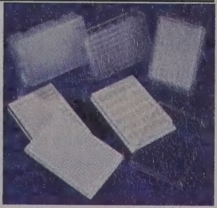
atman* UniFilter* 96-Well, 800µL Microplates

ed for purifications, isolations, and separation of biomolecules, such as DNA

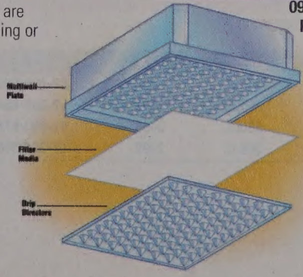
- ar polystyrene plates available with a variety of filter media
- ented integral filter design prevents well-to-well crosstalk

	Short-Drip Director			Long-Drip Director		
rane	Mfr. No.	Cat. No.	Pack of 25	Mfr. No.	Cat. No.	Pack of 25
nan	7700-1801	**09-003-13**	487.41	7700-2801	**PF77002801**	499.13
nan	----	----	----	7700-2803	**PF77002803**	484.90
µm	7700-1804	**PF77001804**	484.90	7700-2804	**PF77002804**	484.90
5µm	----	----	----	7700-2805	**PF77002805**	484.90
ose e m	7700-1808	**09-003-20**	484.91	7700-2808	**PF77002808**	499.13
nan	----	----	----	7700-2810	**PF77002810**	484.90

- Unique drip director design on the bottom of the plates controls filtrate placement
  - Long drip directors eliminate well-to-well contamination during the filtration process
  - Short drip directors are effective for screening or filtering to waste
- Standard footprint is compatible with most plate readers, autosamplers, and robots



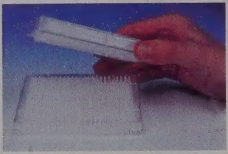
09-003 and PF770028 Series



Whatman* UniFilter* 384-Well Microplates

Long drip directors eliminate well-to-well contamination during filtration

- Clear polystyrene construction
- Ideal for use in DNA template cleanup, cell capture, and the removal of unwanted debris
- 384-well format microplates with a 100µL well volume allow a large enough sample for recovery after filtration



09-003-49

Membrane Type	Mfr. No.	Cat. No.	Pack of
0.45µm Hydrophilic PVDF	7700-2106	**09-003-49**	1136.
DNA Binding	7700-2110	**09-003-50**	1136.
Whatman GF/C	7700-1101	**PF77001101**	1136.

Whatman* 96-Well Lysate Clarification Plate

Ideal for the removal of cellular debris from lysates during high-throughput plasmid DNA purification

- Polystyrene plate with a proprietary filter membrane
- Processes 96 lysates in <10 min.
- Compatible with vacuum filtration or centrifugation
- Produces recovery rates 10 to 30% higher than manual centrifuge methods
- Recovers an average of 6Rg DNA/well when used with the Whatman DNA Binding Plate (Cat. No. PF77002810, see previous page)
- Adaptable to automated platforms

05-714-035

Color	Well Capacity	Sterile	Mfr. No.	Cat. No.	Pack of
Clear	800µL	No	7720-2830	**05-714-035**	502.

Whatman* Fast Flow Protein Precipitation Microplate

Fast, easy and automatable protein precipitation

- Prepare 96 samples up to 150µL for plasma and 200µL for serum in less than 10 minutes
- Minimal liquid handling—precipitation and filtration performed in one well
- Utilizes acetonitrile precipitation and vacuum filtration to remove protein contaminants from samples before downstream analysis
- Unique oleophobic membrane configuration retains acetonitrile/sample mixture during mixing or inoculation steps
- Vacuum filtration allows mixture to pass through the membrane while precipitated proteins remain in well
- Filtrate is then ready for HPLC injection or target UV quantitation
- Conforms with ANSI*/SBS size standards

09-923-14 with vacuum manifold (sold separately)

Well Capacity	Mfr. No.	Cat. No.	Pack
2.0mL	7720-7236	**09-923-14**	327

SPECIALTY PLATES — NUCLEIC ACID LABELING

Costar* DNA-BIND* 96-Well Plates

Convenient method for covalently immobilizing ssDNA by either the 5' or 3' end

- Ready to use without surface preparation, prehybridization, or addition of expensive crosslinking reagents or highly purified oligos
- Ideal for hybridization and amplification
- Surface provides binding with high specificity and extremely low background
- Flat-bottom wells

07-200-680, 07-200-586

Color	Well Volume	Mfr. No.	Cat. No.	Case of
Clear	360µL	2525	**07-200-586**	10/89.21
Clear	360µL	2505	**07-200-584**	50/569.69
Black	360µL	2498	**07-200-678**	50/406.38
White	360µL	2499	**07-200-680**	50/406.38

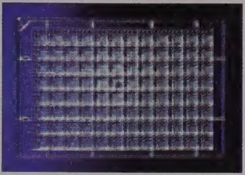
LOOKING FOR PCR PLATES?
Browse our selection of PCR Plates in the PCR section.

SPECIALTY PLATES — PROTEIN CRYSTALLIZATION

orning* 96-Well Next Generation Crystal*EX** Protein Crystallization Microplates

ptimized for high-throughput sitting-drop protein crystallization

- hoice of two materials: cyclic lefin copolymer (COC) and zero olarization polymer (PZero) for zero ackground polarization and non-irefringence
- ach of the 96 reservoir wells is lanked by either one, three, or five rotein wells—with SBS-standard pacing between the centers of djacent well clusters



07-201-830 Series

- igh-clarity protein wells offer optimal microscopic crystal viewing
- rystal cup well design facilitates centering and collecting of rotein crystals
- eservoir working volume: 25 to 150µL
- Vithout lids; use optical sealing tape (05-539-107)
- lphanumeric markers in each well cluster for easy identification under he microscope
- onform to SBS specifications for full compatibility in automated rystal screening
- vailable with hydrophilic-treated well surfaces for improved nicrodrop mixing

Protein Well Size	Protein Well Shape	No. of Protein Wells	Treated Surface	Mfr. No.	Cat. No.	Case of 50
Cyclic Olefin Copolymer (COC)						
4µL	Conical Flat	1	Hydrophilic	3551	**07-202-508**	449.25
4µL	Round	1	Not Treated	3556	**07-202-509**	449.25
Zero Polarization Polymer (PZero)						
2µL	Round	3	Not Treated	3552	**07-201-831**	494.19
2µL	Conical Flat	3	Not Treated	3553	**07-201-832**	494.19
2µL	Flat	3	Not Treated	3554	**07-201-833**	494.19
2µL	Conical Flat-Crystal Cup	3	Not Treated	3555	**07-201-834**	494.19
1µL	Conical Flat-Crystal Cup	3	Not Treated	3550	**07-201-837**	494.19
1µL	Conical Flat-Crystal Cup	5	Not Treated	3557	**07-201-836**	479.79

SPECIALTY PLATES — STREPTAVIDIN COATED

hermo Scientific* Microtiter* Streptavidin-Coated Plates

iversal binding surface

- ight-well strips assembled in a eusable, stackable, vented frame
- uitable for DNA hybridization ssays, binding of small hydrophilic nolecules, and molecules that adsorb oorly to polystyrene or denature pon adsorption
- ligh-binding capacity, stability for ntibodies and antigens, high optical uality and excellent binding haracteristics with low background bsorbance and fluorescence

21-377-2 Series

- Alphanumeric labeling
- Compatible with all standard microplate instrumentation

NOTE:

Breakable strips are ideal for processing a small number of samples.

Color	Well Capacity	Mfr. No.	Cat. No.	Pack of 5
Solid Strip Plates				
Clear	200µL	95029263	**21-377-282**	133.00
Black	200µL	95029283	**21-377-278**	133.00
Breakable Strip Plates				
Clear	200µL	95029293	**21-377-281**	133.00

LOOKING FOR TISSUE CULTURE PLATES?

Browse our selection of Tissue Culture Plates in the Cell Culture section.

SPECIALTY PLATES — TUBES AND STRIPS

Corning* Stripwell* Microplates

For in-vitro diagnostic assays

07-200-3 Series

- Designed and treated to provide uniform binding, high optical clarity, and low background interference
- Contain twelve 1 × 8 strips pre-assembled in an "egg crate" style holder
- Strips fit in frame in only one direction, eliminating the chance of misorientation
- Flat-bottom wells can be easily snapped apart to allow for radiometric analysis
- Hydrophobic **medium-binding surface** has a binding capacity of ~250ng IgG/cm^2 and is suited for large hydrophobic biomolecules
- Hydrophobic and ionic (negatively charged) **high-binding surface** has a binding capacity of ~500ng IgG/cm^2 and is ideal for use with positively charged biomolecules (>10kDa)
- Available in standard volume or low volume to save antibody and reagent costs
- Nonsterile

ORDERING INFORMATION:
Bulk packed. Cat. No. 07-200-97 individually packaged with lid. Cat. No. 07-200-24 has individual 1 × 8 strips without frame.

CERTIFICATIONS:
Cat. Nos. 07-200-31 and -32 have certified surface chemistry.

Color	Binding Property	Mfr. No.	Cat. No.	Case of
Standard-Volume Microplates (360µL well volume)				
Clear	Medium	2593	**07-200-32**[1]	100/503.50
Clear	High	2592	**07-200-31**[1]	100/487.60
Clear	High	2580	**07-200-24**[2]	800/291.50
Clear	TC-Treated (sterile)	9102	**07-200-97**	50/314.26
Black	Medium	3914	**07-200-594**	100/503.50
Black	High	3924	**07-200-596**	100/487.60
White	Medium	3913	**07-200-593**	100/503.50
White	High	3923	**07-200-595**	100/487.60
Low-Volume Microplates (190µL well volume)				
Clear	Medium	2480	**07-200-290**	100/630.70
Clear	High	2481	**07-200-291**	100/630.70
Black	High	2483	**07-200-299**	100/630.70
White	Medium	2484	**07-200-314**	100/630.70
White	High	2485	**07-200-315**	100/630.70

[1] Certified surface chemistry.
[2] Individual 1 × 8 strips without frame.

Surface Modified Stripwell* Microplates

Five surface chemistries suit every type of assay

- Same features as standard volume Stripwell microplates with choice of surface chemistries.
- Hydrophilic and ionic **amine** surface is ideal for small negatively charged biomolecules
- Benzophenone-coated **universal-BIND** surface is suited for use with biomolecules with an extractable hydrogen and covalent immobilization via UV crosslinking
- **DNA-BIND** surface allows covalent immobilization to amine groups an is ideal for use with DNA, proteins, and small peptides
- **Carbo-BIND** surface permits covalent immobilization to CHO moieties and works well with antibodies and Fab fragments
- **Sulfhydryl-BIND** surface enables covalent immobilization to sulfhydry groups and is perfect for use with biomolecules possessing an accessib sulfydryl group
- Volume per well, 360µL

Color	Binding Surface	Surface Chemistry	Mfr. No.	Cat. No.	Case of
Clear	Amine	Amine	2388	**07-200-495**	587
Clear	Universal-BIND	Universal	2504	**07-201-586**	598
Clear	DNA-BIND	N-oxysuccinimide	2506	**07-200-585**	598
Clear	Carbo-BIND	Hydrazide	2508	**07-200-142**	598
Clear	Sulfhydryl-BIND	Maleimide	2510	**07-201-587**	598

Thermo Scientific* ABgene* 96 Omni-Tube Plate

Compatible with 0.5mL thermal cyclers

- 96 Omni-Tubes preassembled in plate format
- 300µL maximum tube volume when used with adhesive and heat seals
- Sealable using adhesive films and foils, heat seals and flat and domed cap strips

Color	Cat. No.	Pack of
Powder Blue	**AB-0407**	157

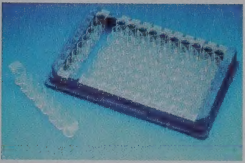
*Trademark. See Trademark Reference.

Prices subject to change.

unc* ELISA/EIA Modules

rips of 16 (2 × 8), 12, or 8 wells in frame—96 wells all

12-565-133



12-565-132

- **tandard assembly** has well trips locked into 96-well frame
- **reakApart* design** includes olystyrene frame with 12 olypropylene carriers, each olding a break-apart 8-well strip
- nap wells from strip for cintillation counting; fix them asily anywhere in carrier
- tackable frame marked for lid rientation
- ompatible with common icroplate readers and washers
- elect wells with CovaLink* covalent inding (for DNA or other small olecules), MaxiSorp* (high protein ffinity), or PolySorp* (high ydrophobic molecule affinity) urface

RTIFICATIONS:
. Nos. specified in chart are tified for: Adsorption of IgG; of <5% between wells; all results % from mean; and background of all lls ±0.005 absorbance units from mean.

face	Well Shape	Wells/Strip	Well Vol.	Mfr. No.	Cat. No.	Case of
dard Assembly Modules						
aLink	Flat	8	400µL	478042	**12-565-132**	30/403.00
xiSorp	C-shaped	8	300µL	445101	**12-565-265**[1]	60/364.46
xiSorp	C-shaped	12	300µL	473709	**12-565-123**[1]	60/364.00
xiSorp	Flat	8	400µL	468667	**12-565-121**[1]	60/350.50
xiSorp	Flat	8	400µL	434797	**22-047029**	120/700.50
xiSorp	Flat	16	400µL	467466	**12-565-119**[1]	60/350.00
xiSorp	U-shaped	8	300µL	475078	**12-565-117**[1]	60/350.50
ySorp	C-shaped	12	300µL	473717	**12-565-124**	60/362.25
ySorp	Flat	8	400µL	469078	**12-565-122**	60/330.25
ySorp	U-shaped	8	300µL	475086	**12-565-118**	60/330.25
ySorp	U-shaped	16	300µL	466966	**12-565-116**	60/348.69
kApart Design Modules						
xiSorp	C-shaped	8	300µL	473768	**12-565-134**[1]	60/482.25
ySorp	C-shaped	8	300µL	473539	**12-565-133**	60/482.25

[1] *rtified*

Thermo Scientific* Immunlon* Immunoassay Plates and Strip Assemblies

Choice of three binding surfaces and two well shapes for reproducible results in immunoassay applications

14-245-78

- Available in clear polystyrene 96-well plates, Removawell* assemblies of 8- or 12-well strips preassembled into a form, individual 12-well Removawell strips, or Dividastrips* assemblies of two strips of eight wells preassembled into a form
- **Immulon 1 B** "binding" products have a consistent medium binding affinity for hydrophobic proteins and complexes
- **Immulon 2 HB** "high binding" products are irradiated to provide increased binding affinity for hydrophilic proteins and complexes
- **Immulon 4 HBX** "extra-high binding" products are also irradiated and offer maximum hydrophilic protein uptake and guaranteed coefficient of variation

Format	Well Shape	Well Configuration	Cat. No.	Price
Immulon 1 B				
Plate	Flat	96-well	**14-245-78**	Pk. of 50/96.00
Plate	U-Shaped	96-well	**14-245-77**	Pk. of 50/96.00
Removawell Assembly	C-shaped	8 wells/strip	**14-245-169**	Cs. of 100/ 360.00
Removawell Assembly	Flat	12 wells/strip	**14-245-168**	Cs. of 100/ 360.00
Removawell Strip	Flat	12 wells/strip	**14-245-80**	Pk. of 320/ 109.00
Dividastrips Assembly	Flat	2 strips of 8 wells	**14-245-210**	Cs. of 100/ 361.00
Immulon 2 HB				
Plate	Flat	96-well	**14-245-61**	Pk. of 50/112.00
Plate	U-shaped	96-well	**14-245-79**	Pk. of 50/112.00
Removawell Assembly	C-shaped	8 wells/strip	**14-245-170**	Cs. of 100/ 376.00
Removawell Assembly	Flat	12 wells/strip	**14-245-167**	Cs. of 100/ 376.00
Removawell Strip	Flat	12 wells/strip	**14-245-81**	Pk. of 320/ 121.00
Dividastrips Assembly	Flat	2 strips of 8 wells	**14-245-211**	Cs. of 100/ 376.00
Immulon 4 HBX				
Plate	Flat	96-well	**14-245-153**	Pk. of 50/122.00
Removawell Assembly	C-shaped	8 wells/strip	**14-245-174**	Cs. of 100/ 401.00
Removawell Assembly	Flat	12 wells/strip	**14-245-193B**	Cs. of 100/ 401.00
Removawell Strip	Flat	12 wells/strip	**14-245-163**	Pk. of 320/ 132.00
Dividastrips Assembly	Flat	2 strips of 8 wells	**14-245-213**	Cs. of 100/ 400.00

ACCESSORIES

Plate Sealer

Mfr. No.	Cat. No.	Pack of 100
3501	**14-245-18**	41.00

DISHES AND TRAYS

Nunc* Polystyrene Rectangular Dishes

Feature 1-, 4-, or 8-well formats

- ANSI* standard dimensions for instrument compatibility
- Nunclon* Δ certified surface treatment for consistent cell attachment and growth
- Untreated surface for molecular biology applications
- **1-Well Format**
    - Convenient plate format for cell culture
    - HTS Petri dish applications
- **4- and 8-Well Formats**
    - Assay compartmentalization
    - Probe multiple gene subsets
    - Wash Western blot strips
    - 4-well dish holds 4 glass slides
    - Useful in all areas of cell culture, including scale-up and cloning

Back to front: 12-566-41, -494, -496

No. of Wells	Color	Lid	Sterile	Mfr. No.	Cat. No.	Case of
Untreated						
1	Clear	Yes	Yes	267060	**12-565-493**	100/285.41
4	Clear	Yes	Yes	267061	**12-565-495**	100/300.71
8	Clear	Yes	Yes	267062	**12-565-497**	100/315.98
Nunclon Δ Certified						
1	Clear	Yes	Yes	140156	**12-566-41**	90/293.00
1	White	Yes	Yes	140175	**12-566-42**	90/294.00
4	Clear	Yes	Yes	167063	**12-565-494**	100/347.00
8	Clear	Yes	Yes	167064	**12-565-496**	100/364.00

Nunc* OmniTray* Multi-Use Tray

Use as a Petri dish or hybridization tray and for screening DNA libraries

- Polystyrene
- Flat bottom, single-well
- Same external dimensions as a standard 96-well plate
- Comes with matching lid to protect clones from contamination and to provide a means for cell respiration

12-565-296

ORDERING INFORMATION:

Internal dimensions: $2\frac{15}{16}$L × $4\frac{7}{16}$W × $\frac{7}{16}$"D (74 × 116.5 × 11.6mm)

External dimensions: $3\frac{3}{8}$L × $5\frac{1}{16}$W × $\frac{9}{16}$"H (85.7 × 127.6 × 14.4mm)

Surface Treatment	Lid	Sterile	Mfr. No.	Cat. No.	Case of
Untreated	Yes	Yes	242811	**12-565-296**	60/141.00
Untreated	Yes	Yes	264728	**12-565-450**	90/211.25
MaxiSorp*	Yes	Yes	465219	**12-565-550**	60/195.50
Nunclon* Δ	Yes	Yes	165218	**12-565-285**	60/155.75

ACCESSORIES

Assay Plate Sealing Film

Nonsterile, precut, clear film with adhesive. Not recommended for cell-based assays.

Mfr. No.	Cat. No.	Case of 200
353073	**08-772-2D**	150.46

MICROPLATE ACCESSORIES

Nunc* Open Well Upper Structures

Used for bonding to a specialty base material, holding PCR plates, adding agar to each well, or other purposes

- Nonsterile
- Black

No. of Wells	Material	Mfr. No.	Cat. No.	Case of 10
96-wells	Polystyrene	256665	**12-565-600**	308.38
384-wells	Cyclic olefin copolymer	267065	**12-565-612**	744.25

LOOKING FOR MICROPLATE SEALS?

Fisher Scientific offers a wide selection of microplate sealing tape.

- For Fisherbrand* Silicone Plate Seals, see p. 1138
- For Millipore* MultiScreen* Plate Sealing Tape, see p. 1147
- For Nunc* Sealing Tapes and MicroWell* 96 Deep Well* Plates Sealing Tape, see p. 1141
- For Thermo Scientific* Plate Seals, see the PCR section
- For BD Falcon* Assay Plate Sealing Film, see p. 1127

12-565 Series

Additional plate-specific microplate lids, cap mats, and seals can be found throughout the Microplates section associated with specific plates. To browse our complete selection of microplate seals, please visit our Web site.

Visit www.fishersci.com and search for Microplate Sealing Supplies

*Trademark. See Trademark Reference.

Prices subject to change.

PHYSICAL BASIS OF FLUORESCENCE

Fluorescence is the emission of photons by atoms or molecules whose electrons are transiently stimulated to a higher excitation state by radiation from an outside source.

In other words, light of a specific wavelength (the excitation wavelength) hits a sample that has been stained with fluorescent dye and, as a result, the sample then gives off light of a specific wavelength (the emission wavelength).

Excitation and emission of light is almost simultaneous: the emission is $<10^{-6}$ seconds after end of excitation.

Because energy is given up in this process, the emission wavelength will always be long.

arl Zeiss* Fluorescence Microscopes

The Axioskop 40 FL and Axio Imager D1 are upright microscopes used primarily to view either covered or uncovered slides and occasionally specimens in small vessels.*

The Axiovert 40 CFL is an inverted microscope/tissue culture microscope and is used to view cells in various vessels, i.e., Petri dishes, roller bottles, multi-well plates and flasks.*

ILLUMINATION TECHNIQUE REVIEW

Contrast is defined as the:

$$\frac{\textbf{Brightness of Specimen - Brightness of Background}}{\textbf{Brightness of Specimen + Brightness of Background}}$$

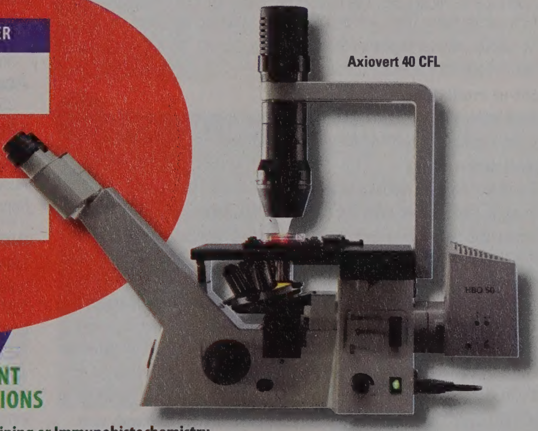
Many things that are otherwise invisible to us can be made visible with added contrast.

Fluorescence Illumination is defined as the luminous phenomenon of substance after illumination. In other words, a dye, specifically a fluorochrome, is used to make a specific structure "glow" when illuminated by a specific wavelength of light—the excitation wavelength.

BEFORE YOU BUY FLUORESCENCE MICROSCOPES

MODEL	INCLUDES	CAT. NUMBER
Axioskop 40 FL Package	Achroplan 10X, 20X, 40X, 100X oil objectives; phototube; Filter Sets 10 and 15	12-070-614
Axio Imager D1 FL Package	Achroplan 10X, 20X, 40X, 100X oil objectives; phototube; Filter Sets 01, 10 and 15	12-070-611
Axiovert 40 CFL Package	A-Plan 10X Ph1, LD A-Plan 20X Ph1 LD A-Plan 40X Ph2; Filter Sets 10 and 15	12-070-441

All models may be customized to meet your needs.


Axiovert 40 CFL

ponsored by:
ZEISS
We make it visible.

IMPORTANT APPLICATIONS

- **Immunostaining or Immunohistochemistry**
  Antibody - Antigen - Reaction
  High specific staining of molecules in tissues and cells
- **Injection of vital dyes**
  Observation of live cells or components of cells
- **Ca^{2+} Imaging**
  Observation of intracellular molecular activities during changes of pH, electrical stimulation, drug application
- **FISH = Fluorescence In Situ Hybridization**
  Staining of parts or even genes on a chromosome
- **GFP = Green Fluorescent Protein**
  Detection of location and time point of a gene expression in a living specimen

For a full selection of Zeiss® Fluorescence Microscopes, see pp. 1156–1157, 1161.

MICROSCOPES

COMPOUND MICROSCOPES

Carl Zeiss* Axio* Imager* D1 Digital Imaging Microscopes

Innovative, modular microscopy platform for both routine and research requirements and applications

Ideal imaging solution:

- Uncompromising focus on digital microscopy
- IC2S Principle optics for highest resolution, more information in all contrast methods
- Higher-contrast fluorescence option
- Modular, intelligent stand architecture with integrated software to control all of your work steps
- Imaging cell and closed loop z-focus for highest precision
- Extremely comfortable ergonomics and operation

Superb Optics

- IC2S Principle for high contrast in all techniques: apochromatically corrected beam path
- New ergotube provides ideal viewing posture
- Optional high-performance/high-resolution objectives: EC Plan-Neofluar* universal for minimized stray-light, improved contrast; Plan-Apochromat 63X/1.4 Oil for outstanding point spread function, improved chromatic correction; LCI Plan-Neofluar 25X/0.8 and 63X/1.3 1mm Korr for live cell imaging techniques; calculated for certain temperature intervals
- Brilliant darkfield from 2.5X to 100X combined with brightfield in one condensor

Superior Fluorescence

- Fluorescence model provides up to 70% higher excitation intensity with high-performance filter sets and optimized reflected light path
- Up to 50% shorter exposure times
- Fast 6X and 10X reflector turrets

Built-In Intelligence

- Standard interfaces for direct communication internally or externally
- Light manager for fast and easy change between contrast methods

Stand architecture

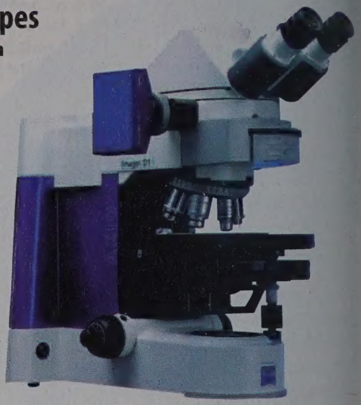
- Extremely flexible; modular expansion
- Imaging Cell isolated from stand to prevent vibrations
- Accessible planes in reflected and transmitted light path, as well as infinity light path

Imaging

- AxioVision* versatile, integrated software for such needs as z-stack, multichannel fluorescence, or time lapse images
- Rapid image acquisition with outstanding quality in up to six dimensions
- Perfectly harmonized system components
- Up to 40% faster experiments

Axio Imager D1 Pathology Microscope for transmitted light Brightfield

- **Eyepiece:** 10/X25 focusing with folding eyecup
- **Head:** Binocular, with phototube
- **Nosepiece:** 7X
- **Objectives:** Achroplan 10X/0.25 N.A., 20X/0.45 N.A., 40X/0.65 N.A., 100X/1.25 N.A. Oil
- **Stage:** Mechanical stage, 75 × 50mm; with 76 × 26mm single specimen holder, stage condenser carrier
- **Condenser:** 0.9 H; conversion filter, 3200° to 5600°K; filter wheel and 25mm filter set
- **Illumination:** 12V 100w Halogen Illuminator



Axio Imager D1 12-070-611

Axio Imager D1 Microscope for Brightfield and Epi Fluorescence

- **Eyepiece:** 10X/25 focusing with folding eyecup
- **Head:** Binocular, with phototube
- **Nosepiece:** 7X
- **Objectives:** Achroplan 10X/0.25 N.A Ph1, 20X /0.45 N.A., 40X /0.64 N.A., 100X /1.25 N.A. Oil
- **Stage:** Mechanical stage, 75 × 50mm; with 76 × 26mm single specimen holder, stage condenser carrier
- **Condenser:** 0.9 H; conversion filter, 3200° to 5600°K; filter wheel and 25mm filter set
- **Illumination:** 12V 100w Halogen Illuminator and HBO burner

ORDERING INFORMATION:

Additional components available; contact your Fisher Customer Service Representative for details.

INCLUDES:

Stand, Ergo phototube, eyepieces, 75 × 50mm mechanical stage, right-hand z-drive, specimen holder, objectives listed above, condenser, 12V 100w bulb, light manager, conversion and white balance filters, filter wheel and filter set, dust cover, manual. AxioImager D1 Microscope for Brightfield and Epi-Flourescence adds: fluorescence shutter, slider with fie disphragm, attenuator, 6X turret; fluorescence cube and filter sets 01 EX B 365/12, 10 EX BP450-490, 15 EX BP 546/12; antiglare screen, HBO burner† lamp and power supply.

Model	Mfr. No.	Cat. No.	Eac
Axio Imager D1 Brightfield	43000102	**12-070-610**	16,058.0
Axio Imager D1 Brightfield/Fluorescence	43000101	**12-070-611**	31,485.0

† *HBO burner contains mercury.*

WARNING

The products indicated contain mercury. Don't put products containing mercury in the trash. Products containing mercury are to be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

rl Zeiss* Axioskop* 40 and 40 FL Microscopes

veloped specifically for a wide range of applications,
m routine to research, to clinical

leal 20° angle: Tubes vertically adjustable up to 50mm
nnovative contrast: Varel and oblique illumination
losed ceramic-top stage surface; space saving, sturdy stand; long-lasting
bust mechanics
ansmitted light lamps with 4000-hr. life expectancy
ew LED with semi-Koehler illumination mode and constant color tem-
erature ensures reliable results

ioskop* 40 Package

lagnifications of 5X, 10X, 40X and 100X; A-Plan lenses
rovides automatic homogeneous brightness and constant temperature
uring change of objectives, due to neutral glass filter
ertically and laterally reversed image
olor fidelity during brightness changes, thanks to special neutral density
lter rings
ontrast techniques include brightfield and darkfield transmitted light,
hase contrast, oblique illumination, simple polarization

ioskop* 40 FL Package

igh-end fluorescence illumination for outstanding contrast
nd transmission
rovides fluorescence contrast for molecular examination methods
lagnifications of 10X, 20X, 40X and 100X: Achroplan lenses
arge 23mm field of view to facilitate recognition of structures
latching condenser for objective magnifications down to 1X
omogeneous illumination of the field of view
ertically and laterally reversed images meet pathologists' standard
olor fidelity in brightness change due to special neutral density
lter rings
ontrast techniques: brightfield transmitted light; fluorescence for
upplementary immunohistochemical examinations (molecular pathology)

DERING INFORMATION:

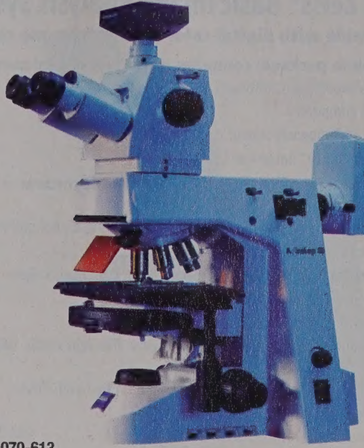
itional components available; contact your Fisher Scientific Customer
vice Representative for details.

LUDES:

nd, Ergo phototube, eyepieces, 75 × 50mm mechanical stage, specimen
der, objectives listed above, condenser, 12V 35w bulb, conversion and
te balance filters, dust cover.Axioskop 40 FL adds 50w L2 HBO burner†,
rescence reflector cube and filter sets.

del	Mfr. No.	Cat. No.	Each
oskop 40	110427901	**12-070-613**	6597.50
oskop 40 FL	11567001	**12-070-614**	14,584.00

O burner contains mercury, See Warning note on at left.



12-070-613

SPECIFICATIONS

Model	Axioskop 40	Axioskop 40 FL
Optical Design	ICS	ICS
Eyepieces	10X/23	10X/23
Max. Field of View	23mm	23mm
Objectives	A-Plan	Achroplan
Condenser	0.9/1.25	0.9 HDPH
Tube	Ergo 20/23+ 25mm	Ergo 20/23+ 25mm
Nosepiece	6-position	6-position
Stage	75 × 50mm, ceramic top	75 × 50mm, ceramic top
Illumination	12V/35w Halogen, Kohler	12V/35w Halogen, Kohler; HBO 50 for fluorescence work

LOOKING FOR MORE MICROSCOPES AND ACCESSORIES?

More Carl Zeiss* Microscopes, accessories and replacement parts are available on our Web site, including:

- Axiostar* Microscopes
- Analyzers and Polarizers
- Cases and Dust Covers, Eyepieces
- Condensers
- Eyepieces
- Micrometers
- Objectives
- Stands

Visit www.fishersci.com and search for Carl Zeiss

Carl Zeiss* Basic Image Analysis Systems

Available with digital color or monochrome camera

Complete package: computer, software, digital camera

- AxioVision* Light Software
- Zeiss computer
- PixeLink* monochrome or color camera
- Viewsonic 19" flatscreen LCD monitor

PixeLink IEEE-1394 Digital Color or Monochrome Video Camera

- High-resolution, low-latency video streams and digital still images
- Output signal: IEEE-1394
- 1.3 megapixels; 1280 × 1024 pixels; pixel size: 6µm × 6µm
- Chip size:7.68mm × 6.14mm, 9.8mm diagonal
- Spectral sensitivity: 400 to 700nm
- Resolution options: 1280 × 1024, 1024 × 768, 800 × 600, 640 × 512, 640 × 480, 320 × 240 pixels
- Digitization: internal: 10bit, limited to 8 bit by twain driver
- Dynamics: 54db
- Exposure time: 1ms to 300ms
- Interface: Firewire*/IEEE 1394, 6-pin socket; 400Mb/sec.
- Optical interface: C-mount
- Max. file size per image: ~ 3.9MB with 1280 × 1024 at 3 × 8 bit
- Operating systems: Windows* 2000, XP
- Housing: magnesium with ¼" threaded camera adapter
- Mounts to any microscope

Viewsonic VP191B 19" Flat LCD

- Color TFT active matrix SXGA LCD
- Display area: 14.8" horizontal × 11.9" vertical; 19.0" diagonal
- Optimum resolution: 1280 × 1024
- Contrast ratio: 700:1 typical
- Viewing angles: 170° horizontal, 170° vertical
- Response time: 16ms typical
- Brightness: 250 cd/m² typical
- Glass surface: anti-glare
- Video inputs two RGB analog (75 ohms, 0.7/1.0V P-P); DVI-D (TMDS, 100 ohms)
- Frequency: FH, 30 to 82kHz; FV, 50 to 85Hz
- Sync: h/v separated (TTL), composite, sync-on-green
- Compatibility: PC VGA up to 1280 × 1024

12-070-616

Axiovision 4.X LE Image Acquisition Software

- For light microscopy under Windows* 2000 SP4 and Windows XP* SP
- Image acquisition with any TWAIN camera
- Create scalings for different magnifications; view complex ZVI images with 3 × 8 bit, 3 × 12 bit, 3 × 14 bit, and 3 × 16 bit cut view
- Image export to bmp, jpg, j2k, tif, tga, png, psd, img, cmp formats
- Image enhancement of brightness, contrast, gamma, shading; change image dimensions
- Annotations as text, boxes, scale bars
- Interactive measurement of length, area, perimeter, angle
- Built-in image browser

Description	Cat. No.	E
Color Camera Package	**12-070-615**	4656
Monochrome Camera Package	**12-070-616**	4556

SEE ALSO:

Canon* PowerShot* A640 Digital Camera, p. 1178

rl Zeiss* Axiostar* Plus Microscopes

extensive laboratory use in clinical and research settings

-quality Carl Zeiss optics deliver optimal performance at an economical
. Medium-sized pyramid design offers high stability. Condenser accommo-
s brightfield, phase-contrast, darkfield, polarized light and fluorescence
niques. Four complete packages are listed below.

finity Color-Corrected Optics System (ICS): Objectives and binocular
be form color-corrected primary image; needs no additional correction;
ss glass provides more light transmission, greater clarity

yepieces: E-PL 10X/20mm FOV eyepieces are supplied; eyepieces may
used by spectacle wearers

ead: Ergonomic binocular tube provides viewing angle of 30° or 45°,
terpupillary distance correction and adjustable eyepiece height

osepiece: Rotatable four- or five-position nosepiece with precision
ll-bearing mechanism; positive click stops

bjectives: Packages include A-Plan objectives in magnification factors
5X, 10X, 40X, 40X Ph2, 50X and 100X oil immersion

tage: 75 × 30mm mechanical stage has adjustable height, controllable
ction, coaxial x/y stage control for smooth movement, precise specimen
ljustment, even at high magnifications; ceramic-coated plate

ocus: Coarse and fine controls with coaxial knobs on both sides of
and, comfortable for right- or left-hand use; planetary gear drive is
aintenance-free, self-adjusting, has positive end stops

ondenser: Abbe-type 0.9/1.25 condenser for routine brightfield, phase-
ntrast and darkfield; aperture diaphragm included for Koehler illumination

ght source: Brightfield, Brightfield/Ph2 and Hematology packages
ave built-in UL-listed 6V, 20w halogen illumination for optimum image
ightness even with phase-contrast techniques; fluorescence package
cludes 50w HBO mercury burner

DERING INFORMATION:

itional packages and accessories are available; contact your
er Scientific Customer Service Reperesentative for details.

LUDES:

packages include stand, head, eyepieces, stage, objectives, condenser,
ninator, filter, dust cover, immersion oil, power supply and cord.

ghtfield Package (12-072-400) offers binocular phototube, 30°,
00/100; 10X/20mm E-PL eyepieces, 1 fixed, 1 focusable; right-hand stage
specimen holder; luminous field diaphragm with iris; five-posiiton
lving nosepiece; four A-Plan objectives (5X/0.12, 10X/0.25, 40X/0.65,
X/1.25 oil); contrast enhancement filter.

ghtfield/Ph2 Package (12-072-401) includes binocular phototube, 30°,
00/100; 10X/20mm E-PL eyepieces, 1 fixed, 1 focusable; right-hand stage
specimen holder; four-positon revolving nosepiece; three A-Plan
ctives (10X/0.25, 40X/0.65 Ph2, 100X/1.25 oil); condenser slider for Ph2;
m dia. pinhole diaphragm, contrast enhancement filter.

rescence Package (12-072-402) features binocular phototube, 30°,
00/100; 10X/20mm E-PL eyepieces, 1 fixed, 1 focusable; right-hand stage
specimen holder; luminous field diaphragm with iris; four-positon
lving nosepiece; three A-Plan objectives (10X/0.25, 40X/0.65 Ph2, 100X/1.25
contrast enhancement filter; FL reflected light illuminator; FL cube and FITC
r set; HBO mercury burner with digital meter and power supply.

natology Package (12-070-442) offers binocular phototube, 45°,
00/100; 10X/20mm focusable E-PL eyepieces; right-hand stage with
cimen holder; five-positon revolving nosepiece; four A-Plan objectives
/0.25 WD 4.4mm, 40X/0.65 WD 0.43mm, 50X/0.9 oil WD 0.29mm,
X/1.25 oil WD 0.22mm); rotatable polarizer D.

NEW
Axiostar plus

12-072 Series

CERTIFICATIONS:
UL listed

Description	Mfr. No.	Cat. No.	Each
Brightfield Package	491031-9696	**12-072-400**	3350.00
Brightfield/Ph2 Package	490700-1302	**12-072-401**	3350.00
Fluorescence Package	490700-1303	**12-072-402**	7950.00
Hematology Package	490700-1301	**12-070-442**	4738.75

ACCESSORIES

Replacement Bulbs

For Carl Zeiss* Microscopes and Fiber-optic Power Supplies

Description	For Model	Contains Mercury	Cat. No.	Each
For Carl Zeiss Microscopes				
6V 20w Halogen Bulb	Axiostar* models, Standard 25 and 20	No	**12-070-183**	24.72
6V 30w Halogen Bulb	Invertoskop*, Invertoskop C	No	**12-070-403**	29.03
6V 20w Halogen Bulb	ID03 Inverted Microscope	No	**12-070-508**	11.54
6V 10w Halogen Bulb	KF2, Standard 16	No	**12-070-184**	15.75
12V 10w Halogen Bulb	Stemi DV4 transmitted light base	No	**12-070-506**	10.75
12V 20w Halogen Bulb	Stemi DV4 reflected light base	No	**12-070-507**	10.75
110V 50w Mercury Burner	Axiostar models for Fluorescence	Yes	**12-070-258**	125.00
110V Power Supply for Mercury Burner HBO	Axiostar models for Fluorescence	No	**12-070-454**	391.00
For Fiber-optic Power Supplies				
8V 20w Halogen Bulb	KL200	No	**12-070-309**	55.00
12V 75w Halogen Bulb	KL750	No	**12-070-509**	14.42
15V 150w Halogen Bulb	KL1500	No	**12-070-510**	22.66

WARNING

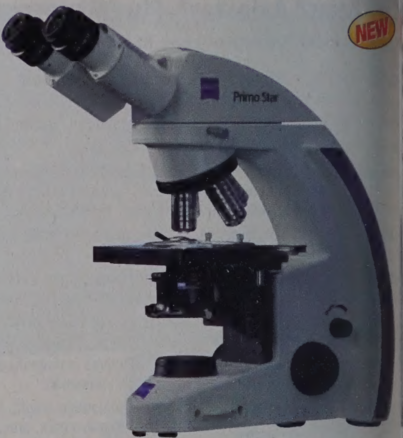
The products indicated contain mercury. Don't put products containing mercury in the trash. Products containing mercury are to be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

Carl Zeiss* Primo Star* Microscopes

High performance for a variety of applications

Robust, easy to operate, equipped with good optics and reasonably priced. Zeiss designed the Primo Star to provide long-term use and great durability. Available in ten different preconfigured packages, you'll find a version for every set of requirements. This microscope, together with its many practical accessories, can be used for education, in the laboratory, doctors' practice and in the field.

- **Head:** Binocular or Binocular with phototube (50%:50%); 30° viewing angle; Siedentopf tube rotates 360°, has two positions, with upper position that offers approximately 40mm extra viewing height); adjustable interpupillary distance, 48–75mm; tube length, 180mm
- **Optics:** Color-corrected, infinity optics; parfocal distance: 45mm
- **Eyepieces:** 10X widefield, 18mm or 22mm FOV; antifungal treatment; suitable for eyeglass wearers; setscrew mount guards against theft; optional eyepiece pointer accessory available (included with two models)
- **Objectives:** Plan-Achromat 4X/0.1 N.A., WD, 6.50mm; Plan-Achromat 10X/0.25 N.A., WD, 4.39mm; Plan-Achromat 40X/0.65 N.A., WD, 0.48mm or Plan-Achromat 40X/0.65 N.A. Ph2, WD, 0.48mm; Plan-Achromat 100X/1.25 N.A., WD, 0.13mm
- **Stage:** Right- or left-hand drive; long-life, scratch- and impact-resistant surface; area, $5\frac{5}{16} \times 5\frac{1}{2}$" (135mmD × 140mmW); travel range, $2\frac{15}{16}$"W (75mm) × $1\frac{11}{64}$"D (30mm); vernier scale
- **Illumination:** Choice of fixed or full Koehler illumination, halogen or LED light source
- **Stand:** Broad-based, stable stand with built-in carrying handle; 5-step blue LED display on both sides of stand is legible at several meters, monitors use, protects light source
- **Condenser:** Abbe condenser 0.9/1.25; holder for phase contrast and darkfield sliders; two variants for fields of view 18mm (Fixed-Koehler) and 20mm (Full-Koehler)



Primo Star Series

- **Power Supply:** Integrated into the stand, with space for stowing cable; external and easy to replace in event of damage; wide-area unit with 3 country-specific plug adapters; IEC adapter for conversion to a table-top power unit
- **Focusing:** Coarse, 4mm/rotation; fine, 0.3mm/rotation; 15mm total travel range

INCLUDES:

All packages include: stand, eyepieces, objectives, illumination module and condenser.

Package	Head	Eyepieces	Objectives	Stage	Illumination	Light Source	Mfr. No.	Cat. No.	Each
1	Binocular	10X/18mm FOV; with pointer	Plan-Achromat 4X, 10X, 40X, 100X	Right-hand drive	Fixed Koehler	30w/6V Halogen lamp	415500-0001-001	**12-071-410**	1150.00
2	Binocular	10X/18mm FOV	Plan-Achromat 4X, 10X; 40X, 100X	Left-hand drive	Fixed Koehler	30w/6V Halogen lamp	415500-002	**12-071-402**	1195.00
3	Binocular	10X/18mm FOV	Plan-Achromat 4X, 10X, 40X, 100X	Right-hand drive	Fixed Koehler	30w/6V LED	415500-0005	**12-071-403**	1450.00
4	Binocular	10X/18mm FOV; with pointer	Plan-Achromat 4X, 10X, 40X, 100X	Right-hand drive	Full Koehler	30w/6V Halogen lamp	415500-0010-001	**12-071-411**	1350.00
5	Binocular with phototube	10X/20mm FOV	Plan-Achromat 4X, 10X, 40X, 100X	Right-hand drive	Full Koehler	30w/6V Halogen lamp	415500-0011	**12-071-404**	1700.00
6	Binocular with phototube	10X/20mm FOV	Plan-Achromat 4X, 10X, 40X, 100X	Left-hand drive	Full Koehler	30w/6V Halogen lamp	415500-0012	**12-071-405**	1750.00
7	Binocular with phototube	10X/20mm FOV	Plan-Achromat 4X, 10X, 40X, 100X	Right-hand drive	Full Koehler	30w/6V LED	415500-0015	**12-071-406**	1950.00
8	Binocular with phototube	10X/20mm FOV	Plan-Achromat 4X, 10X, 40X, 100X	Left-hand drive	Full Koehler	30w/6V LED	415500-0016	**12-071-407**	2000.00
9	Binocular	10X/20mm FOV	Plan-Achromat 4X, 10X, 100X; Plan-Achromat 40X Ph2	Right-hand drive	Full Koehler	30w/6V Halogen lamp	415500-0020	**12-071-408**	1750.00
10	Binocular with phototube	10X/20mm FOV	Plan-Achromat 4X, 10X, 100X; Plan-Achromat 40X Ph2	Right-hand drive	Full Koehler	30w/6V Halogen lamp	415500-0021	**12-071-409**	1860.00

rl Zeiss* Axiovert* 40 CFL Inverted Microscope

erted design for microscopic study of large ecimens by transmitted light/brightfield, phase ntrast and epi-fluorescence techniques

apable and expandable, with a perfect range for routine gh-throughput applications

eal for routine examination of specimens in all kinds of culture vessels, ass and plastic vessels, including cell culture vessels

se with microtest and microtitration plates, too

tegrated lightpath for photo and video documentation is standard

ptional PlasDIC* Contrasting Technique components available

nponents and Specifications

yepieces: 10X wide-field with high eyepoint, 20mm field of view; djustable for interpupillary distance and dioptric drift

ead: Binocular with 45° viewing angle; integrated lightpath for photo d video documentation (100/100) while maintaining an unobstructed ew of the image

osepiece: Five-position, with precision ball bearings and click stops

bjectives: Axiovert 40 CFL, A-Plan 10X/0.25 Phase 1; LD A-Plan X/0.30 Phase 1, LD A-Plan 40X/0.50 Phase 2; Invertoskop 40 C, A-Plan /0.12, 10X/0.25 Phase 1, LD 20X/0.30 Phase 1; LD objectives have long orking distance, produces high-contrast brilliant images and corrects for fferent container thicknesses up to 3mm

tage: 210 × 290mm black fixed stage with specimen guide, sturdy and nveniently placed

ocus: Mounted toward the front in a low, ergonomic position.

ondenser: Axiovert 40 CFL, 0.4 N.A.; Invertoskop 40 C, 0.4 NA with mm normal working distance; with two-position slide for brightfield d Phase 1

lumination: Continuously variable 12V 35w halogen lamp provides mogenous illumination even with large vessels and specimens

DERING INFORMATION:

ional mechanical stage (12-070-311) is available; must be used with cimen holders. Wide variety of supporting frames available for easy unting and exchange of different specimen holders. Contact your er Scientific Customer Service Representative for details.

LOOKING FOR MORE MICROSCOPES AND ACCESSORIES?

More Carl Zeiss Microscopes, accessories and replacement parts are available on our Web site, including:

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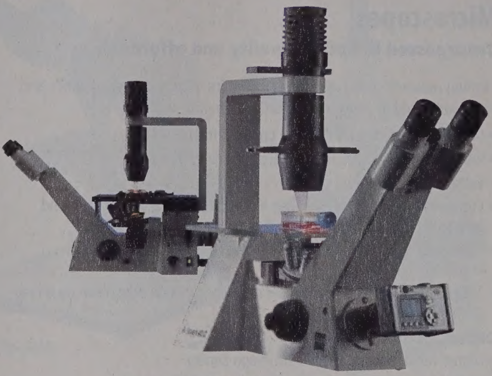
- Cases and Dust Covers, Eyepieces
- Condensers
- Eyepieces
- Micrometers
- Objectives
- Stands

isit www.fishersci.com and search for Carl Zeiss



12-070-441

INCLUDES:

Axiovert 40 CFL includes Axiovert stand; binocular head; fixed stage plate; condenser; neutral density and conversion filters; appropriate filter sets for phase contrast and fluorescence; objectives; eyepieces; illumination system; reflectors, sliders, lamps and housing for brightfield, phase contrast and epi-fluorescence illumination; power supply and 110V power cable; dust cover.

Invertoskop 40 C includes Invertoskop stand with binocular head; fixed stage plate (210 × 290mm); built-in stabilized power supply with rheostat control; condenser for brightfield and Phase 1 techniques; green interference filter and neutral density filter; objectives; eyepieces; 2X centering telescope for phase alignment; dust cover; 110V power cable.

Description	Mfr. No.	Cat. No.	Each
Axiovert 40 CFL Microscope	491202-1301	**12-070-441**	14,471.00
Invertoskop 40 C Microscope	491202-1302	**12-070-440**	5474.00

Fisher Scientific* Micromaster* Infinity Optics Microscopes

Unsurpassed in optical quality and affordability

Exciting research grade microscopes feature infinity corrected optics and extra wide field of view, in standard and digital versions.

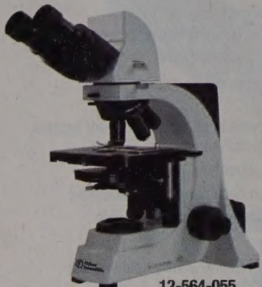
- Choice of brightfield and phase contrast models
- Infinity corrected optics for consistent image flatness up to F.N. 22
- Extra-large 22mm field of view
- Ergonomically designed inverted Y stand for efficiency, comfort and balanced stability
- Swing-out condenser, five-position reversed nosepiece on brightfield models
- 1.25 N.A. five-position condenser and four-position nosepiece on phase contrast models

Digital Models

- Digital head with ⅓" color CCD image sensor
- USB 2.0 connection and cable, fast plug-and-play setup
- Software to capture, save, print and email images
- Micron software for on-screen calibrated measurements: point to point, circle, radius, ellipse, rectangle, 3-point and 4-point angle, and polygon area
- Select units of measurement: µm, mm, inches
- Annotation functions include freehand line, polyline, and hollow or solid polygon
- Plus cropping tool, vertical and horizontal scale rulers, and multi-window viewing

Standard Models

Choice of binocular or trinocular heads



12-564-055

12-564-050

12-564-053

ORDERING INFORMATION:

Dimensions: 19 5/32L × 9⅝W × 1¾"H (49 × 24.5 × 42.5cm).
Weight: Standard Models, 22 lb. (10kg); Digital Models, 23 lb. (10.4kg)

INCLUDES:

Digital models include Micron software and USB 2.0 cable.

REQUIRED ACCESSORIES:

Digital System Requirements:

- **USB 2.0 Recommended Requirements:** PC with Intel* Pentium* IV 2.0GHz processor or higher, Windows* XP operating system, USB 2.0 port
- **USB 2.0 Minimum Requirements:** PC with Intel Pentium III 1.0GHz processor, Windows 2000 or XP operating system, USB 2.0 port

	Standard Models				Digital Models	
Type	**Brightfield**		**Phase Contrast**		**Brightfield**	**Phase Contrast**
Model	Binocular	Trinocular	Binocular	Trinocular	Binocular	Trinocular
Objectives	Plan Achromatic 4X, 10X, 20X, 40X, 100X oil		Plan Achromatic 10X, 20X, 40X, 100X oil		Plan Achromatic 4X, 10X, 20X, 40X, 100X oil	Plan Achromatic 10X, 20X, 40X, 100X oil
Eyepieces	10X, 22mm high eyepoint Plan Achromat				10X, 22mm high eyepoint Plan Achromat	
Stand	Ergonomic design, inverted Y support in rear of microscope for extra lateral stability				Ergonomic design, inverted Y support in rear of microscope for extra lateral stability	
Head	30° inclination; adjusts for interpupillary and dioptric differences				30° inclination; adjusts for interpupillary and dioptric differences	
Illumination	Built-in Koehler illumination system 6V/30w variable				Built-in Koehler illumination system 6V/30w variable	
Focus	Coaxial focus system with tension adjustment and up-limit coarse focus. Stage focus range 25mm, precision 0.002mm.				Coaxial focus system with tension adjustment and up-limit coarse focus. Stage focus range 25mm, precision 0.002mm.	
Nosepiece	Reversed 5-position		Reversed 4-position		Reversed 5-position	Reversed 4-position
Stage	175mm x 145mm mechanical stage; 75mm x 50mm moving range				175mm x 145mm mechanical stage; 75mm x 50mm moving range	
Condenser	1.2/0.22 N.A., swing-out		1.25 N.A. Infinity 5 position		1.2/0.22 N.A., swing-out	1.25 N.A. Infinity 5 position
Cat. No.	**12-564-050**	**12-564-051**	**12-564-052**	**12-564-053**	**12-564-054**	**12-564-055**
Each	3096.31	3147.97	3815.94	3906.68	4098.02	4797.51

*Trademark. See Trademark Reference.

Prices subject to change.

her Scientific* Micromaster* I Brightfield and Phase Contrast Microscopes

fessional quality optics at affordable prices

atile, rugged, adaptable

oice of Brightfield and Phase Contrast models

oice of Monocular, Binocular or Trinocular heads

ith plan achromatic objectives, Koehler illumination, d precision mechanics

mpact yet rugged design for many years of reliable service

sily transportable or storable in a classroom cabinet

onomical, easy to configure and operate, for many years reliable service

ality components

jectives are parfocal, parcentered, coated to reduce reflection

epieces are 10X widefield DIN standard, 18mm field of view

gged metal stand, chemical-resistant baked-on finish resists gerprints and smudges

eads are interchangeable; rotatable 360° with a 30° inclination

nocular and trinocular heads are adjustable for interpupillary distance 5mm to 75mm) and dioptric differences

echanical stage, 140 × 160mm; spring-clip slide holder

umination is Koehler type, variable-intensity quartz halogen lamp, with ld diaphragm, collector lens,integrated drop-in filter holder

cus is via coaxial, coarse/fine controls; adjustable safety stop prevents de damage; tension adjustment ring permits custom setup

sepiece is reversed four-position, with positive click stops for easy anipulation of slides without interference by the objective

ndenser is 1.25 N.A. Abbe type, with iris diaphragm and swing-in xiliary lens for low magnification

PLICATIONS:

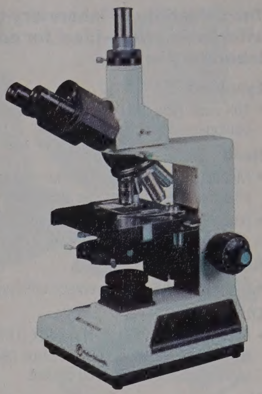
eset packages and common configurations are available for all types applications

eally suited for educational and general laboratory use

ptions available for Darkfield, Polarization, and Phase Contrast work

ameras, adapters and other attachments available

12-561B



12-561-3FAZ

ORDERING INFORMATION:

Dimensions: 10½L × 8½W × 17"H (26.7 × 21.6 × 43.2cm).

INCLUDES:

Blue and frosted filters; 6V, 20W lamp, solid-state dimmer, dust cover, immersion oil, and spare lamp. Heavy duty three-prong plug for use on 110VAC; can be factory converted for use with 220VAC

e	Brightfield			Phase Contrast		
lel	**Monocular**	**Binocular**	**Trinocular**	**Binocular**	**Binocular**	**Trinocular**
ctives	Plan Achromatic 4X,10X, 40X, 100X oil	Plan Achromatic 4X,10X, 40X, 100X oil	Plan Achromatic 4X,10X, 40X, 100X oil	Plan Phase Contrast 10X, 20X, 40X	Plan Phase Contrast 10X, 20X, 40X, 100X oil	Plan Phase Contrast 10X, 20X, 40X, 100X oil
pieces	10X widefield DIN standard, 18mm field of view			10X widefield DIN standard, 18mm field of view		
nd	Ergonomic design, rugged metal stand, chemical-resistant baked-on stippled finish that resists fingerprints and smudges			Ergonomic design, rugged metal stand, chemical-resistant baked-on stippled finish that resists fingerprints and smudges		
d	Rotatable 360°, 30° inclination	Rotatable 360°, 30° inclination; 55 to 75mm interpupillary adjustment; diopter adjustment	Rotatable 360°, 30° inclination; 55 to 75mm interpupillary adjustment; diopter adjustment	Rotatable 360°, 30° inclination	Rotatable 360°, 30° inclination; 55 to 75mm interpupillary adjustment; diopter adjustment	Rotatable 360°, 30° inclination; 55 to 75mm interpupillary adjustment; diopter adjustment
nination	Koehler illumination, 6V 20W halogen lamp, field diaphragm, collector lens, drop-in filter holder, solid-state dimmer			Koehler illumination, 6V 20W halogen lamp, field diaphragm, collector lens, drop-in filter holder, solid-state dimmer		
us	Low-position, coaxial, coarse/fine controls; adjustable safety stop, tension adjustment ring for custom setup			Low-position, coaxial, coarse/fine controls; adjustable safety stop, tension adjustment ring for custom setup		
epiece	Reversed 4-position			Reversed 4-position		
je	140 × 160mm mechanical stage with removable spring-clip slide holder			140 × 160mm mechanical stage with removable spring-clip slide holder		
denser	1.25 N.A. Abbe condenser, fitted with an iris diaphragm and swing-in auxiliary lens for low magnification			1.25 N.A. Abbe condenser, fitted with an iris diaphragm and swing-in auxiliary lens for low magnification		
No.	**12-561M**	**12-561B**	**12-561T**	**12-561-1FAZ**	**12-561-2FAZ**	**12-561-3FAZ**
h	1346.53	1471.19	1695.62	2608.28	2708.02	2987.28

Fisher Scientific* Micromaster* II Microscopes

The versatility of laboratory-grade microscopes at an affordable price—ideal for education and general laboratory use

Eyepieces

- 10X wide-field, DIN standard; binocular and trinocular models are equipped with two eyepieces

Head

- Monocular, binocular, trinocular or dual-viewing configurations; all are interchangeable, rotatable 360°, and inclined at 30°
- Binocular and trinocular heads adjust for interpupillary distance (55 to 75mm) and dioptric differences

Nosepiece

- Quadruple reversed nosepiece with precision click stops

Objectives

- 4X/0.10 N.A., 10X/0.25 N.A., 40X/0.65 N.A. retractable DIN standard achromatic objectives produce true color images with sharp focus, are parfocal, parcentered, and coated

Stage

- Precision-machined 125 × 135mm mechanical stage, chemical-resistant finish, removable spring-clip slide holder

Focus

- Ergonomically positioned coaxial coarse/fine controls; adjustable safety stop and tension adjustments prevent slide damage and contamination

Condenser

- 1.25 N.A. Abbe, iris diaphragm, rack-and-pinion mechanism for precise focusing of light beam
- Swing-in filter holder and blue filter included

Illumination

- Variable-intensity 6V 20w quartz halogen lamp; solid-state dimmer

Finish

- Chemical-resistant baked-on paint with stipple finish to resist fingerprints and smudges

ORDERING INFORMATION:

Dimensions: 9½L × 7W × 14"H (24 × 18 × 35.5cm). For 110V 50/60Hz. Digital/Video models and additional optional eyepieces, objectives and other accessories available.

Micromaster
Fisher Scientific

12-561-4B

INCLUDES:

Dust cover, immersion oil, spare fuse, spare halogen lamp, heavy-duty three-prong cord for use on 110VAC; can be factory converted for use with 220VAC

Body	Objectives	Cat. No.	Each
Monocular	4X, 10X, 40X	**12-561-3M**	828.76
Monocular	4X, 10X, 40X, 100X oil immersion	**12-561-4M**	923.78
Binocular	4X, 10X, 40X, 100X oil immersion	**12-561-4B**	1147.05
Dual view	4X, 10X, 40X	**12-561-3D**	977.21
Dual view	4X, 10X, 40X, 100X oil immersion	**12-561-4D**	1045.09
Trinocular	4X, 10X, 40X, 100X oil immersion	**12-561-4T**	2116.21

LOOKING FOR FISHER SCIENTIFIC* MICROMASTER* III MICROSCOPES?

Visit www.fishersci.com and search for Micromaster III Microscopes 12-561-1M, 12-561-1D

LOOKING FOR FISHER SCIENTIFIC* METALLURGICAL MICROSCOPES?

Visit www.fishersci.com and search for Metallurgical Microscopes 12-561-METL

*Trademark. See Trademark Reference.

Prices subject to change.

sher Scientific* Micromaster* I and II Digital/Video Microscopes

siest, most affordable ways to attach a microscope your computer or video display

nbine selected Micromaster I or II microscope with digital ligital/video head.

:yepiece: 10X wide-field, 18mm field of view

lead: 30° inclination; adjusts for interpupillary and dioptric differences

losepiece: Reversed quadruple nosepiece

)bjectives: Brightfield Micromaster I, Plan Achromatic X/10X/40X/100X oil DIN standard; Brightfield Micromaster II, \chromatic 4X/10X/40X/100X oil DIN standard; Phase Contrast Micromaster I, Phase Contrast Plan Achromatic 10X/20X/40X/100X il DIN standard; Phase Contrast Micromaster II, Phase Contrast \chromatic 10X/20X/40X/100X oil DIN standard

;tage: Micromaster I, 140 × 160mm mechanical stage with removable pring-clip slide holder; Micromaster II, 125 × 135mm mechanical stage vith removable spring-clip slide holder

ocus: Coaxial focus system with tension adjustment and up-limit oarse focus

;ondenser: 1.25 N.A. Abbe condenser, fitted with an iris diaphragm

llumination: Built-in Koehler illumination (Micromaster I) or halogen Micromaster II), 6V/20w variable

;tand: Rugged metal stand, chemical-resistant baked-on enamel stipple inish that resists fingerprints and smudges

B 1.1 Digital/Video Micromaster I and II Series

'rovide both digital (640 × 480 pixel resolution) and NTSC video output

our models include a 5.0" TFT LCD

;hoice of Micromaster I or II models in brightfield or phase contrast onfigurations

;amera is built into microscope head for fast plug-and-play setup

Aicron software included to capture, save, print, and email images; rovide on-screen calibrated measurements: point to point, circle, radius, llipse, rectangle, three-point and four-point angle, and polygon area

;elect units of measurement: µm, mm, inches

\nnotation functions include freehand line, polyline, and hollow r solid polygon

;ropping tool, vertical and horizontal scale rulers, and multi-window viewing

'iew images comfortably on your computer monitor, LCD screen select models), an external monitor, through the eyepieces, or all at he same time

B 2.0 Digital Micromaster I Series

)eliver sharp 1280 × 960 pixel still or real-time images

;hoice of Micromaster I models in brightfield or phase contrast onfigurations

nclude all software features of USB 1.1 models plus Live-Overlay* unction that lets you create your own graphic image template within he Micron application, and then overlay it onto a live image to use as n image comparator or reference

DERING INFORMATION:

jital Heads for retrofitting Micromaster I and II Microscopes are available parately to convert existing models. See p. 1167.

CLUDES:

ad with integral camera, stand, eyepieces, objectives, illuminators, cron software, and appropriate USB cable. Digital/Video microscopes, d 6' BNC to RCA cable connection

12-560-48 (Computer not included)

12-563-320

REQUIRED ACCESSORIES:

System Requirements

- **USB 1.1 Recommended Requirements:** PC with Pentium* II, 266MHz processor or higher; Windows* 98, 2000, ME, or XP operating system; USB 1.1 port, 256MB RAM
- **USB 2.0 Recommended Requirements**: PC with Pentium IV 2.0GHz processor or higher; Windows XP operating system; USB 2.0 port, 256MB RAM
- **USB 2.0 Minimum Requirements:** PC with Pentium III 1.0GHz processor, Windows 2000 or XP operating system; USB 2.0 port, 256MB RAM

Description	Cat. No.	Each
USB 2.0 Digital Fisher Scientific* Micromaster I Complete Microscopes		
USB 2.0 Digital-Only Micromaster I Microscope Brightfield	**12-560-48**	2187.37
USB 2.0 Digital-Only Micromaster I Microscope Phase Contrast	**12-560-49**	3255.61
USB 1.1 Digital/Video Fisher Scientific Micromaster Complete Microscopes		
USB 1.1 Digital/Video Micromaster I Brightfield	**12-563-311**	2037.61
USB 1.1 Digital/Video Micromaster I Phase Contrast	**12-563-312**	3047.02
USB 1.1 Digital/Video Micromaster II Brightfield	**12-563-313**	1747.26
USB 1.1 Digital/Video Micromaster II Phase Contrast	**12-563-314**	2413.45
USB 1.1 Digital/Video Fisher Scientific Micromaster Complete Microscopes with LCD		
USB 1.1 Digital/Video Micromaster I Brightfield with LCD	**12-563-320**	2037.61
USB 1.1 Digital/Video Micromaster I Phase Contrast with LCD	**12-563-321**	3047.02
USB 1.1 Digital/Video Micromaster II Brightfield with LCD	**12-563-322**	1747.26
USB 1.1 Digital/Video Micromaster II Phase Contrast with LCD	**12-563-323**	2413.45

Fisher Scientific* Micromaster* Digital Inverted Microscope with Infinity Optics

Infinity-corrected optics; integrated digital camera

12-575-252

The latest addition to the Micromaster Series of microscopes: new digital inverted microscope with infinity corrected optics, brightfield and phase contrast illumination techniques, integrated digital camera with software.

- Extra large 22mm field of view
- Ergonomic, compact design
- Bright 30w variable illumination
- Digital camera integrated in microscope body
- 1280 × 960 pixel resolution for both live and captured images
- USB 2.0 connection
- Micron* software included

SPECIFICATIONS:

- **Optical system:** Infinity-corrected optical system
- **Objectives:** Infinity plan achromatic LWD objectives: 4X brightfield, 10X phase and 20X phase
- **Head:** Binocular with integrated digital camera
- **Eyepiece:** Plan 10X/22mm FN, high-eyepoint eyepieces
- **Illumination:** Variable 6V/30w halogen bulb, precentered.
- **Stage:** Size, 160W x 250mmL; height, 200mm from table
- **Working Distance:** With condenser, 72mm; without condenser, 150mm

ORDERING INFORMATION:

Optional accessories include attachable mechanical stage, auxiliary stage extensions, and many types of microplate vessel holders. Contact your Fisher Scientific Customer Service Representative for details.

WARRANTY:

Two years

Description	Cat. No.	Each
Binocular with integrated digital camera	12-575-252	5800.00

Fisher Scientific* Micromaster* Inverted Microscopes with Infinity Optics

Infinity-corrected optics; efficient inverted design

12-575-250

New inverted microscopes feature infinity corrected optics, brightfield and phase contrast illumination techniques.

- Extra large 22mm field of view
- Ergonomic, compact design
- Bright 30w variable illumination

SPECIFICATIONS:

- **Optical system:** Infinity corrected optics
- **Objectives:** Infinity plan achromatic LWD objectives: 4X brightfield, 10X phase and 20X phase
- **Head:** Binocular, Trinocular
- **Eyepiece:** Plan 10X/22mm FN, high-eyepoint eyepieces
- **Illumination:** Variable 6V/30w halogen bulb, precentered.
- **Stage:** Size, 160W x 250mmL; height, 200mm from table
- **Working Distance:** With condenser, 72mm; without condenser, 150mm

ORDERING INFORMATION:

Optional accessories include attachable mechanical stage, auxiliary stage extensions, and many types of microplate vessel holders, available on our Web site.

WARRANTY:

Two years

Description	Cat. No.	Eac
Binocular	12-575-250	3800.0
Trinocular with camera port	12-575-251	5542.0

LOOKING FOR MORE INVERTED MICROSCOPES?

Additional Fisher Scientific* Inverted Microscopes can be found online.

Visit www.fishersci.com and search for Micromaster Inverted Microscop

ACCESSORIES

For Fisher Scientific* Micromaster* Microscopes

Digital and Video Heads

Upgrade Upright Microscopes to digital or video systems

- Digital heads come with software, appropriate cables and, if required, power supply; PC not included
- Video heads come with RCA cable and power supply; one model comes with 5" LCD monitor

Description	Cat. No.	Each
For Fisher Scientific* Micromaster I and II Microscopes		
Digital/Video Head with Micron Software, USB 1.1 and video cables	**12-563-309**	1108.55
Digital Head with Micron Software, USB 2.0 cable	**12-564-132**	1230.00
Video Head with RCA cable, power supply and LCD	**12-563-318**	1108.55

Eyepiece Reticles

Adapt microscope eyepiece for counting, measuring or positioning

- Reticles mount inside 21mm I.D. Fisher Scientific* Micromaster* I, II or III eyepieces, or 24mm Micromaster Infinity eyepieces
- Monocular Fisher Scientific Micromaster I, II or III models require focusable eyepiece 12-561-FEP

Description	Cat. No.	Each
For 21mm I.D. Fisher Scientific Micromaster Eyepiece		
Crosshair	**12-561-RX**	47.62
Linear, 5mm, 0.05mm divisions	**12-561-RL1**	47.62
Linear, 10mm, 0.1mm divisions	**12-561-RL2**	47.62
Linear, 0.4", 0.01" division	**12-561-RL3**	47.62
Grid, 5 × 5mm, 1mm squares	**12-561-RG1**	47.62
Grid, 10 × 10mm, 0.5mm squares	**12-561-RG2**	47.62
Grid, 10 × 10mm, 1mm squares	**12-561-RG3**	47.62
For 24mm I.D. Infinity Eyepiece		
Linear, 10mm, 0.1mm divisions	**12-564-130**	51.20
Grid, 5 × 5mm, 0.5mm squares	**12-564-126**	56.10
Grid, 10 × 10mm, 1mm squares	**12-564-127**	56.10
Focusable Eyepiece		
For Fisher Scientific Micromaster I, II, III Microscopes	**12-561-FEP**	115.92

Replacement Bulbs and Fuses

Description	Cat. No.	Each
Bulbs		
Halogen, 6V, 20w, G4 bulb for Fisher Scientific* Micromaster I, II, III, Phase Contrast and Metallurgical Microscopes	**12-561-BLB1**	18.20
Incandescent, 110V, 20w for older Fisher Scientific Micromaster III Microscopes	**12-561-BLB2**	18.20
Halogen, 6V, 30w, for Fisher Scientific Micromaster Infinity Optics Microscopes	**12-564-071**	28.08
Fuses		
220V, 3.15A Fuse for Fisher Scientific Micromaster Infinity Optics Microscopes	**12-564-072**	1.92
250V, 500mA Fuse for Fisher Scientific Micromaster I, II, III Microscopes	**12-564-142**	2.58

Objectives

Interchangeable DIN objectives for Fisher Scientific* Micromaster* Series Microscopes

From left to right: 12-561-100P, 12-561-40P, 12-564-060, 12-564-059, and 12-564-058

- Infinity Optics objectives are for Micromaster Infinity Optics Microscopes
- All other objectives may be used with all Micromaster I, II and III Series microscopes

For Models	Magnification/N.A.	Cat. No.	Each
Fisher Scientific Micromaster Infinity Upright Series	**Plan Achromatic**		
	4X/0.10	**12-564-058**	82.51
	10X/0.25	**12-564-059**	96.20
	20X/0.40	**12-564-060**	207.72
	40X/0.65	**12-564-061**	246.32
	60X/0.90	**12-564-120**	402.00
	100X Oil Immersion/1.25	**12-564-062**	314.32
	Plan Achromatic Phase Contrast		
	10X/0.25	**12-564-121**	232.44
	20X/0.40	**12-564-122**	358.79
	40X/0.65	**12-564-123**	481.40
	100X Oil Immersion/1.25	**12-564-124**	614.00
Fisher Scientific Micromaster I, II and III Upright Series	**Achromatic**		
	4X/0.10	**12-561-4A**	43.49
	10X/0.25	**12-561-10A**	75.56
	20X/0.40	**12-561-20A**	143.11
	40X/0.65	**12-561-40A**	108.68
	60X/0.90	**12-561-60A**	266.59
	50X Oil Immersion/0.90	**12-561-50A**	537.41
	100X Oil Immersion/1.25	**12-561-100A**	155.26
	Plan Achromatic		
	1.3X/0.03	**12-561-13P**	276.01
	4X/0.10	**12-561-4P**	113.86
	10X/0.25	**12-561-10P**	234.19
	25X/0.40	**12-561-25P**	291.90
	40X/0.65	**12-561-40P**	153.18
	100X/1.25	**12-561-100P**	695.55
	Semi-Plan Achromatic		
	50X Oil Immersion/0.95	**12-563-132**	570.74
	Long Working Distance (LWD)		
	40X/0.65	**12-561-40L**	289.83
	Plan Achromatic Phase Contrast		
	10X/0.25	**12-564-133**	162.40
	20X/0.40	**12-564-134**	225.33
	40X/0.65	**12-564-135**	269.34
	100X/1.25	**12-564-136**	443.21

LOOKING FOR MORE ACCESSORIES?

Additional Fisher Scientific* Micromaster accessories are listed on our Web site, including:

- LCD Monitors 12-564-140, 12-564-141
- Condensers
- Darkfield Accessories
- Dust Covers
- Eyepieces
- Filters
- Phase Contrast Accessories
- Stage Micrometers

Visit www.fishersci.com and search for Micromaster Accessories

Leica* CM E Microscope Systems

Three preconfigured systems, brightfield and phase contrast capabilities

Provide durability, flexibility, and high-quality optics for educational applications.

- Compact, tamperproof design with instant setup
- Cast-aluminum stand minimizes vibrations
- Serial-number plate for tracking purposes
- Three packages: Binocular achromatic and plan achromatic for brightfield microscopy, and phase-contrast for phase-contrast microscopy
- Optical parts protected by fungus- and mold-resistant coatings
- Accessories are available to create a system tailored to your specific needs (see note below)

SPECIFICATIONS:

- **Eyepieces:** Widefield 10X/18mm FOV; all glass for quality, high-contrast imaging and compatibility with E2 series optics; pointer built into one eyepiece; high eyepoints; rubber eyeguards reduce glare; 10X/18mm without pointer and 15X/15 eyepieces accommodate 21mm reticles for measuring and counting applications
- **Head:** Monocular, binocular, and trinocular available (see note below); 45° inclination, rotate 360°; binocular and trinocular models have 54 to 74mm interpupillary adjustment range; trinocular model has prism to deflect 80% of light into phototube
- **Nosepiece:** Quadruple rear-facing nosepiece with positive stops provides comfortable and convenient operation; rubber grip on turret
- **Objectives:** 10X, 40X (retractable), 100X (retractable); fourth objective exclusive to model you purchase; brightfield models feature a 4X scanning objective; phase-contrast model includes 20X retractable objective; all objectives are parcentered and parfocal to minimize focusing procedures
- **Stage:** Graduated, mechanical, right-handed stage; all-metal rack and Vernier scales for precise control; 150 × 136mm stage moves vertically over 40mm range; rack-and-pinion x-y drive ensures smooth movement; low-mounted coaxial control for easy, comfortable use; front-loading specimen holder for one standard slide
- **Focus control:** Coarse- and fine-focus controls allocated next to stage for easy adjustments; knurled knob is graduated in microns; self-adjusting and maintenance-free focus mechanism prevents stage drift for the life of the instrument; dual eyetube focus adjustments for interpupillary distance (IPD) assure parfocality
- **Illumination:** 20w high-intensity tungsten-halogen lamp; 2000-hour life; maintains color and intensity throughout life; 1.25 N.A. slider condenser allows for oil immersion; built-in blue filter; angled lamp door prevents breakage; low heat output provides comfortable viewing and prevents injury; meets international safety standards

LOOKING FOR LEICA* REPLACEMENT PARTS AND ACCESSORIES?

Many replacement parts and accessories are available to create a Leica CM E Microscope System tailored to your specific needs, including: Abbe slider condenser, darkfield/phase-contrast sliders, phase-contrast slider kit, polarizer/analyzer kit, eyepieces, eyepiece micrometer, objectives, Koehler illumination kit, green and blue Koehler undiffused filters and critical diffused filters, 20w tungsten halogen lamp, attachable mirror, stage micrometer, stands, 120V and 230V line cords, cordwrap/lock, dust cover, video viewing bodies, video adapters, and monocular, binocular and trinocular viewing bodies.

To order any of these products, contact your Fisher Scientific Customer Service Representative or

Visit www.fishersci.com and search for Leica Accessories

12-589 Series

ORDERING INFORMATION:

Dimensions (L × W × H): 10½ × 8⅜ × 15" (27 × 22 × 38cm).

INCLUDES:

Illumination stand, right-handed mechanical stage, 10X/18 eyepiece, 10X/18 eyepiece with pointer, eyeguards, binocular viewing body, 20w tungsten-halogen illuminator, slider condenser, four objectives, blue filter, dust cover, multilingual instruction manual, and immersion oil.

Plan achromatic system includes plan achromatic objectives and binocular observation tube.

Phase-contrast microscopy system includes Plan phase objectives, binocula observation tube, and phase condenser with light ring sliders.

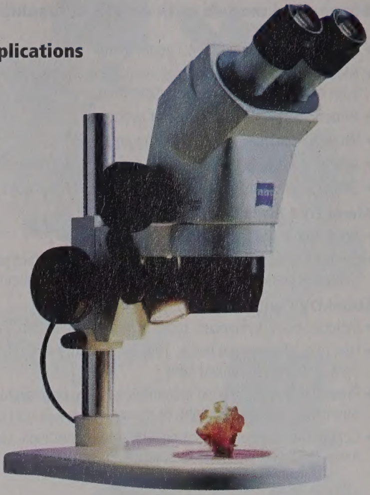
Objectives	Mfr. No.	Electrical Requirements	Cat. No.	Each
Achromatic Brightfield				
4X, 10X, 40X, 100X Oil	13495211	120VAC 60Hz, ±10%	**12-589-173**	1126.48
4X, 10X, 40X, 100X Oil	13495221	220/240VAC 50Hz, ±10%	**12-589-126**	1099.00
Plan Phase-contrast				
10X, 20X, 40X, 100X Oil	13495213	120VAC 60Hz, ±10%	**12-589-174**	1886.00
Plan Achromatic Brightfield				
4X, 10X, 40X, 100X Oil	13495212	120VAC 60Hz, ±10%	**12-589-175**	1485.23

STEREO MICROSCOPES

arl Zeiss* Stemi* 2000/2000C Stereo Microscopes

r education, industrial testing, life sciences and materials research applications

- Both models feature tapered front optics, convenient operating controls nd a rounded base
- 5° angle binocular tube for convenient sample viewing while providing oom for specimen manipulation
- Working distance: 110mm without additional objectives; 31 to 285mm vith additional objectives
- Built-in magnification changer for manual adjustment with a 1 to 7 ontinuous zoom range (see Magnification Range chart for appropriate ange with each available optic and eyepiece)
- Front lenses can be interchanged to alter the magnification range
- For photodocumentation, the Stemi 2000C includes a port for photo ccessories or video camera
- Both models are mounted onto a heavy metal base stand with 1¼" diameter (32mm) post for optical adjustment



12-070-280

CLUDES:
X/23 focusing eyepiece; additional eyepieces and auxiliary objectives ailable (see below). Without illuminators; optional illuminators available; ntact your Fisher Scientific Customer Service Representative.

scription	Zoom Range	Cat. No.	Each
emi 2000†	0.65X to 5.0X	**12-070-280**	2639.00
emi 2000C with photo/video port†	0.65X to 5.0X	**12-070-281**	3308.00

ght source not included

ECIFICATIONS

Auxiliary Objectives		Eyepieces					
		WPL 10X/23 High-eyepoint, Focusing		WPL 16X/16 High-eyepoint, Focusing		W 25X/10 Focusing	
jective	Working Distance	Total Magnification	Object Field (mm)	Total Magnification	Object Field (mm)	Total Magnification	Object Field (mm)
3X	285mm	1.95X–15.0X	118.0–15.3	3.1X–24.0X	82.1–10.7	4.9X–37.5X	51.3–6.7
4X	210mm	2.6X–20.0X	88.5–11.5	4.2X–32.0X	61.5–8.0	6.5X–50.0X	38.5–5.0
63X	130mm	4.1X–31.5X	56.2–7.3	6.6X–50.4X	39.1–5.1	10.2X–78.8X	24.4–3.2
0X (none)	92mm	6.5X–50.0X	35.4–4.6	10.4X–80.0X	24.6–3.2	16.3X–125.0X	15.4–2.0
0X	31mm	13.0X–100.0X	17.7–2.3	20.8X–160.0X	12.3–1.6	32.5X–250.0X	7.7–1.0

ACCESSORIES

Stemi 2000/2000C Eyepieces

See Specifications Chart above for total magnification range of each eyepiece when used with auxiliary objectives.

Description	Cat. No.	Each
WPL 10X/23 High-eyepoint, Focusing	**12-070-283**	236.00
WPL 16X/16 High-eyepoint, Focusing	**12-584-1**	550.13
W 25X/10 Focusing	**12-070-165**	457.00

ACCESSORIES

Auxiliary Objectives

See Specifications Chart above for magnification range and field of view specifications.

Description	Working Distance	Cat. No.	Each
0.3X	285mm	**12-070-279**	276.00
0.4X	210mm	**12-070-102**	236.00
0.63X	130mm	**12-070-111**	236.00
2.0X	31mm	**12-070-282**	485.00

Carl Zeiss* Stemi* DV4 Series Stereo Microscopes

Economical models with excellent resolution

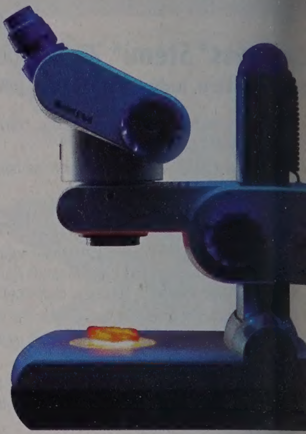
- Double-lens Vario zoom, 4:1 zoom factor
- Mechanical correction for high resolution, definition, and brightness with minimal reflection throughout range
- Widefield 10X/20 high-eyepoint eyepiece
- Working distance, 92mm; viewing angle, 60°
- Can be used with optional 0.3, 0.4, 0.63, and 2.0X auxiliary objectives
- Sound, sturdy design; easy operation of essential controls

Stemi DV4 Body Only

- Body with eyepieces and zoom objective only
- Comes without stand or illumination system; contact your Fisher Scientific Customer Service Representative for information about options

Stemi DV4 with Model C Stand

- Includes body, eyepieces, zoom objective, stand and illumination system
- Has two 12V halogen bulbs: 10w for transmitted light, 20w for reflected light; use both for mixed light
- Press a button to choose illumination mode: brightfield reflected light, brightfield transmitted light, or mixed light
- Continuous control of electronic brightness settings, separate for each mode for fast adaptation to specimens



12-070-374

Description	Zoom Range	Cat. No.	Eac
Stemi DV4 Body Only	8.0 to 32.0X	**12-070-515**	1160.0
Stemi DV4 with Model C Stand	8.0 to 32.0X	**12-070-374**	1675.0

SPECIFICATIONS

Eyepiece	**W 10X/20 High-eyepoint, Focusing**							
Auxiliary Objective	**None**	**0.3X**	**0.4X**	**0.3X to 0.5X**	**0.63X**	**1.25X**	**1.6X**	**2X**
Working Distance	92mm	285mm	210mm	234 to 91mm	130mm	60mm	48mm	31mm
Magnification	8.0X to 32.0X	2.4X to 9.6X	3.2X to 12.8X	2.4X to 16X	5.0X to 20.2X	10X to 40X	12.8X to 51.2X	16.0X to 64.0X
Object Field	25.0 to 6.3mm	83.3 to 20.8mm	62.5 to 15.6mm	83.3 to 12.5mm	40.0 to 9.9mm	20.0 to 5.0mm	15.6 to 3.9mm	12.5 to 3.1mm

ACCESSORIES

Replacement Bulbs

For Carl Zeiss* Microscopes and Fiber-optic Power Supplies

Description	For Model	Contains Mercury	Cat. No.	Each
For Carl Zeiss Microscopes				
6V 20w Halogen Bulb	Axiostar* models, Standard 25 and 20	No	**12-070-183**	24.72
6V 30w Halogen Bulb	Invertoskop*, Invertoskop C	No	**12-070-403**	29.03
6V 20w Halogen Bulb	ID03 Inverted Microscope	No	**12-070-508**	11.54
6V 10w Halogen Bulb	KF2, Standard 16	No	**12-070-184**	15.75
12V 10w Halogen Bulb	Stemi DV4–transmitted light base	No	**12-070-506**	10.75
12V 20w Halogen Bulb	Stemi DV4–reflected light base	No	**12-070-507**	10.75
110V 50w Mercury Burner	Axiostar models for Fluorescence	Yes	**12-070-258**	125.00
110V Power Supply for Mercury Burner HBO	Axiostar models for Fluorescence	No	**12-070-454**	391.00
For Fiber-optic Power Supplies				
8V 20w Halogen Bulb	KL200	No	**12-070-309**	55.00
12V 75w Halogen Bulb	KL750	No	**12-070-509**	14.42
15V 150w Halogen Bulb	KL1500	No	**12-070-510**	22.66

WARNING

The products indicated contain mercury. Don't put products containing mercury in the trash. Products containing mercury are to be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

sher Scientific* Stereomaster* Digital Zoom Microscopes

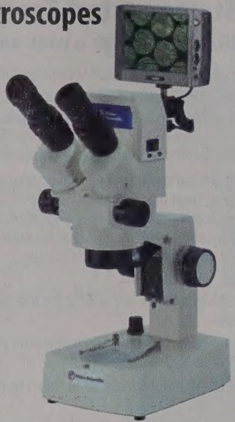
gh optical performance plus the convenience of digital imaging

ree systems for every application

- **tereomaster Digital Zoom Microscopes** have binocular digital head for optical iewing or video display, 10X super-widefield eyepieces with interpupillary adjustment nd diopter adjustment, zoom range of 7.5X to 45X; video outputs include NTSC via CA jack and mini-DIN connection for optional 6.4" or 5.0" color TFT LCD (12-564-141, 2-564-140); permits viewing of live images on a PC, external video monitor, optional CD, through eyepieces, or all of the above at the same time
- **tereomaster Digital Zoom LCD Viewing Systems** have a 6.4" color TFT LCD/ amera head for extended monocular viewing without fatigue, 5.6X to 52X zoom range, 3m to 2.3mm FOV, 100µm to 12.5µm resolution; image capture device with USB 1.1 able connection to computer; boom and pole stand models have 3-position turret for ptional supplementary lenses
- **tereomaster High-Resolution Digital Imaging Systems** are equipped with .3 megapixel color digital camera head for direct real-time viewing via a computer nonitor, 11XZ to 88X zoom range, 27m to 3.35mm FOV, 100µm to 7.7µm resolution; JSB 2.0 cable connection to computer; boom and pole stand models have three- osition turret for optional supplementary lenses

mplete Packages with choice of stands

- ystems are configured with your choice of multipurpose, boom or pole stand
- Dual 20w halogen lamps included with multipurpose stands, 150w fiber-optic light ource with boom and pole stands
- arfocal zoom control via dual side-mounted knobs marked with the nagnification value
- Aicron Software included to capture, save, print and email images; provide n-screen calibrated measurements: point to point, circle, radius, ellipse, rectangle, -point and 4-point angle, and polygon area, plus more
- ower supply, cables, and user guides included


12-563-411 with optional 12-564-140 LCD Monitor

12-563-411

12-564-159

12-564-162

DERING INFORMATION:

tional supplementary lenses and eyepieces are available; contact your her Scientific Customer Service Representative for details.

QUIRED ACCESSORIES:

stem Requirements

JSB 1.1 Recommended Requirements: PC with Pentium* II, 266MHz processor or higher, Windows* 98, 2000, ME or XP operating system, USB 1.1 port, 256MB RAM

JSB 2.0 Recommended Requirements: PC with Pentium IV 2.0GHz processor or higher, Vindows XP operating system, USB 2.0 port, 256MB RAM

JSB 2.0 Minimum Requirements: PC with Pentium III 1.0GHz processor, Windows 2000 or XP operating system, USB 2.0 port, 256MB RAM

ad nfiguration	Total Magnification	Stand	Light Source	Cat. No.	Each
reomaster Digital Zoom Microscopes					
nocular	7X to 45X	Multipurpose	Dual halogen lamps	**12-563-411**	1895.11
nocular	7X to 45X	Boom	Fiber-optic	**12-563-413**	2982.31
nocular	7X to 45X	Pole	Fiber-optic	**12-563-412**	2782.82
reomaster Zoom LCD Viewing Systems					
D/Digital mera	5.6X to 52X	Multipurpose	Dual halogen lamps	**12-564-162**	4463.00
D/Digital mera	5.6X to 52X	Boom	Fiber-optic	**12-564-163**	6639.00
D/Digital mera	5.6X to 52X	Pole	Fiber-optic	**12-564-164**	6225.00
reomaster High-Resolution Digital Imaging Systems					
gital Camera	11X to 88X	Multipurpose	Dual halogen lamps	**12-564-159**	2997.00
gital Camera	11X to 88X	Boom	Fiber-optic	**12-564-160**	5191.00
gital Camera	11X to 88X	Pole	Fiber-optic	**12-564-161**	4777.00
reomaster Digital Camera Head Only					
gital Camera	7X to 45X	None	None	**12-563-410**	1246.79

12-564-161

12-564-163

Fisher Scientific* Stereomaster* Zoom Microscopes

The highest level of optical clarity with a wide variety of configurations

Sensitive optical elements produce high-resolution, three-dimensional images. Large magnification range, easily increased via supplementary lenses. Illumination options let you customize to match your needs.

Choose models with multipurpose, boom stand or industrial pole stand.

- **High-Quality Zoom Optics:** parfocal zoom for continuous changing of magnification without refocusing; total magnification ranges of 7X to 45X or 6.5X to 60X wide angle; supplementary lenses and additional eyepieces are available to produce different magnification ranges; 88mm working distance with standard configuration; smooth-turning, side-mounted control knobs
- **Eyepieces:** 10X super-widefield eyepieces, adjustable for interpupillary distance and dioptric differences
- **Head:** Binocular and trinocular models available; all come with paired 10X eyepieces; heads are rotatable 360°
- **Finish:** Chemical-resistant baked-on paint with stipple finish to resist fingerprints and smudges

Microscope with Multipurpose Stand: ideal for general laboratory use

- Stand/Illumination: has oversized focusing knobs, frosted-glass stage plate, removable stage clips; high-intensity variable-halogen upper and lower illumination; ON/OFF switch allows for use either or both lamps at once; dust caps and cover
- Dimensions of trinocular configuration: 10½L × 7W × 17"H (27 × 18 × 43cm)
- For 110V 50/60Hz

Microscope with Boom Stand: perfect for work with large objects or on user's preferred work surface

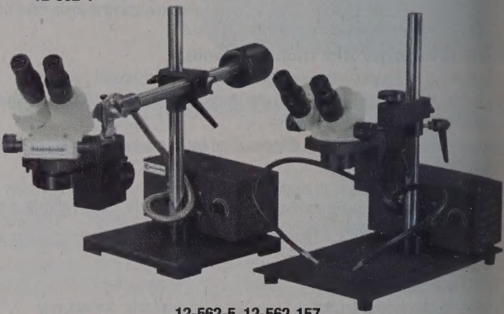
- **Stand:** has 23" (58cm) extension range; tilting adjustment; rack-and-pinion focusing mechanism; easy-to-use levers for quick and positive adjustment; includes dust caps and cover
- **Illumination:** Available with integrated 150w fiber-optic illumination system; 360° annular ring lamp provides shadowless illumination exactly on point of inspection; removable bolt-on light source features two-speed fan for ultralow noise operation
- Dimensions: 10L × 29W × 17"H (25 × 74 × 43cm)
- For 110V 50/60Hz

Microscope with Industrial Pole Stand: large work surface, with or without illumination

- **Stand:** Ideal for large or tall objects; heavy-duty, low-vibration design; oversized anodized work surface; rack-and-pinion focusing mechanism; easy-to-use levers for quick and positive adjustment; dust caps and dust cover
- **Illumination:** Optional dual light guides, each with gooseneck sheath; variable 150w fiber optic light source; two-speed fan for ultralow noise use; bolts on for convenience
- Dimensions: 10L × 17W × 17"H (25 × 43 × 43cm)
- For 110V 50/60Hz

12-562-1

12-564-153



12-562-5, 12-562-157

Body	Total Magnification	Light Source	Cat. No.	Each
With Multipurpose Stand				
Binocular	7X to 45X	Dual halogen lamps	**12-562-1**	1367.19
Trinocular	7X to 45X	Dual halogen lamps	**12-562-2**	1884.53
Binocular	6.5X to 60X	Dual halogen lamps	**12-564-153**	2595.00
Trinocular	6.5X to 60X	Dual halogen lamps	**12-564-154**	3000.00
With Boom Stand				
Binocular	7X to 45X	None	**12-562-3**	1853.80
Trinocular	7X to 45X	None	**12-562-4**	2294.07
Binocular	7X to 45X	Fiber-optic ring	**12-562-5**	2468.62
Trinocular	7X to 45X	Fiber-optic ring	**12-562-6**	2937.41
Binocular	6.5X to 60X	Fiber-optic ring	**12-564-155**	4368.00
Trinocular	6.5X to 60X	Fiber-optic ring	**12-564-156**	4772.00
With Pole Stand				
Binocular	7X to 45X	None	**12-562-7**	1788.31
Trinocular	7X to 45X	None	**12-562-8**	2307.18
Binocular	7X to 45X	Fiber-optic, dual gooseneck	**12-562-9**	2259.16
Trinocular	7X to 45X	Fiber-optic, dual gooseneck	**12-562-10**	2792.79
Binocular	6.5X to 60X	Fiber-optic, dual gooseneck	**12-564-157**	4651.00
Trinocular	6.5X to 60X	Fiber-optic, dual gooseneck	**12-564-158**	5055.00

*Trademark. See Trademark Reference.

Prices subject to change.

sher Scientific* Stereomaster Microscopes

sic stereo microscopes for routine macro work

t-in incident and transmitted lighting complements a two-magnification cal system and a rugged design.

ad:

- inocular heads are rotatable 360° and feature interpupillary adjustment nd diopter adjustment

dy:

- ll come equipped with upper and lower illumination
- pper illuminator is a directable high-intensity variable-halogen lamp
- ower transmitted illumination comes from a fluorescent lamp designed r low-heat output
- hree-position ON/OFF switch allows for use of each lamp individually or oth lamps simultaneously
- emovable stage clips and frosted-glass stage plate (black-and-white eversible stage plate is available)
- yepieces: 10X or 15X wide-field, locked on
- ptional eyepiece/reticle also is available (visit our Web site).

cus Controls

- ack-and-pinion focus controls with oversized knobs and slip-clutch echanism

Finish:

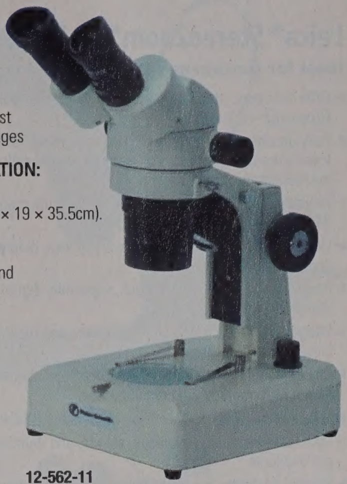
- Chemical-resistant baked-on paint with "stipple" finish to resist fingerprints and smudges

ORDERING INFORMATION:

Overall dimensions:
10L × 7½W × 14"H (25 × 19 × 35.5cm).

INCLUDES:

Dust caps, dust cover and spare lamp.



12-562-11

ectives	Total Magnification	Cat. No.	Each
Eyepieces			
and 2X	10X and 20X	**12-562-11**	592.92
and 3X	10X and 30X	**12-562-12**	592.92
and 4X	20X and 40X	**12-562-13**	592.92
Eyepieces			
and 2X	15X and 30X	**12-562-14**	592.92
and 3X	15X and 45X	**12-562-15**	592.92
and 4X	30X and 60X	**12-562-16**	592.92

SPECIFICATIONS

Total Magnification	Field of View	Maximum Sample Height
10X	18.5mm	36mm
15X	14.5mm	36mm
20X	9.0mm	36mm
30X	6.5mm	36mm
40X	5.5mm	36mm
45X	4.5mm	36mm
60X	3.5mm	36mm

ACCESSORIES

Replacement Bulbs

For Fisher Scientific* Stereomaster* and Stereomaster Zoom models.

Description	Cat. No.	Each
Fluorescent, 35V, 5w high-intensity bulb for Stereomaster* and Stereomaster Zoom Microscopes manufactured between 2003 and 2005	**12-563-324**	16.55
Fluorescent, 35V, 5w high-intensity bulb for Stereomaster and Stereomaster Zoom Microscopes manufactured after 2005	**12-564-129**	14.34
Halogen, 6V, 15w high-intensity bulb, for Stereomaster and Stereomaster Zoom Microscopes manufactured between 2003 and 2005	**12-563-325**	8.27
Halogen, 6V, 20w, G4 bulb for Stereomaster and Stereomaster Zoom Microscopes manufactured in 2002 or earlier	**12-561-BLB1**	18.20
Halogen, 21V, 150w, MR16 type (EKE lamp) for Stereomaster Zoom Pole and Boom stand systems with integrated Fiber Optic Light Source (12-562-5, -6, -9, -10), and standalone Fiber Optic Light Source 12-562-21	**12-562-BLB1**	63.13

LOOKING FOR ILLUMINATION?

See Fisher Scientific* Fiber Optic and LED Light Sources on p. 1180.

LOOKING FOR EYEPIECES AND LENSES?

Eyepieces, supplementrary lenses and other accessories for Fisher Scientific* Stereomaster Microscopes can be found on our Web site.

Visit www.fishersci.com and search for Stereomaster Accessories

Leica* StereoZoom* S8 APO Series Microscopes

Ideal for specimens with fine, low-contrast structures

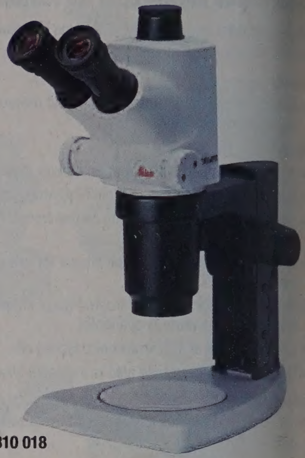
- Offer 8:1 zoom, standard magnification of 10X–80X and high performance Greenough-style optics
- Fully apochromatic corrected zoom lens: ideal for specimens with fine, low-contrast structures, such as large animal cells, plant cilia or metallic microelectronic structures
- Deliver 600 lp/mm resolution and a maximum magnification of 640X (with 2.0X auxiliary objective)
- Unsurpassed contrast, brilliance, sharpness, resolution, color fidelity and reproduction accuracy
- Perfect for exacting applications, especially digital documentation, image archival and analysis
- Integrated video/phototube allows easy and rapid mounting of Leica digital cameras
- Conventional film and analog video cameras can also be mounted for outstanding results

Modular Design:

- Optional objectives, eyepieces, stands, and illumination systems are available
- Several packages are listed below; for more options, contact your Fisher Scientific Customer Service Representative

Components:

- **Eyepieces:** 10X/23 widefield; standard high eyepoint (for eyeglass wearers) or optional low eyepoint; zoom range, 10X–80X (standard objective); 2.9–23mm FOV; interpupiliary adjustment, 55–75mm for comfortable binocular 3D viewing; packages come with one fixed, one adjustable eyepiece for easy parfocal adjustment; accepts optional reticles
- **Head:** Binocular, inclined 38° from horizontal; built-in photo/video tube for optional viewing and documentation accessories; optional lenses permit magnification up to 256X; call your Fisher Scientific Customer Service Representative for details
- **Zoom Objective System:** Patented magnetic mounting system is standard for improved alignment and smooth action; achromatic color correction, 1.0–8.0X zoom magnification; working distance is 75mm; three Apochromatic supplemental objectives are available; contact your Fisher Scientific Customer Service Representative for information
- **Stand/Stage:** Listed models come with A Stand (standard incident-light base) and focus column; B Stand (incident-light base and focus column plus sub-base with transmitted-light reflector); or rectangular S stand (boom and mountable focus arm); standard base has reversible black/white stage for incident light; measures 11L × $8\frac{1}{16}$"W (27.8 × 20.5mm)
- **Focus Control:** Coarse controls mounted on standard focus column; mountable focus arm is tiltable; all focus controls have variable friction for ease of adjustment



LM10 810 018

- **Illumination:** Optional L2 cold-light source, made of ZeroStat antistatic polymer, couples directly to microscope, making a perfect combination for electrostatic-sensitive work; optional Nicholas Illuminator is also available

ORDERING INFORMATION:

Approximate dimensions with standard base: 11L × $8\frac{1}{16}$W × $13\frac{7}{8}$"H (27.8 × 20.5 × 35.1cm). Models come with head, standard eyepieces and objectives listed above and dust cover. Models listed below operate on 120V. Optional accessories include eyepieces, objectives, bases, stages, illumination systems, reticles, videography and photography systems. Call your Fisher Scientific Customer Service Representative for information.

INCLUDES:

- **S8 APO with A-Stand Package** comes with standard incident-light base and focus column
- **S8 APO with B-Stand Package** comes with standard incident-light base, sub-base with reflector and focus column
- **S8 APO with S-Stand Package** comes with rectangular S stand and mountable focus column

Description	Mfr. No.	Cat. No.	Each
S8 APO A-Stand Package	10 810 018	**LM10 810 018**	3446.00
S8 APO B-Stand Package	10 810 028	**LM10 810 028**	3683.00
S8 APO S-Stand Package	10 810 038	**LM10 810 038**	3874.00

ica* StereoZoom* S6/S6 E/S6 D Series Microscopes

romatically optimized for clear, sharp images every time

dular, ergonomic design

- ffer a large, flat (planar) field of view of 36.5mm, long working distance f 110mm
- ptional ergonomic objectives permit fine adjustments of working istance and viewing height
- ptional objectives, eyepieces, stands, and illumination systems are available
- everal packages are listed below; for more options, contact your Fisher cientific Customer Service Representative

mponents:

- **yepieces:** 10X/23 widefield; standard high eyepoint (for eyeglass earers) or optional low eyepoint
- oom range, 6.3X–40X (standard objective); 5.8–36.5mm FOV; interpupillary djustment, 55–75mm for comfortable binocular 3-D viewing; packages ome with one fixed, one adjustable eyepiece for easy parfocal adjustment; ccept optional reticles
- **lead:** S6 has binocular head, 60° inclination from horizontal; S6 E and S6 D ave trinocular head, inclined 38° from horizontal
- **oom Objective System:** Patented magnetic mounting system is tandard for improved alignment, smooth action; achromatic color orrection, 0.63X–4.0X zoom magnification; working distance is 110mm; djustable upper and lower zoom magnification stops; six achromatic upplemental objectives are available; contact your Fisher Scientific ustomer Service Representative for information
- **tands/Stage:** Listed models come with A Stand (standard incident-ght base) and focus column; B Stand (incident-light base and focus olumn plus sub-base with transmitted-light reflector); or rectangular stand (boom and mountable focus arm); standard base has reversible lack/white stage for incident light; measures 11L × 8$\frac{1}{16}$"W (27.8 × 20.5mm)
- **ocus Control:** Coarse controls mounted on standard focus column; nountable focus arm is tiltable; all focus controls have variable friction or ease of adjustment
- **llumination:** Optional L2 cold-light source, made of ZeroStat* antistatic olymer, couples directly to microscope, making a perfect combination or electrostatic-sensitive work; optional Nicholas Illuminator* is also vailable

DERING INFORMATION:

proximate dimensions (standard base): 11L × 8$\frac{1}{16}$W × 13$\frac{7}{8}$"H .8 × 20.5 × 35.1cm). Optional accessories include eyepieces, objectives, ses, stages, illumination systems, reticles, videography and photography stems. Call your Fisher Scientific Customer Service Representative for tails.

CLUDES:

odels come with head, standard eyepieces and objectives listed above d dust cover. Models listed below operate on 120V.

S6 E/S6 D with A-Stand Package comes with standard incident-light base and focus column

S6 E/S6 D with B-Stand Package comes with standard incident-light base, sub-base with reflector and focus column

S6/S6 E/S6 D with S-Stand Package comes with rectangular S stand and mountable focus column

LM10 810 016 with A-Stand and optional L2 illumination system

LM10 810 066 with A-stand

Description	Mfr. No.	Cat. No.	Each
Leica S6 Packages			
S6 S-Stand Package	10 810 046	**LM10 810 046**	2250.00
Leica S6 E Packages			
S6 E A-Stand Package	10 810 016	**LM10 810 016**	1709.00
S6 E B-Stand Package	10 810 026	**LM10 810 026**	1946.00
S6 E S-Stand Package	10 810 036	**LM10 810 036**	2137.00
Leica S6 D Packages			
S6 D A-Stand Package	10 810 066	**LM10 810 066**	2218.00
S6 D B-Stand Package	10 810 076	**LM10 810 076**	2455.00
S6 D S-Stand Package	10 810 086	**LM10 810 086**	2647.00

Leica* StereoZoom* S4 E Microscopes

Offer a large, flat field of view and a long working distance of 110mm with clear, sharp images

Modular, ergonomic design combines high-quality optics, robust and reliable mechanics, and comfortable user interfaces at a reasonable price.

Modular Design:

- An assortment of objectives, eyepieces, stands, and illumination options are available; several packages are listed below; for additional options, contact your Fisher Scientific Customer Service Representative
- **Eyepieces:** 10X/23 wide-field eyepieces, standard low or optional high eyepoint; zoom range of 6.3X to 30X with standard zoom objective, and 7 to 36.5mm FOV; interpupilary adjustment, 55 to 75mm; packages come with one fixed and one adjustable eyepiece; accepts optional reticles
- **Head:** Binocular, inclined 38° from horizontal; optional accessories permit magnification up to 128X
- **Zoom Objective System:** Patented magnetic mounting system for improved alignment and smooth action; achromatic color correction, 0.63X to 3.0X magnification; working distance is 110mm
- **Stand/Stage:** Models listed come with A stand (incident-light base) and focus column, B stand (incident-light base and focus column plus sub-base with reflector for tramsmitted light), or rectangular S stand and mountable focus arm; standard base has reversible (black/white) stage for incident light; measures approximately 11L × $8\frac{1}{16}$"W (27.8 × 20.5cm)
- **Focus Control:** Coarse controls mounted on standard focus column; mountable focus arm is tiltable; controls have variable friction for ease of adjustment
- **Illumination:** Optional L2 cold light source couples directly to microscope, uses UL/CE approved 100–240V volt-sensitive power supply, is constructed of ZeroStat antistatic polymer; optional Nicholas Illuminator

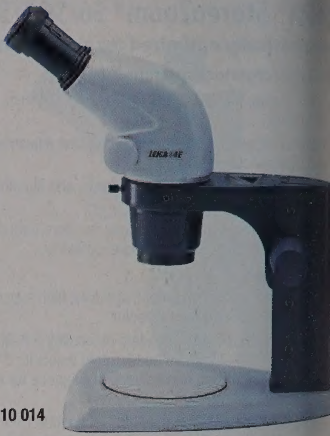
ORDERING INFORMATION:

Dimensions with standard base, 11L × $8\frac{1}{16}$W × $13\frac{7}{8}$"H (27.8 × 20.5 × 35.1cm). All models operate on 120V.
Optional accessories include eyepieces, objectives, bases, stages, illumination systems, reticles, videography and photography systems.
Call your Fisher Scientific Customer Service Representative for information.

INCLUDES:

All models come with S4E head, standard eyepieces and objectives listed above and dust cover; models listed below operate on 120V.

- **S4E with A-Stand Package** comes with standard incident-light base and focus column
- **S4E with B-Stand Package** comes with standard incident-light base, sub-base with reflector and focus column
- **S4E with S-Stand Package** comes with rectangular S stand and mountable focus column



LM10 810 014

CERTIFICATIONS:

UL listed; CE marked.

Description	Mfr. No.	Cat. No.	Each
S4E A-Stand Package	10 810 014	**LM10 810 014**	1484.00
S4E B-Stand Package	10 810 024	**LM10 810 024**	1721.00
S4E S-Stand Package	10 810 034	**LM10 810 034**	1913.00

LOOKING FOR LEICA* REPLACEMENT PARTS AND ACCESSORIES?

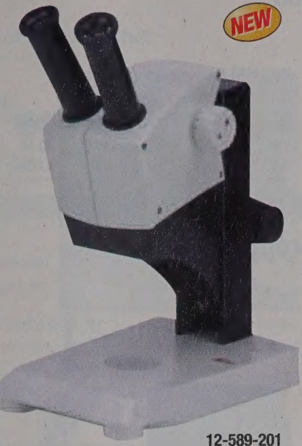
Many replacement parts and accessories are available to create a Leica CM E Microscope System tailored to your specific needs, including: Abbe slider condenser, darkfield/phase-contrast sliders, phase-contrast slider kit, polarizer/analyzer kit, eyepieces, eyepiece micrometer, objectives, Koehler illumination kit, green and blue Koehler undiffused filters and critical diffused filters, 20w tungsten halogen lamp, attachable mirror, stage micrometer, stands, 120V and 230V line cords, cordwrap/lock, dust cover, video viewing bodies, video adapters, and monocular, binocular and trinocular viewing bodies.

To order any of these products, contact your Fisher Scientific Customer Service Representative or

Visit www.fishersci.com and search for Leica Accessories

eica* EZ4 StereoZoom* Microscope

hoice of eyepieces and zoom ranges in a compact, gged package



12-589-201

ee-way incident light hnology plus world-owned Leica quality and cision, in an educational reomicroscope offering the st value for the money.

- High image quality, color nd detail fidelity
- Mechanical precision or decades of naintenance-free use
- Precise magnification hange and focusing ystems for the most xact control
- Power LED illumination ystem for incident and ransmitted light; diodes ast longer than ncandescent lamps, use ess energy, stay cool and equire no maintenance

ree-way dimmable LED illumination

- Unique Leica three-way incident light technology (patent pending) allows bservation of a wide variety of objects, from strongly structured objects o flat probes
- Optimal illumination to obtain a maximum of information; integrated EDs can be switched individually, dimmed and combined with ransmitted light.
- Choose maximum intensity with five LEDs, angled incident light with hree LEDs, side light with three LEDs
- Membrane switch controls illuminator; integrated into base with watertight seal
- Automatic shutoff after 60 min.; approximate LED life, 25,000 hr.

pecifications:

- **Stand:** integrated head, stage and stand
- **Head:** Binocular, 60° inclination
- **Optics:** 10° Greenough, parfocal; 100mm WD; 170 Lp/mm maximum resolution; 0.057 N.A.; 100% visual beam path
- **Eyepieces:** Available with 10X/20mm fixed or 16X/15 fixed eyepieces (suitable for eyeglass wearers, or without eyepieces; 50 to 75mm interpupillary adjustment; replaceable eyecups
- **Objectives:** 8X to 35X magnification with 10X eyepieces; 12.8X to 56X magnification with 16X eyepieces; 5.37 to 25mm and 4.3 to 18.8mm field diameters
- **Focusing:** Individually adjustable ease of movement, 75mm travel
- **Illumination:** LED incident light and transmitted light; integrated, independent or combined; maximum, angled or side lighting modes; dimmable

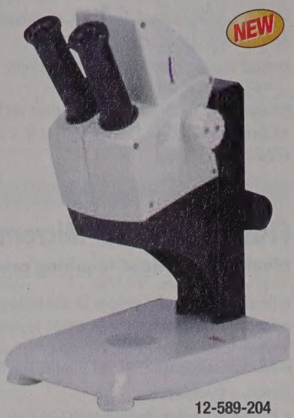
RDERING INFORMATION:

mensions: 10$\frac{1}{32}$L × 7$\frac{3}{16}$W × 14$\frac{3}{8}$"H (255 × 18 × 365mm). Net weight: $\frac{3}{8}$ lb. (3.82kg). Integrated 100 to 240V universal power supply.

odel	Mfr. No.	Cat. No.	Each
Z4 with 10X Eyepieces	10447197	**12-589-201**	825.00
Z4 with 16X Eyepieces	10447198	**12-589-202**	855.00
Z4 without Eyepieces	10447199	**12-589-203**	795.00

Leica* EZ4D StereoZoom* Microscope

Integrated digital camera and software for image data storage and enhancement



12-589-204

Combines the Leica EZ4 StereoZoom Microscope with an integrated three-megapixel CMOS camera and Leica application software, allowing:

- Direct storage of image data on 128 MB SD card
- Connection to PC, Mac*, video recorder or beamer
- Control of image capture and storage, live image display on connected PC or Mac*, and the archiving and optimization of image data using supplied software.

Leica quality and precision

- High image quality, color and detail fidelity
- Mechanical precision for decades of maintenance-free use
- Precise magnification change and focusing systems for the most exact control
- Power LED illumination system for incident and transmitted light; diodes last longer than incandescent lamps, use less energy, stay cool and require no maintenance

Three-way dimmable LED illumination

- Unique Leica three-way incident light technology (patent pending) allows observation of a wide variety of objects, from strongly structured objects to flat probes
- Optimal illumination to obtain a maximum of information; integrated LEDs can be switched individually, dimmed and combined with transmitted light.
- Choose maximum intensity with five LEDs, angled incident light with three LEDs, side light with three LEDs
- Membrane switch controls illuminator; integrated into base with watertight seal
- Automatic shutoff after 60 min.; approximate LED life, 25,000 hr.

Specifications:

- **Stand:** integrated head with digital camera, stage and stand
- **Head:** Binocular, 60° inclination, with camera port and integrated camera
- **Optics:** 10° Greenough, parfocal; 100mm WD; 170 Lp/mm maximum resolution; 0.057 N.A.; 50% visual/50% photo/video beam path
- **Eyepieces:** 10X/20mm fixed (suitable for eyeglass wearers); 50 to 75mm interpupillary adjustment; replaceable eyecups
- **Objectives:** 8X to 35X magnification with 10X eyepieces; 5.37 to 25mm field diameter
- **Focusing:** Individually adjustable ease of movement, 75mm travel
- **Illumination:** LED incident light and transmitted light; integrated, independent or combined; maximum, angled or side lighting modes; dimmable

ORDERING INFORMATION:

Dimensions: 10$\frac{1}{32}$L × 7$\frac{3}{16}$W × 14$\frac{3}{8}$"H (255 × 18 × 365mm). Net weight: 8$\frac{3}{8}$ lb. (3.82kg). Integrated 100 to 240V universal power supply.

Model	Mfr. No.	Cat. No.	Each
EZ4D with Digital Camera	10447200	**12-589-204**	1750.00

POCKET MICROSCOPES

Fisher Scientific* Illuminated Pocket Microscopes

A single mechanism generates a smooth and rock-solid focus

Ideal for quality control, field use, electronics, metal analysis, clinical analysis and plant study applications.

- View at high magnification in bright light, true color, high contrast, and with a sharply defined focus
- Case is chemical- and shock-resistant ABS plastic
- Dimensions: 5½L × 1½W × ⅞"H (140 × 38 × 22mm)
- Weighs 3 oz. (85g)

INCLUDES:
Two "AA" batteries

Magnification	Cat. No.	Each
30X	**12-071-6E**	43.58
60X to 100X zoom	**12-071-6D**	47.04

12-071-6D and 12-071-6E

PHOTODOCUMENTATION AND VIDEO SYSTEMS

Fisher Scientific* Micromaster* Videomicroscopy Systems

Ideal for situations requiring presentation

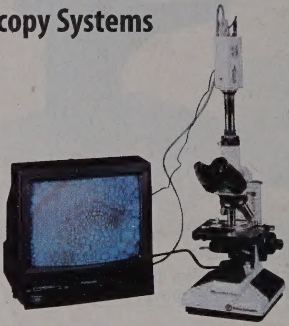
- Ready-to-use configurations fit any biological microscope
- Systems include everything needed to configure new systems or retrofit existing systems
- Adapter has 23mm O.D. and slip-fits into most microscope eyetubes

Camera Systems

- **High-Resolution System** with 500 lines of color, ½" chip, Y/C (SVHS) and composite outputs
- **Standard-Resolution System** with 350 lines of color, ⅓" chip, and composite output

INCLUDES:
Camera, 12V power supply, microscope adapter, video cable

REQUIRED ACCESSORIES:
Microscope compatible with 23mm O.D. adapter; color monitor with appropriate input jacks for system (S-video or RCA)



Fisher Micromaster Trinocular Phase-Contrast Microscope, 12-561-3FAZ (available separately), 12-563-3 Camera and optional 12-478-14 Color Monitor (available separately).

NOTE:
Adapter cannot be used with a reticle.

System	Cable/Connector	Cat. No.	Each
High Resolutiion	S-Video	**12-563-3**	2412.09
Standard Resolutiion	BNC-RCA	**12-563-1**	943.98

Carl Zeiss* Accessory Canon* PowerShot* A640 Digital Color Camera

Photo and video documentation with antirotation adapter

Camera features:

- 10.0-megapixel CCD, 3648 x 2736 effective pixels
- 4X optical zoom, F/2.8 to F/4.1, 7.3 to 29.2mm (35mm film equivalent: 35-140mm)
- 2.5 inch flip-out-and-twist LCD monitor with wide viewing angle
- Optical viewfinder
- 21 shooting modes, 9-point AiAF plus manual modes
- ISO 800 and High ISO Auto to reduce image blur and expand low-light shooting capability
- DIGIC* II Image Processor and iSAPS Technology for superior image quality, fast operation and low power consumption
- Movie Mode recording with sound at 30 fps VGA (640x480)
- Print/Share Button for easy direct printing and downloading
- ID Photo Print and Movie Print with Canon Photo Printers
- Remote control possible via USB, live image via USB or Video Out (Pal/NTSC in full composite quality)
- Slot for SD-Card or MMC

Zeiss extras include:

- Zeiss exclusive adapter design allows for a rotation-free camera mount
- Extra USB cable extension
- Power supply for continuous use
- Optional AxioVision* Software

NEW

Canon Camera 12-171-226

INCLUDES:
PowerShot A640, SD Memory Card 32MB, filter adapter 52mm, 4 "AA" batteries, power supply 100-240V with country-specific power cord, A/V connection cable, USB cable + 3m extension, TWAIN/WIA driver, PhotoStitch, RemoteCapture, ZoomBrowser EX, Basic User Booklet, Advanced Guide on CD.

Aadpter included in 12-171-226

REQUIRED ACCESSORIES:
Camera mount for your specific microscope; computer with USB 2.0 connector for Windows* 98/2000/ME/XP (not NT), or Mac*. Optional: AxioVision Rel. 4.6 or later.

Cat. No.	Each
12-171-226	658.00

FILTERS

mega* Optical Filter Sets for uantum Dots

NEW

ptimized for imaging of all UV-excited dot* conjugates

09-120-1 Series

- Utilize emission filters centered on quantum dot emission center wavelengths
- Produce bright signal and excellent signal-to-noise
- Unique quantum dot technology provides large Stokes shift for cost-effective imaging—no expensive filter components needed
- Wide-band excitation filters provide maximum signal or narrower bandpass design to minimize photodamage
- Single dichroic functions for all colors
- Bandpass design for emission filters yields high discrimination; AR coated and precision-polished

RDERING INFORMATION:
ailable in standard sizes as follows: exciters and emitters in 18, 20 or mm diameter; dichroics in 18 × 26, 21 × 29 or 25.7 × 36mm. Specify es when ordering. See Selection Guide below for a list of sizes for lected microscopes. Custom sizes available; contact your Fisher ientific Customer Service Representative for details.

ICLUDES:
citer, single dichroic, emitter

r Ordering Information, see right.

Omega* Optical Filter Sets

Description	Mfr. No.	Cat. No.	Each
Qdot Complete Set	XF300	**09-120-100**	1375.00
Qdot 525 Set, w/Exciter 1	XF301-1	**09-120-101**	400.75
Qdot 525 Set, w/Exciter 2	XF301-2	**09-120-102**	400.75
Qdot 565 Set, w/Exciter 1	XF302-1	**09-120-103**	400.75
Qdot 565 Set, w/Exciter 2	XF302-2	**09-120-104**	400.75
Qdot 585 Set, w/Exciter 1	XF303-1	**09-120-105**	400.75
Qdot 585 Set, w/Exciter 2	XF303-2	**09-120-106**	400.75
Qdot 605 Set, w/Exciter 1	XF304-1	**09-120-107**	400.75
Qdot 605 Set, w/Exciter 2	XF304-2	**09-120-108**	400.75
Qdot 655 Set, w/Exciter 1	XF305-1	**09-120-109**	400.75
Qdot 655 Set, w/Exciter 2	XF305-2	**09-120-110**	400.75
Qdot 705 Set, w/Exciter 1	XF306-1	**09-120-111**	400.75
Qdot 705 Set, w/Exciter 2	XF306-2	**09-120-112**	400.75
Qdot 800 Set, w/Exciter 1, single color	XF307-1	**09-120-113**	400.75
Qdot 800 Set, w/Exciter 2, single color	XF307-2	**09-120-114**	400.75
Qdot 800 Set, w/Exciter 1, multiplexing	XF308-1	**09-120-115**	400.75
Qdot 800 Set, w/Exciter 2, multiplexing	XF308-2	**09-120-116**	400.75
Qdot 320 Set	XF320	**09-120-117**	500.94
Qdot Multi-color Viewing, with Xenon excitation Set	XF02-2	**09-120-118**	500.94
Qdot Multi-color Viewing, with Hg excitation Set	XF05-2	**09-120-119**	500.94
Filter; Exciter 1	XF1009	**09-120-120**	150.84
Filter; Exciter 2	XF1301	**09-120-121**	150.84
Filter; Dichroic	XF2007	**09-120-122**	125.70
Filter; Emitter 1	XF3301	**09-120-123**	150.84
Filter; Emitter 2	XF3302	**09-120-124**	150.84
Filter; Emitter 3	XF3303	**09-120-125**	150.84
Filter; Emitter 4	XF3304	**09-120-126**	150.84
Filter; Emitter 5	XF3305	**09-120-127**	150.84
Filter; Emitter 6	XF3113	**09-120-128**	150.84
Filter; Emitter 7	XF3307	**09-120-129**	150.84
Filter; Emitter 8	XF3308	**09-120-130**	150.84
Filter; Emitter; DAPI	XF3086	**09-120-131**	251.41
Filter; Emitter; Xenon excitation	XF3097	**09-120-132**	251.41
Filter; Dichroic; Xenon excitation; Hg excitation	XF2001	**09-120-133**	125.70

The Qdot Nanocrystal products and the use thereof are the subject of one or more patents owned by Quantum Dot Corporation (U.S. Patent Nos. 6,274,323; 6,500,622; 6,630,307; 6,649,138; 6,653,080; 6,682,596; 6,734,420; 6,759,235; 6,815,064 and foreign equivalents) or licensed to Quantum Dot Corporation (i) by The Regents of the University of California (including 5,990,479; 6,207,392; 6,225,198; 6,306,736; 6,423,551; 6,699,723; 6,727,065 and foreign equivalents) and (ii) by Massachusetts Institute of Technology (6,207,229; 6,251,303; 6,306,610; 6,319,426; 6,322,901; 6,326,144; 6,426,513; 6,444,143; 6,501,091; 6,576,291; 6,602,671; 6,607,829; 6,617,583; 6,696,299; 6,774,361; 6,803,719; 6,821,337; 6,861,155; and foreign equivalents).

LOOKING FOR ADAPTERS?
For adapters for your microscope,
Visit www.fishersci.com and search for C mount

lanufacturer	Microscope	Holder	Exciter	Dichroic	Emitter
arl Zeiss*	Axio Series	Axio 3 (3-Position Slider)	25mm R	25.7 × 36mm	25mm R
		Axio 2 Cube (On Spinning Turret)	25mm R	25.77 × 36mm	25mm R
eica*	Standard, IM-35, 3RS Photo III, Universal	Ploemopak Holder	18mm R	25.7 × 36mm	18mm R
	BioMed, DMIL, Diaplan, Dialux 20, 22, Diavert, Fluovert, Laborlux, Laborvert, Orthoplan, Ortholux 2		18mm R	18 × 26mm	18mm R
	DMR	DMR Holder	22mm R	21 × 29mm	22mm R
	Aristoplan, Orthoplan II	DMIRB Holder (XC122)	20mm R	21 × 28mm	20mm R
	DMIRB		20mm R	18 × 26mm	20mm R
ikon*	Labophot, Diaphot, FXA, Optiphot, Microphot	Original Holder	18mm R	18 × 26mm	18mm R
		Modified Holder	20mm R	18 × 26mm	22mm R
lympus*	Quadfluor Attachment, Eclipse Series	Quadfluor Holder	25mm R	25. × 36mm	25mm R
	IMT-2	IMT-2 Holder	22mm R	2 × 29mm	20mm R
	BH-2, BHT, BHS, AHBS 3, AHBT 3, AMMT 3	BH-2 Holder	18mm R	18 × 26mm	18mm R
	AX, BX, IX series	BX Holder	25mm R	25.7 × 36mm	25mm R

ILLUMINATORS

12-563-501

Fisher Scientific* LED Light Source

Ideal for a wide variety of applications including microscopy, gemology, industrial, hobby and task lighting

Utilize ultrabright LEDs, mounted on two adjustable light guides. Lamp intensity and color temperature provide illumination that appears 20 to 25% brighter than traditional fiber-optic light sources. Long lamp life, compared to the 200 hour life of halogen bulbs, translates into decades of use.

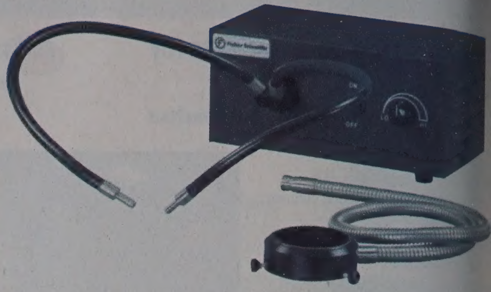
- 24 LEDs for ultra-intensity illumination
- Bright white color temperature
- Variable intensity control
- 50,000 hour LED bulb life
- Cool, quiet, vibration-free operation
- Small footprint

ORDERING INFORMATION:
Models available with weighted base or table edge clamp.

INCLUDES:
Illuminator, light guides, hardware, user guide and power supply.

SPECIFICATIONS

Light Source	24 Ultrabright LEDs
Color Temperature	6500°K
Lamp Life	50,000 hr.
Light Guides	Two 25" gooseneck
Dimensions (L x W x H)	3⅝ × 4¼ × 14$\frac{15}{16}$" (9.0 × 10.8 × 38cm)
Rated Power Output	18mW at 2"
Electrical Requirements	100 to 240V
With Weighted Base	
Cat. No.	**12-563-501**
Each	361.68
With Edge Clamp	
Cat. No.	**12-563-502**
Each	328.11



12-562-21 with 12-562-22 and 12-562-23

Fisher Scientific* Stereomaster* Microscope Fiber-Optic Light Sources

Fiber-optic illumination accessory for microscopes

Stand-alone fiber-optic illuminator is ideal as a retrofit for existing microscopes, as a valuable addition to the Fisher Scientific multipurpose stand, or as general laboratory illumination.

Light Source

- Uses 21V, 150w halogen lamp (EKE type)
- Lamp life, 200 hours at full power; practical lamp life up to 500 hours if dimmed when not in use
- Color temperature, 3250°K
- Dimmer circuit provides continuously variable light level
- Two-speed fan provides choice between maximum lamp life and near-silent operation

Light Guides

- For use with fiber-optic Light Source
- Choose self-supporting dual-light guide or 360° annular ring lamp
- Ring-lamp system uses nylon set screws, eliminating need for a microscope-specific adapter

ORDERING INFORMATION:
Light Source dimensions: 7L × 6½W × 5"H (18 × 16.5 × 13cm).

Description	Cat. No.	Each
Fiber-optic Light Source	**12-562-21**	385.00
Fiber-optic Light Source with Light Guides		
Light Source with single light guide	**12-562-35**	442.00
Light Source with dual (bifurcated) light guide	**12-562-36**	499.00
Light Source with ring lamp, 360°	**12-562-37**	699.00
Light Guides		
Single light guide	**12-562-38**	131.95
Dual (bifurcated) light guide	**12-562-22**	325.00
Ring lamp, 360°	**12-562-23**	464.73

eica* L2 Cold-Light Source Systems

eally suited to industrial d scientific applications

L2 light source attached to stand (sold separately)

- **Provide cool, intense, optimal llumination** to improve optical erformance and reduce error. deally suited to industrial and cientific applications. Accept ttachments for classically angled ghting with one or two light uides, plus coaxial, vertical, and ransmitted illumination methods.
- **owerful and affordable.** /olt-sensitive network component alibrates itself automatically to pplicable voltage of 100–240V, uaranteeing stable illumination uring functions. Exhibit no 100Hz licker which is particularly listracting during image processing. otal light stream at light guide utput: 54 lumens at 4.5mm diameter, 63 lumens at 5mm diameter. owerful illumination with no light dispersion, no noise.
- **asy to maintain and safe.** Use 8V/20w halogen reflector lamp with ife expectancy of 250 to 5000 hours. Lamp casing is designed to make hanging lamp simple: snap off lamp cover and lamp turns off automatically; hange lamp, and snap cover back on. The Leica L2 has been tested and pproved against applicable international safety regulations.
- **ttach directly to microscope stand,** requiring minimal space and permitting easy mobility. Illumination retains constant orientation toward pecimen when microscope is moved.
- **ight guides for various illumination methods.** Light guides are made f glass fiber optics with excellent optical properties, for fastest ransmission and optimal light distribution. High-quality coating of alogen-free, self-erasing Megolon and heat-resistant light guide nterface guarantee an extraordinarily long fiber-optic life.

RDERING INFORMATION:

odest footprint. Measure just 4 15/16 × 4 3/8 × 5 7/8" (125 × 110 × 150mm); eighs only 1 lb. and 2 oz. (0.5kg). Choice of packages with Dual Flex light ides, Universal Single and Dual light guides and six-point Ringlight guides.

CLUDES:

l packages listed include: L2 fiber-optic light source, bulb, power supply d electrical cord; appropriate adapter to connect L2 to microscope stand; ht guides as listed and all necessary mounts. Additional guides for axial and near-vertical lighting, and single and double goosenecks, as ell as freestanding L2 base packages are available. Call your Fisher ientific Customer Service Representative for details.

scription	Cat. No.	Each
2 A-Stand Dual Flex	**LM10 810 011**	541.00
2 A-Stand Ringlight	**LM10 810 012**	736.00
2 B-Stand Single Universal	**LM10 810 021**	504.00
2 B-Stand Dual Universal	**LM10 810 022**	561.00
2 S-Stand Dual Flex	**LM10 810 031**	561.00
2 S-Stand Ringlight	**LM10 810 032**	756.00
2 S-Stand Single Universal	**LM10 810 033**	522.00
2 Freestanding Single Gooseneck	**LM10 810 041**	473.53
2 Freestanding Double Gooseneck with Lens	**LM10 810 042**	625.00
2 Freestanding with Coaxial Guide	**LM10 810 043**	1338.00

Leica* KL Series Cold-Light Sources

Ergonomically designed for quick access to control buttons and exchange of light bulbs, lamp sockets, fuses and filters, even when units are stacked

LM10 810 Series

- **High-performance cold-light sources** to fit Leica stereomicroscopes or macroscopes in demanding applications. LCD presents current color temperature, operating status and mode at a glance. Light intensity is electronically stabilized and can be electronically dimmed from 10% to 100%, or dimmed mechanically from 6 to 100%. Lightweight and handgrip mean easy transport.
- **KL 1500 LCD** features a 150w light source for maximum light intensity of 600 lumens, with single-filter holder insert; accepts light guides up to 9mm diameter.
- **KL 2500 LCD** expands your choice of applications—including fluorescence applications—with approximately twice the light output (250w) of the KL 1500 LCD, for 1300 lumens maximum light intensity. Accepts light guides up to 15mm diameter, and has built-in five-hole filter wheel. Includes connector for optional accessories including remote control of intensity, power switch and RS-232 interface, allowing operation in cleanrooms and difficult-to-access areas.

ORDERING INFORMATION:

Choice of popular packages. Listed below are selected combinations of light sources and light guides. Many additional guides, filters, holders and other accessories are available; contact your Fisher Scientific Customer Service Representative for more information.

Description	Cat. No.	Each
KL1500 LCD Packages		
With single gooseneck fiber-optic bundle	**LM10 810 019**	846.00
With dual gooseneck fiber-optic bundle	**LM10 810 029**	984.00
With 58mm continuous slit ringlights	**LM10 810 039**	1097.00
KL2500 LCD Packages		
With single gooseneck fiber-optic bundle	**LM10 810 049**	1323.00
With dual gooseneck fiber optic bundle	**LM10 810 059**	1461.00
With 58mm continuous slit ringlights	**LM10 810 069**	1575.00

SPECIFICATIONS

Maximum Light Intensity	600 lumens	1300 lumens
Brightness Control	Electronic: 10–100%. Mechanical: 6–100%	Electronic: 10–100%. Mechanical: 6–100%
Active Light Guide Dia.	9mm max.	15mm max.
Cooling	Low-noise fan	Low-noise fan
Stackability	Yes	Yes
Optional RS-232 Interface	No	Yes
Filter Insert	Filter holder for 1 filter	5-place filter wheel
Lamp Type	Halogen reflector lamp, 15V, 150w	Halogen reflector lamp, 24V, 250w
Color Temperature	3200°K; 5500°K with daylight filter	3200°K; 5500°K with daylight filter
Operating Voltage	100–120V 50/60Hz	100–120V 50/60Hz
Power Consumption	200VA; UL/CSA approved	300VA; UL/CSA approved
Dimensions (W x D x H)	10 3/8L × 7 7/8W × 6 11/16"H (265 × 200 × 170mm)	10 3/8L × 7 7/8W × 6 11/16"H (265 × 200 × 170mm)
Weight	11 lb. (5kg)	13 3/4 lb. (6kg)

Leica* Nicholas Illuminator with Transformer, Linkage and Adapter

Designed for stereomicroscopy

BL 31-33-05-28

- With transformer, linkage and adapter
- Provides a whiter light for better images and sharper photomicrographs
- Use as an external illuminator for direct lighting, or with substage mirrors
- Can be inserted in ports of StereoZoom* A Stands† for prealigned oblique lighting, or in the back of Type B Stand bases† to backlight transparent specimens
- The three-step transformer serves as the base for adjustable jack-knife linkage when used as an external illuminator
- At full 6V intensity, the lens system projects a 35mm spot of white light with a color temperature of 2800°K

ORDERING INFORMATION:

For 120V 50/60Hz. Transformer has 6½' (2m) 3-wire cord. With tungsten lamp (replacement BL 31-31-75).

CERTIFICATIONS:

UL listed

Mfr. No.	Cat. No.	Each
13313305 28	**BL 31-33-05-28**	219.47

† For information about Leica StereoZoom Model A and B Stands, contact your Fisher Scientific Customer Service Representative.

Illuminator Only

- Features illuminator lamphouse with lamp, condenser lens system and cord to connect to transformer (not included)

ORDERING INFORMATION:

Uses replacement lamp BL 31-31-75.

Mfr. No.	Cat. No.	Each
133133 05	**BL 31-33-05**	74.25

Replacement Lamp for Nicholas Illuminators

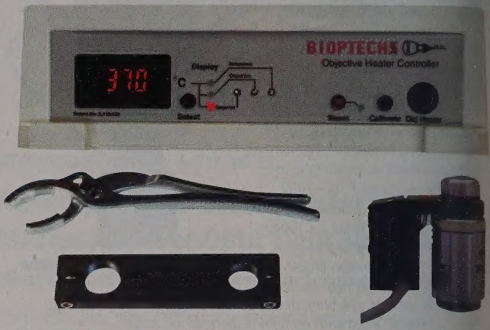
- 6V Tungsten lamp

Mfr. No.	Cat. No.	Each
133131 75	**BL 31-31-75**	24.15

CELL ENVIRONMENT SYSTEMS

Bioptechs* Live-Cell Microscopy Systems

Open and closed systems for live-cell micro-observations and time-lapse imaging



Top: Objective Heater Controller. Lower left: Objective Wrench and Pliers. Lower right: Standard Objective Heater. Order all separately.

Objective Heater and Controller

For use with high-numeric-aperture objectives

Use with the Delta T* Culture Dish System (above) or FCS2 Closed System.

- Accommodates objectives from 16 to 34mm diameter
- Controller slowly heats objective over 15-min. warmup period, then holds objective at setpoint within 0.2°C
- Safety shutdown and audible alarm circuit protect objective if objective sensor deviates more than 0.9°C after the setpoint temperature is reached
- Features large backlit LCD; built-in calibration; and auto reset

ORDERING INFORMATION:

Dimensions: 17L × 9W × 9"H (43.2 × 22.9 × 22.9cm). For 120–240V 50/60Hz. Objective wrench and pliers also available (see ordering table)

Description	Mfr. No.	Cat. No.	Each
Heaters			
Standard 16–28mm	150819	**12-071-25**	675.00
Large 26–35mm	150812	**12-071-26**	735.00
Controller	150803	**12-071-39**	1650.00
Wrench and Pliers	021523	**12-071-40**	195.00

ptechs* Live-Cell Microscopy Systems, Contd.

lta T* Culture Dish System

en-dish, live-cell environmental/optical ntainment system

Top: Delta T Controller. Bottom: Nikon* and Olympus* Round Stage Adapter with Delta T Dish and Hinged Perfusion Adapter Set.

micro-observation and applications uiring physical access to cells or ue: microinjection, electrostimulation, unding, micromanipulation, mechanical bing, recording, and stimulation

ccurate temperature control, uniform eat distribution, and high-numeric- perture compatibility

Vorks in confocal applications; adapts specimens from monolayered dherent cells to tissue preparations, ith inverted, water-immersion, and pright microscopes

ystem passes ~0.9w electrical charge through thin indium tin-oxide oating on underside of glass substrate where cells are grown, ansferring heat through glass to cells

hermal regulation via instantaneous analog control of a feedback loop

lo peripheral heating: cells are unaffected by surface evaporation, heat not lost to the atmosphere

fter plating, cells are ready for incubation or time-lapse imaging

ontroller has real-time temperature display (ambient to 50°C, accuracy 0.1°C); compensates for surface evaporation

larmed protection circuit safeguards cells

imensions: 15½L × 6W × 3"H (39.4 × 15.2 × 7.6cm), operates on 00–240V 50/60Hz or 24V battery

lta T Culture Dish options

isposable polystyrene/glass dishes are available plain (when temperature ontrol is not needed) or with electrically conductive, optically transparent oating and silver bus bars; 6mm depth optimizes access for microinjection nd manipulation. O.D., 35mm, tapering to 23mm optical aperture

ishes with 0.50mm thick bottoms or clear 0.17mm coverslip bottom re available

or fluorescence imaging, select black culture dishes

CLUDES:

ntroller includes Internal reference for user-adjustable calibration and TTL erface for confocal application. Delta T Starter Set includes controller, pack of clear culture dishes, cover glass lid and heated lid. Both require propriate stage adapter; order separately.

QUIRED ACCESSORIES:

rter Kit and Controller require appropriate stage adapter; order separately.

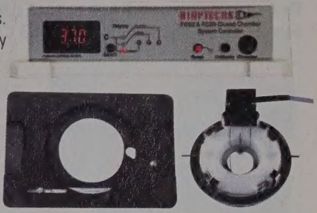
scription	Mfr. No.	Cat. No.	Price
lta T Starter Set	0420-4	**12-071-200**	Ea./3010.00
lta T Controller†	0420403	**12-071-31**	Ea./2625.00
age Adapters			
kon* and Olympus* Round	04201415	**12-071-02**	Ea./580.00
iss* (K), Ludl and Prior	04202602	**12-071-04**	Ea./580.00
iss (M) and Leica Single Plate	04202601	**12-071-05**	Ea./580.00
ear Culture Dishes with Clear Lids			
17mm	04200415C	**12-071-07**	Pk. of 50/305.00
17mm, plain	0420041500C	**12-071-33**	Pk. of 50/185.00
50mm	04200405	**12-071-06**	Pk. of 50/305.00
ack Culture Dishes with Black Lids			
17mm	04200415B	**12-071-08**	Pk. of 50/305.00
17mm, plain	0420041500B	**12-071-34**	Pk. of 50/185.00
ated Lid	04200803	**12-071-35**	Ea./315.00
verglass Lid	04200312	**12-071-30**	Ea./160.00

equires stage adapter. Order separately.

FCS2 and FCS3 Closed Systems

Integrated solution for closed-system microenvironmental control with near-laminar perfusion

Systems offer compatibility with all microscopy techniques. New FCS3 system is specifically optimized for use with upright microscopes. Both consist of controller, chamber, microaqueduct slides and stage adapter.



FCS2 Controller (top) and FCS2 Chamber (lower right) are supplied as part of a Starter Set (12-071-14). Order Zeiss (K), Ludl and Prior Stage Adapter (lower left), separately.

- Parallel-plate flow cell provides uniform tempera ture control, user-definable flow cavity; works with all illumination modes
- Easily modified for time-lapse micro-observation of living cells; especially suited for stopped-flowthrough high-rate flow procedures requiring rapid media exchange and where discrete control of cell surface shear is adjustable
- Controls cell temperature uniformly across entire field, from ambient to 50°C ±0.1°C; bicarbonate or organic buffers can be used in chamber
- Separate channels for microaqueduct slide and chamber frame
- Backlit LCD, user calibration, and auto reset
- Patented microaqueduct slide ensures proper Koehler illumination with high-numeric-aperture optics in transmitted and reflected modes
- Cover slip is 40mm dia. × 0.16 to 0.19mm thick; slide is 75 O.D. × 13mmH (3 × ½")
- Imaging aperture: 22mm
- Volume (min./max.): 6.6/706mm^3; maximum volume exchange rate: 1/sec.
- Separation between optical surfaces, 50 to 1000µm; minimum fluid aperture, 0.63mm^2

ORDERING INFORMATION:

System dimensions: 17L × 9W × 9"H (43.2 × 22.9 × 22.9cm). For 120/240V 50/60Hz. Require Objective Heater and Controller for high NA objectives.

Description	Mfr. No.	Cat. No.	Price
FCS2 Systems			
FCS2 Starter Set†	0603192	**12-071-14**	Ea./4195.00
FCS2 Stage Adapters			
Nikon* and Olympus* Round	06031921415	**12-071-16**	Ea./395.00
Nikon	060319-1415-02	**12-071-203**	Ea./650.00
Olympus	060319-2-15-01	**12-071-204**	Ea./650.00
Zeiss* (K), Ludl and Prior	06031922611	**12-071-17**	Ea./680.00
Zeiss (M) and Leica Single Plate	06031922613	**12-071-18**	Ea./525.00
Microaqueduct Slides	1301195	**12-071-20**	Pk. of 5/370.00
FCS3 Systems			
FCS3 Starter Set†	21-060319-3	**12-071-201**	Ea./4000.00
FCS3 Stage Adapters			
Universal Upright	21-060319-3-08	**12-071-200**	Ea./1000.00
K Stage	21-060319-2611	**12-071-202**	Ea./1000.00
Coverslips			
Coverslips, 40mm	4013130319	**12-071-21**	Pk. of 250/225.00

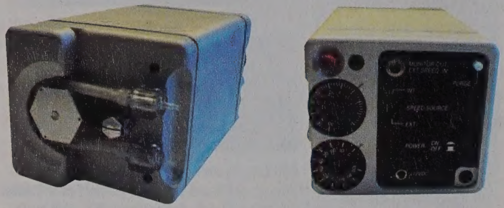
† FCS2 Starter Set includes chamber, controller, five microaqueduct slides, 30-piece gasket set, and 1 oz. of 40mm cover slips. FCS3 Starter Set includes chamber, controller, five microaqueduct slides, 30-piece gasket set, 40mm cover slips and Universal Upright Stage Adapter. Order stage adapter separately.

LOOKING FOR CO$_2$ INCUBATORS?
See the Incubators section pp. 977-1000.

Bioptechs* Live-Cell Microscopy Systems, Contd.

Bioptechs* Live Cell Microscopy Perfusion System

Required for use with Bioptechs Delta T* Culture Dish System and with FCS2 and FCS3 Closed Systems



Front (left) and back (right) of Microperfusion Pump (12-071-22)

- Delta T open-dish system requires hinged perfusion adapter set, perfusable cover glass lid, microperfusion pump, and double tube pump set
- FCS2 and FCS3 closed systems require microperfusion pump and single tube pump set

Microperfusion Pump

- Single- or dual-channel peristaltic pump designed specifically for low flowrates of 2 to 75mL/hr.
- Pump base is threaded for easy mounting to a stand or fixture near the microscope
- Driven by a tachometer-regulated, multistage DC gear motor for smooth analog rotation of the roller spindle to prevent instantaneous steps
- Regulated by internal control circuitry (adjustable from 2 to 75mL/hr.) or by computer via computer-controlled analog port

ORDERING INFORMATION:

Pump measures 4L × 2½W × 2¼"H (10 × 6 × 6cm); weighs 1 lb. (0.45kg).

INCLUDES:

9V AC adapter; contains an internal 9V battery that can function as primary power; single 1⁄16" I.D. tube for use as a single-channel pump and a dual tube with two 1⁄16" I.D. tubes for use as a dual-channel pump; tubes are terminated with a 1⁄16" tubing barb

Description	Mfr. No.	Cat. No.	Price
For Delta T Culture Dish System			
Hinged Perfusion Adapter Set	0420081601	**12-071-09**	Pk. of 2/315.00
Perfusable Cover Glass Lid	0420031216	**12-071-11**	Ea./265.00
Microperfusion Pump	0420131616	**12-071-12**	Ea./1340.00
For FCS2 and FCS3 Closed Systems			
Microperfusion Pump	060319131616	**12-071-22**	Ea./1340.00
Single Tube Pump Set	060319192016	**12-071-23**	Pk. of 4/185.00

MICROSCOPE SUPPLIES

SLIDES

Fisherfinest* Premium Microscope Slides

Highest purity, corrosion-resistant water-white glass

Fisher Scientific's finest quality microscope slides

- Made from highest purity, corrosion-resistant water-white glass
- Flat, ripple-free
- Specimens observed in true color, without distortion—exceed requirements of Fed. Spec. NNN-S-450
- Precleaned twice to eliminate debris and improve wettability
- Slides are packed in an airtight wrapper to keep out dust and moisture that can cause sticking
- Premium-grade slides are available: plain; frosted on one end with Superfrost* coating that won't smudge, rub or wash off during normal handling; or fully frosted for cytology use
- Slides frosted on one end come in standard or extra-thick widths
- Superfrost slides offer high visibility, opaque white writing surface
- Raised coating separates slides in box to help prevent sticking and scratching
- Handy dispenser box of 72 slides is dated to aid inventory control, stock rotation, assure freshness
- Holds slides upright for one-at-a-time dispensing

Plain Glass Microslide

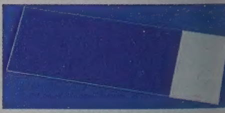
- Clear, premium quality

12-544-1

Size	Cat. No.	Pack of 144	Case of 10 Pack
3 × 1"	**12-544-1**	48.60	415.04
75 × 25mm	**12-544-4**	57.35	490.31

Frosted Slides

- Superfrost* marking area on one end, one side
- Excellent retention of markings in all normal procedures



12-544-3

Size	Cat. No.	Pack of 144	Case of 10 Pack
3 × 1"	**12-544-3**	66.15	574.86
75 × 25mm	**12-544-2**	60.50	525.96

herfinest* Premium Microscope Slides, Contd.

tra-Thick Frosted Slides

uble frosted coating

12-544-6

ighest purity, corrosion-resistant lass is flat, ripple-free

ee specimens in true color, vithout distortion

acked in cellophane; slides stay lean until needed

andy dispenser box of 72 slides s dated to aid inventory control; holds slides upright for ne-at-a-time dispensing

e	Cat. No.	Pack of 144	Case of 10 Pack
1"	12-544-6	87.10	757.26

perfrost* Slides

12-544-7

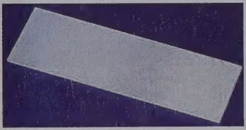
uperfrost coating allows marking vith any pencil or pen

Marking area and "SPECIMEN" re frosted on one side

mm thick

e	Cat. No.	Pack of 144	Case of 10 Pack
× 25mm	12-544-7	63.50	551.85

ll-Frosted Cytology Slides



12-544-5CY

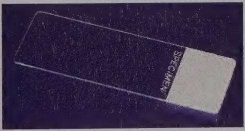
andblasted frosting over one ntire side

rosting disappears when cover lip is mounted over specimen—loesn't interfere with viewing

.097 to 1.07mm thick

ize	Cat. No.	Pack of 144	Case of 10 Pack
× 1"	12-544-5CY	75.95	660.51

unded-Corner Slides



deal for making blood smears

ame high quality as other isherfinest* slides, except all four orners smoothly rounded, so they lramatically reduce the chances of ut or punctured fingers and hands, nd torn gloves

Slides are more comfortable to andle and safer to use than conventional slides

deal for making blood smears because the rounded corners help keep blood away from the edges of the slide

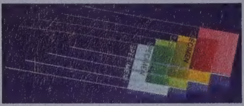
Choose from Superfrost*, plain or frosted slides

Size: 75 × 25mm; 1mm thick

scription	Cat. No.	Pack of 144	Case of 10 Pack
perfrost	22-038-103	69.95	618.72
ain	22-038-104	58.45	517.00
osted	22-038-105	63.55	562.17

*Fisherbrand** ColorFrost* Disposable Microscope Slides

Color-coded frosted end for easy coordinating with tissue cassettes or other color systems



12-550-40 through -43

- Plain corners
- Same properties as Superfrost*, including chemical resistance and easy marking and reading
- Convenient "SPECIMEN" mark lends easy orientation

ORDERING INFORMATION:

Thickness: 1.0mm.

Color	Cat. No.	Pack of 144	Case of 10 Packs
25 × 75mm			
Aqua	22-037-077	57.50	508.65
Blue	12-550-40	59.30	524.82
Burnt Orange	22-037-079	72.55	641.81
Gold	22-037-080	55.30	472.51
Green	12-550-41	59.30	524.82
Lilac	22-037-081	57.50	508.65
Pink	12-550-42	59.30	524.82
Tan	22-037-078	57.50	508.65
Yellow	12-550-43	59.30	524.82
3 × 1"			
Blue	22-214-320	67.80	599.95
Green	22-214-338	68.40	605.39
Pink	22-214-346	67.80	599.96
Yellow	22-214-361	68.55	606.74

*Fisherbrand** Superfrost* Disposable Microscope Slides

Superfrost coating impervious to most common laboratory chemicals and reagents

- Brilliant white, opaque coating takes and retains most laboratory marking methods
- Each side has a written key for easy orientation; the word "SPECIMEN" instantly tells you which side is up
- Superfrost slides can be imprinted with your laboratory or hospital's name (call your Fisher Scientific Customer Service Representative for details)

ORDERING INFORMATION:

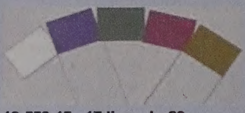
Come in handy one-at-a-time dispenser boxes of 72 slides.

Size	Thickness	Cat. No.	Pack of 144	Case of 10 Pack
3 × 1"	1mm	12-550-123	59.50	526.62
3 × 1"	1.2mm	12-550-13	73.40	649.22
75 × 25mm	1mm	12-550-143	57.65	492.94
3 × 1"	1mm	22-178-277†	77.25	683.62

† Made using premium glass.

*Fisherbrand** Superfrost* Plus and ColorFrost* Plus Microscope Slides

An ideal choice for frozen sections, cytocentrifuge preparations and standard Papanicolaou smears


12-550-15, -17 through -20

Feature the same outstanding performance as regular Superfrost and ColorFrost slides, except with a special treatment process that electrostatically adheres tissue sections and cells to the glass without need for special adhesives or protein coatings.

- Special treatment virtually eliminates tissue loss during staining; saves hours of slide preparation
- Chemical-resistant white marking surface on Superfrost Plus slides and colored marking surface on ColorFrost Plus slides for easy identification throughout procedures

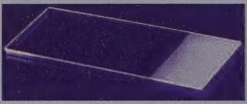
ORDERING INFORMATION:

Size: 75 × 25mm

Color	Cat. No.	Pack of 144	Case of 10 Pack
Superfrost Slides			
White	**12-550-15**	86.05	761.49
Colorfrost Slides			
Aqua	**22-230-890**	86.05	761.73
Blue	**12-550-17**	86.05	761.67
Burnt Orange	**22-230-892**	86.05	761.73
Gold	**22-230-891**	86.05	761.73
Green	**12-550-18**	86.05	761.67
Pink	**12-550-19**	86.05	761.67
Yellow	**12-550-20**	86.05	761.67
Lilac	**12-550-16**	86.05	761.67
Tan	**12-550-16A**	82.90	724.63

*Fisherbrand** Frosted Microslides

Clear, corrosion resistant


12-550-34

- Sandblasted frosted writing area at one end
- Markings will not rub off or wash off in normal procedures

ORDERING INFORMATION:

Approximately 1mm thick

Size	Frosted On	Cat. No.	Pack of 144	Case of 10 Pack
3 × 1"	1 side	**12-550-34**	56.75	484.80
75 × 25mm	1 side	**12-552**	63.10	558.38
75 × 25mm	2 sides	**12-552-5**	56.40	481.89

*Fisherbrand** Plain Glass Microslides

Individually selected for consistent quality

12-549

- Clear, corrosion-resistant glass with flat surfaces and ground edges
- Precleaned and ready to use in one-at-a-time dispenser boxes of 72 slides

ORDERING INFORMATION:

Approximately 1mm thick

Size	Cat. No.	Pack of 144	Case of
3 × 1"	**12-549**	48.05	10 Pk./410.57
75 × 25mm	**12-550A**	42.75	10 Pk./365.49
75 × 38mm	**12-550B**	71.90	5 Pk./318.08
75 × 50mm	**12-550C**	107.24	5 Pk./458.29

*Fisherbrand** Extra-Thick Microslides

About 20% thicker than standard slides

12-550-10

- Made of 1.2mm thick clear, corrosion-resistant glass
- Approximately 20% thicker than standard slides
- Hand-picked for consistent quality, precleaned with flat surfaces and ground edges for consistent quality
- Ready-to-use in boxes of 72 slides
- Frosted slides have sandblasted frosted writing area on one or both ends

Size	Type	Cat. No.	Pack of 144	Case of
3 × 1"	Plain	**12-550-10**	66.25	10 Pk./585.98
3 × 1"	Frosted one end	**12-550-11**	74.40	10 Pk./658.23
3 × 1"	Frosted both ends	**22-267-062**	82.70	10 Pk./731.80
3 × 1.5"	Plain	**22-267-005**	80.30	5 Pk./355.27
3 × 2"	Plain	**22-267-013**	107.00	5 Pk./457.26

*Fisherbrand** Bev-L-Edge* Slides

Simplify blood smears with beveled edges and chambered corners

12-549-5

- For smoother, more uniform blood smears, draw beveled edge across a smeared slide at a 45° angle
- Frosted slides are frosted on both sides at one end

ORDERING INFORMATION:

Size: 3 × 1". Thickness: 1.0mm.

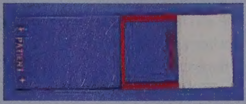
Description	Cat. No.	Pack of 72	Case of 20 Pack
Plain Slides	**12-549-5**	15.05	256.67
Frosted Slides	**12-549-6**	19.90	339.74

*Trademark. See Trademark Reference.

Prices subject to change.

*Fisherbrand** Staining Control Slides

Allow staining of control and patient samples on the ;ame slide with the same protocol


12-518-105

- Red box on the slide identifies the control tissue
- Frosted area provides a positive marking spot
- Superfrost* Plus treatment secures tissue to the slide throughout the staining process
- Cat. No. 22-042-910 has an extended frosted area, allowing room for the addition of patient information and/or a bar code label
- Cat. No. 12-518-105 has a standard frosted area, allowing placement of large tissue specimens

Description	Cat. No.	Pack of 144	Case of 10 Pk.
or Manual Staining Methods			
Standard Frosted Area	**22-035-819**	107.36	917.60
or Automatic Stainers			
Standard Frosted Area	**22-042-910**	107.51	918.93
Extended Frosted Area	**12-518-105**	145.75	----

*Fisherbrand** Hanging Drop Slides

vailable in medium thick or extra thick

Medium Thick

12-560A

- For examining living microorganisms such as bacteria and yeast in hanging drops
- 1.4 to 1.6mm thick
- Concavities ground and polished; 18mm diameter; 0.5mm deep

Extra Thick

- For larger specimens
- With very thick glass (3.12 to 3.22mm) and concavities

RDERING INFORMATION:

Size: 76 × 26mm

No. of Concavities	Cat. No.	Pack of 12
Medium thick		
1	**12-560A**	51.20
2	**12-560B**	88.35
Extra thick		
1	**12-565A**	104.80
2	**12-565B**	104.75

isher Scientific* Tissue Path Superfrost* lus Gold Slides

ecifically designed for frozen tissue sections

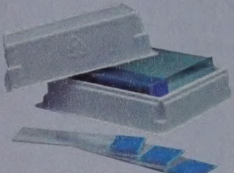
22-035-813

- Made with a revolutionary, new adhesive technology
- Attract and chemically bond fresh or formalin-fixed frozen tissue sections firmly to the slide surface
- deal for special stains, immunocytochemical and in situ DNA hybridization techniques when applied to fixed or frozen tissue sections
- Compatible with both toluidine blue and hematoxylin and eosin rapid frozen section stains

ckaging	Cat. No.	Pack of	Case of
-slide Storage Box	**22-035-813**	25/47.25	20 Pk./807.62
lk Pack of 144	**15-188-48**	144/54.60	10 Pk./466.72

*Fisherbrand** Colormark* Slide Cartridges for SHURMARK* Labeling Systems

Background color makes etched patient information more visible


22-035-815

- Brightly coated with contrasting background color
- Self-contained packages ready for loading into your SHURMARK slide labeling system
- Simply remove the cover from the slide package and drop the sleeve into the loading bin of the SHURMARK labeling system
- Available with Plus formula to provide the utmost adhesion

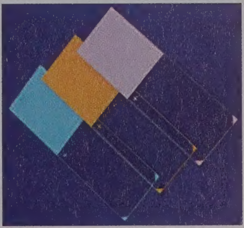
Color	Description	Cat. No.	Pack of 144	Case of 10 Pk.
Blue	----	**22-035-815**	70.45	623.40
Green	----	**22-035-816**	72.05	637.52
Pink	----	**22-035-817**	72.05	637.52
White	----	**22-035-814**	68.25	603.70
Yellow	----	**22-035-818**	71.95	636.76
Blue	Plus Charged	**22-038-325**	106.81	912.90
Green	Plus Charged	**22-038-326**	106.81	912.90
Pink	Plus Charged	**22-038-323**	106.81	912.90
White	Plus Charged	**22-038-324**	103.91	888.12
Yellow	Plus Charged	**22-038-327**	106.81	912.90

Fisherfinest* Capillary-gap Slides

NEW

For Ventana* TechMate*, MicroProbe* and Code-On* stainers

Made with a revolutionary adhesive technology. Attract and chemically bond fresh or formalin-fixed frozen tissue sections to the surface of the slide.


12-548-6A, 12-548-6C, 12-548-6B

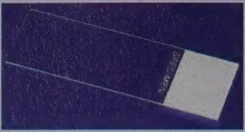
- Ideal for special stains, immunocytochemical and *in situ* DNA hybridization
- Compatible with toluidine blue and hematoxylin and eosin rapid frozen section stains
- Use 100µm slides when increased drainage is needed
- Use 130µm slides when specimen is mounted on a non-capillary-gap slide
- Extra gap width allows slide pair to function as a standard pair of capillary-gap slides

Capillary Gap Width	Color	Cat. No.	Pack of 144	Case of 10 Pack
75µm	Aqua	**12-548-6A**	84.55	735.31
100µm	Lilac	**12-548-6B**	84.50	734.64
130µm	Gold	**12-548-6C**	119.40	1038.23

*Fisherbrand** Superfrost* Clipped Corner Microscope Slides

NEW

45° clipped corner slide offers exceptional cleanliness and resistance to sticking


12-550-14

- Designed specifically for the Sysmex SP-100 slide prep unit
- Tight tolerances for the length and width help to reduce accumulation of glass chips within the instrument
- Corners are safer, less prone to chipping during handling
- Draws specimens away from edges
- Durable, opaque printed surface inert to common laboratory chemicals and reagents
- Autoclavable
- Size: 25 × 75mm, 1mm thick

Cat. No.	Pack of 144
12-550-016	58.35

Thermo Scientific* Erie* Gold Seal* Microslides

Plain, Precleaned Slides

Colorless, noncorrosive glass

- Ground and polished edges
- Thickness: 0.97 to 1.07mm for 3 × 1" and 75 × 25mm slides; 1.1 to 1.3mm for 75 × 50mm slides
- Precleaned to ensure spotless appearance
- Packing box conveniently doubles as slide file

ORDERING INFORMATION:

Full case quantity packaged in Moistur-Barrier* carton

Size	Mfr. No.	Cat. No.	Pack of 144	Case of
3 × 1"	3010	**12-518-100A3**	31.95	25 Pk./639.07
75 × 25mm	3011	**12-518-100B**	32.77	25 Pk./655.45
75 × 50mm	3021	**12-518-100G**	----	1728/889.35

UltraFrost* Frosted Glass Slides

Precleaned slides with one end frosted; with or without label area

- Special frosting on one end for ease in marking slides
- Labeled slides have space for marking specimen number, patient name and date

ORDERING INFORMATION:

In case of 25 packs; each pack includes two boxes of 72 slides (144 total)

Size	Frosted On	Mfr. No.	Cat. No.	Pack of 144	Case of 25 Pk.
With Label					
75 × 25mm	1 side	3064	**12-518-104D**	----	967.85
Without Label					
3 × 1"	2 sides	3056	**12-518-107**	----	1025.00
75 × 25mm	1 side	3063	**12-518-104C**	44.64	892.84

Rite-On* Frosted Microslides

White ceramic ink frosting on one end for easy markin

- Hard, colorless, noncorrosive glass
- 12-518-104 is an extra-strength slide
- One end has ¾" (19mm) white ceramic ink frosting
- Precleaned, ready to use
- In boxes that convert to slide files

Size	Thickness	Mfr. No.	Cat. No.	Pack of 144	Case of 2 Pack
Frosted on one side					
3 × 1"	0.97 to 1.07mm	3051	**12-518-103**	44.46	889.2
75 × 25mm	0.97 to 1.07mm	3050	**12-518-101**	42.59	851.7
Frosted on both sides					
3 × 1"	0.97 to 1.07mm	3017	**12-518-100C**	40.90	818.0
3 × 1"	1.1 to 1.3mm	3052	**12-518-104**	48.69	973.8

Beveled Microslides

Beveled edges for easy handling and margin-free smears

- In plain glass or frosted at one end on both sides
- Pure white glass for better light transmission; clipped corners; 1mm thic
- With diamond-ground edges for smoothness and uniformity
- Optimum feathering; easy on fingers in handling

Size	Type	Mfr. No.	Cat. No.	Pack of 144	Case
3 × 1"	Plain	3061	**12-518-100D**	30.77	25 Pk./615.3
3 × 1"	Frosted	3062	**12-518-104B**	----	3600/875.7
75 × 25mm	Plain	3057	**12-518-110A**	30.64	25 Pk./612.7
75 × 25mm	Frosted	3058	**12-518-110B**	43.44	25 Pk./868.8

Fluorescent Antibody Microslides

- With two etched 10mm diameter circles surrounded by white ceramic in
- Frosted at one end on one side

ORDERING INFORMATION:

Size: 3 × 1". Thickness: 1.1 to 1.3mm. Supplied 72 slides per box, two boxe per pack.

Size	Mfr. No.	Cat. No.	Pack of 144	Case of 25 Pac
3 × 1"	3032	**12-568-20**	66.40	1418.0

UltraStick* Slides

Premium, water-white sheet glass

- UltraStick coating provides superior adhesion of histological and cytological specimens and eliminates need to apply glues and adhesives
- UltraFrost* writing area on one side allows for permanent labeling

ORDERING INFORMATION:

25 × 75mm, 1mm thick. Packed in Moistur-Barrier* cartons.

Cat. No.	Case of 144
12-568-21	507.4

rning* Microsope Slides

ecleaned, ready to use

hickness: 0.9 to 1.1mm

ll except 12-553-7A are packed in andy box for one-at-a-time removal; wo boxes of 72 slides per pack

2-553-7A comes in case of 440 slides

12-553 Series

e	Frosted On	Mfr. No.	Cat. No.	Pack of 144	Case of
n Glass					
1"	----	2947 3X1	**12-553**	29.18	10 Pk./220.29
× 38mm	----	2947 75X38	**12-553-5A**	51.32	5 Pk./186.66
× 50mm	----	2947 75X50	**12-553-5B**	69.51	5 Pk./259.21
× 25mm	----	2947-75X25	**12-553-7A**	----	----
sted Glass					
× 25mm	1 side	2948 75X25	**12-553-10**	35.99	10 Pk./271.86
× 25mm	2 sides	2949 75X25	**12-553-15**	----	1440/302.98

COVER GLASSES

sherfinest* Premium Cover Glasses

e ultimate in purity and cleanliness for exacting work histology, cytology, urinalysis and microbiology

12-548 Series

lade of crystal-clear, pure water-white lass with uniform surface quality, precise quared edge, perfect flatness and exact imensions

recleaned and packaged to stay lean

ach glass is individually inspected nd boxed in a molded plastic ontainer for snugness and easy emoval

DERING INFORMATION:

. 1 thickness range: 0.13 to 0.17mm

e	Approx. Qty. per 1 oz. Pack	Cat. No.	Pack	Case of 10 Pack
ack of 1 oz.				
× 18mm	232	**12-548A**	25.75	220.05
× 22mm	156	**12-548B**	23.95	204.98
× 25mm	125	**12-548C**	24.10	205.65
× 30mm	116	**12-548-5A**	23.95	204.98
× 40mm	86	**12-548-5C**	23.95	204.48
× 50mm	68	**12-548-5E**	23.95	204.89
× 30mm	110	**12-548-5G**	23.95	204.98
× 40mm	78	**12-548-5J**	23.95	204.88
× 50mm	65	**12-548-5M**	23.95	204.89
× 60mm	55	**12-548-5P**	23.95	204.89
× 50mm	45	**12-548-5R**	23.95	204.65
ulk Pack of 4 oz.				
× 22mm	----	**12-544-10**	59.30	525.17
× 40mm	----	**12-544-12**	55.15	471.26
× 50mm	----	**12-544-14**	52.20	446.03

Fisherfinest* Superslip* Cover Slips

Make your automatic cover slip machines run smoothly

12-545-87

- Built-in moisture resistance
- Excellent for use in humid environments

ORDERING INFORMATION:

Thickness: No. 1.

Size	Approx. Qty. per 1 oz. Pack	Cat. No.	Pack	Case of 10 Pack
24 × 40mm	78	**12-545-87**	23.65	202.00
24 × 50mm	65	**12-545-88**	23.65	202.00

*Fisherbrand** Unbreakable Cover Slips

Plastic—clear, noncurling

12-547

- 0.17 to 0.25mm thick

ORDERING INFORMATION:

Pack of 1000 cover slips in boxes of 100

Size	Cat. No.	Pack of 1000
22 × 22mm	**12-547**	70.99

*Fisherbrand** Cover Glasses

Made of finest optical borosilicate glass, with uniform thickness and size

12-545F, 12-542A, 12-545-80

- Corrosion resistant
- Precleaned, lint-free and ready to use
- Available in squares, circles, and rectangles
- Uniformly flat,.won't stick together
- Free from bubbles, scratches and striations

ORDERING INFORMATION:

Packed in 1 oz. (28g) plastic boxes with custom-molded bases for easy one-at-a-time dispensing; precleaned and ready to us

Ordering Table on next page.

Fisherbrand* Cover Glasses, Contd.

ORDERING INFORMATION:

Size	Quantity	Cat. No.	Pack of 1 oz.	Case of 10 Pack
Squares No. 1 - 0.13 to 0.17mm thick				
18mm	232	**12-542A**	24.90	212.72
22mm	156	**12-542B**	23.20	198.15
25mm	125	**12-542C**	23.95	205.05
Squares No. 1½ - 0.16 to 0.19mm thick				
18mm	208	**12-541A**	26.85	229.37
22mm	138	**12-541B**	25.00	213.66
Squares No. 2 - 0.17 to 0.25mm thick				
18mm	176	**12-540A**	16.65	142.30
22mm	116	**12-540B**	16.65	142.30
25mm	93	**12-540C**	17.40	148.50
Circles No. 1 - 0.13 to 0.17mm thick				
12mm	692	**12-545-80**	151.16	1292.00
18mm	308	**12-545-100**	75.75	670.32
22mm	206	**12-545-101**	58.45	517.08
25mm	159	**12-545-102**	55.10	470.92
Circles No. 1½ - 0.16 to 0.19mm thick				
12mm	597	**12-545-81**	148.57	1269.85
Circles No. 2 - 0.17 to 0.25mm thick				
18mm	223	**12-546**	56.95	504.03
22mm	150	**12-546-1**	48.80	417.09
25mm	116	**12-546-2**	40.80	348.83
Rectangles No. 1 - 0.13 to 0.17mm thick				
30 × 22mm	116	**12-545A**	23.85	203.80
40 × 22mm	86	**12-545C**	23.85	203.78
50 × 22mm	68	**12-545E**	23.90	204.21
60 × 22mm	58	**12-545J**	23.90	204.21
30 × 24mm	110	**12-545B**	23.85	203.80
40 × 24mm	78	**12-545D**	22.90	195.52
50 × 24mm	65	**12-545F**	23.90	204.21
55 × 24mm	56	**12-544-18**	29.20	249.69
60 × 24mm	55	**12-545M**	24.70	211.06
50 × 35mm	45	**12-545G**	23.85	203.97
50 × 45mm	35	**12-545H**	29.90	255.58
Rectangles No. 1½ - 0.16 to 0.19mm thick				
30 × 22mm	100	**12-544A**	24.10	206.15
40 × 22mm	74	**12-544B**	23.65	201.90
50 × 22mm	59	**12-544D**	23.65	202.35
60 × 22mm	50	**12-544G**	23.65	202.35
40 × 24mm	68	**12-544C**	23.65	202.35
50 × 24mm	54	**12-544E**	23.10	197.34
50 × 45mm	30	**12-544F**	29.70	253.73
Rectangles No. 2 - 0.17 to 0.25mm thick				
40 × 22mm	62	**12-543A**	28.90	247.13
50 × 22mm	50	**12-543C**	28.90	247.13
40 × 24mm	57	**12-543B**	28.90	247.13
50 × 24mm	45	**12-543D**	28.90	247.13
50 × 35mm	33	**12-543E**	28.90	246.80
Rectangles No. 2 - 0.17 to 0.25mm thick				
50 × 45mm	26	**12-543F**	37.00	316.37

Thermo Scientific* Erie* Gold Seal* Cover Glasses

Noncorrosive borosilicate glass

- Sealed in moisture-resistant plastic case that converts to a 100-piece slide file with clear cover
- Complete with patient-to-sample identification labels

12-518 Series

ORDERING INFORMATION:

Available in 1 oz. packs and cases of 10 packs. Thickness: No.: 1, 0.13 to 0.17mm; No. 1-½, 0.16 to 0.19mm; No. 2, 0.18 to 0.25m.

Thickness No.	Size	Approx. Qty. per 1 oz. Pack	Mfr. No.	Cat. No.	Pack of 1 oz.	Case 10 P
Circles						
1	13mm dia.	454	3350	**12-519-21G**	172.78	1476.
1	25mm dia.	143	3348	**12-519-21F**	64.45	560.
1	18 × 18mm	208	3305	**12-518-105H**	----	142.
1	22 × 22mm	165	3306	**12-518-105K**	16.80	143.
1	25 × 25mm	128	3307	**12-518-105J**	----	135.
1½	22 × 22mm	140	3400	**12-518-212**†	----	143.
1½	18 × 18mm	185	3405	**12-519-21A**	15.60	133.
1½	22 × 22mm	140	3406	**12-518-213**	16.30	139.
2	22 × 22mm	115	3506	**12-518-211**	12.50	106.
Rectangles						
1	22 × 30mm	110	3313	**12-518-105A**	16.65	142.
1	22 × 40mm	86	3316	**12-518-105B**	16.65	142.
1	22 × 50mm	68	3317	**12-519-21B**	17.15	146.
1	22 × 60mm	52	3318	**12-519-21C**	16.85	144.
1	24 × 30mm	107	3319	**12-518-105C**	14.85	126.
1	24 × 35mm	86	3320	**12-518-201**	----	135.
1	24 × 40mm	74	3321	**12-518-105D**	16.65	142.
1	24 × 50mm	65	3322	**12-518-105E**	17.50	149.
1	24 × 60mm	52	3323	**12-518-202**	15.50	132.
1½	24 × 40mm	74	3321	**12-518-108B**	17.25	147.
1½	24 × 50mm	60	3322	**12-518-108A**	17.25	147.
1	35 × 60mm	----	3328	**12-518-206**	----	129.
1	48 × 60mm	----	3334	**12-519-21D**	15.35	130.
1	48 × 65mm	----	3335	**12-518-210**	----	129.

† *Specially processed for blood smears.*

*Trademark. See Trademark Reference.

Prices subject to change.

orning* Cover Glasses

ne optical glass developed specifically for cover glasses

ree of stones, blisters, bubbles and striae
High resistance to surface attack, weather

RDERING INFORMATION:
ckaged in lint-free reclosable plastic xes for complete protection. Supplied in cks of 1 oz.

12-520 and 12-530 Series

e	Mfr. No.	Cat. No.	Each	Case of 10 Pack
tangles No. 1 - 0.13 to 0.16mm thick				
× 22mm	2935 223	**12-531A**	----	119.84
× 22mm	2935 224	**12-531C**	18.76	119.84
× 22mm	2935 225	**12-531E**	18.76	119.84
× 24mm	2935 243	**12-531B**	18.76	119.84
× 24mm	2935 244	**12-531D**	18.76	119.84
tangles No. 1 - 0.13 to 0.16mm thick				
× 24mm	2935 245	**12-531F**	18.76	119.84
tangles No. 1 - 0.13 to 0.16mm thick				
× 24mm	2935 246	**12-531K**	18.76	119.84
tangles No. 1½ - 0.16 to 0.19mm thick				
× 22mm	2940 223	**12-530A**	20.96	122.46
× 22mm	2940 224	**12-530B**	----	122.46
× 22mm	2940 225	**12-530C**	----	122.46
× 24mm	2940 243	**12-530D**	----	122.46
× 24mm	2940 244	**12-530F**	----	122.46
tangles No. 1½ - 0.16 to 0.19mm thick				
× 24mm	2940 245	**12-530E**	18.76	122.46
ares No. 1 - 0.13 to 0.16mm thick				
nm	2865 18	**12-524A**	18.76	119.84
nm	2865 22	**12-524B**	18.76	119.84
nm	2865 25	**12-524C**	18.76	119.84
ares No. 1½ - 0.16 to 0.19mm thick				
nm	2870 18	**12-520A**	20.96	122.46
nm	2870 22	**12-520B**	20.96	122.46
nm	2870 25	**12-520C**	----	122.46
ares No. 2 - 0.19 to 0.25mm thick				
nm	2875 18	**12-519A**	----	97.61
nm	2875 22	**12-519B**	14.35	97.61
nm	2875 25	**12-519C**	----	97.61

SLIDE HOLDERS

isherbrand* Slide Holders and File Box

dex tabs on each holder for slide reference and lassification

Each holder accepts four slides, sizes 3 × 1" or 75 × 25mm
Supplied with or without plastic filing box
Slide holder set includes twelve 5 × 3" (127 × 76mm) slide holders
Holders can also be stored in the Fisherbrand Microslide Cabinet (12-588-30)

12-588-20 with extra 12-588-25 Slide Holders

escription	Cat. No.	Pack of 12
2 Slide Holders	**12-588-25**	16.88
2 Slide Holders with File Box	**12-588-20**	19.83

*Fisherbrand** Cardboard Tray for 20 Slides

Slides lie flat on tray

- Heavy reinforced cardboard tray holds 3 × 1" or 75 × 25mm slides
- Spaces numbered to correspond with index on outside
- Doors are hinged for 360° opening; they do not lie directly on slides when closed

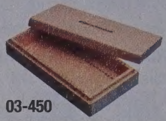
12-587-10

Cat. No.	Each	Case of 72
12-587-10	19.58	1101.11

*Fisherbrand** Wooden Box for 25 Slides

With detachable lid

- Numbered partitions correspond to index card on outside end of box



03-450

For Slides	Cat. No.	Each
3 × 1" or 75 × 25mm	**03-450**	51.91
3 × 2" or 75 × 50mm	**03-451**	31.60

*Fisherbrand** Microslide Holder

Heavy cardboard

- Holds two 3 × 1" or 75 × 25mm slides, with or without cover glasses
- Thumb groove allows easy removal
- Can be mailed in additional packaging (not supplied)

12-587-16

Cat. No.	Pack of 36	Case of 12 Pack
12-587-16	39.60	427.70

*Fisherbrand** Color-Coded ABS Plastic Boxes for 25 or 100 Slides

Provide dust-free storage; available in five colors

Sturdy, color-coded ABS plastic boxes accommodate either 25 or 100 slides.

- Hold 3 × 1" and 75 × 25mm slides
- Numbered slide partitions correspond to numbered index card in lid
- Stackable
- 100-slide box comes with hinged lid

03-448-1 through -5

Color	Cat. No.	Each	Case of 72
Hold 25 Slides			
Blue	**03-448-6**	11.56	666.09
Green	**03-448-7**	11.56	666.09
Red	**03-448-8**	11.56	666.09
Yellow	**03-448-9**	11.56	666.09
White	**03-448-10**	11.56	666.09
Hold 100 Slides			
Blue	**03-448-1**	19.68	1107.25
Green	**03-448-2**	19.68	1107.25
Red	**03-448-3**	19.68	1107.25
Yellow	**03-448-4**	19.68	1107.25
White	**03-448-5**	19.68	1107.25

MILLS

BASIC

IKA* A11 Basic Mill

Stainless-steel analytical mill is ideal for batch processing

14-260-61

Supplied with impact blade for crushing hard and brittle materials such as bone, teeth, tissue, coal, limestone and frozen samples.

- Chamber capacity: 80mL
- Manual control of grinding head in chamber ensures complete sample grinding
- High-speed action (up to 28,000rpm)
- Electronic overload protection

ORDERING INFORMATION:
Chamber dimensions: 3⅜L × 3⅜W × 9½"H (8.4 × 8.4 × 24cm); Accessories include 250mL grinding chamber, cutting blade for grinding fibrous substances and tungsten carbide blade for grinding materials with a hardness greater than 4Mohs (all sold separately online)

INCLUDES:
Impact blade

CERTIFICATIONS:
CE marked, UL listed

Electrical Requirements	Mfr. No.	Cat. No.	Each
115V 50/60Hz	2900000	**14-260-61**	913.30
230V 50/60Hz	2900001	**14-259-145**	913.30

LOOKING FOR A11 BASIC MILL ACCESSORIES?

A 250mL Grinding Chamber (14-259-146) and stainless-steel or tungsten carbide cutting blades can be found online.

Visit www.fishersci.com and search for A11 Basic Mill

IKA* M20 Universal Mills

Ideal for grinding hard, brittle materials and soft, frozen materials with brittle characteristics

14-259-053

Typical samples include dried vegetation, soil, frozen meat, and plastic granulates.

- Grinder capacity, 1 to 250mL
- Maximum feed particle size, 20mm (Output rate depends upon length of operation, type and amount of sample in chamber)
- Large, removable, 250mL stainless-steel grinding chamber provides easy cleaning and efficient processing
- Chamber is double-walled with cooling jacket; can be water-cooled using hose nozzles on back of chamber
- Motor, with speeds up to 20,000rpm, can alternately operate two grinding chambers
- Supplied with stainless-steel cutting blade/beater suitable for crushing most brittle materials up to hardness of 5Mohs
- Blade removes easily for cleaning

ORDERING INFORMATION:
Mill dimensions: 6¹¹⁄₁₆L × 6¹¹⁄₁₆W × 13¾"H (17 × 17 × 35cm)

INCLUDES:
Stainless-steel cutting blade/beater

Electrical Requirements	Mfr. No.	Cat. No.	Each
115V 50/60Hz	1603603	**14-259-053**	2988.30

Bel-Art* Scienceware* MicroMill* Grinde

For rapid, high-speed grinding of small samples from 20 to 50mL

08-

Stainless-steel or hard-faced blade rotates up to 12,000 rpm to grind wide range of samples, including rocks, minerals, bone, muscle tissue, plant matter, ceramics, glass, grain, kaolinites, pharmaceuticals, plastics, and seeds.

- High torque, ⅕hp (150w) motor delivers 30 oz.-in. (2.2kg-cm) torque at 12,000rpm
- Operates only when cover is latched to provide safety and prevent sample loss
- Built-in heat exchangers maintain temperature
- Control panel features overload protection, reset buton, and pilot light
- Epoxy-coated aluminum housing has nonskid rubber feet
- Housing and cover each have ¼" (6mm) tubing connection for circulati water, methanol/dry ice liquid, or liquid nitrogen
- Cover, grinding assembly and milling blade head are removable for clear

ORDERING INFORMATION:
Dimensions (L × W × H), overall: 5½ × 7 × 11" (14 × 18 × 28cm); grinding chamber: 2⅛" dia. × 1"D (54 × 25mm)

INCLUDES:
Unit and standard 6' (1.8 3-wire cord and plug, stainless-steel blades

Electrical Requirements	Mfr. No.	Cat. No.	E
110VAC 60Hz	37252-0000	08-335	149

Foss Tecator Cyclotec* Sample Mill

Self-cleaning, flow-through design for fast, uniform grinding of feeds, grains and leaves

TC1093-002

- Grinds samples with up to 10% moisture and oil content
- Maximum throughput: 4g/second, 40 samples/hour
- Maximum sample size: 10mm
- Hopper capacity: 100mL
- Motor: ½hp
- Maximum speed: 20,000rpm
- High-volume airflow enables self-cleaning and minimizes heat increase, thermal degradation, and cross-contamination

Operation

- High-speed action rolls the sample against the inner surface of a durable grinding ring, then passes it through a fine mesh screen
- Resulting grist size depends on size of screen used

ORDERING INFORMATION:
Dimensions: 11¾L × 8W × 15¾"H (29.8 × 20.3 × 40cm); Accessories including 150mL Bottle (TC1000-3679), Replacement Grinding Rin (TC1000-4463), and screens are available online

INCLUDES:
Two 125mL sample bottles with snap-on caps; 0.5 and 1.0mm screens; Allen keys; and addition grinding ring and seal for grindin chamber

Electrical Requirements	Cat. No.	E
110V 60Hz, 570w	**TC1093-002**	480

LOOKING FOR MORE CYCLOTEC* PARTS AND ACCESSORIES?

Large Inlet Assembly (TC1000-2485), replacement Grinding Ring (TC1000-4463), 125mL replacement Sample Bottles (TC1000-3679) and dust collection covers and screens can be found online.

Visit www.fishersci.com and search for Cyclotec

*Trademark. See Trademark Reference.

Prices subject to change.

etsch* Grindomix Laboratory Knife Mill

ind and homogenize samples with high water, oil, or t content

ckly and efficiently batch process a variety of dry, t and medium-hard foodstuffs such as fresh fruits, ats, cheese, oilseeds, grains, breads and pastries.

- rocesses batches up to 700mL
- /laximum initial sample size: 40mm
- ample output is <300µm in size
- 50w motor with 1200w peak power
- ulse mode for pregrinding and mixing
- 'ariable speed control from 2000 to 10,000rpm in 00rpm increments

08-417-01

- ▸ Cutting chamber has two straight knives in the center of the grinding vessel
- ▸ Integrated memory function for storing frequently used time/speed combinations
- ▸ Automatic safety interlock prevents accidental opening during operation
- ▸ Replaceable knife and grinding chamber
- ▸ Free-floating cover adjusts chamber size to sample volume and provides for a perfect degree of homogenization

ORDERING INFORMATION:
Dimensions: 14½L × 8W × 10⅝"H (37 × 20 × 27cm); For 100–110V 50/60Hz

INCLUDES:
Mill, knife and 1L polypropylene container with cover

Description	Mfr. No.	Cat. No.	Each
Test Sieve	202510003	**08-417-01**	2871.39

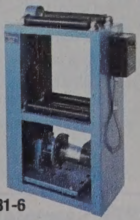
r Mills

ace-saving roller mills grind algae, crystalline emicals, coal, inks, paints, pigments, plant aggregates, cks, soils

- 'ariable speed from 20 to 300rpm
- oller design keeps jars centered, eliminates creepage
- ubber roller construction eliminates static electricity
- C motor with solid-state controls
- Velded construction, with roller chain drives and sealed ball bearings
- ingle- or multi-tier models
- hree-position adjustment on all rollers except bottom one on two- and hree-tier models
- /letal pans on multi-tier mills contain jar contents in case of breakage or pillage

ORDERING INFORMATION:
For 115V 60Hz; Dimensions, Roller: 13L × 2" dia. (33 × 5.1cm); Roll guard cover available for 08-381-8 Mill, sold separately online

REQUIRED ACCESSORIES:
Collection jar and grinding media (sold separately online)



08-381-6

LOOKING FOR JARS AND GRINDING MEDIA?

Fortified porcelain jars in assorted sizes are also available online. So is a selection of porcelain, zirconia and Burundum* grinding balls.

Visit www.fishersci.com and search for Grinding Media

rs	Model	Jar (O.D.)	L × W × H	Motor	Maximum Weight/Tier	Shipping Weight	Cat. No.	Each
	755RMV	2 to 10" (5 to 25cm)	16 × 10½ × 10⅝" (41 × 26.7 × 27cm)	¼hp (186.5w)	60 lb. (27kg)	50 lb. (23kg)	**08-381-8**	1958.19
	764AVM	2 to 10" (5 to 25cm)	30¼ × 12¾ × 15¾" (77 × 32.4 × 40cm)	¼hp (186.5w)	75 lb. (34kg)	90 lb. (41kg)	**08-381-3**	4008.44
	784AVM	2 to 10" (5 to 25cm)	20¼ × 12⅛ × 34⅜" (51.4 × 31 × 87.3cm)	¼hp (186.5w)	60 lb. (27kg)	130 lb. (59kg)	**08-381-6**	3115.29
	784VM	2 to 10" (5 to 25cm)	20¼ × 12⅛ × 50½" (51.4 × 31 × 127.3cm)	⅓hp (248.7w)	60 lb. (27kg)	155 lb. (70kg)	**08-381-7**	6109.38

SPECIALTY

amplePrep* 6770 Freezer/Mill* Cryogenic Grinder

NEW

cryogenic laboratory impact mill capable of processing many normally ungrindable samples

ed to prepare samples for DNA/RNA extraction, pharmaceuticals, ieralogical studies, medical research, plastics, polymers, plant and mal tissue, bone, and heat-sensitive materials. With a self-contained uid nitrogen tub and insulated case.

- iample size: 0.1 to 5.0g
- 'hills samples to liquid nitrogen temperatures
- 'ouch-screen interface with removable control panel
- /lagnetically driven impactor is the only moving part; no mechanical inkages
- ieparate closed grinding vials prevent cross-contamination and maintain ample temperature during grinding cycle
- Iolds one sample vial (6751 or 6771) for grinding, with the capacity to iold two additional vials in a pre-cooling chamber
- iafety interlock

ORDERING INFORMATION:
Dimensions: 19½L × 13⅜W × 11"H (49.5 × 33.6 × 27.9cm); Net weight: 18 lb. (8.2kg); For 115V 60Hz; grinding containers and other optional accessories sold separately (see next page)

6770-115

INCLUDES:
Grinder, Extractor/Vial Opener (6754), one Vial Rack (6755), 8" (20.3cm) controller interconnect cable and power cord

REQUIRED ACCESSORIES:
Liquid nitrogen (order separately)

Accessories Contd. on next page.

Cat. No.	Each
6770-115	5300.00

SPEX SamplePrep* 6770 Freezer/Mill* Cryogenic Grinder, Contd.

ACCESSORIES

For use with SPEX SamplePrep* Freezer/Mill Cryogenic Grinder

Vial Set 6751

- Makes one complete vial plus three spare center sections
- Sample capacity: 0.5 to 4.0mL
- Includes stainless-steel impactor, two end plugs, and four polycarbonate center cylinders (6751C4)
- Individual components available

Microvial Set 6753

- Sample capacity: 0.1 to 0.5mL per vial
- Includes three 6753V microvials with holder
- 6753V microvials have stainless-steel end plugs, center cylinder and impactor

Chromium-free Vial Set 6771

- Sample capacity: 0.5 to 4.0mL per vial
- Includes chromium-free impactor, four polycarbonate center cylinders and two end plugs
- Transparent plastic allows visual check of grinding process

Description	Cat. No.	Each
6751 Grinding Vial Set and Accessories		
Grinding Vial Set, 0.5 to 4.0mL samples†	**6751**	173.50
Polycarbonate Center Cylinders, Pack of 4	**6751C4**	66.79
Polycarbonate Center Cylinders, Pack of 20	**6751C20**	265.36
End Plugs, 1 Pr.	**6751E**	112.27
Impactor	**6751P**	46.49
Steel Center Cylinder	**6752**	92.48
Extractor and Vial Opener Set	**6754**	263.92
Vial Rack	**6755**	30.67
Autoextractor and Vial Opener Set for Vial Sets 6751 and 6801, 115V 60Hz	**6814-115**	1055.67
6753 Microvial Set and Accessories		
Microvial Set	**6753**	477.08
6771 Chromium-free Grinding Vial Set		
Chromium-free Grinding Vial Set, 0.5 to 4.0mL samples	**6771**	221.65

† Four 6751 vial sets required for use with 6850 Freezer/Mill.

SPEX SamplePrep* Geno/Grinder* Tissue Pulverizer/Shaker Mill

Automated grinder/mill performs mechanical disruption of plant and animal tissue for the isolation of nucleic acids (RNA and DNA), proteins, enzymes, and yeast

Designed for vigorous up-and-down shaking of deep-well titer plates.

- Variable grinding speed from 500 to 1600 strokes per minute
- Handles two standard deep-well titer plates (5L × 3W × 2"H [12.7 × 7.6 × 5cm])
- Sample preparation is completed in about two minutes with the addition of 1-2 grinding balls to the sample along with a buffer solution (balls and buffer not included)
- Digital 99 min., 59 sec. timer displays both full timer setting and time remaining in the grinding cycle
- Two safety interlocks, a lockdown latch, and a pneumatic cylinder stabilize the lid for safe operation
- Clamping mechanism has secondary locking tabs for additional safety

2000-115

ORDERING INFORMATION:

Dimensions: 17L × 20½W × 22"H (43 × 52 × 56cm); net weight: 110 lb. (50kg); for 115V 60Hz, 10A; grinding media sold separately

INCLUDES:

Mill, Grinding Ball Dispenser (2100), four 96-well Titer Plates (2200), and 16 height-adjustment spacers for different titer plates (four of each: 1/32", 1/16", 1/8", 1/4"), three-wire grounded cord and plug

CERTIFICATIONS:

CE marked

Cat. No.	Each
2000-115	10,099.81

ACCESSORIES

SPEX SamplePrep* Geno/Grinder* Accessories

Description	Quantity	Cat. No.	Each
Grinding Ball Dispenser	Each	**2100**	158.20
Grinding Balls, 5/32" (4mm)	Pack of 5000	**2150**	446.63
Silica Beads, Acid Washed, 800-1000um	200g	**2160**	97.62
Silica Beads, Acid Washed, Molecular Biology Grade, RNase/DNase Free, 800-1000um	200g	**2161**	137.78
Silica Beads, Acid Washed, Molecular Biology Grade, RNase/DNase Free, 400-600um	200g	**2166**	137.78

EX SamplePrep* 6850 Large-Capacity Freezer/Mill* Cryogenic Grinder

arger cryogenic laboratory impact mill

pares samples for DNA/RNA extraction, pharmaceuticals, mineralogical dies, medical research, plastics, polymers, plant and animal tissue, bone, heat-sensitive materials.

ample size: 1 to 100g

Vith self-contained liquid nitrogen tub and insulated case

olds one large capacity sample vial (6801) or four smaller sample vials 751) for grinding, with the capacity to hold one large capacity vial or ur smaller vials in a pre-cooling chamber

quipped with speed control, programmable timer, and safety interlock

DERING INFORMATION:

ensions: 23 × 21 × 23" (58 × 53 × 58cm); Net weight: 102 lb. (46kg); 115V 60Hz; Autofill option (6820), grinding containers and optional essories sold separately (see below).

LUDES:

nder, power cord and Accessory Package (must be chosen to match ice of grinding containers; contact your Fisher Customer Service resentative to order)

UIRED ACCESSORIES:

id nitrogen (order separately)

6850-115

Cat. No.	Each
6850-115	9643.03

ACCESSORIES

Large-Capacity Freezer Mill Accessories

For use with SPEX SamplePrep* Large-Capacity Freezer/Mill Cryogenic Grinder

Grinding Vial Set 6801

- Exclusively for 6850 SPEX Large Capacity Freezer/Mill
- Makes one complete vial plus three spare center sections
- Sample capacity up to 50mL
- Transparent plastic allows visual check of grinding process
- Includes stainless-steel impactor, two end plugs, and four polycarbonate cylinders (6801C4)
- Components available separately

Grinding Vial Set 6751

- Makes one complete vial plus three spare center sections
- Sample capacity: 0.5 to 4.0mL
- Includes stainless-steel impactor, two end plugs, and four polycarbonate center cylinders (6751C4)

Accessory Packages

- Include extractor/vial opener and vial rack
- Order 6800A when using only 6751 vial set
- Order 6800C when using both 6751 and 6801 vial sets

AutoExtractor*

- Electrically powered version of 6804 Extractor/Vial Opener
- Easily opens cold 6751 and 6801 vials
- For 115V 60Hz

Autofill System

- Automatically maintains proper level of liquid nitrogen in 6850 mill during operation
- Provides safe, efficient liquid nitrogen handling
- Minimizes fluid loss, saves refill time
- Requires cryogenic transfer hose (not included; contact your Fisher Scientific Customer Service Representative for details)

Description	Cat. No.	Each
6751 Grinding Vial Set and Accessories		
Grinding Vial Set, 0.5 to 4.0mL samples†	6751	173.50
Vial Divider (when using four 6751 Vial Sets)	6806	61.65
6801 Grinding Vial Set and Accessories		
Grinding Vial Set, up to 50mL samples	6801	441.55
Accessory Package for 6751 Vial Set	6800A	375.57
Polycarbonate Center Cylinders (Set of 4)	6801C4	137.79
Polycarbonate Center Cylinders (Set of 4)	6801C20	593.81
End Plugs (1 Pr.)	6801E	270.47
Impactor	6801P	61.98
Extractor and Vial Opener Set	6804	329.90
Other Accessories		
Accessory Package for Vial Sets 6751 and 6801	6800C	730.84
Auto-fill System	6820	1979.37
Autoextractor and Vial Opener Set for Vial Sets 6751 and 6801, 115V 60Hz	6814-115	1055.67

† Four 6751 vial sets are required for use with 6850 Freezer/Mill.

SPEX SamplePrep* 8000D Dual Mixer/Mill*

Efficient two-clamp laboratory mill for pulverizing hard, brittle samples

8000 D

Also called a shaker mill or high-energy ball mill. Reduces samples to analytical fineness. Can be used for mechanical alloying.

- Sample size: 10g per vial (for grinding), up to 60mL (for blending or mixing)
- Two-sample capacity increases sample throughput
- Accepts grinding/mixing vials from 2⅜ to 3⅛" in length and up to 2¼" in diameter
- Speed: 1060 cycles/min. (back and forth)
- One or two samples can be processed simultaneously; however, if one sample is processed, a second empty vial must be inserted to maintain the balance of the system
- Features include a variable-range 100-min. electronic timer, START/PAUSE/STOP buttons, ⅓hp motor, dual clamps for multiple sample capacity, digital display, safety interlock system, and forced-air cooling
- Optional adapters (8010 and 8011) permit processing of multiple samples in ½ × 1", ½ × 2", and ¾ × 2" vials

ORDERING INFORMATION:
Dimensions: 24 × 17 × 11" (61 × 43 × 28cm); Weight: 82 lb. (37kg); for 115V 60Hz; accessories sold separately, at right.

INCLUDES:
Mill and power cord

Cat. No.	Each
8000-D	6200.00

SPEX SamplePrep* 8000M Mixer/Mill*

A high-energy ball mill, shaker mill, or laboratory grinder used to grind, pulverize, or mix samples to analytical fineness

8000M-115

Also used in mechanical alloying applications.

- Sample size range: 10g (grinding); 60mL (blending and mixing)
- Speed: 1060 cycles/min.
- Features include a variable-range 100-min. electronic timer, safety interlock system, START/PAUSE/STOP buttons, and shock-mounted ⅓hp electric motor for tabletop operation
- Accepts grinding/mixing vials from 1¾ to 3⅛" in length and up to 2¼" in diameter
- Adapters (8010 and 8011, order separately) permit processing of multiple samples in ½ × 1", ½ × 2", and ¾ × 2" vials

ORDERING INFORMATION:
Dimensions: 19 × 14 × 18" (48 × 36 × 46cm); Weight: 76 lb. (35kg); for 115V 60Hz; accessories sold separately, at right.

INCLUDES:
Mill and power cord

Cat. No.	Each
8000M-115	4400.00

ACCESSORIES

SPEX SamplePrep* 8000 Series Mixer/Mill Accessorie

For use with 8000D and 8000M Mixer/Mills

Accessories offered:

- Grinding balls and vials in assorted materials and sizes
- Grinding ball sets
- Vial sets with vial and grinding ball(s)
- Adapters and clamps

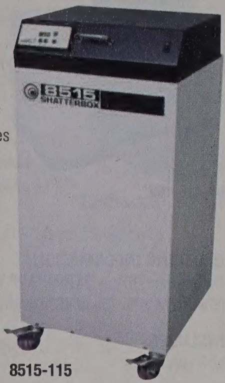
Description	O.D. × L	Cat. No.	Price
Vials (with Caps)			
Polycarbonate	12.7 × 51mm	**3116PC**	Pk. of 100/48.56
Polycarbonate	19 × 51mm	**6133PC**	Pk. of 100/69.82
Polyethylene	31.8 × 76mm	**6135**	Pk. of 100/73.05
Polystyrene	12.7 × 51mm	**3116**	Pk. of 100/41.32
Polystyrene	19 × 51mm	**6133**	Pk. of 100/41.64
Polystyrene	54 × 63.5mm	**8002**	Pk. of 100/150.56
Vial Sets (with Vial and Grinding Ball[s])			
Alumina Ceramic, 2¼ × 2¾"	57 × 69.9mm	**8003**	Ea./431.40
Hardened Steel Vial Set, ½ x 1"	12.7 × 25.4mm	**3117**	Ea./82.21
Hardened Steel Vial Set, ¾ x 1⅞"	19 × 47.6mm	**3127**	Ea./113.03
Hardened Steel Vial Set, 2¼ x 3"	57.2 × 76.2mm	**8001**	Ea./299.44
Round-Ended Hardened Steel Vial Set, 2⅜ x 3"	60.3 × 76.2mm	**8009**	Ea./690.24
Silicon Nitride Vial Set, 2¼ x 2¹¹⁄₁₆"	63.5 × 68.3mm	**8008**	Ea./1352.00
Stainless Steel Vial Set, ½ x 1"	12.7 × 25.4mm	**3114**	Ea./58.56
Stainless Steel Vial Set, 2¼ x 3"	57.2 × 76.2mm	**8007**	Ea./355.27
Tungsten Carbide Vial Set, 2¼ x 2½"	57.2 × 63.5mm	**8004**	Ea./872.95
Tungsten Carbide-Lined Vial, ¾ x 2"	19 × 50.8mm	**5004**	Ea./255.15
Zirconia Vial Set, 2½ x 2¹¹⁄₁₆"	63.5 × 68.3mm	**8005**	Ea./950.00
Grinding Balls (Type, Dia., for Vial Kit)			
Methacrylate Grinding Balls, 3.2mm, fit all vials	----	**3119**	Pk. of 100/13.43
Methacrylate Grinding Balls, 9.5mm, fit all vials	----	**3112**	Pk. of 100/23.76
Methacrylate, 12.7mm, 8006	----	**8006A**	Pk. of 100/39.26
Tungsten Carbide, 7.9mm, 5004	----	**5004A**	Pk. of 4/71.92
Tungsten Carbide, 11.1mm, 8004	----	**8004A**	Ea./30.99
Zirconia, 12.7mm, 8005	----	**8005A**	Ea./61.65
Grinding Ball Sets			
Steel Grinding Ball Set for Vial Sets 8001 and 8009	----	**8001B**	Ea./8.36
Stainless-steel Grinding Ball Set for Vial Set 8007	----	**8007B**	Ea./9.35
Adapters and Clamps			
Adapter, holds seven ½" vials	----	**8010**	Ea./87.34
Adapter, holds four ¾" vials	----	**8011**	Ea./87.34
Plastic Vial Clamp Adapter	----	**8012**	Ea./41.32
Clamps for Slurry Grinding, for Vial Set 8003	----	**8015**	2/90.00

*Trademark. See Trademark Reference.

Prices subject to change.

'EX SamplePrep* Shatterbox* Puck and ng Mill

ctronic laboratory swing mill or puck and ring mill nds and pulverizes samples in the 10 to 100g range


8515-115

am-activated clamp requires only oderate hand pressure to secure the inding dish; adjustable to secure ntainers to different heights
ariable-range 10 min. electronic timer ith "pause" feature and digital display
pical grinding time: two to five minutes
pical grist size: <200 mesh
oundproof enclosure reduces noise vels below OSHA limits
afety interlock system secures lid hile mill is operating
hp motor
ckable casters aid stability

PLICATIONS:
ding cement mix, rocks, slag, soils, mics, ores; also sulfur pellets, dried sses, and pharmaceuticals

DERING INFORMATION:
ensions: 19L × 19W × 40"H (48 × 48 × 102cm); Weight: 225 lb. (102kg); 115V 60Hz; wide choice of grinding containers available below.

LUDES:

UIRED ACCESSORIES:
ding container (sold separately)

No.	Price
5-115	10,719.00

ACCESSORIES

Shatterbox* Accessories

Containers
- Choice of steel, carbide or ceramic styles
- Supplied with lid

8507R Rack
- Holds one or three 8507 or 8508 grinding containers
- Includes base assembly and lid
- 8507 and 8508 containers cannot be mixed during same run

Description	Recommended Load	Cat. No.	Each
ontainers			
Hardened steel	20 to 50mL	**8501**	1380.48
Steel, small†	5 to 20mL	**8507**	517.68
Tungsten carbide, large	20 to 60mL	**8504**	5300.00
Tungsten carbide, small†	5 to 20mL	**8508**	1827.10
Alumina ceramic	15 to 40mL	**8505**	2080.87
ther Accessories			
Rack for 8507 and 8508 containers	N/A	**8507R**	548.13

† Requires 8507R Rack for use.

Retsch* MM 301 Mixer Mill

Ideal for dry, wet and cryogenic grinding of small amounts of sample

08-417-79

Excellent for disrupting biological cells as well as the isolation of DNA and RNA. Mixes and homogenizes powders and suspensions in seconds.

- Two grinding stations
- Max. sample volume: 40mL (2 × 20mL)
- Max. jar size: 50mL
- Feed size: up to 8mm (based on feed material)
- Final size (approx.): 5µm
- Touch keypad controls with digital display
- Adjustable time setting from 10 seconds to 99 minutes
- Three-setting memory for repeatable runs
- Parameters retained in standby memory for subsequent processes
- Self-centering mechanism precisely and consistently places grinding jars for optimal reproducibility
- Self-locking clamping device secures jars

APPLICATIONS:
Reproducible dry, wet, cryogenic and cell disruption grinding

ORDERING INFORMATION:
L × W × H: 18½ × 11⅞ × 9" (47 × 30 × 23cm); Weight: 44 lb. (20kg); for 120V 50/60Hz; accessories sold separately.

INCLUDES:
Mill and quick-clamping device

REQUIRED ACCESSORIES:
Grinding jars and grinding balls (sold separately online)

WARRANTY:
Two years

CERTIFICATIONS:
CE marked

Cat. No.	Each
08-417-79	7082.90

LOOKING FOR MM 301 MIXER MILL ACCESSORIES?

Grinding jars and grinding media are available online.

Visit www.fishersci.com and search for MM 301 Mixer

Retsch* Models PM 100 and PM 200 Planetary Ball Mills

Benchtop ball mills are ideal for wet or dry grinding applications requiring the highest degree of fineness

- Energy and speed control enables reproducible results
- Graphic display and one-button operation for setting speed, time, energy input, grindingdirection reversal
- Powerful, maintenance-free drive maintains constant controlled speed for continuous use
- Memory stores up to 10 combinations of grinding parameters for repetitive tasks
- Maximum timed run: 99 hours, 59 minutes, 59 seconds
- Built-in automatic fan ventilates chamber for safe wet grinding with solvents
- Low vibration rates allow unattended operation
- With serial interface

Model PM 100

- Single grinding station
- For grinding jars from 12 to 500mL (nominal volume)
- Feed size: <10mm
- Grind size: <1µm (normal grinding based on feed material); <0.1µm (colloidal

Model PM 200

- Two grinding stations
- For grinding jars from 12 to 125mL (nominal volume)
- Feed size: <4mm
- Grind size: <1µm (normal grinding based on feed material); <0.1µm (colloidal)

APPLICATIONS:

Agriculture, biology, biotechnology, ceramics and glass, chemicals, construction materials, environmental, medicine, mineralogy, new materials testing

Retsch
PM 200

08-418-162

ORDERING INFORMATION:

Dimensions: 16½ × 24⅞ × 18½" (42 × 63 × 47cm); Weight, PM 100: 176 lb (80kg); PM 200: 159 lb. (72kg); grinding jars and balls sold separately

INCLUDES:

Mill only

REQUIRED ACCESSORIES:

Grinding jars and balls (sold separately, see below)

WARRANTY:

Two years

CERTIFICATIONS:

CE marked

Model	Electrical Reqts.	Cat. No.	Eac
PM 100	120V 50/60Hz	**08-418-162**	8049.9
PM 200	120V 50/60Hz	**08-418-163**	9323.2

ACCESSORIES FOR RETSCH* PM 100 AND PM 200

Grinding Jars

Specially designed for extreme working conditions such as long-term trials, wet grinding, high mechanical loads and maximum speeds as well as mechanical alloying

For use with Retsch PM 100 and PM 200 Planetary Ball Mills.

- Safe, nonslip seating with built-in anti-rotation device and conical base centering
- With O-ring for gastight and dustproof seal
- Lid is easy to grip and open

Capacity	Cat. No.	Each
Stainless-steel Jars		
50mL	**08-418-164**	1057.88
125mL	**08-418-165**	1390.35
250mL	**08-418-166**	1511.26
500mL	**08-418-167**	2226.58
Agate Jars		
80mL	**08-418-169**	1360.13
125mL	**08-418-170**	1420.58
Zirconium Oxide Jars		
50mL	**08-418-173**	2690.03
125mL	**08-418-174**	3304.61

Grinding Balls

For use with Retsch PM 100 and PM 200 Planetary Ball Mills.

- In assorted diameters and materials
- Smaller balls offered for colloidal milling

Material	Dia.	Cat. No.	Each
Standard Grinding Balls			
Stainless steel	10mm	**08-418-177**	2.72
Stainless steel	40mm	**08-418-180**	71.03
Polished agate	20mm	**08-418-184**	34.03
Zirconium oxide	10mm	**08-418-187**	40.03
Grinding Balls for Colloidal Milling			
Stainless steel	2mm	**08-418-181**	414.09
Stainless steel	3mm	**08-418-182**	431.12
Zirconium oxide, yttrium-stabilized	3mm	**08-418-192**	699.21

*Trademark. See Trademark Reference.

Prices subject to change.

MIXERS

sher Scientific* Vortex Mixers

ırable, rugged vortexers offer ceptional versatility and value

02-215-375

ıilable in fixed and variable-speed models as well an advanced pulsing vortexer. A wide range of essories allow these mixers to handle vessels n microtubes to flasks.

ed-speed Mixer

- ne-touch unit for high-speed mixing at 3200rpm
- ctivated by applying pressure to mixing head
- upplied with cup head and 3" head with cover

alog Mixer

- ariable analog speed control from 100 to 3200rpm for gentle to igorous action
- ontinuous mode for use with accessory attachments
- ouch mode activated when depressing the cup head
- hree-way power switch
- upplied with cup head and 3" head with cover

ital Mixer

- leal for applications demanding repeatable results
- ariable speed control from 500 to 3000rpm
- ouch keypad controls and LED display for speed and time
- licroprocessor control maintains set speed for consistent mixing
- imer displays elapsed time; auto shutoff at end of cycle
- ontinuous or touch modes
- hree-way power switch
- upplied with cup head and 3" head with cover

lsing Mixer

- owerful pulsing vortexer provides excellent cell disruption in minutes
- ulse feature reduces heat generation while delivering more effective mixing
- ariable speed control from 500 to 3000rpm
- ouch keypad controls and LED display for speed and time
- licroprocessor control for consistent mixing
- ontinuous or touch modes; pulse key
- imer displays countup during continuous run; countdown during timed runs
- ıcludes holder for 12 × 1.5/2.0mL microtubes

DERING INFORMATION:

ıensions: 6⅞L × 4⅞W × 4⅞H (17.3 × 12.2 × 12.2cm); Weight: 11 lb. g); accessories sold separately

CLUDES:

ed-speed, analog and digital mixers are supplied with cup head and 3" ber head with cover; Pulsing mixer includes microtube holder

RTIFICATIONS:

marked, UL/CUL listed

lel	Electrical Reqts.	Cat. No.	Each
ed-speed	120V 50/60Hz, 75w	**02-215-360**	249.06
ed-speed	230V 50/60Hz, 75w	**02-215-361**	269.85
log	120V 50/60Hz, 75w	**02-215-365**	317.55
log	230V 50/60Hz, 75w	**02-215-366**	332.10
ital	120V 50/60Hz, 75w	**02-215-370**	363.21
ital	230V 50/60Hz, 75w	**02-215-371**	373.60
sing	120V 50/60Hz, 75w	**02-215-375**	486.70
sing	230V 50/60Hz, 75w	**02-215-376**	507.45

ACCESSORIES

Multi-Vessel Holders and Kits

Holders†

- **Microtube Holder** mixes 48 × 2.0/2.5mL microcentrifuge tubes
- **Microwell Plate Holder** mixes 96-well plates or deepwell blocks
- **20-25mm Tube Holder** mixes up to 8 × 50mL centrifuge tubes
- **14-19mm Tube Holder** mixes up to 8 × 15mL tubes
- **9-13mm Tube Holder** mixes 5mL culture tubes and microvials
- **Vessel Holder** mixes Erlenmeyer flasks and media bottles
- **Ampule Tube Holder** mixes storage vials and test tubes

Accessory Kits

- **Tube Holder Kit with Retainer** includes three tube holders (for 9-13mm, 14-19mm, and 20-25mm tubes), one flat foam insert, two vessel harnesses and one insert retainer
- **Microtube and Microwell Plate Holder Kit with Retainer** includes one microtube holder, one microwell plate holder, and one insert retainer

Other Accessories

- **Insert Retainer** secures vessel harness and foam inserts
- **3" Head** permits easy-touch mixing of beakers and flasks
- **3" Head Cover** slides over top of head—ideal for odd-shaped containers
- **Cup Head** secures test tube to prevent slippage

Description	Cat. No.	Each
Tube Holders†		
Microwell Plate Foam Rack	**02-215-387**	39.44
Microtube Foam Rack	**02-215-386**	39.45
Foam Insert Set for 20 to 25mm Tubes	**02-215-395**	17.65
Foam Insert Set for 14 to 19mm Tubes	**02-215-394**	17.66
Foam Insert Set for 9 to 13mm Tubes	**02-215-393**	17.66
Vessel Harness	**02-215-392**	5.25
Ampule Tube Holder, 15 to 17mm	**02-215-398**	77.83
Ampule Tube Holder, 10 to 17mm	**02-215-399**	114.17
Tube Holder Kits		
Foam Rack Kit, with Retainer	**02-215-384**	68.49
Foam Insert Kit with Retainer	**02-215-388**	119.33
Other Accessories		
Insert Retainer	**02-215-391**	83.01
Flat Foam Insert (Pack of 2)	**02-215-397**	16.60
Cup Head	**02-215-380**	22.83
3" Head	**02-215-382**	22.85
3" Head Cover	**02-215-383**	22.85

† All except ampule tube holders require 02-215-391 Insert Retainer, sold separately.

Single Tube Holders

- Mount atop mixer for single-tube, hands-free mixing
- Easily attach without tools
- 02-215-405 adapter allows holder to be used with Vortex-Genie* Mixers

Description	Cat. No.	Each
For standard tube size	**02-215-404**	52.83
Adapter for Vortex-Genie* Mixers	**02-215-405**	92.45
0.5mL microtube holder	**02-215-402**	50.38
1.5/2.0mL single tube holder†	**02-215-403**	51.90
1.5mL single tube holder†	**02-215-400**	181.61

† Not for use with fixed-speed models 02-215-360 and -361.

Fisher Scientific* Multi-Tube Vortexers

Mix up to 50 samples at once

02-215-452

02-215-450

Vortexing action is created by holding the top tray of the vessel securely in place while the bottom tray moves freely in a defined, 3.6mm eccentric orbit.

- Powerful permanent, continuous-duty motor delivers quiet, rattle-free mixing
- Top plate adjusts along two stainless-steel posts; removable for easy sample access
- Rugged corrosion-resistant, stainless-steel base
- Suction-cup feet dampen motion and prevent sliding

Digital Multi-Tube Vortexer

- Microprocessor-controlled for precise, repeatable results
- LED display for speed and time
- Speed range: 500-3500rpm (25rpm increments)
- Programmable timer (1 sec. to 9999 hrs.)
- Timed or continuous-run modes
- Pulsing program can be operated in either mode

Analog Multi-Tube Vortexer

- Speed range: 1200-2400rpm
- Automatic timer (0 to 60 sec. for simple repeat procedures)

ORDERING INFORMATION:

Dimensions: 9¼L × 15W × 15½"H (23.5 × 38.1 × 39.4cm). Accessory test tube and centrifuge racks and post extension kit are available separately.

INCLUDES:

One 50-place foam rack for 12mm test tubes, one tray pad set for mounting and support plates, 92" (234cm) detachable three-wire cord and plug (230V models supplied with European type plug)

WARRANTY:

Two-year limited

CERTIFICATIONS:

UL, CUL, CE

Description	Electrical Requirements	Cat. No.	Ea
Digital	120V 50/60Hz, 5A, 75w	**02-215-452**	2910.0
Digital	230V 50/60Hz, 1A, 75w	**02-215-453**	2910.0
Analog	120V 50/60Hz, 5A, 75w	**02-215-450**	1899.0
Analog	230V 50/60Hz, 1A, 75w	**02-215-451**	1899.0

ACCESSORIES

Racks and Replacement Parts

For use with Fisher Scientific* Multi-Tube Vortexers (02-215-450, -451, -452, -453)

- Color-coded foam racks for test tubes or centrifuge tubes
- Replacement tray pad set includes top and lower pads
- Post extension kit adds 6" (15.2cm) to post to accommodate tubes up to 10" (254 cm)

Description	Tube Size	No. of Places	Color	Cat. No.	Each
Test Tube Rack	10mm	50	Gray	**02-215-454**	21.00
Test Tube Rack	12mm	50	Blue	**02-215-455**	21.00
Test Tube Rack	13mm	50	Yellow	**02-215-456**	21.00
Test Tube Rack	25mm	17	White	**02-215-458**	29.00
Centrifuge Tube Rack	15mL	50	Green	**02-215-457**	29.00
Centrifuge Tube Rack	50mL	17	Red	**02-215-459**	29.00
Replacement Tray Pad Set	N/A	N/A	Gray	**02-215-460**	32.00
Post Extension Kit	N/A	N/A	N/A	**02-215-461**	105.00

Fisher Scientific* miniRoto Vortexer

Economical desktop test tube shaker with touch function

Compact, attractive unit fits virtually anywhere and provides excellent orbital mixing action.

- For test tubes, centrifuge tubes and other small vessels up to 30mm dia.
- Maximum tube capacity: 50mL
- Mixing speed: 2800rpm (fixed)
- Shaking motion/stroke: Orbital/4.5mm
- Operating temperature: 5° to 40°C
- Inert plastic upper casing and test tube surface
- Coated zinc die-cast base adds stability

APPLICATIONS:

General-purpose, small-vessel mixing

ORDERING INFORMATION:

Dimensions: 4 dia. × 2¾"H (100 × 70mm)

INCLUDES:

12V power pack

COMPLIANCE:

Protection classification to DIN EN 60529: IP 40

NEW

14-505-5

Electrical Requirements	Cat. No.	Ea
For 115V 50/60Hz	**14-505-512**	174.
For 230V 50/60Hz	**14-505-513**	174.

*Trademark. See Trademark Reference.

Prices subject to change.

sher Scientific* MS3 Minishaker

mpact, economical, universal desktop mixer/shaker

NEW

14-259-670

al for shaking test tubes, conical-bottom tubes, small vessels and roplates.

ariable analog speed control from 0 to 3000rpm (see Operating Modes)
ne-touch automatic start and continuous operation; triggered by simply essing the pad
rbital motion: 4.5mm
oad capacity: 1⅛ lb. (0.5kg)
lotor input/output: 10/8w
urdy zinc die-cast housing ensures stability at all shaking speeds

erating Modes

Safe Mode with attachment detection; Max. speed 3000rpm with standard attachment, 1300rpm with other attachments
Without attachment detection; Max. speed 3000rpm with ny attachment

DERING INFORMATION:
ensions: 9L × 4½W × 2½"H (23 × 11 × 6cm); For 115V 50/60Hz, 31w. essory attachments available online.

LUDES:
3.1 Standard Attachment, MS3.3 Universal Attachment and MS1.21 -hand Insert

WARRANTY:
Three years

COMPLIANCE:
Protection according to DIN EN 60529 IP-21

CERTIFICATIONS:
CE, CSA

Electrical Requirements	Cat. No.	Each
115V 50/60Hz	**14-259-670**	270.51
230V 50/60Hz	**14-259-671**	270.51

LOOKING FOR TUBES?

Fisherbrand* microcentrifuge tubes combine fine quality with outstanding value. For a wide range of round and conical-bottom tubes, see the Tubes section.

---

ermo Scientific* MaxiMix* I Vortex Mixer

ellent for mixing samples in small flasks with closed tops

12-815-50

all enough to fit almost anywhere.
xed speed operation (3000rpm)
multaneously mixes up to four test tubes
onvenient, top-mounted ON/OFF switch
ary vortex mixing by simply changing pressure of tube against foam bber top
urable, white plastic case resists acids and alkalis
ast-aluminum base with suction-cup feet provides maximum stability
ompact design with 4" diameter (10.2cm) foam rubber top

PLICATIONS:
ymatic and RIA assays, general test tube mixing, biochemical assays, exing cell suspensions, mixing tissue samples, viral dilution arations, precipitated assays

ORDERING INFORMATION:
Dimensions: 5½L × 5½W × 4 3⁄32"H (14 × 14 × 10.4cm);
Weight, 3½ lb. (1.5kg)

INCLUDES:
Mixer, two 12-814-1 foam rubber top pads, three-wire cord and plug

CERTIFICATIONS:
120V model is CSA approved

Electrical Reqts.	Mfr. No.	Cat. No.	Each
120V 50/60Hz, 0.5A	M16715Q	12-815-50	1988.00

Thermo Scientific* MaxiMix* II Vortex Mixer

For vortex mixing of scintillation vials, media in tubes, micro Kjeldahl tubes, radioimmunoassay tubes and bacteria suspensions

12-814-5Q

Variable speed control allows gentle to vigorous agitation.

- Continuous-run or touch-activated run modes
- Variable speed control from 100 to 3000rpm; functions in both operating mode
- White, durable plastic housing resists acids and alkalines
- Heavy-duty cast metal base with rubber feet assures stability and eliminates creep during use

Complete with two mixing devices

- 3½" diameter (9cm) foam pad mixing surface for mixing flasks or multiple tubes simultaneously
- Rubber single-cup tube holder (2" O.D. [5.1cm], 1" I.D. [2.5cm] and 1¼"H [3.2cm])

APPLICATIONS:

Mixing media in test tubes, mixing cytogenetic suspensions in centrifuge tubes, enzymatic and RIA assays, vortexing cell suspensions and drug extractions, atomic absorption sample preparation, Nelson's assay for reducing sugars

ORDERING INFORMATION:

Dimensions, 7L × 4½W × 6"H (17.8 × 11.4 × 15.2cm); Weight, 8 lb. (3.6kg)

INCLUDES:

Mixer, foam pad mixing surface, single-tube holder, power cord

Electrical Reqts.	Mfr. No.	Cat. No.	Each
120V 50/60Hz, 0.75A	M37615Q	**12-814-5Q**	394.0

MORTARS AND PESTLES

CoorsTek* Porcelain Mortars

With pour lip

12-949-1

- Glazed outside except for bottom; rough inside
- Ideal for pharmaceutical applications

ORDERING INFORMATION:

Without pestles; order separately

O.D.	Mfr. No.	Cat. No.	Each	Case of
2¾" (70mm)	60310	**12-961AA**	16.33	18/251.16
3⅛" (80mm)	60313	**12-961AB**	17.81	18/274.05
3½" (90mm)	60316	**12-961A**	22.24	12/242.61
4½" (115mm)	60319	**12-961B**	30.56	8/208.94
5" (130mm)	60322	**12-961C**	40.77	8/296.51
6⅜" (163mm)	60325	**12-961D**	60.14	4/212.87
7¼" (186mm)	60409	**12-949-1**	78.80	3/209.20
8¼" (210mm)	60328	**12-961E**	177.59	2/303.57
10" (256mm)	60415	**12-949-3**	238.90	2/408.38
11⅛" (283mm)	60331	**12-948G**	248.98	----

Porcelain Pestles

- Pestles 12-949-2 and 12-949-4 have porcelain grinding heads and wooden handles
- All others are porcelain (glazed to grinding surface) and oversized for hand comfort

For Mortar	Mfr. No.	Cat. No.	Each	Case o
12-961AA	60311	**12-961-5AA**	17.72	18/272.6
12-961AB	60314	**12-961-5AB**	18.62	18/286.4
12-961A	60317	**12-961-5A**	20.94	12/214.7
12-961B	60320	**12-961-5B**	21.93	8/159.5
12-961C	60323	**12-961-5C**	28.18	8/204.9
12-961D	60326	**12-961-5D**	43.87	4/159.5
12-961D, 12-949-1	60410	**12-949-2**	78.20	3/207.6
12-961E	60329	**12-970D**	81.80	2/144.7
12-949-3	60416	**12-949-4**	104.88	2/179.2
12-948G	60332	**12-948H**	88.52	----

Diamonite* Mortar and Pestle Sets

Synthetic sapphire mortars offer excellent hardness and chemical resistance

- Made of finely powdered synthetic sapphire
- Molded under extremely high pressure and sintered at high temperature
- Hard as tungsten carbide but less costly; hardness is 9+ on Mohs scale
- Resistant to acids, alkalis, corrosive chemicals
- Grinds materials not easily reduced in porcelain or metal mortars

12-952

Mortar O.D. × I.D. × H	Pestle Length	Cat. No.	Eac
3⅜ × 2½ × 1⅝" (85 × 65 × 40mm)	2¾" (70mm)	**12-952**	459.8
4 13/16 × 3⅞ × 2" (122 × 100 × 50mm)	3⅞" (100mm)	**12-952-5**	737.6

WARNING
Not recommended for cryogenic use.

*Trademark. See Trademark Reference.

Prices subject to change.

riety Glass Clear Glass Mortar d Pestle Sets

vide clear view contents

12-970A

ortar has heavy molded base
d lip
ith clear glass pestle
fer clear view of materials

icity	O.D.	Cat. No.	Each	Case of 12
(59mL)	3½" (8.9cm)	**12-970A**	31.67	277.41
(118mL)	3⅞" (10cm)	**12-970B**	33.61	294.41
(237mL)	4¾" (12cm)	**12-970C**	40.03	350.60
z. (455mL)	5⅜" (13.5cm)	**10-381-2**	27.24	----

orsTek* Aluminum Oxide Mortars

ra hardness and abrasion resistance ipared to agate

12-948C

sentially inert
tside glazed

ERING INFORMATION:
out pestles; order separately, below

	Mfr. No.	Cat. No.	Each	Case of
(35mm)	60335	**12-948A**	65.54	4/231.99
0mm)	60358	**12-948B**	69.82	3/185.36
(65mm)	60361	**12-948C**	86.87	2/153.74
5mm)	60364	**12-948D**	101.93	----
(100mm)	60370	**12-948F**	174.98	----
(120mm)	60373	**12-948-5G**	228.6	----

minum Oxide Pestles

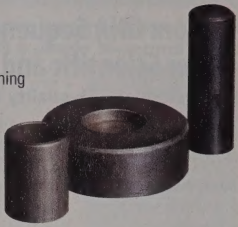
lortar	Mfr. No.	Cat. No.	Each	Case of
48A	60356	**12-948-5A**	30.40	4/110.53
48B	60359	**12-948-5B**	36.25	3/98.87
48C	60362	**12-948-5C**	40.39	2/73.43
48D	60365	**12-948-5D**	51.51	----
48F	60371	**12-948-5F**	77.78	----
48-5G	60374	**12-948-5H**	109.88	----

LOOKING FOR CELL AND TISSUE GRINDERS?
See the Cell Culture section, pp. 312-316.

Alloy Tool Steel Mortar and Pestle Set

Plattner's diamond mortar and pestle set for crushing small ore samples

- Mortar has flat-bottomed cylindrical cavity
- Fitted with removable sleeve for retaining crushed material in cavity
- Pestle fits snugly inside sleeve


12-990

ORDERING INFORMATION:
Cavity, 1 dia. × ¼" deep (25 × 6.4mm). Mortar O.D., 3" (76mm). Pestle diameter, 1" (25mm). Pestle length, 3" (76mm).

Cat. No.	Each
12-990	251.30

Agate Mortar and Pestle Sets

Thick, heavy wall

- Octagonal agate mortars
- Come with matching pestle

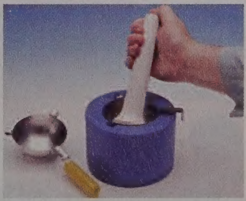
12-950B

O.D.	Cat. No.	Each
2" (50mm)	**12-950AA**	97.25
2½" (65mm)	**12-950A**	141.23
3" (75mm)	**12-950BB**	193.77
3¾" (95mm)	**12-950B**	315.52
3⅞" (100mm)	**12-950C**	369.80
4⅞" (125mm)	**12-950D**	673.44
5⅞" (150mm)	**12-950E**	1356.02

Scienceware* Liquid Nitrogen-Cooled Mortar

For safe grinding of frozen tissue samples

- Stainless-steel mortar is suspended by brackets above stainless-steel bowl of liquid nitrogen
- Bowl rests in insulated polyethylene housing
- Eliminates hazard of flying liquid nitrogen droplets when grinding frozen tissue samples
- Mortar has detachable 4" (10cm) insulated handle


12-947-1

ORDERING INFORMATION:
Housing measures 6½ dia. × 4½"H (16.5 × 11.4cm).

Description	Mfr. No.	Cat. No.	Each
Mortar, bowl and housing	37260 0000	**12-947-1**	226.84
Mortar only†	37260 0001	**12-947-2**	75.38

† Without handle, cooling bowl or housing. Handy spare when grinding differing samples.

NUCLEIC ACID RESEARCH

SERVICES

Custom DNA Sequencing Services from Fisher Scientific and SeqWright*

Fast, reliable, high-quality services

From large-scale genome projects to FDA submissions, we offer a complete range of cost-effective solutions with a guaranteed accuracy of 100%.

Featured Services Include:

- DNA Sequencing
- SNP Discover
- Shotgun Library Construction
- Genotyping
- Quantitative PCR and DNA Synthesis

ORDERING INFORMATION:

To order, visit **www.fishersequencing.com.**

DNA Synthesis Services from Fisher Scientific and Operon*

Offering a wide variety of affordable, high-quality oli

Choose from a full range of longmers and modified oligos in a variety of scales, formats, and purification levels.

Featured Services Include:

- Custom Oligos
- Array Ready Oligo Sets

ORDERING INFORMATION:

Visit our Web Site, **www.fisheroligo.com**, for more information

NUCLEIC ACID PURIFICATION—DNA

Millipore* Montage* Plasmid Miniprep$_{96}$ Kits

Generate high-quality plasmid DNA in 50% less time than traditional methods

LSKP 096 Series (vacuum manifold and pipetter not included)

- Typical yield from 1mL of bacterial culture is 4 to 6µg
- 96-well kit uses unique separation technology
- Simple, 25-minute protocol yields clean and reproducible DNA for sensitive downstream applications
- Collection of purified sample from the top of the plate and lack of centrifugation steps allow compatibility with automated systems

INCLUDES:

All necessary reagents and disposables

REQUIRED ACCESSORIES:

MultiScreen* Vacuum Manifold with underdrain support grid (MAVM 096 0R)

No. of Preps	Cat. No.	Each
1 × 96	**LSKP 096 01**	165.00
4 × 96	**LSKP 096 04**	497.00
24 × 96	**LSKP 096 24**	2572.00

ACCESSORIES

Replacement Solutions for Montage* Plasmid Miniprep$_{96}$ Kits

Description	Quantity	Cat. No.	Each
Cell Lysis Solution	500mL	**LSKC LS5 00**	71.00
Cell Resuspension Solution	500mL	**LSKC RS5 00**	71.00
Neutralization Solution	500mL	**LSKN S05 00**	71.00

Millipore* Montage* SEQ$_{96}$ and SEQ$_{384}$ Sequencing Reaction Cleanup Kits

Fully automatable kits rinse away unincorporated dye terminator without the need for binding and eluting protocols

LSKS 0 Series

Utilize 96- or 384-well filter plates with proprietary size-exclusion membranes to retain sequencing products while excess dye terminator is removed quickly and efficiently. Recovered sequencing products are highly purified and result in long, accurate sequencing reads.

- Protocols are optimized for use with BigDye* Terminator version 3.0, 3.1, 1.1 and ET Terminator sequencing chemistries
- Sequencing products may be resuspended in any aqueous electrokinetic injection buffer
- Plates are suitable for use with ⅛ sequencing reactions, reducing reagent costs by miniaturization

INCLUDES:

Clear polystyrene 96- or 384-well plates, optimized injection solution (96-well kits only)

REQUIRED ACCESSORIES:

MultiScreen* 384 Vacuum Manifold with underdrain support grid (MAVM 096 0R)

Description	Working Well Volume	Nonrecoverable Volume	Cat. No.	Pack
Montage SEQ$_{96}$ Cleanup Kit	10–100µL	<2µL	**LSKS 096 01**	1/88.
			LSKS 096 04	4/269.
			LSKS 096 24	24/1292.
Montage SEQ$_{384}$ Filter Plates	10–100µL	<2µL	**S384 SEQ 10**	10/660.
			S384 SEQ 50	50/2567.

ACCESSORIES

Replacement Solutions for Montage* SEQ$_{96}$ and SEQ$_{384}$ Sequencing Reaction Cleanup Kits

Description	Quantity	Cat. No.	Each
Injection Solution	500mL	**LSKS IS5 00**	71.0
Wash Solution	500mL	**LSKS BW5 00**	71.0

*Trademark. See Trademark Reference.

Prices subject to change.

llipore* Montage* Gel Extraction Kit

tes DNA from agarose gels in 10 minutes

- pically recovers >70% of 100 to 00 bp DNA from standard agarose gels
- nverts agarose to a spray from which IA is separated via a 0.45µm trafree*-MC filter
- epares gel-purified PCR products for quencing or cloning without need for ther purification

LSKGEL050

LUDES:
el nebulizers, 50 Ultrafree-MC 0.45µm rators, 50 microcentrifuge vials, nL stock of 50X modified TAE buffer

ple Volume	Cat. No.	Pack of 50
iL of gel	**LSKGEL050**	97.49

nicon Bioseparations product.*

trafree*-DA Gel Separation Device

lar to Montage Gel Extraction Kit, but without the TAE buffer.

LUDES:
el nebulizers, 50 Ultrafree-MC 0.45µm separators, 50 ocentrifuge vials

ple Volume	Cat. No.	Pack of 50
iL of gel	**42600**	72.36

nicon Bioseparations product.*

LOOKING FOR EMSA ASSAYS OR TRANSCRIPTION FACTOR ASSAYS?

isit www.fishersci.com and search for EMSA

Millipore* Micropure*-EZ Enzyme Remover

Removes restriction or modifying enzymes from double-stranded (ds) DNA with a simple 30-second spin

42528

- Delivers >85% recovery of dsDNA; higher with a quick 5 to 10µL rinse
- Utilizes an adsorptive, hydrophilic membrane with a high affinity for protein, but not for dsDNA
- Requires less hands-on time than precipitation or "bind and elute" purification procedures
- More effective than heat inactivation
- Can be used with a Microcon* concentrator for nucleic acid purification, concentration, and desalting in a single unit

Device	Sample Volume	Hold-up Volume	Cat. No.	Pack of
Micropure-EZ with vial	250µL	5µL	**42528**	8/11.07
			42529	24/37.22
			42530	100/144.54
Micropure-EZ without vial†	250µL	5µL	**42531**	8/8.00
			42532	24/27.00

† For use with Microcon Concentrator.

An Amicon Bioseparations product.*

COMMON ENZYMES REMOVED BY MICROPURE-EZ

Enzyme	Units	Enzyme	Units
***Acc* I**	50	**Exonuclease III**	100
Alkaline Phosphatase, Calf Intestinal	10	***Hae* III**	100
***Bam* H I**	100	***Pst* I**	100
DNase I	10	***Sca* I**	50
***Eco* R I**	100	***Xho* I**	100

In tests, all enzymes were removed from solutions containing DNA and 5µg BSA. Removal was indicated by undetectable or inconsequential enzyme activity in the filtrate.

5 PRIME* FastPlasmid* Mini Purification System

Isolates plasmid DNA from bacterial culture in as little as nine minutes

NEW
5 PRIME
5 PRIME
FP2300000

- Yields up to 20µg of high-copy and up to 10µg of low-copy plasmid DNA from 1.5mL of bacterial culture
- Utilizes one-step lysis in conjunction with an efficient DNA binding membrane, reducing the number of steps and number buffers required for purification
- Requires no specialized equipment
- Produces high-quality DNA that is suitable for demanding downstream applications, including automated sequencing, transformation, in vitro transcription, and PCR

No. of Preps	Sample Size	Cat. No.	Each
100	1.5 to 3mL	**FP2300000**	119.65
250	1.5 to 3mL	**FP2300010**	260.07

5 PRIME* Perfectprep* Plasmid 96 VAC Direct Bind Kit

Isolates ultrapure plasmid DNA in a 96-well format

FP2300210

- High yields up to 15µg plasmid DNA per isolation
- Consistent plasmid concentration
- Reproducible elution volumes
- Excellent sequencing data; average PHRED Q20 scores greater than 600 bases
- Average read lengths 700 bases with 98.5% accuracy
- A high-throughput method of purifying plasmid DNA from 1 to 1.25mL *E. coli* bacterial cultures grown and processed in a 96-well plate format
- Processes 96 samples in just 30 minutes using the rapid protocol; 4 × 96-well plates take approximately 45 minutes
- Designed and optimized for use with vacuum manifolds and compatible with most liquid handling and pipetting stations
- No alcohol precipitation required
- Produces ultrapure plasmid DNA that is free of RNA or chromosomal DNA contamination and is suitable for all downstream applications

Quality Assurance: Each lot of the Perfectprep Plasmid 96 VAC Direct Bind is tested in plasmid DNA isolation as described in the protocol. The isolated plasmid DNA is then evaluated for quantity and quality by agarose gel analysis, successful digestion with a variety of restriction endonucleases, automated fluorescent DNA cycle sequencing, and transfection of cultured cells.

INCLUDES:
Filter plates, culture plates, collection plates, plate seals, reagents

STORAGE CONDITIONS:
Store at room temperature.

NOTE:
50 plate kit (4800 preps) is supplied without culture plates and collection plates. (For replacement plates, see FP2300230 and FP2300240, below.)

No. of Preps	Sample Size	Cat. No.	Each
192	1 to 1.25mL	**FP2300200**	260.07
960	1 to 1.25mL	**FP2300210**	892.32
4800†	1 to 1.25mL	**FP2300220**	4049.51

† Does not include culture plates or collection plates.

ACCESSORIES

Replacement Solutions and Plates

Description	Quantity	Cat. No.	Each
Replacement Solutions			
Solution 1	850mL	**FP2300250**	32.58
Solution 2	850mL	**FP2300260**	25.46
Solution 3	850mL	**FP2300270**	26.47
Replacement Plates			
Collection Plates	50 Plates	**FP2300230**	103.15
Culture Plates	50 Plates	**FP2300240**	675.00

5 PRIME* ArchivePure* DNA Kits

Liquid-phase, genomic DNA purification for over 200 sample types

FP23007

- Virtually foolproof protocols yield recoverable DNA at every step, even after a procedural error
- Protocols are scalable for a wide range of sample sizes
- Isolate high molecular weight DNA, from 100 to 200kb
- Convenient kits include all required reagents, premixed and ready-to-use, right out of the box
- Exceptional purity, A260/A280 ratios from 1.7 to 2.0
- Remove PCR inhibitors and other contaminants
- Purify archival-quality DNA
- Gentle, nontoxic detergents and salts
- No toxic chemicals, phenol, or organic chemicals

APPLICATIONS:
Southern blotting, PCR, sequencing, SNP analysis, archiving

5 PRIME* ArchivePure* Blood Kits

Suitable for fresh or frozen whole blood, bone marrow, packed cells, or buffy coat

- Ideal for clinical molecular diagnostics, gene hunting, pharmacogenetics clinical trial labs
- Typical yield: 35µg/mL blood
- Sample volumes from 150µL to 20mL collected in common coagulants (EDTA, citrate, or heparin)
- Typical preparation time: 25 to 60 minutes
- Purified DNA is stable for at least 12 years when refrigerated at 2° to 4°C

INCLUDES:
RBC lysis solution; cell lysis solution; protein precipitation solution; DNA hydration solution; RNase A solution

Sample Size	Cat. No.	Eac
3mL	**FP2300700**	35.1
30mL	**FP2300710**	94.2
120mL	**FP2300720**	226.5
1000mL	**FP2300730**	1210.5

5 PRIME* ArchivePure* Cell and Tissue Kits

Purify DNA from cultured cells, fluids, tissue, or Gram-negative bacteria

- Typical preparation time: 60 minutes

INCLUDES:
Cell lysis solution; protein precipitation solution; DNA hydration solution; RNase A solution

Sample Size	Cat. No.	Eac
1g	**FP2300810**	88.0
4g	**FP2300820**	208.8
33g	**FP2300830**	959.9

Sample Type	Sample Volume	Typical Yield
Cells	100 to 500 million	5µg/million
Animal Tissue	500µg to 1.5g	0.5 to 10µg/mg
Plant Tissue	5 to 1200mg	0.5 to 5µg/mg
Body Fluid	100 to 1.5mL	2 to 50µg/mL
Bacteria	0.5 to 500mL	10 to 50µg/mL

Contd. on next pag

*Trademark. See Trademark Reference.

Prices subject to change.

IME* ArchivePure* DNA Kits, Contd.

RIME* ArchivePure* Tissue Kits

NEW

ify DNA from fresh, frozen, fixed, or affin-embedded tissue

erage Yield: 5µg/mg

mple Size: 0.5 to 10µg/mg

LUDES:

ysis solution; protein precipita- solution; RNase A solution; inase K solution

FP2300860

ple Size	Cat. No.	Each
ng	FP2300850	35.19
	FP2300860	251.43
	FP2300870	1227.20

RIME* ArchivePure* Mouse Tail Kits

NEW

nples can be fresh, frozen, fixed, or affin-embedded

erage Yield: 5µg/mg

mple Size: 2 to 7.5µg/mg

LUDES:

ysis solution; protein precipitation solution; RNase A solution; inase K solution

ple Size	Cat. No.	Each
ng	FP2300900	34.79
	FP2300910	234.19
	FP2300920	1045.20

RIME* ArchivePure* Buccal Cell Kits

NEW

ninvasive method of sample collection s sterile nylon bristle brushes

IA may be purified immediately or stored on collection brushes at least one month at room temperature

ld Range: 0.2 to 2µg/swab

erage Yield: 1µg/swab

LUDES:

ysis solution; protein precipitation solution; DNA hydration solution; se A solution; glycogen solution; buccal collection brushes

f Preps	Cat. No.	Each
	FP2301000	35.19
	FP2301010	177.74
	FP2301020	354.64
	FP2301030	2386.80

RIME* ArchivePure* Plant

NEW

omic DNA isolation from plant tissues

erage Yield: 0.5µg/mg plant tissue

LUDES:

ysis solution; protein precipitation solution; DNA hydration solution; se A solution

ple Size	Cat. No.	Each
ng	FP2301100	35.19

5 PRIME* ArchivePure* Yeast and Gram-positive Bacteria Kits

NEW

Nontoxic, nonorganic method of purifying DNA from difficult samples

- Typical preparation time: 90 minutes

INCLUDES:

Cell lysis solution; protein precipitation solution; RNase A solution; DNA hydration solution; cell suspension solution; lytic enzyme solution; cell suspension solution

No. of Preps	Cat. No.	Each
10	FP2301200	35.19
400	FP2301210	238.66

Sample	Sample Size	Typical Yield
Yeast	1 to 1000mL	4.5µg/mL
Bacteria	0.5 to 500mL	17µg/mL

ACCESSORIES

NEW

5 PRIME* ArchivePure* Replacement Reagents

For use with ArchivePure DNA purification kits

Description	Quantity	Cat. No.	Each
RBC Lysis Solution	450mL	FP2301300	70.89
	1000mL	FP2301310	118.26
Cell Lysis Solution	125mL	FP2301320	66.59
	1000mL	FP2301330	344.95
Protein Precipitation Solution	50mL	FP2301340	66.59
	350mL	FP2301350	300.91
DNA Hydration Solution	100mL	FP2301360	60.15
	500mL	FP2301370	219.49
Proteinase K Solution, 20mg/mL	650µL	FP2301380	63.36
	5mL	FP2301390	331.31
RNase A Solution, 4mg/mL	650µL	FP2301400	63.36
	5mL	FP2301410	331.31
Lytic Enzyme Solution, 4000µ/mL	650µL	FP2301420	63.36
	5mL	FP2301430	331.31
Glycogen Solution, 20mg/mL	500µL	FP2301440	54.78

5 PRIME* Stop RNase Inhibitor

NEW

Nonhuman-origin protein inhibits greater than 90% of RNase activity in reactions where human placental RNase inhibitors (HPRI) inhibit only 50%

- Inhibits the same types of ribonuclease as HPRI, including RNases A, B, and C, without interfering with RNases T1, T2, H, U1, U2, or CL3
- Remains stable under a broad range of pH, DTT concentrations, and temperatures; best activity occurs in the absence of DTT
- Supplied at a concentration of 30 units/µL, with 30 units being required to process 30µL of sample
- Sterile, DNase- and RNase-free

STORAGE CONDITIONS:

Store at –20°C in constant temperature freezer.

Quantity	Cat. No.	Each
7500U	FP2500100	116.28
15,000U	FP2500110	207.34

Promega* Maxwell* 16 Purification Instrument

Efficient, automated genomic DNA purification from a wide range of sample types

Purifies samples using MagneSil* Paramagnetic Particles, allowing optimal capture, washing, and elution of the target material. The magnetic-particle-handling instrument vigorously mixes samples with enough force to grind tissue in reagent cartridge, preventing clogged tips and partial reagent transfers that can cause suboptimal results.

- Superior mixing reduces total time spent from sample collection to purified nucleic acid and improves consistency of yield and purity
- Supplied preprogrammed with sample-specific automated methods
- Processes up to 16 samples in about 30 minutes, depending on sample type
- Suitable for up to 400µL blood samples, 50mg tissue or cells
- Integrated tissue grinding eliminates preprocessing of mouse tails or tissue samples

REQUIRED ACCESSORIES:
Maxwell 16 Purification Kits

STORAGE CONDITIONS:
Store at 5° to 40°C.

PR-AS1000

Cat. No.	Eac
PR-AS1000	24,500.0

For Laboratory Use.

Promega* Maxwell* 16 DNA Purification Kits

Used with the Maxwell 16 Instrument (PR-AS1000 above) to provide an easy method for efficient, automated purification of genomic DNA

- Blood DNA Kit is designed to process up to 400µL of whole blood per reagent cartridge
- Tissue DNA Kit is recommended for processing of up to 50mg of tissue per cartridge
- Each Cell DNA Kit cartridge accommodates either bacterial and mammalian cells in up to 400µL liquid or as a cell pellet

PR-AS1010

INCLUDES:
48 Maxwell kit-specific cartridges, 50 purification plungers, 50 elution tubes, 20mL elution buffer

REQUIRED ACCESSORIES:
Maxwell 16 DNA Purification Instrument

STORAGE CONDITIONS:
Store kits at room temperature (22° to 25°C).

Description	No. of Preps	Cat. No.	Each
Blood DNA Kit	48	**PR-AS1010**	240.90
Cell DNA Kit	48	**PR-AS1020**	240.90
Tissue DNA Kit	48	**PR-AS1030**	250.94

Promega* Wizard* *Plus* SV Minipreps DNA Purification System

Produces DNA of consistent quality from all bacterial strains

- Provides high yields of plasmid DNA from bacterial cultures
- Uses alkaline protease to allow consistent DNA isolation from *EndA+* and *EndA-* bacterial strains
- Offers a choice of purification formats—spin or vacuum[1]

PR-A1330

INCLUDES:
Cell resuspension solution, cell lysis solution, neutralization solution, column wash solution, alkaline protease solution, nuclease-free water, miniprep spin columns, collection tubes

Discription	Sample Size	Typical Yield	No. of Preps	Cat. No.	Eac
SV Minipreps	1 to 10mL	Up to 20µg	50	**PR-A1330**	60.2
SV Minipreps	1 to 10mL	Up to 20µg	250	**PR-A1460**	261.7
SV Minipreps with vacuum adapters	1 to 10mL	Up to 20µg	50	**PR-A1340**	65.2
SV Minipreps with vacuum adapters	1 to 10mL	Up to 20µg	250	**PR-A1470**	267.7

[1] Vacuum protocol requires use of a vacuum manifold.

U.S. Patent 5,981,235, Australian Patent 729932 and other patents pending.

*Trademark. See Trademark Reference.

Prices subject to change.

omega* Wizard* SV 96 and SV 9600 asmid DNA Purification Systems

ify 96 minipreps in 60 minutes

PR-A225 Series

ification is accomplished in three ple steps. Plasmid DNA is eluted in er or Tris-EDTA, ready for direct use olecular biology applications, uding automated fluorescent uencing.

stems provide reproducible yields high-quality plasmid DNA

uality control ensures that purified NA meets or exceeds 600 bases th over 98% accuracy using BigDye* Terminator chemistry

ate design ensures equal elution volume and prevents spraying

esign is suitable for manual or automated format

LUDES:

vell deep-well plate (except PR-A2258); lysate-clearing plate; -binding plate; DNA elution plate (except PR-A2258); plate sealers ept PR-A2258); cell resuspension solution; cell lysis solution; ralization solution; wash solution; alkaline protease solution ept PR-A2258); nuclease-free water (except PR-A2258)

UIRED ACCESSORIES:

ems require a vacuum pump capable of generating 15 to 20 inches of r equivalent.

ription	No. of Preps	Cat. No.	Each
rd SV 96 Plasmid DNA fication System	1 × 96	**PR-A2250**	209.78
	5 × 96	**PR-A2255**	799.00
rd SV 9600 Plasmid DNA fication System	100 × 96	**PR-A2258**	7677.00

Patent 5,981,235, Australian Patent 729932 and other patents pending.

ACCESSORIES

Vac-Man* 96 Vacuum Manifold

Manifold allows Wizard* SV 96 DNA Purification System to be a true in-line filtration procedure

PR-A2291 (in use)

- Direct lysate clearing is coupled to DNA binding without the need to disassemble the manifold
- Waste solutions are drawn out of the manifold to an external trap (not included), eliminating the need to disassemble the manifold to discard waste
- An additional collar is required for some laboratory workstations

escription	Cat. No.	Each
ac-Man* 96 Vacuum Manifold	**PR-A2291**	299.37
ollar for Vac-Man 96 Vacuum Manifold	**PR-A2311**	77.39

Promega* PureYield* Plasmid Maxiprep System

Isolates transfection-quality plasmid DNA

PR-A2392 (vacuum manifold not included)

- Provides a rapid method for purification of up to 1mg of plasmid DNA from a 250mL bacterial culture
- High purity and concentration of plasmid DNA gives proven performance in transfection, in vitro expression and other molecular biology applications
- Vacuum protocol simplifies purification of multiple samples at one time
- Simple protocol eliminates tedious, gravity-drip columns and post-elution alcohol precipitation
- Membrane column allows purification of large amounts of plasmid DNA
- Designed for use with a vacuum source and vacuum manifold such as the Vac-Man* Laboratory Vacuum Manifold

No. of Preps	Cat. No.	Each
10	**PR-A2392**	169.63
25	**PR-A2393**	392.49

Promega* PureYield* Plasmid Midiprep System

Isolates high-quality plasmid DNA from bacterial cultures

- Designed to purify 100 to 200µg of plasmid DNA from 50mL bacterial culture
- May also be used with up to 250mL of bacterial culture using an alternative protocol
- Utilizes a silica-membrane column which allows for the purification of large amounts of plasmid DNA
- Incorporates an Endotoxin Removal Wash to remove substantial amounts of protein, RNA, and endotoxin contaminants
- Compatible with a variety of protocols—centrifugation, vacuum, or a combination of centrifugation and vacuum
- Provides rapid purification—no need for high-speed centrifugation, gravity-drip columns, or post-elution alcohol precipitation
- Produces purified DNA suitable for sensitive applications such as eukaryotic transfection, in vitro transcription, and coupled in vitro transcription/translation

INCLUDES:

Cell lysis solution, cell resuspension solution, column wash, endotoxin removal wash, neutralization solution, nuclease-free water, PureYield binding columns, PureYield clearing columns

STORAGE CONDITIONS:

Store at room temperature (22° to 25°C).

No. of Preps	Cat. No.	Each
25	**PR-A2492**	185.40
100	**PR-A2495**	675.30

U.S. Patent 6,194,562, Australian Patent 740145, Canadian Patent 2,329,067 and other patents pending.

Promega* Wizard* Genomic DNA Purification Kits

Totally scalable, column- and resin-free system

- Isolate genomic DNA from whole blood, cultured cells, yeast, mouse tissue or numerous other cell sources
- Utilize unique nuclei lysis and protein precipitation solutions to produce high-purity DNA with average $OD_{260/280}$ of 1.6 to 2.0 in approximately 60 minutes†
- Eliminate the need for organic extractions and high-speed centrifugations

PR-A1120

INCLUDES:

Cell lysis solution, nuclei lysis solution, protein precipitation solution, DN
rehydration solution, RNase solution‡

No. of Preps	Sample Size	Yield	Cat. No.	E
100	300µL	5–15µg/300µL	**PR-A1120**	131.
500 (5 × 100)	300µL	5–15µg/300µL	**PR-A1125**	318.
100	10mL	5–15µg/300µL	**PR-A1620**	805.

† To fully rehydrate DNA, allow an additional hour at 65°C (149°F) or overnight at room temper

‡ PR-A1620 does not include RNase Solution.

Promega* Wizard* SV Genomic DNA Purification System

One system for tissue, cultured cells, or mouse tails

PR-A2360

- Permits fast, simple preparation of genomic DNA without centrifugation of the lysate prior to purification
- Processes up to 20mg of tissue, 1.2cm mouse tail, or 5 × 10^6 cultured cells in a single prep
- Can be used in either a microcentrifuge (spin) or vacuum protocol
- Processes up to 24 samples at once in the microcentrifuge format; up to 20 samples in the vacuum format with the Vac-Man* Laboratory Vacuum Manifold (PR-A7231) and the Miniprep Vacuum Adapters (PR-A1331, see below)
- Isolates genomic DNA from cultured cells in about 20 minutes and from tissue or mouse tails using an overnight (16–18 hour) digest with Proteinase K, followed by a 20-minute isolation
- Produces high-quality purified DNA that is suitable for agarose gel analysis, restriction enzyme digestion, and PCR

INCLUDES:

Collection tubes, 0.5M EDTA (pH 8.0), nuclease-free water, nuclei lysis solution, RNase A solution, Wizard SV lysis buffer, Wizard SV minicolumns, Wizard SV wash solution

No. of Preps	Cat. No.	Each
50	**PR-A2360**	96.49
250	**PR-A2361**	382.75

Australian Patent 730718 and other patents and patents pending.

ACCESSORIES

Vac-Man* Vacuum Manifold

For use with any Wizard* DNA Purification System or SV Total RNA Isolation system

PR-A7231

- 20 sample capacity
- Supplied with 20 individual One-Way Luer-Lok* stopcocks for individual port control

Description	Cat. No.	Each
Vac-Man Vacuum Manifold	**PR-A7231**	114.43
Vacuum Adapters, 20 each	**PR-A1331**	11.08

Promega* Wizard* SV 96 Genomic DNA Purification System

For 96-well processing using manual or automated protocols

PR-A237 Se

- Provides fast, simple purification of intact DNA from tissue and cultured cells
- Processes up to 20mg of tissue, 1.2cm mouse tail, or 5 × 10^6 cultured cells per well
- Purifies genomic DNA from tissue or mouse tails in 45 to 60 minutes following an overnight digest with Proteinase K, and from cultured cell in about 30 minutes
- Eliminates the need for a centrifugation step
- Produces high yields of high-quality genomic DNA that can be used in demanding downstream analysis, including PCR

INCLUDES:

96-well deep-well plate; binding plate; 0.5M EDTA (pH 8.0); nuclease-fre water; nuclei lysis solution; RNase A solution; Wizard SV wash solution; Wizard SV lysis buffer

REQUIRED ACCESSORIES:

Manual, benchtop purification requires the Vac-Man* 96 Vacuum Manifold (PR-A2291) or a similar 96-well manifold; use with an automat liquid-handling workstation may require vacuum manifolds specific to the workstation.

No. of Preps	Cat. No.	E
1 × 96	**PR-A2370**	175.
4 × 96	**PR-A2371**	650.

Australian Patent 730718 and other patents and patents pending.

Promega* Wizard* DNA Clean-Up System

Purifies linear and circular DNA from 200 to 50,000 bp

- Removes contaminants
- Uses a quick and easy batch column procedure
- Produces purified DNA in 15 minutes or less
- Does not require phenol extractions or ethanol precipitations

PR-A7280

INCLUDES:

Wizard DNA Clean-Up Resin, 100mL; Wizard minicolumns, 100; 3cc syringe barrels, 100

STORAGE CONDITIONS:

Store at room temperature (22° to 25°

No. of Preps	Cat. No.	Ea
100	**PR-A7280**	122.

U.S. Patents 5,658,548 and 5,808,041; Australian Patents 689815 and other patents and patents pending.

*Trademark. See Trademark Reference.

Prices subject to change.

)mega* Wizard* Magnetic DNA rification System for Food

purification of DNA from a variety of food samples, uding corn seeds, cornmeal, soybeans, soy flour, and milk

es MagneSil* Paramagnetic Particles (PMPs), which permit the binding cleic acids to occur in solution, resulting in increased binding kinetics inding efficiency. The particles can also be completely resuspended g the wash steps of a purification protocol, enhancing contact with emoval of contaminants and increasing nucleic acid purity.

npatible with processed foods, such as corn chips, chocolate, lecithin, l vegetable oils, when used with suggested protocol variations

quires only one-third the time of other methods

quires minimal centrifugation and eliminates organic extractions

duces purified DNA that can be used in PCR-based testing for netically Modified Organism (GMO) DNA sequences

INCLUDES:

MagneSil Paramagnetic Particles; lysis buffer A, food; lysis buffer B, food; precipitation solution, food; RNase A solution

REQUIRED ACCESSORIES:

MagneSphere Technology Magnetic Separation Stand (PR-Z5332 or PR-Z5342)

STORAGE CONDITIONS:

Store at room temperature (22° to 25°C).

No. of Preps	Cat. No.	Each
200	**PR-FF3750**	703.00
400	**PR-FF3751**	1265.00

U.S. Patents 6,027,945 and 6,368,800, Australian Patent 732756 and other patents and patents pending.

Patents for the foundational PCR process, European Patents 201,184 and 200,362, expired on March 28, 2006. In the U.S., the patents covering the foundational PCR process expired on March 29, 2005.

NUCLEIC ACID PURIFICATION—RNA

RIME PerfectPure* RNA Blood rification Kits

luce pure, concentrated RNA from up to 10mL whole od

NEW

ification complete in under 90 utes

C lysis in 15 minutes

venient on-column DNA atment (DNase included)

ntains sufficient reagents for up 0 purifications

5 PRIME
5 PRIME

FP2302100

LICATIONS:

R and real-time RT-PCR, quantita- T-PCR, microarray analysis/gene expression, Northern ng, ribonuclease protectionassays, cDNA synthesis, in vitro cription

UDES:

kits include: RBC lysis, lysis, wash 1, wash 2, elution, DNase buffer, Nase wash solutions; TCEP reducing agent; purification columns; microfuge tubes; DNase 1

02120 also includes: PRECLEAR* columns, additional RBC lysis CEP

Preps	Sample Size	Cat. No.	Each
	0.05-3mL	**FP2302100**	134.58
	0.05-3mL	**FP2302110**	335.93
	3-10mL	**FP2302120**	446.15

5 PRIME* PerfectPure* RNA 96 CellVac Kit

Column-based technology eliminates the most common problems of RNA purification, such as overloading and clogging

NEW

- Produces high quality RNA from cultured cells
- Suitable for use with 10,000 to 5 × 10^6 cells
- Utilizes a vacuum-based method
- Processes 96 samples in less than 45 minutes
- Generates RNA suitable for RT- PCR, microarray analyses, Northerns, dot blots, in vitro translations, ribonuclease protection assays and other downstream analyses

INCLUDES:

Lysis solution, wash 1 solution, wash 2 solution, DNase buffer solution, lyophilized DNase I, elution solution, purification plates, waste plates, collection plates, and pierceable adhesive seals

No. of Preps	Cat. No.	Each
8 × 96	**FP2302540**	1850.00

5 PRIME* PefectPure* RNA Cell and Tissue Kits

Isolate RNA from 0.5 to 40mg tissue or from 1 × 10⁴ to 5 × 10⁷ cells

- Allows purification of a wide range of sample sizes, in as little as 20 minutes
- Produces high purity, ready-to-use RNA, ideal for sensitive downstream applications
- Kits come complete with all components, including DNase
- Unique chemistry uses nonchaotropic reagents
- High sample success rate with no DNA, RNase, protein, or chaotropic salt contamination

APPLICATIONS:

Real-Time PCR, RT-PCR, Microarray

INCLUDES:

FP2302330, FP2302340, and FP2302350 kits:

Lysis solution, purification columns, wash 1 solution, wash 2 solution, elution solution, transfer tubes, 1300 units of lyophilized DNase I, DNase buffer solution, DNase wash solution

FP23023

FP2302400, FP2302410, and FP2302420 kits also include:

Preclear* columns, TCEP

FP2302430 and FP2302440 kits also include:

Proteinase K solution, Preclear columns, TCEP

Description	No. of preps	Cat. No.	Ea
PerfectPure RNA Cell Kit	10	**FP2302330**	103.3
	50	**FP2302340**	255.7
	250	**FP2302350**	1196.0
PerfectPure RNA Tissue Kit	10	**FP2302400**	113.1
	50	**FP2302410**	278.1
	250	**FP2302420**	1237.6
PerfectPure RNA Fibrous Tissue Kit	10	**FP2302430**	118.4
	50	**FP2302440**	314.5

5 PRIME* PerfectPure* RNA 96-Well Cell Kits

Produce up to 100μg of purified RNA in about 90 minutes

- Accommodates cell densities up to 5 million cells per well, using either adherent or suspension cell lines
- Convenient, easy-to-use kits come with premixed reagents
- Bind cellular RNA to a high-capacity glass fiber matrix in a 96-well plate
- Samples can be processed at room temperature, without a fume hood
- No time-consuming incubation steps
- Contain no harsh organic solvents, reducing agents, or reactive cyanide salts—no hazardous waste disposal needed
- Resulting RNA is essentially free of genomic DNA, protein, and other enzymatic inhibitors; suitable for experiments or long-term storage
- Purified RNA can be frozen, thawed, and refrozen without degrading

APPLICATIONS:

RT-PCR and real-time RT-PCR, Quantitative RT-PCR, microarray; Northern, dot, and slot blotting; ribonuclease protection assays, cDNA synthesis, in vitro transcription, poly-A RNA selection

FP2302500 Seri

INCLUDES:

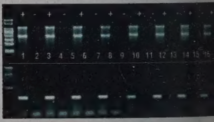
Lysis, wash 1, wash 2, and elution solutions; DNase buffer; purification, waste, and elution plates; lyophilized DNase 1; sterile reagent reservoirs; sterile adhesive seals

Description	No. of Preps	Cat. No.	Ea
Standard	192	**FP2302500**	546.0
	768	**FP2302520**	1965.0
Short Stack	192	**FP2302510**	546.0
	768	**FP2302530**	1965.0

Promega* Maxwell* 16 Total RNA Purification Kit

Use with the Maxwell 16 instrument to provide high yields of DNA-free total RNA using a novel approach that selectively removes all detectable genomic DNA prior to automated walkaway RNA purification.

- No detectable contaminating genomic DNA means fewer repeated experiments or unexplained variable results
- Efficient processing, superior sample capacity
- For most sample types, eluted RNA concentration is directly ready for QRT-PCR; no post-purification concentration required



STORAGE CONDITIONS:

Store at room temperature (22°C to 25°C).

Cat. No.	Ea
P1S105	290.

Promega* PureYield* RNA Midiprep System

Isolates intact total RNA with no detectable genomic DNA carryover using a novel, non-DNase technique designed for sensitive analysis methods

- Yields up to 1mg of total RNA with undetectable levels of genomic DNA contamination
- Uses a protocol compatible with a variety of sample types, including tissues, cultured cells, bacteria, yeasts, plants, and white blood cells; can be modified for other sample types
- Designed for use with centrifugation or vacuum
- Enables rapid purification of total RNA without DNase treatment, organic solvents, protease digestions, or alcohol precipitations
- Produces RNA suitable for use in sensitive downstream applications

INCLUDES:

PureYield binding columns; PureYield clearing columns; RNA dilution buffer; RNA lysis buffer; RNA wash solution; clearing agent; β-mercaptoethanol; nuclease-free water

PR-Z3740

STORAGE CONDITIONS:

Store RNA lysis buffer with added β-mercaptoethanol at 4°C; store othe components at room temprature (22°-25°C)

No. of Preps	Cat. No.	Ea
10	**PR-Z3740**	100.5
50	**PR-Z3741**	450.5

U.S. Patent 6,194,562, Australian Patent 740145, Canadian Patent 2,329,067 and other patents pending.

*Trademark. See Trademark Reference.

Prices subject to change.

omega* SV Total RNA Isolation System

mbrane-based system purifies intact total RNA from ues, cultured cells, and white blood cells in as little one hour

- orporates a DNase I treatment to substantially reduce genomic DNA ntamination without detectable DNase carryover in the final eparation
- ocesses up to 60mg of tissue per purification, depending on tissue type
- ay be used with micro-centrifugation (spin) or vacuum protocol; requires niprep Vacuum Adapters (PR-A1331) for the vacuum protocol
- mpatible with the Vac-Man* (PR-A7231) and Vac-Man Jr. (PR-A7660) cuum Manifolds
- oduces purified RNA that is suitable for routine molecular biology plications, including RT-PCR and Northern blotting

INCLUDES:

Spin column assemblies and elution tubes, DNase I (lyophilized), SV RNA lysis buffer, SV RNA dilution buffer, β-mercaptoethanol, $MnCl_2$ (0.09M), Yellow core buffer, SV DNase stop solution, SV RNA wash solution, nuclease-free water

PR-Z3100

No. of Preps	Cat. No.	Each
10	**PR-Z3101**	60.20
50	**PR-Z3100**	191.40
250	**PR-Z3105**	876.00

Patents for the foundational PCR process, European Patents 201,184 and 200,362, expired on March 28, 2006. In the U.S., the patents covering the foundational PCR process expired on March 29, 2005.

Australian Patent 730718 and other patents and patents pending.

omega* SV 96 Total RNA Isolation System

the preparation of intact, purified total RNA from tissue culture cells

- ostantially reduces genomic DNA contamination through a DNase atment step
- ifies 96 samples at once, in less than one hour with the walk-away omated protocol
- npatible with automated liquid-handling workstations
- ninates the need for phenol/chloroform extraction or ethanol cipitation

UDES:

ng plate; DNA elution plate; DNase I (lyophilized); β-mercaptoethanol; Nase stop solution; $MnCl_2$ (0.09M); nuclease-free water; SV RNA wash on; SV RNA lysis buffer; Yellow core buffer; plate sealers

REQUIRED ACCESSORIES:

Requires the use of the Vac-Man* 96 Vacuum Manifold (PR-A2291) or similar 96-well manifold for manual purification.

PR-Z3500

No. of Preps	Cat. No.	Each
1 × 96	**PR-Z3500**	248.93
5 × 96	**PR-Z3505**	1098.00

Patents for the foundational PCR process, European Patents 201,184 and 200,362, expired on March 28, 2006. In the U.S., the patents covering the foundational PCR process expired on March 29, 2005.

NUCLEIC ACID LABELING

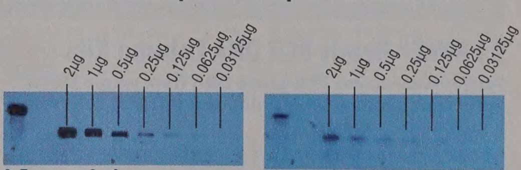
rmo Scientific* Pierce* SuperSignal* RPA III Chemiluminescent Detection Kit

sitive method for the detection and quantitation of specific mRNA transcripts in a complex mixture of total or mRNA molecules

- ose in minutes instead of overnight
- lengthy probe purification necessary
- bles detection of rare message transcripts
- ne of the disposal or safety hassles associated with radioactivity
- gle-tube reaction with no phenol extraction or proteinase K digestion
- uires minimal hands-on time. Nonisotopic probes are stable for years ead of weeks

UDES:

dization III Buffer (1mL); RNase Digestion III Buffer (15mL); Yeast RNA L from torula yeast, sheared to ~300 bases); RNase Inactivation/ itation III Solution (22.5mL); Gel Loading Buffer II (1.4mL); Elution Buffer (8mL); PTRI-Actin-Mouse Linearized DNA Template in TE 0.5mg/mL); Mouse Liver RNA (100µL in 0.1mM EDTA 0.5mg/mL); e A/RNase T1 Mix (300µL); RNase T1 (cloned, 5,000 units/mL 300uL) mmonium Acetate (1mL); Reagents: Thermo Scientific Pierce Signal RPA III Stabilized Streptavidin-Horseradish Peroxidase Conjugate); SuperSignal RPA III Luminol/Enhancer Solution (80mL); SuperSignal I Stable Peroxide Solution (80mL); SuperSignal RPA III Blocking Buffer L); SuperSignal RPA III 4X Wash Buffer (500mL); SuperSignal RPA III rate Equilibration Buffer (500mL)



A. Exposure: 6 min **B. Exposure: 16 h (no screens)**

Figure A. Thermo Scientific Pierce SuperSignal RPA III Kit vs. Figure B. a radioactive RPA using the positive β-actin control: sensitivity and efficiency. RPAs using the positive control system contained within the kit. Lanes 1 and 2: hybridized using 80pg/10,000cpm of β-actin probe and 2µg of yeast torula RNA. Lanes 3-9 : hybridized using 80pg/10,000cpm of β-actin probe and the indicated amount of target (mouse liver total RNA). Lanes 2-9 : were digested using a 1:100 dilution of RNase A/T1. Hybridization was performed at 42°C.

Description	Quantity	Cat. No.	Each
SuperSignal RPA III Chemiluminescent Detection Kit	1 kit	**PI-89832**	420.53

Reference: Zinn, K., et al. (1983). Cell34, 865-879.

Mirus Bio *Label* IT* Nucleic Acid Labeling Kits

Efficient, direct, nonenzymatic labeling of DNA and RNA

- Kits label any DNA or RNA template—suitable for a wide range of applications
- One-step chemical method provides easy and consistent control of the labeling reactions
- Adjustable labeling density permits DNA and RNA to be optimally labeled for high sensitivity results
- Covalent mechanism provides permanent, nondestructive modification of nucleic acid residues—labels do not impact hybridization performance

Labeling Kits Containing Reagents

INCLUDES:
Sufficient reagents for labeling either 25 (Trial Size Kits) or 100µg (Full Size Kits) of nucleic acid

Description	Qty. Labeled	Cat. No.	Each
CX-Rhodamine Labeling Kit	25µg	**MIR 3125**	166.40
	100µg	**MIR 3100**	421.20
TM-Rhodamine Labeling Kit	25µg	**MIR 4125**	166.40
	100µg	**MIR 4100**	421.20
Fluorescein Labeling Kit	25µg	**MIR 3225**	166.40
	100µg	**MIR 3200**	421.20
Digoxin Labeling Kit	25µg	**MIR 3325**	166.40
	100µg	**MIR 3300**	421.20
Biotin Labeling Kit	25µg	**MIR 3425**	166.40
	100µg	**MIR 3400**	421.20
Cy*3 Labeling Kit†	25µg	**MIR 3625**	198.64
	100µg	**MIR 3600**	498.16
Cy5 Labeling Kit†	25µg	**MIR 3725**	198.64
	100µg	**MIR 3700**	498.16
DNP Labeling Kit	25µg	**MIR 3825**	166.40
	100µg	**MIR 3800**	421.20

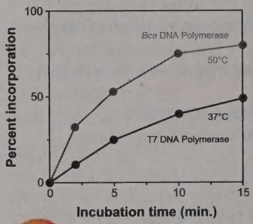
† This product or portions thereof is manufactured under license from Carnegie Mellon University and is protected by U.S. Patent Number 5,268,486 and other patents pending.

Takara* Ladderman* DNA Labeling Kit

Thermostable polymerase and longer primers increase DNA labeling efficiency up to 80%

- Polymerase isolated from *Bacillus caldotenax* YT-G allows polymerization through templates with high GC content (highly structured regions)
- Random priming is accomplished in no more than 10 minutes
- Designed for use with $[\alpha\text{-}^{32}\text{P}]$, $[\alpha\text{-}^{35}\text{S}]$, or $[^{3}\text{H}]$ dCTP labels, but can also be used with biotin, digoxigenin or DNP-labeled dUTPs by replacement of the dNTP mixture
- A probe with specific activity of $>10^{9}$ dpm/µg DNA can generally be obtained with $[\alpha\text{-}^{32}\text{P-}]$ dCTP (approximately 3000 Ci/mmol; 111 TBq/mmol)

Description	Quantity	Cat. No.	Each
Ladderman DNA Labeling Kit	40 rxns	**TAK 6046**	151.53



Random priming on a template with high GC content. Probes were prepared with various extension times using the Ladderman Labeling Kit (TAK 6046) or with T7 DNA Polymerase. The percent incorporation of radioactive label was measured for each time point.

LOOKING FOR PROMEGA* HALOTAG* LABELING TECHNOLOGY?
For Promega HaloTag Labeling Technology and more labeling products, see the Cell Biology Section.

NUCLEIC ACID ARCHIVING

5 PRIME* Ready PCR DNA Column Kits NEW

Purify ready-to-use PCR-grade DNA from whole blood, buffy coat, plasma, body fluids, and cultured cells with a filter-based column

- Simple, two solution system
- Quick and easy protocol
- Provides PCR-ready genomic DNA for quick screening
- Yields up to 60µg per sample

FP2301500

No. of Preps	Cat. No.	Each
10	**FP2301500**	35.19
50	**FP2301510**	89.36
300	**FP2301520**	480.79
1200	**FP2301530**	1718.08

5 PRIME* Ready PCR DNA Plate Kits NEW

96-well filter-plate purification of DNA from whole blood, buffy coat, plasma, body fluids, cultured cells

- Simple, two solution system
- Quick and easy protocol
- Provides PCR-ready genomic DNA for quick screening
- Yields up to 60µg per sample

Description	Quantity	Cat. No.	Each
Ready PCR DNA Plate Kit	3 Plates	**FP2301700**	595.92
Ready PCR DNA Plate Kit	12 Plates	**FP2301710**	2146.56
Ready PCR DNA Plate Covers	36 Covers	**FP2301730**	59.94

RIME* Ready PCR DNA Disk Kits

prepunched 3mm circle sample collection cards to ifiy ready-to-use PCR-grade DNA from blood, buffy t, plasma, body fluids, and cultured cells

- mple, two solution system
- ick and easy protocol
- ovides PCR-ready genomic IA for quick screening
- elds up to 60µg per sample

FP2301600

f Preps	Cat. No.	Each
	FP2301600	35.19
	FP2301610	92.63
	FP2301620	302.03

RIME* Ready PCR DNA Sample llection Card Kit

sample collection cards to purify ready-to-use PCR de DNA from blood, buffy coat, plasma, body ds, and cultured cells

UDES:

omes complete with cards and hole punch

ription	Quantity	Cat. No.	Each
y PCR DNA Card Kit	10 Preps	FP2301870	35.19
y PCR DNA Sample Collection Cards	10 Cards	FP2301860	13.20

ACCESSORIES

eady PCR DNA Solutions

scription	Quantity	Cat. No.	Each
ady PCR DNA Elution Solution 2	22mL	FP2301830	38.49
ady PCR DNA Elution Solution 2	125mL	FP2301840	158.27
ady PCR DNA Elution Solution 2	500mL	FP2301850	436.74
ady DNA Purify Solution 1	33mL	FP2301800	53.40
ady DNA Purify Solution 1	125mL	FP2301810	153.99
ady DNA Purify Solution 1	1L	FP2301820	835.12

Whatman* FTA* Cards

Collect, store, and transport DNA at room temperature

Patented FTA technology simplifies the isolation, storage, and processing of nucleic acids from biological sources including whole blood, buccal cells, and plant material. Sample is applied to the FTA card and allowed to dry; the cells are lysed on contact. The released DNA is captured, stabilized, and protected from nucleases, oxidation, and UV damage as well as microbial and fungal attack.

Clockwise from top left: 09-923-340, 09-923-341, 09-923-345, 09-923-346, 09-923-346, 09-923-344

- ▸ FTA cards inactivate organisms, including bloodborne pathogens, since all cells and viruses are lysed and proteins are denatured upon contact
- ▸ DNA can be recovered quickly—go from sample to PCR in less than 30 minutes
- ▸ DNA from blood stored at room temperature on FTA cards exhibits no loss in PCR efficiency after 14 years and counting
- ▸ Indicating FTA cards change color from pink to white upon sample addition to easily identify sample location, making them ideal for colorless samples
- ▸ FTA Gene Card is housed in a chipboard frame for compatibility with most automatic dispensing/pipetting systems when used with the FTA Gene Card Tray (09-923-349)
- ▸ CloneSaver* Cards capture BAC and plasmid DNA from bacterial culture, resuspended colony, or glycerol stock in a 96-well format and are stable at room temperature for at least four years
- ▸ PlantSaver* Cards capture a variety of plant DNA including transgenic species, and feature a laminated flap that allows the plant sample to be pressed into the FTA matrix without damaging the card

Indicating	Sample Areas/ Card	Overall W × L	Max. Volume/ Sample Area	Mfr. No.	Cat. No.	Pack of
FTA Classic						
Yes	4	3 × 5" (7.6 × 13cm)	125µL	WB12-0306 WB12-0206	**05-715-103** **09-923-341**	25/98.70 100/390.31
No	4	3 × 5" (7.6 × 13cm)	125µL	WB12-0305 WB12-0205	**05-715-102** **09-923-340**	25/75.55 100/300.00
FTA Mini						
Yes	2	2¾ × 2" (7.0 × 5.1cm)	125µL	WB12-0356 WB12-0056	**05-715-101** **09-923-343**	25/81.31 100/320.88
No	2	2¾ × 2" (7.0 × 5.1cm)	125µL	WB12-0355 WB12-0055	**05-715-100** **09-923-342**	25/63.81 100/254.87
FTA Micro						
Yes	1	2⅞ × 1½" (7.3 × 3.8cm)	125µL	WB12-0311 WB12-0211	**05-715-106** **09-923-345**	25/65.70 100/260.97
No	1	2⅞ × 1½" (7.3 × 3.8cm)	125µL	WB12-0310 WB12-0210	**05-715-105** **09-923-344**	25/52.52 100/209.43
FTA Gene						
No	3	2¾ × 2" (7.0 × 5.1cm)	75µL	WB12-0308 WB12-0208	**05-715-104** **09-923-346**	25/75.55 100/298.94
CloneSaver						
Yes	96	5 × 3¾" (13 × 9.5cm)	5µL	WB12-0028	**09-923-347**	5/96.91
PlantSaver						
No	4	3 × 5" (7.6 × 13cm)	N/A	WB12-0365 WB12-0065	**05-715-107** **05-714-450**	25/75.55 100/300.50

Accessories on next page.

ACCESSORIES

FTA* Purification Reagent

Nontoxic, hypoallergenic solution for rapid purification of DNA stored on FTA Cards

- Reagent prepares DNA from a wide variety of specimens including whole blood, epithelial cells, cell cultures, solid tissues, yeast, and bacteria
- Simple washing procedure ensures complete removal of contaminants

FTA Reagent
Whatman

09-923-348

Description	Quantity	Mfr. No.	Cat. No.	Each
FTA Purification Reagent	500mL	WB12-0204	**09-923-348**	185.82

FTA* Card Applicators

For the collection of buccal cells

- Nonabrasive foam head is the same size as the sample area on indicating Classic, Mini, and Micro FTA Cards for easy sample application
- Sterile
- Individually packaged

09-923-375

Mfr. No.	Cat. No.	Pack of 100
WB10-0032	**09-923-375**	56.33

Harris Micro Punch

Sharp cutting edge provides quick and easy sampling from FTA* and CloneSaver* Cards with precise punching and ejection, uniform sampling, and no carryover between punches

- Polished-steel tips are precision tooled, heat treated, rust resistant, and case hardened
- Self-healing inert cutting mat ensures clean sample cuts and extends the life of the punch
- 2.0mm size is recommended for CloneSaver Cards
- Replacement tips and cutting mats are available separately

09-923-35 Series

Description	Mfr. No.	Cat. No.	Each
1.2mm Punch with Mat	WB10-0005	**09-923-352**	245.48
2.0mm Punch with Mat	WB10-0007	**09-923-354**	245.48
3.0mm Punch with Mat	WB10-0038	**05-715-108**	248.35
1.2mm Replacement Tip	WB10-0006	**09-923-353**	61.45
2.0mm Replacement Tip	WB10-0008	**09-923-355**	61.45
Replacement Mat	WB10-0020	**09-923-356**	43.72
Replacement Plunger, 1.2mm	WB10-0025	**05-713-921**	31.59
Replacement Plunger, 2.0mm	WB10-0026	**05-713-922**	31.59

FTA* Card Storage and Shipping Supplies

Multi-Barrier Pouches

- Seven-layer pouch protects cards from environmental contamination
- Tamper-evident seal maintains sample security
- Resealable pouch is available for CloneSaver* Cards

FTA Card Mailer

- Rigid protective cardboard mailer is used to transport FTA Cards in accordance with U.S. Postal Service requirements

09-923-359

Desiccant Packet

- 1g packet ensures that FTA Cards remain dry during transport or storage
- Color changes from blue to pink to indicate absorption of moisture

Combo Pack

- Combination of 1000 FTA Cards, Multi-Barrier Pouches, and Desiccant Packets in one convenient package

Description	Mfr. No.	Cat. No.	Pack of
Multi-Barrier Pouch for FTA Classic Cards	WB10-0037	**05-715-112**	100/75.43
	WB10-0010	**09-923-357**	500/339.69
Multi-Barrier Pouch for FTA Gene Cards, Mini Cards or Micro Cards	WB10-0036	**05-715-111**	100/45.43
Multi-Barrier Pouch for CloneSaver Cards	WB10-0024	**09-923-359**	50/90.64
FTA Card Mailer	WB10-0016	**09-923-361**	50/73.86
Dessicant Packet	WB10-0003	**09-923-360**	1000/185.82

OmniSwab*

For the collection of buccal cells

- Brush-like swab head easily ejects from the stem of the swab for easy transfer of samples into tubes and multiwell plates
- Individually packaged for single use

09-923-376

Mfr. No.	Cat. No.	Pack of 100
WB10-0035	**09-923-376**	121.20

Whatman* FTA* Kit

Provides a simple method for storing and processing nucleic acid samples

Contains everything needed for sample processing.

INCLUDES:
25 FTA Micro Cards; FTA Purification Reagent, 2 × 25mL; 1.2mm Harris Uni-Core Punch; 2.0mm Harris Uni-Core Punch; cutting mat

Mfr. No.	Cat. No.	Each
WB12-0067	**05-714-451**	131.32

05-714-451

*Trademark. See Trademark Reference.

Prices subject to change.

REAGENTS

mega* RNasin* Plus RNase Inhibitor

ers RNase protection during higher temperature eactions

mbinant mammalian RNase inhibitor expressed as a soluble protein in *i.* This protein can be purified by a combination of ion exchange and phobic interaction chromatography, yielding a >90% pure protein with *coli* RNase carryover.

bits eukaryotic RNases, including RNase A and RNase B, similar to nan placental RNase inhibitor

npatible with enzymes such as AMV, M-MLV, and ImProm-II* erse Transcriptases, as well as *Taq* and *Tfl* DNA Polymerases

ers increased resistance to oxidation over the human version he protein

y be heated in a mixture with RNase without reactivation of the ase, even at temperatures as high as 70°C for 15 minutes

vides demonstrated compatibility with several RT-PCR systems, uding Access, AccessQuick*, and *Taq*Man*-based RT-PCR Systems

AGE CONDITIONS:
at -20°C.

ntration	Quantity	Cat. No.	Each
L	2500U	**PR-N2611**	108.40
L	10,000U	**PR-N2615**	270.75

Pending.

mega* Proteinase K

ul for general digestion of protein in ogical samples

aves peptide bonds adjacent to the carboxylic group of aliphatic and natic amino acids

fied to remove RNase and DNase activities

ve over a pH range 4.3 to 12.0 in 0.5% SDS or 1% Triton* X-100

ains >80% of its activity at temperatures up to 60°C

AGE CONDITIONS:
desiccated at -20°C.

t	Quantity	Cat. No.	Each
ilized powder	100mg	**PR-V3021**	92.20

MP Biomedicals DNase-, RNase-Free Water

Completely free of detectable DNase (exo and endo) and RNase

- Water is deionized; treated with 0.001% diethyl-pyrocarbonate (DEPC); then filtered through a 0.2μm filter and autoclaved
- Ideal for use with RNase-Erase* and DNA-Erase* decontaminants

WATER
DNase & RNase-FREE
WATER
DNase & RNase-FREE

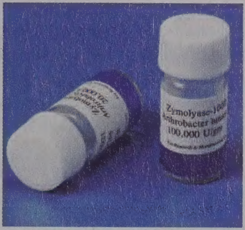
ICN821739

Quantity	Cat. No.	Each
500mL	**ICN821739**	36.41

MP Biomedicals Zymolyase*

For lysing the cell walls of viable yeast cells and preparing yeast spheroblasts

- Highly purified preparation from *Arthrobacter luteus*
- Efficiently hydrolyzes poly (β-1,3 glucose)-like yeast cell-wall glucan
- One unit is defined as the amount of activity causing a decrease in A_{800} of 30%
- Available with lytic activity of 20,000U/g (Zymolyase 20T) or 100,000U/g (Zymolyase 100T)



ICN320921, ICN320932

Description	Quantity	Cat. No.	Each
Zymolyase 20T	1g	**ICN320921**	305.81
Zymolyase 100T	250mg	**ICN320932**	609.82
	500mg	**ICN320931**	996.61

ODOR CONTROL

The Pill* Autoclave Deodorizer

Neutralizes odors from autoclaving

- One capsule treats seven cubic feet of autoclave capacity
- Gelatin capsule keeps deodorizer off fingers, ensures economical dose rate

Cat. No.	Pack of	Case of
04-355-23	100/65.68	20 Pk./997.42
04-355-24	500/221.28	6 Pk./1108.36

04-355-23

OSMOMETRY

OSMOMETERS

Osmette A Model 5002 12-827-5

Osmette XL Model 5007 12-827-33

Multi-Osmette Model 2430 12-827-30

Micro-Osmette Model 5004 12-827

Osmette* Osmometers

Automatic digital osmometers measure osmolality in mOsm/kg H_2O

Use the freezing point depress ion method to provide a quick, accurate indication of total concentration. Instruments measure freezing points of solutions to 0.001°C, then directly translate them to measure of concentration.

Easy to Use

- Add sample tube to well, lower operating head to insert wire and thermistor temperature probe into the sample
- Freezing point is detected by the probe, with accuracy of ±0.001°C
- Digital display shows results directly in mOsm/kg H_2O
- Entire cycle takes between 1½ minutes per sample

Speedy and convenient

- Fast cooldown, completely zero-stable meter
- Reach operating temperature in <15 min. vs. 40 to 60 min. for other cryoscopic devices
- Eliminate Dewar flasks, ice baths, calculations
- Generate precise results in just 50 to 70 sec.; process 40 to 60 samples per hour
- Minimal training; simple two-step calibration takes less than five minutes
- All models hold calibration, eliminating daily calibration

Osmette A, Model 5002

- Automatic Operation
- Small 2 oz. (59mL) bath allows faster results with better control

Osmette XL, Model 5007

- Microprocessor-controlled calibration
- Includes built-in printer, keypad, statistical software and RS-232-C port
- Small 2 oz. (59mL) bath allows faster results with better control

Micro-Osmette, Model 5004

- Automatic Operation
- Features electronic cooling instead of a bath

Multi-Osmette, Models 2430 and 2430E

- 24-position sample turntable for true walk-away operation
- Feature electronic cooling instead of a bath
- Model 2430E features extended range
- Self-calibrating

APPLICATIONS:

Food and beverage industries, chemical manufacturing, pharmaceutical labs, research and quality control; clinical applications include diagnosis renal activity, disease electrolyte imbalance, hyper- and hyponatremia, measuring osmolality of body fluids.

Model Name	Osmette A	Osmette XL	Micro-Osmette	Multi-Osmette	Multi-Osmette
Model No.	**5002**	**5007**	**5004**	**2430**	**2430E**
Operation	Automatic	Automatic	Automatic	Automatic	Automatic
Sample Size	2.0 or 0.2mL	2.0 or 0.2mL	50μL	30μL	30μL
Range (mOsm/kg H_2O)	0 to 3000	0 to 3000	0 to 3000	0 to 2000	0 to 3000
Precision[1]	For 2.0mL sample:<1000mOsm/kg: ±1mOsm/kgH_2O; >1000mOsm/kgH_2O:±0.2%. For 0.2mLsample: <500mOsm/kg: ±2mOsm/kgH_2O; >500mOsm/kgH_2O:±0.5%.		<1000mOsm/kgH_2O: ±2mOsm/kgH_2O. >1000mOsm/kgH_2O: ±0.5%CV at 300mOsm/kgH_2O: <1%.		
Digital Readout	Automatic	Automatic	Automatic	Automatic	Automatic
Cooling Agent	Thermoelectric cooler[2]	Thermoelectric cooler[2]	Thermoelectric cooling block	Thermoelectric cooling block	Thermoelectric cooling block
Cooldown Time	10 to 15 min.	10 to 15 min.	~3 min.	~3 min.	~3 min.
Measurement Time	<1 min.	<1 min.	<1 min.	<1 min.	<1 min.
Calibration Time	<5 min.	<5 min.	<5 min.	<5 min.	<5 min.
Dimensions	8L × 15W × 10"H (20 × 38 × 25cm)	8L × 15W × 10"H (20 × 38 × 25cm)	15L × 5W × 10"H (38 × 13 × 25cm)	20L × 18W × 12"H (51 × 46 × 30cm)	20L × 18W × 12"H (51 × 46 × 30cm)
Electrical Reqts.	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
Cat. No.	**12-827-5**	**12-827-33**	**12-827-7**	**12-827-30**	**12-827-32**
Each	6875.00	8700.00	7145.00	12,750.00	14,000.00

[1] *Reproducibility, 1 S.D. (one standard deviation).*

[2] *With liquid bath.*

Also available: Cryette Cryoscopes. Model 5006 (Cat. No. 12-672) determines added water in milk; Models 5008 and 5009 (Cat. Nos. 12-672-1 and 12-672-2) determine molecular weig solutions such as petroleum fractions and core samples. For information, contact your Fisher Scientific Customer Service Representative.*

*Trademark. See Trademark Reference.

mette II* and Osmette III* Osmometers

simplicity and dependability of Osmette* nometers in a small, lightweight size

Osmette III 12-827-35

l for freezing-point measurement smolality. One-step measurement.

nette II offers:

ito operation from 0 to 00mOsm/kg H_2O, ±<2mOsm/kg O (±1 S.D.)

itocalibration in <5 min.; ierent stability minimizes daily libration checks

ermoelectric heat sink for oldown time of ~2 to 3 min.

ecise results displayed digitally just 60 to 90 sec.

e self-filling disposable plastic mple tubes

-232-C output

nette III features all of above plus:

sy-to-use keypad

ilt-in printer and itistical software

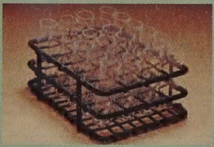
APPLICATIONS:
Pediatric, neonatal, geriatric, and other applications where sample volume is limited.

ORDERING INFORMATION:
Weigh only 9 lb. (4.1kg). Measure 14L × 8½W × 5"H (35.6 × 21.6 × 12.7cm). Electrical requirements: 115V 50/60Hz, 0.5A.

el	Mfr. No.	Cat. No.	Each
ette II	5005	**12-827-31**	7600.00
ette III	5010	**12-827-35**	7975.00

ACCESSORIES

ccessories and eplacements for Osmette* smometers



12-827-11 (tubes not included)

escription	For Use With	Mfr. No.	Cat. No.	Pack of
sposable Sample Tubes				
)µL	12-827-7	2023	**12-827-8**	500/79.00
2mL	12-827-3, -5, -33	2022	**12-827-4**	12/125.00
0mL	All models except 12-827-7, -31, -35	2021	**12-827-2**	12/40.25
)µL	12-827-30, -32	2020	**05-566-6**	1000/217.25
st Tube Racks				
-Tube ick	0.2 and 2.0mL tubes (12-827-2, -4)	2041	**12-827-11**	1/45.00
	50µL tubes (12-827-8)	2044	**13-641-185**	1/41.00
placement Stirring Wires				
	50µL tubes (12-827-8)	2033	**PS-Y2033**	4/60.00
	2.0mL tubes (12-827-2)	2031	**12-827-34**	4/40.00
th Fluid				
0mL	12-827-5, -3, -33	2100	**12-827-22**	1/19.00
placement Temperature Probes				
gh- plation obe	12-827-5, -3, -33	2012	**12-827-6**	1/345.00
	12-827-7, -31, -35	2014	**13-641-186**	1/325.00
	12-827-30, -32 with Serial No. <Q1226B	2016	**12-827-36**	1/455.00
	12-827-30, -32 with Serial No. ≥Q1226B	2017	**13-641-187**	1/430.00

Precision Con-Trol* Osmometer Reference Standards for Osmette*, Osmette II* and Osmette III* Osmometers

Carefully measured concentrations aid in quality assurance programs

CON-TROL
CON-TROL

13-287-25 Series

- Verify bottled calibration standards, preventing use of diluted or contaminated standards
- Verify instrument calibration, pinpoint deviations in instruments exhibiting nonlinear response

All standards are:

- Aqueous solutions of NaCl, gravimetrically prepared to provide labeled values, ±2mOsm
- Stabilized with trace amounts of inert ingredients

Con-Trol 290

- 290mOsm standard provides a check of test accuracy
- Concentration value is near the center of normal human serum range (278 to 305mOsm)

Con-Trol 100 and Con-Trol 500

- 100mOsm and 500mOsm standards
- Values bracket normal human serum range required in instrument calibration

ORDERING INFORMATION:
Each standard comes in 5mL glass ampule, packaged 12 per box. Con-Trol 290 contains ten 5mL ampules of Con-Trol 290 plus one each of Con-Trol 100 and Con-Trol 500. Shelf life of sealed ampules is three years at room temperature.

COMPLIANCE:
Verified by comparison to reference standards prepared from NIST* material.

Standard	Mfr. No.	Cat. No.	Pack of 12
Con-Trol 100	2201	**12-827-25A**	37.00
Con-Trol 290	2202	**12-827-25B**	35.50
Con-Trol 500	2205	**12-827-25C**	37.00

Precision Standard mOsm Solutions for Osmette*, Osmette II* and Osmette III* Osmometers

For use with all osmometers

- Choice of seven standard values
- Each comes in 125mL bottle

Milliosmols	Mfr. No.	Cat. No.	Each
100	2101	**12-827-12**	13.10
300	2103	**12-827-13**	15.00
500	2105	**12-827-14**	14.25
900	2109	**12-827-16**	14.00
1000	2110	**23-268-952**	15.00
1100	2111	**12-827-18**	14.00
1500	2115	**12-827-20**	15.00

OVENS

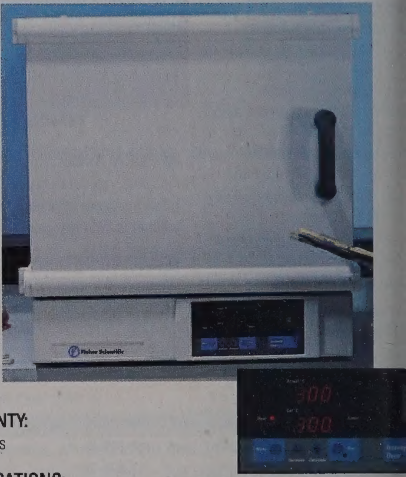
GENERAL PURPOSE

Fisher Scientific* Isotemp* Programmable Ovens

Offer exceptional performance, safe operation and precision control

Can be used for programmed tasks or simple, routine heating tasks. Digital control delivers superior temperature control and faster drying times.

- Temperature range: 50° to 325°C (122° to 617°F)
- Forced-air correction for uniform heating
- Digital display with intuitive menu options
- Program up to 12 ramp and 12 soak periods
- Automatic restart
- Indicator lights for operating parameters
- Backup temperature control
- Overtemperature alarm
- Durable enamel-painted steel panels with stainless-steel interior
- Long-lasting, low-density heating elements
- Exterior and door handle remain cool
- Exhaust port on top
- Adjustable shelf heights
- Door opens 180°
- Fiberglass gasket with stainless-steel mesh core prevents heat loss
- Nonslip black synthetic rubber feet



13-247-825F pa

ORDERING INFORMATION:

Three sizes available; options available for connecting to a computer. Contact your Fisher Scientific Customer Service Representative for details.

WARRANTY:
12 months

CERTIFICATIONS:
CSA approved

Model	Small	Medium	Large
Capacity (Chamber Volume)	2.5 cu. ft. (70.8L)	3.75 cu. ft. (106.2L)	5.0 cu. ft. (141.6L)
Temperature Range	50° to 325°C	50° to 325°C	50° to 325°C
Uniformity at 200°C[1]	±2°C	±2°C	±2°C
BTU per Hour (200°C)	2650	3380	3950
Control Sensitivity	±0.25°C	±0.25°C	±0.25°C
Recovery[2]	1.5 minutes	1.5 minutes	2.5 minutes
Air Changes per Hour	61	41	31
Chamber D × W × H	18 × 18 × 13½" (46 × 46 × 34cm)	18 × 18 × 20" (46 × 46 × 51cm)	18 × 18 × 26½" (46 × 46 × 67cm)
Exterior L × W × H[3]	23½ × 25¾ × 26" (60 × 65 × 66cm)	23½ × 25¾ × 33" (60 × 65 × 84cm)	23½ × 25¾ × 39¼" (60 × 65 × 100cm)
Shipping Weight	115 lb. (52kg)	130 lb. (59kg)	145 lb. (66kg)
Electrical Requirements	120V 60Hz, 15A, 1800w[4]	240V 50/60Hz, 14A, 3300w	240V 50/60Hz, 14A, 3300w
Cat. No.	**13-247-825F**	**13-247-838F**	**13-247-851F**
Each	3432.04	3862.53	4292.78

[1] *Average value performed per ASTM* E 145.*
[2] *Door open one minute at 200°C.*
[3] *Length includes thickness of door; does not include handle.*
[4] *Units require a 20-amp outlet (NEMA 5-20R).*

sher Scientific* Isotemp* Premium Lab Ovens

l-feature ovens available as gravity-flow or forced-air models in a variety of sizes

erating Features

tuitive microprocessor controls with touch keypad, LED digital display d on-screen prompts

riable temperature control from 50° to 275°C in 1°C increments

tomatic overtemperature protection at 5°C above setpoint with sual alarm

st settings retained in memory

ilt-in safety backup and circuit breaker to protect oven from power rges

inet Features

sy-to-clean stainless-steel chambers

amel-painted steel exterior with coated aluminum trim

w-watt-density, longlife heating elements

ick 2½" (6.4cm) all-around fiberglass insulation keeps exterior cool

sketed door has stay-cool latch; opens 180° for easy access

justable chrome-plated steel wire shelves (16¾ × 17⅜" [44 × 42.5cm])

nskid rubber feet elevate cabinet for ventilation

ee Sizes

all: 2.5 cu. ft. chamber volume; supplied with one shelf (hold up to 5)

edium: 3.75 cu. ft.; with one shelf (hold up to 8)

rge: 5.0 cu. ft.; with two shelves (hold up to 11)

ced-Air Ovens

liver more uniform heating for better temperature control and ster drying

ower circulates air throughout chamber; fresh air is mixed in d recirculated

ed air vented through top of oven

vity-Flow Ovens

rtical airflow for uniform sample heating

ed air expelled through top-mounted vent

13-247-725F

ORDERING INFORMATION:
Shelf 13-247S is available online on our Web site.

WARRANTY:
12 months

CERTIFICATIONS:
CSA approved

	Forced-Air Ovens			Gravity-Flow Ovens		
el	**Small**	**Medium**	**Large**	**Small**	**Medium**	**Large**
city mber Volume)	2.5 cu. ft. (70.8L)	3.75 cu. ft. (102.6L)	5.0 cu. ft. (141.6L)	2.5 cu. ft. (70.8L)	3.75 cu. ft. (102.6L)	5.0 cu. ft. (141.6L)
erature Range	50° to 275°C	50° to 275°C	50° to 275°C	50° to 275°C	50° to 275°C	50° to 275°C
rmity at 200°C[1]	±3°C	±3°C	±3°C	±4°C	±4°C	±4°C
per Hour (200°C)	2750	2925	3095	1325	2025	2140
erature Control	±0.5°C	±0.5°C	±0.5°C	±0.5°C	±0.5°C	±0.5°C
very[2]	1 minute	2 minutes	2.5 minutes	2 minutes	3 minutes	4 minutes
hanges per Hour	43	29	22	24	16	12
ior L × W × H[3]	23½ × 25¾ × 26" (60 × 65 × 66cm)	23½ × 25¾ × 33" (60 × 65 × 84cm)	23½ × 25¾ × 39¼" (60 × 65 × 100cm)	23½ × 25¾ × 26" (60 × 65 × 66cm)	23½ × 25¾ × 33" (60 × 65 × 84cm)	23½ × 25¾ × 39¼" (60 × 65 × 100cm)
nber D × W × H	18 × 18 × 13½" (46 × 46 × 34cm)	18 × 18 × 20" (46 × 46 × 51cm)	18 × 18 × 26½" (46 × 46 × 67cm)	18 × 18 × 13½" (46 × 46 × 34cm)	18 × 18 × 20" (46 × 46 × 51cm)	18 × 18 × 26½" (46 × 46 × 67cm)
ping Weight	120 lb. (54kg)	127 lb. (58kg)	135 lb. (61kg)	115 lb. (52kg)	130 lb. (59kg)	145 lb. (66kg)
rical irements	120V 60Hz, 11A, 1300w	120V 60Hz, 15A, 1800w[4]	120V 60Hz, 15A, 1800w[4]	120V 60Hz, 11A, 1300w	120V 60Hz, 15A, 1800w[4]	120V 60Hz, 15A, 1800w[4]
No.	**13-247-725F**	**13-247-737F**	**13-247-750F**	**13-247-725G**	**13-247-737G**	**13-247-750G**
	2369.31	2669.75	3220.72	1924.99	2352.01	2767.25

age valve performed per ASTM E 145.*

open one minute at 200°C.

th includes thickness of door; does not include handle.

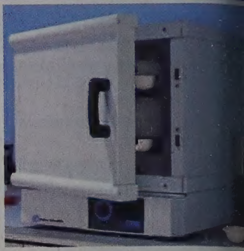
s require a 20-amp outlet (NEMA 5–20R).

Fisher Scientific* Isotemp* Standard Lab Ovens

Gravity-flow convection ovens with electronic control, ideal for general laboratory drying

- Temperature range: 50° to 225°C (122° to 437°F)
- Three sizes available
- Quick, easy temperature setting
- Backup temperature control
- Fast temperature recovery time
- Indicator lights show which thermostat is controlling oven temperature
- Durable powder-coated steel exterior
- Corrosion-resistant, easy to clean, stainless-steel interior
- Exterior remains at safe temperature
- Adjustable shelf heights
- Oven temperature can be monitored in port on top

13-247-625G Panel


13-247-62

- Door opens 180° and features grabber-type latch
- Nonslip black synthetic rubber feet

CERTIFICATIONS:
All models are CSA approved.

WARRANTY:
12 months

Model	Small	Medium	Large
Capacity (Chamber Volume)	2.5 cu. ft. (70.8L)	3.75 cu. ft. (106.2L)	5.0 cu. ft. (141.6L)
Temperature Range	50° to 225°C	50° to 225°C	50° to 225°C
Uniformity at 200°C[1]	±5°C	±5°C	±5°C
BTU per Hour (200°C)	1325	2025	2140
Control Sensitivity	±0.5°C	±0.5°C	±0.5°C
Recovery[2]	2 minutes	4 minutes	4 minutes
Air Exchanges per Hour	24	16	12
Exterior L × W × H[3]	23½ × 25¾ × 26" (60 × 65 × 66cm)	23½ × 25¾ × 33" (60 × 65 × 84cm)	23½ × 25¾ × 39¼" (60 × 65 × 100cm)
Chamber D × W × H	18 × 18 × 13½" (46 × 46 × 34cm)	18 × 18 × 20" (46 × 46 × 51cm)	18 × 18 × 26½" (46 × 46 × 67cm)
Shipping Weight	115 lb. (52kg)	125 lb. (57kg)	140 lb. (64kg)
Electrical Requirements	120V 60Hz, 11A, 1300w	120V 60Hz, 11A, 1300w	120V 60Hz, 11A, 1300w
Cat. No.	**13-247-625G**	**13-247-637G**	**13-247-650G**
Each	1428.95	1740.43	1942.40

[1] *Average value performed per ASTM* E 145.*

[2] *Door open one minute at 200°C.*

[3] *Length includes thickness of door; does not include han*

Fisher Scientific* Isotemp* Model 500 Economy Lab Ovens

Ideal for small drying and sterilizing jobs

Sturdy, reach-in gravity convection ovens are well suited to bacteriological, clinical, educational, and industrial labs on a tight budget. Light enough to move as needed.

13-246-506GAQ

- Gravity convection
- Temperature range: Ambient +5° to 210°C
- 0.7 and 1.7 cu. ft. capacities
- Features front-mounted electronic temperature control, red heating cycle indicator, ON/OFF switch, and green power indicator
- Continuous temperature uniformity
- Built-in backup controller for safety
- Double-wall construction of heavy-gauge steel with 1" (2.5cm) layer of impregnated fiberglass
- Aluminum chamber
- Door opens 180°; cool-touch handle and positive dual spring-loaded latches

ORDERING INFORMATION:
Smaller oven has one-shelf capacity; larger model has three-shelf capacity.

INCLUDES:
Thermometer holder, line cord with grounded plug; 0.7 cu. ft. unit comes with one removable chromium-plated metal shelf, 1.7 cu. ft. unit comes with three shelves.

REQUIRED ACCESSORIES:
Thermometer (13-246; order separately)

WARRANTY:
12 months

Model	506GA	516GA
Capacity (Chamber Volume)	0.7 cu. ft. (19.8L)	1.7 cu. ft. (48.1L)
Temperature		
Range	Ambient +5° to 210°C	Ambient +5° to 210°C
Accuracy	±3°C	±3°C
Control		
Type	Electronic	Electronic
Uniformity	±0.5°C	±0.5°C
Exterior L × W × H[1]	13½ × 12½ × 18" (34 × 32 × 46cm)	13½ × 18½ × 22½" (34 × 47 × 57cm)
Chamber D × W × H	11½ × 10 × 11⅜" (29 × 25 × 29cm)	11½ × 16 × 16¼" (29 × 41 × 41cm)
Shipping Weight	35 lb. (16kg)	57 lb. (26kg)
Electrical Requirements	120V 50/60Hz, 4.2A, 500w	120V 50/60Hz, 6.7A, 800
Cat. No.	**13-246-506GAQ**	**13-246-516GAQ**
Each	861.70	1071.26
Electrical Requirements[2]	230V 50/60Hz, 1.75A	230V 50/60Hz, 3.25A
Cat. No.	**13-246-507GAQ**	**13-246-517GAQ**
Each	885.22	1081.50

[1] *Includes door overhang of 1" (2.5cm).*

[2] *International Model.*

Note: Does not include European-style plug.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

hermometer

or Fisher Scientific* Model 500 Isotemp* ovens

Graduated from 35° to 220°C in 1° increments

ontains	Cat. No.	Each
ercury	13-246	27.30

WARNING

The thermometer indicated contains mercury. Don't put products containing mercury in the trash. Products containing mercury are to be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

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ermo Scientific* Precision* Economy Lab Ovens

v-priced ovens, suitable for most standard heating and drying plications, offer large capacities in a small footprint

lable with gravity or mechanical convection in three sizes.

erating Features

draulic or electronic temperature control from 50° to 210°C[1]

ace-savers—occupy just over 3.5 sq. ft. (0.33m^2), yet provide up to 11.5 . ft. (1.0m^2) of usable heating/drying area

, 2.5, and 4.5 cu. ft. capacities

ass I safety thermostat with overtemperature cut-out and indicator ht prevents thermal runaway

inet Features

ainless-steel interior and rugged steel cabinet offer easy cleaning and rability; resist corrosion

sulation (2" thick [5.1cm]) provides efficient heat retention and precise mperature uniformities

p vent for optimal venting

echanical convection ovens utilize balanced centrifugal blower for iform air distribution throughout chamber

13-264F

INCLUDES:

Two corrosion-resistant, nontip, nickel-plated shelves for convenient loading and unloading, vent cap, 0° to 250°C thermometer, line cord, and plug[2]

CERTIFICATIONS:

UL listed, cUL approved (120V models)

	Gravity Convection			Mechanical Convection	
el	14EG	25EG	45EG	25EM	45EM
city (Chamber Volume)	1.4 cu. ft. (39.6L)	2.5 cu. ft. (70.8L)	4.5 cu. ft. (127.4L)	2.5 cu. ft. (70.8L)	4.5 cu. ft. (127.4L)
berature					
trol	Hydraulic	Electronic	Electronic	Electronic	Electronic
ge	65° to 210°C	65° to 210°C	65° to 210°C	50° to 210°C	50° to 210°C
sitivity	±0.5°C	±0.3°C	±0.3°C	±0.3°C	±0.3°C
rior (L × W × H)	19½ × 18½ × 26" (49 × 47 × 66cm)	21½ × 24 × 28" (55 × 61 × 72cm)	21½ × 24 × 40" (55 × 61 × 102cm)	21½ × 24 × 28" (55 × 61 × 72cm)	21½ × 24 × 40" (55 × 61 × 102cm)
nber (D × W × H)	14 × 12½ × 13¾" (36 × 32 × 35cm)	15½ × 18½ × 15" (39 × 47 × 38cm)	15½ × 18½ × 27" (39 × 47 × 69cm)	15½ × 18½ × 15" (39 × 47 × 38cm)	15½ × 18½ × 27" (39 × 47 × 69cm)
ping Weight	79 lb. (36kg)	117 lb. (53kg)	145 lb. (66kg)	127 lb. (58kg)	155 lb. (70kg)
rical Requirements	115V 50/60Hz, 7.1A, 800w	115V 50/60Hz, 10.4A, 1200w	115V 50/60Hz, 15.6A, 1800w[2]	115V 50/60Hz, 11.3A, 1300w	115V 50/60Hz, 15.6A, 1800w[2]
No.	51221127	51221129	51221131	51221133	51221135
No.	**13-264F**	**13-254-25**	**13-254-22**	**13-254-21**	**13-254-27**
	1161.05	1233.68	1572.46	1697.96	1948.99
rical Requirements	230V 50/60Hz, 3.5A, 800w	230V 50/60Hz, 5.6A, 1300w	230V 50/60Hz, 7.8A, 1800w	230V 50/60Hz, 5.6A, 1300w	230V 50/60Hz, 7.8A, 1800w
No.	51221128	51221130	51221132	51221134	51221136
No.	**13-264G**	**13-254-24**	**13-254-23**	**13-254-26**	**13-254-28**
	1264.22	1233.68	1698.99	1783.67	2029.59

els 13-264F and -G feature hydraulic temperature control.

els 13-254-22 and -27 come with NEMA 5-20P plug.

Thermo Scientific* Precision* Lab Oven

Economical oven for everyday use

Ideal for general heating/drying lab applications including dry sterilization; drying of plant tissue, glassware, textile, paper, and rubber; asphalt, stability and QC/batch testing; aging and curing studies; and epoxy and plastic curing.

- Chamber capacity: 2.5 cu. ft. (70.8L)
- Analog temperature control with heating indicator light maintains temperatures up to 200°C, with sensitivity of ±5°C
- Provides 11.5 sq. ft. (1.0m^2) of usable heating/drying capacity in only 3.5 sq. ft. (0.33m^2) of counter space
- Fiberglass insulation is 2" thick (5.1cm) for efficient heat retention and uniform temperatures
- Stainless-steel chamber resists corrosion and contamination; adjustable exhaust port controls airflow from chamber

ORDERING INFORMATION:
Dimensions, chamber: 15½D × 18½W × 15"H (39 × 47 × 38cm); exterior: 21½L × 24W × 28"H (55 × 61 × 71.5cm); for 115V 50/60Hz, 1200w, 10.4A

13-254-29

INCLUDES:
Non-tip stainless-steel shelf, vent cap, 0° to 250°C themometer, line cord and plug, and leveling feet

Mfr. No.	Cat. No.	Each
51221126	**13-254-29**	1000.02

Thermo Scientific* Precision* Heavy-Duty Deluxe Ovens

Freas* ovens meet ASTM* E 145 IIA standards for temperature uniformity

Typical applications include aging, life, and exposure studies, precise moisture determinations, UL wire testing, thermal setting, and sterilizing.

- 1.4, 4.0, and 10.2 cu. ft. capacities
- Maximum temperature of 325°C (617°F)
- Uniformity of ±1°C at 200°C
- Features a bright LED display for actual temperature and setpoint monitoring
- 12-hour timer
- Programmable three-term PID controller with safety cutoff and temperature deviation alerts
- RS-422 capability for computer control and datalogging
- All stainless-steel interior
- Stainless-steel exterior door with fiberglass gasket for secure, tight seal
- Cold-rolled, chemical-resistant steel cabinet with powder-coated finish

13-248B

INCLUDES:
Two nickel-plated nontip shelves

CERTIFICATIONS:
UL listed

NOTE:
Must be hardwired

Model	605	625	645
Capacity (Chamber Volume)	1.4 cu. ft. (39.6L)	4.0 cu. ft. (113.3L)	10.2 cu. ft. (288.8L)
Temperature Uniformity			
at 100°C	±0.5°C	±0.5°C	±0.5°C
at 200°C	±1.0°C	±0.9°C	±1.0°C
at 300°C	±2.5°C	±2.2°C	±2.1°C
Recovery Time[1]	2.5 min.	4.0 min.	3.0 min.
Time to Max. Temperature	60 min.	50 min.	45 min.
Max. Air Changes per Hour	128	195	155
Exterior L × W × H	24 × 39 × 25" (61 × 99 × 64cm)	28 × 45 × 29" (71 × 114 × 74cm)	31 × 65 × 36" (79 × 165 × 91cm)
Chamber D × W × H	14 × 13 × 13" (36 × 33 × 33cm)	19 × 19 × 19" (48 × 48 × 48cm)	19 × 37 × 25" (48 × 94 × 64cm)
Shipping Weight	270 lb. (122kg)	310 lb. (141kg)	500 lb. (227kg)
Electrical Requirements	120V 60Hz	230V 50/60Hz	230V 50/60Hz
Mfr. No.	51221137	51221139	51221140
Cat. No.	**13-248A**	**13-248B**	**13-248C**
Each	5610.66	7170.42	9055.11

[1] *At 200°C with door open for 30 seconds.*

ermo Scientific* Precision* All-Purpose Laboratory Ovens

npact gravity or mechanical convection ovens with a choice of
roprocessor or electronic temperature control

de as much as 14.75 sq. ft. (1.4m^2) of usable heating/drying area.

rating Features

mperature control to 250°C (482°F), sensitivity: ±0.3°C or better

ilt-in timer (12 hours, electronic models; 99 hours, microprocessor-ntrol models)

ass II user-adjustable safety thermostat with flashing indicator light ectronic control models) or with audio/visual alarm (microprocessor-ntrol models)

inet Features

quire only 3.5 sq. ft. of bench space

rrosion- and contamination-resistant stainless-steel chamber

eel exterior with gasketed door

vent for optimal venting

th two adjustable, nontip nickel-plated shelves

hanical Ovens

id chamber floor that resists spills and protects heating elements

anced centrifugal blower for uniform air distribution

Microprocessor-controlled Models

- Digital setpoints and LED display
- RS-232-C knockout for data port

ORDERING INFORMATION:
Models available for 115 or 230V operation

13-254-2

INCLUDES:
Two shelves, three-line cord and plug, two nontip shelves; electronic-control ovens also include 0° to 250°C thermometer

COMPLIANCE:
ASTM* E 145

vity Convection Ovens

	Electronic Temperature Control			Microprocessor Temperature Control[1]		
l	**70**	**130**	**160**	**70D**	**130D**	**160D**
city (Chamber Volume)	2.5 cu. ft. (70.8L)	4.5 cu. ft. (127.4L)	5.5 cu. ft. (155.8L)	2.5 cu. ft. (70.8L)	4.5 cu. ft. (127.4L)	5.5 cu. ft. (155.8L)
erature Uniformity at 100°C	±3.5°C	±3.5°C	±4.0°C	±3.0°C	±3.0°C	±3.5°C
very Time[2]	5 min.	5 min.	7 min.	10 min.	10 min.	12 min.
to Max. Temperature	60 min.	60 min.	60 min.	60 min.	60 min.	60 min.
Air Changes per Hour	30	23	15	30	23	15
ior L × W × H	21½ × 24 × 28" (55 × 61 × 72cm)	21½ × 24 × 40" (55 × 61 × 102cm)	21½ × 24 × 46" (55 × 61 × 117cm)	21½ × 24 × 28" (55 × 61 × 72cm)	21½ × 24 × 40" (55 × 61 × 102cm)	21½ × 24 × 46" (55 × 61 × 117cm)
ber D × W × H	15½ × 18½ × 15" (39 × 47 × 38cm)	15½ × 18½ × 27" (39 × 47 × 69cm)	15½ × 18½ × 33" (39 × 47 × 84cm)	15½ × 18½ × 15" (39 × 47 × 38cm)	15½ × 18½ × 27" (39 × 47 × 69cm)	15½ × 18½ × 33" (39 × 47 × 84cm)
ing Weight	125 lb. (57kg)	155 lb. (70kg)	170 lb. (77kg)	125 lb. (57kg)	155 lb. (70kg)	170 lb. (77kg)
rical Requirements	115V 50/60Hz, 10.4A, 1200w	115V 50/60Hz, 14.8A, 1700w[3]	----	115V 50/60Hz, 10.4A, 1200w	115V 50/60Hz, 14.8A, 1700w[3]	----
lo.	51221142	51221144	----	51221147	51221149	----
lo.	**13-254-1**	**13-254-3**	----	**13-254-6**	**13-254-8**	----
	1420.41	1724.50	----	1781.63	2212.26	----
rical Requirements	230V 50/60Hz, 5.2A, 1300w	230V 50/60Hz, 7.4A, 1700w	230V 50/60Hz, 8.7A, 2000w	----	----	230V 50/60Hz, 8.7A, 2000w
lo.	51221143	51221145	51221146	----	----	51221151
lo.	**13-254-2**	**13-254-4**	**13-254-5**	----	----	**13-254-10**
	1901.03	2031.91	2404.08	----	----	2829.59

re RS-232C knockout for optional data interface.
open 30 seconds.
s with NEMA 5-20P plug.

Contd. on next page.

Thermo Scientific* Precision* All-Purpose Laboratory Ovens, Contd.

Mechanical Convection Ovens

	Electronic Temperature Control		Microprocessor Temperature Control[1]		
Model	**70M**	**130M**	**70DM**	**130DM**	**160DM**
Capacity (Chamber Volume)	2.5 cu. ft. (70.8L)	4.5 cu. ft. (127.4L)	2.5 cu. ft. (70.8L)	4.5 cu. ft. (127.4L)	5.5 cu. ft. (127.4L)
Temperature Uniformity at 100°C	±2.5°C	±2.5°C	±1.75°C	±1.75°C	±2.0°C
Recovery Time[2]	5 min.	5 min.	10 min.	10 min.	12 min.
Time to Max. Temperature	70 min.	70 min.	70 min.	70 min.	70 min.
Max. Air Changes per Hour	52	34	52	34	19
Exterior L × W × H	21½ × 24 × 28" (55 × 61 × 72cm)	21½ × 24 × 40" (55 × 61 × 102cm)	21½ × 24 × 28" (55 × 61 × 72cm)	21½ × 24 × 40" (55 × 61 × 102cm)	21½ × 24 × 46" (55 × 61 × 117cm)
Chamber D × W × H	15½ × 18½ × 15" (39 × 47 × 38cm)	15½ × 18½ × 27" (39 × 47 × 69cm)	15½ × 18½ × 15" (39 × 47 × 38cm)	15½ × 18½ × 27" (39 × 47 × 69cm)	15½ × 18½ × 33" (39 × 47 × 84cm)
Shipping Weight	135 lb. (61kg)	165 lb. (75kg)	135 lb. (61kg)	165 lb. (75kg)	180 lb. (82kg)
Electrical Requirements	115V 50/60Hz, 11.3A, 1300w	115V 50/60Hz, 15.6A, 1800w[3]	115V 50/60Hz, 11.3A, 1300w	115V 50/60Hz, 15.6A, 1800w[3]	----
Mfr. No.	51221152	51221154	51221157	51221159	----
Cat. No.	**13-254-11**	**13-254-13**	**13-254-16**	**13-254-18**	----
Each	1825.47	2258.25	2198.99	2568.38	----
Electrical Requirements	----	----	----	230V 50/60Hz, 7.8A, 1800w	230V 50/60Hz, 9.1A, 2100w
Mfr. No.	----	----	----	51221160	51221161
Cat. No.	----	----	----	**13-254-19**	**13-254-20**
Each	----	----	----	2829.59	3256.12

[1] Feature RS-232-C knockout for optional data interface.

[2] At 200°C with door open for 30 seconds.

[3] Comes with NEMA 5-20P plug.

Thermo Scientific* Thermolyne* Oven/Incubator

Provides rapid heatup and excellent temperature uniformity; economical oven for drying and incubating

- Capacity: 1 cu. ft. (28.3L)
- Heats to 56°C (133°F) in 9 minutes; uniformity: ±1.25° at 37°C
- Bimetallic thermostat controls temperature, from ambient to 140°C ±1°C (284°F ±1.8°F)
- Heating element and aluminum chamber deliver heat evenly
- Chamber door has large window for easy viewing
- Aluminum-lined chamber walls clean easily
- Thermometer port accommodates any partial-immersion thermometer

ORDERING INFORMATION:
Chamber dimensions: 12D × 12¼W × 11½"H (30.5 × 31 × 29cm); overall dimensions: 13L × 13¼W × 15½"H (33 × 34 × 39cm); for 120V 50/60Hz

INCLUDES:
Line cord and plug, one removable metal shelf

13-261-40

Mfr. No.	Cat. No.	Eac
OV19225	**13-261-40**	1035.0

WARNING
Ovens are not suitable for use with hazardous vapors.

ermo Scientific* Lindberg/Blue M* Economy Gravity Convection Ovens

al for small work volumes which do not require the accelerated drying es and chamber uniformity of mechanically convected ovens

13-258-30A

for baking, drying, conditioning, curing, preheating, incubating, izing, quality control and general lab use. Compact size— 2 cu. ft.—is suitable for tabletop.

- mperature range: 40° to 220°C (104° to 428°F); uniform to within 5% setpoint
- onitoring and control features include ON/OFF switch with power licator light and LED of setpoint and chamber temperature with solution to 1°C
- tual uniformity may vary depending on load, sample placement and bient conditions
- ulated by 2" (5cm) fiberglass on all sides and door; peripheral silicon or gasket minimizes heat loss
- teriors are double-wall, heavy-gauge steel with white painted finish d adjustable door latch and hinges
- eriors are Type 304 corrosion-resistant polished stainless steel
- feguarded by factory-set overtemperature protection
- haust port (3" [7.6cm]) on top is also adjustable

ORDERING INFORMATION:
For 120V 50/60Hz, 550w.

INCLUDES:
Two adjustable, perforated stainless-steel shelves and power cord

Capacity (Chamber Volume)	Exterior L × W × H[1]	Mfr. No.	Cat. No.	Each
1 cu. ft. (28.3L)	17½ × 16 × 18½" (45 × 41 × 51cm)	G01300A	**13-258-30A**	1394.00
2 cu. ft. (56.6L)	17½ × 21 ×23½" (45 × 53 × 60cm)	G01305A	**13-258-30C**	1586.00

[1] Exterior dimensions include exhaust stack and door handle.

ermo Scientific* Lindberg/Blue M* Gravity Convection Ovens

multiple applications in analytical, hospital/clinical and industrial labs

13-258-14

rating Features

- mperature range: 40° to 260°C
- iformity ±3% at 100°C (actual performance based on load, chamber e, sample placement, ambient temperature and environmental conditions)
- egral digital control with digital LED display for chamber temperature solution to 1°C); ON/OFF switch with POWER ON light
- ertemperature protection

inet Features

- rrosion-resistant stainless-steel interior
- avy-gauge steel exterior with scratch-resistant finish (Triple-wall for neral Purpose models; double-wall for Deluxe models)
- ick 3" (76mm) fiberglass insulation on all sides with silicon door seal
- ng-life, low-watt density heating elements are enclosed and protected
- ake ports at bottom allow fresh air entry for gravity airflow
- pplied with two adjustable open wire shelves

eral-Purpose Models

- justable overtemperature protection
- e exhaust port

Deluxe Series Models

- ▸ Factory-set, independent overtemperature protection
- ▸ Two exhaust ports (except Models G01310A and G01320A, with one)

ORDERING INFORMATION:
Stainless-steel exterior models are available; to order contact your Fisher Scientific Customer Service Representative.

INCLUDES:
Oven, two adjustable open-wire nickel-plated shelves and 10' power cord

CERTIFICATIONS:
UL, cUL listed. General-purpose models are also CE marked.

el	Deluxe Series					General-Purpose Series
city (Chamber Volume)	1.0 cu. ft. (28.3L)	2.1 cu. ft. (59.5L)	3.0 cu. ft. (85L)	4.5 cu. ft. (127.4L)	7.0 cu. ft. (198.2L)	3.0 cu. ft. (85L)
rior L × W × H	18½ × 18 × 28½" (47 × 46 × 72cm)	22½ × 25 × 32" (57 × 64 × 81cm)	22½ × 25 × 37" (57 × 64 × 94cm)	22½ × 34 × 37" (57 × 86 × 94cm)	22½ × 34 × 46½" (57 × 86 × 118cm)	22 × 29 × 31" (56 × 74 × 79cm)
nber D × W × H	12 × 12 × 12" (31 × 31 × 31cm)	16 × 18½ × 12½" (41 × 47 × 32cm)	16 × 18½ × 17½" (41 × 47 × 45cm)	16 × 28 × 17½" (41 × 71 × 45cm)	16 × 28 × 27" (41 × 71 × 69cm)	15 × 19 × 18" (38 × 48 × 46cm)
f Shelf Positions	12	12	18	18	28	16
ping Weight	60 lb. (27kg)	100 lb. (45kg)	150 lb. (68kg)	170 lb. (77kg)	180 lb. (82kg)	145 lb. (66kg)
20V 50/60Hz	5.4A, 900w	10.8A, 1000w	15.8A, 1300w	17.5A, 1900w	17.5A, 2100w	14A, 1600w
No.	G01310A	G01320A	G01330A	G01340A	G01350A	G01390A
No.	**13-258-14**[1]	**13-258-14B**	**13-258-14D**[1]	**13-258-14H**	**13-258-14M**	**13-258-34**
	1902.00	2310.00	2718.00	3020.00	3197.00	1968.00
08/240V 50/60Hz	----	----	----	8.75A, 1900w	8.75A, 2100w	7A, 1600w
No.	----	----	----	GO 1340C	G01350C	G01390C
No.	**----**	**----**	**----**	**13-258-14J**	**13-258-14N**	**13-258-33**
	----	----	----	3020.00	3259.00	1968.00

able with stainless-steel exterior. Contact your Fisher Scientific Customer Service Representative for information on 13-258-14A (1.0 cu. ft. model) or 13-258-14F (3.0 cu. ft. model).

Thermo Scientific* Lindberg/Blue M* Mechanical Convection Ovens

Ideal for baking, drying, conditioning, sterilizing, and quality control

Available in Deluxe or General-Purpose models with painted- or stainless-steel cabinets.

10-549-212

Operating Features

- Digital, single-setpoint controller with a simultaneous LED display
- Microprocessor automatically optimizes control parameters during operation

Cabinet Features

- Stainless-steel interiors are easy to clean
- Exteriors are available in heavy-gauge steel with painted- or stainless-steel finish (double-walled for Deluxe Series, triple-walled for General Purpose)
- Aided by a fully insulated chamber, maximize energy efficiency and allow oven exterior to remain cool to the touch
- Heating elements located in chamber bottom are shielded by a layer of stainless steel
- Adjustable exhaust vent and air intake permit airflow to and from chamber
- Side-swing door with positive sealing latch allows for convenient one-handed access

Deluxe Models

- Temperature range: 40° to 300°C; uniformity ±1% at 100°C
- Horizontal airflow
- Independent, factory-set overtemperature protection

General Purpose Models

- Temperature range: 40° to 260°C; uniformity ±3% at 100°C
- Multidirectional airflow
- Adjustable overtemperature protection

INCLUDES:

10' (3m) power cord and two adjustable open-wire shelves. Stainless-stee exterior ovens have stainless-steel wire shelves; painted-steel exterior models have nickel-plated shelves.

CERTIFICATIONS:

UL, cUL listed. General-purpose models are CE marked.

WARNING
Ovens are not suitable for use with hazardous vapors.

Model	300°C Deluxe Series				260°C General-purpose Series
Capacity (Chamber Volume)	1.2 cu. ft. (34L)	1.8 cu. ft. (34L)	3.0 cu. ft. (85L)	4.9 cu. ft. (138.8L)	3.0 cu. ft. (85L)
Exterior L × W × H	22½ × 25 × 32" (57 × 64 × 81cm)	22½ × 25 × 37" (57 × 64 × 94cm)	22½ × 34 × 37" (57 × 86 × 94cm)	22½ × 34 × 46½" (57 × 86 × 118cm)	22 × 29 × 31" (56 × 74 × 79cm)
Chamber D × W × H	16 × 13 × 10" (41 × 33 × 25cm)	16 × 13 × 15" (41 × 33 × 38cm)	16 × 22 × 15" (41 × 56 × 38cm)	16 × 22 × 24" (41 × 56 × 61cm)	15 × 19 × 18" (38 × 48 × 46cm)
No. of Shelf Positions	5	7	7	12	16
Shipping Weight	130 lb. (59kg)	180 lb. (82kg)	200 lb. (91kg)	220 lb. (100kg)	140 lb. (64kg)
Painted-steel Exterior					
For 120V 50/60Hz	5.4A, 1000w	10.3A, 1300w	15.8A, 1900w	17.5A, 2100w	20A, 1600w
Mfr. No.	MO1420SA	MO1430A	MO1440A	MO1450A	MO1490A
Cat. No.	**13-258-15**	**13-258-15B**	**13-258-15D**	**13-258-15H**	**10-549-212**
Each	2645.00	2962.00	3153.00	3350.00	2600.00
For 208/240V 50/60Hz	----	----	7.9A, 1900w	8.75A, 2100w	----
Mfr. No.	----	----	MO1440C	MO1450C	----
Cat. No.	----	----	**13-258-15F**	**13-258-15K**	----
Each	----	----	3153.00	3350.00	----
Stainless-steel Exterior					
For 120V 50/60Hz	5.4A, 1000w	----	15.8A, 1900w	17.5A, 2100w	20A, 1600w
Mfr. No.	MO1420SA	----	MO1440SA	MO1450SA	MO1490SA
Cat. No.	**13-258-15A**	----	**13-258-15E**	**13-258-15J**	**10-549-213**
Each	3172.00	----	3883.00	4140.00	3272.00
For 208/240V 50/60Hz	----	----	7.9A, 1900w	----	7A, 1600w
Mfr. No.	----	----	MO1440SC	----	MO1490SC
Cat. No.	----	----	**13-258-15G**	----	**10-549-215**
Each	----	----	3883.00	----	3272.00

amato* Mechanical Convection Ovens

ogrammable, multisegment/multistep PID controller ovides accuracy and user-friendly programmability

- ow programming of up to 15 segment/30 step programs (16 segment/32 p on large-capacity oven), including automatic start/stop, ramp and soak des—all easily entered through keypad.
- emperature range: from 5° above ambient to 260°C on Model DKN-810 to 210°C on Model DKN-900)
- tore 10 preset temperatures and up to 10 set temperatures
- ettings can be locked
- ID controller compensates for temperature changes caused by fluctuat-ng loads and setting changes to ensure accuracy
- uilt-in diagnostics include automatic shutoff and audible/visual alarms
- attery backup (standard on Model DKN-900; optional on Model DKN-10) retains time and temperature stored in memory
- orrosion-resistant Type 304 stainless-steel interior
- old-rolled carbon steel exterior with baked melamine finish

ORDERING INFORMATION:

Both ovens can be retrofitted with the following customizable options: RS-422-A or RS-232-C computer interface adapter; 3" (7.6mm) exhaust port; adjustable overtemperature control; temperature output terminal; program resume function; 24-hr./7-day temperature recorder; and cable port. Contact your Fisher Scientific Customer Service Representative for more information.

INCLUDES:

Removable Type 304 stainless-steel shelves (Model DKN-810, 4 shelves; Model DKN-900, 8 shelves)

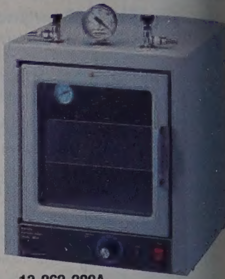
13-265-55

del	DKN-810 Standard Capacity	DKN-900 Large Capacity
pacity (Chamber Volume)	10.7 cu. ft. (303L)	18.5 cu. ft. (523.9L)
nperature Range	Ambient +5° to 260°C	Ambient +5° to 210°C
curacy at 210°C	±1°C	±0.5°C
iformity at 210°C	±2.5°C	±2.5°C
nsor	Platinum thermo-resistant element	K Thermocouple
Controller	HiTec* IV, FR Type 2	HiTec IV, CR Type
ogramming	15 segments/30 steps	16 segments/32 steps
ater	2.7kW	1.5kW × 2
ne to Max. Temp.	≈75 min.	≈75 min.
ner Range	1 min. to 99 hr. 59 min.	1 min. to 99 hr. 59 min.
ximum No. of Shelves	29 (4 supplied)	28 (8 supplied)
ximum Shelf Load	33 lb.	33 lb.
terior L × W × H	25⅝ × 28 × 63¾" (65 × 71 × 162cm)	25⅝ × 46½ × 66¼" (65 × 118 × 168cm)
amber D × W × H	19¾ × 23⅝ × 39⅜" (50 × 60 × 100cm)	19¼ × 42⅛ × 39⅜" (49 × 107 × 100cm)
t Weight	275 lb. (125kg)	419 lb. (190kg)
ctrical Requirements	220VAC 50/60Hz, 13.5A	220VAC 50/60Hz, 15A
t. No.	**13-263-55**	**13-263-60**
ch	5201.96	11,589.32

VACUUM

Fisher Scientific* Isotemp* Vacuum Ovens

Standard, large and economy ovens, suitable for a variety of drying applications


13-262-280A

Chamber capacities from 0.65 to 1.6 cu. ft.

- Wraparound elements deliver efficient, uniform heating
- Front-mounted indicator lights and controls
- Safety controller prevents temperature runaway
- Minimal leak rate
- Steel exterior with durable enamel finish
- Glass panel in door for viewing samples
- Corrosion-resistant, easy-to-clean, stainless-steel interior
- Removable shelves
- Oven floor can be used as additional shelf
- Separate inlet and outlet connectors/controls allow replacement of air with inert gas
- 7-day programmable timer (with 13-262-52 only)

REQUIRED ACCESSORIES:
13-262-285A is equipped with a 20A domestic plug; 20A service required

WARRANTY:
12 months

CERTIFICATIONS:
CSA approved

	Vacuum Ovens		Economy Vacuum Ovens	
Model	**Standard (281A)**	**Large (282A)**	**Standard (280A)**	**Large (285A)**
Capacity (Chamber Volume)	0.65 cu. ft. (18.3L)	1.5 cu. ft. (42.5L)	0.67 cu. ft. (19L)	1.6 cu. ft. (45.3L)
Operating Temperature Range	Ambient to 280°C	Ambient to 280°C	Ambient +10° to 200°C	Ambient +10° to 200°C
Temperature Accuracy 50° to 280°C	----	±2°C	----	----
Chamber Dimensions	11½ × 10× 10" (29 × 29 × 25cm)	18 × 12 × 12" (46 × 30× 30cm)	11⅛ × 9¾ × 9¾" (28.3 × 24.8 × 24.8cm)	19 × 12 × 12" (48.3 × 30.5 × 30.5cm)
Exterior Dimensions	17⅞ × 18 × 22⅞" (45 × 46 × 58cm)	23 × 26 × 22" (58 × 66 × 56cm)	16 × 15 × 20" (40.6 × 38.1 × 50.8cm)	25 × 22½ × 23½" (63.5 × 57.2 × 59.7cm)
Maximum Vacuum	<1 torr (762mm)	<1 torr (0.039mm)	0 to 30"Hg (762mm)	0 to 30"Hg (762mm)
Vacuum Leak Rate	<0.5"Hg/24 hr. (12.7mm/24 hr.)	<1"Hg/24 hr. (25.4mm/24 hr.)	<0.2"Hg/24 hr. (5.1mm/24 hr.)	<0.2"Hg/24 hr. (5.1mm/24 hr.)
Heat Rise Time to 100°C	----	Ambient to 100°C in <30 min.	----	----
Average Uniformity at 100°C	----	<±0.5°C (in vacuum)	----	----
Shipping Weight	90 lb. (41kg)	205 lb. (93kg)	70 lb. (31.5kg)	130 lb. (58.5kg)
Electrical Requirements	120V 50/60Hz, 1700w, 8.5A	115V 50/60Hz, 1700w, 14.7A	120V 50/60Hz, 1000w, 8.4A	120V 50/60Hz, 1700w, 14.2A (20A service required)
Cat. No.	**13-262-50**	**13-262-52**	**13-262-280A**	**13-262-285A**
Each	3158.28	5748.74	1543.42	3336.70

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

ACCESSORIES

Replacement Door Gasket Kit

- Includes gasket and adhesive.

Cat. No.	**Each**
SPN 50430	160.35

Thermo Scientific* Precision* Vacuum Ovens

Excellent vacuum and temperature performance for long-term lab and production needs

Ideal for production of semiconductors.

- Temperature range: 35° to 200°C
- Vacuum range: 1 atmosphere to 30"Hg within 10 microns, with adequate pump
- 0.45 and 1.6 cu. ft. models
- Stainless-steel chamber withstands corrosive vapors and aromatic hydrocarbons
- Walls insulated with 2" thick (5cm) fiberglass
- Window of ½" (1.3cm) thick tempered glass is 8 × 8" (20 × 20cm) and gasketed for vacuum sealing
- Heat-resistant silicone gaskets on window and door
- Positive door latch
- Exterior is cold-rolled steel with scratch-resistant epoxy-polyester finish

ORDERING INFORMATION:
Buna-N gaskets are recommended for volatile hydrocarbons, Viton*-B gaskets for acids; both available on special order.

INCLUDES:
Vacuum gauge, thermostat with calibrated dial, two metering valves for vacuum adjustment and bleeding, two shelves, and glass thermometer

CERTIFICATIONS:
UL listed, CSA approved

13-264A

Contd. on next page.

*Trademark. See Trademark Reference.

mo Scientific* Precision* Vacuum Ovens, Contd.

l	19	29
city (Chamber Volume)	0.45 cu. ft. (12.7L)	1.6 cu. ft. (45.3L)
erature		
ge	35° to 200°C	35° to 200°C
rol	Analog with graduated dial	Analog with graduated dial
lay	0° to 250°C thermometer	0° to 250°C thermometer
um Range	1 atm. to 30"Hg (762mmHg)	1 atm. to 30"Hg (762mmHg)
ior L × W × H	16 × 13 × 18" (40 × 33 × 46cm)	27 × 20 × 23" (69 × 51 × 58cm)
nber D × W × H	12 × 8 × 8" (30 × 20 × 20cm)	19 × 12 × 12" (48 × 30 × 30cm)
rical Requirements	120V 50/60Hz, 5.0A, 600w	120V 50/60Hz, 13.3A, 1600w
lo.	51221162	51221164
lo.	**13-264A**	**13-264B**
	1479.60	3462.26
rical Requirements	----	240V 50/60Hz, 6.9A, 1600w
lo.	----	51221165
lo.	----	**13-264C**
	----	3769.40

ermo Scientific* Lindberg/Blue M* Vacuum Ovens

drying, curing, outgassing, aging, process control and other applications which require elevated temperature educed atmospheres or vacuum/purge with nonflammable and inert atmospheres

e capacities available.

rating Features

- ximum temperature: 260°C (500°F) with nominal uniformity of ±3.5% setpoint
- cuum: to 1×10^2 torr (10µm of Hg); 1" dia. (2.5cm)
- gle setpoint digital microprocessor control with simultaneous LED play of setpoint and actual temperature
- nt-mounted vacuum gauge and control valves for vacuum, gas and nt functions
- ertemperature safety system is factory set with reset pushbutton

mber Features

- rrosion-resistant stainless-steel construction
- ludes inert gas port, vacuum port and vent port
- ar-mounted vacuum manifold connects to pump (not included) or house vacuum source
- v-watt heating element extends oven life

inet Features

- avy-gauge steel exterior with choice of painted steel or stainless-steel ish
- al-wall construction with fiberglass insulation for minimum heat loss in lls and door
- gh-temperature silicone gasket is specially molded for a positive seal
- agnetic latch for positive door seal (4.5 cu. ft. capacity models include chanical latches)
- Viewing windows: ½" thick (1.3cm) in two smaller capacity models or ¾" thick (1.9cm) in 4.5 cu. ft. model; permit observation of work in progress without loss of heat
- Stainless-steel exterior models come with double door—a solid outer door over inner window door

INCLUDES:

Power cord and aluminum shelves (number of shelves based on model; see ordering table)

13-258-13

CERTIFICATIONS:

13-258-13, -13A, -13B and -13C are UL listed.

WARNING

Ovens are not suitable for use with hazardous vapor. For use with nonflammable, noncorrosive inert gases only.

Contd. on next page.

Thermo Scientific* Lindberg/Blue M* Vacuum Ovens, Contd.

Model	260°C General-Purpose Series		
Capacity (Chamber Volume)	0.65 cu. ft. (18.4L)	1.5 cu. ft. (42.5L)	4.5 cu. ft. (127.4L)
Exterior L × W × H	23 × 18 × 26" (58 × 46 × 66cm)	26 × 21 × 29" (66 × 53 × 74cm)	32 × 27 × 35" (81 × 69 × 89cm)
Chamber D × W × H	14 × 9 × 9" (36 × 23 × 23cm)	18 × 12 × 12" (46 × 31 × 31cm)	24 × 18 × 18" (61 × 46 × 46cm)
No. of Shelves	3 (removable)	3 (removable)	2 (fixed)
Shipping Weight	150 lb. (68kg)	250 lb. (113kg)	325 lb. (147kg)
Painted-Steel Exterior			
Door Style	1 w/viewing window	1 w/viewing window	1 w/viewing window
Electrical Requirements	120V 50/60Hz, 750w	120V 50/60Hz, 1250w	120V 50/60Hz, 1500w
Mfr. No.	VO914A	VO1218A	VO1824A
Cat. No.	**13-258-13**	**13-258-13B**	**10-549-227**
Each	2942.00	5219.00	11,596.00
Electrical Requirements	208/240V 50/60Hz, 750w	208/240V 50/60Hz, 1250w	208/240V 50/60Hz, 1500w
Mfr. No.	VO914C	VO1218C	VO1824C
Cat. No.	**10-549-223**	**10-549-224**	**10-549-225**
Each	2942.00	5219.00	11,596.00
Stainless-Steel Exterior			
Door Style	1 inner w/viewing window; 1 solid outer	1 inner w/viewing window; 1 solid outer	----
Electrical Requirements	120V 50/60Hz, 750w	120V 50/60Hz, 1250w	----
Mfr. No.	VO914SA	VO1218SA	----
Cat. No.	**13-258-13A**	**13-258-13C**	----
Each	4495.00	6944.00	----

Thermo Scientific* Napco* Vacuum Ovens

Provide uniform temperature

- Temperature range: +10° above ambient to 200°C (ambient +18° to 392°F), thermostatically controlled
- Vacuum range: 1 atmosphere to 30"Hg, with adequate pump
- 0.45, 1.6 and 4.5 cu. ft. (0.013, 0.045 and 0.127m^3) capacities
- Negligible loss over extended period of closed-door operation
- Two metering valves allow fine adjustment for vacuum and bleed operation
- Stainless-steel interior
- ½" thick (13mm) tempered-glass window provides excellent visibility
- Encased in thick fiberglass insulation
- Heat-resistant silicone gaskets

13-262-12, 13-262-1

ORDERING INFORMATION:

Replacement door gaskets, including Buna-N style, are offered; replacement Thermometer 13-262-3A fits Models 5831 and 5851; all accessories are available online.

INCLUDES:

Two aluminum shelves

CERTIFICATIONS:

UL listed, CSA approved

Model	5831	5851	5861
Capacity (Chamber Volume)	0.45 cu. ft. (12.7L)	1.6 cu. ft. (45.3L)	4.5 cu. ft. (127.4L)
Temperature			
Range	35° to 200°C	35° to 200°C	35° to 200°C
Display	0° to 250°C thermometer†	0° to 250°C thermometer†	0° to 250°C panel-mounted gauge
Vacuum Range	1 atm. to 30"Hg (762mmHg)	1 atm. to 30"Hg (762mmHg)	1 atm. to 30"Hg (762mmHg)
Exterior L × W × H	16 × 13 × 18" (41 × 33 × 46cm)	27 × 20 × 23" (69 × 51 × 58cm)	36 × 26 × 36" (91 × 66 × 91cm)
Chamber D × W × H	12 × 8 × 8" (31 × 20 × 20cm)	19 × 12 × 12" (48 × 31 × 31cm)	24 × 18 × 18" (61 × 46 × 46cm)
Electrical Requirements	120V 50/60Hz, 4.2A, 500w	120V 50/60Hz, 8.3A, 1000w	120V 50/60Hz, 12.5A, 1500w
Mfr. No.	51220166	51220201	51220169
Cat. No.	**13-262-1**	**13-262-12**	**13-262-25A**
Each	1494.91	3495.93	6997.97
Electrical Requirements	230V 50/60Hz, 2.1A, 500w	----	----
Mfr. No.	51220167	----	----
Cat. No.	**13-262-2**	----	----
Each	1931.63	----	----

† Thermometer included with oven.

ACCESSORIES

Replacement Door Gaskets

For Thermo Scientific* Napco* Vacuum Ovens.

ype	For Oven	Mfr. No.	Cat. No.	Each
ilicone	13-262-1	34167331	**13-262-3**	139.20
una-N[1]	13-262-1	34002419	**13-262-4**	291.00
ilicone	13-262-12	34167332	**13-262-14**	112.89
una-N[1]	13-262-12	34002420	**13-262-13**	111.15

Not for use at temperatures above 125°C.

ermo Scientific* Lab-Line* Squaroid acuum Ovens

ailable in 0.7 and 2.3 cu. ft. capacities

13-261-286

- iant, warm wall heaters provide orm heating.
- emperature range: ambient ±5° to 20°C (428°F)
- ydraulic thermostat with built-in gh-limit thermostat controls emperature to ±1.5°C and prevents ven from exceeding maximum emperature
- ont-mounted controls with LED emperature readout
- EAT-ON indicator light
- tainless-steel interior is surround- d by 3" thick (7.6cm) of glass wool insulation
- ilicone door gasket and positive latch door with tempered glass ensure xcellent seal at all vacuum levels between two and nearly 30"Hg
- olycarbonate safety shield protects door glass from damage
- acuum line fittings accept ¼" I.D. vacuum tubing
- ne-piece shelf assembly features two removable solid aluminum helves
- eavy-gauge steel exterior with durable baked-enamel overcoat

RTIFICATIONS:

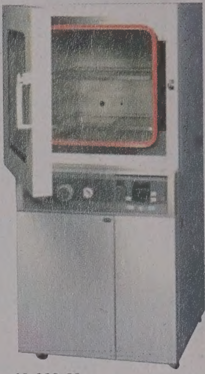
261-286 is CSA approved.

acity (Chamber Volume)	0.7 cu. ft. (19.8L)	2.3 cu. ft. (65.1L)
perature		
nge	Ambient ±5° to 220°C	Ambient ±5° to 220°C
ntrol @ 100°C 25"Hg	±1.0°C	±1.0°C
iformity @ 100°C 25"Hg†	±4.0°C	±5.0°C
uum	1 atm. to 30"Hg (762mmHg)	1 atm. to 30"Hg (762mmHg)
erior W × H	16 × 19⅞ × 16¼" (41 × 51 × 41cm)	25 × 25 × 22" (64 × 64 × 56cm)
mber W × H	12 × 10 × 10" (31 × 25 × 25cm)	20 × 14 × 14" (51 × 36 × 36cm)
ctrical Requirements	120V 50/60Hz, 5.0A, 600w	120V 50/60Hz, 13.3A, 1600w
. No.	3608 5	3618 5
. No.	**13-261-286**	**13-261-288**
h	2983.00	5001.00

termined at 150°C.

Yamato* Large-Capacity DP Series Vacuum Drying Ovens

Feature large chambers with powerful heaters that radiate heat to sample



13-263-38

- Temperature range: ambient +5° to 200°C with accuracy ±1°C at 200°C
- 3.2 and 7.6 cu. ft. capacities
- HiTEC* IV CR-Type microprocessor PID temperature controller offers 16-segment/32-step programmability, including auto start/stop, ramp and soak modes
- With overtemperature protection; if the temperature goes beyond the set limit, the user is alerted both visually and audibly, and the oven heater automatically shuts off
- Cold-rolled carbon steel exterior with baked melamine finish
- Large reinforced observation window for sample viewing
- Purge and vacuum handles are conveniently located on the front panel
- Bottom cabinet with door is ideal for storing vacuum pump
- Corrosion-resistant, durable, Type 304 stainless-steel interior

ORDERING INFORMATION:

Ovens may be customized with the following optional features: RS-422-A or RS-232-C computer interface adapter, temperature output terminal, 24-hr./7-day temperature recorder, vacuum port, vacuum pump, digital vacuum gauge and extra shelves. For more information, contact your Fisher Scientific Customer Service Representative.

INCLUDES:

Two Type 304 stainless-steel shelves

Model	DP-43	DP-63
Capacity (Chamber Volume)	3.2 cu. ft. (90.6L)	7.6 cu. ft. (215.2L)
Temperature		
Range	Ambient +5° to 200°C	Ambient +5° to 200°C
Accuracy at 200°C	±1°C	±1°C
Heater	2.25kW	3.15kW
Time to Max. Temperature	≈80 min.	≈120 min.
Vacuum Range	760 to 1mmHg	760 to 1mmHg
Exterior L × W × H	27⅛ × 26⅜ × 59⅛" (69 × 97 × 150cm)	32¼ × 32¼ × 65" (82 × 82 × 165cm)
Chamber D × W × H	17¾ × 17¾ × 17¾ (45 × 45 × 45cm)	23⅝ × 23⅝ × 23⅝" (60 × 60 × 60cm)
Net Weight	419 lb. (190kg)	639 lb. (290kg)
Electrical Requirements	220VAC 50/60Hz, 12A	220VAC 50/60Hz, 17A
Cat. No.	**13-263-38**	**13-263-40**
Each	9216.34	15,600.36

CONSIDER YOUR APPLICATION

1. **Choose an instrument that fits your present *and* future applications.** The instrumen be versatile, customizable, and flexible enough to work for your applications now, and in the
2. **Consider the sensors available.** Interchangeable cable lengths, user replaceable sensors, choice of electrodes allow for ultimate versatility.
3. **Consider where your instrument will be used.** Your instrument should handle the dem continuous field sampling, with a rugged housing, mil-spec connectors, and high-quality ca

CONSIDER DATA MANAGEMENT

1. **Do you need a lot of memory?** Memory for datalogging is increasingly importan accurate data management. Make sure the instrument allows you to name the fold site lists to suit your sampling events and lets you download the data to a PC effo
2. **Do you need *any* memory?** Even if a large memory isn't necessary, it's st while to select an instrument with a smaller internal memory capability, to readings during your sampling events and ensure accurate data.

sponsored by: YSI

BEFORE YOU BUY ELECTROCHEMIST METERS

FEATURE	PRO PLUS	PRO 1020	PRO 1030	PRO 2030	PRO 10	PRO 20	PRO 30
Temperature	X	X	X	X	X	X	X
Dissolved Oxygen Mode (% DO and mg/L)	X	X	—	X	—	X	—
Conductivity/Specific Conductance/ Salinity/TDS Modes	X	—	X	X	—	—	X
pH Mode	X	X	X	—	X	—	—
ORP (mV) Mode	X	X	X	—	X	—	—
ISE Mode (Ammonium, Chloride and/or Nitrate	X	—	—	—	—	—	—
DO Cap Membranes	X	X	—	X	—	X	—
Field Replaceable Probes	X	X	X	X	X	X	—
USB Connection	X	—	—	—	—	—	—
Memory (2000 data sets with GLP)	X	—	—	—	—	—	—
Memory (50 data sets)	—	X	X	X	X	X	X
Barometer	X	X	—	X	—	X	—

Professional
21.14
740.30
7.20
11.27
YSI

YSI Profes

YSI FEATURES TO LOOK FOR:

- IP67 waterproof rating
- Field worthy connectors (mil-spec) for instruments with detachable cables in lengths from 1 to 30m
- User replaceable probes, including BOD probes, lab-and field-grade pH and ORP probes, galvanic and polarographic DO probes and cables
- Easy calibration, auto buffer recognition
- Data management capabilities (within the instrument and via connectivity to computers)
- Backlit display and keypad
- Good Laboratory Practice (GLP) functionality
- Three-year instrument warranty, two-year cable warranty

For a full selection of YSI Meters, see pp. 1240, 1246-1249.

OXYGEN ANALYSIS

BENCHTOP METERS

accumet
XL40
XL60
4.010
100
300.0
99.8
XL60

play data from 2, 3 or 4 channels at once

sher Scientific* accumet* Excel (XL) enchtop Meters

curate, versatile meters are extremely user-friendly

tra-large full-color LCD touchscreen

ouch to display measurement, stability, standards in use

lus time/date stamp, plain-language prompts, temperature and more

leasure and display up to four channels at once (on selected models)

lumeric display mode shows complete measurement data; **Graphic** node shows measured data over time

ceptional ease of use

Vindows CE* operating system: familiar, intuitive operation

n-screen prompts and icons help you get to Setup or Measurement nodes quickly

wo levels of context-sensitive help screens: basic and advanced

xtensive setup screens customize meter to meet your needs

ystem Setup Options customize display, show parameters that suit our needs; edit date, screen configuration, time, beeper status, nd print configuration

ustomize operational modes to select appropriate operating arameters, resolution, buffer sets, and more

wo procedural levels: Basic Level displays reduced information set, estricts user access to a limited list of setup parameters; allows the cientist to configure meter in Advanced Level and have a technician erform measurements in Basic Level

B, RS-232, and Ethernet connectivity

onnect to printers, peripherals, or LAN

dvanced USB connectivity allows you to add a keyboard, mouse, r other USB device

thernet ready: lets you connect to LAN for remote reading and peration or system upgrade

eck out the complete Excel line

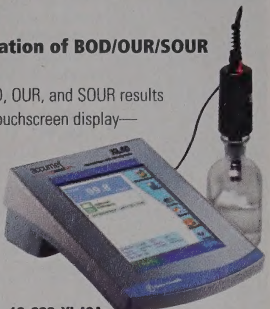
edicated and multiparameter DO meters on this and following page

edicated and multiparameter Conductivity meters in the onductivity section

edicated and multiparameter pH and ISE meters in the pH/pX section

Fisher Scientific* accumet* Excel XL40 Dissolved Oxygen (DO)/BOD/OUR/SOUR Temperature Meter

Direct-read DO plus calculation of BOD/OUR/SOUR



13-636-XL40A

Powerful and versatile

- ▸ DO mode calculates five-day BOD, OUR, and SOUR results
- ▸ Windows CE*-driven, full-color touchscreen display—easy setup and operation
- ▸ 1000 data-point memory and password security

Convenient measurement of dissolved oxygen, oxygen demand and uptake

- ▸ DO measurements cover 0 to 60mg/L range (0 to 600% saturation)
- ▸ Autocalculation of temperature, pressure, and salinity corrections
- ▸ Self-stirring BOD probe
- ▸ On-screen prompts for BOD, OUR, and SOUR tests
- ▸ Easy results calculation

Extensive GLP capabilities

- ▸ Customizable printer/computer output
- ▸ 1000-reading datalog capability
- ▸ Print Setup lets you print exactly what you want, when you want
- ▸ Displays time in 12- or 24-hour format, date in U.S. or international format
- ▸ USB port lets you connect keyboard, mouse or trackball for meter control, or connect printer or PC for data output
- ▸ RS-232 serial port lets you connect to PCs or printers without USB, or frees computer USB port while meter is in use
- ▸ Ethernet allows unmatched LAN connectivity and even allows software upgrades
- ▸ Durable ABS plastic housing resists dust and chemicals

ORDERING INFORMATION:

Dimensions: 9¼L × 6½W × 3½"H (23.5 × 16.5 × 9cm)
Net weight: 2¾ lb. (1.2kg)

INCLUDES:

Meter Only option includes meter, 110/220V power supply, manual.
Meter Kit/DO option includes meter, Fisher Scientific accumet Self-Stirring BOD Probe (13-620-SSP), electrode support stand, 110/220V power supply, manual.

WARRANTY:

Three-year Warranty. Model XL40 is warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years. Call your Fisher Scientific Customer Service Representative for full details.

Description	Cat. No.	Each
XL40 Benchtop Meter Only	**13-636-XL40A**	2274.35
XL40 Benchtop Meter Kit	**13-636-XL40**	2518.33

Contd. on next page.

Fisher Scientific* accumet* Excel XL40 Dissolved Oxygen (DO)/BOD/OUR/SOUR Temperature Meter, Contd.

SPECIFICATIONS

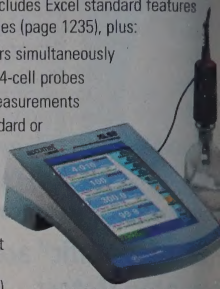
Model	XL40A DO/Temperature Meter Only
Display	640 × 480 pixel STN Color LCD; 4½W × 6"H (11 × 15cm). Measurement Characters: ¾"H (1.9cm). Other Data: ¼"H (0.6cm)
Keypad/Controls	Touchscreen and External Keypad
Menus	Microsoft* Windows CE pull-down menu options; extensive Help screens.
Remote Access	Parameters remotely controllable and monitorable via Windows CE Remote Application Interface.
Connectivity	Ethernet port connectivity to LAN. USB Host/Device 1.1 connectivity to printer, PC, bar code scanner, mouse, keypad etc.
Data Memory	Internal: 1000 Data points. External: USB storage device connectivity, SDCARD Memory Interface version 1.0, RS-232 connectivity.
Data Output	On Stable; via timer; Manual
Special Features	User upgradable software (Flash ROM via Ethernet). Powerup self test; error messages; alarm, real-time clock/calendar.
Dissolved Oxygen Mode	
Range	0 to 60mg/L, 0 to 600% saturation
Resolution	0.01mg/L, 0.1% saturation
Accuracy	±0.1mg/L ±1 least significant digit, ±0.1% saturation
Temperature Mode	
Range	-10.0° to +110.0°C (14° to 230°F)
Resolution	0.1°C
Accuracy	±0.2°C
Inputs	DO Probe
Outputs	USB Host/Device, Bidirectional RS-232, Ethernet, SDCARD
Electrical Requirements	110V/220V 50/60Hz

Fisher Scientific* accumet* Excel XL60 DO/pH/ISE/ Conductivity Meter

A complete electrochemistry lab in one instrument

Top-of-the-line, research-grade meter includes Excel standard features and XL40 DO/BOD/OUR/SOUR capabilities (page 1235), plus:

- Measures and displays four parameters simultaneously
- Conductivity mode accepts 2-cell and 4-cell probes
- ISE mode offers direct and indirect measurements
- Extended-range pH mode; accepts standard or accuFet* nonglass electrodes
- Same extensive GLP capabilities as XL40



13-636-XL60A with DO Probe 13-620-SSP

ORDERING INFORMATION:

Durable ABS plastic housing resists dust and chemicals. Dimensions: 9¼L× 6½W × 3½"H (23.5 × 16.5 × 9cm). Net weight 2¾ lb. (1.2kg). For complete specifications, see the pH/pX section.
Each package is also available with Certificate of Traceability to NIST* Standards.

INCLUDES:

Meter Kit/pH-DO package includes meter, Fisher Scientific accuCap* combination pH electrode (13-620-130), self-stirring BOD probe (13-620-SSP), ATC probe (13-620-19), electrode support arm and bracket, 110/220V power supply and operation manual.

Meter Kit/pH package includes meter, Fisher Scientific accuCap combination pH electrode (13-620-130), ATC probe (13-620-19), electrode support arm and bracket, 110/220V power supply and operation manual.

Meter Only package includes meter, electrode support arm and bracket, 110/220V power supply and operation manual.

WARRANTY:

Model XL60 is warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years. Call your Fisher Scientific Customer Service Representative for full details.

Packaging Option	Cat. No.	Each
Meter Kit/pH-DO	**13-636-XL60D**	3696.57
Meter Kit/pH	**13-636-XL60**	3034.04
Meter Only	**13-636-XL60A**	2768.54

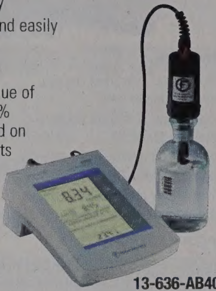
SPECIFICATIONS

Model	XL60
Modes	DO, pH, ISE, Conductivity, Temperature
Dissolved Oxygen Mode	
Range	0 to 60mg/L, 0 to 600% saturation
Resolution	0.01mg/L, 0.1% saturation
Relative Accuracy	±0.1mg/L ±1 least significant digit, ±0.1% saturation
Temperature Mode	
Range	-10.0° to +110.0°C (14° to 230°F)
Resolution	0.1°C
Relative Accuracy	±0.2°C
Compensation	Automatic or Manual
Additional Modes	
pH Range/Resolution	-2.000 to +20.000pH/0.1, 0.01, 0.001pH; auto lock
mV Range/Resolution	0 to ±2000mV (absolute or relative)/0.1mV
ISE Range/Resolution	1×10^{-6} to 9.99×10^{10}/0.1, 0.01, 0.001
Conductivity Range	0 to 5×10^{5} µS/cm

sher Scientific* accumet* Basic AB40 ssolved Oxygen Meter Kit

nple, affordable DO/BOD measurement: microprocessor ecision in a compact, easy-to-use benchtop design

- arge 4¼L × 3"W (10.8 × 7.6cm) display
- n-screen prompts guide user quickly and easily rough DO measurement process
- ve-key soft-touch keypad
- et barometric pressure, set salinity value of ample, and read DO in either mg/L or % aturation. Measurements are displayed on creen in easy-to-read ¾" high (2cm) digits



13-636-AB40

LUDES:

ter Kit includes meter, power ply, Self-Stirring BOD Probe 620-SSP), membrane kit 637-DOM), and manual.

RRANTY:

del AB40 is warranted to the end user to be free from defects in erials and workmanship under normal use for a period of three years. your Fisher Scientific Customer Service Representative for full details.

cription	Cat. No.	Each
er Kit	**13-636-AB40**	2084.19

SPECIFICATIONS

Dissolved Oxygen Mode	
Range	0-60mg/L (ppm) 0-600% saturation
Accuracy	0.1% + 1 lsd† (mg/L) 0.1% saturation + 1 lsd†
Resolution	0.01mg/L 0.10% saturation
Temperature Mode	
Range	0° to 45°C
Accuracy	0.1°C
Resolution	0.1°C
Barometric Pressure Compensation	
Type	Manual
Range	450-825mmHg
Accuracy	1% + 1 lsd†
Resolution	1mmHg
Salinity Compensation	
Salinity Correction Range	0-45ppt
Connectivity	
Inputs	8-pin DIN
Safety	
Approvals	CE, CSA, FCC
Physical Characteristics	
Dimensions	7½L × 5½W × 3¼"H (19 × 14 × 8.3cm)
Net Weight	1 lb. 13 oz. (0.82kg)
Electrical Requirements	115V 60Hz

† Least significant digit.

ACCESSORIES

Self-Stirring BOD Probe and Membrane Kit

For all current Fisher Scientific* accumet* benchtop meters with dissolved oxygen mode, including XL60, XL40, AB40

Description	Cat. No.	Each
Self-Stirring BOD Probe	**13-620-SSP**	962.75
Membrane Kit for DO Probes: 6 caps, polishing disk, fill solution	**13-637-DOM**	149.81

Thermo Scientific* Orion* Star Benchtop Dissolved Oxygen and pH/Dissolved Oxygen Meters

Dedicated measurement of dissolved oxygen (DO) or pH and DO in a compact, ergonomic package

3-Star DO meter offers dedicated single-channel DO measurement; 4-Star pH/DO meter features dual channels and dual display. Both are easy to set up and use, provide reliable measurements for water testing applications.

- Display DO and temperature measurements simultaneously; display DO concentration or percent DO Saturation
- Allow meter and probe calibration to a Winkler Titration for correlation of direct Biological Oxygen Demand (BOD) readings to Winkler methods
- Easy to use three-button function
- Bright LCD display with ready indication
- Convenient built-in Quick-Start Guide
- Enhanced stability indicators, salinity correction and automatic barometric pressure compensation
- Full complement of GLP-related features
- Store up to 10 password protected methods, including setup parameters and calibrations; download additional methods and software updates via the Web
- 200 point datalogger, downloadable to printer or computer via an optional RS-232 or USB interface accessory
- SMART STABILITY* and SMART AVERAGING* functions automatically optimize accuracy, precision and response time
- IP54 dustproof and splashproof
- Mini-DIN locking probe connectors
- Advanced self-tests on meter operation, self-diagnostics
- Universal power adapter for worldwide operation

4-Star pH/DO Model adds:

- Dual-channel measurement and simultaneous display of pH and dissolved oxygen
- Selectable 1 to 5 point pH calibration to ensure accuracy
- Automatic or manual pH calibration at 1 to 5 points
- Recognizes NIST*, US and manual buffers

ORDERING INFORMATION:

More Star Series Application Packages are available for specific applications, including meter, all required accessories and Tech Notes on procedure. Contact your Fisher Scienitifc Customer Service Representative for details. Thermo Scientific Orion Multiparameter Meters with Dissolved Oxygen mode available; see pH/pX section.

INCLUDES:

3-Star Meter Only option includes meter and instruction manual. **3-Star Meter Kit** option includes meter, DO probe with 3m cable, overflow funnel and stribox, probe service kit, DO calibration sleeve, benchtop electrode stand, instruction manual. **4-Star Meter Only** option includes meter and instruction manual. **4-Star Meter Kit** option includes meter, Ross* Ultra pH electrode, Epoxy ATC probe, 475mL each of pH 4.01, 7.00 and 10.01 buffers; and pH Electrode Storage Solution; DO probe with 3m cable, overflow funnel and stribox, probe service kit, DO calibration sleeve, benchtop electrode stand, instruction manual.

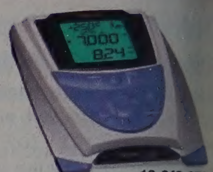
WARRANTY:

Three-year replacement warranty

COMPLIANCE:

UL listed. CE marked. CSA and FCC Class A limits approved.

13-642-053


13-642-056

Description	Mfr. No.	Cat. No.	Each
Orion 3-Star Dissolved Oxygen Benchtop Meter Only	1113000	**13-642-053**	1056.08
Orion 3-Star Dissolved Oxygen Benchtop Meter Kit	1113001	**13-645-103**	1525.00
Orion 4-Star pH/Dissolved Oxygen Benchtop Meter Only	1116000	**13-642-056**	1116.63
Orion 4-Star pH/Dissolved Oxygen Benchtop Meter Kit	1116001	**13-645-108**	1762.00

SPECIFICATIONS

Model	3-Star Dissolved Oxygen Benchtop Meter	4-Star pH/Dissolved Oxygen Benchtop Meter
Modes	Dissolved Oxygen, Temperature	pH, Dissolved Oxygen, Temperature
Display	Custom backlit LCD	Custom backlit LCD
Data Management	Saves 200 datapoints by time, stability or manual read with time/date stamp. Calibration log of last 10 calibrations. User method storage for 10 procedures. Advanced self-test and diagnostics routines. Password protection. Downloadable software and methods updates via Internet.	Saves 200 datapoints by time, stability or manual read with time/date stamp. Calibration log of last 10 calibrations. User method storage for 10 procedures. Advanced self-test and diagnostics routines. Password protection. Downloadable software and methods updates via Internet.
pH Mode		
Range	----	-2.000 to +19.999pH
Resolution	----	0.1/0.01/0.001pH
Relative Accuracy	----	±0.002pH
Calibration Points	----	1 to 5
Dissolved Oxygen Mode (Concentration)		
Range	0.00 to 90.00mg/L	0.00 to 90.00mg/L
Resolution	0.01mg/L	0.01mg/L
Relative Accuracy	0.2mg/L	0.2mg/L
Dissolved Oxygen Mode (Saturation)		
Range	0.0 to 600%	0.0 to 600%
Resolution	0.1%	0.1%
Temperature Mode		
Range	-5° to +105°C	-5° to +105°C
Resolution	0.1° up to 99.9°C, 1.0 over 99.9°C	0.1° up to 99.9°C, 1.0 over 99.9°C
Relative Accuracy	±0.1°, ±1 digit	±0.1°, ±1 digit
Compensation Range	-5° to +105°C	-5° to +105°C
Compensation Reference Temperature	15°C, 20°C or 25°C (default); autoranging	15°C, 20°C or 25°C (default); autoranging
Inputs	Mini-DIN, locking; phono jack for stirrer	Mini-DIN, locking; phono jack for stirrer
Data Output	Bidirectional RS-232, stereo jack, optional USB interface cable	Bidirectional RS-232, stereo jack, optional USB interface cable
Electrical Requirements	Universal AC power adapter or 4 × 1.5V "AA" batteries (optional)	Universal AC power adapter or 4 × 1.5V "AA" batteries (optional)

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

For Thermo Scientific* Orion* 3-Star DO or 4-Star pH/DO Meter

escription	Mfr. No.	Cat. No.	Each
olarographic Dissolved Oxygen Probe	081010MD	**13-642-230**	430.62
oss* Ultra pH Combination Electrode	8102BNU	**13-641-758**	352.19
poxy Body ATC Probe	917005	**13-641-260**	200.97

Accessories and Replacements for use with Thermo Scientific* Orion* DO Probes

escription	Mfr. No.	Cat. No.	Each
O Probe Service Kit	080113	**13-299-519**	92.36
verflow Funnel with Stir Box	970802	**13-299-82**	120.82
alibration Sleeve for DO Probes	080017	**13-302-35**	112.07

Thermo Scientific* Orion* Dissolved Oxygen/BOD Probe

Makes any pH meter a dissolved oxygen meter

Dissolved Oxygen/BOD Probe 13-299-80, 13-299-85

- Polarographic O_2 sensor plus solid-state circuitry in probe top; converts current to voltage for direct DO readout
- Plug probe into benchtop or portable pH meter, read DO over 0 to 14ppm range
- Accuracy, ±0.05ppm/2% of reading, whichever is greater, at 15° to 35°C (59° to 95°F) (sample temperature within 10°C of calibration temperature)
- Dual thermocompensator corrects for membrane permeability and O_2 solubility
- Ideal for BOD testing: overflow funnel supplied fits 300mL BOD bottle; built-in magnetic stir bar
- Responds to 96% of change in <30 sec.; O_2 consumption 0.1µg/hr.
- Screw-on membrane/electrolyte module; no membrane replacement—simply replace module after ~3 months of use

ORDERING INFORMATION:

Weight, 8 oz. (225g). Dimensions: 1⅞" O.D. (48mm) at top, ½" O.D. (13mm) at sensor section and 9⅝"L (240mm).

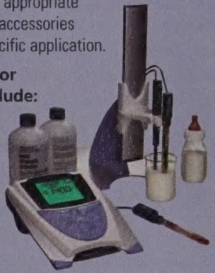
INCLUDES:

Two silver oxide 10L14 batteries, two membrane/electrolyte modules, overflow funnel, built-in stir bar, 29½"L (75cm) cable, U.S. standard or BNC connector.

Description	Mfr. No.	Cat. No.	Each
Probes			
Oxygen/BOD U.S. Standard Connector	970800	**13-299-80**	999.00
Replacement Parts			
Overflow Funnel with Stir Box	970802	**13-299-82**	120.82
Membrane/Electrolyte Module	970801	**13-299-81**	63.24
Battery, Silver Oxide, Type 10L14 (pack of two)	970803	**13-299-83**	46.50

THERMO SCIENTIFIC* ORION* STAR* SERIES APPLICATION PACKS

Thermo Scientific Orion offers a large variety of Application Packs, each including a Star Series meter, appropriate probes, standards and all required accessories (including Method Notes) for a specific application.



Application Packs available for dissolved oxygen testing include:

- DO in Wine and Beer
- DO in Salt Water

Application Packs available for pH testing include:

- pH of Wine/Beer
- pH of Salt Water
- pH of Cheese
- pH of Milk

Visit www.fishersci.com and search for Orion Star Kit

THERMO SCIENTIFIC* ORION* ACCESSORIES FOR OLDER DO METERS

Additional accessories, replacements and maintenance products for Thermo Scientific Orion Benchtop Dissolved Oxygen Meters are available on our Web site, including:

13-642-130

- Polarographic Autostir BOD Probe 13-642-130
- Probe Stand/Calibration Chamber 09-357-53
- Replacement Probes for Thermo Scientific Orion 800 Series Meters
- Replacement Probe Service Kits for Thermo Scientific Orion DO Probes

Visit www.fishersci.com and search for Orion Accessories

YSI* Benchtop Models 5000 and 5100 Dissolved Oxygen Meters

Full-featured, microprocessor-controlled meters for state-of-the-art performance

Microprocessor-based, menu-driven meters measure dissolved oxygen and biochemical oxygen demand (BOD).

Model 5000 features:

- Dissolved oxygen and temperature measurement
- Large graphic LCD readout
- Audio and tactile keyboard response
- Real-time clock
- Automatic calibration
- 100 datapoint memory with date/time stamp
- Salinity and barometric pressure compensation
- Performance of all required BOD calculations when used with YSI's BOD Analyst* software (02-681-448)
- Instrument-powered probe
- Computer interface control via RS-232-C interface for direct link to your computer
- Internal software is user-upgradable via the Web

Model 5100 includes these added features:

- Built-in software that calculates dissolved oxygen uptake rate (DOUR) and specific oxygen uptake rate (SOUR) with graphic display; simplifies compliance with U.S. EPA 503 regulations for safe use of biosolids
- One-touch automatic calibration
- Built-in calibratable barometer for automatic barometric pressure compensation
- Bar code scanner interface
- Port for computer keyboard

ORDERING INFORMATION:

Compatible with all YSI BOD probes when used with 13-299-78 Adapter Cable (order separately). Dimensions: 9L × 9½W × 4½"H (23 × 24 × 11cm).

INCLUDES:

Four "C" batteries, 115VAC power supply.

COMPLIANCE:

CE marked

Mfr. No.	Cat. No.	Each
5000	**13-298-21**	1195.00
5100	**13-298-22**	1575.00

13-298-21

SPECIFICATIONS

Dissolved Oxygen	
Range	0 to 60mg/L 0 to 600% air saturation
Accuracy	±0.1% + 1 lsd†
Resolution	0.01mg/L, 0.1% air saturation
Temperature	
Range	-5° to +50°C
Accuracy	±0.1°C
Resolution	0.01°C
Barometric Pressure Compensation	
Type	Manual for Model 5000; Automatic for Model 5100
Range	450 to 825mmHg
Accuracy	±1% + 1 lsd†
Resolution	1mmHg
Salinity Compensation	
Range	0 to 40ppt
Accuracy	±0.02mg/L

† *Least significant digit.*

ACCESSORIES

YSI* BOD Analyst* Software

Exclusive Windows* software for automated five-day BOD calculations

- User-friendly, flexible software automates BOD testing
- Works with YSI 52, 5000 and 5100 Dissolved Oxygen Instruments
- Sends first-day and fifth-day results to your PC which performs the calculations and prints reports
- Saves time, automates BOD calculations, reduces errors, ensures data integrity

COMPLIANCE:

Conforms to *Standard Methods for the Examination of Water and Wastewater*

Cat. No.	Each
02-681-448	306.91

*Trademark. See Trademark Reference.

ACCESSORIES

FOR YSI* DO METERS

Model 5010 Self-Stirring BOD Probes

Plug-in probes for more convenient functioning

- Plug directly into Models 5000 and 5100 (no adapter cable needed)
- Operate from meter's power supply
- Built-in stirrer creates consistent flow past membrane for accurate measurement, faster response
- Designed to fit 300mL BOD bottles

INCLUDES:

15-176-17 has an adapter with 5° taper; 15-176-18 includes $ 24 funnel; 15-176-20 includes 6¾" long (17cm) shaft for use in the wine ndustry (cannot use any funnels or adapters). All include six membrane caps and KCl probe solution.

Stir Paddle Size	Mfr. No.	Cat. No.	Each
3¼" (8cm)	5010	**13-298-23**	595.00
4¼" (11cm)	5010 J	**15-176-17**	726.00
4¼" (11cm)	5010 K	**15-176-18**	625.00
6¾" (17cm)	5010 W	**15-176-20**	1046.00

Model 5750 Nonstirring BOD Probe

Nonstirring BOD bottle probe senses dissolved oxygen and temperature

- Fits neck of standard BOD bottles or other containers with 17mm opening
- Without motorized stirrer
- For use with YSI 5000 or 5100 benchtop meters when equipped with Optional Probe Adapter Cable 13-299-78
- For use with YSI portable Models 52 and 58
- Operates on 120V 60Hz

INCLUDES:

Membrane/KCl Kit 5775 found in Probe Service Kits (13-299-16)

NOTE:

Probe is not for use with Models 55, 85, 95, 550A or 556, nor is it suitable for field use.

Mfr. No.	Cat. No.	Each
5750	**13-298-80**	337.09

Model 5905 Self-Stirring BOD Probe

Fast response to DO changes

Provides vigorous stirring for fast, accurate measurements. Responds rapidly to changes in dissolved oxygen—at 20°C (68°F), 90% of change is completed in 30 seconds.

- Has easily replaceable stirring motor, silver anode, and cap membrane
- Usable with YSI* portable Models 52 and 58 (available on our Web site)
- Usable with YSI 5000 or 5100 benchtop meters when equipped with optional Probe Adapter Cable 13-299-78
- Compatible with 300mL BOD bottles

13-299-76

INCLUDES:

Six membrane caps and bottle of KCl solution; for replacements, see 13-299-77 Cap Membrane Kit; 115VAC power cord

NOTE:

Probe is not for use with Models 55, 85, 95, 550A or 556.

Mfr. No.	Cat. No.	Each
5905	**13-299-76**	635.00

Cap Membrane Kit

- Includes six cap membranes, a 1 oz. (30mL) bottle of KCl solution and one sanding disk. For use with 13-398-87, -88, and -89 (Model 5239 Field Oxygen/Temperature Probes); 13-299-76 (Model 5905 BOD Probe); and 13-298-24 through-27 (Model 85 DO/ Conductivity Meters).

Mfr. No.	Cat. No.	Each
5906	**13-299-77**	43.46

Probe Adapter Cable

Adapts Models 5750 and 5905 BOD Probes for use with Models 5000 or 5100

Mfr. No.	Cat. No.	Each
5011	**13-299-78**	78.39

LOOKING FOR BOD BOTTLES?

See more BOD Bottles from Corning*, Kontes* and Wheaton* in the Bottles Section.

PORTABLE METERS

Fisher Scientific* accumet* Waterproof AP74 Portable Dissolved Oxygen Meter

Dedicated DO meter uses galvanic probe for immediate DO measurements

- Measures DO in mg/L (ppm) or % saturation, plus temperature
- Dual display has adjustable backlight; read measured value and temperature even in dark areas
- Automatic Temperature Compensation from 0° to 50°C
- Key in salinity and pressure; meter calculates barometric pressure and salinity offsets
- Independent 100%, zero and offset adjustment capabilities
- Displays probe diagnostics, slope, offset and mV values
- Data memory for 50 readings with temperature and date/time stamp
- IP67 waterproof construction; floatable, washable to maintain reliable operation
- HOLD function, Ready indicator, and auto shutoff

ORDERING INFORMATION:
Dimensions: 7½L × 3¾W × 2¼"H (19 × 9.5 × 5.7cm)

INCLUDES:
Meter/Probe option includes meter, DO/temperature probe, electrolyte, instructions and four "AAA" batteries. **Meter Kit** option includes meter, DO/temperature probe, electrolyte, five replacement membranes and replacement tool, rinse bottle, instructions, four "AAA" batteries, and carrying case.

13-636-AP74A

13-636-AP74

WARRANTY:
Model AP74 is warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years. Call your Fisher Scientific Customer Service Representative for full details.

Description	Cat. No.	Each
Meter Kit	13-636-AP74	928.27
Meter/Probe	13-636-AP74A	834.87

SPECIFICATIONS

Dissolved Oxygen Mode	
Range	0.00 to 20.00mg/L (ppm); 0.0 to 200.0% saturation
Relative Accuracy	±1.5% of full scale
Resolution	0.01mg/L (ppm); 0.1% saturation
Calibration	One or two points
Temperature Mode	
Range	0.0° to 50.0°C (32.0° to 122.0°F)
Relative Accuracy	±0.3°C (±0.5°F)
Resolution	0.1°C (0.1°F)
Temperature Compensation	Automatic; 0° to 50°C (32.0° to 122.0°F)

Fisher Scientific* accumet* Waterproof AP84 Portable pH/Dissolved Oxygen Meter

Wide-range pH and rapid DO readings

- Galvanic probe design for immediate DO measurements in mg/L (ppm) or % saturation
- Powerful pH Mode: -2.00 to +16.00pH range, ±0.01pH, 5-point autocalibration
- Dual display has adjustable backlight
- ATC from 0° to 50°C for DO and pH
- Key in salinity and pressure; meter calculates barometric pressure and salinity offsets
- Independent 100%, zero and offset adjustment capabilities
- Displays probe diagnostics, slope, offset and mV values
- Data memory for 50 readings with temperature and date/time stamp
- IP67 waterproof construction; floatable, washable to maintain reliable operation
- HOLD function, Ready indicator, and auto shutoff

ORDERING INFORMATION:
Dimensions: 7½L × 3¾W × 2¼"H (19 × 9.5 × 5.7cm)

INCLUDES:
Meter/Probe package includes meter, pH electrode, DO/temperature probe, electrolyte solution, instructions and four "AAA" batteries. **Meter Kit** package includes meter, pH electrode, DO/temperature probe, pH buffer solutions, electrolyte solution, two replacement membrane caps, 50mL each pH 4 and pH 7 standard solutions, rinse bottle, instructions, four "AAA" batteries, and carrying case.

Description	Cat. No.	Each
Meter/Probe	13-636-AP84A	1293.91
Meter Kit	13-636-AP84	1417.11

WARRANTY:
Model AP84 is warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years. Call your Fisher Scientific Customer Service Representative for full details.

13-636-AP84

SPECIFICATIONS

Dissolved Oxygen Mode	
Range	0.00 to 20.00mg/L (ppm); 0.0 to 200.0% saturation
Resolution	0.01mg/L (ppm); 0.1% saturation
Relative Accuracy	±1.5% full scale
Calibration Points	One or two points
pH Mode	
Range/Resolution/Accuracy	-2.00 to +16.00pH/0.01pH/±0.01pH
Temperature Mode	
Range	0° to 50°C; 32° to 122°F
Resolution	0.1°C; 0.1°F
Relative Accuracy	±0.3°C; ±0.5°F
Compensation	Automatic; 0° to 50°C; 32° to 122°F

ACCESSORIES

Replacement Probes for AP74 and AP84 pH/DO Meters

Description	For	Cat. No.	Each
pH Combination Electrode	AP84	13-620-AP56	143.74
DO/Temperature Probe	AP84, AP74	15-500-034	421.72

*Trademark. See Trademark Reference.

Prices subject to change.

sher Scientific* Traceable* Portable issolved Oxygen Meter

aceable to NIST* standards

- arge digits simultaneously display DO and temperature
- O range, 0.0 to 20.0mg/L, ±0.4mg/L
- emperature range, 0.0° to 60.0°C (32.0° to 140.0°F), ±0.8°C (±1.5°F)
- leter recalls highest, lowest and average readings; HOLD button reezes display
- S-232-C output connects to computer or datalogger for monitoring and toring results

DERING INFORMATION:
easures 1¼L × 3W × 7"H (3.2 × 7.6 × 17.8cm); weighs 9½ oz. (269g).
V adapter (11-661-23) available separately.

INCLUDES:
Probe, five membranes, electrolyte solution, 40" (101.6cm) cable, 9V alkaline battery, RS-232-C output, sample program that stores 100 readings.

REQUIRED ACCESSORIES:
DAS-3* Data Acquisition System (11-661-22) or DAS-4* Datalogger System (06-662-72) is required to transfer data to a computer file.

CERTIFICATIONS:
ISO 17025 Certificate provided to indicate instrument traceability to standards provided by NIST.

TRACEABLE
8.5
27.6
OXYGEN METER

06-662-66

Cat. No.	Each
06-662-66	470.04

hermo Scientific* Orion* Star Portable Dissolved Oxygen and pH/Dissolved xygen Meters

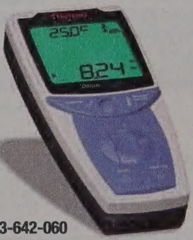
dicated measurement of dissolved oxygen or pH and DO in a handheld, ergonomic package

Star dissolved oxygen meter offers dedicated single-channel DO asurement; **4-Star pH/Dissolved Oxygen meter** features dual nnels and dual display. Both are easy to set up and use, provide able measurements for water testing applications.

- Vaterproof, battery-operated meters stand up to demanding ield applications
- eliver over 2000 hours of continuous operation
- isplay DO and temperature measurements simultaneously; display O concentration or percent DO Saturation
- alanced, comfortable handling
- asy to use three-button function
- right, backlit LCD display with ready indication
- utomatic barometric pressure compensation
- onvenient Quick-Start Guide on back of meter
- nhanced stability indicators, salinity correction and automatic barometric ressure compensation
- llow meter and probe calibration to a Winkler Titration for correlation of irect Biological Oxygen Demand (BOD) readings to Winkler methods
- ull complement of GLP-related features
- tore up to 10 password-protected methods, including setup parameters nd calibrations; download additional methods and software updates via he Web
- 00 point datalogger, downloadable to printer or computer via an optional S-232 or USB interface accessory
- MART STABILITY* and SMART AVERAGING* functions automatically; ptimize accuracy, precision and response time
- P67 waterproof; may be immersed for up to one hour with no vater incursion
- Vaterproof mini-DIN locking probe connectors
- dvanced self-tests on meter operation, self-diagnostics
- perate on four "AA" batteries

tar pH/DO Model adds:

- ual channel measurement and simultaneous display of pH and issolved oxygen
- utomatic or manual pH calibration at 1 to 5 points



13-642-060

25.0
7.00
8.24
ORION

13-642-063

- Recognizes NIST*, US and manual buffers
- Waterproof BNC pH electrode and waterproof mini-DIN locking DO probe connectors

ORDERING INFORMATION:
Additional application kits including meter, electrode, standards, solutions and accessories are available for your convenience. For more information, contact your Fisher Scientific Customer Service Representative. Thermo Scientific Orion Multiparameter Meters with Dissolved Oxygen mode available; see pH/pX section.

INCLUDES:
3-Star Meter Only option includes meter and instruction manual. **3-Star Meter Kit** option includes meter, DO probe 13-642-230, probe service kit, DO calibration sleeve, hard field case, and instruction manual. **4-Star Meter Only** option includes meter and instruction manual. **4-Star Meter Kit** option includes meter, Triode* pH/ATC electrode 13-642-250, 10-pack of pH 4.01, 7.00 and 10.01 buffer; 5 × 60mL of pH Electrode Storage Solution; DO probe 13-642-231 with 1.5m cable, probe service kit, DO calibration sleeve, hard field case, instruction manual. **4-Star Meter Kit Package** option includes meter, waterproof Triode pH/ATC electrode 09-357-75, 10-pack of pH 4.01, 7.00 and 10.01 buffer; 5 × 60mL of pH Electrode Storage Solution; DO probe 13-642-232 with 3m cable, probe service kit, DO calibration sleeve, hard field case, instruction manual.

Contd. on next page.

Thermo Scientific* Orion* Star Portable Dissolved Oxygen and pH/Dissolved Oxygen Meters, Contd.

Model	**Orion 3-Star Dissolved Oxygen Portable Meter**	**Orion 4-Star pH/Dissolved Oxygen Portable Meter**
Display	Custom backlit LCD	
Data Management	Saves 200 datapoints by time, stability or manual read with time/date stamp. Calibration log of last 10 calibrations. User method storage for 10 procedures. Advanced self-test and diagnostics routines. Password protection. Downloadable software and methods updates via Internet.	
Dissolved Oxygen Mode		
Range	0.00 to 90.00mg/L (0.0 to 600%)	
Resolution	0.01mg/L (0.1%)	
Relative Accuracy	±0.2mg/L	
pH Mode		
Range	----	-2.000 to +19.999pH
Resolution	----	0.1/0.01/0.001pH
Relative Accuracy	----	±0.002pH
Calibration Points	----	1 to 5
Temperature Mode		
Range	-5° to +105°C	
Resolution	0.1°C up to 99.9°C, 1.0 over 99.9°C	
Relative Accuracy	±0.1°, ±1 digit	
Compensation Range	-5° to +105°C	
Inputs	Mini-DIN, locking; phono jack for stirrer	
Data Output	Bidirectional RS-232, stereo jack, optional USB interface cable	
Electrical Requirements	4 × 1.5V "AA" (optional)	
Meter Only		
Mfr. No.	1213000	1216000
Cat. No.	**13-642-060**	**13-642-063**
Each	552.94	893.69
Meter Kit		
Mfr. No.	1213001	1216001
Cat. No.	**13-645-113**	**13-645-116**
Each	1183.00	1333.00
Meter Kit Package		
Mfr. No.	----	1216002
Cat. No.	----	**13-645-117**
Each	----	1302.00

ACCESSORIES

Dissolved Oxygen Probes

For Thermo Scientific* Orion* Star* DO Meters

- All have Mini-DIN connector for use with Star meters only.

Description	Mfr. No.	Cat. No.	Each
Dissolved Oxygen Probe with 12mm dia. body and overflow funnel	081010MD	**13-642-230**	430.62
Epoxy Body Dissolved Oxygen Probe with 1.5m cable	083005MD	**13-642-231**	594.00
Epoxy Body Dissolved Oxygen Probe with 3m cable	083010MD	**13-642-232**	626.65
Epoxy Body Dissolved Oxygen Probe with 20m cable	083060MD	**13-642-233**	756.00
Dissolved Oxygen Probe with autostirrer	086030MD	**13-642-234**	1265.00

THERMO SCIENTIFIC* ORION* STAR* SERIES APPLICATION PACKS

Thermo Scientific offers a large variety of Application Packs, each including a Star Series meter, appropriate probes, standards and all required accessories (including Method Notes) for a specific application.

Application Packs available for dissolved oxygen testing include:

- DO in Wine and Beer
- DO in Salt Water

Application Packs available for pH testing include:

- pH of Wine/Beer
- pH of Salt Water
- pH of Cheese
- pH of Milk

Visit www.fishersci.com and search for Orion Star Kits

*Trademark. See Trademark Reference.

Prices subject to change.

kton* Acorn* DO 6 Dissolved ygen Meter

nomical DO measurements in mg/L, ppm % saturation

- alvanic probe design for immediate dissolved ygen readings, easy maintenance and placeable cap assembly
- ree-point calibration at 0%, 100%, and offset
- mperature readout in °C with the push of a button
- utomatic temperature compensation; barometric and linity compensation after manual parameter inputs
- alinity correction from 0.0 to 50.0ppt, barometric essure correction from 500 to 1499mmHg
- OLD function and automatic shutoff
- agnostic messages help you aintain electrode in top condition
- plash-resistant membrane keypad helps otect meter components

13-200-218

DERING INFORMATION:

ensions: 1⅜L × 2¾W × 5¾"H
× 7 × 14.6cm). Operates on four "AAA"
eries.

LUDES:

ter Kit option includes meter, DO/tem-
ature probe with 3' (1m) cable, replacement membrane caps, electrolyte
tion, three sample bottles, batteries and instructions, hard carrying case

RRANTY:

years

cription	Mfr. No.	Cat. No.	Each
er Kit	35642-60	**13-200-218**	690.96

CIFICATIONS

solved Oxygen Mode (Concentration)	
nge	0.00 to 20.00mg/L (ppm)
solution	0.01mg/L (ppm)
lative Accuracy	±1.5% of full scale
solved Oxygen Mode (Saturation)	
nge	0.0 to 200.0%
solution	0.1%
lative Accuracy	±1.5% of full scale
nperature Mode	
nge	-5.0° to +105.0°C
solution	0.1°C
lative Accuracy	±0.5°C
mpensation	Automatic
ometric Pressure Compensation	
nge	500 to 1499mmHg
solution	1mmHg
inity Compensation	
nge	0.0 to 50.0ppt
solution	0.1ppt

ACCESSORIES

Replacement DO/Temperature Probe for Oakton* Acorn* DO 6

Cable Length	Cat. No.	Each
3' (1m)	**13-200-271**	253.60

Oakton* DO 100 Dissolved Oxygen Meter

Dual display of dissolved oxygen and temperature readings

15-500-032

- Dual-readout LCD
- Galvanic probe design for immediate dissolved oxygen readings—no meter warmup
- Memory stores up to 16 readings with temperatures
- Independent 100%, zero and offset adjustment capabilities
- Key in barometric pressure and salinity; meter calculates salinity correction from 0.0 to 50.0ppt, barometric pressure correction from 555 to 808mmHg
- Easy-to service, low maintenance galvanic probe with replaceable cap assembly
- Displays probe diagnostics, slope, zero offset and millivolt values
- HOLD function, Ready indicator, and automatic shutoff
- Splash-resistant membrane keypad helps protect meter components

15-500-033

ORDERING INFORMATION:

Dimensions: 7½L × 3½W × 1¾"H (19 × 8.9 × 4.4cm). Built-in stand. Operates on four "AA" batteries.

INCLUDES:

Meter/Probe option includes dissolved oxygen/temperature probe with 10' (3m) cable, electrolyte solution, batteries and instructions. **Meter Kit** option includes meter, DO/temperature probe, 500mL electrolyte solution, five replacement membranes, membrane replacement tool, rinse bottle, and hard plastic carrying case.

WARRANTY:

Three years

Type	Cat. No.	Each
Meter/Probe	**15-500-032**	767.99
Meter Kit	**15-500-033**	984.03

SPECIFICATIONS

Dissolved Oxygen Mode: 0mg/L (ppm)	
Range	0.00 to 200.00%
Resolution	0.01mg/L (ppm)
Accuracy	±1.5% full scale
Calibration	0.0 to 20.00mg/L (ppm)
Dissolved Oxygen Mode: 0% Saturation	
Range	0.0 to 200.0%
Resolution	0.1%
Accuracy	±1.5% full scale
Calibration	Up to three points
Temperature Mode	
Range	0.0° to 50.0°C
Resolution	0.1°C
Accuracy	±0.1°C
Compensation	Automatic
Power	Four 1.5V "AA" batteries or 110/220V adapter
Housing	Built-in stand; Splash-resistant keypad
Display	Dual LCD

ACCESSORIES

Replacement DO/Temperature Probes for Oakton* DO 100

Cable Length	Cat. No.	Each
10' (3m)	**15-500-034**	421.72
25' (7.6m)	**15-500-035**	467.68

YSI* Professional Series DO and DO/Conductivity Meters

Compact, handheld instruments provide user-selectable cable lengths and probe options.

Choose the Pro20 for a dedicated, single-probe DO meter. Choose the Pro2030 to measure both DO and Conductivity. With both, you get:

- IP67 waterproof rating, even with battery cover off
- Auto temperature, salinity, barometric compensation
- Choice of 4, 10, 20, and 30m (13, 32, 65 and 98') detachable cables
- Fuel gauge continuously displays battery level
- User selectable polarographic or galvanic DO sensors with screw-on cap membranes
- EPA-approved DO methodology
- Backlit display and keypad
- User-upgradeable software via USB communications
- Graphic display with detailed messages and instructions

Pro20 features:

- DO range of 0 to 50mg/L, 0 to 500% air saturation
- User-selectable resolution of 0.1 or 0.01mg/L, 1% or 0.1% air saturation
- Temperature range of -5° to +45°C
- Choice of DO/temperature cables in 4, 10, 20 and 30m lengths
- USB connection for software upgrades
- 1000 datasets with date/time stamp plus GLP, manual or logging, user-selectable rate

Pro2030 adds:

- Conductivity range of 0 to 200mS/cm, using four-electrode cell with autoranging
- Salinity range calculated from 0.0 to 70.0ppt
- Total Dissolved Solids range calculated from 0 to 100g/L
- Choice of DO/temperature cables in 4, 10, 20 and 30m lengths
- Choice of Conductivity/temperature probes with attached cables in 4, 10, 20 and 30m lengths

ORDERING INFORMATION:

Dimensions: 8½L × 3¼W × 2¼"H (21.6 × 8.3 × 2.3cm). Net weight, with batteries: 1 lb. 1 oz. (475g). Additional YSI Professional models may be found in the Conductivity and pH/pX sections.

Description	Mfr No.	Cat. No.	Each
Pro20 DO Instrument	6050020	**15-177-452**	525.00
Pro2030 DO/Conductivity Instrument	6052030	**15-177-457**	635.00

ACCESSORIES

Probes for Pro20 and Pro2030 Meters

- DO probes come without cable; order separately
- Conductivity probes come with attached cable of length indicated in table

Description	Cable	Mfr. No.	Cat. No.	Each
Dissolved Oxygen/Temperature Probes				
Galvanic DO probe	None	605202	**15-177-458**	160.00
Polarographic DO Probe	None	605203	**15-177-459**	160.00
Conductivity/Temperature Probes with Cables				
Probe with 4m cable	13' (4m)	60530-4	**15-177-474**	375.00
Probe with 10m cable	32' (10m)	60530-10	**15-177-475**	395.00
Probe with 20m cable	65' (20m)	60530-20	**15-177-476**	445.00

DO/Temperature Cables for Pro20 and Pro2030

- Without probes; order separately

Cable Length	Mfr. No.	Cat. No.	Each
13' (4m)	60520-4	**15-177-470**	220.00
32' (10m)	60520-10	**15-177-471**	245.00
65' (20m)	60520-20	**15-177-472**	275.00

15-177-452

INCLUDES:
Meter, two alkaline C-cells, instructions

REQUIRED ACCESSORIES:
For both, DO Probe 15-177-458 or -459 and detachable cable 15-177-470, -471, -472, or -473; for Pro2030, Conductivity/Temperature Probe/Cable Combination 15-177-474, -475, -476, or -477.

WARRANTY:
Three years for the instrument; two years for the cables; one year for probes

COMPLIANCE:
EPA-approved DO methodology

Model	Pro20	Pro2030
Modes	DO and Temperature	DO, Conductivity and Temperature
Display	Backlit LCD	
Data Management	Stores 50 datasets with date/time stamp	
Data Output	----	
Dissolved Oxygen Mode Concentration)		
Range	0 to 50mg/L	
Resolution	0.1 or 0.01mg/L (user selectable)	
Relative Accuracy	0 to 20mg/L: ±2% of reading or 0.2mg/L, whichever is greater. 20 to 50mg/L: ±6% of reading	
Dissolved Oxygen Mode (% Saturation)		
Range	0 to 500% air saturation	
Resolution	0.1% air saturation	
Relative Accuracy	0 to 200%: ±2% of reading or ±2% air saturation, whichever is greater. 200 to 500%: ±6% of reading.	
Temperature Mode		
Range	-5° to +100°C	-5° to +70°C
Resolution	0.01°C	0.01°C
Relative Accuracy	±0.15°C	±0.1°C
Compensation Range	-5° to +45°C	-5° to +45°C
Conductivity Mode		
Range	----	0 to 200mS/cm
Resolution	----	0.001mS/cm to 0.1mS/cm (range-dependent)
Relative Accuracy	----	±0.5% of reading or ±0.001mS/cm, whichever is greater (4m cable); ±1.0% of reading or ±0.001mS/cm; whichever is greater (20m cable)
Salinity Mode		
Range	----	0 to 70ppt
Resolution	----	0.01ppt
Relative Accuracy	----	±1.0% of reading or ±0.1ppt, whichever is greater
Total Dissolved Solids (TDS) Mode		
Range	----	0 to 100g/L
Resolution	----	4 digits
Barometric Compensation		
Range	375 to 825mmHg	
Resolution	0.1mmHg	
Relative Accuracy	±3mmHg within ±15°C temperature range from calibration point	

*Trademark. See Trademark Reference.

Prices subject to change.

I* 550A DO and 556 Multi-Probe Meters

gged, accurate, waterproof field meters for DO and more

- ssolved oxygen calibration in mg/L or % air saturation; readings tomatically compensatated for temperature
- ish-button calibration in % and mg/L, direct mperature, salinity and altitude compensated
- ccurately measure dissolved oxygen and mperature simultaneously
- eld-replaceable, weighted DO electrode has rew-on cap with PE membrane for faster sponse, lower stirring dependence
- irge, easy-to-read backlit display, low-battery dicator
- eet IP67 requirements; housing is waterproof id resists impact
- perate on four alkaline "C" cells that last over 00 hours

13-298-118

del 550A DO/Temperature Meter:

- anual salinity input; 0 to 70ppt range
- ackaged with 12, 25, 50, or 100' cables; placement DO electrode sold separately

del 556 Multi-Probe Meter adds:

- multaneous measurement of DO, pH, ORP, itoranging Conductivity/Salinity/TDS
- ores more than 49,000 time/date-stamped atasets with up to eight parameters each
- ompatible with EcoWatch* for Windows* ata analysis software (order separately; ontact your Fisher Scientific Customer Service epresentative)
- isplays graphs of parameters over time
- onforms to GLP standards
- S-232 interface to PC
- ptional user-calibratable internal barometer; displays and logs data r DO calibration and tracking pressure changes

13-298-64

DERING INFORMATION:

ensions: 2½L × 4¾W × 9"H (6 × 11.9 × 22cm). Additional accessories ilable on our Web site, including carrying cases, mounting devices, argeable battery pack and charger.

LUDES:

del 550A comes with four "C" batteries, operating manual, Temperature probe and cable of length specified in ordering table.

del 556 comes with four "C" batteries, operating manual, soft carrying e; order DO/Temperature/Conductivity probe/cable combinations and ORP probes separately.

RRANTY:

ee-year warranty on instrument and one-year warranty on aceable electrode.

MPLIANCE:

marked.

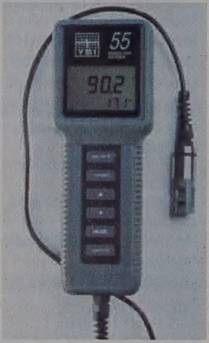
Description	Mfr. No.	Cat. No.	Each
Model 550A Meter/Probe Packages			
Meter/Probe, 12' (3.7m) cable	550A 12	**13-298-118**	795.00
Meter/Probe, 25' (7.6m) cable	550A 25	**13-298-120**	845.00
Meter/Probe, 50' (15.2m) cable	550A 50	**13-298-122**	895.00
Meter/Probe, 100' (30.5m) cable	550A 100	**13-298-116**	945.00
Model 550A Meter/Probe/Carrying Case Packages			
Meter/Probe, 12' (3.7m) cable, carrying case	550A 12CC	**13-298-119**	855.00
Meter/Probe, 25' (7.6m) cable, carrying case	550A 25CC	**13-298-121**	895.00
Meter/Probe, 50' (15.2m) cable, carrying case	550A 50CC	**13-298-123**	945.00
Meter/Probe, 100' (30.5m) cable, carrying case	550A 100CC	**13-298-117**	995.00
Model 550A Replacement Probe			
Replacement DO/ Temperature Electrode	559	**13-298-63**	160.01
Model 556 Multi-Probe Meter Packages			
Meter	556-01	**13-298-64**	1750.00
Meter with Barometer	556-02	**13-298-65**	1995.00
Model 556 Probes			
DO/Temperature Conductivity Probe, 13' (4m) cable	5563-4	**13-298-70**	950.00
DO/Temperature Conductivity Probe, 33' (10m) cable	5563-10	**13-298-71**	1050.00
DO/Temperature Conductivity Probe, 26' (20m) cable	5563-20	**13-298-72**	1150.00
pH/ORP Probe	5565	**13-298-66**	311.94
pH Probe	5564	**13-298-67**	205.79

SPECIFICATIONS

Model	550A	556
Modes	DO/Temperature	DO/Temperature/Conductivity/pH/ORP
Dissolved Oxygen Mode	0 to 50mg/L; 0 to 500% air saturation; accuracy, 0 to 20mg/L (0 to 200% saturation): greater of ±2% of reading, ±0.3mg/L, ±2% saturation. 20 to 50mg/L (200 to 500% saturation): ±% of reading	0.00 to 50.00mg/L; 0.0 to 500.0% air saturation; accuracy, 0 to 20mg/L (0 to 200% saturation): greater of ±2% of reading, ±0.2mg/L, ±2% saturation. 20 to 50mg/L (200 to 500% saturation): ±% of reading
Barometric Compensation	----	500.0 to 800.0mmHg; accuracy, ±3mmHg within ±15°C of calibration point
Temperature Mode	-5.0 to +45.0°C; accuracy, ±0.3°C	-5.0 to 45.0°C; accuracy, ±0.15°C
Conductivity Mode	----	0.000 to 200.0mS/cm; accuracy, 4m cable: greater of ±0.5% of reading or ±0.001mS/cm. 20m cable: greater of ±1.0% of reading or ±0.001mS/cm.
Salinity Mode	----	0.00 to 70.00ppt; accuracy, ±1.0% of reading or ±0.1ppt, whichever is greater
TDS Mode	----	0 to 100g/L
pH Mode	----	0.00 to 14.00pH; accuracy,±0.2pH
ORP Mode	----	-999.0 to +999.0mV; accuracy, ±20mV

YSI* Model 55 Handheld Dissolved Oxygen Meter

With easy-to-use, push-button calibration


13-298-56

Lightweight, handheld unit is a complete system for measuring dissolved oxygen.

Easy to calibrate and operate:

- Place probe inside built-in calibration chamber
- Push both arrow buttons simultaneously
- Indicate altitude and salinity
- Place stainless-steel probe in sample; probe sinks easily for measuring convenience

Accurate measurement and compensation:

- Simultaneously displays oxygen and temperature
- 0 to 20mg/L dissolved oxygen range; accurate to ±0.3mg/L
- 0 to 200% air saturation range; accurate to ±2%
- Measures temperature from -5° to +45°C (23° to 113°F)
- Direct salinity compensation of 0 to 40ppt range means you can use meter in fresh or salt water

ORDERING INFORMATION:

Dimensions: 2½L × 3½W × 9½"H (6.4 × 8.9 × 24cm)

INCLUDES:

Rugged, floatable ABS plastic case, probe, and your choice of 12, 25 or 50' long (3.7, 7.6, or 15.2m) cable. Six "AA" alkaline batteries supply power for approximately 100 hours of operation.

Cable Length	Mfr. No.	Cat. No.	Each
12' (3.7m)	55 12	**13-298-56**	699.00
25' (7.6m)	55 25	**13-298-57**	735.00
50' (15.2m)	55 50	**13-298-62**	800.00

SPECIFICATIONS

Dissolved Oxygen	
Range	0 to 20mg/L, 0 to 200% air saturation
Accuracy	±0.3mg/L, ±2% air saturation
Resolution	0.01mg/L, 0.1% air saturation
Temperature	
Range	-5° to +45°C (23° to 113°F)
Accuracy	±0.4°C
Resolution	0.1°C

YSI* Model 85 Handheld Dissolved Oxygen/Conductivity Meter

Simultaneously measures dissolved oxygen, conductivity, salinity, and temperature

13-298-24

Rugged, microprocessor-based digital meter features:

- Automatic salinity compensation for DO readings
- Automatic temperature compensation
- Autoranging for fast, accurate DO and conductivity reading
- Push-button calibration for DO or conductivity
- Internal memory stores 50 sets of readings for on-screen recall
- Adjustable specific conductance temperature coefficient and reference temperature
- Low battery alert

ORDERING INFORMATION:

Dimensions: 2¼L × 3½W × 9½"H (5.6 × 9 × 24cm). Uses 13-299-77 Cap Membrane Kit.

INCLUDES:

Combination stainless-steel dissolved oxygen/conductivity/temperature probe; six "AA" batteries, six easy-to-install screw-on membrane caps, KCl probe solution, and waterproof case that meets IP65 requirements

Cable Length	Mfr. No.	Cat. No.	Each
10' (3m)	85 10	**13-298-24**	1250.00
25' (7.6m)	85 25	**13-298-25**	1295.00
50' (15.2m)	85 50	**13-298-26**	1450.00
100' (30.5m)	85 100	**13-298-27**	1435.00

SPECIFICATIONS

Dissolved Oxygen	
Range	0 to 20mg/L, 0 to 200% air saturation
Accuracy	±0.3mg/L, ±2% air saturation
Resolution	0.01mg/L, 0.1% air saturation
Conductivity	
Range	0 to 200mS in four ranges
Accuracy	±0.5% of full scale
Resolution	0.1µS
Salinity	
Range	0 to 80ppt
Accuracy	±2% or ±0.1ppt
Resolution	0.1ppt
Temperature	
Range	-5° to +65°C
Accuracy	±0.1°C + 1 lsd[†]
Resolution	0.1°C

[†] *Least significant digit.*

*Trademark. See Trademark Reference.

Prices subject to change.

I* Model 58 Portable Dissolved xygen Meter

de range, exceptional accuracy

leasures over a broad range: 0 to
0mg/L (ppm) or 0 to 200%
r saturation

rovides excellent accuracy of
0.03mg/L, ±0.3%

esigned for measuring supersaturated
ater; use in fresh or salt water

leter displays oxygen concentrations in
vo temperature-compensated modes on
n LCD

esponse time is typically 90% in 10 seconds at 30°C

lanual salinity correction, recorder output

perates from line power or four "D" cell batteries (included)

DERING INFORMATION:
ight, 4¼ lb. (1.9kg). Dimensions: 3¾L × 11W × 8½"H (9.5 × 28 × 22cm).

LUDES:
ged ABS plastic case, four "D" cell batteries and 115VAC adapter

No.	Cat. No.	Each
	13-298-58	1795.00

ECIFICATIONS

solved Oxygen	
nge	0 to 20mg/L (ppm); 0 to 200% air saturation
curacy	±0.03mg/L; ±0.3%
solution	0.1, 0.01mg/L; 0.1% air saturation
perature	
nge	-5° to +45°C
curacy	±0.3°C
solution	0.1°C
linity mpensation Range	0 to 40ppt

ACCESSORIES

Model 5739 Field Oxygen/Temperature Probe

Can be calibrated easily and quickly

For use with YSI* portable Models 52 and 58 or with YSI 5000 or 5100 benchtop meters when equipped with optional Probe Adapter Cable 13-299-78.

- Calibrates easily in air in just seconds
- Automatic temperature compensation and pressure compensation to ±0.5% of reading at 100psi/230' (7kg/cm²/70m) of water
- Rugged plastic body, built-in sinker weight

INCLUDES:
One 13-299-16 Membrane/KCl Kit

REQUIRED ACCESSORIES:
Detachable cable; order separately

NOTE:
Benchtop meters are not recommended for field use. Not for use with handheld Models 55, 85, 95, 550 or 556.

Cable Length	Mfr. No.	Cat. No.	Each
None	5739	**13-299-43**	300.68

ACCESSORIES

Detachable Cables for 5739 Probe

- For use with Model 5739 (13-299-43) probe
- Cables available in lengths from 10 to 200' (3 to 61m)
- Cables 25' (7.5m) or longer include storage reel

Cable Length	Mfr. No.	Cat. No.	Each
10' (3m)	5740 10	**13-299-40**	185.00
25' (7.5m)	5740 25	**13-299-46**	225.00
50' (15m)	5740 50	**13-299-1**	276.72
100' (30.5m)	5740 100	**13-299-48**	328.04
200' (61m)	5740 200	**13-299-52**	448.79

Model 5239 Probe

Tough probe to accompany portable DO field-testers

Rugged field probe for use with YSI* portable Models 52 and 58 or with YSI 5000 or 5100 benchtop meters when equipped with optional Probe Adapter Cable 13-299-78.

- Weighted and protected by a heavy-duty guard; optimized for YSI microprocessor-based systems
- Uses 13-299-77 Cap Membrane Kit

NOTE:
Benchtop meters are not recommended for field use. Not for use with handheld Models 55, 85, or 95.

Cable Length	Mfr. No.	Cat. No.	Each
10' (3m)	5239 10	**13-398-87**	501.13
25' (7.5m)	5239 25	**13-398-88**	536.00
50' (15m)	5239 50	**13-298-89**	580.00

Probe Service Kits

For replenishing oxygen sensor on YSI* Dissolved Oxygen Probes

- Membrane Kits include 150 standard, 1mil PTFE membranes or 150 high-sensitivity, 0.5mil PTFE membranes, in 10 packs of 50
- Membrane/KCl Kits include 30 standard or high-sensitivity membranes, 1 oz. (30mL) dropper bottle with KCl crystals for adding distilled water and a probe contour tool
- For use with probes 13-299-43 (Model 5739), 13-298-80 (Model 5750), 15-176-50 (Model 5718), 13-298-16 (Model 5300 Biological Oxygen Monitor), and 13-298-56, -57, or -62 (Model 55 Handheld Dissolved Oxygen Meters)

Description	Mfr. No.	Cat. No.	Price
Standard Membrane Kit	5793	**13-298-82**	Pk. of 10/84.05
High-sensitivity Membrane Kit	5794	**13-298-83**	Pk. of 10/66.63
Standard Membrane/KCl Kit	5775	**13-299-16**	Ea./24.14
High-sensitivity Membrane/KCl Kit	5776	**13-299-32**	Ea./26.16

Mettler Toledo* SevenGo pro* SG6 Dissolved Oxygen Meter

Professional oxygen instrument; IP-67 waterproof rating

01-910-530 Series

Portable meter measures dissolved oxygen in mg/L and % saturation. Designed for easy, comfortable right- or left-handed operation. Meter is waterproof and dustproof to IP-67 standard, features large display of measured value and settings; optional rotatable electrode clip mounts left or right for single-handed operation.

- Manual or automatic air pressure compensation with built-in barometer
- High-performance O_2 sensor
- Comprehensive range of accessories
- Data memory for 200 GLP datapoints
- Backlit display
- Separate operating modes for expert and routine use
- Linear and nonlinear temperature compensation
- Record date, time, time interval
- Intuitive menu operation using softkeys
- GLP memory for 200 datapoints
- Contact-free infrared communication with notebook, printer, or PC

ORDERING INFORMATION:
All options include wrist strap, four "AA" batteries, operating instructions, test certificate, and declaration of conformity. Choose from three packaging options:

- Meter with electrode and 1.8m cable
- Meter with electrode, 1.8m cable, and field case with electrode arm and cover
- Meter with electrode, 10m cable, and field case with electrode arm and cover

Model	**SevenGo pro SG6**
Dissolved Oxygen Mode	
Range	0.00 to 99.00mg/L (ppm); 0 to 600% saturation
Resolution	0.01mg/L (ppm); 0.1% or 1% saturation
Relative Accuracy	±0.5%; max. 0.03mg/L
Temperature Mode	
Range	0.0° to 60°C
Resolution	0.1°C
Relative Accuracy	±0.1°C
Barometric Presssure	500 to 1100mbar ±1mbar
Inputs	BNC, NTC (both IP-67)
Outputs	IR to printer or PC via RS-232 or USB
Power Requirements	4 × "AA" batteries or optional 1.3V NiMH accumulators
Operating Environment	0° to 40°C, 55 to 85% rel. humidity (non-cond.)
Dimensions (L × W × H)	1¾L x 3½W x 8⅝"H (45 x 90 x 220cm)
Weight	11½ oz. (325g) without batteries
Meter with Electrode and 1.8m Cable	
Mfr. No.	SG6-ELK
Cat. No.	**01-910-530**
Each	1070.00
Meter with Electrode, 1.8m Cable and Case	
Mfr. No.	SG6-FK2
Cat. No.	**01-910-531**
Each	1155.00
Meter with Electrode, 10m Cable and Case	
Mfr. No.	SG6-FK10
Cat. No.	**01-910-532**
Each	1295.00

ACCESSORIES

Dissolved Oxygen Replacement Electrode

Model	Cable Length	Mfr. No.	Cat. No.	Each
InLab 605	1.8m	51340291	**01-910-556**	603.00

*Trademark. See Trademark Reference.

IMPORTANT TERMS TO KNOW

Gradient PCR—For most PCR experiments, much of your overall time is devoted to optimizing the reaction. The annealing temperature must often be determined empirically in numerous experiment runs. A gradient cycler enables the testing of various annealing and, where necessary, denaturing temperatures in one run, thereby reducing your amount of work.

Licensed and authorized for PCR—Practice of the patented Polymerase Chain Reaction (PCR) process requires a license, therefore it is important that your cycler is an authorized thermal cycler.

FEATURES TO LOOK FOR

Fast Heating and Cooling Rates—The heating and cooling rates of cyclers influence the speed at which the reaction occurs. The faster the ramp rates, the quicker your protocol is finished.

Triple Circuit Technology—Three separate temperature control circuits (Peltier elements) control the block, which ensures precise control of the temperature gradient, enhances the linearity of the gradient, and reduces temperature loss in the peripheral areas.

High Throughput Flexibility—As your lab grows and you need to expand the number of cyclers you have, it's comforting to know that your cyclers can easily link together and be controlled with one device (via a control panel or computer software).

ast. Friendly. Flexible.
hat's the Eppendorf® design concept,
articularly for our Mastercyclers®
-when less is more, and it's speed,
ccuracy, and reproducibility that
ount most.

BEFORE YOU BUY THERMAL CYCLERS

Technical Specifications

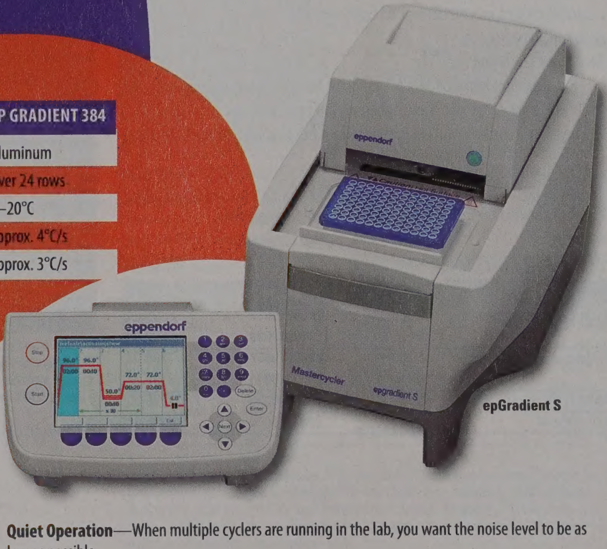
MASTERCYCLER	EP GRADIENT	EP GRADIENT S	EP GRADIENT 384
Thermoblock	Aluminum	Silver	Aluminum
Gradient Block	Over 12 rows	Over 12 rows	Over 24 rows
Gradient Range	1–20°C	1–24°C	1–20°C
Heating Rate*	approx. 4°C/s	approx. 6°C/s	approx. 4°C/s
Cooling Rate*	approx. 3°C/s	approx. 4.5°C/s	approx. 3°C/s

*Block Temperature.

Practice of the patented Polymerase Chain Reaction (PCR) process requires a license. The Eppendorf® Thermal Cycler is an Authorized Thermal Cycler and may be used with PCR licenses available from Applied Biosystems. Its use with Authorized Reagents also provides a limited PCR license in accordance with the label rights accompanying such reagents.

onsored by:

eppendorf
North America



epGradient S

Quiet Operation—When multiple cyclers are running in the lab, you want the noise level to be as low as possible.

Heated Lid—A heated lid minimizes formation of non-specific annealing and primer-dimers as well as reduces condensation and evaporation of your sample.

No Restrictions on Reagents/Consumables—Having an open platform is essential if you want to use kits, reagents and consumables of your choice.

Upgradeable to Real-time—As your needs change, your system's capabilities should be able to as well.

Intuitive Programming—Quickly and easily program, edit and start your protocol.

For a full selection of Eppendorf® Thermal Cyclers, see the PCR section.

Eppendorf* Mastercycler* ep Thermal Cyclers

Faster, reliable, and flexible

Key Features

- Gradient function simplifies protocol optimization
- Easy connectivity from cycler to cycler allows for modular laboratory settings
- Lids use Electronic Sample Protection (ESP) to ensure that samples are heated efficiently and evenly
- Optional motorized, one-touch automatic lids provide compatibility with robotic systems
- Control Panel with graphical user interface and color display (sold separately) controls Mastercycler ep modules

Control Panel Features

- Intuitive software tracks and reports the status of runs
- Control Panel can be operated with keypad or a user-supplied mouse to create and edit protocols in optional password-protected folders
- Protocols can be easily edited—simply type in a new time or temperature, or add or delete a step with the touch of a button
- An external printer can be attached directly to the thermal cycler to print GLP-compliant reports
- Up to five Mastercycler ep cyclers can be controlled by one Control Panel
- Up to 30 cyclers can be controlled using one PC

Additional Features

- Two block materials available
  - Aluminium block allows for efficient heat transfer to samples
  - Silver block provides enhanced heating capabilities
- SteadySlope* Technology ensures constant heating and cooling rates and allows the results of gradient experiments to be transferred seamlessly to routine applications
- Triple Circuit Technology (TCT) provides an additional heating and cooling zone for precise temperature control of all gradient profiles

Description	Lid	Cat. No.	Each
Mastercycler ep gradient	Manual lid	**E950010011**	6999.00
	Motorized lid	**E950010029**	8699.00
Mastercycler ep gradient S	Manual lid	**E950010037**	7799.00
	Motorized lid	**E950010045**	9499.00
Mastercycler ep 384	Manual lid	**E950010053**	7499.00
Control Panel	----	**E950011009**	2095.00

E950011009 with E9500100 Series

NOTE:
Control panel (purchased separately) is necessary for operation of Mastercycler modules.

SPECIFICATIONS

Model	ep gradient	ep gradient S	ep 384
Accepts	96-well plates, 0.2mL tubes and strips	96-well plates, 0.2mL tubes and strips	384-well plates
Block Material	Aluminium	Silver	Aluminium
Temp. Control Range	4° to 99°C	4° to 99°C	4° to 99°C
Gradient Range	1° to 20°C	1° to 24°C	1° to 20°C
Temp. Uniformity			
95°C	≤±0.4°C	≤±0.4°C	≤±0.4°C
20° to 72°C	≤±0.3°C	≤±0.3°C	≤±0.3°C
Control Accuracy	±0.2°C	±0.2°C	±0.2°C
Heating Rate	≈4.5°C/sec.	≈6°C/sec.	≈4.5°C/sec.
Cooling Rate	≈3°C/sec.	≈4.5°C/sec.	≈3°C/sec.
No. of Programs	>700 (Control Panel); infinite (multimedia card)	>700 (Control Panel); infinite (multimedia card)	>700 (Control Panel); infinite (multimedia card)
L × W × H	16⅜ × 10⅜ × 12¼" (41.7 × 26.4 × 31cm)	16⅜ × 10⅜ × 12¼" (41.7 × 26.4 × 31cm)	16⅜ × 10⅜ × 12¼" (41.7 × 26.4 × 31cm
Electrical Requirements	120V 50/60Hz	120V 50/60Hz	120V 50/60Hz

Practice of the patented Polymerase Chain Reaction (PCR) process requires a license. The Eppendorf Thermal Cycler is an Authorized Thermal Cycler and may be used with PCR licenses available from Applied Biosystems. Its use with Authorized Reagents also provides a limited PCR license in accordance with the label rights accompanying such reagents.

U.S. Patent 6,210,958.

*Trademark. See Trademark Reference.

Prices subject to change.

ermo Scientific* Hybaid MultiBlock Satellite (MBS) Thermal Cycler System

histicated thermal cycling system can be expanded as laboratory needs grow

Features

fers the ability to network satellite reaction blocks with a computer

ch system can be customized, using any combination of satellite blocks m five available formats

computer controls each satellite block independently and stores an limited number of programs, making the system suitable for ltiple users

e system can be expanded by the addition of one or many satellite ocks, up to 30 total

tware Features

arge, easy-to-use interface displays information about all of the tellite blocks in graphical and tabular formats, allowing users to see mediately which blocks are running which programs

rsonal directories and file storage offer convenient program storage for ltiple users

llite Block Features

ngradient blocks are available in 0.2mL, 0.5mL, and 384-well formats

adient blocks are available in 0.2mL and 0.5mL formats

tellite blocks can be positioned next to each other or across the oratory, providing the freedom to design a system that maximizes the ailable space

justable heated lids provide oil-free operation with all styles of PCR bes and plates

e lid pressure can be altered with the turn of a dial to ensure a firm al on both polycarbonate and polypropylene plates

tellite blocks will continue an exisiting run if the software or computer turned off, preventing sample loss

ur control modes provide accurate temperature control

- Active Tube Control measures the actual temperature of the reaction mix using a tube thermistor and enables the unit to actively compensate for differences between the programmed temperature and the actual temperature
- Simulated Tube and Simulated Plate Control achieve temperature accuracy similar to Active Tube Control for tube and 96-well plate formats, respectively, by constantly calculating the sample temperature and adjusting the block temperature as necessary
- Block Control monitors the actual block temperature

LUDES:

t-up Kits include desktop or laptop computer, authorized software, l interface card, any one or two MBS satellite units (please specify ed units when ordering)

IPLIANCE:

ware offers real-time block data and advanced data recording facilities tisfy GLP requirements.

E:

tional satellite blocks are available separately.

HBMBSKIT2L with three accessory blocks

SPECIFICATIONS

Temp. Control Modes	Active Tube Control, Simulated Tube Control, Simulated Plate Control, and Block Control
Temp. Control Range	4° to 99°C
Gradient Range†	Up to 15°C
Temp. Uniformity	±0.3°C within 30 sec.
Heating Rate	Up to 3°C/sec.
Cooling Rate	Up to 2°C/sec.
No. of Programs	Unlimited
Max. No. of Cycles	99 per program stage
Max. No of Program Steps	44 per program stage
Max. No. of Program Stages	35
L × W × H	11⅜ × 11¾ × 7⅞" (29 × 30 × 20cm)
Electrical Requirements	115/230VAC (switchable) 50/60Hz, 550w

Description	Cat. No.	Each
Desktop Kits		
Start-Up Kit 1 (w/one satellite unit)	**HBMBSKIT1**	10,096.00
Start-Up Kit 2 (w/two satellite units)	**HBMBSKIT2**	14,355.00
Laptop Kits		
Start-Up Kit 2 (w/two satellite units)	**HBMBSKIT2L**	15,732.00
Nongradient Satellite Blocks		
0.2mL 96-well	**HBMBS02**	5760.00
0.5mL 96-well	**HBMBS05**	5760.00
384-well	**HBMBS384**	6038.00
Gradient Satellite Blocks		
0.2mL 96-well	**HBMBSG02**	6340.00
0.5mL 96-well	**HBMBSG05**	6340.00

† When used with gradient blocks.

Practice of the patented Polymerase Chain Reaction (PCR) process requires a license in certain countries. The Thermo Scientific Thermal Cycler is an Authorized Thermal Cycler and may be used with PCR licenses available from Applied Biosystems. Its use with Authorized Reagents also provides a limited PCR license in accordance with the label rights accompanying such reagents.

Thermo Scientific* Hybaid Px2 Thermal Cycler

Interchangeable reaction blocks maximize choice of sample formats

Key Features

- Personal thermal cycler accommodates six interchangeable reaction blocks (sold separately)
- Nongradient blocks are available in 0.2mL, 0.5mL, 384-well, and flat-block formats
- Gradient blocks are available in 0.2mL and 0.5mL formats
- Gradient option allows rapid protocol optimization
- Advanced temperature control and excellent uniformity allow users to reduce dwell times and achieve faster results

HBPX2

Additional Features

- Large, high-defintion display provides detailed run information
- Keypad with functional soft keys permits easy software navigation
- Software provides easy protocol editing and manipulation
- Heated lid can be adjusted to ensure a firm seal with all tube and plate types
- Five control modes provide accurate temperature control
    - Active Tube Control measures the actual temperature of the reaction mix during PCR using a tube thermistor and actively compensates for differences between the programmed temperature and the actual temperature by adjusting the block temperature
    - Simulated Tube Control, Simulated Plate Control, and Simulated Slide Control achieve temperature accuracy similar to Active Tube Control for tube, plate, and slide formats, respectively, by constantly calculating the sample temperature and adjusting the block temperature as necessary
    - Block Control monitors the actual block temperature

REQUIRED ACCESSORIES:
Reaction block, see ordering table at right

SPECIFICATIONS

Temp. Control Modes	Active Tube Control, Simulated Tube Control, Simulated Plate Control, Simulated Slide Control, Block Control
Temp. Control Range	4° to 99°C
Gradient Range†	Up to 15°C
Temp. Uniformity	±0.3°C within 30 sec.
Heating Rate	Up to 3°C/sec.
Cooling Rate	Up to 2°C/sec.
No. of Programs	99, including 10 preset protocols
Max. No. of Cycles	99 per program stage
Max. No. of Program Steps	10 per program stage
Max. No. of Program Stages	10
L × W × H	15¼ × 9⅜ × 11" (39 × 24 × 28cm)
Electrical Requirements	115/230VAC (switchable) 50/60Hz, 550w

Description	Accepts	Cat. No.	Each
Px2 Chassis	----	**HBPX2**	4996.00
Nongradient Blocks			
0.2mL 96-well	96 × 0.2mL tubes; 96-well plate	**HBPXB02**	1717.00
0.5mL 96-well	48 × 0.5mL tubes; 96 × 0.3mL tubes	**HBPXB05**	1717.00
384-well	384-well plate	**HBPXB384**	1921.00
Flat Block	4 microscope slides	**HBPXBFB**	1717.00
Gradient Blocks			
0.2mL 96-well	96 × 0.2mL tubes; 96-well plate	**HBPXBG02**	2075.00
0.5mL 96-well	48 × 0.5mL tubes; 96 × 0.3mL tubes	**HBPXBG05**	2075.00

† When used with gradient block.

Practice of the patented Polymerase Chain Reaction (PCR) process requires a license in certain countries. The Thermo Scientific Thermal Cycler is an Authorized Thermal Cycler and may be used with PCR licenses available from Applied Biosystems. Its use with Authorized Reagents also provides a limited PCR license in accordance with the label rights accompanying such reagents.

Thermo Scientific* Hybaid PxE Thermal Cycler

Economical 96-well thermal cycler

Key Features

- Compact thermal cyclers provide personal cycling in a choice of two formats
- Custom-designed software is easy to use, even for inexperienced users

Additional Features

- Automatic self-checks are run when the unit is powered up to ensure consistent performance
- Three control modes provide accurate temperature control
    - Simulated Tube Control and Simulated Plate Control calculate the sample temperature and adjust the block temperature as necessary
    - Block Control monitors the actual block temperature

HBPXE02

SPECIFICATIONS

Temp. Control Modes	Simulated Tube Control, Simulated Plate Control, Block Control
Temp. Control Range	4° to 99°C
Temp. Uniformity	±0.5°C within 30 sec.
Heating Rate	Up to 3°C/sec.
Cooling Rate	Up to 2°C/sec.
No. of Programs	99
Max. No. of Cycles	99 per program stage
Max. No. of Steps	10 per program stage
Max. No. of Program Stages	10
L × W × H	15⅞ × 9⅝ × 11¼" (40.5 × 24.4 × 28.5cm)
Electrical Requirements	115/230VAC (switchable) 50/60Hz, 550w

Accepts	Cat. No.	Each
96 samples in 0.2mL tubes, plates, or strips	**HBPXE02**	5099.00
48 samples in 0.5mL tubes or 96 samples in 0.3mL tubes, plates, or strips	**HBPXE05**	5099.00

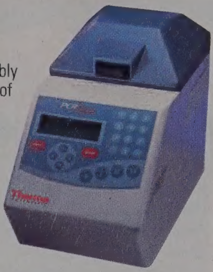
Practice of the patented Polymerase Chain Reaction (PCR) process requires a license in certain countries. The Thermo Scientific Thermal Cycler is an Authorized Thermal Cycler and may be used with PCR licenses available from Applied Biosystems. Its use with Authorized Reagents also provides a limited PCR license in accordance with the label rights accompanying such reagents.

*Trademark. See Trademark Reference.

Prices subject to change.

ermo Scientific* Hybaid PCR Sprint Thermal Cycler

npact, cost-effective thermal cycler ideal for lower-throughput laboratories


HBSP02

Features

o formats, 0.2mL × 24-well and
mL × 20-well, are available

pplied blocks can be used interchangeably th accessory blocks to provide a choice of mple formats for a single unit

litional Features

er-friendly software allows programs be created and stored easily

ograms can be stored in six odirectories, allowing multiple ers to store programs within their n storage space

lf-adjusting heated lid permits oil-free thermal cling without the need to adjust the lid height to commodate the tube in use

ree control modes provide accurate temperature control

- Active Tube Control measures the actual temperature of the reaction mix using a tube thermistor and actively compensates for differences between the programmed temperature and the actual temperature by adjusting the block temperature
- Simulated Tube Control calculates the sample temperature and adjusts the block temperature as necessary
- Block Control monitors the actual block temperature

SPECIFICATIONS

Temp. Control Modes	Active Tube Control, Simulated Tube Control, Block Control
Temp. Control Range	4° to 99°C
Temp. Uniformity	±0.5°C within 15 sec.
Heating Rate	Up to 3°C/sec.
Cooling Rate	Up to 2°C/sec.
No. of Programs	60
Max. No. of Cycles	99 per program stage
Max. No. of Program Steps	5 per program stage
Max. No. of Program Stages	5
L × W × H	11¾ × 7 × 9" (30 × 18 × 23cm)
Electrical Requirements	115/230VAC (switchable) 50/60Hz, 250w

Accepts	Cat. No.	Each
PCR Sprint Thermal Cycler w/Block		
24 × 0.2mL tubes	**HBSP02**	3355.00
20 × 0.5mL tubes	**HBSP05**	3355.00
Replacement Blocks		
24 × 0.2mL tubes	**HBSPB02**	1400.00
20 × 0.5mL tubes	**HBSPB05**	1400.00

Practice of the patented Polymerase Chain Reaction (PCR) process requires a license in certain countries. The Thermo Scientific Thermal Cycler is an Authorized Thermal Cycler and may be used with PCR licenses available from Applied Biosystems. Its use with Authorized Reagents also provides a limited PCR license in accordance with the label rights accompanying such reagents.

THERMAL CYCLERS—REAL-TIME PCR

pheid* SmartCycler* Real-Time Thermal Cyclers

forms amplification and fluorescent detection in a single unit

Features

teen I-CORE* (Intelligent Cooling/heating Optical Reaction) modules nction as independent thermal cycler/fluorometers

ch module can be programmed separately, allowing up to 16 different cling/detection protocols to be performed simultaneously in one ocessing block

to six processing blocks can be linked to one computer

phisticated optics enable the measurement of fluorescence in four annels in each module at the same time for sensitive detection and ecise quantitation

e use of multiple fluorescent dyes permits the detection of up to four gets in a single sample

litional Features

pid, accurate heating and cooling cycles produce results in as little as minutes

ultiple experimental runs can be started at different times, allowing veral operators to use the instrument concurrently

oprietary sealable reaction tubes optimize rapid thermal transfer and tical sensitivity while reducing the possibility of contamination

owth curves are displayed in real time, and the presence of nplified product is confirmed when the fluorescent signal crosses user-determined threshold

oduct can be detected over a broad range of target concentrations

- ▸ A linear standard curve can be created from a serial dilution, allowing the determination of an unknown sample concentration
- ▸ The system can be used with a variety of detection methods including Molecular Beacons probes, *Taq*Man* probes, Amplifluor* primers, and intercalating dyes such as SYBR* Green

Software Features

- ▸ Threshold settings, protocols, and graph formats can be user-defined
- ▸ Each module can be stopped after crossing a user-defined threshold, or transitioned to a melt analysis in order to obtain the concentration or purity of a product
- ▸ Two experimental runs can be monitored simultaneously and growth curves from different runs overlayed for easy comparison
- ▸ Access to protocols, graphs, and data can be controlled

INCLUDES:

SmartCycler processing block(s); laptop computer or desktop computer with a flat-panel monitor; SmartCycler Software v. 2.0; accessory kit with a mini-centrifuge, tube racks, and cooling block; carrying case (SC1600 TD Starter System only)

REQUIRED ACCESSORIES:

Proprietary PCR reaction tubes must be ordered separately.

Contd. on next page.

Cepheid* SmartCycler* Real-Time Thermal Cyclers, Contd.

Description	No. of Processing Blocks	Mfr. No.	Cat. No.	Each
Desktop Systems				
SC1600 Starter System	1	SC2500N1-1	**SC2000N1-1**	34,399.00
SC3200 Starter System	2	SC2500N5-1	**SC2000N5-1**	55,995.00
Laptop Systems				
SC1600 Starter System	1	SC2500N4-1	**SC2000N4-1**	35,399.00
SC1600 TD Starter System	1	SC2500N2-1	**SC2000N2-1**	36,720.00
SC3200 Starter System	2	SC2500N6-1	**SC2000N6-1**	56,995.00
Additional Blocks				
Processing Block	----	SC2500N3-1	**SC2000N3-1**	31,315.00

This real-time thermal cycler is licensed for use in research, diagnostics and all other applied fields under Applera's U.S. Patent No. 6,814,934, European Patent No. EP 0 872 562, Japanese Patent No. JP 3136129 and patents pending.
No rights are conveyed expressly, by implication or estoppel to any patents on real-time methods, including but not limited to 5' nuclease assays, or to any patent claiming a reagent or kit. Applied Biosystems does not guarantee the performance of this instrument or endorse its use in any application.

SC2000N3-1

SPECIFICATIONS

Heating Ramp Rates (Max.)	10°C/sec. from 50° to 95°C
Cooling Ramp Rates (Max.)	2.5°C/sec. from 95° to 50°C
Temperature Duration Accuracy	±1.0 sec. from programmed time
Temperature Accuracy	±0.5°C from 60° to 95°C
Melt Curve Programmable Ramp Rates	0.1°C/sec. to 1.0°C/sec.
Processing Block L × W × H	10 × 12 × 12" (25.4 × 30.5 × 30.5cm)
Processing Block Net Weight	22 lb. (10kg)
Electrical Requirements	100–240VAC, 50/60Hz, 350w

ACCESSORIES

SmartCycler* Reaction Tubes

For use with the SmartCycler Real-Time Thermal Cycler

900-008 Series

- Proprietary polypropylene reaction tubes are designed for rapid thermal transfer and optical sensitivity
- 25µL tubes allow reduction in reagent usage; 100µL tubes provide higher sensitivity when template concentration is low
- No-leak closures seal tubes to reduce chance for amplicon contamination
- Each single-use tube is pressure tested to ensure film seal integrity
- Each lot of tubes is tested for RNase, DNA, and DNase
- Rack holds 16 tubes and can be used as a separate workstation

Capacity	Cat. No.	Pack of
25µL	**900-0085**	250/150.00
25µL	**11-400-3**	1000/550.00
100µL	**900-0086**	250/150.00
100µL	**11-400-2**	1000/550.00
Tube Racks	**900-0087**	8/70.35

REAGENTS AND KITS—ROUTINE PCR

Fisher BioReagents* *exACTGene** Complete PCR Kit and Core Reagent Sets

Optimized for routine PCR applications

FB-6100

- Generate reliable PCR products using all genomic and cDNA templates
- Provide clean and consistent PCR yields up to 10kb
- Offer excellent specificity for all PCR amplicons
- PCR-tested to ensure reliable, reproducible, high-performance reactions
  - **Complete PCR Kit** includes positive controls for troubleshooting PCR parameters, color-coded reagent tubes for ease-of-use, and dual reaction buffers for extra flexibility in optimizing PCR reactions
  - **Core Reagent Sets** provide an economical alternative for high quality PCR
  - Kit components are also available separately

STORAGE CONDITIONS:
Store at -20°C.

Description	Quantity‡	Cat. No.	Eac
Complete PCR Kit (250U *Taq* DNA Polymerase†, 10X Buffer A, 10X Buffer B, 25mM $MgCl_2$, dNTPs, three Control Primers, and DNA Template)	200 rxns	**FB-6100**	285.7
Core Reagent Set A (*Taq* DNA Polymerase, 10X Buffer A, and dNTPs)	80 rxns	**FB-6210**	70.7
	400 rxns	**FB-6225**	282.9
Core Reagent Set B (*Taq* DNA Polymerase, 10X Buffer B, $MgCl_2$ and dNTPs)	80 rxns	**FB-6245**	70.7
	400 rxns	**FB-6260**	293.3
Individual Components			
Taq DNA Polymerase (5U/µL)	250U	**FB-6111**	171.7
10X Buffer A (with $MgCl_2$)	1000µL	**BP-6112**	11.0
10X Buffer B (without $MgCl_2$)	1000µL	**BP-6113**	11.5
25mM $MgCl_2$	1000µL	**BP-6114**	11.5
PCR Nucleotide Mix (10mM each dNTP)	200µL	**BP-25652K**	63.3
Lambda DNA Template (1ng/µL)	100µL	**BP-6115**	11.5
Control Primer 1 (20µM)	100µL	**BP-6116**	11.0
Control Primer 2 (20µM)	100µL	**BP-6117**	11.0
Control Primer 3 (20µM)	100µL	**BP-6118**	11.0

† *Purchase of this product includes an immunity from suit under patents specified in the product insert to use only the amount purchased for the purchaser's own internal researc No other patent rights (such as 5' Nuclease Process patent rights) are conveyed expressly implication, or by estoppel. Further information on purchasing licenses may be obtained b contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.*

‡ *One reaction is defined as a 50µL PCR reaction using 1.25U Taq.*

*Trademark. See Trademark Reference.

Prices subject to change.

PRIME* MasterMix* PCR Mix

dy-to-use mix improves PCR yields

5 PRIME
5 PRIME
FP2200100

fers easy reaction setup and high
producibility for large sample series

eal for high throughput or
gh-yield PCR and amplification
contaminated templates

pplied as 2.5X (0.06U/µL)
ncentrate; simply add primers
d template

eal for PCR automation

orage and Reaction Buffers: *Taq* DNA Polymerase (0.06U/µL), 2.5X *Taq* action buffer (with 125mM KCl, 75mM Tris-HCl pH 8.4, 4mM Mg^{2+}, 25% Nonidet-P40*), 500µM each of dNTP, stabilizers

RAGE CONDITIONS:

e at 2° to 8°C or -20°C.

f Rxns	Cat. No.	Each
	FP2200100	63.81
)	**FP2200110**	550.53

product is sold under licensing arrangements with F. Hoffmann-La Roche Ltd., Roche cular Systems, Inc., and Applied Biosystems.

PRIME* *Taq* DNA Polymerase

ures the utmost purity, reproducibility, l processivity

trapure, thermostable recombinant DNA Polymerase encoded by a mod-ed gene from *Thermus aquaticus* YT1 and expressed in *E. coli* DH 1

e enzyme provides thermostability that meets the requirements of ecialized PCR applications

e enzyme's activity is not significantly influenced by initial exposure for en 20 min. at 95°C before starting the PCR reaction

censed for PCR

ckaged with Reaction Buffer (10X) and $Mg(OAc)_2$ Solution (25mM) in dividual tubes

orage and Dilution Buffer: 20mM Tris-HCl pH 8.0 (at 25°C), 100mM aCl, 0.1mM EDTA, 1mM DTT, 50% glycerol and 0.5% Tween* 20

action Buffer: 10X Reaction buffer with $Mg(OAc)_2$: 500mM KCl, 100mM s-HCl pH 8.3 (at 25°C), 15mM $Mg(OAc)_2$, 1% Triton* X 100

it Definition: One unit is defined as the amount of enzyme that corporates 10nmol of dNTPs into acid-insoluble form within 30 min. at °C under the assay conditions, using reaction conditions: 25mM TAPS -tris-(hydroxymethyl)-methyl-3-amino-propanesulfonic acid, sodium salt) 9.3 (at 25°C); 50mM KCl; 2mM $Mg(OAc)_2$; 1mM β-mercaptoethanol; 0µmol each dATP, dGTP, dTTP; 100µM dCTP (a mix of unlabeled and ^{32}P]-labeled); 12.5µg activated salmon sperm DNA in a final volume 50µL

ssociated Activities: Endonuclease and exonuclease activities were not tectable after 1 or 2 hours' incubation, respectively, of 1µg lambda NA and 0.22µg of *Eco*RI-digested lambda DNA at 72°C in the presence 15–20 units of 5 PRIME *Taq* DNA Polymerase

RAGE CONDITIONS:

e at -20°C.

tity	Concentration	Cat. No.	Each
J	5U/µL	**FP2200000**	42.56
J	5U/µL	**FP2200010**	92.63
0U	5U/µL	**FP2200020**	322.92
1000U	5U/µL	**FP2200030**	1541.28

product is sold under licensing arrangements with F. Hoffmann-La Roche Ltd., Roche cular Systems, Inc., and Applied Biosystems.

Takara* *Taq* and *Taq* Premix DNA Polymerase

Thermostable enzyme for a variety of standard PCR applications

- Packaged with dNTPs and buffer in separate tubes or with dNTPs, magnesium-free buffer, and 25mM $MgCl_2$ in separate tubes
- Also available as a premix of *Taq* polymerase, buffer, and dNTPs in a single tube to simplify PCR setup and minimize pipetting steps

STORAGE CONDITIONS:

Store at -20°C.

Description	Quantity	Cat. No.	Each
Taq DNA Polymerase (dNTPs and buffer included)	250U	**TAK R001A**	115.85
	4 × 250U	**TAK R001B**	400.85
	12 × 250U	**TAK R001C**	1055.97
Taq DNA Polymerase (dNTPs, magnesium-free buffer, and a separate tube of 25mM $MgCl^2$ included)	250U	**TAK R001AM**	115.85
	4 × 250U	**TAK R001BM**	400.85
	12 × 250U	**TAK R001CM**	1055.97
Taq Premix DNA Polymerase	120 rxns	**TAK R004A**	126.10

Use of this product is covered by one or more of the following U.S. patents and corresponding patent claims outside the U.S.: 5,079,352; 5,789,224; 5,618,711; 6,127,155 and claims outside the U.S. corresponding to U.S. Patent 4,889,818. The purchase of this product includes a limited, nontransferable immunity from suit under the foregoing patent claims for using only this amount of product for the purchaser's own internal research. This product is for research use only. Diagnostic uses under Roche patents require a separate license from Roche. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

Takara* PCR Amplification Kit

For amplification of any DNA template via PCR

INCLUDES:

Taq DNA Polymerase†, buffer, $MgCl_2$ solution, control template, primers, dNTP mixture

STORAGE CONDITIONS:

Store at -20°C.

Description	Quantity	Cat. No.	Each
PCR Amplification Kit	100 rxns	**TAK R011**	269.63

† *Use of this product is covered by one or more of the following U.S. patents and corresponding patent claims outside the U.S.: 5,079,352; 5,789,224; 5,618,711; 6,127,155 and claims outside the U.S. corresponding to U.S. Patent 4,889,818. The purchase of this product includes a limited, nontransferable immunity from suit under the foregoing patent claims for using only this amount of product for the purchaser's own internal research. This product is for research use only. Diagnostic uses under Roche patents require a separate license from Roche. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.*

LOOKING FOR MORE PCR?

To browse Fisher Scientific's complete line of PCR products, check out our Web site.

Visit www.fishersci.com and search for PCR Products

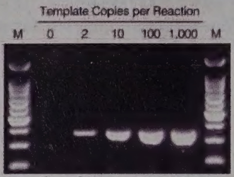
DON'T SEE THE RIGHT PRODUCT?

For Fisher BioReagents* *Taq* DNA Polymerase, please see the BioReagents section.

Promega* PCR Master Mix

Ready-to-use premix permits setup of PCR reactions in less than a minute

- Contains *Taq* DNA Polymerase, dNTPs, $MgCl_2$, and reaction buffers at optimal concentrations
- Optimized for use in routine PCR with templates in the range of 0.2 to 2kb
- Amplifies as little as two copies of target template
- Scalable for 10, 25, or 50µL reactions



Detection of low-copy-number templates using PCR Master Mix. Use of PCR Master Mix to detect low number of copies of the α-1-antitrypsin gene. PCR was performed on Human Genomic DNA (Cat. No. PR-G3041) using primers targeting a 360 bp fragment of the α-1-antitrypsin gene (single copy per genome). Lane M, 100 bp DNA Ladder (Cat. No. PR-G2101).

INCLUDES:
PCR Master Mix, nuclease-free water

STORAGE CONDITIONS:
Store at -20°C; can also be stored at 4°C for up to three months.

Quantity	Concentration	Cat. No.	Each
250µL (10 × 50µL rxns)	2X	**PR-M7501**	10.20
2 × 1250µL (100 × 50µL rxns)	2X	**PR-M7502**	69.20
25mL (1000 × 50µL rxns)	2X	**PR-M7505**	536.00

Patents for the foundational PCR process, European Patents 201,184 and 200,362, expired on March 28, 2006. In the U.S., the patents covering the foundational PCR process expired on March 29, 2005.

Promega* PCR Core Systems

Provide a set of performance-tested PCR reagents

- With optimization tools for reaction flexibility
- **PCR Core System I** includes basic PCR reaction components
- **PCR Core System II** also includes positive controls to help troubleshoot PCR parameters

STORAGE CONDITIONS:
Store all components at -20°C.

SYSTEM COMPONENTS

	PCR Core System I	PCR Core System II
Taq DNA Polymerase in Storage Buffer B	250U	250U
10X Mg-free Reaction Buffer	1.2mL	1.2mL
$MgCl_2$	1.2mL	1.2mL
10X Reaction Buffer with 15mM $MgCl_2$	1mL	1mL
PCR Nucleotide Mix	200µL	200µL
Positive Control Plasmid DNA	----	100µL
Upstream Control Primer	----	100µL
Downstream Control Primer	----	100µL

Description	Quantity	Cat. No.	Each
PCR Core System I	200 rxns	**PR-M7660**	100.50
PCR Core System II	200 rxns	**PR-M7665**	110.41

Patents for the foundational PCR process, European Patents 201,184 and 200,362, expired on March 28, 2006. In the U.S., the patents covering the foundational PCR process expired on March 29, 2005.

Thermo Scientific* *Taq* DNA Polymerase

94kDa ultrapure recombinant thermostable DNA polymerase obtained by high-level expression of the *Taq* DNA polymerase gene in *E. coli*

- Licensed for PCR
- 5' to 3' exonuclease (strand displacement) activity
- 3' adenylation activity
- Free of nuclease
- Reaction Buffer (Buffer IV, 10X): 750mM Tris-HCl (pH 8.8 at 25°C), 200mM $(NH_4)2SO_4$, 0.1% (v/v) Tween* 20. $MgCl_2$ supplied as a separate vial (concentration of 25mM) or included in the buffer (concentration 15mM)
- Unit Definition: One unit of enzyme is defined as the amount that will incorporate 10nmol of dNTPs into acid-insoluble material in 30 minutes 74°C under the following analysis conditions: 25mM TAPS (pH 9.3 at 25°C), 50mM KCl, 2mM $MgCl_2$, 1mM β-mercaptoethanol, 250µM of each: dCTP, dGTP, dTTP, 250µM [^{3}H]-dATP (0.05Ci/mmol) and 1.25µg/µL activated salmon sperm DNA in a final volume of 50µL

STORAGE CONDITIONS:
Store at -20°C.

Description	Quantity	Concentration	Cat. No.	Each
With 10X Buffer, separate 25mM $MgCl_2$	250U	5U/µL	**AB-0192**	99.90
	2500U	5U/µL	**AB-0192B**	906.24
With 10X Buffer containing 15mM $MgCl_2$	250U	5U/µL	**AB-1192A**	101.47

Purchase of this product includes an immunity from suit under patents specified in the product insert to use only the amount purchased for the purchaser's own internal research. No other patent rights (such as 5' Nuclease Process patent rights) are conveyed expressly, b implication, or by estoppel. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster C California 94404, USA.

Thermo Scientific* Thermoprime Plus DNA Polymerase

Enhanced thermal stability at DNA denaturation temperatures

- 94kDa ultrapure recombinant thermostable DNA polymerase
- 5' to 3' exonuclease (strand displacement) activity
- 3' adenylation activity
- Free of nucleases
- Proven performance in excess of 12kb for basic templates
- Licensed and optimized for use in the Polymerase Chain Reaction (PCR) process
- Storage and Dilution Buffer: 100mM KCl, 20mM Tris-HCl (pH 8.0 at 25°C 0.1mM EDTA, 1mM DTT, 0.5% (v/v) Tween* 20, 0.5% (v/v) Nonidet P40* 50% (v/v) glycerol
- Reaction Buffer IV (10X): 750mM Tris-HCl (pH 8.8 at 25°C), 200mM $(NH_4)_2SO_4$, 0.1% (v/v) Tween 20

STORAGE CONDITIONS:
Store at -20°C.

Description	Quantity	Concentration	Cat. No.	Each
With 10X Buffer, separate 25mM $MgCl_2$	250U	5U/µL	**AB-0301**	95.38
	2500U	5U/µL	**AB-0301B**	865.53

Purchase of this product includes an immunity from suit under patents specified in the product insert to use only the amount purchased for the purchaser's own internal research. No other patent rights (such as 5' Nuclease Process patent rights) are conveyed expressly, b implication, or by estoppel. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster Ci California 94404, USA.

ermo Scientific* Thermoprime Plus DNA lymerase with ReddyMix* PCR Buffer

h-performance, recombinant DNA polymerase with a ction buffer that allows direct loading of PCR ducts for electrophoresis

- ves valuable post-PCR analysis time—addition of loading dye not quired
- ovides 5' to 3' exonuclease (strand displacement) and 3' adenylation tivity
- ee of nucleases
- eal for PCR of genomic, viral and plasmid templates and high-roughput experiments

RAGE CONDITIONS:

e at -20°C.

tity	Concentration	Cat. No.	Each
tion buffer w/15mM MgCl$_2$			
	5U/µL	**AB-0785**	106.58
U	5U/µL	**AB-0785B**	865.53
tion buffer plus separate 25mM MgCl$_2$			
	5U/µL	**AB-0790**	106.58

ase of this product includes an immunity from suit under patents specified in the ct insert to use only the amount purchased for the purchaser's own internal research. ner patent rights (such as 5' Nuclease Process patent rights) are conveyed expressly, plication, or by estoppel. Further information on purchasing licenses may be obtained ntacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, City, California 4404, USA.

ermo Scientific* Thermoprime Plus PCR ster Mixes

h-performance DNA polymerase in a convenient and tible master mix format

- ers significant time savings in PCR of genomic, viral and plasmid nplates and high-throughput experiments
- wer reagent handling steps
- duce chance of errors
- producible results every time
- x contains: 0.025U/µL Thermoprime Plus DNA Polymerase .25U/50µL rxn); 75mM Tris-HCl (pH 8.8 at 25°C); 20mM $(NH_4)_2SO_4$; 1% (v/v) Tween*; 200µM of each dATP, dCTP, dGTP, dTTP; -4.0mM $MgCl_2$ (depending on Cat. No. selected)

RAGE CONDITIONS:

e at 4°C for up to one month; store at -20°C for up to one year.

Description	Cat. No.	Each
Thermoprime Plus with 1.5mM MgCl$_2$		
50µL rxns	**AB-0575A**	74.07
× 50µL rxns	**AB-0575B**	558.48
Thermoprime Plus ReddyMix* with 1.5mM MgCl$_2$		
50µL rxns	**AB-0575LDA**	74.07
× 50µL rxns	**AB-0575LDB**	575.23
ermoprime Plus with 1.5mM MgCl$_2$		
50µL rxns	**AB-0575DCA**	74.06
× 50µL rxns	**AB-0575DCB**	575.23
2X Thermoprime Plus ReddyMix with 1.5mM MgCl$_2$		
80 × 50µL rxns	**AB-0575LDDCA**	74.07
800 × 50µL rxns	**AB-0575LDDCB**	575.23
80 × 50µL rxns	**AB-0575ASP†**	74.10
1.1X Thermoprime Plus with 2.0mM MgCl$_2$		
80 × 50µL rxns	**AB-0608A**	74.07
800 × 50µL rxns	**AB-0608B**	558.48
1.1X Thermoprime Plus ReddyMix with 2.0mM MgCl$_2$		
80 × 50µL rxns	**AB-0608LDA**	74.07
800 × 50µL rxns	**AB-0608LDB**	575.23
2X Thermoprime Plus with 2.0mM MgCl$_2$		
80 × 50µL rxns	**AB-0608DCA**	71.55
800 × 50µL rxns	**AB-0608DCB**	558.48
2X Thermoprime Plus ReddyMix with 2.0mM MgCl$_2$		
80 × 50µL rxns	**AB-0608LDDCA**	74.07
800 × 50µL rxns	**AB-0608LDDCB**	558.58
1.1X Thermoprime Plus with 2.5mM MgCl$_2$		
80 × 50µL rxns	**AB-0619A**	74.07
800 × 50µL rxns	**AB-0619B**	558.48
1.1X Thermoprime Plus ReddyMix with 2.5mM MgCl$_2$		
80 × 50µL rxns	**AB-0619LDA**	71.55
800 × 50µL rxns	**AB-0619LDB**	558.48
2X Thermoprime Plus with 2.5mM MgCl$_2$		
80 × 50µL rxns	**AB-0619DCA**	71.55
800 × 50µL rxns	**AB-0619DCB**	558.48
2X Thermoprime Plus ReddyMix with 2.5mM MgCl$_2$		
80 × 50µL rxns	**AB-0619LDDCA**	74.07
800 × 50µL rxns	**AB-0619LDDCB**	558.48
1.1X Thermoprime Plus with 3.0mM MgCl$_2$		
800 × 50µL rxns	**AB-0627B**	558.48
1.1X Thermoprime Plus ReddyMix with 3.0mM MgCl$_2$		
80 × 50µL rxns	**AB-0627LDA**	74.07
800 × 50µL rxns	**AB-0627LDB**	530.40
2X Thermoprime Plus with 3.0mM MgCl$_2$		
80 × 50µL rxns	**AB-0627LDDCA**	71.55
800 × 50µL rxns	**AB-0627LDDCB**	558.48
1.1X Thermoprime Plus with 3.5mM MgCl$_2$		
80 × 50µL rxns	**AB-0628A**	71.55
800 × 50µL rxns	**AB-0628B**	558.48
1.1X Thermoprime Plus ReddyMix with 3.5mM MgCl$_2$		
80 × 50µL rxns	**AB-0628LDA**	71.55
800 × 50µL rxns	**AB-0628LDB**	575.23
2X Thermoprime Plus with 3.5mM MgCl$_2$		
80 × 50µL rxns	**AB-0628DCA**	71.55
800 × 50µL rxns	**AB-0628DCB**	558.48
2X Thermoprime Plus ReddyMix with 3.5mM MgCl$_2$		
80 × 50µL rxns	**AB-0628LDDCA**	71.55
800 × 50µL rxns	**AB-0628LDDCB**	558.48
1.1X Thermoprime Plus with 4.0mM MgCl$_2$		
80 × 50µL rxns	**AB-0629A**	71.55
800 × 50µL rxns	**AB-0629B**	558.48
1.1X Thermoprime Plus ReddyMix with 4.0mM MgCl$_2$		
80 × 50µL rxns	**AB-0629LDA**	71.55
800 × 50µL rxns	**AB-0629LDB**	558.48
2X Thermoprime Plus with 4.0mM MgCl$_2$		
80 × 50µL rxns	**AB-0629DCA**	71.55
800 × 50µL rxns	**AB-0629DCB**	558.48
2X Thermoprime Plus ReddyMix with 4.0mM MgCl$_2$		
80 × 50µL rxns	**AB-0629LDDCA**	74.07
800 × 50µL rxns	**AB-0629LDDCB**	558.48

plied with KCl-based buffer. Purchase of this product includes an immunity from suit er patents specified in the product insert to use only the amount purchased for the chaser's own internal research. No other patent rights (such as 5' Nuclease Process ent rights) are conveyed expressly, by implication, or by estoppel. Further information on chasing licenses may be obtained by contacting the Director of Licensing, Applied ystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

Ordering table contd. at right.

Thermo Scientific* Red Hot* DNA Polymerase

Original "red" thermostable DNA polymerase

- Consists of recombinant Thermoprime Plus DNA Polymerase plus an inert red dye
- Dye facilitates accurate low-volume pipetting
- Reaction mix turns to pink on enzyme addition for easy identification
- Dye has no adverse effect on the outcome of PCR
- Offers 5' to 3' exonuclease (strand displacement) and 3' adenylation activity
- Free of nucleases
- Suitable for standard PCR, high-throughput experiments, miniaturized PCR reactions
- Reaction Buffer: 10X Buffer IV with 750mM Tris-HCl (pH 8.8 at 25°C), 200mM $(NH_4)_2SO_4$, 0.1% (v/v) Tween* 20; $MgCl_2$ supplied as a separate vial at a concentration of 25mM
- Unit Definition: one unit of enzyme is the amount that will incorporate 10nmol of dNTPs into acid-insoluble material in 30 min. at 74°C under the following analysis conditions: 25mM TAPS (pH 9.3 at 25°C); 50mM KC
2mM $MgCl_2$; 1mM β-mercaptoethanol; 250μM each of dCTP, dGTP, d
250μM [^{3}H]-dATP (0.05Ci/mmol); and 1.25μg/μL activated salmon spe
DNA in a final volume of 50μL

STORAGE CONDITIONS:

Store at -20°C.

Quantity	Concentration	Cat. No.	Ea
100U	5U/μL	**AB-0406**	56.
500U	5U/μL	**AB-0406B**	191.
5000U	5U/μL	**AB-0406C**	1785.

Purchase of this product includes an immunity from suit under patents specified in the product insert to use only the amount purchased for the purchaser's own internal researc No other patent rights (such as 5' Nuclease Process patent rights) are conveyed expressl implication, or by estoppel. Further information on purchasing licenses may be obtained b contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foste California 94404, USA.

Thermo Scientific* 10X PCR Buffer IV

Autoclaved and supplied sterile

- **With $MgCl_2$:** One 1.25mL vial of 750mM Tris-HCl (pH 8.8 at 25°C), 200mM $(NH_4)_2SO_4$, 0.1% (v/v) Tween* 20, 15mM $MgCl_2$
- **With Separate $MgCl_2$:** One 1.25mL vial of 750mM Tris-HCl (pH 8.8 at 25°C), 200mM $(NH_4)_2SO_4$, 0.1% (v/v) Tween 20. Separate 1.25mL vial of 25mM $MgCl_2$

Description	Quantity	Cat. No.	Ea
PCR Buffer IV with $MgCl_2$	1.25mL	**AB-0288**	16
PCR Buffer IV with Separate $MgCl_2$	1.25mL	**AB-0289**	16

Promega* GoTaq* DNA Polymerase

Provides robust amplification and streamlined analysis of PCR products

- Offers robust amplification equal to—and in some cases superior to—conventional *Taq* DNA polymerase
- Suitable for PCR, two-step RT-PCR, and T-vector cloning
- Samples can be loaded directly onto a gel after amplification
- Compatible with PCR enhancers such as betaine and DMSO
- Unit Definition: One unit is defined as the amount of enzyme required to catalyze the incorporation of 10nmol of dNTP into acid-insoluble material in 30 minutes at 74°C. The reaction conditions are 50mM Tris-HCl (pH 9.0 at 25°C), 50mM NaCl, 5mM $MgCl_2$, 200μM each of dATP, dCTP, dGTP, dTTP (a mix of unlabeled and [^{3}H]dTTP), 10μg activated calf thymus DNA and 0.1mg/mL BSA in a final volume of 50μL

INCLUDES:

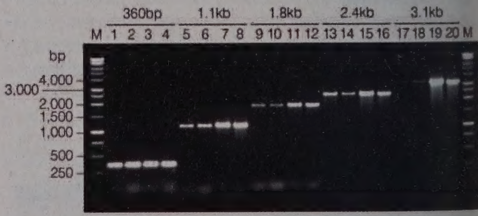
GoTaq DNA Polymerase; 5X Colorless GoTaq Reaction Buffer (Used when direct fluorescence or absorbance readings are required without prior purification of the DNA from the amplification reaction); 5X Green GoTaq Reaction Buffer (Contains two dyes that separate during electrophoresis facilitate direct-to-gel analysis of PCR products). Both buffers are supplie at pH 8.5 and contain $MgCl_2$ at a concentration of 7.5mM, giving a final concentration of 1.5mM in a 1X reaction.

Size	Concentration	Cat. No.	Each
100U	5U/μL	**PR-M3001**	26.00
500U	5U/μL	**PR-M3005**	116.00
2500U	5U/μL	**PR-M3008**	515.00

These catalog numbers are not available in Europe. Use of these products in all other countries except the U.S. is covered by one or more of the following U.S. patents and corresponding patent claims outside the U.S.: 5,079,352; 5,789,224; 5,618,711; 6,127,155 and claims outside the U.S. corresponding to U.S. Patent No. 4,889,818. The purchase of this product includes a limited, nontransferable immunity from suit under the foregoing patent claims for using only this amount of product for the purchaser's own internal research. No right under any other patent claim (such as the patented 5' Nuclease Process claims in U.S. Patents Nos. 5,210,015 and 5,487,972), no right to perform any patented method, and no right to perform commercial services of any kind, including without limitation reporting the results of purchaser's activities for a fee or other commercial consideration, is conveyed expressly, by implication, or by estoppel. This product is for research use only. Diagnostic uses under Roche patents require a separate license from Roche. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404 USA. Use of these products in the U.S. for basic PCR is outside of any valid U.S. patents assigned to Hoffman La-Roche or Applera. These products can be used in the U.S. for basic PCR in research, commercial or diagnostic applications without any license or royalty fees.

STORAGE CONDITIONS:

Store at -20°C.



Comparison of amplification reactions using *Taq* DNA Polymerase in Storage Buffer B, *Taq* DNA Polymerase in Storage Buffer A and GoTaq Polymerase (PR-M3001). A 360 bp α-1-antitrypsin fragment from 3.3ng Human Genomic DNA (Cat. No. PR-G3041), a 1.1kb IL-1β fragment from 1 Mouse Genomic DNA (Cat. No. PR-G3091), a 1.8kb APC fragment from 3.3n Human Genomic DNA, a 2.4kb APC fragment from 33ng Human Genomic D and a 3.1kb APC fragment from 75ng Human Genomic DNA were amplified using indicated amounts of template DNA. Amplifications were performed u either *Taq* DNA Polymerase in Storage Buffer B (lanes 1, 5, 9, 13, 17) with Thermophilic DNA Polymerase Buffer, *Taq* DNA Polymerase in Storage Buffe (lanes 2, 6, 10, 14, 18) with Thermophilic DNA Polymerase Buffer, GoTaq DN Polymerase (lanes 3, 7, 11, 15, 19) with Colorless GoTaq Reaction Buffer, or GoTaq DNA Polymerase (lanes 4, 8, 12, 16, 20) with Green GoTaq Reaction Buffer. Lane M, BenchTop 1kb DNA Ladder (Cat. No. PR-G7541). All amplifica tions were perfomed with PCR Nucleotide Mix (Cat. No. PR-C1141) as the d source.

*Trademark. See Trademark Reference.

Prices subject to change.

omega* GoTaq* Flexi DNA Polymerase

mbines robust amplification, streamlined downstream analysis, and the flexibility optimize Mg^{2+} concentration

ffers robust amplification equal to—and in some cases superior to—onventional *Taq* DNA polymerase

uitable for PCR, two-step RT-PCR, and T-vector cloning

tilizes a separate $MgCl_2$ solution to allow for optimization of magnesium oncentration

amples can be loaded directly onto a gel after amplification

nit Definition: One unit is defined as the amount of enzyme required to atalyze the incorporation of 10nmol of dNTP into acid-insoluble material 30 minutes at 74°C. The reaction conditions are 50mM Tris-HCl (pH 9.0 25°C), 50mM NaCl, 5mM $MgCl_2$, 200µM each of dATP, dCTP, dGTP, TTP (a mix of unlabeled and [^{3}H]dTTP), 10µg activated calf thymus DNA nd 0.1mg/mL BSA in a final volume of 50µL

ntity	Concentration	Cat. No.	Each
U	5U/µL	**PR-M8291**	26.00
U	5U/µL	**PR-M8295**	116.00
500U	5U/µL	**PR-M8296**	515.00
500U	5U/µL	**PR-M8297**	750.00
500U	5U/µL	**PR-M8298**	1010.00

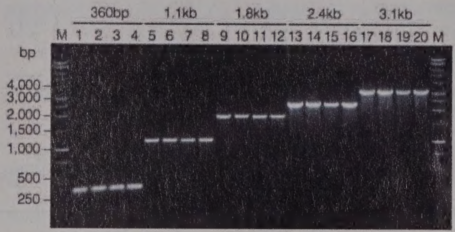
e catalog numbers are not available in Europe. Use of these products in all other tries except the U.S. is covered by one or more of the following U.S. patents and sponding patent claims outside the U.S.: 5,079,352; 5,789,224; 5,618,711; 6,127,155 claims outside the U.S. corresponding to U.S. Patent No. 4,889,818. The purchase of this uct includes a limited, nontransferable immunity from suit under the foregoing patent s for using only this amount of product for the purchaser's own internal research. No under any other patent claim (such as the patented 5' Nuclease Process claims in U.S. nts Nos. 5,210,015 and 5,487,972), no right to perform any patented method, and no to perform commercial services of any kind, including without limitation reporting the ts of purchaser's activities for a fee or other commercial consideration, is conveyed essly, by implication, or by estoppel. This product is for research use only. Diagnostic uses r Roche patents require a separate license from Roche. Further information on purchas-censes may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 ln Centre Drive, Foster City, California 94404 USA. Use of these products in the U.S. for PCR is outside of any valid U.S. patents assigned to Hoffman La-Roche or Applera. e products can be used in the U.S. for basic PCR in research, commercial or diagnostic cations without any license or royalty fees.

INCLUDES:

GoTaq Flexi DNA Polymerase, 5X Colorless GoTaq Flexi Buffer (Used when direct fluorescence or absorbance readings are required without prior purification of the DNA from the amplification reaction), 5X Green GoTaq Flexi Buffer (Contains two dyes that separate during electrophoresis to facilitate direct-to-gel analysis of PCR products), 25mM $MgCl_2$

STORAGE CONDITIONS:

Store at -20°C.



Comparison of amplification reactions using GoTaq DNA Polymerase and GoTaq Flexi DNA Polymerase (PR-M8291). A 360 bp α-1-antitrypsin fragment from 3.3ng Human Genomic DNA (Cat. No. PR-G3041), a 1.1kb IL-1 β fragment from 10ng Mouse Genomic DNA (Cat. No. PR-G3091), a 1.8kb APC fragment from 3.3ng Human Genomic DNA, a 2.4kb APC fragment from 33ng Human Genomic DNA and a 3.1kb APC fragment from 75ng Human Genomic DNA were amplified using the indicated amounts of template DNA. Amplifications were performed using either GoTaq DNA Polymerase with Colorless GoTaq Reaction Buffer (lanes 1, 5, 9, 13, 17), GoTaq Flexi DNA Polymerase with Colorless GoTaq Flexi Buffer (lanes 2, 6, 10, 14, 18), GoTaq DNA Polymerase with Green GoTaq Reaction Buffer (lanes 3, 7, 11, 15, 19), or GoTaq Flexi DNA Polymerase with Green GoTaq Flexi Buffer (lanes 4, 8, 12, 16, 20). Lane M, BenchTop 1kb DNA Ladder (Cat. No. PR-G7541). All amplifications were performed with PCR Nucleotide Mix (Cat. No. PR-C1141) as the dNTP source.

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omega* GoTaq* Green Master Mix

es time during reaction setup and PCR product analysis

emixed, ready-to-use solution contains GoTaq DNA polymerase, dNTPs, gCl_2, and reaction buffers in a single tube

ilizes an optimized enzyme and buffer formulation that offers nplification typically better than standard *Taq* DNA polymerases

n be directly substituted into existing PCR protocols without the need change cycling parameters

rves as a gel loading solution, so PCR products may be directly loaded to agarose gels

ntains a blue dye and a yellow dye that allow the monitoring of ogress during electrophoresis

LUDES:

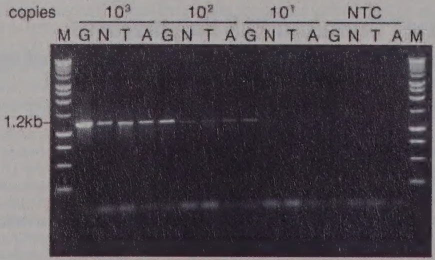
q Green Master Mix, nuclease-free water

RAGE CONDITIONS:

e at -20°C; may be stored at 4°C for up to six weeks.

tity	Concentration	Cat. No.	Each
rxns	2X	**PR-M7122**	34.00
rxns	2X	**PR-M7123**	300.00

atents above for GoTaq.



GoTaq Green Master Mix outperforms standard *Taq* DNA Polymerase. Amplification of 1.2kb fragment of α-1-anti-trypsin gene from indicated copies of human genomic DNA (Cat. No. PR-G3041). G: GoTaq Green Master Mix; N: competitor N; T: competitor T; A: competitor A; NTC: no template control; and M: BenchTop 1kb DNA Ladder (Cat. No. PR-G7541).

REAGENTS AND KITS — HOT START PCR

Thermo Scientific* Thermo-Start* DNA Polymerase

Patented, chemically modified version of Thermoprime Plus DNA Polymerase for hot-start PCR

- Inactive until "switched on" by high temperature incubation—reactions are prepared and held at room temperature
- Eliminates nonspecific priming
- Includes a proprietary buffer which ensures a maximal response from the enzyme once it has been activated, resulting in higher yields than those obtained with systems based on chemical modifications alone
- Can be activated incrementally for highest stringency
- Provides 5' to 3' exonuclease (strand displacement) and 3' adenylation activity
- Free of nucleases
- Storage and Dilution Buffer: 100mM KCl, 20mM Tris-HCl (pH 9.2 at 25°C), 0.1mM EDTA, 1mM DTT, 0.5% (v/v) Tween*, 0.5% (v/v) Nonidet P40*, 50% (v/v) glycerol
- Reaction Buffer: Available with 10X reaction buffer containing 15mM $MgCl_2$ or with $MgCl_2$ supplied in a separate vial at a concentration of 25mM
- Unit Definition: one unit of enzyme is the amount that will incorporate 10nmol of dNTPs into acid-insoluble material in 30 min. at 74°C under the following analysis conditions: 25mM TAPS (pH 9.3 at 25°C), 50mM KCl, 2mM $MgCl_2$, 1mM β-mercaptoethanol, 250µM of each: dCTP, dGTP, dTTP, 250µM [^{3}H]-dATP (0.05Ci/mmol) and 1.25µg/µL activated salmon sperm DNA in a final volume of 50µL

STORAGE CONDITIONS:
Store at -20°C.

Quantity	Concentration	Cat. No.	Ea
Reaction Buffer containing $MgCl_2$			
250U	5U/µL	**AB-1908A**	146.
Reaction Buffer and Separate 25mM $MgCl_2$			
250U	5U/µL	**AB-0908**	124.
2500U	5U/µL	**AB-0908B**	1142.

Purchase of this product includes an immunity from suit under patents specified in the product insert to use only the amount purchased for the purchaser's own internal research. No other patent rights (such as 5' Nuclease Process patent rights) are conveyed expressly, by implication, or by estoppel. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Fos City, California 94404, USA.

Thermo Scientific* Thermo-Start* PCR Master Mix

Convenient premix for high-specificity PCR

- Eliminates nonspecific priming and primer-dimer formation
- Contains proprietary buffer for improved yields
- Reduces reagent handling steps, reducing chance of errors
- Contains all the components required for hot-start PCR (except template and primers): 0.025U/µL Thermo-Start DNA Polymerase (= 1.25U/50µL rxn); 1X Thermo-Start Reaction Buffer; 200µM of each dATP, dCTP, dGTP, dTTP; 1.5-3.0mM $MgCl_2$ (depending on Cat. No. selected)

STORAGE CONDITIONS:
Store at 4°C for up to one month; store at -20°C for up to six months.

$MgCl_2$ Concentration	Quantity	Cat. No.	Ea
1.1X PCR Master Mix			
1.5	80 × 50µL rxns	**AB-093815A**	84.
2.0	80 × 50µL rxns	**AB-093820A**	84.
2.5	800 × 50µL rxns	**AB-093825B**	735.
2X PCR Master Mix			
1.5	80 × 50µL rxns	**AB-0938DC15**	84.
1.5	800 × 50µL rxns	**AB-0938DC15B**	735.
2.5	80 × 50µL rxns	**AB-0938DC25A**	84.
3.0	80 × 50µL rxns	**AB-0938DC30**	84.

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Takara* Premium PCR Polymerases

A monoclonal antibody to *Taq* polymerase is bound to the polymerase until the temperature is elevated

- Provide the same performance as original *Taq*, *Ex Taq**, and *LA Taq** polymerases—with the added advantages of hot start
- Reduce background
- Increase specificity
- Permit room-temperature reaction assembly
- Prevent nonspecific amplification caused by mispriming and/or formation of primer-dimers during reaction assembly

NOTE:
Taq antibody is also available separately.

STORAGE CONDITIONS:
Store at -20°C.

Description	Quantity	Cat. No.	Ea
Taq DNA Polymerase	250U	**TAK R007A**	130.
	1000U (4 × 250U)	**TAK R007B**	475.
Ex Taq DNA Polymerase	250U	**TAK RR006A**	193.
	1000U (4 × 250U)	**TAK RR006B**	682.
LA Taq DNA Polymerase	125U	**TAK RR042A**	174.
	500U (4 × 125U)	**TAK RR042B**	641.
Taq Antibody	250U	**TAK 9002A**	105.

Use of this product is covered by one or more of the following U.S. patents and corresponding patent claims outside the U.S.: 5,079,352; 5,789,224; 5,618,711; 6,127,155 and claims ou the U.S. corresponding to U.S. Patent 4,889,818. The purchase of this product includes a limi nontransferable immunity from suit under the foregoing patent claims for using only this amou of product for the purchaser's own internal research. This product is for research use only. Diagnostic uses under Roche patents require a separate license from Roche. Further informat on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

LA PCR technology is covered by U.S. Patent 5,436,149 issued to TaKaRa Bio Inc.

Takara Bio's Hot Start PCR-related products are liscensed under U.S. Patents 5,338,671 a 5,587,287 and corresponding patents in other countries.

kara* PrimeSTAR* HS DNA Polymerase

ɦh-fidelity PCR enzyme ideal for demanding ning and sequencing applications

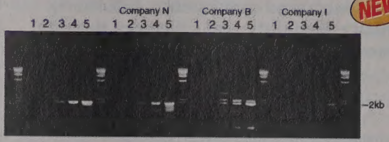
- aximum fidelity and extended product length—8.5kb for human genomic NA, 22kb for lambda DNA
- rong exonuclease activity results in an extremely low error rate—only errors per 250,000 bp as determined by DNA sequence analysis
- cellent amplification efficiency shortens reaction times
- tibody-mediated hot-start formulation prevents false initiation events ring reaction assembly
- bust performance with GC-rich templates

neSTAR HS Premix
A Polymerase

- cludes PrimeSTAR's strong exonuclease activity, high reactivity, and onoclonal-antibody mediated hot-start
- quires addition of only template, primer, and water
- duced number of pipetting steps limits reaction variation and portunities for contamination
- formulation containing PrimeSTAR HS, PCR Buffer, $MgCl_2$, and dNTPs

LUDES:
eSTAR HS DNA Polymerase, 5X PrimeSTAR Buffer (with Mg^{2+}), P mixture

RAGE CONDITIONS:
e at -20°C.



Comparison of PrimeSTAR HS Amplification Efficiency with Competitors on a 2kb Human Genomic DNA Fragment. Superior amplification efficiency was apparent using PrimeSTAR HS on a human genomic (DCLRE1A) 2kb template. Human genomic DNA was used in the following quantities: Lane 1: 0ng (dH_2O), Lane 2: 100pg, Lane 3: 1ng, Lane 4: 10ng, Lane 5: 100ng.

Description	Quantity	Cat. No.	Each
PrimeSTAR HS DNA Polymerase	200 rxns	**TAKR010A**	222.09
PrimeSTAR HS DNA Polymerase	400 rxns	**TAKR010B**	785.00
PrimeSTAR HS DNA Polymerase Premix	100 rxns	**TMBR040A**	171.28

Use of this product is covered by one or more of the following U.S. patents and corresponding patent claims outside the U.S.: 5,079,352; 5,789,224; 5,618,711; 6,127,155 and claims outside the U.S. corresponding to U.S. Patent 4,889,818. The purchase of this product includes a limited, nontransferable immunity from suit under the foregoing patent claims for using only this amount of product for the purchaser's own internal research. This product is for research use only. Diagnostic uses under Roche patents require a separate license from Roche. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

Takara Bio's Hot-Start PCR-related products are licensed under U.S. Patents 5,338,671 and 5,587,287 and corresponding patents in other countries.

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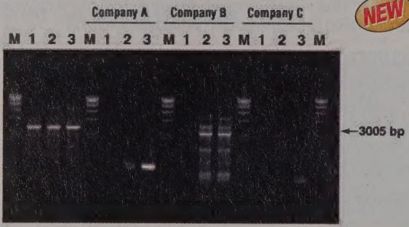
kara* PrimeSTAR* HS DNA Polymerase th GC Buffer

eased reproducibility and minimized risk ontamination

- eSTAR HS is a unique high fidelity DNA polymerase, offering both mal accuracy and higher amplification efficiency than *Taq* Polymerase.
- v error rate of only 25 errors per 304,000 bp (high-GC DNA, termined by sequence analysis)
- h efficiency amplification, even on GC-rich templates (75%)
- plify high GC human genomic DNA targets of up to 5kb
- reased priming efficiency results in rapid annealing times and proved specificity
- tibody-mediated hot-start prevents false initiation events during ction assembly due to mispriming or primer digestion

RAGE CONDITIONS:
e at -20°C.



Amplification of 3005 bp high-GC (73.2%) TthHB8 Genomic DNA Template. The performance of high fidelity, high-GC enzymes from Companies A, B, and C were compared with PrimeSTAR HS DNA Polymerase with GC Buffer. Lanes 1, 2, and 3: 100pg, 1ng, 10ng human genomic DNA template.

Description	Quantity	Cat. No.	Each
PrimeSTAR HS DNA	250U	**TMBR044A**	219.64
Polymerase with GC Buffer	1000U	**TMBR044B**	785.00

Use of this product is covered by one or more of the following U.S. patents and corresponding patent claims outside the U.S.: 5,079,352; 5,789,224; 5,618,711; 6,127,155 and claims outside the U.S. corresponding to U.S. Patent 4,889,818. The purchase of this product includes a limited, nontransferable immunity from suit under the foregoing patent claims for using only this amount of product for the purchaser's own internal research. This product is for research use only. Diagnostic uses under Roche patents require a separate license from Roche. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

Takara Bio's Hot-Start PCR-related products are licensed under U.S. Patents 5,338,671 and 5,587,287 and corresponding patents in other countries.

5 PRIME* HotMaster* *Taq* Polymerase

Provides increased convenience, sensitivity, specificity, flexibility, and efficiency through an innovative Hot Start technology

FP2200300

- Licensed for PCR use
- Uses a recombinant and modified form of the *Thermus aquaticus* YT1 DNA Polymerase gene expressed in *E. coli* DH 1
- Does not require the long, high-temperature preincubations associated with other Hot Start systems
- Enables both Hot Start activity during the entire PCR and Cold Stop* activity at temperatures below 60°C during the annealing step of every PCR cycle due to a temperature-dependent inhibitor that binds the polymerase
- Eliminates the need to optimize for Mg^{2+} concentration by using a reaction buffer that weakly chelates the ion, so it can be released as needed for the reaction
- Amplifies fragments up to 5kb
- Unit Definition: One unit is defined as the amount of enzyme that incorporates 10nmoles of dNTPs into acid-insoluble form within 30 min. at 74°C under the assay conditions, using reaction conditions: 25mM TAPS (N-tris-(hydroxymethyl)-methyl-3-amino-propanesulfonic acid, sodium salt) pH 9.3 (at 25°C); 50mM KCl; 2mM $MgCl_2$; 1mM β-mercaptoethanol; 200μmol each dATP, dGTP, dTTP; 100μM dCTP (a mix of unlabeled and [α-^{32}P]-labeled); 12.5μg activated salmon sperm DNA in a final volume of 50μL
- Associated Activities: No endonuclease or exonuclease activity was detected after a 14–16 hour incubation at 37°C of the polymerase with lambda/*Hin*d III fragments and purified plasmid DNA

INCLUDES:

- HotMaster *Taq* Polymerase and reaction buffer packaged in separate tubes
- Storage and Dilution Buffer: 25mM Tris-HCl pH 8.0, 35mM KCl, 0.1mM EDTA, 1mM DTT, 50% glycerol, 0.5% Tween* 20, 0.5% IGEPAL* CA-630 and stabilizers
- Reaction Buffer: 10X HotMaster *Taq* Buffer with 25mM Mg^{2+}

STORAGE CONDITIONS:

Store at -20°C.

Quantity	Concentration	Cat. No.	Each
100U	5U/μL	**FP2200300**	49.11
250U	5U/μL	**FP2200310**	110.94
1000U	5U/μL	**FP2200320**	392.27
5000U	5U/μL	**FP2200330**	1857.11

This product is sold under licensing arrangements with F. Hoffmann-La Roche Ltd., Roche Molecular Systems, Inc., and Applied Biosystems.

5 PRIME* HotMasterMix

Combines HotMaster* *Taq* Polymerase†, self-adjustin Mg^{2+} reaction buffer, and nucleotides in one tube

- HotMasterMix contains all the necessary subcomponents except for template and primer set—ideal for high throughput PCR
- PCR experiments may be set up at room temperature; no heat activati required before cycling
- Nonspecific products due to mispriming are minimized throughout the entire PCR experiment
- Preoptimized buffer that adjusts the Mg^{2+} concentration automatically no need to titrate Mg^{2+} manually

STORAGE CONDITIONS:

If used frequently, store between 2 and 8°C. For long-term storage, keep at -20°C.

Quantity	Cat. No.	E
100 rxns	**FP2200400**	71
1000 rxns	**FP2200410**	579

† This product is sold under licensing arrangements with F. Hoffmann-La Roche Ltd., Roc Molecular Systems, Inc., and Applied Biosystems.

Cepheid* OmniMix* HS Reagent

Ready-to-use PCR reagent bead

- Bead contains all necessary reagents for PCR, except primers and pro or intercalating dye
- Ready-to-use format eliminates extra pipetting steps and reduces contamination risk
- *Taq*-specific, monoclonal-antibody-based, hot-start technology minimi mispriming and/or primer-dimer formation before thermal cycling
- Each bead is packaged in a 0.5mL tube and contains sufficient reagen for performing two 25μL PCR amplification reactions
- When reconstituted to a final volume of 50μL, OmniMix HS contains Hot-Start *Taq* Polymerase, 200μM dNTP, 4mM $MgCl_2$, and 25mM HEP buffer pH 8.0 ± 0.1

STORAGE CONDITIONS:

Store at 2 to 8°C.

Quantity	Cat. No.	Ea
25 beads	**OMNI100N050**	125

Purchase of this product is accompanied by a limited license under foreign counterparts U.S. Patents 4,683,202; 4,683,195; and 4,965,188 to use it in the Polymerase Chain Reaction (PCR) process for research in conjunction with a thermal cycler whose use in th automated performance of the PCR process is covered by the up-front license fee, either payment to Applied Biosystems or as purchased, i.e., an authorized thermal cycler.

Licensed under U.S. Patents 5,338,671 and 5,587,287 and corresponding patents in oth countries.

PRIME* Master*Taq** Kits

cially developed to improve the amplification of ficult templates by stabilizing the enzyme during reaction procedure

FP2200200

sures improved yield of PCR products

proved results with impure templates

liable results for GC-rich templates

urce: Recombinant and modified m of the *Thermus aquaticus* YT1 IA Polymerase gene expressed in *coli* DH 1

it Definition: One unit is defined as e amount of enzyme that incorporates nmol of dNTPs into acid-insoluble form within 30 min. at 74°C under e following conditions: 25mM TAPS (N-tris-(hydroxymethyl)-methyl-3-ino-propanesulfonic acid, sodium salt) pH 9.3 (at 25°C); 50mM KCl; M Mg^{2+}; 1mM β-mercaptoethanol; 200µmol each dATP, dGTP, dTTP; 0µM dCTP (a mix of unlabeled and [α-^{32}P]-labeled); 12.5µg activated mon sperm DNA in a final volume of 50µL.

sociated Activities: Endonuclease and exonuclease activities were not tectable after one or two hours' incubation, respectively, of 1µg lambda IA and 0.22µg of *Eco*RI-digested lambda DNA at 72°C in the presence 15–20 units of 5 PRIME *Taq* DNA Polymerase

orage and Dilution Buffer: 20mM Tris-HCl pH 8.0 (at 25°C), 100mM KCl, mM EDTA, 1mM DTT, 50% glycerol, 0.5% Tween* 20

action Buffer: 10X Reaction Buffer with magnesium: 500mM KCl, 0mM Tris-HCl pH 8.3 (at 25°C), 15mM Mg^{2+}

LUDES:

laster (5×PCR Enhancer), 5 PRIME *Taq* DNA Polymerase, reaction r (10X), 25mM $Mg(OAc)_2$ solution

RAGE CONDITIONS:

e at -20°C.

tity	Concentration	Cat. No.	Each
	5U/µL	**FP2200200**	44.75
	5U/µL	**FP2200210**	98.07
	5U/µL	**FP2200220**	184.90
U	5U/µL	**FP2200230**	346.76

roduct is sold under licensing arrangements with F. Hoffmann-La Roche Ltd., Roche ular Systems, Inc., and Applied Biosystems.

5 PRIME* PCR Extender System

Three-in-one kit for PCR applications

- Unique enzyme blend, high-fidelity buffer, and Tuning Buffer* provide outstanding long-range PCR product yields and achieve fragment lengths up to 40kb
- Tuning Buffer prevents the acidic hydrolysis (strand breakage) of very long templates, thus markedly increasing the sensitivity of the PCR
- High-fidelity buffer and unique enzyme mix help ensure minimal error rates with proofreading reactions
- System successfully amplifies templates with GC content in excess of 70%
- Low error rate ensured by proofreading mix

APPLICATIONS:

Long-range PCR, High-fidelity/proofreading PCR, Templates with very high GC-content and secondary structures, PCR experiments with high number of cycles (>40 cycles), Amplification of rare targets (e.g. after reverse transcription)

STORAGE CONDITIONS:

Store at -20°C

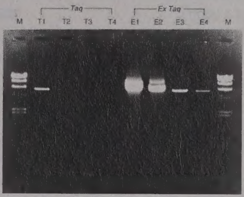
Quantity	No. of Rxns	Cat. No.	Each
100U	50 to 100	**FP2200500**	101.16
200U	100 to 200	**FP2200510**	184.90
500U	250 to 500	**FP2200520**	380.00

This product is sold under licensing arrangements with F. Hoffmann-La Roche Ltd., Roche Molecular Systems, Inc., and Applied Biosystems.

Takara* *Ex Taq** DNA Polymerase

For high-yield and high-fidelity PCR

- Provides efficient 3'→5' exonuclease activity
- Gives higher yields and lower mutation rates (approximately 4X lower, as determined by the Kunkel method) than does standard *Taq* polymerase
- Allows amplification of longer products than does *Taq*, with 20kb lengths possible from genomic DNA and up to 30kb possible from lambda DNA
- Generates products that are suitable for cloning into T-vectors
- Excellent for amplifying fragments from problem organisms



Amplification of a 6kb target from *E. coli* genomic DNA with Takara *Taq* and *Ex Taq* (TAK RR001A) DNA Polymerases.

Description	Quantity	Cat. No.	Each
Ex Taq DNA Polymerase (dNTPs and buffer included)	250U	**TAK RR001A**	161.98
	1000U (4 × 250U)	**TAK RR001B**	581.29
	3000U (12 × 250U)	**TAK RR001C**	1520.38
Ex Taq DNA Polymerase (dNTPs, magnesium-free buffer, and separate tube of $MgCl_2$ included)	250U	**TAK RR01AM**	161.98
	1000U (4 × 250U)	**TAK RR01BM**	581.29
	3000U (12 × 250U)	**TAK RR01CM**	1520.38
Premix *Ex Taq* DNA Polymerase (includes dNTPs and buffer in a two-fold concentrate, single-solution format)	120 rxns	**TAK RR003A**	150.70

Use of this product is covered by one or more of the following U.S. patents and corresponding patent claims outside the U.S.: 5,079,352; 5,789,224; 5,618,711; 6,127,155 and claims outside the U.S. corresponding to U.S. Patent 4,889,818. The purchase of this product includes a limited, nontransferable immunity from suit under the foregoing patent claims for using only this amount of product for the purchaser's own internal research. This product is for research use only. Diagnostic uses under Roche patents require a separate license from Roche. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

Takara* Long and Accurate (LA) PCR Products

Result in longer and more accurate genomic PCR products

- *LA Taq** DNA Polymerase facilitates amplification of large DNA templates (up to 48kb)
- Efficient 3'→5' exonuclease activity achieves 6.5-fold better fidelity than conventional *Taq*
- Products are suitable for cloning into T-vectors
- **LA PCR Kit** helps to optimize long PCR and includes polymerase, buffer system, control template and primers
- **LA *Taq*** with GC Buffers is specifically designed to increase fidelity when amplifying DNA templates with high GC content or secondary structures
- **LA PCR Genome DNA Set** contains highly purified, high molecular weight human genomic and *E. coli* DNA control templates and primers for use as controls
- **One-Shot LA *Taq*** DNA Polymerase PCR Mix contains polymerase, reaction buffer, and dNTPs at a 2X concentration; 25µL aliquots are predispensed into 0.2mL microcentrifuge tubes

Description	Quantity	Cat. No.	Ea
LA Taq DNA Polymerase	50U	**TAK RR002T**	66.
	250U	**TAK RR002M**	269.
	4 × 250U	**TAK RR002B**	1003.
	12 × 250U	**TAK RR002C**	2851.
LA Taq DNA Polymerase w/separate $MgCl_2$	125U	**TAK RR002A**	134.
One-Shot *LA Taq* DNA Polymerase PCR Mix	24 × 25µL	**TAK RR004**	115.
LA PCR Kit, Version 2.1	50 rxns	**TAK RR013A**	226.
	100 rxns	**TAK RR013B**	430.
LA Taq DNA Polymerase w/GC Buffers	125U	**TAK RR02AG**	135.
LA PCR Genome DNA Set	20 rxns	**TAK 9060**	140.

Use of this product is covered by one or more of the following U.S. patents and corresponding patent claims outside the U.S.: 5,079,352; 5,789,224; 5,618,711; 6,127,155 and claims ou the U.S. corresponding to U.S. Patent 4,889,818. The purchase of this product includes a limi nontransferable immunity from suit under the foregoing patent claims for using only this amou of product for the purchaser's own internal research. This product is for research use only. Diagnostic uses under Roche patents require a separate license from Roche. Further informati on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

LA PCR technology is covered by U.S. Patent 5,436,149 issued to TaKaRa Bio Inc.

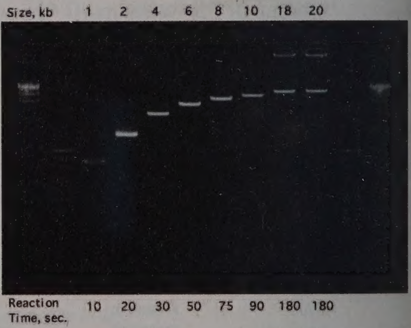
Takara* *Z-Taq** DNA Polymerase

For rapid, high-yield PCR and high-fidelity PCR

- Provides fivefold greater processivity than *Taq* polymerase
- Promotes rapid amplification times and enables amplification of longer templates (human genomic DNA templates up to 17.5kb and lambda DNA templates over 20kb have been successfully amplified)

Quantity	Cat. No.	Each
200U	**TAK R006A**	269.63
4 × 200U	**TAK R006B**	950.36

Use of this product is covered by one or more of the following U.S. patents and corresponding patent claims outside the U.S.: 5,079,352; 5,789,224; 5,618,711; 6,127,155 and claims outside the U.S. corresponding to U.S. Patent 4,889,818. The purchase of this product includes a limited, nontransferable immunity from suit under the foregoing patent claims for using only this amount of product for the purchaser's own internal research. This product is for research use only. Diagnostic uses under Roche patents require a separate license from Roche. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.



Thermo Scientific* Extensor Hi-Fidelity PCR Enzyme Blend

Blend of Thermo Scientific Thermoprime Plus DNA Polymerase with proprietary thermostable proof-reading enzyme that acts synergistically

- Amplifies DNA templates with at least double the yields and four times higher fidelity than standard *Taq* DNA polymerase
- Can also generate larger products than either enzyme individually (>20kb)
- Ideal for full-length amplification of sequences for cloning

INCLUDES:

Extensor Hi-Fidelity PCR Enzyme Blend; Storage and Dilution Buffer: 100mM KCl, 20mM Tris-HCl (pH 8.0 at 25°C), 0.1mM EDTA, 1mM DTT, 0.5% (v/v) Tween* 20, 0.5% (v/v) Nonidet P40*, 50% (v/v) glycerol; Reaction Buffer (two 10X alternatives): Buffer 1 for amplifications up to 12kb, Buffer 2 for amplifications longer than 12kb or problematic PCR. Both contain 22.5mM $MgCl_2$. An additional vial of 25mM $MgCl_2$ is also provided. AB-0720 Series includes controls.

STORAGE CONDITIONS:

Store at -20°C.

Quantity	Concentration	Cat. No.	Ea
PCR Enzyme Blend			
100U	5U/µL	**AB-0720**	123.
500U	5U/µL	**AB-0720B**	572.
5000U	5U/µL	**AB-0720C**	5251.
PCR Enzyme Blend and Controls			
500U	5U/µL	**AB-0721B**	736.

Purchase of this product includes an immunity from suit under patents specified in the product insert to use only the amount purchased for the purchaser's own internal researc No other patent rights (such as 5' Nuclease Process patent rights) are conveyed expressly implication, or by estoppel. Further information on purchasing licenses may be obtained b contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster California 94404, USA.

*Trademark. See Trademark Reference.

Prices subject to change.

ermo Scientific* Extensor Hi-Fidelity R Master Mix

nvenient, time-saving master-mix format for h-fidelity or long PCR

educes the risk of contamination and reagent handling errors

least four times higher fidelity than standard *Taq* DNA polymerase

uble the yields of standard *Taq* DNA polymerase

nplifies sequences >20kb

noice of two proprietary buffers (Extensor Buffer 1 for amplifications to 12kb or Extensor Buffer 2 for amplifications longer than 12kb or oblematic PCR), with and without Thermo Scientific ReddyMix* buffer

LUDES:

nsor Hi-Fidelity PCR Enzyme Blend, dNTPs, $MgCl_2$

RAGE CONDITIONS:

e at 4°C for up to one month; store at -20°C for up to one year.

ntity	Concentration	Cat. No.	Each
Buffer 1			
25µL rxns	2X	**AB-0792A**	143.01
× 25µL rxns	2X	**AB-0792B**	703.78
Buffer 2			
25µL rxns	2X	**AB-0793A**	143.04
yMix with Buffer 1			
25µL rxns	2X	**AB-0794A**	143.01
× 25µL rxns	2X	**AB-0794B**	703.78
yMix with Buffer 2			
25µL rxns	2X	**AB-0795A**	143.01

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REAGENTS AND KITS — REVERSE TRANSCRIPTION

ermo Scientific* Verso* cDNA Kit

erates high yields of full-length cDNA

AB-1453A

ermo Scientific Verso Reverse nscriptase, an RNA-dependent DNA lymerase which is active at high nperatures, is highly sensitive, and n generate long cDNA strands up to kb at temperatures from 42° to 57°C

ermo Scientific Verso Mix contains lase inhibitor to protect RNA templates m degradation

NA Synthesis Buffer is a proprietary buffer which s been optimized to improve reverse transcription oss a wide range of templates

oice of primers provides flexible RNA priming methods for cDNA synthesis

LUDES:

me Mix including RNase inhibitor, cDNA Synthesis Buffer (5X), ored oligo-dT (500ng/µL), Random hexamer (400ng/µL), dNTP mix M each)

RAGE CONDITIONS:

e at -20°C.

tity	Cat. No.	Each
20µL rxns	**AB-1453A**	103.77
× 20µL rxns	**AB-1453B**	246.01

5 PRIME* MasterScript RT Kits

Provide maximum flexibility for the demands of RT

FP2201000

- Use a recombinant homodimeric viral reverse transcriptase combined with the MasterScript RT-PCR buffer
- Allow efficient cDNA synthesis up to 12.5kb over a 99–140°F (37–60°C) temperature range
- Virtually eliminate the need for Mg^{2+} optimization by using self-adjusting MasterScript RT-PCR buffer
- Licensed for PCR

APPLICATIONS:

Generate cDNA probes for Northern Blot; label RNA samples for microarray hybridization; prepare full-length cDNA libraries; detect and quantify mRNA level from low to high throughput

STORAGE CONDITIONS:

Store at -20°C.

Quantity	Cat. No.	Each
50 rxns	**FP2201000**	222.98
200 rxns	**FP2201010**	759.20

This product is sold under licensing arrangements with F. Hoffmann-La Roche Ltd., Roche Molecular Systems, Inc., and Applied Biosystems.

Promega* AMV Reverse Transcriptase

Catalyzes the polymerization of DNA using template DNA, RNA, or RNA:DNA hybrids

- Ideal for first- and second-strand synthesis of cDNA, primer extensions and RNA sequencing, preparation of labeled hybridization probes, and RT-PCR
- Well suited for templates with high secondary structures due to its stability at higher reaction temperatures (37° to 58°C)
- Requires a primer and Mg^{2+} or Mn^{2+} for activity
- Possesses an intrinsic RNase H activity, but is free of contaminating DNases and RNases
- Stabilized in vitro by nonionic detergents and sulfhydryl compounds

INCLUDES:

5X Reaction Buffer (250mM Tris-HCl [pH 8.3 at 25°C], 250mM KCl, 50mM $MgCl_2$, 2.5mM spermidine, 50mM DTT)

STORAGE CONDITIONS:

Store at -20°C.

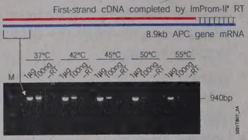
NOTE:

Provided buffer is not compatible with RT-PCR; for RT-PCR, Reverse Transcription 10X Buffer (PR-A3561) should be used in combination with $MgCl_2$ (PR-A3511).

Quantity	Concentration	Cat. No.	Each
1 × 300U	10U/µL	**PR-M5101**	82.20
1 × 1000U	10U/µL	**PR-M5108**	221.40
1 × 600U	20–25U/µL	**PR-M9004**	158.40

Promega* ImProm-II* Reverse Transcription System

Formulated for stand-alone applications or for easy transition to gene-specific target amplification



Full-length cDNA synthesis of 8.9kb template over a range of temperatures using the ImProm-II Reverse Transcription System (PR-A3800), demonstrated by selective amplification of terminal 3' sequence in two-step RT-PCR. Entire 8.9kb message must be reverse transcribed to amplify the terminal 940 bp sequence. Message was amplified from either 1µg or 100ng of total RNA. Control reactions without the reverse transcriptase (-RT) are shown as well.

- Reverse transcribes RNA templates from total RNA, poly(A)+ mRNA, or synthetic transcript RNA
- Enables robust, full-length cDNA synthesis for the analysis of rare or long messages (up to 8.9kb)
- Uses volumes of 1–20µL from the initial RT reaction in coupled or uncoupled PCR reactions
- May also be used for the incorporation of regular, Cy*3-modified, Cy5-modified, and amino-allyl-modified nucleotides for microarray applications

INCLUDES:

ImProm-II Reverse Transcriptase, buffer, $MgCl_2$, dNTPs, primers, nuclease-free water, recombinant RNasin* Ribonuclease Inhibitor

NOTE:

ImProm-II Reverse Transcriptase with buffer and $MgCl_2$ is also available separately.

STORAGE CONDITIONS:

Store at -20°C.

Description	Quantity	Cat. No.	Each
ImProm-II Reverse Transcription System	100 rxns	**PR-A3800**	362.75
ImProm-II Reverse Transcriptase	10 rxns	**PR-A3801**	15.00
	100 rxns	**PR-A3802**	108.40
	500 rxns	**PR-A3803**	417.75

Patents for the foundational PCR process, European Patents 201,184 and 200,362, expired on March 28, 2006. In the U.S., the patents covering the foundational PCR process expired on March 29, 2005.
U.S. Patents 4,966,964; 5,019,556; and 5,266,687; Australian Patents 616881 and 641261 and other pending and issued patents, which claim vectors encoding a portion of human placental ribonuclease inhibitor, are exclusively licensed to Promega Corporation.

Promega* Reverse Transcription System

Efficiently reverse-transcribes RNA into cDNA in just 15 minutes

- AMV Reverse Transcriptase synthesizes single-stranded cDNA from total or poly(A)+ RNA
- Both Oligo(dT)15 and Random Primers are included, allowing cDNA synthesis from virtually any RNA source
- A polyadenylated 1.2kb RNA transcript is provided as a control template

INCLUDES:

Necessary enzymes, primers, and buffers; dNTPs; nuclease-free water

STORAGE CONDITIONS:

Store at -20°C; store positive control RNA at -70°C.

NOTE:

Additional buffers are also available separately.

Description	Quantity	Cat. No.	Each
Reverse Transcription System	100 rxns	**PR-A3500**	370.7
Reverse Transcription 10X Buffer	1.4mL	**PR-A3561**	28.2
$MgCl_2$ Solution, 25mM	1.5mL	**PR-A3511**	28.2
$MgCl_2$ Solution, 25mM	25mL	**PR-A3513**	38.2

Patents for the foundational PCR process, European Patents 201,184 and 200,362, expired on March 28, 2006. In the U.S., the patents covering the foundational PCR process expired on March 29, 2005.
U.S. Patent 5,552,302; Australian Patent 646803 and other patents.

Promega* Random and Oligo(dT) Primers

For first-strand cDNA synthesis and cloning

- Quality tested in RT-PCR using the ImProm-II* Reverse Transcription System (PR-A3800) for first-strand cDNA synthesis
- Tested to be free of RNase and DNase activity
- Use with AMV, M-MLV, or ImProm-II Reverse Transcriptases to prime first-strand cDNA synthesis

STORAGE CONDITIONS:

Store at -20°C.

Description	Quantity	Cat. No.	Each
Random Primers	20µg	**PR-C1181**	28.2
Oligo(dT) Primers	20µg	**PR-C1101**	44.2

REAGENTS AND KITS — RT-PCR

Thermo Scientific* Verso* 1-Step RT-PCR Kit

Supplies all of the reagents required to perform a rapid, sensitive, and reproducible RT-PCR in only two vials

Enzyme Mix

- Utilizes Thermo Scientific Verso Reverse Transcriptase, an RNA-dependent DNA polymerase which is active at high temperatures, is highly sensitive, and can generate long cDNA strands up to 11kb at temperatures from 42° to 57°C
- Contains RNase inhibitor to protect RNA templates from degradation

AB-1454LDA

1-Step PCR Master Mix

- Includes Thermoprime Plus DNA polymerase which is stable at high temperatures and has 5' to 3' polymerization and exonuclease activity
- Uses a proprietary reaction buffer which has been optimized to allow both reverse transcription and PCR amplification to occur in the same reaction mix across a wide range of templates
- Also includes $MgCl_2$ and dNTP mix
- Available with Thermo Scientific ReddyMix* buffer system for loading of PCR products directly onto an agarose gel

INCLUDES:

Thermo Scientific Enzyme Mix including RNase inhibitor, 1-Step PCR Master Mix (2X)

STORAGE CONDITIONS:

Store at -20°C.

Description	Quantity	Cat. No.	Ea
1-Step RT-PCR Kit	40 × 50µL rxns	**AB-1454A**	150.
1-Step RT-PCR Kit	200 × 50µL rxns	**AB-1454B**	675.
1-Step RT-PCR Kit with Thermo Scientific ReddyMix Buffer	40 × 50µL rxns	**AB-1454LDA**	165.
1-Step RT-PCR Kit with Thermo Scientific ReddyMix Buffer	200 × 50µL rxns	**AB-1454LDB**	742.

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ermo Scientific* Verso* 1-Step t-Start RT-PCR Kit

NEW

plies all of the reagents required to perform a rapid, sitive, and reproducible RT-PCR with the advantages hot-start DNA polymerase in only two vials

yme Mix

lizes Thermo Scientific Verso Reverse Transcriptase, an RNA-dependent
A polymerase which is active at high temperatures, is highly sensitive,
l can generate long cDNA strands up to 11kb at temperatures from 42°
57°C

ntains RNase inhibitor to protect RNA templates from degradation

ep PCR Hot-Start Master Mix

ludes Thermo Scientific Thermo-Start* DNA polymerase, a chemically
dified hot-start version of Thermoprime Plus DNA polymerase, which
vents nonspecific amplification during cDNA synthesis and requires an
ivation step at 95°C for 15 minutes

es a proprietary reaction buffer which has been optimized to allow
h reverse transcription and PCR amplification to occur in the same
ction mix across a wide range of templates

o includes $MgCl_2$ and dNTP mix

UDES:

ne Mix including RNase inhibitor, 1-Step PCR Hot-Start
er Mix (2X)

RAGE CONDITIONS:

at -20°C.

ity	Cat. No.	Each
50µL rxns	**AB-1455A**	165.73
50µL rxns	**AB-1455B**	741.60

ase of this product includes an immunity from suit under patents specified in the t insert to use only the amount purchased for the purchaser's own internal research. er patent rights (such as 5' Nuclease Process patent rights) are conveyed expressly, by ation, or by estoppel. Further information on purchasing licenses may be obtained by ting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, nia 94404, USA.

RIME* MasterScript* RTplusPCR* Kits

ide maximum flexibility for all demands of RT-PCR

NEW

a recombinant homodimeric viral reverse transcriptase
nbined with the MasterScript RT-PCR buffer

w efficient cDNA synthesis up to 12.5kb over a 99°–140°F
–60°C) temperature range

ually eliminate the need for Mg^{2+} optimization by using self-adjusting
sterScript RT-PCR buffer

nsed for PCR

LICATIONS:

ate cDNA probes for Northern Blot; label RNA samples for microarray
lization; prepare full-length cDNA libraries; detect and quantify mRNA
from low to high throughput

AGE CONDITIONS:

at -20°C.

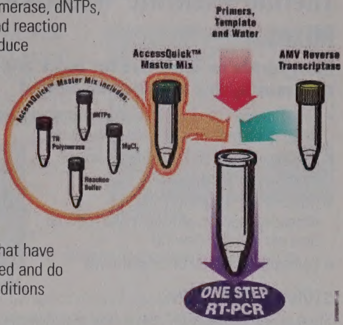
ity	Cat. No.	Each
ns	**FP2201100**	108.77
xns	**FP2201110**	415.03

oduct is sold under licensing arrangements with F. Hoffmann-La Roche Ltd., Roche lar Systems, Inc., and Applied Biosystems.

Promega* AccessQuick* RT-PCR System

Convenient master mix for routine RT-PCR applications

- Combines *Tfl* DNA polymerase, dNTPs, magnesium chloride, and reaction buffer in one tube to reduce the number of pipetting steps required
- Provides AMV RT enzyme in a separate tube to allow enzyme-free control reactions
- Amplifies as little as zeptomole (10^{-21} mol) levels of RNA template
- Intended for reactions that have been previously optimized and do not require extreme conditions


Primers, Template and Water
AccessQuick™ Master Mix
AMV Reverse Transcriptase
AccessQuick™ Master Mix includes:
dNTPs
Tfl Polymerase
MgCl₂
Reaction Buffer
ONE STEP RT-PCR

Schematic of AccessQuick RT-PCR System (PR-A1701)

INCLUDES:

AccessQuick Master Mix, 2X;
AMV reverse transcriptase;
nuclease-free water

STORAGE CONDITIONS:

Store at -20°C; stable over many freeze-thaw cycles.

Quantity	Cat. No.	Each
20 rxns	**PR-A1701**	106.40
100 rxns	**PR-A1702**	377.75
500 rxns	**PR-A1703**	1512.00

Patents for the foundational PCR process, European Patents 201,184 and 200,362, expired on March 28, 2006. In the U.S., the patents covering the foundational PCR process expired on March 29, 2005.
For laboratory use.

Takara* Real-Time One-Step RNA PCR Kit

Performs RT-PCR in a single tube without changing buffers or adding reagents

- Utilizes AMV Reverse Transcriptase XL (TAK 2630A) for greater thermostability and a wider range of reaction temperatures and Takara *Ex Taq** Hot Start Polymerase (TAK RR006A) for superior specificity and sensitivity with reduced background
- Minimizes the risk of contamination
- Excellent for RT-PCR using real time PCR

INCLUDES:

AMV Reverse Transcriptase XL, RNase-free dH_2O, RNase Inhibitor, Takara *Ex Taq* Hot-Start Polymerase, 2X One-step RNA PCR Buffer (Contains dNTP mixture and Mg^{2+}), ROX* Reference Dye I, ROX Reference Dye II

STORAGE CONDITIONS:

Store at -20°C.

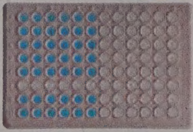
Quantity	Cat. No.	Each
100 rxns	**TAK RR026**	316.79

Use of this product is covered by one or more of the following U.S. patents and corresponding patent claims outside the U.S.: 5,079,352; 5,789,224; 5,618,711; 6,127,155 and claims outside the U.S. corresponding to U.S. Patent 4,889,818. The purchase of this product includes a limited, nontransferable immunity from suit under the foregoing patent claims for using only this amount of product for the purchaser's own internal research. This product is for research use only. Diagnostic uses under Roche patents require a separate license from Roche. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

Thermo Scientific* ABsolute* Blue QPCR Mixes

Incorporate an inert dye for quick and easy verification that master mix has been dispensed

- Easier to see in the white opaque plastics recommended for QPCR than traditional colorless reagents
- Contain Thermo-Start* hot-start enzyme for increased sensitivity
- Utilize dTTP in the dNTP mix for increased reaction efficiency and reduced time per reaction (low Ct)
- Compatible with all QPCR platforms



AB-4000 Series

STORAGE CONDITIONS:

Store at -20°C. The ROX* dye is light sensitive; exposure to light should be minimized for vials containing ROX dye.

Description	Quantity	Cat. No.	Pack of
QPCR Mix and ROX Vial	100 × 25µL rxns	**AB-4136A**	2/194.11
QPCR Mix and ROX Vial	100 × 25µL rxns	**AB-4136B**	16/1265.00
QPCR Mix and ROX Vial	400 × 25µL rxns	**AB-4137A**	1/375.17
QPCR Mix and ROX Vial	400 × 25µL rxns	**AB-4137B**	10/2956.80
QPCR ROX Mix	100 × 25µL rxns	**AB-4138A**	2/194.11
QPCR ROX Mix	100 × 25µL rxns	**AB-4138B**	16/1265.00
QPCR ROX Mix	400 × 25µL rxns	**AB-4139A**	1/359.96
QPCR ROX Mix	400 × 25µL rxns	**AB-4139B**	10/2956.80
QPCR SYBR* Green ROX Mix	100 × 25µL rxns	**AB-4162A**	2/220.04
QPCR SYBR Green ROX Mix	100 × 25µL rxns	**AB-4162B**	16/1267.20
QPCR SYBR Green ROX Mix	400 × 25µL rxns	**AB-4163A**	1/435.36
QPCR SYBR Green ROX Mix	400 × 25µL rxns	**AB-4163B**	10/3094.30
QPCR SYBR Green Mix and ROX Vial	100 × 25µL rxns	**AB-4166A**	2/220.04
QPCR SYBR Green Mix and ROX Vial	100 × 25µL rxns	**AB-4166B**	16/1267.20
QPCR SYBR Green Mix and ROX Vial	400 × 25µL rxns	**AB-4167A**	1/433.35
QPCR SYBR Green Mix and ROX Vial	400 × 25µL rxns	**AB-4167B**	10/3094.30
QPCR SYBR Green Fluorescein Mix	100 × 25µL rxns	**AB-4219A**	2/182.35
QPCR SYBR Green Fluorescein Mix	100 × 25µL rxns	**AB-4219B**	16/1267.20
QPCR SYBR Green Fluorescein Mix	400 × 25µL rxns	**AB-4220A**	1/435.36
QPCR SYBR Green Fluorescein Mix	400 × 25µL rxns	**AB-4220B**	10/3094.30
QPCR low ROX Mix	100 × 25µL rxns	**AB-4318A**	2/194.11
QPCR low ROX Mix	100 × 25µL rxns	**AB-4318B**	16/1265.00
QPCR low ROX Mix	400 × 25µL rxns	**AB-4319A**	1/375.17
QPCR low ROX Mix	400 × 25µL rxns	**AB-4319B**	10/2956.80
QPCR SYBR Green low ROX Mix	100 × 25µL rxns	**AB-4322A**	2/220.04
QPCR SYBR Green low ROX Mix	100 × 25µL rxns	**AB-4322B**	16/1267.20
QPCR SYBR Green low ROX Mix	400 × 25µL rxns	**AB-4323A**	1/435.36
QPCR SYBR Green low ROX Mix	400 × 25µL rxns	**AB-4323B**	10/3094.30

Purchase of this product includes an immunity from suit under patents specified in the product insert to use only the amount purchased for the purchaser's own internal research. No other patent rights (such as 5' Nuclease Process patent rights) are conveyed expressly, by implication, or by estoppel. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

Thermo Scientific* ABsolute* QPCR Probe Mixes

For use with hybridization probes

- High sensitivity, specificity, reproducibility
- Optimized buffer for optimal performance in multiplex reactions
- Contain all necessary components for quantitative PCR, with the exception of template and primers/probes
- The 2X QPCR Mix contains a proprietary reaction buffer that provides high sensitivity, specificity and reproducibility
- Mix is optimized for end-point applications, including SNP assays
- Kits are available with the option of ROX* passive reference dye

Quantity	Cat. No.	Ea
QPCR Mix		
2 × 1.25mL vials; 100 × 50µL rxns	**AB-1132A**	175.
16 × 1.25mL vials; 800 × 50µL rxns	**AB-1132B**	1211.
1 × 5mL vials; 200 × 50µL rxns	**AB-1133**	352.
10 × 5mL vials; 2000 × 50µL rxns	**AB-1133B**	2665.
1 × 50mL; 2000 × 50µL rxns	**CM-215A**	2414.
QPCR Mix plus ROX Vial		
2 × 1.25mL vials; 100 × 50µL rxns	**AB-1136A**	179.
16 × 1.25mL vials; 800 × 50µL rxns	**AB-1136B**	1255.
1 × 5mL vials; 200 × 50µL rxns	**AB-1137**	652.
10 × 5mL vials; 2000 × 50µL rxns	**AB-1137B**	2768.
1 × 50mL; 2000 × 50µL rxns	**CM-216A**	2414.
QPCR ROX (500nM) Mix		
2 × 1.25mL vials; 100 × 50µL rxns	**AB-1138A**	179.
16 × 1.25mL vials; 800 × 50µL rxns	**AB-1138B**	1283.
1 × 5mL vials; 200 × 50µL rxns	**AB-1139A**	363.
10 × 5mL vials; 2000 × 50µL rxns	**AB-1139B**	3111.
1mM ROX Reference Dye		
50µL; 2000+ reactions	**AB-1153**	73.

Practice of the patented 5' Nuclease Process requires a license from Applied Biosystems. The purchase of this product includes an immunity from suit under patents specified in the product insert to use only the amount purchased for the purchaser's own internal research when used with the separate purchase of Licensed Probe. No other patent rights are conve expressly, by implication, or by estoppel. Further information on purchasing licenses may be obtained from the Director or Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Fost City, California 94404, USA.

ermo Scientific* ABsolute* BR* Green QPCR Mixes

imized for SYBR Green I assays

- h sensitivity, specificity, reproducibility
- ad dynamic range
- timized buffer containing active SYBR Green I
- xes contain all necesary components for quantitative PCR, with the eption of template and primers
- QPCR SYBR Green Mix contains optimal levels of active SYBR Green I e and Thermo-Start* DNA Polymerase in a proprietary reaction buffer t enables detection of low copy number targets

RAGE CONDITIONS:

below 0°C, preferably at -20°C. Avoid repeated freeze/thawing. ct from light.

ity	Cat. No.	Each
SYBR Green Mix		
50µL rxns	**AB-1158A**	173.53
50µL rxns	**AB-1158B**	1234.02
50µL rxns	**AB-1159**	346.00
× 50µL rxns	**AB-1159B**	3013.29
SYBR Green Mix plus ROX Vial		
50µL rxns	**AB-1166A**	173.53
50µL rxns	**AB-1166B**	1234.02
50µL rxns	**AB-1167**	346.00
× 50µL rxns	**AB-1167B**	3013.29
SYBR Green ROX (500nM) Mix		
50µL rxns	**AB-1162A**	173.53
50µL rxns	**AB-1162B**	1234.02
50µL rxns	**AB-1163**	346.00
× 50µL rxns	**AB-1163B**	3013.29
Green Fluorescein Mix		
50µL rxns	**AB-1219A**	173.53
50µL rxns	**AB-1219B**	1234.02
50µL rxns	**AB-1220A**	346.00

se of this product includes an immunity from suit under patents specified in the t insert to use only the amount purchased for the purchaser's own internal research. er patent rights are conveyed expressly, by implication, or by estoppel. Further ation on purchasing licenses may be obtained by contacting the Director of Licensing, l Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

5 PRIME* RealMasterMix

For quantitative and qualitative real-time PCR

FP2200700

Ready-to-use mix is ideal for probe-based real-time PCR assays such as *Taq*Man* or molecular beacons. The optimized formulation contains all of the components for quantitative PCR (except for template and primers/probes) in one tube for fast, easy handling and results with high reproducibility.

- Utilizes HotMaster* *Taq*† for Hot Start/Cold Stop* activity
- Uses Mg^{2+} self-adjusting buffer, eliminating the need for optimization of magnesium
- Offers anti-primer-dimer formation technology‡
- Enhances the signal release by nucleolytic probe degradation, so more signal can be generated with the same amount of target DNA
- Optimized for sequence-specific probes
- Available with and without ROX* passive reference dye for reference dye dependent and independent instrument platforms
- Any of the enzymes, labels, dyes, and methods mentioned may be covered by third party patent rights.

STORAGE CONDITIONS:

Store at -20°C for long-term storage. Stable at 4°C for up to three months. Products containing ROX should be protected from light.

Description	Quantity	Cat. No.	Each
RealMasterMix Probe	200 × 50µL rxns	**FP2200700**	314.25
	2000 × 50µL rxns	**FP2200710**	2836.55
RealMasterMix $Probe_{Rox}$	200 × 50µL rxns	**FP2200720**	314.25
	2000 × 50µL rxns	**FP2200730**	2822.98

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† *This product is sold under licensing arrangements with F. Hoffmann-La Roche Ltd., Roche Molecular Systems, Inc., and Applied Biosystems.*

‡ *Patent pending.*

5 PRIME* RealMasterMix for SYBR* Green

Optimized for SYBR Green and single-plex, probe-based assays

- Ready-to-use MasterMix format (2.5X)
- HotMaster* enzyme technology: Hot Start-Cold Stop* feature for continuous specificity control during the entire PCR
- No enyzme activation step necessary; ideal for high-speed PCR
- High reproducibility and sensitivity
- Self-adjusting Mg^{2+} buffer technology
- Primer-dimer reducing formulation
- Contains ROX* dye for optional passive reference dye normalization

STORAGE CONDITIONS:

Store at -20°C for long-term storage. Stable at 4°C for up to three months. Protect from light.

Quantity	Cat. No.	Each
200 × 50µL rxns	**FP2200800**	316.16
2000 × 50µL rxns	**FP2200810**	2836.55

Thermo Scientific* Verso* 1-Step QRT-PCR Kit

Combines Verso RT enzyme and ABsolute* Blue QPCR master mix to produce sensitive results from low copy number template

AB-4100A

Verso RT Enzyme Mix Features

- Has a superior dynamic range, allowing the detection of 10pg to 1µg of total RNA or 1pg to 10ng mRNA
- Performs the RT step quickly, reducing the cDNA transcription time between 5 and 15 minutes
- Eliminates primer dimer formation, increasing sensitivity and efficiency
- Includes RNase inhibitor, significantly reducing RNase contamination while simplifying setup

RT Enhancer Features

- Eliminates the need for DNase treatment of samples

ABsolute Blue QPCR Master Mix Features

- Includes an inert blue dye that offers an immediate check that the correct amount of master mix has been added
- Utilizes Thermo-Start* *Taq* DNA polymerase, which remains inactive until an incubation at 95°C is performed, increasing specificity
- Uses a buffer system that has been optimized to work across a wide range of RNA templates for both transcription and amplification and incorporates special enhancers and additives which allow both RT and *Taq* polymerase to work optimally

INCLUDES:

Verso Enzyme Mix including RNase inhibitor, RT Enhancer, ABsolute Blue QPCR Master Mix, stain or dye as indicated in ordering table

STORAGE CONDITIONS:

Store at -20°C.

Description	Quantity	Cat. No.	Each
1-Step QRT-PCR Kit plus separate ROX* vial†	200 × 25µL rxns	**AB-4100A**	288.95
1-Step QRT-PCR Kit plus separate ROX vial†	400 × 25µL rxns	**AB-4100C**	519.12
1-Step QRT-PCR Kit w/ROX†	200 × 25µL rxns	**AB-4101A**	288.95
1-Step QRT-PCR Kit w/ROX†	400 × 25µL rxns	**AB-4101C**	519.12
1-Step QRT-PCR Kit w/low ROX†	200 × 25µL rxns	**AB-4102A**	288.95
1-Step QRT-PCR Kit w/low ROX†	400 × 25µL rxns	**AB-4102C**	519.12
1-Step QRT-PCR Kit w/SYBR* Green plus separate ROX vial‡	200 × 25µL rxns	**AB-4104A**	346.73
1-Step QRT-PCR Kit w/SYBR Green plus separate ROX vial‡	400 × 25µL rxns	**AB-4104C**	622.94
1-Step QRT-PCR Kit w/SYBR Green and ROX‡	200 × 25µL rxns	**AB-4105A**	346.73
1-Step QRT-PCR Kit w/SYBR Green and ROX‡	400 × 25µL rxns	**AB-4105C**	622.94
1-Step QRT-PCR Kit w/SYBR Green and Low ROX‡	200 × 25µL rxns	**AB-4106A**	346.73
1-Step QRT-PCR Kit w/SYBR Green and Low ROX‡	400 × 25µL rxns	**AB-4106C**	622.94
1-Step QRT-PCR Kit w/SYBR Green and Fluorsecein‡	200 × 25µL rxns	**AB-4107A**	346.73
1-Step QRT-PCR Kit w/SYBR Green and Fluorsecein‡	400 × 25µL rxns	**AB-4107C**	622.94

† *Practice of the patented 5' Nuclease Process requires a license from Applied Biosystems. The purchase of this product includes an immunity from suit under patents specified in the product insert to use only the amount purchased for the purchaser's own internal research when used with the separate purchase of Licensed Probe. No other patent rights are conveyed expressly, by implication, or by estoppel. Further information on purchasing licenses may be obtained from the Director or Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.*

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Thermo Scientific* Verso* 2-Step QRT-PCR Kit

Combines Verso RT enzyme and ABsolute* Blue QPCR master mix for convenient 2-Step QRT-PCR

AB-4109A

- Produces sensitive results from low copy number template
- Includes anchored oligo dT and random hexamer primers, allowing for an increase in both the amount of cDNA produced and the diversity of the cDNA pool
- Uses dTTP in the nucleotide mix instead of dUTP, increasing reaction efficiency by more than 5%
- Uses a buffer system that has been optimized to work across a wide range of RNA templates for both transcription and amplification and incorporates special enhancers and additives which allow both RT and *Taq* polymerase to work optimally

Verso RT Enzyme Mix Features

- Has a superior dynamic range, allowing the detection of 10pg to 1µg total RNA or 1pg to 100ng mRNA
- Performs the RT step quickly, reducing the cDNA transcription time to 15 minutes
- Eliminates primer dimer formation, increasing sensitivity and efficienc
- Includes RNase inhibitor, significantly reducing RNase contamination while simplifying setup

RT Enhancer Features

- Eliminates the need for DNase treatment of samples

ABsolute Blue QPCR Master Mix Features

- Includes an inert blue dye that offers an immediate check that the corr amount of master mix has been added
- Utilizes Thermo-Start* *Taq* DNA polymerase, which remains inactive u an incubation at 95°C is performed, increasing specificity

INCLUDES:

Verso Enzyme Mix including RNase inhibitor, cDNA Synthesis Buffer (5X), anchored oligo dT (500ng/µL), random hexamers (400ng/µL), RT Enhance ABsolute Blue QPCR Master Mix, dNTP mix (5mM each), stain or dye as indicated in ordering table

STORAGE CONDITIONS:

Store at -20°C.

Description	Quantity	Cat. No.	Ea
2-Step QRT-PCR Kit plus separate ROX* vial†	200 × 25µL rxns	**AB-4109A**	361.
2-Step QRT-PCR Kit w/ROX†	200 × 25µL rxns	**AB-4110A**	361.
2-Step QRT-PCR Kit w/SYBR* Green plus separate ROX vial‡	200 × 25µL rxns	**AB-4112A**	433.
2-Step QRT-PCR Kit w/SYBR Green and ROX‡	200 × 25µL rxns	**AB-4113A**	433.
2-Step QRT-PCR Kit w/SYBR Green and Fluorscein‡	200 × 25µL rxns	**AB-4114A**	433.

† *Practice of the patented 5' Nuclease Process requires a license from Applied Biosystems The purchase of this product includes an immunity from suit under patents specified in th product insert to use only the amount purchased for the purchaser's own internal researc when used with the separate purchase of Licensed Probe. No other patent rights are conveyed expressly, by implication, or by estoppel. Further information on purchasing licenses may be obtained from the Director or Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.*

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omega* Plexor* Real-Time
antitative PCR Systems

NEW

asure each target directly during the amplification
cess and not through a secondary reaction

ly two primers are required for each target, making the design of
ltiplex assays much easier

nvenient master mix format provides all necessary reagents, including
proprietary reagent to minimize primer-dimer formation, in one tube—
nply add template and primers

ch target is measured through a reduction in fluorescent signal during
nplification; quenching is directly proportional to amplicon accumulation

melt analysis can be performed after amplification to provide an
ernal control for specificity

exor technology works on most currently available real-time instruments
pable of measuring more than one fluor

ee Plexor Analysis Software allows users to import and analyze data
m their preferred instrument platform

e, Web-based design and analysis tools assist in multiplex assay design

RAGE CONDITIONS:

e at -20°C.

ription	Quantity	Cat. No.	Each
or QPCR System	200 rxns	**PR-A4011**	170.64
or One-Step QRT-PCR System	200 rxns	**PR-A4021**	320.40
or Two-Step QRT-PCR System	200 rxns	**PR-A4051**	320.40

ts for the foundational PCR process, European Patents 201,184 and 200,362; expired
rch 28, 2006. In the U.S., the patents covering the foundational PCR process expired on
29, 2005.

roduct is designed and sold for use in the multiplex PCR process covered by U.S. Patent
,989; Canadian Patent 1,339,731 and Australian Patent 634,175. A limited license has
granted under the patent to use only this amount of the product to practice the multiplex
rocess and is conveyed to the purchaser by the purchase of this product.

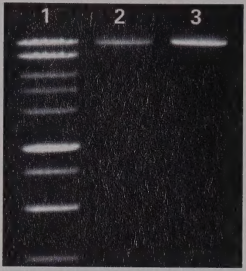
urchase of this product conveys to the buyer the limited, nonexclusive, nontransferable
without the right to resell, repackage, or further sublicense) under U.S. Published Patent
20020150900 and U.S. Patents 5,432,272; 6,617,106 and 6,140,496 to use the
ct. No other license is granted to the buyer whether expressly, by implication, by
pel or otherwise. In particular, the purchase of this product does not include or carry any
r license to sell this product. For information on purchasing a license for other uses,
contact Promega Corporation, Business Development, 2800 Woods Hollow Road,
on, WI 53711, or EraGen Biosciences, Corporate Licensing, 918 Deming Way, Suite
Madison, WI 53717.

REAGENTS AND KITS — NUCLEOTIDES

Fisher BioReagents* *exACTGene** dNTPs

Ultrapure dNTPs ideal for use in PCR, DNA labeling, and DNA sequencing

- >99% triphosphate
- Chemically synthesized to meet a high purity standard
- Ensure consistent results and optimum sensitivity for many rigorous applications
- Tested for purity by HPLC, performance in long-template PCR, and absence of DNase, RNase, and protease activity to ensure dependable performance and lot-to-lot consistency
- Ultrapure dNTPs will enhance results for the following procedures: QPCR, high-fidelity PCR, long template (>8kb) PCR, RT-PCR, fluorescent sequencing, cDNA synthesis, Pyrosequencing*, and in vitro mutagenesis



Performance of ultrapure dNTPs in long template PCR. Impurities in PCR reagents can often inhibit PCR reactions. To demonstrate this effect, a 10kb fragment from Lambda DNA was amplified using *exACTGene* PCR dNTP Mix (BP2595-200) (lane 3) and a competitor's standard dNTP mix of lower purity (lane 2).

STORAGE CONDITIONS:

Store at -20°C.

Description	Concentration	Quantity	Cat. No.	Each
dATP	100mM	250µL	**BP2590-250**	78.34
dCTP	100mM	250µL	**BP2592-250**	78.34
dGTP	100mM	250µL	**BP2591-250**	78.34
dTTP	100mM	250µL	**BP2593-250**	78.34
dNTP Mix	10mM soln. of dATP, dCTP, dGTP, and dTTP	200µL	**BP2595-200**	60.93
		1000µL	**BP2595-1**	227.26
dNTP Set	100mM	250µL of each	**BP2594-250**	214.40
		500µL of each	**BP2594-500**	377.21

This product is distributed for laboratory research use only. Under no circumstances may it be used for diagnostic purposes. The safety and efficacy of this product in diagnostic or other clinical uses has not been established.

Takara* Deoxynucleotide Triphosphates (dNTPs)

Quality tested in a variety of applications

- Purity ≥98%
- Individual dNTPs are supplied in a 100mM solution
- dNTP Mixture is a premixed solution with each dNTP at a concentration of 2.5mM
- dNTP Set contains one each of dATP, dCTP, dGTP, and dTTP

STORAGE CONDITIONS:

Store at -20°C.

Description	Quantity	Cat. No.	Each
dATP	100µmol	**TAK 4026**	150.98
dCTP	100µmol	**TAK 4028**	150.98
dGTP	100µmol	**TAK 4027**	150.98
dTTP	100µmol	**TAK 4029**	150.98
dNTP Mixture	1.28mL	**TAK 4030**	54.19
dNTP Set	100µmol each	**TAK 4025**	542.34

Promega* Ultra Pure Deoxynucleotide Triphosphates (dNTPs)

High-quality dNTPs for cDNA synthesis, sequencing, and labeling

PR-U1330

- Triphosphate content is >98%
- No detectable DNase or RNase activity
- Performance is tested using AMV reverse transcriptase, DNA polymerase, and *Taq* DNA polymerase
- dNTPs are assayed to ensure the absence of contaminating dUTP
- Combination Packages include individual tubes of each dNTP
- Premixed Solutions contain equal amounts of each dNTP in a single tube

STORAGE CONDITIONS:
Store at -20°C.

Description	Concentration	Quantity	Cat. No.	Each
dATP	100mM	25µmol	**PR-U1205**	54.27
		40µmol	**PR-U1201**	85.20
dCTP	100mM	25µmol	**PR-U1225**	54.27
		40µmol	**PR-U1221**	85.20
dGTP	100mM	25µmol	**PR-U1215**	54.27
		40µmol	**PR-U1211**	85.20
dTTP	100mM	25µmol	**PR-U1235**	54.27
		40µmol	**PR-U1231**	85.20
Combination Package	100mM	4 × 10µmol	**PR-U1330**	83.20
		4 × 25µmol	**PR-U1420**	188.71
		4 × 40µmol	**PR-U1240**	282.75
		4 × (2 × 100µmol)	**PR-U1410**	1069.00
Premixed Solution	10mM	200µL	**PR-C1141**	60.20
		1000µL	**PR-C1145**	232.40

Promega* dNTP Mix

High-purity dNTPs are >98% pure

Premixed solution containing sodium salts of dATP, dCTP, dGTP, and dTTP.

STORAGE CONDITIONS:
Store at -20°C.

Description	Concentration	Quantity	Cat. No.	Each
dNTP Mix	10mM	200µL	**PR-U1511**	20.20
		1000µL	**PR-U1515**	50.30

Certain applications of this product are covered by patents issued and applicable in certain countries. Because purchase of this product does not include a license to perform any patented application, users of this product may be required to obtain a patent license depending upon the particular application and country in which the product is used.

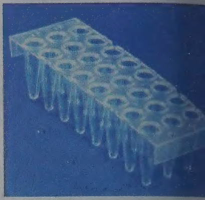
Looking for Custom Oligos?

For information about Operon* Custom Oligos, see the Custom Services section.

MICROPLATES — 24- AND 48-WELL

Thermo Scientific* ABgene* Thermo-Fast 24- and 48-Well Plates

Compatible with all major thermal cyclers with 0.2mL blocks



AB-0624

- Thin wall polypropylene
- Semi-skirt for labeling and barcoding
- Sealable using adhesive films and foils, heat seals and flat and domed cap strips
- 300µL maximum well volume (when used with adhesive and heat seals)
- Alphanumeric grid
- Cleanroom produced

CERTIFICATIONS:
Certified DNase-, RNase-, and DNA-free

Color	Well Volume	Cat. No.	Case of
24-Well PCR Plate (3 × 8 wells)			
Natural	300µL	**AB-0624**	134.
Blue	300µL	**AB-0624B**	129.
Green	300µL	**AB-0624G**	129.
Yellow	300µL	**AB-0624Y**	129.
48-Well PCR Plate (6 × 8 wells)			
Natural	300µL	**AB-0648**	149.
Yellow	300µL	**AB-0648Y**	141.

MICROPLATES — 96-WELL

*Fisherbrand** 96-Well Nonskirted PCR Plates

Slightly raised rims provide maximum sealing surfac

NEW

08-408-220

- Polypropylene
- Can be easily cut into strips or partial plates
- Use thin-wall design for maximum heat transfer efficiency
- Fit most popular thermal cyclers

CERTIFICATIONS:
Certified free of RNase, DNase, human DNA, pyrogens, and PCR inhibitors

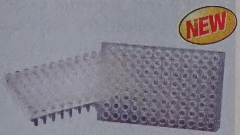
Color	Well Volume	Cat. No.	Case of 2
Natural	200µL	**08-408-220**	69.7
Blue	200µL	**08-408-222**	69.7
Green	200µL	**08-408-223**	69.7
Red	200µL	**08-408-221**	69.7
Yellow	200µL	**08-408-224**	72.1

*Trademark. See Trademark Reference.

Prices subject to change.

*isherbrand** 96-Well Tall-Chimney CR Plates

aised rims minimize well-to-well contamination



08-408-230

- Polypropylene
- Use thin-wall design for maximum heat transfer efficiency
- Offer a robust design to minimize warp
- Fit most popular thermal cyclers
- Certified for use with the MegaBACE* 1000 DNA Analysis Capillary Electrophoresis Systems

ERTIFICATIONS:

rtified free of RNase, DNase, human DNA, pyrogens, and R inhibitors

lor	Well Volume	Cat. No.	Case of 50
tural	200µL	**08-408-230**	205.90
ue	200µL	**08-408-231**	205.90
een	200µL	**08-408-234**	209.90
d	200µL	**08-408-233**	209.90
llow	200µL	**08-408-232**	205.90

*isherbrand** 96-Well Skirted CR Plates

w profile design minimizes condensation d evaporation with less "dead space"

08-408-225

- olypropylene
- Jse thin-wall design for maximum eat transfer efficiency
- it many popular thermal cyclers
- esigned to SBS (Society for Biomolecular Screening) standards
- uitable for use on MegaBACE* 500 and MegaBACE 1000 DNA nalysis Systems
- ompatible with most robotic platforms

MPLIANCE:

tified free of RNase, DNase, human DNA, pyrogens, l PCR inhibitors

or	Well Volume	Cat. No.	Case of 25
tural	200µL	**08-408-225**	83.65
e	200µL	**08-408-226**	83.65
en	200µL	**08-408-227**	83.65
low	200µL	**08-408-228**	83.65

*isherbrand** MicroMat* Cap Mat

r pressure-sealing ermal cyclers

08-408-219 (Plate not included.)

Use with	Cat. No.	Pack of 5
well Plates	**08-408-219**	45.80

*Fisherbrand** Adhesive Plate Seals

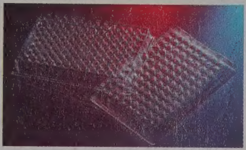
Seals are optically clear for Real-Time PCR applications

08-408-240 (Plate not included.)

Cat. No.	Case of 100
08-408-240	82.20

Costar* Thermowell* 96-Well PCR Plates

Ultrathin polypropylene or polycarbonate for fast, consistent heat transfer



07-200-613

Polypropylene Plates

- ▸ Fit a variety of heat blocks
- ▸ Sealable with 8-cap strips or sealing mat
- ▸ Autoclavable
- ▸ Robotic-friendly with wide skirt for bar code compatibility

Polycarbonate Plates

- ▸ Low protein-binding surface prevents loss of sample
- ▸ For oil-free operation, use polyethylene or aluminum sealing tape in conjunction with heated-lid cyclers; also accommodate silicone reusable sealing mat
- ▸ Withstand temperatures to 135°C without warping
- ▸ Various well shapes fit popular thermal cyclers
- ▸ Surface of DNA-BIND* plate allows covalent attachment of ssDNA at 5' and 3' end
- ▸ Nonsterile

CERTIFICATIONS:

Polypropylene plates are certified DNase- and RNase-free.

Color/Well Style	Mfr. No.	Cat. No.	Case of 25
Polypropylene			
Clear	6551	**07-200-613**	130.49
Polycarbonate			
Clear/P	6509	**07-200-541**[1]	158.40
Clear/M	6511	**07-200-245**	158.40
Clear/M/DNA-BIND	6573	**07-200-691**[2]	293.50

[1] *Requires spacer block and frame for use in Perkin-Elmer GeneAmp PCR System 9600 and Thermo Scientific* Thermolyne* Amplitron II.*

[2] *With DNA-BIND surface chemistry.*

SPECIFICATIONS

Compatible Thermal Cyclers for Polypropylene Thermowell Plates

Perkin-Elmer GeneAmp* PCR System 9600 and 9700; Thermo Scientific* Thermolyne* Amplitron* II; Techne* Cyclogene and Gene "E" with 96 × 0.2µL block; MJ Research PTC-100-96V, PTC-200 DNA Engine*; Biometra Uno; Delta Cycler I; Delta Cycler II; Coy Corporation Temp Cycler II; Corbett Research PC 960, PC 960 G, and P 960 C; Thermo Scientific Hybaid* OmniGene with Microblock; Thermo Scientific Lab-Line*; Quatro BioSystems

Compatible Thermal Cyclers for Polycarbonate Thermowell Plates

Style P	Thermo Scientific Thermolyne Amplitron* II; Perkin-Elmer GeneAmp* PCR System 9600; Techne* Cyclogene, Gene "E" with 96 × 0.2µL block
Style M	BioOven III, MJ Research PTC-100-96V, PTC-200 DNA Engine*; Biometra* Uno, Corbett Research PC 960, PC 960G, and PC 960C; Coy Corporation Temp Cycler II, Thermo Scientific Hybaid OmniGene with Microblock, Thermo Scientific Lab-Line Programmable Thermal Block, Quatro Biosystems T-C-40

ACCESSORIES

Costar* Thermowell* Plate Cap Strips and Sealing Tape

Eight-Cap Strips

- For 96-well polypropylene Thermowell plates
- Made from thin-wall polypropylene
- Certified DNase- and RNase-free
- Autoclavable at 121°C (250°F)
- Supplied nonsterile

Clear Polyethylene Sealing Tapes

- For polycarbonate plates only
- Supplied nonsterile
- Allows sample viewing and is thermally stable up to 100°C (212°F)

Description	Mfr. No.	Cat. No.	Case of
Eight-cap Strips	6556	**07-200-639**	300/54.32
Polyethylene Sealing Tape	6524	**07-200-542**	100/49.85

Costar* Aluminum Sealing Tape

- Prevents sample evaporation
- Pierceable for access to reaction mix
- Removes easily without tearing

For Use with	Mfr. No.	Cat. No.	Case of 100
96-well Plates	6570	**07-200-684**	54.80
384-well Plates	6569	**07-200-683**	54.92

Costar* Thermowell* Plate Sealing Mat

- Fits Thermowell P (Cat. No. 07-200-541), Thermowell M (Cat. Nos. 07-200-245 and -691) and all Thermowell 96-well polypropylene plates
- Minimizes evaporation, condensation, and prevents cross-contamination
- Eliminates need for oil overlays in thermal cyclers with heated lids
- Reusable silicone rubber
- Autoclavable

Mfr. No.	Cat. No.	Pack of 1	Case of 25 Pk.
6555	**07-200-614**	5.36	92.11

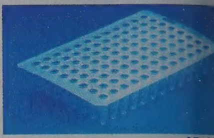
Costar* Thermowell* Plate Lids

- For Thermowell polycarbonate plates
- Designed for use as covers or as additional protection to oil overlays only; lids do not prevent evaporation
- Thermally stable up to 135°C
- Polycarbonate

Fits	Mfr. No.	Cat. No.	Case of 25
Style M	6520	**07-200-250**	82.03

Thermo Scientific* ABgene* Thermo-Fast 96-Well Unskirted Plates

Fit all 0.2mL thermal cyclers and ABI Prism* 310, 3100 and 3700 capillary sequencers



AB-0

- Highly rigid plate deck
- Clear well bottom for sample visibility
- Sealable using Thermo-Mat*, adhesive films and foils, heat seals and flat and domed cap strips
- 0.3mL maximum well volume (when used with adhesive and heat seals)
- Cut-away corner

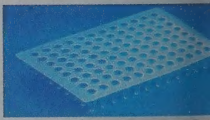
CERTIFICATIONS:

Certified free from DNase and RNase.

Color	Well Volume	Cat. No.	Pack of
Natural	300µL	**AB-0600**	129.
Blue	300µL	**AB-0600B**	129.
Green	300µL	**AB-0600G**	129.
Purple	300µL	**AB-0600P**	129.
Red	300µL	**AB-0600R**	129.
Opaque White	300µL	**AB-0600W**	140.
Yellow	300µL	**AB-0600Y**	129.

Thermo Scientific* ABgene* Thermo-Fast 96-Well Unskirted, Low-Profile PCR Plate

Shorter wells decrease 'dead space' between thermal cycler heated lid and sample



AB-0

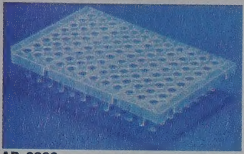
- Eliminate condensation on tube side wall
- Prevent reduction in PCR volume
- Increase reaction efficiency
- Suitable for 0.2mL thermal cycler blocks
- Clear well bottom for sample visibility
- 200µL maximum well volume (when used with adhesive and heat seal
- Cut-away corner

Color	Well Volume	Cat. No.	Pack of
Natural	200µL	**AB-0700**	129.
Opaque Black	200µL	**AB-0700K**	140.
Blue	200µL	**AB-0700B**	129.
Green	200µL	**AB-0700G**	129.
Purple	200µL	**AB-0700P**	129.
Red	200µL	**AB-0700R**	129.
Opaque White	200µL	**AB-0700W**	140.
Yellow	200µL	**AB-0700Y**	129.

*Trademark. See Trademark Reference.

ermo Scientific* ABgene* Thermo-Fast* -Well Semi-Skirted PCR Plates

ented segmented design allows plate to be cut into and 48-well sections



AB-0900

- rgin polypropylene
- ised rim, thin-wall design
- ear well bottom for mple visibility
- mpatible with all major ermal cyclers
- 0µL maximum well volume hen used with adhesive and heat seals)
- t-away corner and alphanumeric grid
- ailable in a rigid version for robotic handling applications; rigid version nnot be cut

TIFICATIONS:

fied free from DNase, RNase and human genomic DNA

	Well Volume	Cat. No.	Pack of 25
ented Version			
ral	300µL	**AB-0900**	129.28
	300µL	**AB-0900B**	129.28
n	300µL	**AB-0900G**	129.28
	300µL	**AB-0900R**	129.28
ue White	300µL	**AB-0900W**	140.04
Version			
ral	300µL	**AB-0990**	129.06
e	300µL	**AB-0990W**	140.04

ermo Scientific* ABgene* Thermo-Fast* -Well PCR Detection Plates

igned to be directly compatible with all major rmal cyclers, including ABI instruments

- gin polypropylene
- sed-rim design
- ar well bottom for sample visibility
- n be used directly in ABI 96-well sequencers without adapters
- µL maximum well volume (when used with adhesive and heat seals)
- -away corner and alphanumeric grid

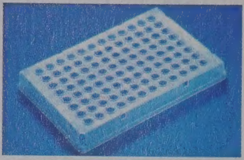
IFICATIONS:

ied free from DNase, RNase, and human genomic DNA

	Well Volume	Cat. No.	Pack of
al	300µL	**AB-1100**	25/129.57
al	300µL	**AB-1100150**	150/641.65
	300µL	**AB-1100K**	25/140.09
	300µL	**AB-1100B**	25/129.29
	300µL	**AB-1100G**	25/129.28
e	300µL	**AB-1100P**	25/129.28
	300µL	**AB-1100W**	25/140.08
/	300µL	**AB-1100Y**	25/129.28

Thermo Scientific* ABgene* Thermo-Fast* 96-Well Skirted, Low-Profile PCR Plates

Full skirt surround provides even surface for robotic arms to grip



AB-0800

- Virgin polypropylene
- Low-profile design enhances PCR efficiency
- Fits most thermal cyclers
- Stackable
- Clear well bottom for sample visibility
- Available with enhanced strengthening ribs for increased rigidity
- 200µL maximum well volume (when used with adhesive and heat seals)
- Cut-away corner and alphanumeric grid

CERTIFICATIONS:

Certified free from DNase, RNase, and human genomic DNA

Color	Well Volume	Cat. No.	Pack of 25	Cat. No.	Case of 150
Without strengthening ribs					
Natural	200µL	**AB-0800**	129.28	**AB-0800150**	725.20
Opaque Black	200µL	**AB-0800K**	139.78	----	----
Blue	200µL	**AB-0800B**	129.28	**AB-0800B150**	725.20
Green	200µL	**AB-0800G**	129.28	**AB-0800G150**	725.94
Purple	200µL	**AB-0800P**	129.28	----	----
Red	200µL	**AB-0800R**	129.28	**AB-0800R150**	725.20
Opaque White	200µL	**AB-0800W**	140.07	----	----
Yellow	200µL	**AB-0800Y**	129.29	**AB-0800Y150**	725.20
With strengthening ribs					
Natural	200µL	**AB-1000**	241.30	**AB-1000150**	725.20
Blue	200µL	----	----	**AB-1000150B**	725.20

ACCESSORIES

Thermo Scientific* ABgene* Thermo-Fast* Plate Adapters

Allow Thermo-Fast 96 PCR plates to be used with ABI Prism* sequencers

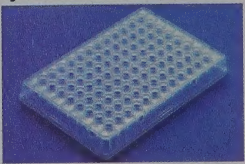
Simply replace original plate holders with the appropriate adapter—no need for software changes to the instrument.

AB-1070 shown with plate (sold separately)

For Use with	Cat. No.	Each
Thermo-Fast 96 semi-skirted plates/ABI Prism 3100 sequencer	**AB-1070**	602.01

Thermo Scientific* ABgene* Thermo-Fast* Robotic 96-Well, Low-Profile PCR Plates

Extensive reinforcing ribs throughout the plate deck provide maximum rigidity and minimize post-PCR warping


AB-1300

- Virgin polypropylene
- Raised-rim design
- Clear well bottom for sample visibility
- Stackable
- 200µL maximum well volume (when used with adhesive and heat seals)
- Cut-away corner and alphanumeric grid
- Eight holes in skirt aid plate positioning and removal from the thermal cycler block
- Designed for robotic handling and other applications that require plate rigidity

CERTIFICATIONS:
Certified free from DNase, RNase, and human genomic DNA

Color	Well Volume	Cat. No.	Case of 50
Natural	200µL	**AB-1300**	224.07

Thermo Scientific* ABgene* Thermo-Fast* 96 PCR Detection Plates, Mark II

NEW

Flat deck for improved handling and sealing

- Compatible for use with the Thermo-Sealer, ALPS 300 and SEAL-IT 100* instruments
- Seal with heat seals, adhesive seals, mats or cap strips
- Certified free of DNase, RNase and human genomic DNA
- Available with black lettering for easier manual well identification

CERTIFICATIONS:
Certified free from DNase, RNase, and human genomic DNA

Color	Cat. No.	Pack of
Natural	**AB-1400**	25/123.91
Natural	**AB-1400150**	150/669.50
Natural, w/black lettering	**AB-1400L**	25/123.65
Black	**AB-1400K**	25/145.43
White	**AB-1400W**	25/145.44
White, w/black lettering	**AB-1400WL**	25/145.16
With Barcode 128		
Natural	**AB-1308**	25/129.28
Natural, w/black lettering	**AB-1308L**	25/129.03
White, w/black lettering	**AB-1308WL**	25/152.11

Thermo Scientific* ABgene* Thermo-Fast* 96 PCR Detection Plate MKIII

NEW

Semi-skirted low-profile plate compatible with all ABI Fast Block machines

- Thin walled
- Cut-away corner
- Clear well for sample visibility

Color	Well Volume	Cat. No.	Pack of 25
Clear	100µL	**AB-1900**	90.80

ACCESSORIES

Thermo Scientific* ABgene* Thermo-Mat* Plate Seals

For efficient sealing with screw or clip-down hot lid thermal cyclers

AB-0753

- Can be reused up to 50 times
- Fully autoclavable
- "Dimples" on both sides of Thermo-Mat 96 for easy location on 96-tube plates
- End tabs on Thermo-Mat 384 fit into holes in the skirt of the plate†

CERTIFICATIONS:
Certified free from DNase, RNase and human genomic DNA

Description	Cat. No.	Pack of 5
For 96-well plates	**AB-0427**	49.47
For 384-well plates	**AB-0753†**	105.50
For 384-well plates; without tabs	**AB-0770**	105.50

† Cat. No. AB-0753 not recommended for sealing Thermo-Fast 384-Well Diamond Plates (AB-1111).*

Nunc* 96-Well Amplification Plates

Ideal for amplifying nucleic acids for high-volume analysis

12-566 Se

- Virgin polypropylene has no clarifiers to interfere with PCR reactions
- Uniform thin-wall wells ensure consistent thermal transfer
- Rigid plates consist of 96 conical wells in an 8 × 12 array

CERTIFICATIONS:
Certified free from DNase and RNase

Color	Description	Well Volume	Mfr. No.	Cat. No.	Case of
Clear	With full skirt	200µL	230012	**12-566-133**	280.
Black	With full skirt	200µL	264605	**12-566-149**	286.
Clear	With semi-skirt	200µL	230013	**12-566-134**	280.
Clear	With semi-skirt[1]	200µL	267011	**12-565-536**	280.
Clear	Without skirt	200µL	240600	**12-566-138**	285.

[1] Automation compatible

ACCESSORIES

96-Well Amplification Plate Accessories

Nonsterile and autoclavable at 121°C

1 × 8-Strip Caps (12-575-123)

- Limit evaporation or contamination risk
- Dome shaped for close contact with heated lids on thermal cyclers eliminating condensation without the use of an oil overlay

Silicone Spacer Plate (12-565-412)

- Reusable
- Ensures even heat transfer

Description	Mfr. No.	Cat. No.	Case
1 × 8 Amplification Strip Caps	265643	**12-575-123**	120/25.5
Silicone Spacer Plate	259684	**12-565-412**	1/13.8

*Trademark. See Trademark Reference.

Prices subject to change.

pendorf* 96-Well twin.tec* PCR Plates

al for extreme applications such as multiple t sealing

E951020389, E951020303, E951020346, E951020362, E951020427

ufactured using "twin-shot" nology, combining the surface rgin polypropylene wells with the ity of poloycarbonate plate decks skirts.

ells are 20% thinner than ndard thin-wall tubes for timum heat transfer to sample

ycarbonate plate decks and rts provide mechanical stability, nplifying plate handling and ensuring a more secure seal

toclavable

eet SBS (Society for Biomolecular Screening) footprint ommendations

tomation friendly

ailable in skirted or semi-skirted styles in five colors with clear wells

TIFICATIONS:

fied free from DNA, DNase, RNase, and PCR-inhibitor

	Cat. No.	Case of 25
d		
	E951020401	93.00
	E951020460	93.00
	E951020443	93.00
	E951020486	93.00
v	E951020427	93.00
skirted		
	E951020303	93.00
	E951020362	93.00
	E951020346	93.00
	E951020389	93.00
v	E951020320	93.00

ermo Scientific* Hybaid OmniTube 96 croplates

slucent polypropylene plates for use with thermal er blocks

HBTC4073N

iTube 96

igned for use with 0.2mL rmal cycling blocks

top; unskirted

l with TDX Tape (TDXTAPE100)

oil-free thermal cycler operation

ed OmniTube 96

igned for use with 0.5mL thermal cycling blocks

l with OmniTube strip caps (HBTC6022N)

IFICATIONS:

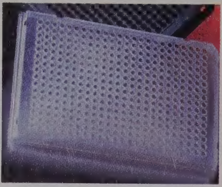
ed free from DNase, and RNase

ption	Well Volume	Packaging	Cat. No.	Pack of 25
ube 96	200µL	5/bag	HBTC6002N	119.45
d OmniTube 96	300µL	Individual	HBTC4073N	162.61

MICROPLATES — 384-WELL

Corning* Thermowell* GOLD 384-Well Polypropylene PCR Microplates

Fit automated equipment as well as the original manufacturers' plates



07-201-220

- Uniform wall thickness ensures efficient heat transfer while minimizing well-to-well variability
- Conical well bottom
- Rigid construction is ideal for automation
- Plate available with two barcode labels per microplate, generic sequence without repeats

ORDERING INFORMATION:

Packaged in packs of 10.

CERTIFICATIONS:

Certified free from DNase, and RNase

Color	Well Volume	Lid	Sterile	Mfr. No.	Cat. No.	Case of 50
Clear	50µL	No	No	3757	07-201-220	429.33
With Two Barcode Labels						
Clear	50µL	No	No	3354	07-202-506	468.98

Costar* 384-Well Thermocycling Plate

For consistent, reliable performance in high-throughput PCR applications

07-200-734

- Rigid polyolefin construction with uniform, thin walls
- Raised rims improve sealing and reduce well-to-well contamination
- Skirted sides provide space for bar coding
- 50µL well volume yields strong, clear signals from samples as low as 5µL
- Stackable and compatible with robotic handlers

CERTIFICATIONS:

Certified free from DNase and RNase

NOTE:

When used with Aluminum Sealing Tape (07-200-683) or Reusable Sealing Mat (07-200-662), samples exhibit less than 1% evaporation of reaction volume.

Compatible Thermal Cyclers	Mfr. No.	Cat. No.	Case of 25
Perkin-Elmer GeneAmp* PCR System 9700 (with the dual 384-well block), MJ Research PTC-225 DNA Engine* Tetrad*	6502	07-200-734	107.83

Looking for Costar* Aluminum Sealing Tape?

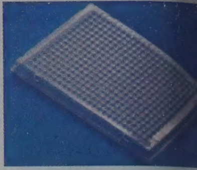
Costar Aluminum Sealing Tape is available for 96- and 384-well plates. For ordering information, see p. 1282.

Thermo Scientific* ABgene* Thermo-Fast* Mark II 384-Well PCR Plates

Ideal for post-PCR applications such as enzymatic digestions and ethanol precipitation

- Ultralow-retention polypropylene helps prevent adhesion of samples to side walls
- U-shaped wells
- 55μL maximum well volume, 40μL working volume
- Cut-away corner and alpha-numeric grid
- Compatible with all leading 384-block thermal cyclers
- Fully skirted for compatibility with automated systems; eight skirt holes aid plate positioning and removal

CERTIFICATIONS:
Certified free from DNase, RNase, and human genomic DNA

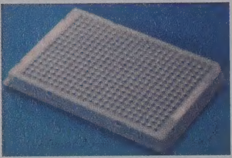


AB-0937100

Color	Cat. No.	Case of 10
Natural	AB-0937100	514.7

Thermo Scientific* ABgene* Thermo-Fast* 384-Well PCR Plates

Compatible with most 384-block PCR and sequencing instruments



AB-1384

- Virgin polypropylene
- Full skirt and rigid plate deck minimize distortion during PCR
- Raised-rim design
- 40μL maximum well volume, 25μL working volume
- Cut-away corners and alphanumeric grid
- Suitable for use with robotic systems
- Eight holes in skirt aid plate positioning and removal from the thermal cycler block
- Available with full cut-off corner for use in ABI 3730 Genetic Analyzers
- Also available with barcode 128 for use with ABI 7900HT and ABI 3730 instruments

CERTIFICATIONS:
Certified free from DNase, RNase, and human genomic DNA

Color	Cat. No.	Case of 5
For most 384-block instruments		
Natural	TF-0384	379.9
Black	TF-0384K	486.1
White	TF-0384W	486.1
For ABI 3730 Genetic Analyzer		
Natural	AB-1384	379.9
White	AB-1384W	486.1
For ABI 3730 Genetic Analyzer, with Barcode 128		
Natural	AB-1310	364.9

Thermo Scientific* ABgene* Thermo-Fast* 384-Well Diamond PCR Plates

One piece plate molded from a low-DNA-binding, crystal-clear polymer

- Extremely rigid polymer eliminates post-PCR shrinking and warping, making it ideal for high-throughput PCR applications and robotic plate handling
- Raised-rim design
- 40μL maximum well volume; 25μL working volume
- Cut-away corner and alphanumeric grid
- Full skirt with eight holes aids robotic handling
- Compatible with all leading 384-block thermal cyclers

CERTIFICATIONS:
Certified free from DNase, RNase, and human genomic DNA

NOTE:
Mineral oil should not be used with this plate; if sample overlay is necessary, please use silicone oil.

AB-1111

Color	Cat. No.	Pack of
Natural	AB-1111	447.

Thermo Scientific* ABgene* 384 MULTISIP* Septum Cap Mat

Fully autoclavable

- 384-cap mat made from an inert polymer with unique split septum design for use with 384-well tall-chimney plates (Cat. Nos. AB-1055, AB-1056)
- Suitable for PCR when used in conjunction with screw or clip-down hot lid thermal cyclers
- Pierceable with standard pipetting equipment; caps can be pierced simultaneously at <0.5N pierce pressure per cap
- 100% resealing after multiple piercings
- Resists solvents, including acetonitrile and DMSO

CERTIFICATIONS:
Certified free from DNase, RNase, and human genomic DNA

AB-1176

Fits	Cat. No.	Pack o
Thermo Scientific ABgene tall-chimney plates	AB-1176	58

pendorf* twin.tec* 384-Well PCR Plate

que, "twin-shot" process combines virgin ypropylene wells and polycarbonate plate deck l skirt in a one-piece plate

- ert, nonwetting well surface prevents DNA, RNA, and enzymes from nding and improves well recovery; raised rims optimize sealing and duce cross-contamination
- in walls allow optimum heat transfer into the sample
- toclavable and stackable
- gid plates provide mechanical stability and improved plane parallelism
- ntinuous skirt is compatible with automated systems and most 4-well thermal cyclers; skirt design aids plate positioning and removal m machinery

E9510207 Series

CERTIFICATIONS:
Certified free from human DNA, DNase, RNase and PCR inhibitors

Color	Well Volume	Cat. No.	Pack of 25
Clear	45μL	E951020702	179.00
Blue	45μL	E951020737	179.00
Green	45μL	E951020729	179.00
Red	45μL	E951020745	179.00
Yellow	45μL	E951020711	179.00

ermo Scientific* Hybaid OmniFast 4 Microplate

high-throughput applications

- aque polypropylene
- ividual well capacity of 40μL; working volume of 25μL
- mplements 384-well block Thermo Scientific thermal cyclers

HBTC3840N

CERTIFICATIONS:
Certified free from DNase- and RNase

Packaging	Cat. No.	Pack of 50
10/bag	HBTC3840N	378.47

MICROPLATES — SEALING SUPPLIES

ermo Scientific* ALPS 3000* Automated Laboratory Plate Sealer

e protection diagnostics eliminate sample loss or damage

- al for high-throughput applications
- als up to 10 plates per minute
- table for manual operation or robotic integration
- chscreen operation with full parameter control for user simplicity
- nplified sealing roll loading

ERING INFORMATION:
rical requirements: 120V. Air pressure requirements: 80psi. Minimum w requirement: 50L/min. L × W × H: 7¼ × 16¼ × 14½" × 41.4 × 36.9cm). Weight: 48 lb. (21.8kg).

NEW
Thermo
ALPS 3000
AB-3000

REQUIRED ACCESSORIES:
Sealing film sold separately.

CERTIFICATIONS:
CE marked

Cat. No.	Each
AB-3000	29,458.00

ermo Scientific* Automated Laboratory Plate Sealer (ALPS) 300

s a wide range of plates—even those of different heights and without plate adapters†

- al for medium- to high-throughput applications
- ls approximately six plates/min.
- cesses up to 5000 plates automatically (3000 with Thermo-Seal and ar Seal Diamond 370m rolls) without user intervention
- ers flexible control mechanisms and compact dimensions for manual as l as robotic integration
- rks with most commercially available plate stackers
- d with sealing material (sold separately) the same width as a roplate (78mm) and cut to the exact length of the plate, leaving no seal rhang to interfere with robotic stacking—length of seal can be changed eave a tab for removal
- erates manually via touchscreen, by footpedal (for hands-free use), by ote start, or by RS-232 connection, which allows time and temperature ings to be monitored and adjusted, checks a remote system for l-level detection, and reports fault diagnosis settings

ERING INFORMATION:
ical requirements: 110–120V, 50/60Hz, 650w. Air pressure ements: Minimum 80psi (5.5 bar), clean and dry. Minimum airflow ement: 50L/min. at 5.5 bar; compressor output rating depends on duty cycle. L × W × H: 22⅜ × 10⅞ × 16⅛" (56.9 × 27.5 × 41.0cm). Weight: 48½ lb. (22kg).

INCLUDES:
240V to 110V power transformer (if required), plate carrier for nonskirted PCR plates, three plate carrier inserts, 2 × 1A and 2 × 5A antisurge fuses, four vacuum cups, 3m air line, 5mm Allen key, film-loading tool

REQUIRED ACCESSORIES:
Sealing film sold separately.

Thermo
ALPS 300
AB-0950

CERTIFICATIONS:
CE marked

Description	Cat. No.	Each
ALPS 300	AB-0950	26,831.50
I/O Interface	AB-0779	1785.69

† Adapters (included) are necessary only for some nonskirted PCR plates.

Thermo Scientific* Thermo-Sealer

Compact, portable, manual heat sealer ideal for low- to medium-throughput applications

AB-0384

- Seals a wide range of plates of differing heights when supported by plate carriers; deep-well plates can be sealed without a carrier
- Sealer heating element is preset to produce permanent or peelable seals when used in conjunction with ABgene* sealing foil or film sheets (sold separately)
- Built-in thermostat control prevents overheating
- For safety, the heating plate of the sealer faces downward
- Guaranteed for up to 100,000 sealings

ORDERING INFORMATION:

L × W × H: 6 × 6¼ × 13" (15.0 × 16.0 × 33.0cm). Weight: 8 lb. (3.6kg).

CERTIFICATIONS:

CE marked

Electrical Requirements	Cat. No.	E
110V	AB-0384	1557

LOOKING FOR PCR PLATE SEALS?

A variety of sealing supplies for PCR Plates may be found throughou the PCR section.

- Fisherbrand* Adhesive Plate Seals and MicroMat* CapMat, p. 12
- Costar* Plate Sealing Supplies, p. 1276
- Thermo Scientific* ABgene* Thermo-Mat Plate Seals, p. 1278
- Thermo Scientific ABgene 384 MULTISIP* Septum Cap Mat, p. 12
- Thermo Scientific Sealing Films and Foils, below

Additional plate seals can be found in the Microplates section. To browse Fisher Scientific's complete selection of plate seals, visit our Web site.

Visit www.fishersci.com and search for Microplate Sealing Supplies

Thermo Scientific* Sealing Films and Foils

Provide a robust, convenient, and cost-effective method for sealing and storing PCR and storage plates

Quick and easy application.

Description	Applications	Quantity	Cat. No.	Ea
Adhesive PCR Film	Clear for fluorescence applications	100 Sheets	AB-0558	158
		100m Roll	AB-2558	893
ABsolute* QPCR Seal	Designed for QPCR applications	50 Sheets	AB-1170	151
Clear Seal Diamond Heat Sealing Film	Ideal for fluorescence and colorimetric applications	100 Sheets	AB-0812	105
		370m Roll	AB-3799	1535
Clear Seal 3730 Heat Sealing Film	Pierceable, nonconductive seal material	1000 Sheets, For use with Thermo-Sealer	AB-1797	669
		610m Roll, For use with ALPS 300*	AB-3797	1952
Adhesive Crystallography Seal	Ideal for crystallography and genotyping applications	50 Sheets	AB-1450	204
Clear Strong Heat Sealing Film	Suitable for genotyping applications	100 Sheets	AB-0685	175
Adhesive Plate Seals	Suitable for short- or long-term storage	100 Sheets	AB-0580	46
Gas Permeable Adhesive Seals	For venting cultures while providing barrier against contamination	50 Sheets	AB-0718	105
		150m Roll, For use with Seal-It 100* Automated Adhesive Sealer (AB-1350)	AB-2718	1227
Adhesive PCR Foil	Prevents evaporation during thermal cycling or sample storage	100 Sheets	AB-0626	158
		200m Roll	AB-2626	1116
Easy Peel Heat Sealing Foil	Suitable for long-term, low-temperature storage	100 Sheets, For use with Thermo-Sealer	AB-0745	76
		510m Roll, For use with ALPS 300	AB-3739	1952
Easy Pierce Heat Sealing Foil	Ideal for compound management and HTS applications	100 Sheets, For use with Thermo-Sealer	AB-0757	76
		610m Roll, For use with ALPS 300	AB-3738	1952
Thermo-Seal Heat Sealing Foil	Suitable for long-term, low-temperature storage, transportation, and high-temperature applications.	100 Sheets, For use with Thermo-Sealer	AB-0559	76
		370m Roll, for use with ALPS 300	AB-3559	1535

*Trademark. See Trademark Reference.

TUBES

*Fisherbrand** Thin Wall 0.2mL PCR ubes with Attached Caps

NEW

/ith flat or domed caps

Thin-wall design provides maximum PCR efficiency

Fit most popular thermal cyclers

08-408 Series

olor	Cat. No.	Pack of 1000	Case of 10 Pk.
/ith Flat Caps			
latural	**08-408-214**	141.34	1208.00
lue	**08-408-216**	127.00	1034.00
ireen	**08-408-217**	173.86	1486.00
ted	**08-408-215**	127.00	1036.00
ellow	**08-408-218**	127.00	1056.00
ith Dome Caps			
atural	**08-408-229**	102.15	904.00
lue	**08-408-205**	100.94	893.25
reen	**08-408-206**	100.94	893.25
ed	**08-408-204**	100.94	893.25
ellow	**08-408-207**	100.94	893.25

*Fisherbrand** 0.2mL PCR Tube trips with Cap Strips

NEW

hin-wall design provides maximum PCR efficiency

Numerical mark on each tube

Cut easily for use as individual tubes

olor	Cat. No.	Case of
ith Flat Cap Strips		
atural	**08-408-246**	250/365.95
reen	**08-408-247**	125/183.65
ed	**08-408-248**	125/183.65
ellow	**08-408-249**	125/183.65
ith Domed Cap Strips		
atural	**08-408-213**	250/367.00
lue	**08-408-210**	125/184.00
reen	**08-408-211**	125/184.00
ed	**08-408-209**	125/184.00
ellow	**08-408-212**	125/184.00

star* PCR Tubes

-walled polypropylene provides fast heat transfer

thstands centrifugation 0,000×G

h lot tested and certified to RNase- and DNase-free

tural color

nsterile

oclavable at 121°C (250°F)

07-200-681

Size	Cap Style	Mfr. No.	Cat. No.	Case of
-	Dome	6531	**07-200-493**	960/100.46
-	Flat	6571	**07-200-681**	960/73.65
-	Flat	6530	**07-200-252**	1000/56.37

*Fisherbrand** 0.2mL PCR Tube Strips without Caps

NEW

Numerical mark on each tube for easy sample identification

- Thin-wall design provides maximum PCR efficiency
- Strips cut easily for use as individual tubes

08-408-237

Color	Cat. No.	Case of 125
Natural	**08-408-237**	153.70
Blue	**08-408-235**	146.35
Green	**08-408-236**	146.35
Red	**08-408-238**	146.35
Yellow	**08-408-239**	146.35

*Fisherbrand** Domed 8-Cap Strips for 0.2mL PCR Tubes

NEW

Fit tube strips and 96-well plates

08-408-243

Color	Cat. No.	Case of 300
Natural	**08-408-243**	130.30

*Fisherbrand** Thin Wall 0.65mL PCR Tubes with Attached Caps

NEW

Integral flat caps for added convenience

- Thin-wall design provides maximum PCR efficiency
- Fit most popular thermal cyclers

08-408 Series

Color	Cat. No.	Pack of 100	Case of 10 Pk.
Natural	**08-408-208**	134.67	1151.00
Blue	**08-408-201**	128.23	1096.00
Green	**08-408-202**	128.23	1096.00
Red	**08-408-200**	115.00	1096.00
Yellow	**08-408-203**	128.23	1096.00

Costar* 8-Well PCR Tube Strips

Fit precisely in thermal cyclers for optimal heat transfer

- Strips are formed of eight 0.2mL thin-wall polypropylene tubes
- Dual connectors between each tube eliminate inadvertent breakage during sample handling
- Tested and certified to be free from DNase and RNase contamination
- Nonsterile
- Autoclavable at 121°C

ORDERING INFORMATION:

Cap strips are packaged together with tube strips.

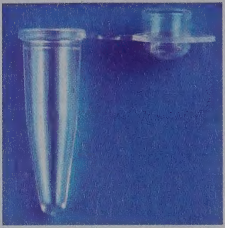
07-200-264

Color	Mfr. No.	Cat. No.	Case of 300
Natural	6542	**07-200-259**	318.48
Assorted	6547	**07-200-264**	318.48

Thermo Scientific* ABgene* 0.2mL Flat- and Domed-Cap Tubes

Suitable for PCR (0.2mL thermal cycler blocks)

- 0.25mL maximum tube capacity when closed
- Thin-wall design, integral "snap shut" cap
- Contamination-free virgin polypropylene



AB-0337

Color	Cat. No.	Case of 1000
Flat Caps		
Natural	**AB-0620**	47.57
Blue	**AB-0620B**	50.80
Green	**AB-0620G**	50.80
Purple	**AB-0620P**	50.80
Red	**AB-0620R**	50.80
Yellow	**AB-0620Y**	50.80
Assorted	**AB-0622**	68.00
Domed Caps		
Natural	**AB-0337**	47.57
Blue	**AB-0337B**	47.57
Green	**AB-0337G**	47.57
Purple	**AB-0337P**	47.57
Red	**AB-0337R**	47.57
Yellow	**AB-0337Y**	47.57
Assorted	**AB-0491**	68.00

Thermo Scientific* ABgene* 8- and 12-Strip Low-Profile Thermo-Strips*

Recommended for use with reaction volumes below 20µL

Low-profile design reduces 'dead space' between cycler heated lid and sample, eliminating condensation on tube side, preventing reduction in PCR volume, and increasing reaction efficiency.

AB-0771

- Suitable for 0.2mL thermal cycler blocks
- 0.15mL maximum tube capacity when capped
- Labeled A-H end tabs (8-strip) and 1-12 end tabs (12-strip)
- Sealable with flat- and domed-cap strips

Color	Caps	Cat. No.	Each
Strips of 8, 10 packs of 12 strips			
Natural	N/A	**AB-0771**	89.57
White	N/A	**AB-0771W**	89.57
Natural	Flat	**AB-0773**	99.29
Natural	Domed	**AB-0772**	105.78
Strips of 12, 10 packs of 8 strips			
Natural	Flat	**AB-0849**	168.05
Natural	Domed	**AB-0848**	166.96

Thermo Scientific* ABgene* 8- and 12-Flat–Cap Strips

Suitable for use with 96-well PCR plates as well as standard and low-profile Thermo-Strips*

- Easy to apply
- Flat surface of each cap facilitates sample labeling
- Large labeled end tabs for strip orientation and removal (A-H for 8 strip and 1-12 for 12 strip)

AB-0

Color	Quantity	Cat. No.	E
Strips of 8			
Natural	10 packs of 12	**AB-0783**	24
Natural	250 strips	**AB-0784**	49
Natural	25 packs of 12	**AB-0786**	62
Strips of 12			
Natural	25 packs of 8	**AB-0851**	78

Thermo Scientific* ABgene* 8- and 12-Tube Thermo-Strips*

Ideal for use in 96-well V-bottom thermal cyclers

- Suitable for 0.2mL thermal cycler blocks
- 0.25mL maximum tube capacity when capped
- Can be cut into individual tubes
- Sealable using flat and domed cap strips

AB-0

Caps	Color	Cat. No.	Ea
Strips of 8, 250 strips			
None	Natural	**AB-0264**	162
	Blue	**AB-0264B**	162
	Green	**AB-0264G**	162
	Red	**AB-0264R**	162
Flat	Natural	**AB-1182**	224
Domed	Natural	**AB-0266**	194
	Blue	**AB-0266B**	194
	Green	**AB-0266G**	194
	Purple	**AB-0266P**	194
	Red	**AB-0266R**	194
	Assorted	**AB-0490**	230
Strips of 8, 10 packs of 12			
None	Natural	**AB-0452**	74
	Blue	**AB-0452B**	74
	Yellow	**AB-0452Y**	74
Domed	Natural	**AB-0451**	101
	Blue	**AB-0451B**	101
	Green	**AB-0451G**	101
	Purple	**AB-0451P**	101
	Red	**AB-0451R**	101
	Yellow	**AB-0451Y**	101
Ultra-Clear	Clear	**AB-1183**	157
	White	**AB-1191**	123
Strips of 12, 10 pack of 8			
None	Natural	**AB-1112**	126
Flat	Natural	**AB-1114**	126
Domed	Natural	**AB-1113**	126
	Blue	**AB-1113B**	126
	Green	**AB-1113G**	126
	Purple	**AB-1113P**	126
	Red	**AB-1113R**	126
	Yellow	**AB-1113Y**	126

*Trademark. See Trademark Reference.

ermo Scientific* ABgene* 8- and - Domed–Cap Strips

table for use with 96-well PCR plates as well as ndard and low-profile Thermo-Strips*

strips have large end tabs for ip removal.

AB-0265

r	Quantity	Cat. No.	Each
s of 8			
ral	10 packs of 12	**AB-0386**	38.92
ral	250 strips	**AB-0265**	78.82
ral	25 packs of 12	**AB-0602**	84.27
ral	500 strips	**AB-0265500**	96.06
‹	500 strips	**AB-0265500BL**	96.07
s of 12			
ral	10 packs of 8	**AB-0852**	50.80
ral	25 packs of 8	**AB-0853**	101.46

ermo Scientific* PCR Plate Cap Strips

real-time and quantitative PCR

lded from a specially formulated polypropylene that enhances nal detection by minimizing emission wavelength interference and sorption

hly polished flat surface vides optically clear window

ap strip with flat caps

mpatible with all Thermo entific* ABgene* PCR tube ps and 96-well plates

AB-0866

	Cat. No.	Case of 120
	AB-0866	43.26

ermo Scientific* ABgene* 0.5mL Flat- d Domed-Cap Tubes

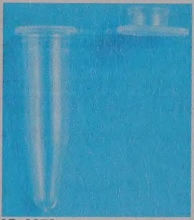
able for PCR (0.5mL thermal er blocks)

mL maximum tube capacity when closed

n-wall design, integral "snap shut" cap

anroom-produced, contamination-free jin polypropylene

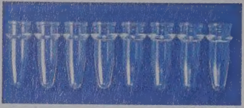
t or domed frosted caps


AB-0350

	Cat. No.	Case of 1000
aps		
al	**AB-0350**	50.81
	AB-0350B	50.80
	AB-0350G	50.80
e	**AB-0350P**	50.80
	AB-0350R	50.80
/	**AB-0350Y**	50.80
ted	**AB-0533**	61.52
l Caps		
al	**AB-0489**	50.80
ted	**AB-0535**	61.52

Thermo Scientific* ABgene* 8-Tube Omnistrips

In 8-tube strips sealable using flat and domed cap strips

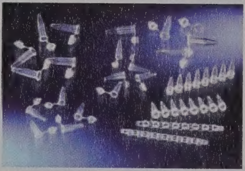

AB-0485

- Suitable for 0.5mL thermal cycler blocks
- 0.32mL maximum tube capacity when capped

Description	Packaging	Cat. No.	Price
Omnistrips	250 strips	**AB-0485**	179.90
Omnistrips & Domed Caps	250 strips and caps	**AB-0404**	185.35
Omnistrips & Domed Caps	10 pks. of 12 x 8 strips and caps	**AB-0530**	108.80

Nunc* Amplification Tubes and Tube Strips

Optimized for liquid-phase PCR


12-575 Series

- Virgin polypropylene
- Withstand temperatures from -20° to +121°C
- V-shaped tubes with uniformly thin walls
- Offer uniform heat transmission for maximum yield
- Compatible with most 0.2 or 0.5mL thermal cycler formats
- Available in 0.2mL strips or as 0.2 and 0.5mL individual tubes
- Dome-shaped caps for good contact with heated lids of cycler
- Flat caps for easy closure and sample labeling

CERTIFICATIONS:

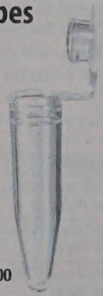
Certified free from DNase and RNase.

Total Volume	Working Volume	Closure	Mfr. No.	Cat. No.	Case of
Individual Tubes					
0.2mL	5-100µL	Attached domed caps	250875	**12-575-124**	1000/62.20
0.2mL	5-100µL	Attached flat caps	230895	**12-575-125**	1000/62.20
0.5mL	50-100µL	Attached domed caps	230971	**12-575-126**	1000/67.50
0.5mL	50-350µL	Attached flat caps	230885	**12-575-127**	1000/67.50
Tube Strips (8 tubes per strip)					
0.2mL	5-100µL	Matching cap strip	248161	**12-575-122**	12/144.00

Eppendorf* Thin-Walled PCR Tubes

Precise tolerance, high transparency, and tight sealing

- Can be used in most thermal cyclers with heated lids


E0030 124 600

Description	Cat. No.	Case of
Individual 0.2mL PCR Tubes	**E0030 124 260**	1000/117.00
Individual 0.5mL PCR Tubes	**E0030 124 600**	500/59.00

Eppendorf* 0.2mL PCR Tube Strips

Hinged caps open to a 90° angle—lids will not cover adjacent tubes in thermal cycler block

- Clear polypropylene with etched writing surface and snap cap closures
- Thin walls ensure uniform, rapid heat transfer in thermal cycler blocks
- Integral contamination shield prevents fingertip from touching inner lid surface when opening
- Autoclavable

CERTIFICATIONS:

Certified free from human DNA, DNase, RNase and PCR inhibitors

Description	Cat. No.	Case of
5-Tube Strips	**E0030 124 278**	125/123.00
8-Tube Strips	**E0030 124 286**	120/158.00

ACCESSORIES

Eppendorf* PCR Tube Work Tray and Frame

Ideal for sample prep and transport

E0030 124 294 and E0030 124 308

- Polycarbonate work tray, plus frame (E0030 124 308), makes a benchtop rack that holds 96 × 0.2mL tubes
- Load tubes into rack and transfer the tray portion directly onto thermal cycler block
- Autoclavable

Description	Cat. No.	Case of
Work Tray	**E0030 124 294**	10/38.23
Frame for Work Tray	**E0030 124 308**	5/34.20

CLEANUP

Millipore* Montage*-PCR Filter Unit

Removes primers, salts, and unincorporated dNTPs with a single, 15-minute spin

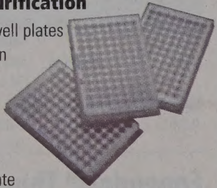
UFC7 PCR 50

- Typically recovers 90% of PCR products
- Accommodates 100µL of sample diluted with 400µL water or buffer
- Ideal for one-up or "middle throughput" (10 or more) sample preparation before sequencing or cloning

Cat. No.	Pack of
UFC7 PCR 50	50/104.00
UFC7 PC2 50	250/468.00

Millipore* MultiScreen* PCR$_{\mu 96}$, PCR$_{96}$, and PCR$_{384}$ Filter Plates

Fully automatable PCR product purification



MSNU 030 Series

- Nonsterile, clear polystyrene 96- and 384-well plates
- Size-exclusion proprietary membranes retain DNA products at the surface
- Complete (vacuum-based protocols) in 10 to 12 minutes without centrifugation, binding, or eluting
- Suitable with 96- or 384-tip liquid handlers capable of pipetting ≤25µL/sec. or with plate shakers that have a 0.12" orbit at 1100rpm
- Working well volume, 10 to 300µL; nonrecoverable volume, <2µL
- High-throughput format meets SBS (Society of Biomolecular Screening) standard
- High-purity PCR product is ready for microarray spotting, sequencing, and cloning

Description	Volume Range	Cat. No.	Price
MultiScreen PCR$_{\mu 96}$ Filter Plates	Up to 150µL/well	**LSKM PCR 10**	Pk. of 10/423.00
		LSKM PCR 50	Pk. of 50/1394.00
MultiScreen PCR$_{96}$ Filter Plates	150–300µL/well	**MSNU 030 10**	Pk. of 10/407.51
		MSNU 030 50	Pk. of 50/1340.00
MultiScreen PCR$_{384}$ Filter Plates	Up to 100µL/well	**S384 PCR 10**	Pk. of 10/709.00
		S384 PCR 50	Pk. of 50/2812.00
MultiScreen 96 Vacuum Manifold	----	**MAVM 096 OR**	Ea./1250.00
MultiScreen 384 Vacuum Manifold	----	**SAVM 384 01**	Ea./875.00

5 PRIME* GelElute DNA Extraction Kit

For batch purification of DNA fragments from agarose gels and solutions

NEW

- Provides convenient extraction of DNA from 40 bp to 50kb
- Suitable for use with both agarose and polyacrylamide gels
- Free of sodium iodide—no interference with downstream applications
- No DNA shearing
- Maximum binding capacity: 5µg DNA per 10µL GelElute Suspension

FP230040

APPLICATIONS:

Restriction digestion, Labeling, Ligation, PCR

INCLUDES:

Kits include GelElute DNA Extraction Suspension, Buffer GX1 with pH indicator, Buffer GE concentrate

Description	Quantity	Cat. No.	Each
GelElute DNA Extraction Kit	150 preps	**FP2300400**	103.58
GelElute DNA Extraction Kit	500 preps	**FP2300410**	239.34
GelElute DNA Extraction Suspension	1.5mL	**FP2300420**	81.41

omega* Wizard* PCR Preps DNA Purification System

in-based system purifies double-stranded PCR-amplified DNA using 5-minute batch column purification method

- covers 70–90% of DNA fragments from low-melting agarose gels and –99% of products from PCR reactions
- es not bind fragments smaller than 200 bp, so primers and primer-ners are removed from the reaction
- tes DNA from the DNA Purification Resin in water or TE buffer, free of ts or macro molecular contaminants
- commended for DNA fragments between 200 and 3200 bp
- n easily process multiple PCR Preps at one time with the Vac-Man* oratory Vacuum Manifold (Cat. No. PR-A7231)

UDES:

rd SV Purification Resin, Direct Purification Buffer, Wizard columns, 3cc syringe barrels

PR-A7170

Quantity	Cat. No.	Each
50 preps	**PR-A7170**	80.40
250 preps	**PR-A2180**	343.43

U.S. Patent 5,075,430.

U.S. Patents 4,966,964; 5,019,556; and 5,266,687; Australian Patents 616881 and 641261 and other pending and issued patents, which claim vectors encoding a portion of human placental ribonuclease inhibitor, are exclusively licensed to Promega Corporation.

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omega* Wizard* SV Gel and PCR Cleanup System

fies DNA from agarose gels or PCR reactions in as little as 15 minutes

- brane-based system purifies DNA fragments from standard or nelt agarose gels in either Tris acetate (TAE) or Tris borate (TBE). Also es products directly from PCR reactions, removing excess nucleotides rimers.
- covers up to 95% of fragments or amplification products in as little as uL elution volume
- table for spin or vacuum purification formats; no phenol extraction or anol precipitation required
- ted to ensure performance of purified products in automated rescent sequencing to at least 700 bp with 78% accuracy

UDES:

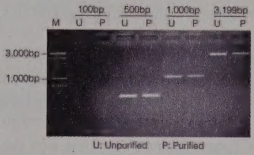
rd SV Minicolumns, collection tubes, membrane binding solution, rane wash solution, nuclease-free water

REQUIRED ACCESSORIES:

Vacuum protocol requires vacuum adapters (PR-A1331, sold separately).

STORAGE CONDITIONS:

Store at room temperature.



Gel analysis of PCR products before and after gel extraction using the Wizard SV Gel and PCR Cleanup System (PR-A9281)

Quantity	Cat. No.	Each
50 preps	**PR-A9281**	74.20
250 preps	**PR-A9282**	340.75

Patents for the foundational PCR process, European Patents 201,184 and 200,362, expired on March 28, 2006. In the U.S., the patents covering the foundational PCR process expired on March 29, 2005.

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pendorf* PCR Clean Microcentrifuge Tubes

ose from Safe-Lock or Flex-Tube* styles—both are ideal for DNA sample prep prior to PCR

- ypropylene; rated to 25,000xG
- e-Lock tubes feature a patented (U.S. Pat. 4,713,219) lid-lock that ses securely
- -Tube tubes are easy to open and close
- h volume graduations and etched marking surfaces
- tified free from human DNA, DNase, RNase and PCR inhibitors
- nufactured under cleanroom conditions

ity	Cat. No.	Pack of 500
ock Tubes		
	05-402-93	60.00
	05-402-94	55.00
	05-402-95	57.00
ube Tubes		
	05-402-96	36.00

05-402-90 Series

PENETROMETERS

Koehler* Microprocessor-Based Digital Penetrometer

Microprocessor-based digital penetrometer tests the consistency of lubricating greases, petroleum waxes, bitumens, pastes, creams, food products, and other solid to semi-solid materials

User-friendly Operation

- Separate keypad controls for each parameter
- Choice of programmable or full manual operation using coarse and fine push-button controls
- Can also be programmed with four sample surface height presets, automatically timed penetration measurements and test intervals, and a curing or temperature stabilization period for delayed penetrator release
- Memory stores selected parameters for automatic use in subsequent tests until changed by user
- Built-in circuit senses sample surface for automatic placement when testing electronically conductive samples
- Audible signal and visual error messages
- Test results can be communicated to a printer or computer via a built-in RS-232 interface
- Optional Software Package provides additional features—see 14-210-36, below

Other Features

- Built-in magnifier and illuminator arms
- Large digital display located on head of unit displays all functions, countdown of penetration and delay intervals, and test results
- Detachable machined base with large platform accommodates many sizes of sample containers or constant temperature cylinders

INCLUDES:

47.5g standard plunger; 50g and 100g weights; rechargeable, built-in battery pack or AC operation

COMPLIANCE:

Conforms to all ASTM*, IP, ISO 9001, and related specifications

Penetrometer

22-172-592

Description	Cat. No.	Mfr. No.	Eac
Digital Penetrometer	**22-172-592**	**K95500**	6948.0

SPECIFICATIONS

Penetration Range	0 to 62.0mm (0 to 620 penetration scale) in 1⁄10mm scale reported in user-defined 1⁄10mm or 1⁄100mm increments
Penetration Interval	5-second default or operator variable from 0.1 to 9999.9 seconds (in 0.1-second increments)
Electrical Reqts.	115V 50/60Hz
Overall Dimensions (L × W × H)	12½ × 14 × 18" (31.7 × 35.6 × 45.7cm)
Net Weight	21 lb. (9.5kg)

Koehler* Penetrometer Software Package

Windows*-based software automatically downloads full test parameters and final results on each penetration test

- Determines averages, standard deviation, and ASTM* test repeatability
- Automatic real-time data acquisition via RS-232

INCLUDES:

Installation CD and cables

Description	Mfr. No.	Cat. No.	Ea
Digital Penetrometer Software Package	K95500-SFW	**14-210-36**	540.

*Trademark. See Trademark Reference.

y approved ISE Methods

iods provide simpler, more economical and faster measurement

Orion
Thermo
ORION

In March of 2007, the EPA released the Methods Update† Final Rule, which approved four new Ion Selective Electrode (ISE) methods for analysis in wastewater and for NPDES permitting. The newly approved EPA methods are:

Parameter	Methodology	Approved Method(s)
Chloride	Ion Selective Electrode	ASTM* D512-89 (1999)
Cyanide	Ion Selective Electrode	SM 4500-CN-F; ASTM D2036-98 A
Sulfide	Ion Selective Electrode	SM 4500-S2-G; ASTM D4658-03 (1996)
Nitrate	Ion Selective Electrode	SM 4500-NO3-D

nd Measurement

tive Electrode (ISE)
e been popular for many
iods and applications are
ng developed.

a particular ion in
e of the characteristics
's sensing membrane.
levelops an electrical
s proportional to the
the ion for which the
lective. The most widely
glass-membrane pH
ech Note discusses
pes of ISEs.

the indicator electrode—
electrode are placed in
onnected to a pH/ion
a potentiometric cell.

At equilibrium, the meter measures the potential difference between the ISE and the reference electrode. This potential is proportional to the activity of the ion of interest, and the relationship is described by the Nernst equation:

$$E = E^0 \pm 2.3\ (RT/nF)\ (\log A)$$

where E is the measured electrode potential; E^0 is the standard potential of the system; R is the gas constant; T is the temperature in °K; n is the number of electrons involved in the reaction; F is Faraday's constant; and A is the activity of the ion being measured.

Activity [A] is not the same as concentration. The activity of an ion is strongly influenced by the total ionic strength of the solution. When ISE measurements are made, a determination in concentration units is usually desired. This is done by adding an Ionic Strength Adjuster (ISA) to samples and standards. When ionic strength is held constant, the Nernst Equation reduces to:

$$E = E^0 \pm 2.3\ (RT/nF)\ (\log C)$$

where C is the concentration of the ion of interest. This form of the Nernst equation states that the electrode potential varies directly with the log of the concentration, in a straight-line manner. The slope of the line is equal to the value of:

$$2.3\ (RT/nF)$$

The table below gives theoretical slope values at 25°C:

Species	Slope (mV/decade)
Monovalent cation	+59.16
Monovalent anion	–59.16
Divalent cation	+29.58
Divalent anion	–29.58

The equation is as follows:

$$S = E^0 \pm 2.3\ (RT/nF)$$

where S is the electrode's slope.

The Nernst equation thus reduces to:

$$E = E^0 \pm S\ (\log A)$$

Thermo Scientific* Orion* ISEs are designed to provide you with optimum performance and reliability.

Analysis by ISE methods with a pH/ISE meter quickly displays results in concentration units at a cost of a few cents per test. The ISE methods are adaptable to either lab or field, and turbidity and color do not affect the measurement.

No one knows ISEs like Orion.

Trust the name that developed ISE technology to provide you with electrode options, quality standards and solutions, and experienced application notes. The new methods detailed above join the list of Thermo Scientific Orion ISE EPA-approved methods for Ammonia, Chlorine, and Fluoride—methods that provide a simpler, more economical and faster measurement.

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† *40 CFR Part 122, 136, et al. Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act; National Primary Drinking Water Regulations; and National Secondary Drinking Water Regulations: Analysis and Sampling Procedures; Final Rule.*

*Trademark. See Trademark Reference.

Prices subject to change.

BENCHTOP METERS

Selection Guide: Fisher Scientific* accumet* Excel and Basic Series Benchtop Meters

Excel Series

Model	XL60 pH/mV/DO/ISE/ Conductivity/Resistivity/ Temperature Meter	XL50 pH/mV/ ISE/Conductivity/Resistivity/ Temperature Meter	XL25 pH/mV/ISE/ Temperature Meter	XL20 pH/mV/ Conductivity/Resistivity/ Salinity/Temperature Meter
Display	640 × 480 pixel STN Color LCD; 4$\frac{1}{2}$W × 6"H (11 × 15cm). Measurement Characters: $\frac{3}{4}$"H (1.9cm). Other Data: $\frac{1}{4}$"H (0.6cm)			
Keypad/Controls	Touchscreen and External Keypad			
Menus	Microsoft Windows CE* pull-down menu options; extensive Help screens			
Remote Access	Parameters remotely controllable and monitorable via Windows CE Remote Application Interface			
Network Connection	Ethernet port connectivity to LAN			
USB Connectivity	USB Host/Device 1.1 connectivity to printer, PC, bar code scanner, mouse, keypad, etc.			
Data Memory	Internal: 1,000 Data points. External: USB storage device connectivity, SDCARD Memory Interface version 1.0, RS-232 connectivity			
Data Output	On Stable; via timer; manual			
Special Features	User upgradable software (Flash ROM via Ethernet). Powerup self test; error messages; alarm, real-time clock/calendar			
pH Mode				
Range	-2.000 to +20.000pH	-2.000 to +20.000pH	-2.000 to +20.000pH	-2.000 to +20.000pH
Resolution	0.1/0.01/0.001pH	0.1/0.01/0.001pH	0.1/0.01/0.001pH	0.1/0.01/0.001pH
Relative accuracy	±0.002pH ±1 LSD	±0.002pH ±1 LSD	±0.002pH ±1 LSD	±0.002pH ±1 LSD
Buffer recognition	Manual or Automatic: U.S., Euro, NIST* or Custom	Manual or Automatic: U.S., Euro, NIST or Custom	Manual or Automatic: U.S., Euro, NIST or Custom	Manual or Automatic: U.S., Euro, NIST or Custom
Calibration points	1 to 6	1 to 6	1 to 6	1 to 6
FET Electrode Input	Yes	Yes	Yes	Yes
mV Mode				
Range	0 to ±2000mV (absolute or relative)	0 to ±2000mV (absolute or relative)	0 to ±2000mV (absolute or relative)	0 to ±2000mV (absolute or relative)
Resolution	0.1mV	0.1mV	0.1mV	0.1mV
Relative Accuracy	±0.2mV ±1 LSD	±0.2mV ±1 LSD	±0.2mV ±1 LSD	±0.2mV ±1 LSD
Temperature Mode				
Measurement Range	-10.0° to +110.0°C (14° to 230°F)	-10.0° to +110.0°C (14° to 230°F)	-10.0° to +110.0°C (14° to 230°F)	-10.0° to +110.0°C (14° to 230°F
Resolution	0.1°C	0.1°C	0.1°C	0.1°C
Relative Accuracy	±0.2°C	±0.2°C	±0.2°C	±0.2°C
Compensation	Automatic or Manual	Automatic or Manual	Automatic or Manual	Automatic or Manual
Ion Mode (Concentration)				
Range	1×10^{-6} to 9.99×10^{10}	1×10^{-6} to 9.99×10^{10}	1×10^{-6} to 9.99×10^{10}	----
Resolution	0.1, 0.01, 0.001	0.1, 0.01, 0.001	0.1, 0.01, 0.001	----
Relative Accuracy	±0.17n%	±0.17n%	±0.17n%	----
Calibration Points	5	5	5	----
Incremental Methods	Known/analyte addition, known/analyte subtraction	Known/analyte addition, known/analyte subtraction	Known/analyte addition, known/analyte subtraction	----
Conductivity Mode				
Cell Constants	0.1cm^{-1}, 1.0cm^{-1}, 10cm^{-1}	0.1cm^{-1}, 1.0cm^{-1}, 10cm^{-1}	----	0.1cm^{-1}, 1.0cm^{-1}, 10cm^{-1}
Conductivity	0 to 5×10^5μS/cm	0 to 5×10^5μS/cm	----	0 to 5×10^5μS/cm
Resistivity	3ohms·cm to 100megohms·cm	3ohms·cm to 100megohms·cm	----	3ohm·cm to 100megohms·cm
Salinity	0 to 90ppt	0 to 90ppt	----	0 to 90ppt
Relative Accuracy	±0.5% of Full Scale reading ±1 LSD	±0.5% of Full Scale reading ±1 LSD	----	±0.5% of Full Scale reading ±1 LSD
Dissolved Oxygen Mode				
Range	0 to 60mg/L, 0 to 600% saturation	----	----	----
Relative Accuracy	±0.1mg/L ±1 LSD, ±0.1% saturation	----	----	----
Resolution	0.01mg/L, 0.1% saturation	----	----	----
Inputs	2 BNC/pin, 2 ATC, 3 DIN (FET, 2- or 4-cell cond., DO)	2 BNC/pin, 2 ATC, 2-pin cond., 2 DIN (FET, 4-cell cond.)	2 BNC/pin, 2 ATC, 1 DIN (FET)	1 BNC/pin, 1 ATC, 2-pin cond., 2 DIN (FET, 4-cell cond.)
Outputs	USB Host/Device, Bidirectional RS-232, Ethernet, SDCARD	USB Host/Device, Bidirectional RS-232, Ethernet, SDCARD	USB Host/Device, Bidirectional RS-232, Ethernet, SDCARD	USB Host/Device, Bidirectional RS-232, Ethernet, SDCARD
Electrical Requirements	110V/220V 50/60Hz	110V/220V 50/60Hz	110V/220V 50/60Hz	110V/220V 50/60Hz
Meter Only:	**13-636-XL60A**	**13-636-XL50A**	**13-636-XL25A**	**13-636-XL20A**
Meter Kit/pH:	**13-636-XL60**	**13-636-XL50**	**13-636-XL25**	**13-636-XL20**
Meter Kit/DO:	**13-636-XL60D**	----	----	----

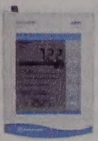
*Trademark. See Trademark Reference.

Prices subject to change.

ction Guide: Fisher Scientific* accumet* Excel and Basic Series Benchtop Meters Contd.

el Series, td.

Basic Series



el	XL15 pH/mV/Temperature Meter	AB15 Plus pH/mV/°C	AB15 pH/mV/°C
lay	640 × 480 pixel STN Color LCD; $4\frac{1}{2}$W × 6"H (11 × 15cm). Measurement Characters: $\frac{3}{4}$"H (1.9cm). Other Data: $\frac{1}{4}$"H (0.6cm)	Custom LCD; 3W × 4"H (8 × 11cm). Measurement Characters: $\frac{3}{4}$"H (1.9cm). Other Data: $\frac{5}{16}$"H (0.8cm)	Custom LCD; 3W × 4"H (8 × 11cm). Measurement Characters: $\frac{3}{4}$"H (1.9cm). Other Data: $\frac{5}{16}$"H (0.8cm)
ad/Controls	Touch Screen and External Keypad	5-key Soft-touch Membrane	5-key Soft-touch Membrane
us	Microsoft Windows* CE pull-down menu options; extensive Help screens	Prompts and error messages guide operation	Prompts and error messages guide operation
ote Access	Parameters remotely controllable and monitorable via Windows CE Remote Application Interface	----	----
ork Connection	Ethernet port connectivity to LAN	----	----
Connectivity	USB Host/Device 1.1 connectivity to printer, PC, bar code scanner, mouse, keypad, etc.	----	----
Memory	Internal: 1,000 Data points. External: USB storage device connectivity, SDCARD Memory Interface version 1.0, RS-232 connectivity	Internal: 100 datapoints. External: RS-232-C connection to computer or printer	Internal: 50 datapoints
Output	On Stable; via timer; manual	On Stable; manual	On Stable; manual
ial Features	User upgradable software (Flash ROM via Ethernet). Powerup self test; error messages; alarm, real-time clock/calendar	Powerup self-test; error messages; internal diagnostics; RS-232-C interface	Powerup self test; error messages; internal diagnostics
lode			
ge	-2.000 to +20.000pH	-1.999 to +19.999pH	-1.99 to +19.99pH
olution	0.1/0.01/0.001pH	0.1/0.01/0.001pH	0.1/0.01pH
ative Accuracy	±0.002pH ±1 LSD	±0.002pH ±1 LSD	±0.002pH ±1 LSD
fer Recognition	Manual or Automatic: U.S., Euro, NIST* or Custom	Manual or Automatic: U.S., Euro or NIST	Manual or Automatic: U.S.
bration Points	1 to 6	1 to 5	1 to 5
Electronic Input	Yes	Yes	Yes
lode			
ge	0 to ±2000mV (absolute or relative)	0 to ±1800mV (absolute or relative)	0 to ±1800mV (absolute or relative)
olution	0.1mV	1mV	1mV
ative Accuracy	±0.2mV ±1 LSD	±0.1mV ±1 LSD	±0.1mV ±1 LSD
perature Mode			
surement Range	-10.0° to +110.0°C (14° to 230°F)	-5.0° to +105.0°C (23° to 221°F)	-5.0° to +105.0°C (23° to 221°F)
olution	0.1°C	0.1°C	0.1°C
ative Accuracy	±0.2°C	±0.2°C	±0.5°C
pensation	Automatic or Manual	Automatic or Manual	Automatic or Manual
s	1 BNC/pin, 1 ATC, 1 DIN (FET)	1 BNC/pin, 1 ATC, 1 DIN (FET)	1 BNC/pin, 1 ATC, 1 DIN (FET)
uts	USB Host/Device, Bidirectional RS-232, Ethernet, SDCARD	RS-232-C connection to computer or printer	----
rical Requirements	110V/220V 50/60Hz	115V 60Hz	115V 60Hz
r Only:	**13-636-XL15A**	**13-636-AB15PA**	**13-636-AB15A**
r Kit/pH:	**13-636-XL15**	**13-636-AB15P**	**13-636-AB15**
r BioKit:	----	**13-636-AB15PB**	**13-636-AB15B**

lus Excel Models dedicated to Conductivity and Dissolved Oxygen Measurements

sher Scientific* accumet* Excel 30 onductivity Meter

- Conductivity, Resistivity, Salinity tests
- Accepts two-cell and four-cell probes
- Windows* CE driven—color touchscreen
- Three-year warranty
- See page 510, Conductivity Section

XL30

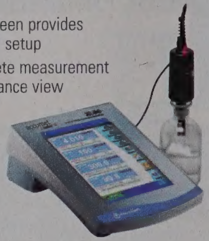
Fisher Scientific* accumet Excel 40 DO/BOD Plus Meter

- DO/BOD/OUR/SOUR tests
- Salinity/pressure compensation
- Windows CE driven—color touchscreen
- Three-year warranty
- See page 1235, Oxygen Analysis Section

XL40

Fisher Scientific* accumet* Excel XL60 pH/mV/Temperature/DO/ISE/Conductivity Meter

A complete electrochemistry lab in one instrument, with unrivaled usability and connectivity



- Windows CE*-driven, full-color touchscreen provides unmatched ease of use in operation and setup
- Switchable numeric display with complete measurement data or graphic display mode for at-a-glance view of measured data over time
- User prompts and context-specific HELP screens easily guide user through operation
- Extensive setup screens allow you to customize the meter precisely to your needs

Top-of-the-line, research-grade meter

- Measures and displays four parameters simultaneously
- DO mode calculates 5-day BOD testing, OUR, and SOUR
- Conductivity mode accepts 2-cell and 4-cell probes
- ISE mode offers direct and indirect measurements
- pH mode accepts standard or Fisher Scientific accuFet* nonglass electrodes

XL60 gives you two pH/mV/ISE inputs, 2- or 4-cell conductivity input, plus dissolved oxygen input

- Advanced circuitry and shielding prevent crosstalk and other interference
- 1000-datapoint memory storage, unprecedented connectivity to printer, computer and LANs
- Password security protects your data from accidental deletion

Full-function pH and mV capabilities

- Extended pH range: -2 to +20pH
- Resolution to 0.001pH
- Calibration at up to 6 points for exceptional accuracy

ISE measurements are easy and versatile

- Ion name is displayed right on the screen—you'll never have the wrong curve
- Automatically runs direct or addition/subtraction methods
- Screen prompts allow easy volume/concentration entry, providing concentration data without tedious paper calculations

Dissolved Oxygen mode features extra flexibility

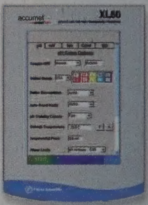
- Optional self-stirring BOD probe and on-screen prompts make BOD, SOUR, and OUR methods easy
- Easy to use for simple dissolved oxygen measurements from 0-60 mg/L, 0 to 600% saturation
- Temperature, salinity, and pressure corrections are calculated automatically

Measure Conductivity, Salinity, or Resistivity

- Selectable temperature coefficients, cell constants, and display units ensure accurate readings throughout a broad range of samples
- Measure conductivity from 0 to 5 x 10^5 µS/cm, salinity from 0 to 90ppt, resistivity from 3ohms·cm to 100megohm·cm

Extensive GLP capabilities

- Customizable printer/computer output
- 1000-reading datalog capability
- Print Setup lets you print exactly what you want, when you want
- Displays time in 12- or 24-hour format, date in U.S. or international format
- USB port lets you connect keyboard, mouse, or trackball for meter control, or connect printer or PC for data output
- RS-232 serial port lets you connect to PCs or printers without USB, or frees computer USB port while the meter is in use
- Ethernet allows unmatched LAN connectivity plus software upgrades



ORDERING INFORMATION:

- Durable ABS plastic housing resists dust and chemicals
- Dimensions: 9¼L × 6½W × 3½"H (23.5 × 16.5 × 9cm)
- Net weight: 2¾ lb. (1.2kg)

Choice of packaging options:

- **Meter Kit/pH-DO** package includes meter, Fisher Scientific accuCap* combination pH electrode (13-620-130), self-stirring BOD probe (13-620-SSP), ATC probe (13-620-19), electrode support arm and bracket, 110V/220V power supply and operation manual.
- **Meter Kit/pH** package includes meter, Fisher Scientific accuCap combination pH electrode (13-620-130), ATC probe (13-620-19), electrode support arm and bracket, 110V/220V power supply and operation manual.
- **Meter Only** package includes meter, electrode support arm and bracket, 110V/220V power supply and operation manual.

Note: Each package is also available with Certificate of Traceability to NIST* Standards.

WARRANTY:

Three-year warranty: Model XL60 is warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years. Call your Fisher Scientific Customer Service Representative for full details.

Package	Electrode(s)	Cat. No.	Eac
Meter Only	None	**13-636-XL60A**	2768.54
Meter Only with NIST-Traceable Certificate	None	**13-636-XL60AC**	2881.04
Meter Kit/pH	Fisher Scientific accuCap pH Combination 13-620-130; ATC Probe 13-620-19	**13-636-XL60**	3034.04
Meter Kit/pH with NIST-Traceable Certificate	Fisher Scientific accuCap pH Combination 13-620-130; ATC Probe 13-620-19	**13-636-XL60C**	3146.53
Meter Kit/pH-DO	Fisher Scientific accuCap pH Combination 13-620-130; DO Probe 13-620-SSP; ATC Probe 13-620-19	**13-636-XL60D**	3696.57
Meter Kit/pH-DO with NIST-Traceable Certificate	Fisher Scientific accuCap pH Combination 13-620-130; DO Probe 13-620-SSP; ATC Probe 13-620-19	**13-636-XL60DC**	3809.07

Contd. on next page

*Trademark. See Trademark Reference.

Prices subject to change.

er Scientific* accumet* Excel XL60 pH/mV/Temperature/DO/ISE/ ductivity Meter, Contd.

CIFICATIONS

el	XL60
es	pH, mV, Dissolved Oxygen, Concentration, Conductivity, Resistivity, Temperature
lay	640 × 480 pixel STN Color LCD; 4½W × 6"H (11 × 15cm). Measurement Characters: ¾"H (1.9cm). Other Data: ¼"H (0.6cm)
ad/Controls	Touchscreen and External Keypad
us	Microsoft Windows CE* pull-down menu options; extensive Help screens.
ote Access	Parameters remotely controllable and monitorable via Windows CE Remote Application Interface.
nectivity	Ethernet port connectivity to LAN. USB Host/Device 1.1 connectivity to printer, PC, bar code scanner, mouse, keypad etc.
Memory	Internal: 1000 Data points. External: USB storage device connectivity, SDCARD Memory Interface ver 1.0, RS-232 connectivity.
Output	On Stable; via timer; Manual
ial Features	User upgradable software (Flash ROM via Ethernet). Powerup self test; error messages; alarm, real-time clock/calendar.
lode	
ge/Resolution	-2.000 to +20.000pH/0.1, 0.01, 0.001pH; auto lock
tive Accuracy	±0.002pH ±1 least significant digit
fer Recognition	Manual or Automatic: U.S., Euro, NIST or Custom.
bration Points	1 to 6
Electrode Input	Yes
Mode	
ge/Resolution	0 to ±2000mV (absolute or relative)/0.1mV
tive Accuracy	±0.2mV ±1 least significant digit
erature Mode	
ge/Resolution	-10.0° to +110.0°C (14° to 230°F)/0.1°C
tive Accuracy	±0.2°C
pensation	Automatic or Manual
Mode (Concentration)	
ge/Resolution	1×10^{-6} to 9.99×10^{10}/0.1, 0.01, 0.001
tive Accuracy	±0.17n% (where n = the number of electrons exchanged in the electrode reaction process)
bration Points	5
emental Methods	Known addition, analyte addition, known subtraction, analyte subtraction
luctivity Mode	
Constants	0.1cm^{-1}, 1.0cm^{-1}, 10cm^{-1}
ductivity Range	0 to 5×10^5µS/cm
istivity Range	3ohms·cm to 100megohms·cm
nity Range	0 to 90ppt
tive Accuracy	±0.5% of Full Scale reading ±1 least significant digit
lved Oxygen Mode	
ge/Resolution	0-60mg/L, 0-600% saturation/0.01mg/L, 0.1% saturation
tive Accuracy	±0.1mg/L ±1 least significant digit, ±0.1% saturation
ts	2 BNC/pin, 2 ATC, 3 DIN (FET, 2- or 4-cell cond., DO)
uts	USB Host/Device, Bidirectional RS-232, Ethernet, SDCARD
rical Requirements	110V/220V 50/60Hz

Fisher Scientific* accumet* Excel XL50 pH/mV/ Temperature/ISE/Conductivity Meter

Multiparameter meter with research-grade capabilities, unrivalled usability and connectivity

- Windows CE*-driven, full-color touchscreen provides unmatched ease of use in operation and setup
- Switchable numeric display with complete measurement data or graphic display mode for at-a-glance view of measured data over time
- User prompts and context-specific HELP screens easily guide user through operation
- Extensive setup screens allow you to customize the meter precisely to your needs

Three-channel measurement and display for fast and flexible research-grade analyses

- Conductivity mode accepts two-cell and four-cell probes
- Automatic temperature correction: ATC probe in two channels
- ISE mode offers direct and indirect measurements
- pH mode accepts standard or Fisher Scientific accuFet* nonglass electrodes
- Provides two pH/mV/ISE inputs, two ATC inputs, an input for the Fisher Scientific accuFet nonglass electrode, plus inputs for two- and four-cell conductivity probes
- Advanced circuitry and shielding prevent crosstalk and other interference
- Password security protects your data from accidental deletion

Direct and indirect ISE measurements

- Three-channel capability: no need to recalibrate when switching from ISE to pH testing
- Displays name of ion of interest on the measurement screen: you'll never have the wrong ISE curve
- Incremental known and analyte addition and subtraction methods are almost foolproof
- Meter prompts you through the method steps, allows easy entry of volumes and concentrations, calculates sample concentration automatically

Measure Conductivity, Salinity, or Resistivity.

- Measures conductivity from 0 to 5 × 10^5µS/cm, resistivity from 3ohms·cm to 100megohms·cm, salinity from 0 to 90ppt
- Selectable temperature coefficients, cell constants, and display units ensure accurate readings over a broad sample range

Full-function pH and mV capabilities

- Extended pH range: -2 to +20pH
- Resolution to 0.001pH
- Calibration at up to 6 points for exceptional accuracy

Extensive GLP capabilities

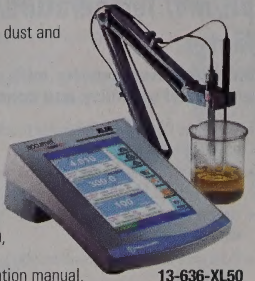
- Customizable printer/computer output
- 1000-reading datalog capability
- Print Setup lets you print exactly what you want, when you want
- Displays time in 12- or 24-hour format, date in U.S. or international format
- USB port lets you connect keyboard, mouse, or trackball for meter control, or connect printer or PC for data output
- RS-232 serial port lets you connect to PCs or printers without USB, or frees computer USB port while meter is in use
- Ethernet allows unmatched LAN connectivity plus software upgrades

Contd. on next page.

Fisher Scientific* accumet* Excel XL50 pH/mV/ Temperature/ISE/Conductivity Meter, contd.

ORDERING INFORMATION:

- Durable ABS plastic housing resists dust and chemicals
- Dimensions: 9¼L × 6½W × 31/2"H (23.5 × 16.5 × 9cm)
- Net weight 2¾ lb. (1.2kg)



13-636-XL50

INCLUDES:

- **Meter Kit/pH** package includes meter, Fisher Scientific accuCap* Combination pH electrode (13-620-130), ATC probe (13-602-19), electrode support arm and bracket, 110/220V power supplies and operation manual.
- **Meter Only** package includes meter, electrode support arm and bracket, 110/220V power supply and operation manual.

NOTE:

Each package is also available with Certificate of Traceability to NIST* Standards.

WARRANTY:

Three-year warranty. Model XL50 is warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years. Call your Fisher Scientific Customer Service Representative for full details.

Package	Electrode(s)	Cat. No.	Each
Meter Only	None	13-636-XL50A	2376.18
Meter Only with NIST-Traceable Certificate	None	13-636-XL50AC	2488.67
Meter Kit/pH	Fisher Scientific accuCap 13-620-130; ATC Probe 13-620-19	13-636-XL50	2645.85
Meter Kit/pH with NIST-Traceable Certificate	Fisher Scientific accuCap 13-620-130; ATC Probe 13-620-19	13-636-XL50C	2758.34

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Visit www.fishersci.com and search for Solution Buffers

13-636-XL50A

SPECIFICATIONS

Model	XL50
Modes	pH, mV, Concentration, Conductivity, Resistivity, Temperature
Display	640 × 480 pixel STN Color LCD; 4½W × 6"H (11 × 15cm). Measurement Characters: ¾"H (1.9cm). Other Data: ¼"H (0.6cm)
Keypad/Controls	Touchscreen and External Keypad
Menus	Microsoft Windows CE* pull-down menu options; extensive Help screens.
Remote Access	Parameters remotely controllable and monitorable via Windows CE Remote Application Interface
Connectivity	Ethernet port connectivity to LAN. USB Host/Device 1.1 connectivity to printer, PC, bar code scanner, mouse, keypad etc.
Data Memory	Internal: 1,000 Data points. External: USB storage device connectivity, SDCARD Memory Interface ver 1.0, RS-232 connectivity.
Data Output	On Stable; via timer; Manual
Special Features	User upgradable software (Flash ROM via Ethernet). Powerup self test; error messages; alarm, real-time clock/calendar.
pH Mode	
Range/Resolution	-2.000 to +20.000pH/0.1, 0.01, 0.001pH; auto lock
Relative Accuracy	±0.002pH + 1 least significant digit
Buffer Recognition	Manual or Automatic: U.S., Euro, NIST or Custom
Calibration Points	1 to 6
FET Electrode Input	Yes
mV Mode	
Range/Resolution	0 to ±2000mV (absolute or relative)/0.1mV
Relative Accuracy	±0.2mV + 1 least significant digit
Temperature Mode	
Range/Resolution	-10.0° to +110.0°C (14° to 230°F)/0.1°C
Relative Accuracy	±0.2°C
Compensation	Automatic or Manual
Ion Mode (Concentration)	
Range/Resolution	1×10^{-6} to 9.99×10^{10}/0.1, 0.01, 0.001
Relative Accuracy	±0.17n% (where n = the number of electrons exchanged in the electrode reaction process)
Calibration Points	5
Incremental Methods	Known addition, analyte addition, known subtraction, analyte subtraction
Conductivity Mode	
Cell Constants	$0.1cm^{-1}$, $1.0cm^{-1}$, $10cm^{-1}$
Conductivity Range	0 to 5×10^{5}µS/cm
Resistivity Range	3ohms·cm to 100megohms·cm
Salinity Range	0 to 90ppt
Relative Accuracy	±0.5% of Full Scale reading ±1 least significant digit
Inputs	2 BNC/pin, 2 ATC, 2-pin cond., 2 DIN (FET, 4-cell cond.)
Outputs	USB Host/Device, Bidirectional RS-232, Ethernet, SDCARD
Electrical Reqts.	110V/220V 50/60Hz

*Trademark. See Trademark Reference.

sher Scientific* accumet* Excel XL25 pH/mV/Temperature/ISE Meter

selective electrode measurement has never been this easy

ivalled usability and connectivity

indows CE*-driven, full-color touchscreen provides matched ease of use in operation and setup

witchable numeric display with complete easurement data or graphic display mode r at-a-glance view of measured data er time

ser prompts and context-specific HELP reens easily guide user through eration

tensive setup screens allow you to stomize the meter precisely to your needs

13-636-XL25

l channel measurement and display for fast and flexible earch-grade analyses

tomatic temperature correction: ATC probe in each channel

E mode offers direct and indirect measurements

l mode accepts standard or Fisher Scientific accuFet* nonglass electrodes

ovides two pH/mV/ISE inputs, two ATC inputs, plus an input for the Fisher ientific accuFet nonglass electrode

lvanced circuitry and shielding prevent crosstalk and other interference

ssword security to protect data from deletion

l channel capability

need to recalibrate when switching from ISE to pH testing

splays name of ion of interest on the measurement screen: you'll never ve the wrong ISE curve

cremental known and analyte addition and subtraction methods are most foolproof

eter prompts you through the method steps, allows easy entry of volumes d concentrations, calculates sample concentration automatically

-function pH and mV capabilities

tended pH range: -2 to +20pH

solution to 0.001pH

libration at up to six points for exceptional accuracy of ±0.002pH

ensive GLP capabilities

stomizable printer/computer output

talog capability: 1000 readings

nt Setup lets you print exactly what you want, when you want

splays time in 12- or 24-hour format, date in U.S. or international format

B port lets you connect keyboard, mouse, or trackball for meter control, connect printer or PC for data output

-232 serial port lets you connect to PCs or printers without USB, or frees mputer USB port while meter is in use

ernet allows unmatched LAN connectivity plus software upgrades

ERING INFORMATION:

rable ABS plastic housing resists dust and chemicals

mensions: 9¼L × 6½W × 3½"H (23.5 × 16.5 × 9cm)

t weight: 2¾ lb. (1.2kg)

UDES:

eter Kit/pH package includes meter, Fisher Scientific accuCap* mbination pH electrode (13-620-130), ATC probe (13-620-19), electrode pport arm and bracket, 110/220V power supplies and operation manual

eter Only package includes meter, electrode support arm and bracket, 0/220V power supply and operation manual

: Each package is also available with Certificate of Traceability to * Standards.

accumet
XL25
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XL60

WARRANTY:

Three-year warranty. Model XL25 is warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years. Call your Fisher Scientific Customer Service Representative for full details.

Package	Electrode(s)	Cat. No.	Each
Meter Only	None	**13-636-XL25A**	1780.25
Meter Only with NIST-Traceable Certificate	None	**13-636-XL25AC**	1892.75
Meter Kit/pH	Fisher Scientific accuCap 13-620-130; ATC Probe 13-620-19	**13-636-XL25**	2029.18
Meter Kit/pH with NIST-Traceable Certificate	Fisher Scientific accuCap 13-620-130; ATC Probe 13-620-19	**13-636-XL25C**	2141.68

SPECIFICATIONS

Model	**XL25**
Modes	pH, mV, Concentration, Temperature
Display	640 × 480 pixel STN Color LCD; 4½W × 6"H (11 × 15cm). Measurement Characters: ¾"H (1.9cm). Other Data: ¼"H (0.6cm)
Keypad/Controls	Touchscreen and External Keypad
Menus	Microsoft Windows CE* pull-down menu options; extensive Help screens.
Remote Access	Parameters remotely controllable and monitorable via Windows CE Remote Application Interface.
Connectivity	Ethernet port connectivity to LAN. USB Host/Device 1.1 connectivity to printer, PC, bar code scanner, mouse, keypad etc.
Data Memory	Internal: 1000 Data points. External: USB storage device connectivity, SDCARD Memory Interface ver 1.0, RS-232 connectivity.
Data Output	On Stable; via timer; Manual
Special Features	User upgradable software (Flash ROM via Ethernet). Powerup self test; error messages; alarm, real-time clock/calendar.
pH Mode	
Range/Resolution	-2.000 to +20.000pH/0.1, 0.01, 0.001pH; auto lock
Relative Accuracy	±0.002pH + 1 least significant digit
Buffer Recognition	Manual or Automatic: U.S., Euro, NIST or Custom.
Calibration Points	1 to 6
FET Electrode Input	Yes
mV Mode	
Range/Resolution	0 to ±2000mV (absolute or relative)/0.1mV
Relative Accuracy	±0.2mV + 1 least significant digit
Temperature Mode	
Range/Resolution	-10.0° to +110.0°C (14° to 230°F)/0.1°C
Relative Accuracy	±0.2°C
Compensation	Automatic or Manual
Ion Mode (Concentration)	
Range/Resolution	1×10^{-6} to 9.99×10^{10}/0.1, 0.01, 0.001
Relative Accuracy	±0.17n% (where n = the number of electrons exchanged in the electrode reaction process)
Calibration Points	5
Incremental Methods	Known addition, analyte addition, known subtraction, analyte subtraction
Inputs	2 BNC/pin, 2 ATC, 1 DIN (FET)
Outputs	USB Host/Device, Bidirectional RS-232, Ethernet, SDCARD
Electrical Requirements	110V/220V 50/60Hz

Fisher Scientific* accumet* Excel XL20 pH/mV/Temperature/Conductivity/ Resistivity Meter

Unrivaled usability and connectivity:

- Windows CE*-driven, full-color touchscreen provides unmatched ease of use in operation and setup
- Switchable numeric display with complete measurement data or graphic display mode for at-a-glance view of measured data over time
- User prompts and context-specific HELP screens easily guide user through operation
- Extensive setup screens allow you to customize the meter precisely to your needs

Dual channel measurement and display for fast and flexible research-grade analyses

- Automatic temperature correction: ATC probe in each channel
- Accepts two- and four-cell conductivity probes
- Built-in replatinizing circuit
- Provides inputs for two- and four-cell conductivity probe, pH/mV electrode, ATC probe, plus an input for the Fisher Scientific accuFet* nonglass electrode
- Advanced circuitry and shielding prevent crosstalk and other interference
- Password security to protect data from deletion

Versatile Conductivity Mode

- Measure conductivity from 0 to 5×10^5µS/cm, resistivity from 3ohms·cm to 100megohms·cm, salinity from 0 to 60ppt
- Selectable temperature coefficients, cell constants and display units ensure accurate readings throughout a broad range of samples
- Accepts simple two-cell probes or versatile four-cell probes for greater linearity over a wide range
- Use k=1 cells for general purpose, 0.1 cells for high purity water, or 10 for brines or other concentrated solutions

Full-function pH and mV capabilities

- Extended pH range: -2 to +20pH
- Adjustable resolution to 0.001pH
- Reads to 0.1mV for accurate titrations and ORP readings, too
- Calibration at up to six points for exceptional accuracy of ±0.002pH

Extensive GLP capabilities

- Customizable printer/computer output
- 1000-reading datalog capability
- Print Setup lets you print exactly what you want, when you want
- Displays time in 12- or 24-hour format, date in U.S. or international format
- USB port lets you connect keyboard, mouse, or trackball for meter control, or connect printer or PC for data output
- RS-232 serial port lets you connect to PCs or printers without USB, or frees computer USB port while meter is in use
- Ethernet allows unmatched LAN connectivity plus software upgrades

ORDERING INFORMATION:

Durable ABS plastic housing resists dust and chemicals. Dimensions: 9¼ × 6½W × 3½"H (23.5 × 16.5 × 9cm). Net weight 2¾ lb. (1.2kg).

INCLUDES:

Choice of packaging options:

- **Meter Kit/pH** package includes meter, Fisher Scientific accuCap* Combination pH electrode (13-620-130), ATC probe (13-602-19), electrode support arm and bracket, 110/220V power supplies and operation manual
- **Meter Only** package includes meter, electrode support arm and bracket, 110/220V power supply and operation manual

Note: Each package is also available with Certificate of Traceability to NIST* Standards.

WARRANTY:

Three-year warranty. Model XL20 is warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years. Call your Fisher Scientific Customer Service Representative for full details.

13-636-XL20A

Package	Electrode(s)	Cat. No.	Ea
Meter Only	None	**13-636-XL20A**	1780.
Meter Only with NIST-Traceable Certificate	None	**13-636-XL20AC**	1892.
Meter Kit/pH	Fisher Scientific accuCap 13-620-130; ATC Probe 13-620-19	**13-636-XL20**	2029.
Meter Kit/pH with NIST-Traceable Certificate	Fisher Scientific accuCap 13-620-130; ATC Probe 13-620-19	**13-636-XL20C**	2141.

SPECIFICATIONS

Model	XL20
Modes	pH, mV, Conductivity, Resistivity, Temperature
Display	640 × 480 pixel STN Color LCD; 4½W × 6"H (11 × 15cm). Measurement Characters: ¾"H (1.9cm). Other Data: ¼"H (0.6cm)
Keypad/Controls	Touchscreen and External Keypad
Menus	Microsoft Windows CE* pull-down menu options; extensiv Help screens
Remote Access	Parameters remotely controllable and monitorable via Windows CE Remote Application Interface
Connectivity	Ethernet port connectivity to LAN. USB Host/Device 1.1 connectivity to printer, PC, bar code scanner, mouse, keypad, et
Data Memory	Internal: 1000 Data points. External: USB storage device connectivity, SDCARD Memory Interface ver 1.0, RS-232 connectivity
Data Output	On Stable; via timer; Manual
Special Features	User upgradable software (Flash ROM via Ethernet); Powerup self test; error messages; alarm, real-time clock/calendar
pH Mode	
Range/Resolution	-2.000 to +20.000pH/0.1, 0.01, 0.001pH; auto lock
Relative Accuracy	±0.002pH ±1 least significant digit
Buffer Recognition	Manual or Automatic: U.S., Euro, NIST or Custom
Calibration Points	1 to 6
FET Electrode Input	Yes
mV Mode	
Range/Resolution	0 to ±2000mV (absolute or relative)/0.1mV
Relative Accuracy	±0.2mV ±1 least significant digit
Temperature Mode	
Range/Resolution	-10.0° to +110.0°C (14° to 230°F)/0.1°C
Relative Accuracy	±0.2°C
Compensation	Automatic or Manual
Conductivity Mode	
Cell Constants	$0.1cm^{-1}$, $1.0cm^{-1}$, $10cm^{-1}$
Conductivity Range	0 to 5×10^5µS/cm
Resistivity Range	3ohms·cm to 100megohms·cm
Salinity Range	0 to 90ppt
TDS Range	0.0 to 500.0ppt
Relative Accuracy	±0.5% of Full Scale reading ±1 least significant digit
Inputs	1 BNC/pin, 1 ATC, 2-pin cond., 2 DIN (FET, 4-cell cond.)
Outputs	USB Host/Device, Bidirectional RS-232, Ethernet, SDCARD
Electrical Reqts.	110V/220V 50/60Hz

*Trademark. See Trademark Reference.

sher Scientific* accumet* Excel XL15 pH/mV/Temperature Meter

curate measurements, easy-to-use touchscreen design

ple but powerful; large, color, touchscreen display

XL15 pH/mV/Temperature Meter

uto-calibrates with up to 6 pH iffers from three standard sets nd 15 different buffers; custom iffers and manual calibration

H mode accepts standard or sher Scientific accuFet* nonglass ectrodes

'indows CE*-driven, full-color uchscreen provides unmatched ase of use in operation and setup

plified operation and top performance

'indows CE operating system makes operation intuitive from the first me you turn it on

asily recognizable icons help you get to setup or measurement modes uickly, for both everyday measurements and more complicated routines

-function pH and mV capabilities

tended pH range: -2 to +20pH; reads to 0.1mV for accurate titrations nd ORP readings, too

djustable resolution to 0.001pH

alibration at up to six points for exceptional accuracy of ±0.002pH

ensive GLP capabilities

istomizable printer/computer output

00-reading datalog capability

int Setup lets you print exactly what you want, when you want

splays time in 12- or 24-hour format, date in U.S. or international rmat

SB port lets you connect keyboard, mouse, or trackball for meter control, connect printer or PC for data output

S-232 serial port lets you connect to PCs or printers without USB, or ees computer USB port while using the meter is in use

hernet allows unmatched LAN connectivity and even allows software ograde s

DERING INFORMATION:

able ABS plastic housing resists dust and chemicals. Dimensions: . × 6½W × 3½"H (23.5 × 16.5 × 9cm). Net weight 2¾ lb. (1.2kg)

LUDES:

ter Kit/pH package includes meter, Fisher Scientific accuCap* bination pH electrode (13-620-130), ATC probe (13-620-19), electrode port arm and bracket, 110/220V power supply and operation manual.

ter Only package includes meter, electrode support arm and bracket, /220V power supply and operation manual.

n package is also available with a Certificate of Traceability to NIST* ndards.

WARRANTY:

Three-year warranty. Model XL15 is warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years. Call your Fisher Scientific Customer Service Representative for full details.

Package	Electrode(s)	Cat. No.	Each
Meter Only	None	**13-636-XL15A**	1259.54
Meter Only with NIST-Traceable Certificate	None	**13-636-XL15AC**	1372.04
Meter Kit/pH	Fisher Scientific accuCap 13-620-130; ATC Probe 13-620-19	**13-636-XL15**	1432.30
Meter Kit/pH with NIST-Traceable Certificate	Fisher Scientific accuCap 13-620-130; ATC Probe 13-620-19	**13-636-XL15C**	1544.80

SPECIFICATIONS

Model	XL15
Display	640 × 480 pixel STN Color LCD; 4½W × 6"H (11 × 15cm). Measurement Characters: ¾"H (1.9cm). Other Data: ¼"H (0.6cm)
Keypad/Controls	Touch Screen and External Keypad
Menus	Microsoft* Windows CE* pull-down menu options; extensive Help screens
Remote Access	Parameters remotely controllable and monitorable via Windows CE Remote Application Interface
Connectivity	USB Host/Device 1.1 connectivity to printer, PC, bar code scanner, mouse, keypad. Ethernet port connectivity to LAN
Data Memory	Internal: 1000 Data points. External: USB storage device connectivity, SDCARD Memory Interface ver 1.0, RS-232 connectivity
Data Output	On Stable; via timer; Manual
Special Features	User upgradable software (Flash ROM via Ethernet). Powerup self test; error messages; alarm, real-time clock/calendar
pH Mode	
Range/Resolution	-2.000 to +20.002pH/0.1, 0.01, 0.001pH; auto lock
Relative Accuracy	±0.002pH ±1 least significant digit
Buffer Recognition	Manual or Automatic: U.S., Euro, NIST or Custom
Calibration Points	1 to 6
FET Electrode Input	Yes
mV Mode	
Range/Resolution	0 to ±2000mV (absolute or relative)/0.1mV
Relative Accuracy	±0.2mV ±1 least significant digit
Temperature Mode	
Range/Resolution	-10.0° to +110.0°C (14° to 230°F)/0.1°C
Relative Accuracy	±0.2°C
Compensation	Automatic or Manual
Inputs	1 BNC/pin, 1 ATC, 1 DIN (FET)
Outputs	USB Host/Device, Bidirectional RS-232, Ethernet, SDCARD
Electrical Requirements	110V/220V 50/60Hz

Fisher Scientific* accumet* AB15+ Basic and BioBasic pH/mV/°C Meters

Compact, affordable pH/mV meters

Intuitive operation and improved user interface

- Large LCD guides user with plain-language prompts and error messages
- Display indicators keep you apprised of menu choice, measuring units, buffers standardized (in pH mode), and temperature
- No cryptic icons to learn: prompts and status/error messages are displayed in plain language
- Store up to 100 datapoints in nonvolatile memory
- Selectable resolution to 0.1, 0.01 or 0.001pH
- Five-button, soft-key input simplifies data entry
- Internal diagnostics
- Automatic recognition of 15 buffers and five-point calibration
- BNC and reference pin inputs, input for Fisher Scientific accuFet* Electrode, ATC probe input, plus bidirectional RS-232 port

ORDERING INFORMATION:

Dimensions: 7½L × 5½W × 3¼"H (19 × 14 × 8cm). Net weight: 1⅞ lb. (0.8kg).

INCLUDES:

Meter Only package includes meter, power supply, electrode support (13-637-671), and operation manual.

Meter Kit package includes items above plus an Fisher Scientific accumet liquid-filled, glass body single-junction combination pH Ag/AgCl Electrode (13-620-285) and separate ATC probe (13-620-19).

BioBasic Meter Kit package for the life science lab includes meter, power supply, manual, electrode support and Fisher Scientific accuTupH* rugged bulb, liquid-filled, glass body double-junction combination pH Combination Electrode (13-620-183) and separate ATC probe (13-620-19).

NOTE:

Each package is also available with a Certificate of Traceability to NIST* Standards.

WARRANTY:

Three-year warranty. Model AB15+ is warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years. Call your Fisher Scientific Customer Service Representative for full details.

13-636-AB15P

Package	Electrode(s)	Cat. No.	
Meter Only	None	**13-636-AB15PA**	93
Meter Only with NIST-Traceable Certificate	None	**13-636-15PAC**	106
Meter Kit/pH	Fisher Scientific accumet Ag/AgCl pH Combination Electrode 13-620-285; ATC Probe 13-620-19	**13-636-AB15P**	111
Meter Kit/pH with NIST-Traceable Certificate	Fisher Scientific accumet Ag/AgCl pH Combination Electrode 13-620-285; ATC Probe 13-620-19	**13-636-AB15PC**	122
Meter BioBasic Kit	Fisher Scientific accumet Double-Junction pH Combination Electrode 13-620-183; ATC Probe 13-620-19	**13-636-AB15PB**	114
Meter BioBasic Kit with NIST-Traceable Certificate	Fisher Scientific accumet Double-Junction pH Combination Electrode 13-620-183; ATC Probe 13-620-19	**13-636-15PBC**	126

SPECIFICATIONS

Model	**AB15+**
pH Mode	
Range	-1.999 to +19.999pH
Resolution	0.1/0.01/0.001pH
Relative Accuracy	±0.002pH ±1 least significant digit
mV Mode	
Range	0 to ±1800mV (abs. or rel.)
Resolution	0.1mV
Relative Accuracy	±0.2mV
Temperature Mode	
Range	-5.0° to +105.0°C (23° to 221°F)
Resolution	0.1°C
Relative Accuracy	±0.2°C

*Trademark. See Trademark Reference.

Prices subject to change.

her Scientific* accumet* AB15 Basic and BioBasic pH/mV/°C Meters

ple, menu-guided operation in an affordable pH/mV Meter

vide easy operation, accuracy, and affordability

- rge LCD guides user with plain-language prompts and error messages
- splay indicators keep you apprised of menu choice, measuring units, ffers standardized (in pH mode), and temperature
- cryptic icons to learn: prompts and status/error messages are played in plain language
- ore up to 50 datapoints in nonvolatile memory
- werful pH mode offers selectable resolution to 0.01pH
- tomatic recognition of 15 buffers and five-point calibration
- C and reference pin electrode inputs, ATC probe input, and input for her Scientific accuFet* electrode

ERING INFORMATION:

ensions: 7½L × 5½W × 3¼"H (19 × 14 × 8cm). Net weight: 1⅞ lb. g).

LUDES:

er Only package includes meter, power supply, electrode support 37-671), and operation manual.

er Kit package includes items above plus a Fisher Scientific accumet l-filled, glass body combination pH Ag/AgCl Electrode (13-620-285) separate ATC probe (13-620-19).

Basic Meter Kit package for the life science lab includes meter, er supply, manual, electrode support and Fisher Scientific accuTupH* ed bulb, glass body combination pH Double-Junction Electrode 20-183) and separate ATC probe (13-620-19).

: Packages are also available with a Certificate of Traceability to * Standards.

RRANTY:

e-year warranty. Model AB15 is warranted to the end user to be free defects in materials and workmanship under normal use for a period ree years. Call your Fisher Scientific Customer Service Representative ull details.

13-636-AB15

13-636-AB15

Package	Electrodes	Cat. No.	Each
Meter Only	None	**13-636-AB15A**	664.46
Meter Kit/pH	Fisher Scientific accumet Ag/AgCl pH Combination Electrode 13-620-285; ATC Probe 13-620-19	**13-636-AB15**	839.65
Meter Kit/pH with NIST-Traceable Certificate	Fisher Scientific accumet Ag/AgCl pH Combination Electrode 13-620-285; ATC Probe 13-620-19	**13-636-AB15C**	963.89
Meter BioBasic Kit	Fisher Scientific accumet Double-Junction pH Combination Electrode 13-620-183; ATC Probe 13-620-19	**13-636-AB15B**	875.89
Meter BioBasic Kit with NIST-Traceable Certificate	Fisher Scientific accumet Double-Junction pH Combination Electrode 13-620-183; ATC Probe 13-620-19	**13-636-B15BC**	988.39

SPECIFICATIONS

Model	AB15
pH Mode	
Range	-1.99 to +19.99pH
Resolution	0.1/0.01pH
Relative Accuracy	±0.01pH
mV Mode	
Range	0 to ±1800mV (abs. or rel.)
Resolution	0.1mV
Relative Accuracy	±0.2mV
Temperature Mode	
Range	-5.0° to +105.0°C (23° to 221°F)
Resolution	0.1°C
Relative Accuracy	±0.5°C

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Thermo Scientific* Orion* 5-Star pH/ISE/ORP/DO/Conductivity Benchtop Meter

Multiparameter measurements in one compact unit

13-642-058

Highly versatile, competitively priced, multi-channel, multi-display meter is easy to set up and use while delivering exceptional, long-life performance for demanding R&D and QA/QC applications.

- Easy to use three-button function
- Bright LCD display with ready indication
- Convenient built-in Quick-Start Guide
- Stores up to 10 methods with password protection
- BNC pH, ORP and ISE connectors and mini DIN locking DO and conductivity probe connectors
- Automatic or manual pH calibration with one to five calibration points; auto-buffer-recognition of NIST/US and DIN buffers
- Uses polarographic DO probe
- Automatic or manual temperature compensation
- Manual ISE calibration with 1 to 5 calibration points
- Point-to-point ISE calibration, high and low concentration range; automatic blank correction
- Automatic barometric pressure compensation
- Auto-read/hold function
- Star Navigator 21 software for Windows* provides 21 CFR Part 11, GLP IQ/OQ documentation; see p.1301 for details
- Advanced self-tests on meter operation, self-diagnostics
- 200 point datalogger, downloadable to printer or computer via RS232 connection; optional USB interface

INCLUDES:

Meter Only package includes meter, power supply, Star Navigator 21 software, instructions.

Meter Kit includes meter; Thermo Scientific Ross* Ultra* pH Electrode; Epoxy ATC probe with 3.5m cable; conductivity cell with 1.5m cable; conductivity/TDS standard 1413µS/cm, 5 x 60mL; electrode storage solution, 475mL; DO Probe with 3m cable; overflow funnel with stirbox; Probe Service Kit; DO calibration sleeve; power supply; Star Navigator 21 software, instructions.

COMPLIANCE:

21 CFR Part 11 Compliant.

Model	**5-Star pH/ORP/DO/ISE/Conductivity Benchtop Meter**
pH Mode	
Range	-2.000 to +19.999pH or 0 to 14pH in aqueous solutions
Resolution	0.1/0.01/0.001pH
Relative Accuracy	±0.002pH
ISE mode	
Range	0 to 19,900
Units	M, mg/L, %, ppb, or no units
Relative Accuracy	±0.2mV or 0.05%, whichever is greater
Resolution	1, 2, or 3 significant digits
mV/RmV	±1999.9mV
DO Mode	
Range	0.00 to 90.00mg/L; 0.0 to 600% saturation
Relative Accuracy	±0.2mg/L
Salinity Factor	0 to 45ppt
Barometric Pressure	450-850mmHg
Conductivity Mode	
Range	0.000 to 3000mS/cm, auto resolution, cell constant dependent
Resistivity	0.0001 to 100megohms/cm
Salinity	0.01 to 80.0ppt NaCl equivalent
TDS	0 to 19,999mg/L
Reference Temperature	15°, 20° or 25°(default), autoranging
Cell Constant	0.001 to 199.9
ORP Mode	
Range	±1999.9mV/RmV
Resolution	±0.1mV
Relative Accuracy	±0.2mV or 0.05%, whichever is greater
Temperature Mode	-5° to +105°C
Meter Only	
Mfr. No.	1119000
Cat. No.	**13-642-058**
Each	1290.00
Meter Kit	
Mfr. No.	1119001
Cat. No.	**13-645-110**
Each	2548.00

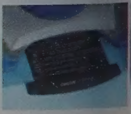
Thermo Scientific* Orion* 4-Star pH/ISE Benchtop Meter

Reliable measurement of pH and ionic concentrations for quality control and general analysis applications.

13-642-055

Features dual channels and dual display. Easy to set up and use, provides reliable measurements for water testing applications.

- Displays pH or ISE reading and temperature measurements
- Simultaneously accepts ISFET (Ion Selective Field Effect Transistor) electrodes
- Automatic or manual pH calibration with one to five calibration points
- Manual ISE calibration with one to five calibration points; point-to-point ISE calibration, high and low concentration range; automatic blank correction
- Easy to use three-button function
- Bright LCD display with ready indication
- Convenient built-in Quick-Start Guide
- Full complement of GLP-related features
- Stores up to 10 password-protected methods, including setup parameters and calibrations; download additional methods and software updates via the Web
- 200 point datalogger, downloadable to printer or computer via an optional RS-232 or USB interface accessory
- SMART STABILITY* and SMART AVERAGING* functions automatically optimize accuracy, precision and response time
- IP-54 dustproof and splashproof


Quick-Start Guide

Contd. on next page.

*Trademark. See Trademark Reference.

Prices subject to change.

rmo Scientific* Orion* 4-Star pH/ISE Benchtop Meter, Contd.

NC pH electrode and ISE connectors
dvanced self-tests on meter operation, self-diagnostics
niversal power adapter for worldwide operation
ecognizes NIST, US and manual buffers

LUDES:

ter Only option includes meter, instructions.

ter Kit option includes meter; Thermo Scientific Ross* Ultra* pH trode; Epoxy ATC probe; 475mL each of pH 4.01, 7.00 and 10.01 buffers pH Electrode Storage Solution; benchtop electrode stand; instructions.

RRANTY:

e-year replacement

MPLIANCE:

sted. CE marked. CSA and FCC Class A limits approved. 21 CFR Part 11 pliant.

lel	**4-Star pH/ISE Benchtop Meter**
Mode	
nge	-2.000 to +19.999pH or 0 to 14pH in aqueous solutions
solution	0.1/0.01/0.001pH
lative Accuracy	±0.002pH
mode	
nge	0 to 19,900
its	M, mg/L, %, ppb, or no units
lative Accuracy	±0.2mV or 0.05%, whichever is greater
solution	1, 2, or 3 significant digits
RmV	±1999.9mV
perature Mode	
nge	-5° to +105°C
solution	0.1°C up to 99.9°C, 1.0 over 99.9°C
lative Accuracy	±0.1°, ±1 digit
mpensation Range	-5° to +105°C
er Only	
No.	1115000
No.	**13-642-055**
h	1080.00
er Kit	
No.	1115001
No.	**13-645-107**
h	1308.00

LOOKING FOR THERMO SCIENTIFIC* ORION* 5-STAR APPLICATION KITS?

Application Kits include meter, solutions, all necessary accessories plus Technical Notes for each procedure, such as Conductivity of Water USP 645. For more information,

Visit www.fishersci.com and search for Orion Application kits

Thermo Scientific* Orion* Star Navigator 21* Software

Complete software for 21 CFR Part 11 compliance

Data collection software allows users to uphold FDA guidelines and to effectively operate to varying specification requirements world-wide. Provides significant savings in time and productivity associated with data management.

13-645-127 (meter and computer not included)

User friendly Windows* interface

- Easy to install and operate
- Complete control from your computer
- Quick operation of custom Star Series methods
- Convenient report templates

Electronic records and signatures

- Enables paperless record system
- Framework for compliance reporting
- Tools for 21 CFR Part 11 compliance
- Saves time and money in the approval process

Convenient, thorough documentation

- Unique user name and password provided by operating system for each user
- Account lockout after predetermined number of unsuccessful login attempts
- Automatic password protected screensavers
- Complex password capabilities
- Audit Trail records important events; lists user, date, time, severity of event, application, description and details
- All changes are recorded with a digital signature; users must provide reasons for changes
- Data Security: data cannot be removed or altered in an uncontrolled manner; database can only be accessed with proper tools and user rights; data integrity is verified each time data is accessed

ORDERING INFORMATION:

For use with the Thermo Scientific Orion 3, 4 and 5-Star electrochemistry meters; compatible with Windows XP* operating system.

Packaged as a standalone accessory product; also included in:

- 5-Star Benchtop Meter packages
- 5-Star Benchtop Meter Wastewater Sulfide Application Kit (13-643-022)
- 5-Star Benchtop Meter Wastewater Conductivity USP 645 Application Kit (13-643-060)
- 4-Star Benchtop Meter pH of Tablets Application Kit (13-643-062)
- 4-Star Benchtop Meter pH of Capsules Application Kit (13-643-063)
- 4-Star Benchtop Meter pH of Ointments Application Kit (13-643-064)

INCLUDES:

CD and instructions

Mfr. No.	Cat. No.	Each
1010007	**13-645-127**	516.94

Thermo Scientific* Orion* 4-Star pH/Conductivity Benchtop Meter

Dual channel, dual display pH/conductivity meter for reliable, accurate measurements in soil and water analysis applications

- Displays pH or conductivity reading and temperature measurements simultaneously
- Provides accurate pH,conductivity, resistivity, salinity, TDS and temperature measurements
- Accepts both four-electrode and two-electrode cells
- Automatic or manual pH calibration with one to five calibration points
- Auto-buffer-recognition of DIN and NIST/US buffers
- Automatic or manual temperature compensation
- Easy to use three-button function
- Bright LCD display with ready indication
- Convenient built-in Quick-Start Guide
- Meets all U.S. Pharmacopeia (USP) requirements
- Full complement of GLP-related features
- Stores up to 10 password protected methods, including setup parameters and calibrations; download additional methods and software updates via the Web
- 200 point datalogger, downloadable to printer or computer via an optional RS-232 or USB interface accessory
- SMART STABILITY* and SMART AVERAGING* functions automatically optimize accuracy, precision and response time
- IP-54 dustproof and splashproof
- BNC pH electrode and Mini-DIN locking conductivity probe connectors
- Advanced self-tests on meter operation, self-diagnostics
- Universal power adapter for worldwide operation
- Recognizes NIST, US and manual buffers

INCLUDES:

Meter Only option includes meter and instruction manual.

Meter Kit option includes meter; Thermo Scientific Triode* pH/ATC electrode; 475mL each of pH 4.01, 7.00 and 10.01 buffers and pH Electrode Storage Solution; conductivity cell and 1.5m cable; conductivity/TDS standard 1413µS/cm, 5 x 60mL; benchtop electrode stand; instruction manual.

WARRANTY:

Three-year replacement

COMPLIANCE:

CE, CSA, UL and FCC Class A limits approved

13-642-057

Model	4-Star pH/Conductivity Benchtop Meter
pH Mode	
Range	-2.000 to +19.999pH or 0 to 14pH in aqueous solutions
Resolution	0.1/0.01/0.001pH
Relative Accuracy	±0.002pH
Conductivity Mode	
Range	0.000 to 3000mS/cm, auto resolution, cell constant depende
Resistivity	0.0001 to 100megohms/cm
Salinity	0.01 to 80.0ppt NaCl equivalent
TDS	0 to 19,999
Reference Temperature	15°, 20° or 25°(default), autoranging
Cell Constant	0.001 to 199.9
Temperature Mode	
Range	-5° to +105°C
Resolution	0.1°C up to 99.9°C, 1.0 over 99.9°C
Relative Accuracy	±0.1°, ±1 digit
Compensation	-5° to +105°C
Meter Only	
Mfr. No.	1117000
Cat. No.	**13-642-057**
Each	1187.00
Meter Kit	
Mfr. No.	1117001
Cat. No.	**13-645-109**
Each	1798.00

Thermo Scientific* Orion* 4-Star pH/DO Benchtop Meter

Measure pH and DO in a compact, ergonomic package

13-642-056

- Easy to set up and use, provides reliable measurements for water testing applications.
- Dual channel measurement and simultaneous display of pH and dissolved oxygen
- Displays pH, DO and temperature measurements simultaneously; display DO concentration or percent DO Saturation
- Allows meter and probe calibration to a Winkler Titration for correlation of direct Biological Oxygen Demand (BOD) readings to Winkler methods
- Easy-to-use three-button function
- Bright LCD display with ready indication
- Convenient built-in Quick-Start Guide
- Enhanced stability indicators, salinity correction and automatic barometric pressure compensation
- Full complement of GLP-related features
- Stores up to 10 password protected methods, including setup parameters and calibrations; download additional methods and software updates via the Web
- 200 point datalogger, downloadable to printer or computer via an optiona RS-232 or USB interface accessory
- SMART STABILITY* and SMART AVERAGING* functions automatically optimize accuracy, precision and response time
- IP-54 dustproof and splashproof
- Mini-DIN locking probe connectors
- Advanced self-tests on meter operation, self-diagnostics
- Universal power adapter for worldwide operation
- Selectable one to five point pH calibration to ensure accuracy
- Automatic or manual pH calibration at one to five points
- Recognizes NIST*, US and manual buffers

Contd. on next page

rmo Scientific* Orion* 4-Star pH/DO Benchtop Meter, Contd.

LUDES:

ter Only option includes meter and instruction manual.

ter Kit option includes meter, Thermo Scientific Ross* Ultra* pH elec-
e, Epoxy ATC probe, 475mL each of pH 4.01, 7.00 and 10.01 buffers and
Electrode Storage Solution; DO probe with 3m cable, overflow funnel
stribox, probe service kit, DO calibration sleeve, benchtop electrode
d, instruction manual.

RRANTY:

e-year replacement

MPLIANCE:

isted. CE marked and FCC Class A limits approved.

Model	**4-Star pH/Dissolved Oxygen Benchtop Meter**
pH Mode	
Range	-2.000 to +19.999pH
Resolution	0.1/0.01/0.001pH
Relative Accuracy	±0.002pH
Dissolved Oxygen Mode	
Range	0.00 to 90.00 mg/L; 0.0 to 600%
Resolution	0.01mg/L; 0.1%
Relative Accuracy	0.2 mg/L
Temperature Mode	
Range	-5° to +105°C
Resolution	0.1°C up to 99.9°C, 1.0 over 99.9°C
Relative Accuracy	±0.1°, ±1 digit
Compensation Range	-5° to +105°C
Meter Only	
Mfr. No.	1116000
Cat. No.	**13-642-056**
Each	1116.63
Meter Kit	
Mfr. No.	1116001
Cat. No.	**13-645-108**
Each	1762.00

ermo Scientific* Orion* 3-Star Benchtop pH Meter

dicated measurement of pH and temperature in a compact, ergonomic package

able, accurate pH measurement for any general laboratory or QC
ication.

splays pH or mV and temperature measurements simultaneously

ight LCD display with ready indication

onvenient built-in Quick-Start Guide

utomatic or manual calibration with 1 to 5 calibration points

uto-Buffer Recognition (ABR) of DIN and NIST/US buffers

ffers a full complement of GLP-related features

ores up to 10 password protected methods, including setup parameters
d calibrations; download additional methods and software updates via
e Web

0 point datalogger, downloadable to printer or computer via an optional
S-232 or USB interface accessory

MART STABILITY* and SMART AVERAGING* functions automatically
ptimize accuracy, precision and response time

54 dustproof and splashproof

ini-DIN locking probe connectors

dvanced self-tests on meter operation, self-diagnostics

niversal power adapter for worldwide operation

LUDES:

ter Only option includes meter and instruction manual.

ter Kit without Electrode option includes meter, benchtop electrode
d, instruction manual.

ter Kit with pH/ATC Electrrode option includes meter, pH/ATC
bination Electrode 13-642-252, 475ml (1 qt.) each of ph 4.01, 7.00 and
1 buffers, electrode storage solution, benchtop electrode stand,
ruction manual.

ter Kit with Ross* Electrode option includes meter, Thermo Scientific
s* Ultra* pH Combination Electrode, Epoxy ATC probe, 475ml (1 qt.)
 of ph 4.01, 7.00 and 10.01 buffers, electrode storage solution, bench-
electrode stand, instruction manual.

WARRANTY:

Three-year replacement

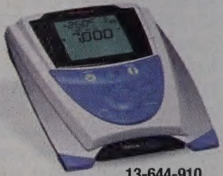
13-642-052

Model	**3-Star pH Benchtop Meter**
pH Mode	
Range	-2.000 to +19.999pH
Resolution	0.1/0.01/0.001pH
Relative Accuracy	±0.002pH
mV Mode	
Range	±1999.9mV
Resolution	0.1mV
Temperature Mode	
Range	-5° to +105°C
Resolution	0.1°C up to 99.9°C, 1.0 over 99.9°C
Relative Accuracy	±0.1°, ±1 digit
Meter Only	
Mfr. No.	1112000
Cat. No.	**13-642-052**
Each	556.62
Meter Kit without Electrode	
Mfr. No.	1112002
Cat. No.	**13-645-101**
Each	590.77
Meter Kit with pH/ATC Electrode	
Mfr. No.	1112001
Cat. No.	**13-645-100**
Each	787.85
Meter Kit with Thermo Scientific Ross Electrode	
Mfr. No.	1112003
Cat. No.	**13-645-102**
Each	884.92

Thermo Scientific* Orion* 2-Star Benchtop pH Meter

Value priced pH Meter for general purpose applications

Economical, accurate measurement of pH, mV and temperature



13-644-910

- Displays pH or mV and temperature measurements simultaneously, plus calibration points and electrode condition
- Bright LCD display with ready indicator
- Simple push button keypad
- Convenient built-in Quick-Start Guide pulls out for rapid setup and sample measurement
- Automatic or manual calibration with 1 to 3 calibration points
- Auto buffer recognition, including pH 1.68, 6.86, 9.18 and 12.46 buffers; USA and EURO buffers; custom buffers
- Electrode condition indicator monitors electrode slope
- Smart Stability and Smart Averaging for faster response time, better accuracy and precision without user intervention
- GLP electrode verification
- Stores up to 50 datapoints, including calibrations, with time/date stamp
- IP54 dustproof and splashproof
- Mini-DIN locking probe connectors
- Advanced self-tests on meter operation, self-diagnostics
- Universal power adapter for worldwide operation

INCLUDES:

Meter Only option includes meter and instruction manual.

Meter Kit option includes meter, electrode(s) specified in ordering table, pH 4.01, 7.00 and 10.01 buffers, universal AC power supply, instruction manual.

Meter/Electrode Package option includes meter, electrode(s) specified in ordering table, universal AC power supply, instruction manual.

Meter/Electrode,Stand Package option includes meter, electrode(s) specified in ordering table, benchtop electrode stand, universal AC power supply, instruction manual.

WARRANTY:

Three-year replacement

Model	2-Star Benchtip pH/mV/Temperature Meter
pH Mode	
Range	0.000 to 14.000pH
Resolution	0.001/0.01/0.1pH
Relative Accuracy	±0.002pH
Calibration Points	1, 2 or 3
mV Mode	
Range	±1999.9mV
Resolution	0.1mV
Relative Accuracy	±0.2mV or 0.05% of reading, whichever is greater
Temperature Mode	
Range	-5.0 to +105.0°C
Resolution	0.1° up to 99.9°C, 1.0° over 99.9°C
Relative Accuracy	±0.1°C
Compensation	Auto or manulal
Inputs	BNC, locking ATC Mini-DIN
Data Output	RS232
Electrical Requirements	Universal AC line voltage or 4 "AA" batteries

Packaging Option	Thermo Scientific Orion Probe(s) Included	Mfr. No.	Cat. No.	Eac
Meter Only	None included	1111000	**13-644-910**	425.8
Meter Kit	9157BNMD Refillable Epoxy Body pH/ATC Triode (13-642-252)	1111001	**13-642-604**	690.0
Meter/Electrode Package	9165BNWP Epoxy Sure-Flow pH combination electrode (13-642-253)	1111101	**13-644-911**	540.0
	9157BNMD Refillable Epoxy Body pH/ATC Triode (13-642-252)	1111102	**13-644-913**	610.0
	9156AWP Aquapro Gel-filled Epoxy Body Double-Junction pH combination electrode	1111103	**13-644-915**	704.0
	9142BN Glass pH combination electrode (13-644-905), 927007MD stainless-steel ATC probe (13-642-259)	1111104	**13-644-917**	530.0
	9142BN Glass pH combination electrode (13-644-905)	1111105	**13-644-951**	514.0
	9145BN Gel-filled Epoxy Body pH combination electrode	1111106	**13-644-953**	494.9
	9107BNMD Gel-filled Epoxy Body pH/ATC Triode (13-642-250)	1111107	**13-644-955**	532.0
	9107APMD Gel-filled Epoxy Body Dpouble-Junction pH/ATC Triode	1111108	**13-644-957**	600.0
Meter/Electrode/ Stand Package	9165BNWP Epoxy Sure-Flow pH combination electrode (13-642-253)	1111201	**13-644-912**	590.0
	9157BNMD Refillable Epoxy Body pH/ATC Triode (13-642-252)	1111202	**13-644-914**	660.0
	9156AWP Aquapro Gel-filled Epoxy Body Double-Junction pH combination electrode	1111203	**13-644-916**	754.0
	9142BN Glass pH combination electrode (13-644-905), 927007MD stainless-steel ATC probe (13-642-259)	1111204	**13-644-918**	580.0
	9142BN Glass pH combination electrode (13-644-905)	1111205	**13-644-952**	564.0
	9145BN Gel-filled Epoxy Body pH combination electrode	1111206	**13-644-954**	544.0
	9107BNMD Gel-filled Epoxy Body pH/ATC Triode (13-642-250)	1111207	**13-644-956**	582.0
	9107APMD Gel-filled Epoxy Body Double-Junction pH/ATC Triode	1111208	**13-644-958**	650.0

*Trademark. See Trademark Reference.

hermo Scientific* Orion* Microprocessor pH/mV/ISE Benchtop Meters

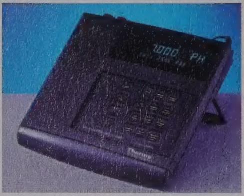
irect ISE and pH readout
imultaneous data/temperature display
tability display
electable resolution
bsolute and relative mV modes
djustable isopotential point
H autocalibration; calibrate at up to five pH/ISE points
uto blank correction
Manual or automatic temperature compensation with optional probe
elf-diagnostics and user prompts
hoice of printout options at ready, at timed intervals, or on demand
Memory storage for calibration and data points
wo-way RS-232-C port
lodel 920Aplus* permits incremental ISE techniques; gives tempera-ure-corrected ISE readout and electrode identification; has calibration dit function for changing one or more calibration points without doing a omplete calibration
lodels 920Aplus and 720Aplus provide dual inputs, store two sets f calibration in memory; have recorder and KF outputs and numeric eypad; have autobuffer recognition and 25-point datalogging including me/date of last calibration; have vacuum fluorescent display

INCLUDES:

- **Meter Only** option has meter, electrode holder, instruction manual, cord and plug for required voltage
- **Meter/Electrode** option includes meter, Thermo Scientific Ross* Ultra combination electrode, instruction manual, cord and plug

WARRANTY:

Three-year warranty.



13-641-224

Key to Special Features:

B. Two-color VF display; 17-character prompt line
C. Custom liquid crystal display
D. Dual inputs for simultaneous measurements
E. Incremental ISE analyses
F. Autoblank correction with 3 or more ISE calibration points
G. O_2/BOD measurement with optional probe (13-299-85)
I. Autocalibrates with 5 pH buffers
J. Timer; high/low alarm limits
K. Internal logging of 25 data points
L. User-friendly prompts and self-diagnostic programming
M. Three print options: when electrode signal is stable; at selected timer interval; on demand
N. Works with optional Model 900A printer, available separately

del	**920Aplus**	**720Aplus**
nge/Resolution		
H	-2 to +19.999/0.001†	-2 to +19.999/0.001†
n	0.0001 to 19,900	0.0001 to 19,900
V	0 to ±1600.0/0.1‡	0 to ±1600.0/0.1‡
emperature	-5° to +105°C/0.1°C	-5° to +105°C/0.1°C
elative Accuracy	±0.002pH/0.5% (ISE)/0.2mV or 0.05% ΔE/1.0°C	±0.002pH/0.5% (ISE)/0.2mV or 0.05% ΔE/1.0°C
epeatability	±0.002pH/1 LSD (ISE)/0.2mV/1.0°C	±0.002pH/1 LSD (ISE)/0.2mV/1.0°C
tability	±50µV/°C	±50µV/°C
uts	2 each BNC/Pin; 1 ATC	2 each BNC/Pin; 1 ATC
tputs	Bidirectional RS-232-C, Recorder, Karl Fischer	Bidirectional RS-232-C, Recorder, Karl Fischer
nensions (L × W × H)	7⅝ × 9⅛ × 2" (19 × 23 × 5cm)	7⅝ × 9⅛ × 2" (19 × 23 × 5cm)
ecial Features	B, D, E, F, G, I, J, K, L, M, N	B, D, F, G, I, J, K, L, M, N
ter Only		
ctrical Requirements	For 110VAC	For 110VAC
. No.	0920A3	0720A3
. No.	**13-641-224**	**13-641-242**
h	2583.00	1550.00
ter/Electrode		
ctrical Requirements	For 110VAC	For 110VAC
. No.	0920A0	0720A0
. No.	**13-641-255**	**13-641-253**
h	2583.00	1677.00
ctrical Requirements	For 220VAC	For 220VAC
. No.	0920A1	0720A1
. No.	**13-641-256**	**13-641-254**
h	2555.94	1677.00

lectable to 0.1, 0.01 or 0.001pH.
elative mV range: 0 to ±1999.9mV.

Thermo Scientific* Orion* LogR* Benchtop pH/pX Meters

Patented digital circuitry provides ATC with or without an ATC probe

Multiparameter meters with large LED provide easy, accurate measurement and are easy to operate.

13-642-553

- Use your favorite BNC-plug electrodes—without an ATC probe—and get temperature-compensated pH measurements
- Use the Thermo Scientific PerpHecT* Combination Electrode included with the meter for enhanced pH and ATC accuracy
- Use a separate ATC probe and the electrode of your choice when temperature accuracy to 0.1°C is critical
- Rugged tactile keypads
- Autocalibration
- Autorecognition of pH buffers 4.01, 7.00 and 10.01 (or three user-defined values)
- Selectable pH resolution
- Automatic slope calculation and display
- Include Thermo Scientific PerpHecT Combination Electrode, power supply and manual
- **Model 320** adds mV mode, enhanced eight-button keypad, and simultaneous display of pH or mV and °C
- **Models 350 and 370** offer simultaneous display of pH, absolute or relative mV, and °C; GLPcheck* electrode data printout; and Ross Resolution* to 0.001pH units
- **Model 370** features Concentration mode for ISE measurements that allows two-point calibration and direct measurement in a variety of concentration units

ORDERING INFORMATION:

All meters accept PerpHecT electrodes, and most other pH electrodes with BNC plug or adapter. All meters also accept separate ATC probe for critical temperature measurement.

Model	**Orion 320**	**Orion 350**	**Orion 370**
Range/Resolution			
pH	0.00 to 14.00pH/selectable to 0.01pH	0.000 to 14.000pH/selectable to 0.001pH	0.000 to 14.000pH/selectable to 0.001pH
Ion Concentration	----	----	0.00 to 19,900/0.000
mV	±1999mV/1.0mV	±1999.9mV/0.1mV	±1999.9mV/0.1mV
Temperature	0° to 100°C/0.1°C	0° to 100°C/0.1°C	0° to 100°C/0.1°C
Relative Accuracy	±0.02pH/0.5°C[1]/0.1°C[2]	±0.005pH/0.5°C[1]/0.1°C[2]	±0.005pH, 0.005% ISE/0.5°C[1]/0.1°C[2]
Inputs	BNC/ATC/Pin	BNC/ATC/Pin	BNC/ATC/Pin
Outputs	----	RS-232-C/Recorder	RS-232-C/Recorder
Dimensions (L × W × H)	9 × 8 × 2" (23 × 20 × 5cm)	9 × 8 × 2" (23 × 20 × 5cm)	9 × 8 × 2" (23 × 20 × 5cm)
Net Weight	3 lb. (1.4kg)	3 lb. (1.4kg)	3 lb. (1.4kg)
Meter with Ag/AgCl Probe			
Electrical Reqts.	115V 60Hz	115V 60Hz	115V 60Hz
Orion No.	032000	035000	037000
Cat. No.	**13-642-626**[3]	**13-642-628**[4]	**13-642-553**[4]
Each	867.00	1164.00	1277.00
Meter with Aquaprobe			
Electrical Reqts.	115V 60Hz	----	----
Orion No.	032004	----	----
Cat. No.	**13-640-4**	----	----
Each	872.81	----	----
Meter with Ross Probe*			
Electrical Reqts.	115V 60Hz	115V 60Hz	----
Orion No.	0320A0	0350A0	----
Cat. No.	**13-642-627**[5]	**13-642-629**[6]	----
Each	923.00	1230.00	----
Meter with GLP Package[7]			
Electrical Reqts.	----	115V 60Hz	115V 60Hz
Orion No.	----	0350G0	0370G0
Cat. No.	----	**13-642-630**[6]	**13-642-631**[6]
Each	----	1694.00	1814.00

[1] *Used with Thermo Scientific PerpHecT electrode, no ATC probe.*

[2] *Used with Thermo Scientific Orion Triode* or with separate ATC probe and combination electrode.*

[3] *Comes with Thermo Scientific PerpHecT Glass Combination Electrode.*

[4] *Comes with Thermo Scientific PerpHecT Glass Sure-Flow* Combination Electrode.*

[5] *Comes with Thermo Scientific PerpHecT Ross Glass Combination Electrode.*

[6] *Comes with Thermo Scientific PerpHecT Ross Glass Sure-Flow Combination Electrode.*

[7] *Includes Printer and Cable to connect to PerpHecT meter.*

ıkton* pH 1100 and pH 2100 Benchtop Meters

th many customizable features and a user-friendly interface

ıly versatile benchtop meters ideal for many applications including er quality, soil, and geological testing, food processing, and metal ing—suitable for most ASTM* and EPA test procedures. Measure and mV plus temperature in °C or °F; pH 2100 also features ion centration mode with direct display of values in ppm, ppt, %, or er units.

- acklit, alphanumeric two-line and 20-character LCD display
- electable manual or automatic temperature compensation
- gh/low setpoint alarms signal when readings are outside preset limits
- noose up to five pH calibration points, or select from four standard uffer sets (USA, NIST*, Bf1, Bf2)
- larm signals when meter recalibration is needed—user-defined interval nsures regularly scheduled maintenance for ISO and GLP compliance
- utomatically calculate and display electrode slope/offset and check ectrode quality
- dvanced setup mode allows customization of meter parameters
- tore up to 100 readings either manually or on programmable intervals
- uilt-in real-time clock with timer and alarm stamps stored data with ate and time—suitable for GLP documentation
- leters can also store data of last calibration with date and time
- S-232 output enables meters to send data to printer or PC on e-programmed intervals, when reading is stable, or manually ith a push of a button
- cluded Windows*-compatible software allows user to download ata in a format easy for import into spreadsheet programs
- ompact housing maximizes valuable benchtop space
- etachable electrode holder can be mounted to either side of meter r left- or right-handed use
- andy instruction card in storage compartment underneath meter
- lanufactured using ISO 9001: 2000-certified processes

ter includes CSA-/UL-listed 110V 50Hz and 220V 60Hz adapters, ware, and instructions.

ter Kit includes includes CSA-/UL-listed 110V 50Hz and 220V 60Hz pters, software, instructions, double-junction glass-bodied pH electrode h 3′ (0.9m) long cable (13-620-324), and stainless-steel temperature be with 3′ (0.9m) long cable (15-500-003).

DERING INFORMATION:
ıensions: 7¼L × 9¼W × 2½"H (18.3 × 23.4 × 6.4cm).

ıRRANTY:
ee years

Oakton pH 1100/2100 Series

Model	pH 1100	pH 2100
pH Mode		
Range	-1.000 to +14.000pH	-1.000 to +14.000pH
Resolution	±0.001 or ±0.01pH (selectable)	±0.001 or ±0.01pH (selectable)
Accuracy	±0.002 or ±0.01pH	±0.002 or ±0.01pH
Calibration Points	Up to five customizable calibration points, or USA (1.68, 4.01, 7.00, 10.01, 12.45), NIST (1.68, 4.01, 6.86, 9.18, 12.45), Bf1 (1.68, 4.01, 7.01, 9.18, 12.45), or Bf2 (1.68, 4.01, 6.86, 10.01, 12.45) standard buffer sets	
mV Mode		
Range	0 to ±1850 to +1850	0 to ±1850 to +1850
Resolution	0.1mV	0.1mV
Accuracy	±0.2mV	±0.2mV
Calibration	Offset up to ±150mV	Offset up to ±150mV
Temperature		
Range	-5° to +105°C (23 to 221°F)	-5° to +105°C (23 to 221°F)
Resolution	0.1°C/°F	0.1°C/°F
Accuracy	±0.5°C/±0.9°F	±0.5°C/±0.9°F
Compensation	Manual or Automatic	Manual or Automatic
Ion Concentration Mode		
Range	----	0.000 to 19,999
Resolution	----	0.001, 0.01, 0.1, or 1 (depending on resolution mode)
Accuracy	----	±0.5% of reading
Calibration	----	Up to five customizable calibration points
Meter Only		
Cat. No.	**13-620-320**	**13-620-322**
Each	639.83	931.39
Meter Kit		
Cat. No.	**13-620-321**	**13-620-323**
Each	747.63	1076.42

ACCESSORIES

Replacement Electrodes and Probes

Description	Cat. No.	Each
Glass Body, Ag/AgCl reference, Double Junction,	**13-620-324**	120.35
Stainless-Steel ATC Probe	**15-500-003**	38.19
All-in-One Single-Junction Combination pH Electrode/Temperature Probe	**15-500-016**	77.53
All-in-One Double-Junction Combination pH Electrode/Temperature Probe	**13-620-327**	115.14

pH Calibration Buffer Bottles

pH Value	Ingredients	Cat. No.	Each
1.68	Potassium chloride and hydrochloric acid	**13-300-155**	8.50
4.01	Potassium acid phthalate	**13-300-154**	8.50
7.00	Monobasic potassium phosphate and disodium phosphate	**13-300-153**	8.50
10.00	Sodium carbonate and sodium bicarbonate	**13-300-152**	8.50
12.45	Potassium chloride and sodium hydroxide	**13-300-151**	9.81

Oakton* 510 Series Benchtop Meters

Choose basic pH meter or more advanced models for biological applications, mV, ion concentration, conductivity, and TDS measurements

15-500-013

15-500-019

15-500-017

- Dual display of measured parameter with temperature reading
- Selectable automatic or manual temperature compensation (0° to 100°C)
- Hold function, ready indicator, and error messages

pH 510 Basic Benchtop Meter

- An economical benchtop pH meter
- Easy to use, ideal for students and technicians who need to take quick, accurate readings
- Three-point pH calibration
- Recorder output for hard copies of readings

pH 510 Meter and pH 510 BIO Meter

- Set up in minutes
- Memory stores up to 50 pH or mV readings with temperature (°C)
- Three-point pH calibration
- Built-in electrode holder arm holds probe firmly in place
- Recorder output for hard copies of readings

Ion 510 Meter

- Measure pH, mV, ion concentration and °C, with direct readout of ion concentration
- LCD display shows pH or mV and °C reading, or ppm and mV in ion mode
- Store up to 50 readings in memory
- Preprogrammed ion calibration points; three-point pH calibration
- Recorder output for hard copies of readings
- Built-in electrode holder arm holds probe firmly in place

pH/CON 510 Meter

- An economical way to measure pH, mV, conductivity, and TDS in the lab
- Adjustable temperature coefficient and conductivity-to-TDS conversion factor
- Advanced set-up mode lets you view calibration points, pH electrode slope and offset, and conductivity/TDS effective cell constants
- Five-point calibration for pH and either conductivity or TDS
- Built-in electrode holder arm holds probe firmly in place

INCLUDES:

pH 510 Basic Meter: Gel-filled epoxy-body electrode, 100V/220V adapters, and instructions. Electrode support arm and temperature probe not included; purchase separately. (Fisherbrand* Electrode Holder 22-286439 . ATC probe 15-500-003.)

pH 510 Meter: pH 510 meter includes All-in-One combination pH electrode/temperature probe, 100V/220V adapters, and instructions.

pH 510 BIO meter includes temperature probe and Calomel single-junction epoxy-body pH electrode—ideal for aplications with organics, proteins, metals, and Tris buffers. Also includes 100V/220V adapters, and instructions.

Ion 510 Meter: All-in-One combination pH electrode/temperature probe, 100V/220V adapters, and instructions. Ion selective electrode not included; accepts most ion selective electrodes with BNC connector (order separately).

pH/CON 510 Meter: All-in-One combination pH electrode/temperature probe; conductivity/TDS/temperature probe, K = 1.0; 100V/220V adapters; and instructions.

ORDERING INFORMATION:

Electrical Requirements (all meters): 9V, 0.5A with AC adapter (included); 110V 60Hz or 220V 50Hz. Dimensions (all meters): 9 × 7 × 2" (23 × 18 × 6cm).

Contd. on next page.

*Trademark. See Trademark Reference.

ton* 510 Series Benchtop Meters, Contd.

lel	pH 510 Basic	pH 510 and 510 BIO	Ion 510	pH/CON 510
les	pH, mV, °C	pH, mV, °C	pH, mV, ion concentration (ppm), °C	pH, mV, conductivity, TDS, °C, °F
Mode				
nge	0.00 to 14.00pH	0.00 to 14.00pH	1.00 to 14.00pH	-2.00 TO +16.00pH
solution	0.01pH	0.01pH	0.01pH	0.01pH
lative Accuracy	±0.01pH	±0.01pH	±0.01pH	±0.01pH
Mode				
nge	0 to ±2000mV	0 to ±2000mV	0 to ±2000mV	0 to ±600mV
solution	0.1mV, 0 to ±199.9mV; 1mV, outside this range	±0.1mV, 0 to ±199.9mV; ±1mV, outside this range	±0.1mV, 0 to ±199.9mV; ±1mV, outside this range	±0.1mV, 0 to ±199.9mV; ±1mV, outside this range
lative Accuracy	±0.2mV, 0 to ±199.9mV; ±2mV, outside this range	±0.2mV, 0 to ±199.9mV; ±2mV, outside this range	±0.2mV, 0 to ±199.9mV; ±2mV, outside this range	±0.2mV, 0 to ±199.9mV; ±2mV, outside this range
perature Mode				
nge	0.0° to 100.0°C	0.0° to 100.0°C	0.0° to 100.0°C	0.0° to 100.0°C; 32.0° to 212.0°F
solution	0.1°C	0.1°C	0.1°C	0.1°C; 0.1°F
lative Accuracy	±0.3°C	±0.3°C	±0.3°C	±0.5°C; ±0.5°F
Concentration Mode				
nge	----	----	0.01 to 1999ppm	----
solution	----	----	0.01, 0.1, 1ppm	----
lative Accuracy	----	----	±0.5% of reading	----
ductivity Mode				
nge	----	----	----	0.00 to 199.9mS (five ranges)
solution	----	----	----	0.01, 0.1, 1µS; 0.01, 0.1mS
lative Accuracy	----	----	----	±1% full scale
Mode				
nge	----	----	----	0.00 to 200ppt (six ranges)
solution	----	----	----	0.01, 0.1, 1ppm; 0.01, 0.1, 1ppt
lative Accuracy	----	----	----	±1% full scale
lel	pH 510 Basic	pH 510	Ion 510	pH/CON 510
No.	WD-35619-04	WD-35619-13	WD-35619-21	WD-35610-11
No.	**15-500-018**	**15-500-013**	**15-500-019**	**15-500-017**
h	538.31	610.25	713.75	889.36
lel	----	pH 510 BIO	----	----
No.	----	WD-35619-14	----	----
No.	----	**15-500-014**	----	----
h	----	637.35	----	----

ACCESSORIES

Replacement Probes

Description	For Meters	Cat. No.	Each
All-in-One Single-Junction Combination pH Electrode/Temperature Probe	pH 5, pH 6, pH 510, Ion 510, pH 1100, pH 2100	**15-500-016**	77.53
Epoxy body, Calomel reference, Single Junction, Gel filled, sealed	pH 510 BIO	**15-500-015**[†]	67.39

WARNING

[†] The products indicated contain mercury. Don't put products containing mercury in the trash. Products containing mercury are to be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

Mettler Toledo* Seven Series Multifunction pH Meters

Innovative design and impressive functionality

Covering pH/ISFET, conductivity, ion concentration, ORP/mV, and temperature measurements, the Seven series includes both basic instruments (SevenEasy series) and advanced instruments (SevenMulti series).

- Expansion units for pH/mV/ORP, conductivity, ISFET, and ISE measurement provide flexibility
- Add a second channel without buying a new meter
- Turn a pH meter into a conductivity meter or vice versa
- Add USB and TTL communication micro modules to enable connection of peripherals such as sample changers and bar code readers, as well as integration into computer networks
- Each model is offered as a basic package and as a "kit," i.e., including sensors and accessories (K catalog number). See below and on facing page for for complete product and ordering information for models, expansion units and micro modules.

WARRANTY:
Two-year warranty on meters; one-year warranty on probes

SevenMulti Series Meters

Upgradable modular systems

Modular design enhances instrument versatility. Optional plug-in expansion modules can be changed quickly and easily, providing expanded functionality with a single meter. Units automatically recognize the module in use. Each meter includes at least one module.

- Back-lit display and text menus with online Help
- Simultaneous pH or mV and temperature display; relative mV available
- Limited ISE function to determine ion concentration
- Up to nine-point pH calibration with auto buffer recognition; five selectable sets, plus user-definable set of up to nine buffers
- Graphic display of calibration curve and last 25 readings with high/low limits; calibration reminder
- Selectable resolution: 0.001/0.01/0.1pH
- Manual -30° to +130°C or automatic -5° to +130°C temperature compensation with Pt1000 or 30k NTC thermistor
- Temperature reference is selectable at 20°C or 25°C with choice of linear, nonlinear, or no correction
- Acquire results using auto-read, manual-read, or timed-read functions
- Built-in self-diagnostics
- Stores up to 10 calibrations, 10 methods, 1000 measurement/temperature data pairs; includes clock to save last 1000 data pairs with date and time; power loss memory protection
- Secure data management; PIN code password protection prevents unauthorized deletion of calibration/measurement data; full GLP menu
- BNC, Mini-DIN, conductivity, 2mm pin, ATC, and power inputs
- Bidirectional RS-232 interface and analog output (pH/mV and temperature); RS-232 interface supports bar code reader for sample or sensor ID
- Optional USB and TTL communication modules; TTL output can be sent to sample changer or titrator (one-channel measurement only)

INCLUDES:
Basic Instrument Package includes meter, select modules, electrode support arm, power supply, and instructions. Kit adds in-use cover, electrode, and calibration sachets. See ordering chart on following page for specific components.

SevenMulti Model S40 High Performance pH/mV/°C Meter

- Standard modes: pH, temperature, mV

Standard features: all features as described above.

Optional modular upgrades: ion, conductivity, ISFET, or dual-channel pH.

01-913-80

SevenMulti S47 Dual-Channel pH/Conductivity Meter

- Standard modes: pH, temperature, mV, conductivity

Standard features: Dual-channel model with all features of model S40, plus conductivity and custom buffer capability. USP-compliant.

Optional modular upgrade: ion, ISFET

01-913-80

SevenMulti Model S80 High Performance ISE/pH/mV/ORP Meter

- Dual-channel model for direct ISE/pH readout

01-913-81

SevenEasy Model S20 Basic pH/mV/°C Meter

Offers precise electrochemical measuring technology, innovative design, and easy operation.

- Large LCD displays pH, mV and temperature values, the buffers being used, and the electrode condition
- Offers two- and three-point calibration with automatic buffer recognition
- Selectable automatic (ATC) or manual temperature compensation
- Automatic endpoint feature improves reproducibility of readings
- Built-in self-diagnostics ensure proper operation
- RS-232 data transfer port included
- Battery operation available (four "AA" batteries required)

Model S20 (basic instrument package) includes meter, electrode support arm, power supply, and instruction book. **Model S20K Kit** adds InLab* 413 electrode and buffer sachets. See ordering chart on following page.

*Trademark. See Trademark Reference.

ttler Toledo* Seven Series Ordering Information

ies	SevenMulti			SevenEasy
lels	**S40 and S40K**	**S47 and S47K**	**S80 and S80K**	**S20 and S20K**
Mode				
nge/Resolution	-2.000 to 19.999/0.001/0.01/0.1	-2.000 to 19.999/0.001/0.01/0.1	-2.000 to 19.999/0.001/0.01/0.1	0.00 to 14.00/0.01
lative Accuracy	±0.001	±0.001	±0.001	±0.01
libration Points	Up to 9	Up to 9	Up to 9	Up to 3
Mode				
nge	0 to ±1999mV/0.1mV	0 to ±1999mV/0.1mV	0 to ±1999mV/0.1mV	±1999mV/1mV
solute/Relative	Yes/Yes	Yes/Yes	Yes/Yes	Yes/No
lative Accuracy	±2	±2	±1	±1
perature Mode				
nge/Resolution	-30° to +130°C/0.1°C	-30° to +130°C/0.1°C	-30° to +130°C/0.1°C	-5° to +105°C/0.1°C
lative Accuracy	±0.1°C	±0.1°C	±0.1°C	±0.5°C
Concentration Mode				
nge/Resolution	Optional	Optional	1.00×10^{-9} to $9.99 \times 10^{+9}$/±1 LSD	----
lative Accuracy	----	----	±0.5%	----
libration Points	----	----	Up to 9	----
ductivity Mode				
nge/Resolution	----	0.01µS/cm to 1000mS/cm/0.01	----	----
lative Accuracy	----	±0.5%	----	----
ll Constant	----	0.000001 to $200cm^{-1}$	----	----
Mode				
nge/Resolution	Optional	0.1mg/L to 1000g/L/0.01	Optional	----
lative Accuracy	----	±0.5%	----	----
sistivity Range	----	0.00 to 20megohms·cm	----	----
linity Range	Optional	0.00 to 80.00ppt	Optional	----
uts	BNC, 2mm pin, ATC, PT1000, power	BNC, mini-DIN, 2mm pin, ATC, PT1000, power	Power, 2mm pin, and two of each: BNC, ATC, PT1000	BNC, ATC, power
puts	RS-232	RS-232	RS-232	RS-232
nory	1000/channel	1000/channel	1000 per channel	----
ensions	7 × 9½" × 2½" (18 × 24 × 6.5cm)			7 × 7 × 2½" (18 × 18 × 6.5cm)
ic Instrument	Includes meter, modules (below) electrode support arm, power supply and instructions			
mes with module(s)	pH	pH, conductivity	Two pH/ISE	N/A
. No.	S40	S47	S80	S20
. No.	**01-913-808**	**01-913-804**	**01-913-810**	**01-913-806**
h	1220.00	1700.00	1920.00	670.00
	Includes basic package (above); adds in-use cover, electrode (below) and calibration sachets			
mes with electrode(s)	InLab* 413	InLab 413, InLab 730	InLab 413	InLab 413
. No.	S40K	S47K	S80K	S20K
. No.	**01-913-809**	**01-913-805**	**01-913-811**	**01-913-807**
h	1380.00	2040.00	2080.00	820.00

ACCESSORIES

Expansion Units

Color-coded for easy identification

- **Expansion Units for S40, S80, and S47** convert meter to dual-channel instrument add capability for pH/mV, conductivity, ISFET, or ISE measurement
- **USB communication micro module for S40, S80, and S47** provides meter with an additional interface

Description	Mfr. No.	Cat. No.	Each
pH/mV Expansion Unit	51302821	**01-920-136**	510.00
Conductivity Expansion Unit	51302822	**01-920-137**	815.00
ISE/pH/mV/ORP Expansion Unit	51302823	**01-920-138**	1015.00
ISFET Expansion Unit	51302824	**01-920-139**	275.00
USB Communication Module	51302826	**01-920-141**	112.00

Accessories

For use with Mettler Toledo* SevenEasy and SevenMulti Series meters

Description	Mfr. No.	Cat. No.	Each
Electrode Stand	51302820	**01-920-135**	152.00
Power Adapter, US	51302871	**01-920-142**	67.00
SevenMulti Protective Cover	51302819	**01-920-134**	36.15

PORTABLE METERS

Selection Guide: Fisher Scientific* accumet* AP70 and AP80 Series Portable Meters

Model	**AP71 pH/mV/°C**	**AP72 pH/mV/°C**	**AP84 pH/°C/Dissolved Oxygen**	**AP85 pH/°C/Conductivity/TDS**
	(p. 1315)	(p. 1315)	(p. 1314)	(p. 1313)
Display	Dual readout LCD; 2¼" × 1½" (5.7 × 3.8cm). Measurement Characters: ⅜"H (0.4cm). Other Data: 5⁄16"H (0.3cm)			
Keypad/Controls	8-button	9-button	9-button	8-button
Special Features	Automatic endpoint recognition; selectable buffer sets; auto shutoff; Hold; Ready indicator; error messages	Automatic endpoint recognition; selectable buffer sets; auto shutoff; Hold; Ready indicator; error messages	Displays Probe diagnostics; auto shutoff; Hold function; Ready indicator	Displays calibration points. slope/effective cell constant, auto endpoint; auto shutoff, Hold function, Ready indicator, error messages
Waterproofing	IP-67	IP-67	IP-67	IP-67
pH Mode				
Range	-2.00 to +16.00pH	-2.00 to +16.00pH	-2.00 to +16.00pH	-2.00 to +16.00pH
Resolution	0.01pH	0.01pH	0.01pH	0.01pH
Relative Accuracy	±0.01pH	±0.01pH	±0.01pH	±0.01pH
Auto Buffer Recognition	NIST*, DIN, and standard US buffers	NIST, DIN, and standard US buffers	NIST, DIN, and standard US buffers	NIST, DIN, and standard US buffers
Calibration Points	5 points (pH 1.68, 4.01, 7.01, 10.01, 12.45)	6 points (select from 3 sets: USA: pH 1.68; 4; 7; 10; 12.45. NIST: pH 1.68; 4.01; 6.86; 9.18; 12.45. DIN: pH 1.09; 2.06; 4.65; 6.79; 9.23; 12.75)	5 points (pH 1.68; 4.01; 7.00; 10.00, 12.45)	5 points (pH 1.68, 4.01, 7.00, 10.00, 12.45)
mV Mode				
Range	0 to ±2000mV	0 to ±2000mV	----	----
Resolution	0.1mV from 0 to ±400mV; 1mV beyond	0.1mV from 0 to ±400mV; 1mV beyond	----	----
Relative Accuracy	±0.2mV from 0 to ±400mV; ±2mV beyond	±0.2mV from 0 to ±400mV; ±2mV beyond	----	----
Temperature Mode				
Range	0.0° to 100.0°C	0.0° to 100.0°C; 32.0° to 212.0°F	0.0° to 50.0°C (32° to 122°F)	0.0° to 100.0°C/32° to 212°F
Resolution	0.1°C	0.1°C; 0.1°F	0.1°C; 0.1°F	0.1°C; 0.1°F
Relative Accuracy	±0.5°C	±0.5°C; ±0.5°F	±0.3°C; ±0.5°F	±0.5°C; ±0.5°F
Temperature Compensation	Automatic or manual	Automatic or manual	Automatic; 0° to 50°C (32° to 122°F)	Manual or Automatic
Conductivity Mode				
Range	----	----	----	0.00µS to 199.9mS (5 ranges)
Resolution	----	----	----	0.01/0.1/1µS; 0.01/0.1mS
Relative Accuracy	----	----	----	±1% full scale
Calibration	----	----	----	Up to 5 points
TDS Mode				
Range	----	----	----	0.00ppm to 200ppt (6 ranges)
Resolution	----	----	----	0.01/0.1/1ppm; 0.01/0.1/1ppt
Relative Accuracy	----	----	----	±1% full scale
Calibration	----	----	----	Up to 5 points
DO Mode				
Range	----	----	0.00 to 20.00mg/L (ppm); 0.0 to 200.0% saturation	----
Resolution	----	----	0.01mg/L (ppm); 0.1% saturation	----
Relative Accuracy	----	----	±1.5% full scale	----
Calibration	----	----	One or two points	----
Inputs	BNC, Mini-phone ATC	BNC, Mini-phone ATC	6-pin, BNC	6-pin, BNC, ATC
Input Impedance	>10¹² ohms	>10¹² ohms	>10¹² ohms	>10¹² ohms
Electrical Requirements	4 "AAA" batteries	4 "AAA" batteries	4 "AAA" batteries	4 "AAA" batteries
Dimensions L × W × H	7½ × 3¾ × 2¼" (19 × 9.5 × 5.7cm)	7½ × 3¾ × 2¼" (19 × 9.5 × 5.7cm)	7½ × 3¾ × 2¼" (19 × 9.5 × 5.7cm)	7½ × 3¾ × 2¼" (19 × 9.5 × 5.7cm)
Net Weight	1.0 lb. (0.5kg)	1.0 lb. (0.5kg)	1.0 lb. (0.5kg)	1.0 lb. (0.5kg)
Meter Only:	**13-636-AP71A**	**13-636-AP72A**	**13-636-AP84A**	**13-636-AP85A**
Meter Kit:	**13-636-AP71**	**13-636-AP72**	**13-636-AP84**	**13-636-AP85**

*Trademark. See Trademark Reference.

sher Scientific* accumet* AP85 Portable Waterproof pH/Conductivity Meter

rable, waterproof, dustproof—ideal for rough field applications

asures pH, conductivity and TDS temperature. Switches between conductivity and TDS with the ss of a button. Dual-display LCD ws all parameters with tempera- ; recalls previous calibration ts too.

dvanced set-up mode for istomizing meter parameters

electable automatic endpoint eezes reading immediately ter stabilization

OLD button freezes reading

elf-diagnostic: meter indicates hen it is ready to operate; ror messages alert operator problems

anufacturered using ISO 9001: 00- certified processes

13-636-AP85A

verful pH Mode

ecalls pH electrode slope and offset

as five-point calibration with automatic buffer recognition

nductivity and TDS Modes

ecalls and customizes effective cell constants for each range

utoranging for conductivity across five ranges

utoranging for TDS across six ranges

ve-point calibration for ±1% full-scale accuracy

xible Temperature Mode

elect temperature in °C or °F

et coefficient from 0 to 10% for accurate compensation in most any solution

anual or automatic temperature compensation

LUDES:

ter/Probe package includes meter, 1.0cm^{-1} conductivity/temperature stic-bodied probe with 3' (0.9m) long cable (13-620-AP54), All-in-One temperature probe (13-620-AP55), four "AAA" batteries, and instruction ual.

ter Kit package includes meter, 1.0cm^{-1} conductivity/temperature stic-bodied probe with 3' (0.9m) long cable (13-620-AP54), All-in-One temperature probe (13-620-AP55), 4.00 and 7.00pH buffer solutions, 3µS conductivity calibration solution, sample bottle, four "AAA" eries, instruction manual, and hard plastic carrying case.

RRANTY:

ee-year warranty: AP85 is warranted to the end user to be free from ects in materials and workmanship under normal use for a period of e years. Call your Fisher Scientific Customer Service Representative for details.

Model	**AP85**
pH Mode	
Range	-2.00 to +16.00pH
Resolution	0.01pH
Relative Accuracy	±0.01pH
Calibration	5 points (pH 1.68, 4.01, 7.00, 10.00, 12.45)
Conductivity Mode	
Range	0.00 to 19.99µS, 0.0 to 199.9µS, 0 to 1999µS, 0.00 to 19.99mS, 0.0 to 199.9mS
Resolution	0.01µS, 0.1µS, 1µS, 0.01mS, 0.1mS
Relative Accuracy	±1% of FS
Cell Constant	1.0cm^{-1}
TDS Mode	
Range	0.00 to 9.99ppm, 10.0 to 99.9ppm, 100 to 999ppm, 1.00 to 9.99ppt, 10.0 to 99.9ppt, 100 to 200ppt
Resolution	0.01ppm, 0.1ppm, 1ppm, 0.01ppt, 0.1ppt, 1ppt
Relative Accuracy	±1% of FS
Temperature Mode	
Range	0.0° to 100.0°C; 32° to 212°F
Resolution	0.1°C; 0.1°F
Relative Accuracy	±0.5°C; ±0.5°F
Compensation	Manual or Automatic
Display	Backlit dual-display LCD
Special Features	Displays calibration points, slope/effective cell constant, auto endpoint; auto shutoff, Hold function, Ready indicator, error messages
Dimensions (L x W x H)	7½ × 3¾ × 2¼" (19 × 9.5 × 5.7cm)
Shipping Weight	1.4 lb. (0.6kg)
Meter/Probe	
Cat. No.	**13-636-AP85A**
Each	945.79
Meter Kit	
Cat. No.	**13-636-AP85**
Each	1021.69

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

ACCESSORIES

Replacement Probes for AP85 Meter

Description	Cat. No.	Each
Conductivity/TDS/Temperature Probe	**13-620-AP54**	246.36
pH/ATC Probe	**13-620-AP55**	184.00

Fisher Scientific* accumet* Waterproof AP84 Portable pH/Dissolved Oxygen Meter

Wide-range pH and rapid DO readings

13-636-AP84

13-636-AP84A

Model	AP84
DO Mode	
Range	0.00 to 20.00mg/L (ppm); 0.0 to 200.0% saturation
Resolution	0.01mg/L (ppm); 0.1% saturation
Relative Accuracy	±1.5% full scale
Calibration	One or two points
pH Mode	
Range	-2.00 to +16.00pH
Resolution	0.01pH
Relative Accuracy	±0.01pH
Calibration	5 points (pH 1.68, 4.01, 7.00, 10.00, 12.45)
Temperature Mode	
Range	0.0° to 50.0°C; 32° to 122°F
Resolution	0.1°C; 0.1°F
Relative Accuracy	±0.3°C; ±0.5°F
Compensation	Automatic; 0° to 50°C; 32° to 122°F
Display	Backlit dual display LCD
Special Features	Displays Probe diagnostics; auto shutoff; Hold function; Ready indicator
Dimensions (L x W x H)	7½ × 3¾ × 2¼" (19 × 9.5 × 5.7cm)
Shipping Weight	1.4 lb. (0.6kg)
Meter/Probe	
Cat. No.	**13-636-AP84A**
Each	1293.91
Meter Kit	
Cat. No.	**13-636-AP84**
Each	1417.11

Powerful pH Mode:

- Five-point pH calibration with auto-buffer recognition
- Ranges fron -2.00 to +16.00pH, ±0.01pH
- Automatic temperature compensation for DO and pH measurements

Versatile Dissolved Oxygen capabilities:

- Galvanic probe design for immediate DO measurements in mg/L (ppm) or % saturation,
- On entering salinity and pressure values, meter automatically calculates barometric pressure and salinity offset values
- Ensures high accuracy with independent 100%, zero and offset adjustment capabilities

Extra-convenient operation:

- Adjustable backlit display, ideal for taking readings in dark areas
- Displays probe diagnostics, slope, offset and mV values
- Features HOLD function, Ready indicator, and auto shutoff
- IP67 waterproof construction: floatable, washable, easy to keep clean

INCLUDES:

Meter/Probe package includes pH electrode, dissolved oxygen/temperature probe, electrolyte solution, instructions and four "AAA" batteries. **Meter Kit** package includes meter, pH electrode, DO probe, pH buffer solutions, electrolyte solution, two replacement membrane caps, 50mL each pH 4 and pH 7 standard solutions, rinse bottle and carrying case.

WARRANTY:

Three-Year Warranty. AP84 meter is warranted to the end user to be free from defects in materials and workmanship under normal use for a period of three years. Call your Fisher Scientific Customer Service Representative for full details.

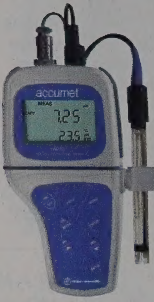
ACCESSORIES

Fisher Scientific* accumet* Replacement Probes for AP84 DO/pH Meter

Description	For	Cat. No.	Each
pH Combination Electrode	AP84	**13-620-AP56**	143.74
DO/Temperature Probe	AP84, AP74	**15-500-034**	421.72

her Scientific* accumet* Waterproof AP71 and AP72 pH/mV/ mperature Meters

anced pH meters in waterproof, dustproof housing



13-636-AP72A

- gonomic design fits comfortably in e hand
- ctrode bracket positions electrode one-handed operation
- vanced setup mode lets user stomize meter parameters and eck electrode slope and offset assure electrode accuracy
- ad pH, absolute mV or relative mV d temperature
- curacy of ±0.01pH and ±0.02mV
- anual or automatic temperature ntrol
- e-point push-button pH calibration d automatic buffer recognition 1.68, 4.01, 7.01, 10.01, 12.45)
- LD function, Ready indicator and automatic shut-off function
- anufactured using ISO 9001: 2000-certified processes

del AP71 Features

- ad pH, mV or relative mV and temperature in °C
- emory allows storage and recall of up to 16 readings with rresponding temperatures

del AP72 Adds

- panded memory for up to 50 readings
- al-time clock that stamps stored data and calibration data with te and time ·
- -point push-button pH calibration and automatic buffer recognition
- lectable buffer sets (NIST*, DIN and Standard US)
- lectable automatic endpoint freezes reading when stable
- ads temperature in °F or °C
- atures date/time stamp, expanded memory

UDES:

er Only package includes meter, batteries and instructions.

er Kit package includes meter, pH/ATC electrode, pH calibration rs, sample bottle, and hard plastic carrying case.

RRANTY:

e-Year warranty. AP71 and AP72 meters are warranted to the end to be free from defects in materials and workmanship under normal or a period of three years. Call your Fisher Scientific Customer Service esentative for full details.

TIFICATIONS:

rs are CE marked

13-636-AP71

Model	AP71	AP72
pH Mode		
Range	-2.00 to +16.00pH	-2.00 to +16.00pH
Resolution	0.01pH	0.01pH
Relative Accuracy	±0.01pH	±0.01pH
Calibration	5 points (pH 1.68, 4.01, 7.01, 10.01, 12.45)	6 points (select from 3 sets: USA: pH 1.68, 4, 7, 10, 12.45; NIST: pH 1.68, 4.01, 6.86, 9.18, 12.45; DIN: pH 1.09, 2.06, 4.65, 6.79, 9.23, 12.75)
mV Mode		
Range	0 to ±2000mV	0 to ±2000mV
Resolution	0.1mV from 0 to ±400mV; 1mV beyond	0.1mV from 0 to ±400mV; 1mV beyond
Relative Accuracy	±0.2mV from 0 to ±400mV; ±2mV beyond	±0.2mV from 0 to ±400mV; ±2mV beyond
Calibration	Offset up to ±150mV	Offset up to ±150mV
Temperature Mode		
Range	0.0° to 100.0°C	0.0° to 100.0°C; 32.0° to 212.0°F
Resolution	0.1°C	0.1°C; 0.1°F
Relative Accuracy	±0.5°C	±0.5°C; ±0.5°F
Compensation	Automatic or manual	Automatic or manual
Real Time Clock	----	Stamps calibration data and stored data with time and date
Memory Function	16 readings with temperatures	50 readings with temperatures
Display	Dual LCD	Dual LCD
Special Features	Automatic buffer recognition; auto shut-off; Hold; Ready indicator; error messages	Automatic endpoint recognition; selectable buffer sets; auto shutoff; Hold; Ready indicator; error messages
Dimensions (L × W × H)	7½ × 3¾ × 2¼" (19 × 9.5 × 5.7cm)	7½ × 3¾ × 2¼" (19 × 9.5 × 5.7cm)
Shipping Weight	1.4 lb. (0.6kg)	1.4 lb. (0.6kg)
Meter Only		
Cat. No.	**13-636-AP71A**	**13-636-AP72A**
Each	583.83	648.05
Meter with Kit		
Cat. No.	**13-636-AP71**	**13-636-AP72**
Each	677.24	741.45

Fisher Scientific* accumet* AP60 Series Portable Meters

Rugged, accurate meters can be held and operated with one hand

Small enough to fit in a shirt pocket

- Five pH calibration points
- Waterproof to IP67 standards
- Choose the AP61 for pH-only measurements, the AP62 for pH/mV or the AP63 for pH, mV, or ion applications
- Trim shape and wraparound rubberized grips make these meters comfortable to hold

Six-button soft-key entry

- Lets you scroll through menu options with ease
- pH mode features selectable resolution to 0.01, automatic recognition of five U.S. buffers and five-point calibration
- In ion mode, the AP63 lets you standardize with five of ten standard values (0.1, 0.5, 1, 2, 5, 10, 50, 100, 500, 1000)
- Automatic Temperature Ccompensation when used with an ATC probe; otherwise assumes a temperature of 25°C (77°F)
- Press AUTO to lock on stable pH measurement or toggle for continuous read
- Onscreen prompts, stable-reading indicator and electrode error message for accurate results

Waterproof to a depth of 3¼ ft. and floatable

- BNC and ATC inputs
- ABS plastic housing with sealed keypad
- LCD is 1¾W × 2½"H (4.4 × 6.4cm)
- Operate on 9V battery or with optional adapter

INCLUDES:

Meter-Only package includes meter, 9V battery and operating manual.

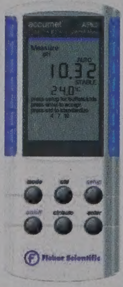
Meter Kit package adds Fisher Scientific accumet liquid-filled,polymer-body combination pH/ATC Ag/AgCl Electrode (13-620-AP50, below), operating manual and hard plastic Carrying Case (13-636-AP69) with fill solution and four buffer bottles.

WARRANTY:

Two-Year Warranty AP60 Series Models are warranted to the end user to be free from defects in materials and workmanship under normal use for a period of two years. Call your Fisher Scientific Customer Service Representative for full details.

accumet
Measure
pH
7.14
STABLE
20.6°C
mode
cal
setup
on/off
clr/auto
enter
Fisher Scientific

13-636-AP61



13-636-AP62

accumet
Measure
ION
107.1
STABLE
22.2°C
mode
cal
setup
on/off
clr/auto
enter
Fisher Scientific

13-636-AP63

Model	AP63	AP62	AP61
pH Mode			
Range	-1.99 to +19.99pH	-1.99 to +19.99pH	-1.99 to +19.99pH
Resolution	0.1, 0.01pH	0.1, 0.01pH	0.1, 0.01pH
Relative Accuracy	±0.01pH	±0.01pH	±0.01pH
mV Mode			
Range	0 to ±999mV	0 to ±999mV	----
Resolution	0.1mV	1mV	----
Relative Accuracy	±0.1mV	±0.1mV	----
Temperature Mode			
Range	-5° to +100°C	-5° to +100°C	-5° to +100°C
Resolution	0.1°C	0.1°C	0.1°C
Relative Accuracy	±0.3°C	±0.3°C	±0.3°C
Ion Mode			
Range	1×10^{-3} to 9.99×10^{4}	----	----
Resolution	0.1 units	----	----
Relative Accuracy	±0.17n%†	----	----
Meter Only			
Cat. No.	**13-636-AP63A**	**13-636-AP62A**	**13-636-AP61A**
Each	844.10	609.98	486.74
Meter Kit			
Cat. No.	**13-636-AP63**	**13-636-AP62**	**13-636-AP61**
Each	948.88	708.57	585.34

† *n = number of electrons exchanged in electrode reaction process.*

ACCESSORIES

Fisher Scientific* accumet* pH/ATC Electrodes for AP60 Series Meters

Combination electrodes with built-in ATC probe

- Choice of liquid-filled or gel-filled models, Ag/AgCl or Calomel, single or double junction
- All have BNC/Mini-Phone waterproof connectors for AP60 Series portable models
- 0 to 14pH range
- 0 to 100°C temperature range
- Length, 102mm; diameter, 10mm

13-620-AP50

Description	Contains Mercury	Cat. No.	Each
Liquid-filled Polymer Body			
Single-junction Ag/AgCl	No	**13-620-AP50**	169.09
Single-junction calomel†	Yes	**13-620-AP51**	176.68
Gel-filled Epoxy Body			
Double junction Ag/AgCl	No	**13-620-AP52**	299.06

WARNING

† The product indicated contain mercury. Don't put products containing mercury in the trash. Products containing mercury are to be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

*Trademark. See Trademark Reference.

Prices subject to change.

ermo Scientific* Orion* 5-Star pH/ISE/ORP/DO/Conductivity Portable Meter

e-parameter measurements in one handheld unit

13-642-065

erproof, battery-operated
)O/ISE/conductivity meter stands
) the most demanding R&D and
)C applications and delivers over
) hours of continuous operation

sy to use 3-button function

lanced comfortable handling

CFR Part 11 Compliant

ight LCD display with ready
dication

ores up to 10 methods with
ssword protection

IC pH, ORP and ISE connectors
d Mini-DIN locking DO and con-
ctivity probe connectors

tomatic or manual pH calibration with 1 to 5 calibration points;
to-buffer-recognition of NIST*/US and DIN buffers

es polarographic DO probe

tomatic or manual temperature compensation

anual ISE calibration with 1 to 5 calibration points

int-to-point ISE calibration, high and low concentration range;
tomatic blank correction

tomatic barometric pressure compensation

to-read/hold function; GLP IQ/OQ documentation included

lvanced self-tests on meter operation, self-diagnostics

0 point datalogger, downloadable to printer or computer via
-232 connection; optional USB interface

LUDES:

er Only package includes meter, power supply, instructions.

er Kit includes meter; low maintenance Epoxy pH/ATC
mo Scientific Triode* with 3m cable (13-642-222), conductivity
(13-642-226), conductivity/TDS standard 1413µS/cm, 5x60mL;
uffers, electrode storage solution, 475mL; DO Probe (13-642-232),
e Service Kit, DO calibration sleeve, Thermo Scientific* Orion*
Navigator 21 Software, instructions.

RRANTY:

e-year replacement

IPLIANCE:

sted. CE marked. CSA and FCC Class A limits approved.

Model	**5-Star pH/ISE/ORP/DO/Conductivity Portable Meter**
pH Mode	
Range	-2.000 to +19.999pH or 0 to 14pH in aqueous solutions
Resolution	0.1/0.01/0.001pH
Relative Accuracy	±0.002pH
ISE mode	
Range	0 to 19,900
Units	M, mg/L, %, ppb, or no units
Relative Accuracy	±0.2mV or 0.05%, whichever is greater
Resolution	1, 2, or 3 significant digits
mV/RmV	±1999.9mV
DO Mode	
Range	0.00 to 90.00mg/L; 0.0 to 600% saturation
Relative Accuracy	±0.2mg/L
Salinity Factor	0 to 45ppt
Barometric Pressure	450-850mmHg
Conductivity Mode	
Range	0.000 to 3000mS/cm, auto resolution, cell constant dependent
Resistivity	0.0001 to 100megohms/cm
Salinity	0.01 to 80.0ppt NaCl equivalent
TDS	0 to 19,999
Reference Temperature	15°, 20° or 25°(default), autoranging
Cell Constant	0.001 to 199.9
ORP Mode	
Range	0 to ±1999.9mV/RmV
Resolution	±0.1mV
Relative Accuracy	±0.2mV or 0.05%, whichever is greater
Temperature Mode	-5° to +105°C
Meter Only	
Mfr. No.	1219000
Cat. No.	**13-642-065**
Each	1191.00
Meter Kit	
Mfr. No.	1219001
Cat. No.	**13-645-120**
Each	2606.00

Thermo Scientific* Orion* 5-Star pH/ORP/DO/Conductivity Portable Meter

Five-parameter measurements in one handheld unit

Waterproof, battery-operated pH/ORP/DO/Conductivity meter stands up to the most demanding R&D and QA/QC applications and delivers over 2000 hours of continuous operation.

13-645-400

- IP67 waterproof
- Easy to use three-button function
- Balanced comfortable handling
- 21 CFR Part 11 Compliant
- Bright LCD display with ready indication
- Stores up to 10 methods with password protection
- BNC pH, ORP and Mini-DIN locking DO and conductivity probe connectors
- Automatic or manual pH calibration with one to five calibration points; Auto-buffer-recognition of NIST*/US and DIN buffers
- Uses polarographic DO probe
- Automatic or manual temperature compensation
- Automatic barometric pressure compensation
- Auto-read/hold function; GLP IQ/OQ documentation included
- Advanced self-tests on meter operation, self-diagnostics
- 200 point datalogger, downloadable to printer or computer via RS-232 connection; optional USB interface

INCLUDES:

Meter Only package includes meter, power supply, instructions.

Meter Kit includes meter; low maintenance Epoxy pH/ATC Thermo Scientific Triode* with 3m cable (13-642-222), conductivity cell (13-642-226), conductivity/TDS standard 1413µS/cm, 5x60mL; pH buffers, electrode storage solution, 475mL; DO Probe (13-642-232), Probe Service Kit, DO calibration sleeve, Thermo Scientific Orion Star Navigator 21 Software, instructions, hard case.

WARRANTY:

Three-year replacement

COMPLIANCE:

CE marked. UL listed. CSA and FCC Class A limits approved.

Model	**5-Star pH/ORP/DO/Conductivity Portable Meter**
pH Mode	
Range	-2.000 to +19.999pH or 0 to 14pH in aqueous solutions
Resolution	0.1/0.01/0.001pH
Relative Accuracy	±0.002pH
DO Mode	
Range	0.00 to 90.00mg/L; 0.0 to 600% saturation
Relative Accuracy	±0.2mg/L
Salinity Factor	0 to 45ppt
Barometric Pressure	450-850mmHg
Conductivity Mode	
Range	0.000 to 3000mS/cm, auto resolution, cell constant dependent
Resistivity	0.0001 to 100megohms/cm
Salinity	0.01 to 80.0ppt NaCl equivalent
TDS	0 to 19,999
Reference Temperature	15°, 20° or 25°(default), autoranging
Cell Constant	0.001 to 199.9
ORP Mode	
Range	0 to ±1999.9mV/RmV
Resolution	±0.1mV
Relative Accuracy	±0.2mV or 0.05%, whichever is greater
Temperature Mode	-5° to +105°C
Meter Only	
Mfr. No.	1218000
Cat. No.	**13-645-400**
Each	1091.00
Meter Kit	
Mfr. No.	1218001
Cat. No.	**13-644-959**
Each	2442.00

ermo Scientific* Orion* 4-Star pH/ISE Portable Meter

terproof, battery-operated pH/ISE meter stands up to the most demanding quality control and ieral analysis applications

13-642-062

ures dual channels and dual lay. Easy to set up and use, ides reliable measurements for er testing applications.

splays pH or ISE reading and mperature measurements nultaneously

elivers over 2000 hours of ntinuous operation

lanced comfortable handling

cepts ISFET (Ion Selective Field fect Transistor) electrodes

tomatic or manual pH calibration th 1 to 5 calibration points

anual ISE calibration with 1 to 5 calibration points; point-to-point ISE libration, high and low concentration range; automatic blank correction

sy to use 3-button function

ight LCD display with ready indication

nvenient built-in Quick-Start Guide

ll complement of GLP-related features

ores up to 10 password protected methods, including setup parameters d calibrations; download additional methods and software updates via e Web

0 point datalogger, downloadable to printer or computer via an optional -232 or USB interface accessory

MART STABILITY* and SMART AVERAGING* functions automatically timize accuracy, precision and response time

67 waterproof: may be immersed for up to one hour with no water cursion

aterproof BBNC pH electrode and ISE connectors

lvanced self-tests on meter operation, self-diagnostics

cognizes NIST*, US and manual buffers

LUDES:

er Only option includes meter and instruction manual.

er Kit option includes meter, low maintenance Epoxy pH/ATC mo Scientific Triode* with 1.5m cable (13-642-250), 10-pack each of .01, 7.00 and 10.01 buffers, electrode stoarge solution (5 x 60mL), field case, instruction manual.

RRANTY:

e-year replacement

MPLIANCE:

arked. UL listed. CSA and FCC Class A limits approved.

Model	**4-Star pH/ISE Portable Meter**
pH Mode	
Range	-2.000 to +19.999pH or 0 to 14pH in aqueous solutions
Resolution	0.1/0.01/0.001pH
Relative Accuracy	±0.002pH
ISE mode	
Range	0 to 19,900
Units	M, mg/L, %, ppb, or no units
Relative Accuracy	±0.2mV or 0.05%, whichever is greater
Resolution	1, 2, or 3 significant digits
mV/RmV	0 to ±1999.9mV
Temperature Mode	
Range	-5° to +105°C
Resolution	0.1°C up to 99.9°C, 1.0 over 99.9°C
Relative Accuracy	±0.1°, ±1 digit
Compensation Range	-5° to +105°C
Meter Only	
Mfr. Part No.	1215000
Cat. No.	**13-642-062**
Each	844.92
Meter Kit	
Mfr. Part No.	1215001
Cat. No.	**13-645-115**
Each	999.00

LOOKING FOR THERMO SCIENTIFIC* ORION* 4-STAR APPLICATION KITS?

Application Kits (including meter and all necessary accessories and solutions) available with Thermo Scientific Orion 4-Star pH Meters include:

- ▸ Cyanide in Drinking Water
- ▸ pH of Wastewater
- ▸ ORP of Wastewater
- ▸ Sulfide in Wastewater

Check our Web site for details.

Visit www.fishersci.com and search for Orion Application Kits

Thermo Scientific* Orion* 4-Star pH/Conductivity Portable Meter

Dual channel, dual display pH/conductivity meter for reliable, accurate measurements in soil and water analysis applications

13-642-064

- Displays pH or conductivity reading and temperature measurements simultaneously
- Provides accurate pH, conductivity, resistivity, salinity, TDS and temperature measurements
- Delivers over 2000 hours of continuous operation
- Balanced comfortable handling
- Accepts both four-electrode and two-electrode cells
- Automatic or manual pH calibration with one to five calibration points
- Auto-buffer-recognition of DIN and NIST*/US buffers
- Automatic or manual temperature compensation
- Easy to use three-button function
- Bright LCD display with ready indication
- Meets all U.S. Pharmacopeia (USP) requirements
- Full complement of GLP-related features
- Stores up to 10 password protected methods, including setup parameters and calibrations; download additional methods and software updates via the Web
- 200 point datalogger, downloadable to printer or computer via an optional RS-232 or USB interface accessory
- SMART STABILITY* and SMART AVERAGING* functions automatically optimize accuracy, precision and response time
- IP67 waterproof: may be immersed for up to one hour with no water incursion
- Waterproof BNC pH electrode and Mini-DIN locking conductivity probe connectors
- Advanced self-tests on meter operation, self-diagnostics
- Recognizes NIST*, US and manual buffers

INCLUDES:

Meter Only option includes meter and instruction manual.

Meter Kit with 1.5m Cables option includes meter, low-maintenance epoxy pH/ATC Thermo Scientific Triode* with 1.5m cable (13-642-250), 10-pack each of pH 4.01, 7.00 and 10.01 buffers; conductivity cell (13-642-226) and 1.5m cable; conductivity/TDS standard 1413µS/cm, 5 × 60mL, instruction manual.

Meter Kit with 3m cables option includes meter, low-maintenance epoxy pH/ATC Thermo Scientific Triode* (13-642-222) with 3m cable, 10-pack each of pH 4.01, 7.00 and 10.01 buffers; conductivity cell (13-642-226) and 3m cable; conductivity/TDS standard 1413µS/cm, 5 × 60mL, instruction manual.

WARRANTY:

Three-year replacement

COMPLIANCE:

CE marked. UL listed. CSA and FCC Class A limits approved.

Model	4-Star pH/Conductivity Portable Meter
pH Mode	
Range	-2.000 to +19.999pH or 0 to 14pH in aqueous solutions
Resolution	0.1/0.01/0.001pH
Relative Accuracy	±0.002pH
Conductivity Mode	
Range	0.000 to 3000mS/cm, auto resolution, cell constant dependent
Resistivity	0.0001 to 100megohms/cm
Salinity	0.01 to 80.0ppt NaCl equivalent
TDS	0 to 19,999
Reference Temperature	15°, 20° or 25° (default), autoranging
Cell Constant	0.001 to 199.9
Temperature Mode	
Range	-5° to +105°C
Resolution	0.1°C up to 99.9°C, 1.0 over 99.9°C
Relative Accuracy	±0.1°, ±1 digit
Compensation	-5° to +105°C
Meter Only	
Mfr. No.	1217000
Cat. No.	**13-642-064**
Each	852.08
Meter Kit with 1.5m Cables	
Mfr. No.	1217001
Cat. No.	**13-645-118**
Each	1242.00
Meter Kit with 3m Cables	
Mfr. No.	1217002
Cat. No.	**13 645 119**
Each	1207.00

LOOKING FOR THERMO SCIENTIFIC* ORION* 4-STAR APPLICATION KITS?

Application Kits (including meter and all necessary accessories and solutions) available with Thermo Scientific Orion 4-Star pH Meters include:

- Cyanide in Drinking Water
- pH of Wastewater
- ORP of Wastewater
- Sulfide in Wastewater

Check our Web site for details.

Visit www.fishersci.com and search for Orion Application Kits

SEE ALSO...

Thermo Scientific* Orion* 4-Star pH/ Dissolved Oxygen Meters listed in this catalog in the Oxygen Analysis section.

ermo Scientific* Orion* 3-Star Portable pH Meter

nds up to the most demanding field applications

13-642-059

- aterproof, battery-operated pH eter delivers over 2000 hours of ntinuous operation
- splays pH and temperature easurements simultaneously
- ight LCD display with ready dication
- lanced comfortable handling
- tomatic or manual calibration th 1 to 5 calibration points
- ito-Buffer Recognition (ABR) of N and NIST*/US buffers
- fers a full complement of P-related features
- ores up to 10 password protected methods, including setup parameters d calibrations; download additional methods and software updates via e Web
- 0 point datalogger, downloadable to printer or computer via an optional -232 or USB interface accessory
- ART STABILITY* and SMART AVERAGING* functions automatically timize accuracy, precision and response time
- 7 waterproof: may be immersed for up to one hour with no water ursion
- C connector
- vanced self-tests on meter operation, self-diagnostics

LUDES:

er Only option includes meter and instruction manual.

er Kit option includes meter, low maintenance epoxy pH/ATC mo Scientific Triode* (13-642-250), beaker, electrode storage solution ack of pH 4.01, 7.00 and 10.01 buffers, instruction manual.

er Kit with No-Cal Electrode option includes meter, No-Cal pH rode (13-644-939), electrode storage solution 10-pack of pH 4.01, 7.00 10.01 buffers, hard case, instruction manual.

RRANTY:

e-year replacement

IPLIANCE:

arked. UL listed. CSA and FCC Class A limits approved.

Model	3-Star pH Portable Meter
pH Mode	
Range	-2.000 to +19.999pH
Resolution	0.1/0.01/0.001pH
Relative Accuracy	±0.002pH
Temperature Mode	
Range	-5° to +105°C
Resolution	0.1°C up to 99.9°C, 1.0 over 99.9°C
Relative Accuracy	±0.1°, ±1 digit
Meter Only	
Mfr. No.	1212000
Cat. No.	**13-642-059**
Each	445.95
Meter Kit	
Mfr. No.	1212001
Cat. No.	**13-645-111**
Each	660.00
Meter Kit with No-Cal Electrode	
Mfr. No.	1212002
Cat. No.	**13-645-112**
Each	744.92

LOOKING FOR THERMO SCIENTIFIC* ORION* 3-STAR APPLICATION KITS?

Application Kits available with Thermo Scientific Orion 3-Star pH Meters include:

- ▸ pH of Wastewater
- ▸ pH of Salt Water
- ▸ pH of Fresh Water
- ▸ Total Alkalinity of Fresh Water

Visit www.fishersci.com and search for Orion Application Kits

Oakton* pH 110 Advanced Portable Meter

Easily track and review large volumes of pH, mV and temperature data

13-620-239

- Dual pH (or mV) and °C/°F temperature display
- Advanced setup mode can display previous pH, mV, and temperature calibration data
- Push-button five-point pH calibration and offset mV calibration
- Ready indicator alerts when reading has stabilized
- Recalls electrode slope, electrode offset, and 100 sets of stored readings
- Selectable manual or automatic temperature compensation
- Downloads readings to computer or printer via RS-232 connection
- Supplied software creates PC data files; data can be printed continuously
- Ergonomic design; meter fits easily in the hand
- Electrode bracket positions electrode for one-handed operation

ORDERING INFORMATION:

AC adapter sold separately. Accessories include replacement pH/ATC electrode (15-500-016), temperature probe (15-500-003); and double-junction electrode (13-620-327).

INCLUDES:

Meter Only includes built-in stand, instructions and four "AAA" batteries.

Meter Kit includes meter, pH electrode, temperature probe, 20 solution pouches, sample bottle, batteries, instructions and carrying case

Model	pH 110
pH Mode	
Range	-2.0 to +16.0pH
Resolution	0.01pH
Accuracy	±0.01pH
mV Mode	
Range	0 to ±1999mV
Resolution	0.1mV up to ±199.9mV, 1mV beyond
Accuracy	±0.2mV up to ±199.9mV, ±2mV beyond
Temperature Mode	
Range	-10° to +110°C; 14° to 230°F
Resolution	0.1°C for 10° to +110°C [entire Celsius range; 0.1°F between 14° to 199.9°F; 1.0°F between 200° to 230°F
Accuracy	±0.5°C; ±0.9°F
Compensation	Manual or automatic
Meter Only	
Cat. No.	**13-620-239**
Each	477.58
Meter Kit	
Cat. No.	**13-620-238**
Each	544.26

Oakton* pH 11 Standard Portable Meter

13-620-235

Ergonomically designed, portable meter measures pH and mV with high resolution and accuracy; also reads in millivolts for taking ORP measurements. All meter functions are accessible from the water-resistant membrane keypad.

- Large dual-display LCD shows measurement plus temperature in °C
- Five-point push-button calibration with auto-buffer recognition and selectable manual or automatic temperature compensation
- Choose from USA or NIST* buffer
- Press HOLD button to freeze measurements
- Ready indicator shows when reading has stabilized
- Diagnostic error messages alert operator of problems
- Meter can store and recall up to 50 data sets
- With a built-in stand and electrode bracket to position electrodes for one-handed use
- pH 11 accepts standard pH or ORP electrodes with a BNC connector
- Manufactured using ISO 9001:2000-certified processes

ORDERING INFORMATION:

Dimensions: 7½L × 3½W × 1¾"H (19.1 × 8.9 × 4.4cm). Electrical requirements: four "AAA" batteries or 115V 60Hz AC adapter (13-300-126 sold separately).

INCLUDES:

Meter Only includes instructions and four "AAA" batteries.

Meter Kit includes meter, single-junction epoxy-bodied pH/ATC electrode with 3′ (0.9m) long cable (15-500-016), 20 solution pouches (five each of p 4.00, 7.00, 10.00, and rinse water), sample bottle, four "AAA" batteries, instructions, and carrying case.

WARRANTY:

Two years

Model	pH 11
pH Mode	
Range	-2.0 to +16.00pH
Resolution	0.01pH
Accuracy	±0.01pH
Calibration Points	USA and NIST*
mV Mode	
Range	0 to ±1999mV
Resolution	0.1mV from ±199.9mV; 1mV beyond ±199.9mV
Accuracy	±0.2 ±199.9mV, ±2mV beyond
Temperature Mode	
Range	-10.0° to +110.0°C
Resolution	0.1°C
Accuracy	±0.5°C
Compensation	Manual or Automatic
Meter Only	
Cat. No.	**13-620-235**
Each	335.09
Meter Kit	
Cat. No.	**13-620-234**
Each	408.30

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

)akton* Replacement Electrodes for pH 10 and 10 Portable Meters

)escription	Cat. No.	Each
:poxy body, Ag/AgCl reference, Single Junction, iel filled, sealed	15-500-002	42.42
itandard Series ATC Probe	15-500-007	21.32
itainless-Steel ATC Probe	15-500-003	38.19

)akton* AC Adapter for pH 11

:at. No.	Each
3-300-126	51.67

Oakton* Replacement Probe for pH 11

Cat. No.	Each
15-500-016	77.53

Oakton* Replacement Electrode and Probe for pH 6 and Ion 6

- pH electrode is single junction, has a plastic body, and a 3' (0.9m) long cable
- Temperature probe is used to take Automatic Temperature Compensation readings
- Probe is stainless steel and has a 3' (0.9m) long cable

Description	Cat. No.	Each
pH Electrode	15-500-002	42.42
Stainless-Steel ATC Probe	15-500-003	38.19

kton* Acorn* pH 6 and Ion 6 Economy Portable Meters

) easy-to-operate, economical and rugged meters

- 6 reads pH, mV, and temperature
- 6 adds ion measurement (ppm)
- D displays measured parameters or nperature with a press of a button
- ee-point push-button calibration
- to buffer recognition
- lectable pH buffer sets in USA or NIST*
- LD function
- eful error messages help set measure-nts back on track
- to shutoff after 17 minutes of nonuse

meter is ideal for routine measurements. eadout supports taking ORP/redox ngs. Automatic Temperature Compensation cts for fluctuating temperatures.

15-500-000

meter features direct readout in ion concentration units and ogrammed ion calibration points that allow the user to operate ument in minutes. Also reads pH and temperature in °C; mV mode ks electrode performance; temperature compensation in automatic anual. Accepts standard pH or ORP electrodes with BNC connectors.

.UDES:

er Only includes stainless-steel temperature probe with 3' (0.9m) cable 00-003), protective rubber boot, meter stand, instructions, and four " batteries.

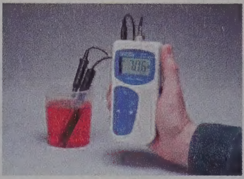
er Kits include meter, single-junction epoxy-bodied pH electrode 00-002) with 3' (0.9m) cable, stainless-steel temperature probe with 3') cable (15-500-003), solution pouches (4.01, 7.00, 10.00, and rinse r), sample bottle, protective rubber boot, meter stand, four "AAA" ries, instructions, and plastic carrying case.

ERING INFORMATION:

nsions: 5½L × 2¾W × 1¼"H (14 × 7 × 3.2cm).

RANTY:

years


15-500-040

15-500-001

Model	pH 6	Ion 6
pH Mode		
Range	0.00 to 14.00pH	0.00 to 14.00pH
Resolution	0.01pH	0.01pH
Accuracy	±0.01pH	±0.01pH
Calibration Points	3 (NIST: pH 4.01, 6.86, 9.18 or USA: pH 4.01, 7.00, 10.00)	3 (NIST: pH 4.01, 6.86, 9.18 or USA: pH 4.01, 7.00, 10.00)
mV Mode		
Range	0 to ±1000mV	0 to ±500mV
Resolution	1mV	±0.1mV from 0 to ±199.9mV, ±1mV beyond
Accuracy	±2mV	±0.2mV from 0 to ±199.99mV, ±2mV beyond
Calibration	Offset to ±20mV	----
Ion Mode (Concentration)		
Range	----	0.01 to 0.99ppm, 1.0 to 199.9ppm, 200 to 1999ppm
Resolution	----	0.01ppm, 0.1ppm, 1ppm
Accuracy	----	±1% FS
Calibration Points	----	2 or 3 points (0.1ppm, 1ppm, 10ppm, 100ppm)
Temperature Mode		
Range	0.0° to 100.0°C	0.0° to 100.0°C
Resolution	0.1°C	0.1°C
Accuracy	±0.5°C	±0.5°C
Compensation	Automatic	Manual or Automatic
Meter Only		
Cat. No.	15-500-000	15-500-040
Each	213.07	387.22
Meter Kit		
Cat. No.	15-500-001	15-500-041
Each	321.79	454.56

Oakton* Waterproof Big Display pHTestr* Models 10, 20 and 30

Pocket pH meters with large display make taking readings easy

- Microprocessor-based, with accurate readings to 0.1 or 0.01pH
- Replaceable electrode (13-200-222) lets you use Testr body many times over, save money
- Unique double junction design and extra reference gel volume for significantly longer electrode life, especially in harsh applications
- Automatic temperature compensation
- Push-button three-point calibration
- Auto buffer recognition: selectable buffer sets
- Hold function; auto-off; error messages
- Waterproof, dustproof and floatable; certifiable to IP67 standards

pHTestr 10
(13-200-261)

pHTestr 20
(13-200-262)

pHTestr 30
(13-200-263)

ORDERING INFORMATION:

Meter dimensions: 6½H × 1½" dia. (16.5 × 3.8cm). Shipping weight (meter only): 4.5 oz. (125g).

INCLUDES:

Meter Only package includes meter, electrode, four 1.5V batteries, instructions.

Meter Kit package includes meter; electrode; two each of pH 4.01, 7.00, 10.00 buffers and rinse solution in single-use pouches; sample jar, batteries, instructions and hard plastic carrying case.

WARRANTY:

One year

Model	Packaging Option	Cat. No.	Each
pHTestr 10	Meter Only	**13-200-261**	87.81
	Meter Kit	**13-200-268**	108.97
pHTestr 20	Meter Only	**13-200-262**	96.44
	Meter Kit	**13-200-269**	131.54
pHTestr 30	Meter Only	**13-200-263**	106.30
	Meter Kit	**13-200-270**	144.12

SPECIFICATIONS

Model	pHTestr 10	pHTestr 20	pHTestr 30
pH Mode			
Range	-1.0 to +15.0pH	-1.00 to +15.00pH	-1.00 to +15.00pH
Resolution	0.1pH	0.01pH	0.01pH
Relative Accuracy	±0.1pH	±0.01pH	±0.01pH
Calibration	Up to 3 points; select buffer sets (USA: 4.01, 7.00, 10.00; or NIST* 4.01, 6.86, 9.18)	Up to 3 points; select buffer sets (USA: 4.01, 7.00, 10.00; or NIST 4.01, 6.86, 9.18)	Up to 3 points; select buffer sets (USA: 4.01, 7.00, 10.00; or NIST 4.01, 6.86, 9.18)
Temperature Compensation			
Range	----	----	0.0° to 50.0°C (32° to 122°F)
Resolution	----	----	0.1°C (1°F)
Relative Accuracy	----	----	±1°C (±1°F)
Compensation (ATC)	0.0° to 50.0°C (32° to 122°F)	0.0° to 50.0°C (32° to 122°F)	0.0° to 50.0°C (32° to 122°F)
Electrical Requirements	Four 1.5V batteries (included)	Four 1.5V batteries (included)	Four 1.5V batteries (included)
Battery Life	Over 500 hours	Over 500 hours	Over 500 hours

Oakton* Waterproof Big Display pHTestr* 10 BNC

Pocket pH meter with large display; accepts pH combination electrode with BNC connector

- Microprocessor-based, with accurate readings to 0.1pH
- Lets you use most any pH combination electrode with BNC connector
- Push-button three-point calibration
- Hold function; auto-off; error messages
- Waterproof, dustproof and floatable; certifiable to IP67 standards

ORDERING INFORMATION: Meter dimensions: 6½H × 1½" dia. (16.5 × 3.8cm). Shipping weight (meter only): 4.5 oz. (125g).

INCLUDES:

Meter Only package includes meter, four 1.5V batteries, instructions.

Packaging Option	Mfr. No.	Cat. No.	Each
Meter Only	WD-35634-40	**13-200-264**	278.81

REQUIRED ACCESSORIES:

Without electrode; accepts most pH combination electrodes with BNC connector.

WARRANTY:

One year

13-200-264

SPECIFICATIONS

pH Mode	
Range	-1.00 to +15.00pH
Resolution	0.01pH
Relative Accuracy	±0.01pH
Calibration	Up to 3 points; select buffer sets (US: 4.01, 7.00 10.00; or NIST* 4.01, 6.86, 9.18)
Electrical Requirements	Four 1.5V batteries (included)
Battery Life	Over 500 hours

*Trademark. See Trademark Reference.

kton* Waterproof Big Display pH Spear

ket pH meter with spear tip for soft solids

- icroprocessor-based, accurate
- placeable spear-tip double-junction electrode
- ique double junction design and extra reference gel volume r longer electrode life
- sh-button three-point calibration
- to buffer recognition; selectable buffer sets
- aterproof, dustproof and floatable; certifiable to IP67 standards

ERING INFORMATION:

er dimensions: 6½H × 1½ dia. (16.5 × 3.8cm).

UDES:

er/Probe package includes meter, electrode, four 1.5V eries, instructions.

13-200-266

WARRANTY:

One year

Packaging Option	Mfr. No.	Cat. No.	Each
Meter/Probe	WD-35634-40	**13-200-266**	278.81

SPECIFICATIONS

pH Mode	
Range	-1.0 to +15.0pH
Resolution	0.1pH
Relative Accuracy	±0.1pH
Calibration	Up to 3 points; select buffer sets (US: 4.01, 7.00, 10.00; or NIST 4.01, 6.86, 9.18)
Electrical Requirements	Four 1.5V batteries (included)
Battery Life	Over 500 hours

akton* Big Display Double-Junction Waterproof ORPTestr* 10

cket ORP meter with extra-large display and replaceable double-junction electrode

- croprocessor-based, with accurate readings to 1mV ± 2mV
- 99 to +1000mV range
- mpact size is perfect for convenient testing of oxidation-luction (redox) potential
- placeable electrode (13-200-228) lets you use Testr body ny times over, save money
- ge-surface-area, platinum-band sensor gives faster, more ble response
- ique double junction design for significantly longer electrode e, especially in harsh applications
- sh-button calibration via ±150mV offset lets you standardize ter in calibration solutions, or bring it into agreement with established work standard
- ld function; auto-off; error messages
- aterproof, dustproof and floatable; certifiable to IP67 standards

13-200-265

ORDERING INFORMATION:

Dimensions: 6½L × 1½" dia. (16.5 × 3.8cm). Electrical requirements: four 1.5V batteries.

INCLUDES:

Meter comes with electrode, batteries and instructions.

WARRANTY:

One year

Cat. No.	Each
13-200-265	180.32

SPECIFICATIONS

ORP Mode	
Range	-999 to +1000mV
Resolution	1mV
Relative Accuracy	±2mV
Calibration	Offset up to ±150mV

I* Pro10 Portable Meter

npact, handheld single-Probe pH/ORP Meter provides r-selectable cable lengths and probe options

- as a dedicated, single-probe pH or ORP meter.
- 67 waterproof rating, even with battery cover off
- oice of 1, 4, 10, 20, and 30m (3, 13, 32, 65 and 98')
- tachable cables (available separately; see p. 1328)
- tomatic buffer recognition
- tomatic temperature compensation
- ntinuous battery level display
- cklit display and glowing keypad
- ngle-probe measurement with YSI pH or ORP electrodes
- mperature range of -5 to +70°C
- dataset memory

15-177-451

ERING INFORMATION:

ensions: 8½L × 3¼W × 2¼"H (21.6 × 8.3 × 2.3cm). Net weight, with eries: 1 lb. 1 oz. (475g). 1m cables available on certain combinations. tional YSI Professional models may be found in the Conductivity and en Analysis sections.

UDES:

er, two alkaline "C" cells, instructions

REQUIRED ACCESSORIES:

pH or ORP probe and separate cable; order separately; see p. 0000.

WARRANTY:

Three years for the instrument; two years for the cables; one year for probes

Model	**Pro10**
pH Mode	
Sensor Type	Glass combination electrode
Range	0 to 14pH
Accuracy	±0.2pH
Resolution	0.01pH
ORP Mode	
Sensor Type	Platinum button
Range	-1999 to 0+1999mV
Accuracy	±20mV
Resolution	0.1mV
Units	mV, ppm or mg/L (user selectable)
Temperature Mode	
Range	-5° to +100°C
Accuracy	±0.15°C
Resolution	0.01°C
Mfr. No.	6050010
Cat. No.	**15-177-451**
Each	425.00

YSI* Professional Plus Multiparameter Meter

Versatile handheld instrument for pH, DO, conductivity and ISE measurements

Compact, handheld instrument provides true versatility in a multiparameter platform. Simply choose the cable length and probes to suit your application; then determine what you want the instrument to display.

15-177-450

- Two mV inputs for combinations of Ammonium, Chloride, Nitrate, pH and ORP
- Choice of lab or field grade pH and ORP probes
- IP67 waterproof rating, even with battery cover off
- Choice of 1, 4, 10, 20, and 30m (3, 13, 32, 65 and 98') detachable cables (available separately; see p. 1328)
- Automatic buffer recognition
- Automatic temperature, salinity, and barometric compensation for dissolved oxygen measurements
- Continuous battery level display
- Backlit display and keypad
- User-upgradeable software via USB communications
- Graphic display with detailed messages and instructions
- 2000 data-set memory with additional GLP event logging
- Interval or single event logging capability
- Data Manager desktop software to manage all your data

ORDERING INFORMATION:

Dimensions: 2¼L × 3¼W × 8½"H (2.3 × 8.3 × 21.6cm). Waterproof case, IP-67 rated with shock resistant rubber overmold. Weight with batteries, 1.05 lb. (475g). Power: two alkaline "C" cells; 300-600 hours depending on usage and parameters. Cables available: 1, 4, 10, 20, 30m (3, 13.1, 32.8, 65.6, 98.4') lengths; longer lengths on DO/temp only

INCLUDES:

Meter, two alkaline "C"-cells, instructions, communications saddle, USB cable and YSI Data Manager* software for Windows*

REQUIRED ACCESSORIES:

pH, ORP, DO, or ISE probe and cable; conductivity probe/cable combination (see p. 1328)

WARRANTY:

Three years for meter; two years for cables; six months for Ammonium, Nitrate, and Chloride probes; one year for all other probes.

Model	**Professional Plus**
Dissolved Oxygen Saturation Mode	
Sensor Type	Polarographic or Galvanic (user selectable)
% Saturation Range	0 to 500% air saturation
Accuracy	0 to 200%: ±2% of reading or ±2% air saturation, whichever is greater. 200 to 500%: ±6% of reading
Resolution	1% or 0.1% air saturation (user selectable)
Dissolved Oxygen Concentration Mode	
Sensor Type	Polarographic or Galvanic (user selectable)
Range	0 to 50mg/L
Accuracy	0 to 20mg/L: ±2% of reading or 0.2mg/L, whichever is greater. 20 to 50mg/L: ±6% of reading.
Resolution	0.1 or 0.01mg/L (user selectable)
Temperature Mode	
Range	-5° to +100°C (DO compensation range -5° to +45°C)
Accuracy	±0.15°C
Resolution	0.01°C
Conductivity Mode	
Sensor Type	4-electrode cell with autoranging
Range	0 to 200mS/cm
Accuracy	±0.5% of reading or ±0.001mS/cm, whichever is greater (with 4 meter cable) ±1.0% of reading or ±0.001mS/cm, whichever is greater (with 20 meter cabl
Resolution	0.001mS/cm to 0.1mS/cm (range-dependent)
Salinity Mode	
Range	0.00 to 30.00ppt
Resolution	0.01ppt
Relative Accuracy	±1.0% of reading or ±0.1ppt, whichever is greater
TDS Mode	
Range	0 to 100g/L
Resolution	4 significant digits
pH Mode	
Sensor Type	Glass combination electrode
Range	0 to 14pH
Accuracy	±0.2pH
Resolution	0.01pH
ISE Mode	
Range	-1999 to +1999mV
Accuracy	±20mV
Resolution	0.1mV
Units	mV or mg/L
Mfr. No.	605000
Cat. No.	**15-177-450**
Each	895.00

I* Pro1030 and Pro2030 Portable Meters

ultaneous measurement of conductivity and ORP or DO

- -channel instruments accept YSI luctivity probes in one channel; Pro1030 pH/ISE input, Pro2030 adds dissolved en probe input. Compact, handheld uments provide user-selectable cable hs and probe options.
- 7 waterproof rating, even with battery er off
- oice of 1, 4, 10, 20, and 30m (3, 13, 32, and 98') detachable cables (available parately; see p. 1328)
- tomatic buffer recognition
- tomatic temperature compensation
- ntinuously displays battery level
- klit display and keypad
- nperature range of –5 to +70°C
- dataset memory

15-177-456

ERING INFORMATION:

nsions: 8½L × 3¼W × 2¼"H (21.6 × 8.3 × 2.3cm). Net weight, with ries: 1 lb. 1 oz. (475g). Additional YSI Professional models may be in the Conductivity and Oxygen Analysis sections

UDES:

r, two alkaline "C"-cells, instructions

IRED ACCESSORIES:

30: pH, ORP or ISE probe and separate cable; conductivity probe and . Pro2030: dissolved oxygen probe and separate cable; conductivity and cable. See p. 1328 for probes and cables.

Model	Pro1030	Pro2030
Conductivity Mode		
Sensor Type	4-electrode cell with autoranging	4-electrode cell with autoranging
Range	0 to 200mS/cm	0 to 200mS/cm
Accuracy	±0.5% of reading or ±0.001mS/cm; whichever is greater (4 meter cable) ±1.0% of reading or 0.001mS/cm; whichever is greater (20 meter cable)	±0.5% of reading or ±0.001mS/cm; whichever is greater (4 meter cable) ±1.0% of reading or 0.001mS/cm; whichever is greater (20 meter cable)
Resolution	0.001mS/cm to 0.1mS/cm (range-dependent)	0.001mS/cm to 0.1mS/cm (range-dependent)
pH Mode		
Sensor Type	Glass combination electrode	----
Range	0 to 14pH	----
Accuracy	±0.2pH	----
Resolution	0.01pH	----
ORP Mode		
Sensor Type	Platinum button	----
Range	-1999 to 0+1999mV	----
Accuracy	0.1 mV	----
Units	mV or mg/L	----
Dissolved Oxygen Mode		
Sensor Type	----	Polarographic or Galvanic (user selectable)
Range	----	0 to 50mg/L; 0 to 500% air saturation
Accuracy	----	0 to 200%: ±2% of the reading or ±2% air saturation, whichever is greater. 200 to 500%: ±6% of the reading.
Resolution	----	0.1 or 0.01mg/L (user selectable); 0.1% air saturation
Temperature Mode		
Range	-5° to +100°C	-5° to +100°C
Accuracy	±0.15°C	±0.15°C
Resolution	0.01°C	0.01°C
Mfr. No.	6051030	6052030
Cat. No.	**15-177-456**	**15-177-457**
Each	615.00	635.00

YSI* Pro1020 Dual pH or ORP/DO Portable Meter

Measure with pH or ORP and DO probes simultaneously

15-177-455

Dual inputs: one for pH or ORP electrodes, one for dissolved oxygen probe

- IP67 waterproof rating, even with battery cover off
- Choice of 1, 4, 10, 20, and 30m (3, 13, 32, 65 and 98') detachable cables (available separately; see p. 1328)
- Automatic buffer recognition
- Automatic temperature compensation
- Continuously displays battery level
- Backlit display and glowing keypad
- User-upgradable software via USB
- Measurement with YSI pH or ORP electrodes
- DO measurement with choice of probes; DO Temperature compensation range of –5° to +45°C
- 50 dataset memory

ORDERING INFORMATION:

Dimensions: 8½L × 3¼W × 2¼"H (21.6 × 8.3 × 2.3cm). Net weight, with batteries: 1 lb. 1 oz. (475g). Additional YSI Professional models may be found in the Conductivity and Oxygen Analysis sections.

INCLUDES:

Meter, two alkaline "C" cells, instructions

REQUIRED ACCESSORIES:

pH or ORP probe; DO probe; and separate cables (order separately; see p. 1328)

WARRANTY:

Three years for meter; two years for cables; one year for probes

Model	**Pro1020**
pH Mode	
Sensor Type	Glass combination electrode
Range	0 to 14pH
Accuracy	±0.2pH
Resolution	0.01pH
ORP Mode	
Range	-1999 to +1999mV
Accuracy	±20mV
Resolution	0.1mV
Units	mV or mg/L
Dissolved Oxygen Saturation Mode	
Sensor Type	Polarographic or Galvanic (user selectable)
% Saturation Range	0 to 500% air saturation
Accuracy	0 to 200%: ±2% of reading or ±2% air saturation, whichever is greater. 200 to 500%: ±6% of reading
Resolution	1% or 0.1% air saturation (user selectable)
Dissolved Oxygen Concentration Mode	
Sensor Type	Polarographic or Galvanic (user selectable)
Range	0 to 50mg/L
Accuracy	0 to 20mg/L: ±2% of reading or 0.2mg/L, whichever is greater. 20 to 50mg/L: ±6% of reading.
Resolution	0.1 or 0.01mg/L (user selectable)
Temperature Mode	
Range	-5° to +100°C (DO compensation range -5° to +45°C)
Accuracy	±0.15°C
Resolution	0.01°C
Mfr. No.	6051020
Cat. No.	**15-177-455**
Each	625.00

ACCESSORIES

Probes for Pro Series Portable Meters

Conductivity probes are built into cables, and are listed with cables, below.

Description	Mfr. No.	Cat. No.	Each
Field Probes; without cables or connectors			
pH Probe	605101	**15-177-460**	145.00
ORP Probe	605102	**15-177-461**	185.00
pH/ORP Probe	605103	**15-177-462**	275.00
Ammonium ISE	605104	**15-177-463**	325.00
Chloride ISE	605105	**15-177-464**	325.00
Nitrate ISE	605106	**15-177-465**	325.00
Lab-Grade Single-Junction Probes; with Cables and Connectors			
pH/Temp. Probe with 1m cable	605107	**15-177-500**	160.90
pH/Temp. Probe with 4m cable	605177	**15-177-501**	186.04
ORP/Temp. Probe with 1m cable	605108	**15-177-502**	196.10
ORP/Temp. Probe with 4m cable	605118	**15-177-503**	226.27
ORP/Temp. Probe with 4m cable	605109	**15-177-504**	295.55
pH/ORP/Temp. Probe with 4m cable	605179	**15-177-505**	315.59

Flow Cell Accessory for Pro Series Meters

- 203mL flow cell for dual parameter cables

Mfr. No.	Cat. No.	Each
603059	**15-177-509**	226.27

Cables for YSI* Pro Meters

Cables with Conductivity include conductivity probe. Order all other probes separately.

Description	Mfr. No.	Cat. No.	Each
For Use with Professional Plus and Pro10			
ISE Cable, 4m	60510-4C	**15-177-466**	210.00
For Use with Professional Plus only			
Dual ISE/Temp. Cable Assembly, 4m	6051010-4	**15-177-478**	325.00
For Use with Professional Plus and Pro1020			
ISE/DO/Temp. Cable Assembly, 30m	6051020-30	**15-177-485**	425.00
For Use with Professional Plus, Pro 20 and Pro1020			
DO/Temp. Cable Assembly, 4m	60520-4	**15-177-470**	220.00
DO/Temp. Cable Assembly, 10m	60520-10	**15-177-471**	245.00
DO/Temp. Cable Assembly, 20m	60520-20	**15-177-472**	275.00
For Use with Professional Plus, and Pro30; with Conductivity Probe			
Conductivity/Temp. Probe with 4m Cable	60530-4	**15-177-474**	375.00
Conductivity/Temp. Probe with 10m Cable	60530-10	**15-177-475**	395.00
Conductivity/Temp. Probe with 20m Cable	60530-20	**15-177-476**	445.00
For Use with Professional Plus and Pro2030; with Conductivity Probe			
DO/Conductivity/Temp. Cable Assembly, 4m	6052030-4	**15-177-490**	495.00
DO/Conductivity/Temp. Cable Assembly, 10m	6052030-10	**15-177-491**	525.00
DO/Conductivity/Temp. Cable Assembly, 20m	6052030-20	**15-177-492**	565.00

*Trademark. See Trademark Reference.

ttler Toledo* SevenGo* pH and SevenGo pro* pH/Ion Meters

t-in data memory and automatic functions for outstanding performance

ble meters measure pH, mV and erature; SevenGo pro Model SG8 ion concentration. Designed for comfortable right- or left-handed ation. Choice of two models, four aging options. Both models are rproof and dustproof to IP-67 lard, feature large display of sured value and settings, and rotatable electrode clip that ts left or right for single-handed ation.

01-910-514

01-910-518

nGo SG2

- 67 pH meter with 0 to 14pH ge for routine use
- tinuous indication of electrode l battery status
- omatic endpoint and buffer ognition
- omatic temperature compensation
- a memory for 30 GLP data points
- ee-point calibration with predefined or user-defined buffers

nGo pro SG8

- 67 pH/Ion meter with expanded range for the highest demands
- ple ion concentration determination
- mented or linear calibration as desired
- e-point calibration with choice of six predefined and one user-defined fer set
- ord date, time, time interval
- itive menu operation using softkeys
- P memory for 200 datapoints
- tact-free infrared communication with notebook, printer or PC
- /OFF backlit display

ERING INFORMATION:

aging Options

clude wrist strap, four "AA" batteries, operating instructions, ertificate, and declaration of conformity:

- ter Only, without electrode
- ter with electrode and 1.2m cable
- ter with electrode, 1.2m cable, and field case with electrode arm and er
- ter with electrode, 1.2m cable, field case with electode arm and cover, l ErGo* field assistant that:
  - onverts SevenGo meter into mobile benchtop instrument or lets you vear it around your neck for hands-free operation on the go
  - an be used for a variety of functions
  - tores pH electrodes wet for immediate use without watering caps

Model	SevenGo SG2	SevenGo pro SG8
pH Mode		
Range	0.00 to 14.00pH	-2.000 to +20.000pH
Resolution	0.01pH	0.001pH
Relative Accuracy	±0.01pH	±0.001pH
mV Mode		
Range	0 to 1999mV	0.0 to 1999.0mV
Resolution	1mV	0.1mV
Relative Accuracy	±1mV	±0.1mV
Temperature Mode		
Range	-5.0° to +105.0°C	-5.0° to +130.0°C ATC; -30.0° to +130.0°C MTC
Resolution	0.1°C	0.1°C
Relative Accuracy	±0.5°C	±0.2°C
Inputs	BNC, NTC	BNC, NTC
Outputs	----	IR to printer or PC via RS-232 or USB
Power Requirements	4 x 1.5V "AA" batteries or 1.3V NiMH accumulators	
Dimensions (L x W x H)	1¾ × 3½ × 8⅝" (45 × 90 × 220cm)	
Environmental Conditions	0° to 40°C (32° to 104°F), 5 to 85% RH (non-cond.)	
Weight	11½ oz. (325g) without batteries	
Meter Only		
Mfr. No.	SG2-B	SG8-B
Cat. No.	**01-910-514**	**01-910-518**
Each	430.00	860.00
Meter with Electrode, 1.2m Cable		
Mfr. No.	SG2-ELK	SG8-ELK
Cat. No.	**01-910-515**	**01-910-519**
Each	595.00	1025.00
Meter with Electrode, 1.2m Cable and Case		
Mfr. No.	SG2-FK	----
Cat. No.	**01-910-516**	----
Each	675.00	----
Meter with Electrode, 1.2m Cable, Case and ErGo Field Assistant		
Mfr. No.	SG2-ASK	SG8-ASK
Cat. No.	**01-910-517**	**01-910-521**
Each	860.00	1295.00

SEE ALSO:

lettler Toledo* SevenGo* Meters in the Conductivity and Oxygen nalysis sections.

ACCESSORIES

Mettler Toledo* SevenGo* Replacement Electrodes

Model	Cable Length	Mfr. No.	Cat. No.	Each
pH/ATC Electrode				
InLab 413 SG	1.8m (71")	51340288	**01-910-552**	258.00
InLab 413 SG	10m (32')	51340289	**01-910-553**	307.00
Conductivity Electrode				
InLab 737 SG	1.8m (71")	51340277	**01-910-554**	317.00
Dissolved Oxygen Electrode				
InLab 605	1.8m (71")	51340291	**01-910-556**	603.00

LOOKING FOR MORE METTLER TOLEDO* SEVENGO* ACCESSORIES?

Check our Web site for a variety of accessories for SevenGo models, including:

- USB and RS-232 infrared adapters
- Balance links
- Ergo* Field Assistant
- Clips, wrist and neck straps
- Protective covers and sealing kits
- Field case

Visit www.fishersci.com and search for SevenGo

METER ACCESSORIES

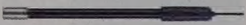
Fisher Scientific* accumet* Meter Accessories

Automatic Temperature Compensation Probes

For Benchtop and Portable Meters

- Signal solution temperature to meter for automatic compensation
- Permit temperature readout with meters having this feature
- Probes for Fisher Scientific accumet AP Series portable meters have waterproof connector

13-620-16, 13-620-19, 13-620-AP19



13-620-18

For Fisher Scientific accumet Models	Connector	Cat. No.	Each
Benchtops			
XL15, XL20, XL25, XL50, XL60, AB15, AB30, AR10, AR15, AR20, AR25, AR50, AR60	Mini-Phone Plug	**13-620-19**	156.02
150, 50, 30, 25, 20, 15, 10, 950, 925, 915, 900, 825MP, 815MP, 805MP, 750	¼' Phone Plug	**13-620-16**	145.95
Portables			
AP71, AP72	Waterproof Plug	**13-620-20**	140.30
AP63, AP62, AP61	Mini-Phone Plug	**13-620-AP53**	160.01
1003, 1002, 1001, BASIC	Mini-Phone Plug	**13-620-19**	196.10
955, 640, 640A	Mini-Phone Plug	**13-620-18**	170.69
AP50, AP25, AP15, AP10, AP5	Twist-Lock Plug	**13-620-AP19**	196.10

Electrode Reservoir

- Stores individual electrode in appropriate soaking solution, without dried-out soaking beakers or messy spills
- Keeps electrodes conditioned and ready for use
- Oval polyethylene bottle 1L × 2W × 3¾"H (2.5 × 5.1 × 9.5cm)
- Punched cap has hole for insertion of any electrode with nominal diameter of ⅜" (10mm)
- O-ring provides leakproof seal

INCLUDES:

Reducing seal for use with ¼" diameter (6.4mm) electrodes

Reservoir Bottle
Cat. No. 13-620-499

13-620-499

Cat. No.	Each
13-620-499	24.99

Electrode Storage Solution

- Solution of potassium hydrogen phthalate-potassium chloride conditions electrodes when not in use.

Quantity	Cat. No.	Each	Case of 6
1L	**SE40-1**	42.96	204.63

Fisher Scientific* Electrode Holder

Handles multiple pH and conductivity readings quickly with reduced electrode breakage

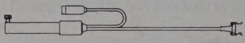
Accepts all brands of standard electrodes; extends 21" and pivots 360°; designed for smooth movement and effortless operation.

22-286-43

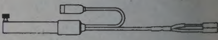
- Articulated at three points, the arm holder pivots in any direction (360°) while holder maintains electrode in vertical position
- Extends to 21" (53cm) from weighted 8" (20cm), die-cast metal base
- Accommodates standard glass, reference, and combination electrodes as well as temperature and conductivity probes
- Spring counterbalance for smooth, fingertip control and stability

Cat. No.	Each
22-286-439	107.87

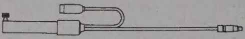
Electrode Connection Adapters



13-620-498



13-620-497



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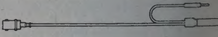

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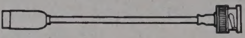

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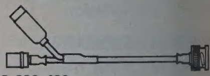
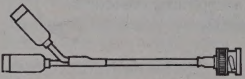
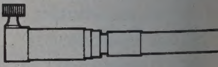


13-620-489



13-620-488



13-620-150

Adapts:	Cat. No.	Each
U.S. Standard/Pin plugs to BNC input jack. Use with new Fisher Scientific* accumet*, Corning*, Orion*, Beckman* pHI Series, and many handheld models.	**13-620-498**	83.40
U.S. Standard/Pin plugs to Dual-pin input jacks. Use with older Fisher Scientific* Portable Models 150 and 156, older Fisherbrand* Model 107 portables.	**13-620-497**	84.18
U.S. Standard/Pin plugs to Mini-Phone A input jack. Use with Corning Models 4, 5 and 6 pH meters.	**13-620-496**	92.75
U.S. Standard/Pin plugs to Radiometer* Type 7 input jack. Use with newer Radiometer meters made during or after 1975.	**13-620-493**	83.39
BNC plug to U.S. Standard/Pin input jack.	**13-620-491**	84.18
Pin plug to BNC input jack. Use with metallic electrodes having pin connectors.	**13-620-490**	49.24
BNC/Pin plugs to single BNC input jack.	**13-620-489**	77.18
Dual-pin plugs to BNC input jack.	**13-620-488**	77.18
Pin plug to U.S. Standard input jack. Use with metallic electrodes having pin connectors.	**13-640-150**	51.46

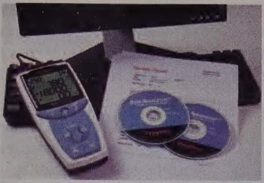
*Trademark. See Trademark Reference.

Prices subject to change.

ermo Scientific* Orion* Meter Accessories

rmo Scientific Star Navigator 21* Software

nplete software for 21 CFR Part 11 compliance



collection software allows
s to uphold FDA guidelines
to effectively operate to
ng specification requirements
d-wide. Provides significant
ngs in time and productivity
ciated with data management.

r friendly Windows*
rface

sy to install and operate
mplete control from your computer
ick operation of custom Star Series methods
nvenient report templates

tronic records and signatures

ables paperless record system
mework for compliance reporting
ols for 21 CFR Part 11 compliance
ves time and money in the approval process

venient, thorough documentation

ique user name and password provided by operating system for
ch user
count lockout after predetermined number of unsuccessful login
empts
tomatic password protected screensavers
mplex password capabilities
dit Trail records important events; lists user, date, time, severity of
ent, application, description and details
changes are recorded with a digital signature; users must provide
isons for changes
ta Security: data cannot be removed or altered in an uncontrolled
nner; database can only be accessed with proper tools and user
hts; data integrity is verified each time data is accessed

ERING INFORMATION:

se with the Thermo Scientific Orion 3, 4 and 5-Star electrochemistry
rs; compatible with Windows XP* operating system.

aged as a standalone accessory product; also included in:

tar Benchtop Meter packages
tar Benchtop Meter Wastewater Sulfide Application Kit (13-643-022)
tar Benchtop Meter Wastewater Conductivity USP 645 Application
(13-643-060)
tar Benchtop Meter pH of Tablets Meter Application Kit (13-643-062)
tar Benchtop Meter pH of Capsules Application Kit (13-643-063)
tar Benchtop Meter pH of Ointments Application Kit (13-643-064)

UDES:

nd instructions

lo.	Cat. No.	Each
007	**13-645-127**	516.94

900A Printer

Lightweight, compact thermal printer attaches mechanically to the meter bodies, and electrically through the RS-232-C port to create a functional meter-printer unit that saves space.

- Provides a complete record of pH and concentration measurements, along with time, date, and temperature
- Prints by direct command or at timed intervals, 16 characters per line, 19 characters per second
- Powered by rechargeable battery or by included 110 or 220V line converter

INCLUDES:

110 or 220V line converter

Mfr. No.	Electrical Requirements	Cat. No.	Each
0900A0	110V 50/60Hz	**13-641-257**	800.00
0900A1	220V 50/60Hz	**13-641-258**	808.00

Meter Compatibility

Portable	115, 115Aplus*, 125, 125Aplus, 250A, 250Aplus, 265A and 266S, 290A, 290Aplus, 810, 810Aplus
Benchtop	145, 145Aplus, 150, 150Aplus, 410A, 410Aplus, 420A and 420Aplus, 520A, 520Aplus, 525A, 525Aplus, 620, 920A, 710A, 710Aplus, 720A, 720Aplus, 850, 850Aplus, 920Aplus

Replacement Parts for 900A Printer

Description	Mfr. No.	Cat. No.	Price
Printer Paper, 10 rolls	0900A4	**13-641-267**	78.93
Rechargeable Battery	0900A6	**13-641-268**	126.33

Swing Arm and Electrode Holder

- Adjustable base, arm and holder for four 12mm diameter, one 16mm dia. electrodes.

Mfr. No.	Cat. No.	Each
090043	**13-641-712B**	184.39

ATC Probes

For Meter Models	Type	Mfr. No.	Cat. No.	Each
920A, 720A, 710A, 620, 610, 525A, 520A, 420A, 410A, 290A, 250A, 230A, 210A	Epoxy	917005	**13-641-260**	200.97
EA940, EA920, SA720, SA520, SA270, SA250, SA230, 811, 501, 231	Epoxy	917001	**13-641-709A**	281.40
EA940, EA920, SA720, SA520, SA270, SA250, SA230, 811, 501, 231	Glass	917002	**13-641-710B**	281.40
370, 350, 330, 320, 310	Glass	927006	**13-301-138**	200.97
370, 350, 330, 320, 310	Epoxy	927005	**13-642-618**	201.71

FEATURES TO CONSIDER

Body style—Consider both material and dimensional specifications. Glass body electrodes provide greater chemical and temp
resistance. Plastic body electrodes are often less expensive and resist breakage. A variety of lengths and diameters are av
take measurements in beakers, test tubes or even microwell plates.

Fill type—Simple fill formulations like KCl are appropriate for general purpose applications. Advanced fo
like Thermo Scientific* ROSS* and ROSS Ultra* provide the highest level of stability, performance at
temperatures, and resistance to contamination. Both Thermo Scientific ROSS and Thermo Scient
Ultra are mercury free. Liquid filled electrodes offer faster response; gel-filled electrodes offe
maintenance but are slower and cannot be serviced. On refillable electrodes, features like
Scientific accumet* fill-hole cover can make maintenance easy.

Junction design—Pin-type junctions provide consistent electrolyte flow in sim
applications. Flushable junctions like the Thermo Scientific Orion* Sure-Flow* (
Scientific accu•pHast* provide fast response, are virtually clog-free, and easy
Open designs such as the accuCap* capillary reference can maximize samp
reference contact.

Temperature compensation—Accurate results are highly tempera
dent. Temperature elements can be built into an electrode for conven
may result in slower response. Separate temperature probes are oft
with meters. The Thermo Scientific Orion LogR* and perpHect* se
unique system that determines temperature from changes in the

Successful pH measurement begins with selecting the right pH electrode. Many applications present challenges that can produce measurement errors and premature electrode failure. Be sure to consider the following information when making your selection.

BEFORE YOU BUY pH ELECTRODES

MATCHING ELECTRODES AND APPLICATI

Clean Water Applications—While simple, single-junction
will often work well, problems can arise in very low ionic s
solutions; consider high flow electrodes like a Thermo S
Orion Sure-Flow.

Dirty Water Applications—At a minimum, c
junction designs should be used. For best per
consider advanced fill type electrodes such
Scientific ROSS or Fisher Scientific accuCa

Food Industry Applications—Applic
involving semi-solids are common in th
industry. Special designs such as a spea
knife-tip electrode simplify testin

Pharmaceutical Applic
TRIS compatible electr
essential. With tight
considerations, ac
design features
Thermo Scient
fill and Therr
Orion Sure-
junction a
Double-j
designs
a mercu
option f
protein

For help
the righ
call our
chemistry
1-888-35

Thermo ROSS
Epoxy Body
Sure-Flow 13-642-242
accumet® Cat. #13-620-530
Epoxy Body
Liquid Filled 13-620-530
accumet® Cat. #13-620-285
Glass Body
Single Junction 13-620-285
Orion Thermo Scientific
Glass Body
Ross Ultra 13-642-238

ELECTRODE CARE AND CALIBRATION

Buffer solutions—Calibration is required for compliance with EPA, ASTM*, and many other procedures. Fresh buffers are critical to ensure accurate calibration.

Electrode cleaning solutions—Many samples can clog and coat the bulb and junction of even the best designed electrode, resulting in slow response and unstable readings.

Electrode storage solutions—For accurate readings and fastest response, both the bulb and junction must be properly hydrated. To ensure your electrode is always ready for testing, be sure to keep the bulb in a storage bottle or beaker filled with storage solution.

For a full selection of Fisher Scientific accumet and Thermo Scientific Orion electrodes, see pp. 1334-1360.

Thermo
SCIENTIFIC

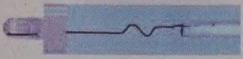
sponsored by
Thermo Fisher Scientific

ELECTRODES—pH/ORP/TITRATION

her Scientific* accuCap* Capillary Junction pH Combination Electrodes

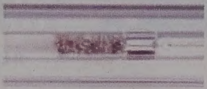
ge junction for increased flow, minimal clogging

ter junction:



Capillary Junction

- ngle-pore capillary junction is 00 times larger than typical ramic junctions
- most impossible to clog, even in ficult samples
- creased electrolyte flow, greater ntact between sample and ference, fast and stable readings



Double Junction with diffusion barrier

ter reference design:

- uble junction design for enhanced rformance
- fusion barrier separates silver chloride reservoir from reference electrolyte
- rmits use of silver-free electrolytes, prevents silver chloride loss from mperature-induced variations
- sult: an extremely stable reference potential, providing long electrode

t accurate

- sting at German Federal Physical Technical Institute in Braunschweig termined this electrode design to be the most accurate laboratory ctrode
- e *Traceability of pH Measurement* by Petra Spitzer

er Scientific accuCap Glass Body Fluid Gel Refillable trode

- ique fluid-gel electrolyte and accuCap junction provide faster flowrate, proved contact between electrolyte and sample
- ster response time and very accurate readings
- uble-liquid-junction further extends diffusion barrier for increased ctrode life in aggressive samples
- o performs well in liquids with low ion concentration and in partly ueous samples

er Scientific accuCap Glass Body Gel-Filled Electrode

- ndard glass body and pH membrane
- id polymer-gel electrolyte offers the advantages of the accuCap tem in a maintenance-free version
- vides a more stable matrix than other gelled electrode reference tems
- es reliable results in very dirty, ion-weak or protein samples
- iable even at low pH or in presence of most organic solvents

er Scientific accuCap Plastic Body Gel-Filled Electrode

- ndard plastic body and glass pH membrane
- id polymer-gel electrolyte offers the advantages of the accuCap tem in a maintenance-free version
- vides a more stable matrix than other gelled electrode reference tems
- es reliable results in very dirty, ion-weak or protein samples
- iable even at low pH or in presence of some organic solvents eck compatibility before measuring)

Glass Body Refillable 13-620-130

Glass Body Gel-Filled 13-620-131

Fisher Scientific accuCap Glass Body Gel-Filled Spear Tip Electrode

- Glass body and pH membrane
- Rugged spear tip is ideal for soft foods
- Polymer gel electrolyte provides reliable performance with difficult samples

APPLICATION/SAMPLE TYPE

Electrode Cat. No.	13-620-130	13-620-131	13-620-132	13-620-133
Bread, Dough				■
Butter, Cheese				■
Color, Varnish, Paint	■	■	■	
Cosmetics	■	■	■	
Cream	■			
Deionized Water	■		■	
Drinking Water	■	■	■	
Emulsions: Aqueous	■	■	■	
Emulsions: Partly Aqueous	■	■	■	
Fruit Juice	■	■		
Fruits, Vegetables				■
Galvanic Waste	■	■	■	
Jam				■
Liquid Soap	■	■	■	
Low Ionic Strength Solutions	■		■	
Mayonnaise	■			■
Meat				■
Milk	■	■	■	
Protein-Containing Samples	■	■	■	■
Soaps, Detergents	■	■	■	
Suspensions, Aqueous	■	■	■	
Titrations			■	
TRIS Buffer	■	■	■	■
Varnish, Aqueous	■		■	
Viscous Samples	■			
Wastewater	■	■	■	
Yogurt	■			

iption	Cap Color†	Fill Solution‡	Connector	pH Range	Temperature Range (°C)	Length/Dia.	Cat. No.	Each
body, refillable	P	13-636-430	BNC	0 to 14	0° to 80°C	160mm/12mm	**13-620-130**	366.16
body, gel-filled	P	----	BNC	0 to 14	0° to 80°C	130mm/12mm	**13-620-131**	312.42
c body, gel-filled	P	----	BNC	0 to 14	0° to 60°C	120mm/12mm	**13-620-132**	172.40
body, gel-filled, spear tip	P	----	BNC	2 to 14	0° to 50°C	25mm/6mm††	**13-620-133**	258.66

Color: B (Blue) = standard pH measurements; P (Purple) = biological, pharmaceutical RIS applications; NA = no color code.

‡ Fill Solutions: Cat. No. 13-636-430 is fluid-gel KCl solution.

†† Dimensions are for insertion portion of electrode body; overall length is 70mm.

ELECTRODES

Fisher Scientific* accumet* Combination pH Electrodes

Fisher Scientific accu•pHast* R Variable Temperature Electrodes†

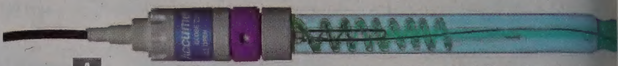
Innovative reference system prevents precipitation of solution components at reference element from 0 to 100°C. Internal electrolyte has minimal temperature coefficient.

- Electrodes are predictable, reliable, and quick to respond at any temperature
- Cycled between samples at 25° and 80°C, reach reproducible pH in 30 seconds
- Read pH in <20 seconds, correct to ±0.02pH; pH value stays constant at any temperature
- Read pH consistently at elevated temperatures, without premature loss in performance
- Choose from glass body double-junction model, or from glass and epoxy body models with Fisher Scientific accuFlow* flushable junction

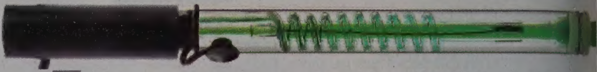
accu•pHast Variable Temperature Electrodes

Patented design with dual ceramic junctions, sealed Ag/AgCl reference and special electrolyte to eliminate slow response when measuring samples at different temperatures in quick succession.

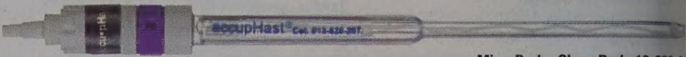
- Accurate to ±0.01pH at 25°C and ±0.05pH from –5° to +100°C
- Response time, 20 seconds or less; negligible drift
- Isolated reference element and outer KCl fill solution eliminate clogging from silver compound precipitates; no silver or mercury to contaminate samples
- Choice of standard and Fisher Scientific MicroProbe* glass or extra-long epoxy bodies


A

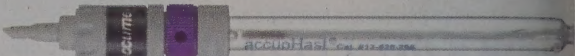
R Standard Glass Body† 13-620-1


B

R Epoxy Body Flushable Junction† 13-620-1


C

MicroProbe Glass Body 13-620-2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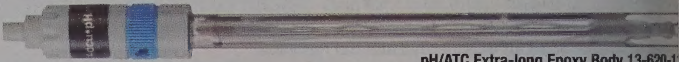
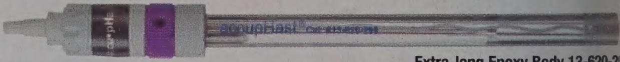
Standard Glass Body 13-620-2


E

pH/ATC Extra-long Epoxy Body 13-620-1


F

Extra-long Epoxy Body 13-620-2

Cat. No.	Description	Photo Key	Cap Color‡	Fill Solution††	Connector	pH Range	Temperature Range (°C)	Length/ Dia. (mm)	Each
Fisher Scientific accu•pHast R Variable Temperature†									
13-620-195	Standard glass body	A	🟪	SP138-500	BNC	0 to 14	–5 to +100	102/10	341.06
13-620-197	Glass body, flushable junction	----	----	SP138-500	BNC	0 to 14	–5 to +100	102/5	385.83
13-620-196	Epoxy body, flushable junction	B	----	SP138-500	BNC	0 to 14	–5 to +100	102/10	385.83
Fisher Scientific accu•pHast Variable Temperature									
13-620-296	Standard glass body	D	🟪	SP138-500	BNC	0 to 14	–5 to +100	102/10	338.77
13-620-297	MicroProbe glass body	C	🟪	SP138-500	BNC	0 to 14	–5 to +100	165/5	428.06
13-620-298	Extra-long epoxy body	F	🟪	SP138-500	BNC	0 to 14	–5 to +100	140/10	314.91
13-620-113	pH/ATC, extra-long epoxy body	E	🟪	SP138-500	BNC/1/4" Phone ATC	0 to 14	–5 to +100	143/10	409.79
13-620-114	pH/ATC, extra-long epoxy body	----	🟪	SP138-500	BNC/Mini-Phone ATC	0 to 14	–5 to +100	143/10	386.01
Fisher Scientific accuFlow Flushable Junction, Plastic Body									
13-620-117	pH/ATC with accu•**pH**ast reference	----	🟪	SP138-500	BNC/Min-Phone ATC	0 to 14	0 to 100	175/12	367.54
13-620-116	pH with accu•**pH**ast reference	G	🟪	SP138-500	BNC	0 to 14	0 to 100	175/12	318.51
13-620-110	pH/ATC with double-junction Ag/AgCl reference	----	🟪	SP138-500	BNC/Mini-Phone ATC	0 to 14	0 to 100	175/12	232.77
13-620-109	pH with double-junction Ag/AgCl reference	----	🟪	SP138-500	BNC	0 to 14	0 to 100	175/12	196.06
Fisher Scientific accuTupH+* Variable Temperature, Rugged Bulb									
13-620-185	Double junction, glass body	H	🟪	SP138-500	BNC	0 to 14	–5 to +100	102/10	357.21
Fisher Scientific accuTupH* Rugged Bulb, Glass Body									
13-620-181	Single junction, Ag/AgCl reference	I	🟦	SP135-500	BNC	0 to 14	0 to 80	102/10	184.6
13-620-183	Double junction, Ag/AgCl reference	J	🟪	SP138-500	BNC	0 to 14	0 to 80	102/10	198.39

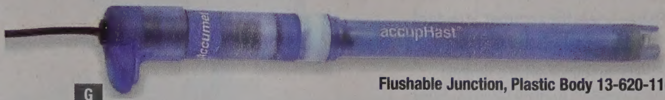
†The Electrode Coil Trade Dress is a trademark used under license from Thermo Fisher Scientific.
‡Cap Color: 🟦 For standard pH measurements. 🟪 For biological, pharmaceutical and Tris applications.
††Fill Solutions: Cat. No. SP138-500 Saturated KCl; Cat. No. SP135-500 4M KCl saturated with AgCl. See p. 1342 for ordering information.

er Scientific* accuFlow* hable Junction Combinations

- inate junction clogging: no mic or fiber junction to clog.
- ess on cap to clean; filling lution flushes away any viscous lutions or small particles from ference junction
- ailable with Fisher Scientific cu•**pH**ast* or Ag/AgCl double nction, in pH and pH/ATC rsions

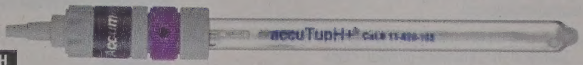
er Scientific accuTupH* and TupH+*Rugged Bulb binations

- ed pH bulb is up to 40 times her than conventional glass s.
- ass bodies fit standard ctrode holders
- her Scientific accuTupH* ailable in single- and double-nction models
- her Scientific accuTupH+* has her Scientific accu•**pH**ast iable temperature reference



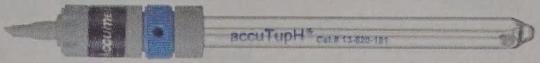
G

Flushable Junction, Plastic Body 13-620-116



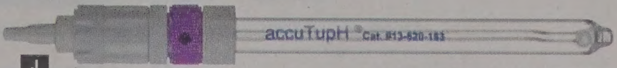
H

Variable Temperature, Rugged Bulb 13-620-185



I

Rugged Bulb, Glass Body 13-620-181



J

Rugged Bulb, Glass Body 13-620-183

	Application/Sample Type																		
					Harsh Environments											Water			
	General Purpose	Biological/Pharmaceutical Tris Compatible	Education/Student Use	Emulsions	Field or Plant Use	Rugged Use	Large Sample Size	Low Ionic Strength	Nonaqueous	Process Measurements	Pulp & Paper	Small Sample Size	Soil	Titration	Viscous Samples	Acid Rain, Boiler Feed, Distilled, Rain, Well	Drinking	Sea Water	Wastewater
at. No.																			
isher Scientific accu•pHast R Variable Temperature																			
3-620-195	■	■		■				■	■				■	■		■	■	■	■
3-620-197		■		■		■							■	■	■	■	■	■	■
3-620-196		■	■	■	■	■							■	■	■	■	■	■	■
isher Scientific accu•pHast Variable Temperature																			
3-620-296	■	■						■	■					■		■	■	■	■
3-620-297		■										■							
3-620-298	■	■	■		■	■	■												
3-620-113		■	■		■	■													
3-620-114		■	■		■	■													
isher Scientific accuFlow Flushable Junction																			
3-620-117	■	■		■	■	■		■					■		■	■	■		■
3-620-116	■	■		■	■	■		■					■		■	■	■		■
3-620-110		■		■	■	■		■					■		■	■	■		■
3-620-109		■		■	■	■		■					■		■	■	■		■
isher Scientific accuTupH+ Variable Temperature, Rugged Bulb																			
3-620-185	■	■	■			■				■	■						■	■	■
isher Scientific accuTupH Rugged Bulb, Glass Body																			
3-620-181	■		■			■				■				■					
3-620-183	■	■	■			■				■	■			■		■	■		

Fisher Scientific* accumet* Combination pH Electrodes, Contd.

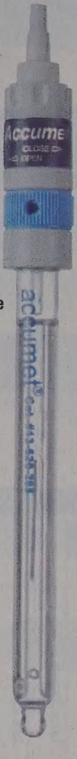
Fisher Scientific accumet Standard-Size Glass Body Combinations

Perfect for routine pH and titration measurements in small samples, small vessels, where a separate electrode pair maybe impractical.

- Constant distance between the glass bulb and the reference junction maintains high reproducibility in nonaqueous as well as aqueous pH and titration samples
- Choice of models with Ag/AgCl or Calomel reference element

INCLUDES:
All come with removable bulb protector.

Glass Body Single-Junction Ag/AgCl Reference 13-620-285

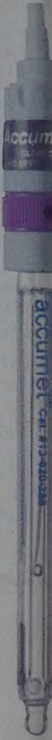


A

Glass Body Double-Junction Ag/AgCl Reference 13-620-223

B

Glass Body Single-Junction Calomel Reference 13-620-286



C

Cat. No.	Description	Photo Key	Cap Color†	Fill Solution‡	Connector	pH Range	Temperature Range (°C)	Length/ Dia. (mm)	Each
Fisher Scientific accumet Standard-Size Glass Body									
13-620-285	Single junction, Ag/AgCl reference	A	■	SP135-500	BNC	0 to 14	–5 to +100	106/10	183.
13-620-223	Double junction, Ag/AgCl reference	B	▨	SP138-500	BNC	0 to 14	–5 to +100	106/10	183.
13-620-286	Single junction, Calomel reference	C	▨	SP138-500	BNC	0 to 14	–5 to +80	106/10	184.
Fisher Scientific accumet MicroProbe Glass Body									
13-620-94	Micro tip, miniature length, Ag/AgCl reference	D	■	SP135-500	U.S. Standard/pin	0 to 14	–5 to +110	60/6	219.
13-620-291	Micro tip, standard length, Ag/AgCl reference	E	■	SP135-500	BNC	0 to 14	–5 to +110	100/6	217.
13-620-292	Micro tip, extra long, Ag/AgCl reference	F	■	SP135-500	BNC	0 to 14	–5 to +100	150/6	217.
13-620-293	Semimicro, extra long, Calomel reference††	G	▨	SP138-500	BNC	0 to 14	–5 to +80	150/6	207.
13-620-95	Micro tip, 6" stem length, Calomel reference††	H	▨	SP138-500	BNC	0 to 14	0 to 80	254/3	304.
13-620-96	Micro tip, 1½" stem length, Calomel reference††	I	▨	SP138-500	BNC	0 to 14	0 to 80	127/3	275.

† *Cap Color:* ■ *For standard pH measurements.* ▨ *For biological, pharmaceutical, and Tris applications.*
‡ *Fill Solutions: Cat. No. SP138-500 Saturated KCl; Cat. No. SP135-500 4M KCl saturated with AgCl. See p. 1342 for ordering information.*
†† *For Mercury alert, see page 1316*

er Scientific* accumet oProbe* Glass Body binations

bodies with choice of 6mm or diameter tip. Perfect for small-le testing in tubes, vials, extra- and narrow vessels.

nstant distance between the FS-5 ss bulb and the reference junction intains high reproducibility in non- ueous as well as aqueous pH and ation samples

oice of models with Ag/AgCl or omel reference element, in gths from 60 to 254mm

accumet Cat. #13-620-94
accumet

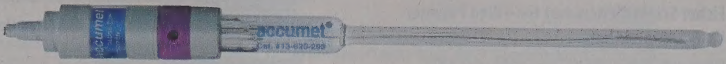
D Glass Body Miniature Ag/AgCl MicroProbe* Combination 13-620-94

accumet Cat. #13-620-291
accumet

E Glass Body Standard-Length Ag/AgCl MicroProbe Combination 13-620-291

accumet Cat. #13-620-292
accumet

F Glass Body Extra-Long Ag/AgCl MicroProbe Combination 13-620-292



G Glass Body, Semimicro Extra-Long Calomel Reference 13-620-293

H Glass Body MicroProbe with 6" Stem, Calomel Reference 13-620-95

I Glass Body, MicroProbe with 1½" Stem, Calomel Reference 13-620-96

	Application/Sample Type																		
					Harsh Environments											Water			
at. No.	General Purpose	Biological/Pharmaceutical Tris Compatible	Education/Student Use	Emulsions	Field or Plant Use	Rugged Use	Large Sample Size	Low Ionic Strength	Nonaqueous	Process Measurements	Pulp & Paper	Small Sample Size	Soil	Titration	Viscous Samples	Acid Rain, Boiler Feed, Distilled, Rain, Well	Drinking	Sea Water	Wastewater
sher Scientific accumet Standard-Size Glass Body																			
3-620-285	■																		
3-620-223	■	■						■	■		■			■		■	■	■	■
3-620-286	■	■						■	■					■		■	■		
sher Scientific accumet MicroProbe Glass Body																			
3-620-94												■							
3-620-291												■							
3-620-292												■							
3-620-293		■					■					■							
3-620-95		■										■							
3-620-96		■										■							

Contd. on next page.

Fisher Scientific* accumet* Combination pH Electrodes, Contd.

Fisher Scientific accumet Liquid-Filled Polymer Body Combinations

- Rugged polypropylene or epoxy body—ideal for handheld use with aqueous samples
- All have porous ceramic junction
- Polypropylene body models are available with single-junction Calomel or Ag/AgCl reference; or with double-junction Ag/AgCl reference
- Epoxy body models are available with standard-size body and Calomel reference[1] or in flat-surface model with Ag/AgCl single-junction reference
- Two pH/ATC models are available with Calomel or Ag/AgCl reference

Fisher Scientific accumet Gel-Filled Polymer Body Combinations

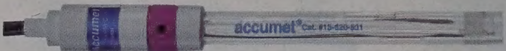
Filled with gelled 4M KCl saturated with AgCl for low maintenance.

- Polypropylene or epoxy body
- With Ag/AgCl internal reference element, porous ceramic junction
- Standard-size models are available in single-junction or double-junction pH/ATC models
- Pencil-thin epoxy body model has ¼" dia. for narrow, thin vessels

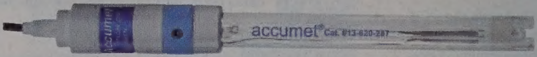
[1] *For Mercury alert, see page 1316.*

accumet® Cat. #13-620-530

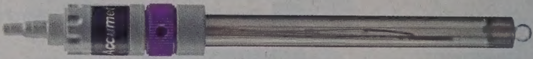
A Polypropylene Body 3-in-1 pH/ATC Liquid-Filled Ag/AgCl Combination 13-620-530



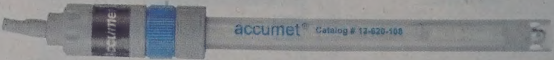
B Polypropylene Body 3-in-1 pH/ATC Liquid-Filled Calomel Combination 13-620-531



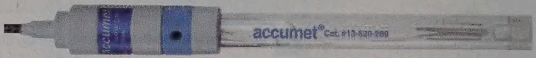
C Polypropylene Body Single-Junction Liquid-Filled Ag/AgCl Combination 13-620-287



D Epoxy Body Single-Junction Liquid-Filled Calomel Reference 13-620-288



E Polypropylene Body Single-Junction Gelled Ag/AgCl Combination 13-620-108



F Epoxy Body Single-Junction Gelled Ag/AgCl Flat Surface Combination 13-620-289

G Pencil-Thin Epoxy Body Single-Junction Gelled Ag/AgCl Reference 13-620-290

Cat. No.	Description	Photo Key	Cup Color†	Fill Solution‡	Connector	pH Range	Temperature Range (°C)	Length/ Dia. (mm)	Each
Fisher Scientific accumet Standard-Size Polypropylene Body Liquid-Filled									
13-620-287	Single junction, Ag/AgCl reference	C	■	SP135-500	BNC	0 to 14	–5 to +100	106/10	145.97
13-620-300	Single junction, Calomel reference	----	▨	SP138-500	BNC	0 to 14	–5 to +80	106/10	172.08
13-620-221	Double junction, Ag/AgCl reference	----	▨	SP138-500	BNC	0 to 14	–5 to +100	106/10	163.56
Fisher Scientific accumet Standard-Size Epoxy Body Liquid-Filled									
13-620-530	3-in-1 pH/ATC, Ag/AgCl reference††	A	■	SP135-500	BNC/Mini-Phone ATC	0 to 14	–5 to +100	106/12	163.98
13-620-531	3-in-1 pH/ATC, CCalomel reference††	B	▨	SP138-500	BNC/Mini-Phone ATC	0 to 14	–5 to +80	106/12	176.68
13-620-288	Single junction, calomel reference	D	▨	SP138-500	BNC	0 to 14	–5 to +80	106/10	171.53
13-620-289	Single junction, Ag/AgCl reference, flat surface	F	■	SP135-500	BNC	0 to 14	–5 to +100	114/13	208.19
Fisher Scientific accumet Standard-Size Polypropylene Body Gel-Filled									
13-620-104	Single junction, gelled Ag/AgCl reference	----	■	----	U.S. Standard/pin	0 to 14	–5 to +80	106/10	113.94
13-620-108	Single junction, gelled Ag/AgCl reference	E	■	----	BNC	0 to 14	–5 to +80	106/10	116.17
13-620-299	Double junction, gelled Ag/AgCl reference	----	▨	----	BNC	0 to 14	–5 to +80	106/10	141.67
Fisher Scientific accumet Standard and Pencil-Thin Epoxy Body Gel-Filled									
13-620-290	Pencil-thin, Single junction, Ag/AgCl reference	G	■	----	BNC	0 to 14	–5 to +80	178/6	170.36
13-620-111	pH/ATC, Double junction, Ag/AgCl reference††	----	▨	----	BNC/Mini-Phone ATC	0 to 14	–5 to +80	106/10	240.14
13-620-112	pH/ATC, Double junction, Ag/AgCl reference‡‡	----	▨	----	BNC/¼" Phone ATC	0 to 14	–5 to +80	106/10	253.03
Fisher Scientific accuFet Solid-State Epoxy Body Gel-Filled									
13-620-755	pH/ATC, ISFET sensor, Ag/AgCl reference	H	■	----	DIN	0 to 14	0 to 100	140/12	467.91
Fisher Scientific accuFet XL Solid-State Plastic Body Gel-Filled									
13-620-700	Cone tip, ISFET sensor, Ag/AgCl reference	I	----	----	DIN	0 to 14	–5 to +105	160/10	520.29
13-620-710	Cup tip, ISFET sensor, Ag/AgCl reference	J	----	----	DIN	0 to 14	–5 to +105	160/10	516.03
13-620-720	Flat tip, ISFET sensor, Ag/AgCl reference	K	----	----	DIN	0 to 14	–5 to +105	160/10	567.96
13-620-730	Lance tip, ISFET sensor, Ag/AgCl reference	----	----	----	DIN	0 to 14	–5 to +105	160/10	677.18

† Cap Color: ■ *For standard pH measurements.* ▨ *For biological, pharmaceutical, and Tris applications.*
‡ Fill Solutions: Cat. No. SP138-500 Saturated KCl; Cat. No. SP135-500 4M KCl saturated with AgCl. See p. 1342 for ordering information.
†† For Fisher Scientific accumet Benchtop Meters with Mini-Phone ATC jack.
‡‡ For older Fisher Scientific accumet Benchtop Meters with ¼" Phone ATC jack.

*Trademark. See Trademark Reference.

her Scientific* accuFet* Solid-State pH/ATC nbinations

selective field effect transistor (ISFET) solid-e pH sensor plus reference and ATC probe—in tough epoxy body. Does away with fragile ss pH-sensing membrane, and replaces it with gged, ISFET.

eference cell uses gelled Ag/AgCl electrolyte r high performance and low maintenance

orous junction for extra-long service; mperature probe built in for accurate easurements in minimal space

at. No. 13-620-755 is for Fisher Scientific ccumet* AR and AB Series benchtops only

er Scientific accuFet XL Solid-State nbinations

l for food applications—choose from four mod-o match most applications. All can be used for eral-purpose immersion.

ne type 13-620-700 is fine for immersion or misolid samples

p type 13-620-710 measures with just a few ops of sample

at type 13-620-720 provides fast surface pH easurement

nce type 13-620-730 features steel-reinforced to penetrate meats or frozen samples

l-filled reference

have DIN connector for use with new Fisher ientific accumet XL Series meters only

H pH/ATC Solid-State Epoxy-Body ISFET Combination 13-620-755

I XL Cone Tip Solid-State Plastic-Body ISFET Combination 13-620-700

J XL Cup Tip Solid-State Plastic-Body ISFET Combination 13-620-710

K XL Flat Tip Solid-State Plastic-Body ISFET Combination 13-620-720

No.	Application/Sample Type												
					Harsh Environments							Water	
	General Purpose	Biological/Pharmaceutical Tris Compatible	Education/Student Use	Flat Surface (Food, Cheese, Agar)	Field or Plant Use	Rugged Use	Large Sample Size	Process Measurements	Pulp & Paper	Semisolids (Fruit, Meat, Cheese)	Small Sample Size	Drinking	Wastewater
ner Scientific accumet Standard-Size Polypropylene Body Liquid-Filled													
520-287	■		■		■								
520-300	■	■	■		■								
520-221	■	■	■			■							
er Scientific accumet Standard-Size Epoxy Body Liquid-Filled													
520-530	■				■	■							
520-531	■	■			■								
520-288		■	■		■	■							
520-289				■						■			
er Scientific accumet Standard-Size Polypropylene Body Gel-Filled													
520-104	■	■	■		■	■						■	■
520-108	■		■		■	■						■	■
520-299	■	■	■		■	■		■	■			■	■
er Scientific accumet Standard and Pencil-Thin Epoxy Body Gel-Filled													
520-290	■						■				■		
20-111		■			■	■		■					
20-112		■			■	■		■					
er Scientific accuFet Solid-State Epoxy Body Gel-Filled													
20-755						■				■			
er Scientific accuFet Solid-State Plastic Body Gel-Filled													
20-700	■					■		■		■			
20-710						■				■	■		
20-720				■		■				■			
20-730				■		■				■			

Fisher Scientific* accumet* pH Indicating and Reference Half Cell Electrodes

pH Indicating Half Cells

Fisher Scientific* accuTupH* Rugged Bulb Model

- Made to be up to 40 times tougher than electrodes with conventional glass bulbs, without sacrificing response time
- In glass body

Universal Glass Bulb Models

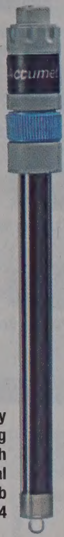
- Provide durable service in production and process monitoring, with low-temperature samples, and in routine pH and titration measurements
- In glass or epoxy body

Full-Range/High pH Glass Bulb Model

- Offers superior chemical durability in frequent or long-term testing at very high or very low pH values
- In glass body

accuTupH
accuTupH* Cat. #13-620-187

A Glass Body pH Indicating Half Cell with Rugged Bulb 13-620-187

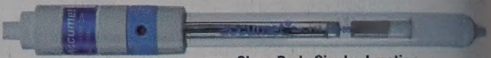


B Epoxy Body pH Indicating Half Cell with Universal Glass Bulb 13-620-294

Reference Half Cells

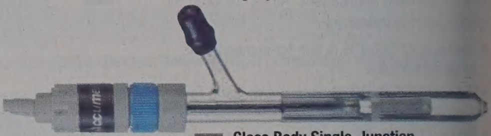
Fisher Scientific gives you a generous choice of reference half cells.

- With Ag/AgCl or Calomel elements
- In a variety of junction types to provide a selection of flowrates—including ceramic, annular, single, double, cracked bead and sleeve junctions
- In glass bodies plus liquid-or gel-filled epoxy bodies

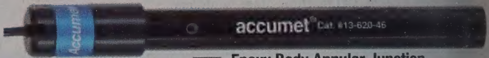


C Glass Body Single-Junction Ag/AgCl Reference 13-620-53

D Glass Body Double-Junction Ag/AgCl Reference 13-620-273



E Glass Body Single-Junction Side-Arm Ag/AgCl Reference 13-620-45



F Epoxy Body Annular Junction Ag/AgCl Reference 13-620-46

Cat. No.	Description	Photo Key	Cap Color†	Fill Solution‡	Connector	pH Range	Temperature Range (°C)	Length/ Dia. (mm)	Each
Fisher Scientific accumet pH Indicating Half Cells									
Rugged Bulb Glass Body pH Indicating Half Cells									
13-620-187	Standard glass body, rugged bulb	A	🟦	----	BNC	0 to 14	0 to 100	102/10	156.14
Standard pH Indicating Half Cells									
13-620-284	Glass body, universal glass pH bulb	----	🟦	----	BNC	0 to 14	–5 to +110	102/10	137.38
13-620-294	Epoxy body, universal glass pH bulb	B	🟦	----	BNC	0 to 14	–5 to +110	102/10	124.94
13-620-295	Glass body, full range/high pH glass bulb	----	🟦	----	BNC	0 to 14	–5 to +110	102/10	138.17
Fisher Scientific accumet Reference Half Cells									
Standard Glass Body Ag/AgCl Reference Half Cells									
13-620-53	Single junction	C	🟦	SP135-500	Pin	0 to 14	–5 to +110	105/10	121.83
13-620-216	Single junction, for Ag and Cl titrations	----	🟦	1M Na_2 SO_4††	Pin	0 to 14	–5 to +110	105/10	118.23
13-620-273	Double junction; replaceable outer body (Cat. No. **13-620-274**)	D	----	SP138-500 (inner), SP135-500 (outer)	Pin	0 to 14	–5 to +110	102/10	205.71
13-620-45	Single junction, side arm for remote filling	E	🟦	SP135-500	Pin	0 to 14	–5 to +110	105/10	121.72
Epoxy Body Ag/AgCl Reference Half Cells									
13-620-46	Single annular junction; high flowrate for ISEs, pH	F	----	SP135-500	Pin	0 to 14	0 to +100	108/13	176.90
13-620-47	Double annular/ceramic junction; high flowrate	----	----	SP135-500 (inner)	Pin	0 to 14	0 to +100	108/13	224.04
Glass Body Calomel Reference Half Cells									
13-620-51	Standard size, packed dry (without electrolyte)‡‡	G	🟪	SP-138-500	Pin	0 to 14	–5 to +80	105/10	118.87
13-620-52	Standard size, with electrolyte‡‡	G	🟪	SP-138-500	Pin	0 to 14	–5 to +80	105/10	118.87
13-620-64	Standard size, 60" lead‡‡	G	🟪	SP-138-500	Pin	0 to 14	–5 to +80	105/10	131.25
13-620-79	Miniature size‡‡	H	🟪	SP-138-500	Pin	0 to 14	–5 to +80	41/10	114.14
13-620-57	Standard size, cracked bead junction, low flow‡‡	I	🟪	SP-138-500	Pin	0 to 14	–5 to +80	102/10	136.27
13-620-62	Standard size, sleeve junction, high flow‡‡	J	🟪	SP-138-500	Pin	0 to 14	–5 to +80	102/10	136.28
13-620-61	Standard size, reverse sleeve junction, high flow‡‡	K	🟪	SP-138-500	Pin	0 to 14	–5 to +80	102/10	136.27
Epoxy Body Calomel Reference Half Cells									
13-620-258	Standard size, liquid filled‡‡	----	🟪	SP-138-500	Pin	0 to 14	–5 to +80	102/10	129.36
13-620-259	Standard size, gel filled‡‡	L	🟪	----	Pin	0 to 14	–5 to +80	102/10	131.25

† Cap Color: 🟦 For standard pH measurements. 🟪 For biological, pharmaceutical and Tris applications.
‡ Fill Solutions: Cat. No. SP138-500 Saturated KCl; Cat. No. SP135-500 4M KCl saturated with AgCl. See p. 1342 for ordering information.
†† For Cat Nos., contact your Fisher Scientific Customer Service Representative.

‡‡ These products contain mercury. Do not put products containing mercury in the trash. They should be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

*Trademark. See Trademark Reference.

Prices subject to change.

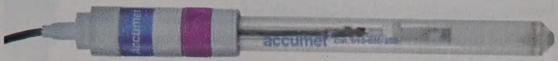
Glass Body Standard Size Calomel Reference 13-620-51 13-620-52 13-620-64

Glass Body Miniature Calomel Reference 13-620-79

Glass Body Cracked Bead Junction Calomel Reference 13-620-57

Glass Body Sleeve Junction Calomel Reference 13-620-62

Glass Body Reverse Sleeve Junction Calomel Reference 13-620-61



Epoxy Body Gel-Filled Calomel Reference 13-620-259

	Application/Sample Type																
						Harsh Environments									Water		
t. No.	General Purpose	Biological/Pharmaceutical Tris Compatible	Br^-, Cl^-, Cu, I^-, Pb, NO_3, Ag/S^{2-}	$Ca(CN)_2$, Divalent Cation F^-, Na^+	Emulsions	Field or Plant Use	Rugged Use	Process Measurements	Low Ionic Strength	Nonaqueous	Small Sample Size	Titration	ORP Measurements	Viscous Samples	Acid Rain, Boiler Feed, Distilled, Rain, Well	Drinking	Wastewater
gged Bulb Glass Body pH Indicating Half Cells																	
-620-187	■	■					■										
ndard pH Indicating Half Cells																	
-620-284	■	■			■				■	■				■	■	■	■
-620-294	■	■															
-620-295	■	■			■												
. Glass Body Ag/AgCl Reference Half Cells																	
620-53	■						■										
620-216	■		■				■										
620-273	■	■															
620-45	■																
xy Body Ag/AgCl Reference Half Cells																	
620-46	■			■						■			■			■	■
620-47		■	■										■				
ss Body Calomel Reference Half Cells																	
620-51	■	■															
620-52	■	■															
620-64	■	■															
620-79											■						
620-57										■							
620-62					■									■			
620-61					■				■					■	■	■	
xy Body Calomel Reference Half Cells																	
620-258						■	■										
620-259						■	■										

Fisher Scientific* accumet* Metallic Electrodes for ORP and Titrations

Fisher Scientific accumet Metallic Indicating Half Cells

Cover –5° to +100°C (23° to 212°F) range.

Platinum Indicating Model

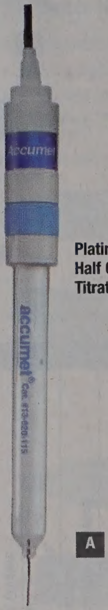
- For ORP measurements and redox titrations
- Glass body and large area platinum element

Silver Billet Model

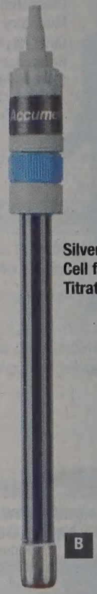
- For silver and halide titrations
- Extra-large silver billet area and glass body

ORDERING INFORMATION:
Dimensions: 5½"L (14cm)

REQUIRED ACCESSORIES:
13-640-150 Pin-jack Adapter for U.S. Standard inputs or 13-620-490 BNC Input Adapter for BNC inputs.



Platinum Indicating Half Cell for Redox Titrations 13-620-115



Silver Billet Indicating Half Cell for Silver and Halide Titrations 13-620-122

Cat. No.	Description	Photo Key	Cap Color[†]	Fill Solution[‡]	Connector	pH Range	Temperature Range (°C)	Length/ Dia. (mm)	Each
Metallic Indicating Half Cells									
Platinum Indicating Half Cell for ORP/Redox Measurements									
13-620-115	Glass body, platinum element, large surface area	A	🟦	----	Pin	----	–5 to +100	140/10	174.70
Silver Billet Indicating Half Cell for Silver and Halide Titrations									
13-620-122	Glass body, large-surface-area silver billet	B	🟦	----	Pin	----	–5 to +100	140/10	168.05
Metallic Combination Electrodes									
Dual Platinum Plate Combination									
13-620-149	Dual Platinum Plate for chlorine titrations; 25" lead	C	----	----	Dual Pin	----	10 to 80	114/13	232.23
Dual Platinum Pin Combination									
13-620-123	Dual Platinum Pin for KF dead-stop titrations, sulfur analyses; 25" lead	D	🟦	----	Dual Pin	----	–5 to +100	140/13	207.75
Platinum Pin Ag/AgCl Combination									
13-620-82 **13-620-81**	Platinum indicator, Ag/AgCl reference element; For environmental ORP measurements; 30" lead	E	🟦	13-620-834	U.S. Standard/Pin BNC	----	–5 to +100	140/10	268.80 264.32

[†] Cap Color: 🟦 For standard ORP measurements and titrations; not for biological, pharmaceutical and Tris applications.

[‡] Fill Solutions: Cat. No. 13-620-834 1M KNO_3. See below for ordering information.

Fisher Scientific* Filling Solutions

For Fisher Scientific accumet* pH/ORP/Titration Reference and Combination Electrodes

In 16 oz. (500mL) bottles.

Solution	Use with	Cat. No.	Each	Case of 6
Saturated KCl	All calomel single-junction models; outer chamber of Ag/AgCl double-junction models; fluoride and sodium combination ISEs; Fisher Scientific accu•**pHast***, accu•**pHast R***, accuTup**H*** and accuTup**H+*** outer chambers	**SP138-500**	23.30	118.81
4M KCl saturated	All Ag/AgCl single-junction models; inner chamber of all double-junction models, except Fisher Scientific accu•**pHast**, accu•**pHast R***, accuTup**H*** and accuTup**H+***	**SP135-500**	26.80	138.26

*Trademark. See Trademark Reference.

Prices subject to change.

er Scientific* accumet* Metallic bination Electrodes

Platinum Plate Model

chlorine titrations using the Fisher Scientific* Cl Titrimeter*

ers 10° to 80°C (50° to 176°F) range

asures 4½"L (11.4cm)

Platinum Pin Model

Karl Fischer and dead-stop titrations and sulfur analyses h titrators, analyzers, and pH meters having –10µA KF rizing output)

ers –5° to +100°C (23° to 212°F) range

asures 5½"L (14cm)

ıum Ag/AgCl Model

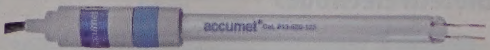
environmental ORP measurements

ers –5° to +100°C (23° to 212°F) range

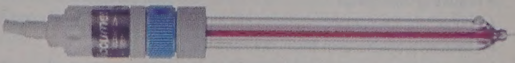
asures 5"L (14cm)

IRED ACCESSORIES:

ıal Platinum Plate and Dual Platinum Pin Models both require)-150 Pin-jack Adapter for use with U.S. Standard inputs or)-488 BNC Input Adapter for BNC inputs.



D Dual Platinum Pin Combination Electrode 13-620-123



E Platinum Pin Ag/AgCl Combination Electrode 13-620-82

accumet Cat. #13-620-149

C Dual Platinum Plate Combination Electrode 13-620-149

ıt. No.	Application/Sample Type											
			Harsh Environments								Water	
	General Purpose	Biological/Pharmaceutical Tris Compatible	Emulsions	Field or Plant Use	Rugged Use	Low Ionic Strength	Nonaqueous	ORP Measurements	Titration	Viscous Samples	Acid Rain, Boiler Feed, Distilled, Rain, Well	Drinking
etallic Indicating Half Cells												
atinum Indicating Half Cell for ORP/Redox Measurements												
-620-115								■	■			
ver Billet Indicating Half Cell for Silver and Halide Titrations												
-620-122									■			
etallic Combination Electrodes												
al Platinum Plate Combination												
-620-149									■			
al Platinum Pin Combination												
-620-123									■			
ıtinum Pin Ag/AgCl Combination												
-620-82								■				
-620-81								■				

Don't leave accuracy to chance!

Instrument calibration to NIST*-traceable standard helps meet ISO, FDA, USDA, and EPA quality assurance guidelines. Have your equipment pretested and calibrated before using it in your critical processes. Testing is performed by an A2LA-accredited laboratory and includes a NIST-traceable certificate.

Service is available for temperature, humidity, pH, refractometers, and much more.

Contact your Fisher Scientific Customer Service Representative at 1-800-766-7000 for details.

INNOCAL®
INNOVATIVE CALIBRATION SOLUTIONS

A2LA ACCREDITED Certificate No. 1746.01

Fisher Scientific* accumet* pH Combination Biotech Electrodes

13-620-2004

Accurate, reproducible result

- Ideal for fermentor pH monitoring
- Feature 0–13pH range
- Double-junction ceramic reference design prevents fouling of electrodes
- Eliminate problems with Tris buffers and sulfides
- Available in a variety of lengths to fit most fermentors ("A" lengths)
- FS-5 glass formulation provides durable, long life
- Autoclavable to 135°C
- Withstand pressures up to 150psi at 25°C

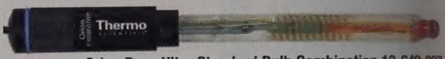
"A" Length	Connection Type	Junction Type	Cat. No.	Each
Refillable Models				
6 11/16" (170mm)	K9	Dual Ceramic Wick	**13-620-2000**	211.01
10⅝" (270mm)	K9	Dual Ceramic Wick	**13-620-2001**	233.33
Sealed Models				
1 1/16" (120mm)	K8	Dual Ceramic Wick	**13-620-2003**	166.36
5⅞" (150mm)	K8	Dual Ceramic Frit	**13-620-2008**	161.88
⅞" (200mm)	K8	Dual Ceramic Wick	**13-620-2004**	177.50
⅞" (225mm)	K8	Dual Ceramic Frit	**13-620-2009**	173.06
12 13/16" (325mm)	K8	Dual Ceramic Wick	**13-620-2005**	188.70
1 3/16" (325mm)	K8	Dual Ceramic Frit	**13-620-2010**	184.23
1 1/16" (425mm)	K8	Dual Ceramic Frit	**13-620-2011**	223.28

Thermo Scientific* Orion* Ross* Ultra* pH Combination Electrodes

Unique reference system provides longer life, more stability, virtually no drift, and fast results.

Ideal for any application when the use of a metallic reference electrode would contaminate the sample—measuring biological media, pharmaceuticals, foods, and more. Choose from six combination electrodes with glass or epoxy bodies and one half-cell reference electrode with a glass body.

Unique internal element system replaces Ag/AgCl or Hg_2Cl_2 internals with platinum wire and redox-couple filling solution. Double-junction reference cells have porous ceramic or glass fiber outer junction. Design provides stable potential, independent of temperature, and stable readings even when samples vary by 50°C (90°F) or more. Minimizes drift, stirring effects, clogged junctions; no need for frequent standardization so samples are analyzed faster.



Orion Ross Ultra Standard Bulb Combination 13-642-237

Thermo SCIENTIFIC
Orion
Orion Ross Ultra Rugged Bulb Combination 13-642-239

Thermo SCIENTIFIC
Orion
Orion Ross Ultra Semimicro Combination 13-642-238

81-02U Combination Electrodes

- Glass bodies; for general purpose, quality control, and research applications

81-03U Combination Electrodes

- Glass bodies; feature semimicro bulbs to fit test tubes and measure samples as small as 0.2mL
- Use in pharmaceutical, clinical, or food laboratories wherever sample size is a constraint

81-04U Combination Electrodes

- Glass bodies with rugged bulbs for tough laboratory use
- Ideal for precise quality control measurements

81-15U Combination Electrodes

- Epoxy bodies with semimicro bulbs
- Use to measure aqueous samples that are as small as 0.2mL

81-35U Combination Electrodes

- Epoxy bodies with flat surface to measure solid and semisolid soft, moist surfaces like agar plates and various foods

81-56U Combination Electrodes

- General-purpose epoxy bodies for durability and ruggedness

Specifications for Thermo Scientific Orion Ross Ultra pH/Reference Combination Electrodes

- 0 to 14pH
- 0° to 100°C (32° to 212°F) range
- Slope, 92 to 102%; isopotential point, pH 7
- When standardized in 6.86pH buffer at 25°C (77°F), accuracy is ±0.03pH for the buffer from 0° to 100°C (32° to 212°F) (using ATC); response is stable to 0.01pH within 30 seconds at 25°C (77°F) and 75°C (167°F) and stable to ±0.002pH within 15 seconds when cycling between pH 6.86 and 4.01 buffers at 25°C (77°F)
- Max. cap dia. (top): ¾" (19mm); collar dia. ⅝" (16mm); Cable length is 39⅜" (1m)

WARRANTY:
24 months

Model	Description	Junction	L × Dia.	Connector	Mfr. No.	Cat. No.	Each
Glass Body Combination Electrodes							
81-02U	General Purpose/Standard Size/Standard Bulb	Porous ceramic	120 × 12mm	Waterproof BNC	8102BNUWP	**13-642-237**	381.43
81-03U	Semimicro Size	Porous ceramic	120 × 12mm	Waterproof BNC	8103BNUWP	**13-642-238**	488.82
81-04U	Standard Size/Rugged Bulb	Porous ceramic	120 × 12mm	Waterproof BNC	8104BNUWP	**13-642-239**	410.53
Epoxy Body Combination Electrodes							
81-56U	General Purpose/Standard Size/Standard Bulb	Glass Fiber	120 × 12mm	Waterproof BNC	8156BNUWP	**13-642-241**	372.39
81-15U	Semimicro Size	Glass Fiber	165 × 6mm†	Waterproof BNC	8115BNUWP	**13-642-240**	416.56
81-35U	Flat Surface/Standard Size	Glass Fiber	120 × 12mm	Waterproof BNC	8135BNUWP	**13-642-235**	473.78

† 6mm dia. section is 95mm long.

ermo Scientific* Orion* Ross* Series pH, Reference and Combination Electrodes

que internal element system replaces Ag/AgCl or Hg_2Cl_2 internals with platinum wire and redox-couple filling tion.

ence cells have double junctions. Design provides stable potential endent of temperature and stable readings even when samples oy 50°C (90°F) or more. Minimizes drift, stirring effects, clogged ons—no need for frequent standardization.

Reference Pair

ndard-size glass body electrodes for general-purpose or research use
erence cell has porous ceramic frit junction
nes with bottle of 3M KCl filling solution

bination Electrodes

ne in glass or epoxy body models
able epoxy body models have glass fiber junction; all others have ous ceramic junction

HecT* Combination Electrodes

ide excellent accuracy with PerpHecT LogR* meters
also be used with any meter having BNC inputs

Flow* Reference and Combination Electrodes

e special free-flowing junction you can clean just by pressing the cap
xy body models have removable protective sleeve to guard bulb

Choice of body styles and sizes

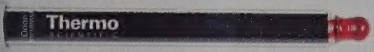
- All models have cap diameter of ⅝" (16mm); maximum body diameter of 7⁄16" (12mm); cable length of 39⅜" (1m)

Standard-size Models have 4¾" long (12cm) body.
Semimicro Models have 6½" long (16.5cm) body, ¼" diameter (16mm) at tip.
Spear Tip Models have 4⅜" long (11cm) or 4¾" long (12cm) body, ⅛" (5mm) to 1⁄16" (3mm) maximum tip diameter (see table for individual models).

Specifications for Thermo Scientific Orion Ross pH/Reference Pairs or Combination Electrodes

- 0 to 14pH
- 0° to 100°C (32° to 212°F) range
- Slope, 92 to 102%; isopotential point, pH 7
- When standardized in 6.86pH buffer at 25°C (77°F), accuracy is ±0.03pH for the buffer from 0° to 100°C (32° to 212°F) (using ATC); response is stable to 0.01pH within 30 seconds at 25°C (77°F) and 75°C (167°F); stable to ±0.002pH within 15 seconds when cycling between pH 6.86 and 4.01 buffers at 25°C (77°F)

mo Scientific* Orion* Ross Series Glass Body pH and y Body Reference Cells


13-642-236

13-641-795

	Connector	Mfr. No.	Cat. No.	Each
	Waterproof BNC	8101BNWP	**13-642-236**	242.71
	U.S. Std.	810100	**13-641-757**	247.56
nce	Pin	800500	**13-641-756**	202.74
low Reference	Pin	800300	**13-641-795**	334.07

LOOKING FOR PROCESS ELECTRODES?

d pH combination electrodes in housing for process monitoring on Web site.

t www.fishersci.com and search for accumet Process Electrodes

Thermo Scientific* Orion* Ross* Glass Body and Epoxy Body Combination Electrodes, Contd.

13-641-729

13-641-8

13-641-940

13-642-807

13-642-800

13-642-244

Model	Junction	L x Dia.	Connector[s]	Mfr. No.	Cat. No.	Each
Glass Body Combination Models						
General Purpose/Standard Size/Standard Bulb	Porous ceramic	120 × 12mm	BNC	8102BN	**13-641-729**	332.62
			U.S. Standard	810200	**13-641-762**	344.80
			Screw Cap	8102SC	**13-641-2**	318.98
General Purpose/Standard Size/Rugged Bulb	Porous ceramic	120 × 12mm	BNC	8104BN	**13-641-805**	361.88
			U.S. Standard	810400	**13-641-804**	374.70
			Screw Cap	8104SC	**13-641-4**	352.19
General Purpose PerpHecT*/Standard Size	Porous ceramic	120 × 12mm	BNC	8202BN	**13-642-562**	351.66
General Purpose Sure-Flow*/Standard Size	Porous ceramic	120 × 12mm	Waterproof BNC	8172BNWP	**13-642-243**	410.53
			E DIN	8172DN	**13-642-142**	441.74
General Purpose PerpHecT Sure-Flow/Standard Size	Porous ceramic	120 × 12mm	BNC	8272BN	**13-642-566**	413.78
Semimicro Size	Porous ceramic	165 × 5mm†	BNC	8103BN	**13-641-731**	442.83
			U.S. Standard	810300	**13-641-817**	455.85
			Screw Cap	8103SC	**13-641-3**	430.68
PerpHecT Semimicro Size	Porous ceramic	165 × 6mm†	BNC	8203BN	**13-642-563**	465.90
Spear Tip for semisolids	Porous ceramic	110 × 6mm†	Waterproof BNC	8163BNWP	**13-644-940**	484.87
Standard Taper 14/15 Tip	Porous ceramic	120 × 6mm†	Screw Cap	8162SC	**13-641-8**	353.19
PerpHecT Spear Tip for semisolids	Porous ceramic	120 × 6mm†	BNC	8263BN	**13-301-67**	484.00
PerpHecT Micro Size	Porous ceramic	155 × 3mm†	Waterproof BNC	8220BNWP	**13-642-800**	465.87
Epoxy Body Combination Electrodes						
General Purpose/Standard Size for viscous samples	Glass fiber	120 × 12mm	BNC	815600	**13-641-760**	338.63
			U.S. Standard	815500	**13-641-759**	351.66
			Screw Cap	8155SC	**13-641-7**	326.03
General Purpose PerpHecT/Standard Size	Glass fiber	120 × 12mm	BNC	8256BN	**13-642-565**	356.67
Sure-Flow Rugged Duty/Standard Size	Glass fiber	120 × 12mm	Waterproof BNC	8165BNWP	**13-642-242**	403.52
			E DIN	8165DN	**13-642-141**	441.74
Flat Surface/Standard Size	Glass fiber	120 × 12mm	BNC	8135BN	**13-641-807**	400.96
			Screw Cap	8135SC	**13-641-6**	402.50
PerpHecT Flat Surface/Standard Size	Glass fiber	120 × 12mm	BNC	8235BN	**13-642-564**	430.81
Semimicro	Glass fiber	165 × 6mm†	BNC	8115BN	**13-641-816**	373.32
			Screw Cap	8115SC	**13-641-5**	358.23
Sure-Flow Semimicro Size	Glass fiber	165 × 6mm†	Waterproof BNC	8175BNWP	**13-642-244**	417.57

† *Diameter at tip.*

*Trademark. See Trademark Reference.

Prices subject to change.

ıermo Scientific* Orion* Standard Series pH, Reference and Combination Electrodes

Combination Electrodes

ave Ag/AgCl internals, 39⅜″ long (1m) cable, 7/16″ (12mm) maximum ɔdy diameter, ⅝″ diameter (16mm) cap

ccept as noted, all measure 0 to 14pH and 0° to 90°C (32° to 194°F)

ass Body Combination Models all have ceramic junction except ıre-Flow models

ɔoxy Body Combination Models come as refillable or gel-filled models, ith glass fiber junction

iode* types incorporate ATC probe; Series A Triode is for Series A eters, has -5° to +105°C (23° to 221°F) temperature range; PerpHecT* ode is for PerpHecT Series meters

rpHecT Combination Electrodes provide excellent accuracy with rpHecT LogR* meters; may also be used with any meter having VC inputs

ıre-Flow Combination Electrodes have free-flowing junction that cleans sily by pressing the cap; epoxy body models have removable protective ɜeve to guard bulb

ıs Body pH Electrodes

andard size for general-purpose or research use

- Measure 0 to 14pH
- 0° to 90°C (32° to 194°F) temperature range
- 39⅜″ long (1m) cable, 4¾″ long (12cm) body

Epoxy Body Reference Electrodes

- 0° to 100°C (32° to 212°F) temperature range
- Ag/AgCl internals, sleeve junction, 39⅜″ long (1m) cable, pin connector, 4 9/16″ long (11cm) body
- Double-Junction Model is useful in ISE determinations; takes a variety of fill solutions
- Single-Junction Model handles routine pH, many ISE measurements
- Reservoir Model has filling solution reservoir to eliminate frequent refilling in prolonged testing

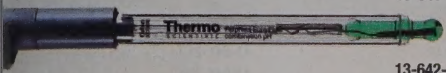
Choice of body styles and sizes

- All models have cap diameter of ⅝″ (16mm); maximum body diameter of 7/16″ (12mm); cable length of 39⅜″ (1m)
- Standard-size Models have 4¾″ long (12cm) body
- Semimicro Models have 5½″ long (14cm) body, ¼″ diameter

ıs Body and Epoxy Body Combination Electrodes

13-641-259

13-641-700



13-642-561

13-642-557

ɘl	Connector	Mfr. No.	Cat. No.	Each
Body Combination Models				
ral Purpose Standard Size Standard Bulb	Waterproof BNC	9102BNWP	**13-642-246**	161.80
	Screw Cap	9102SC	**13-641-13**	185.96
ɔle Junction General Purpose Standard Size Standard Bulb	Waterproof BNC	9102DJWP	**13-643-100**	157.88
ral Purpose PerpHecT Standard Size	BNC	9202BN	**13-642-557**	199.34
ɟard Size Rugged Bulb	Waterproof BNC	9104BNWP	**13-642-248**	201.24
	Screw Cap	9104SC	**13-641-15**	170.14
ɟard Size Rugged Bulb Tapered Tip	Waterproof BNC	9162BNWP	**13-645-155**	297.95
	Screw Cap	9162SC	**13-641-17**	237.37
ral Purpose PerpHecT Sure-Flow Standard Size	BNC	9272BN	**13-642-561**	217.45
ral Purpose Sure-Flow Standard Size	Waterproof BNC	9172BNWP	**13-642-254**	232.35
micro Size	Waterproof BNC	9103BNWP	**13-642-247**	255.93
le Junction Semimicro Size	Waterproof BNC	9110DJWP	**13-643-101**	120.68
ɫecT Semimicro Size	BNC	9203BN	**13-642-558**	239.61
Body Combination Models				
ral Purpose Standard Size Liquid Filled	U. S. Standard	915500	**13-641-700**	161.08
	Waterproof BNC	9156BNWP	**13-642-251**	136.52
le Junction General Purpose Standard Size Liquid Filled	Waterproof BNC	9156DJWP	**13-643-102**	149.50
ral Purpose PerpHecT Standard Size Liquid Filled	BNC	9256BN	**13-642-559**	161.08
Flow Rugged Duty Standard Size Liquid Filled	Waterproof BNC	9165BNWP	**13-642-253**	228.55
ɘ pH/Reference/ATC Liquid Filled [1]	BNC	9157BN	**13-641-259**	248.68
	Mini DIN	9157BNMD	**13-642-252**	291.02
ɘ 3-in-1 pH/Reference/ATC Non-Refillable [2]	Waterproof DIN	9109WP	**13-302-107**	195.60
	Waterproof DIN, 18′ cable	9109WL	**13-303-155**	215.20
ral Purpose PerpHecT Standard Size Gel Filled	BNC	9206BN	**13-642-560**	121.81
ɫecT Triode pH/ Reference/ATC Gel Filled [3]	BNC	9207BN	**13-642-619**	190.51

eries A/Aplus meters.*

erpHecT meters and SensorLink pH systems.*

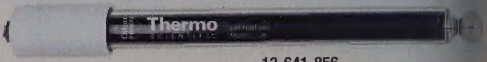
[3] *For Models 260A/Aplus, 261, 261S, 265A/Aplus, 266 and 266S meters.*

Contd. on next page.

Thermo Scientific* Orion* Standard Electrodes, Contd.

Glass Body pH and Epoxy Body Reference Cells

Model	Connector	Mfr. No.	Cat. No.	Each
Glass Body pH				
General-Purpose pH Electrode	BNC	9101BN	**13-641-856**	158.34
General-Purpose pH Electrode	U.S. Std.	910100	**13-641-763**	166.46
Epoxy Body Reference				
Double-Junction Reference Electrode	Pin	900200	**13-641-900**	214.17
Single-Junction Reference Electrode	Pin	900100	**13-641-898**	176.61
Reservoir Reference Electrode	Pin	900400	**13-641-907**	366.28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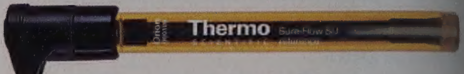
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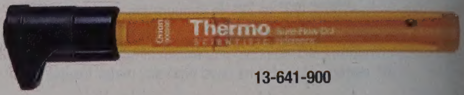
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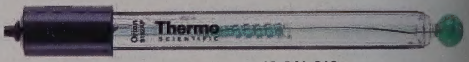
Thermo Scientific* Orion* Aquapro* pH Combination Electrodes

High-performance combination electrodes with isolated Ag/AgCl internals

Feature improved electrode life, low maintenance, fast response time and clean junctions. Patented reference system and double-junction design prevent silver ions from contacting sample.

- Measure 0 to 14pH
- Temperature range: 0° to 60°C (0° to 140°F)
- With BNC connector and 1m (3') cable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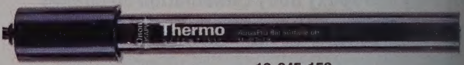
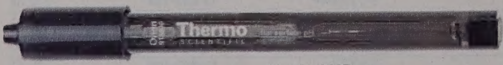

13-645-153

Model	Connector	Mfr. No.	Cat. No.	Each
Glass Body Combination Models				
General Purpose Double Junction	BNC	9102AP	**13-641-212**	268.41
Semimicro Double Junction	Waterproof BNC	9103APWP	**13-645-150**	318.00
Rugged Bulb Double Junction	Waterproof BNC	9104APWP	**13-645-151**	278.00
Epoxy Body Combination Models				
General Purpose Double Junction	Waterproof BNC	9156APWP	**13-645-154**	292.11
Semimicro Double Junction	Waterproof BNC	9115APWP	**13-645-152**	312.54
Flat Surface Double Junction	BNC	9135APWP	**13-645-153**	305.00

Thermo Scientific* Orion* Economy Series pH Combination Electrodes

Epoxy Body Electrodes have permanently gelled Ag/AgCl electrolyte, 0 to 12pH and 0° to 80°C (32° to 176°F) temperature range, wick junction


13-641-869B

13-641-865A

- General-Purpose and Flat Surface Models have $4\frac{5}{16}$" long (11cm) × $\frac{7}{16}$" diameter (12mm) body, $\frac{5}{8}$" diameter (16mm) cap
- Semimicro Model has $5\frac{15}{16}$" long (15cm) × $\frac{1}{4}$" diameter (6mm) body, $\frac{3}{16}$" diameter (10mm) cap

Model	Connector	Mfr. No.	Cat. No.	Each
General Purpose	Waterproof BNC	9106BNWP	**13-642-249**	100.49
Flat Surface	BNC	913600	**13-641-869B**	187.78
Semimicro	BNC	911600	**13-641-865A**	147.18

ACCESSORIES

Accessories and Solutions for Thermo Scientific* Orion* PerpHecT*, Sensor Link* and Ross* Systems

Description	Mfr. No.	Cat. No.	Pack of
ATC Probe for PerpHecT Meters and SensorLink pH System	927005	**13-642-618**	1/201.71
pH Electrode Storage Solution; 475mL (1 pt.) bottle	910001	**13-641-908**	1/46.49
3M KCl, without AgCl, for Ross Reference and Combination Electrodes	810007	**13-641-755**	5/81.60
2M KCl, saturated with Ag; for Standard Ag/AgCl Electrodes, 50mL	900004	**13-641-685**	5/83.03
4M KCl, saturated with Ag; for Standard Ag/AgCl Electrodes, 2 oz.	900011	**13-641-686**	5/83.03
Equitransferent Solution for 13-641-898 Single-Junction Electrode, 2 oz.	900001	**13-641-899**	5/78.93
Inner Chamber Solution for Double-Junction Electrodes, 2 oz.	900002	**13-641-901**	5/82.00
Outer Chamber Solution for Double-Junction Electrodes; 10% KNO_3, 2 oz.	900003	**13-641-897**	5/83.03

ermo Scientific* Orion* pH Micro mbination Electrodes

rocombination electrodes in three sizes for a ltitude of small-sample applications

s combination micro pH electrode se in test tubes or small contain- equire as little as 5μL of sample. ave:

o 14pH range, ±0.2pH accuracy
to 100°C temperature range
/AgCl reference, ceramic junction
C connector, 1m cable

lel 9802BN features:
dy: 150mm × 6mm dia.
: 2.5mm dia. × 18mmL
pth of Immersion: 2mm

lel 9810BN features:
dy: 83mmL × 2.5mm dia.
: 2.5mm dia. × 48mmL
pth of Immersion: 2mm

lel 9803BN features:
dy: 120mmL × 6mm dia.
1.3mm dia. × 37mmL
pth of Immersion: 1 mm

13-299-514 13-299-512 13-299-511

JIRED ACCESSORIES:
olution: 4 M KCl with Ag/AgCl

lo.	Cat. No.	Each
3N	13-299-511	429.67
3N	13-299-512	429.67
3N	13-299-514	373.31

ermo Scientific* Orion* Metallic nbination Electrodes

Platinum Model
KF coulometric titrations
o 40°C (32° to 104°F) range
NS 14.5/15

y Body Redox/ORP Model
o 80°C (32° to 176°F) range
eve junction, 5⁵⁄₁₆" long (13.5cm) body

Body Redox/ORP Model
o 70°C (32° to 158°F) range
amic frit junction, 5½" long (14cm) body

13-299-109

	With BNC Connector			With U.S. Standard/Pin Connectors		
	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each
Platinum ons	----	----	----	977900	13-299-109	358.31
Body um /ORP	9678BN	13-299-103	353.76	967800	13-641-905	384.91
Body um /ORP	9778BN	13-642-575	371.85	977800	13-299-107	408.53

Mettler Toledo* InLab* pH and Metallic Electrodes

InLab electrodes meet a wide variety of applications, from simple pH measurements in the field to stringent research protocols

Each InLab electrode is supplied with a quality certificate detailing slope, zero point, membrane resistance, and response time, while an individual serial number helps ensure that traceability requirements are met. InLab pH electrodes offer a wide range of pH measurement—0 to 14 for all electrodes listed except the special pH combination models **426** (pH 1 to 11) and **427** (pH 2 to 11). Comprehensive instructions in seven languages are provided.

pH Half-cell and Reference Electrodes

- Use the **201** half-cell pH electrode in conjunction with reference electrode **301** to measure pH in organic liquids, corrosive acids or alkalis, or general aqueous media
- Internal Argenthal* reference is complemented by a specially designed silver ion trap that prevents blockage of the diaphragm with silver salts

Basic pH Combination Electrodes

- Use the **407** electrode with portable or field pH meters for general pH measurement in aqueous media
- Features a durable polysulphone shaft and gel electrolyte for low maintenance operation
- Fixed 3.9 ft. (1.2m) lead with BNC connector is included

Standard pH Combination Electrodes

- **409** Ag/AgCl electrode is for general aqueous pH measurements or use in organic liquids or corrosive acids/alkalis
- **412** electrode with Argenthal reference and silver ion trap is for samples with high sulphide content, dairy applications or samples in which silver ion contamination would be a problem
- Both feature glass shafts and ceramic diaphragms; the **409** electrode includes a fixed 3.9 ft. (1.2m) cable with BNC connector

Standard 3-in-1 Electrodes

- Automatically correct for the effects of temperature on slope with an integrated 30kΩ temperature sensor—no need for a separate temperature probe
- Temperature sensor is housed in fast-conducting stainless steel and is positioned outside the electrode body, ensuring rapid response
- Unique symmetric design virtually eliminates differential warming of the pH and reference elements
- **410** electrode has an Argenthal reference with silver ion trap and features a multipin connector, which allows simultaneous connection to the meter of pH, reference, and temperature sensors with just one cable—and electrode release with one short twist
- **413** electrode features a maintenance-free, open-junction diaphragm and a unique polymer reference material that slowly leaks KCl, giving extremely stable values in difficult samples
- **413** also includes a fixed 3.9 ft. (1.2m) cable with BNC/cinch connector, and a PEEK (poly ether ether ketone) shaft

Special pH Combination Electrodes

For more specific applications

- **420** electrode with Teflon* fluorocarbon resin-sleeve is ideally suited for low ionic strength solutions, viscous liquids, and semi-aqueous reagents
- **421** electrode with its 7⅞" (200mm) length and ¼" diameter (6mm) is for longer reaches required to access deep vessels, flasks, or test tubes
- **423** electrode (2⅜" [60mm] length; ⅛" diameter [3mm]) is for very small sample sizes and access to microtitration plates, ampules, and NMR tubes

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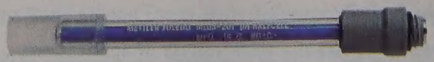
Mettler Toledo* InLab* pH and Metallic Electrodes, Contd.



pH Half-Cell and Reference Electrodes: pH Half-Cell 201

Standard pH 409

Reference 301

Basic and Standard pH Combination Electrodes: Basic pH 407

- **426** electrode (pH 1 to 11) is specially suited to small samples (droplet method) and surface measurement
- **427** electrode (pH 2 to 11) is used to puncture measurement of semisolids such as foodstuffs or soil

Metallic Electrode

- Use **501** platinum redox electrode for reliable monitoring of oxidation/reduction reactions

Electrode	Internal Reference	Electrolyte	Shaft	Diaphragm	Temp. Range	Cable/Connector	Length	Outside Dia.	Cat. No.	Each
pH Half Cell										
201	Ag/AgCl	----	Glass	----	0° to 80°C	S7 Screw Head	120cm	12mm	**01-911-264**	119.00
Reference										
301	Argenthal*†	KCl	Glass	Ceramic	0° to 80°C	S7 Screw Head	120cm	12mm	**01-911-265**	108.00
Basic pH Combination										
407	Ag/AgCl	Gel	Polysulphone	Ceramic	0° to 80°C	1.2m/BNC	120cm	12mm	**01-911-266**	97.00
Standard pH Combination										
409	Argenthal†	KCl	Glass	Ceramic	0° to 80°C	1.2m/BNC	120cm	12mm	**01-911-267**	147.00
412	Argenthal†	KCl	Glass	Ceramic	0° to 100°C	S7 Screw Head	120cm	12mm	**01-911-269**	185.00
Standard 3-in-1‡										
413	Argenthal	Polymer	PEEK	Open Junction	0° to 60°C	1.2m/BNC/Cinch	120cm	12mm	**01-911-270**	213.00
Special pH Combination										
420	Argenthal	KCl	Glass	PTFE Sleeve	0° to 60°C	S7 Screw Head	120cm	12mm	**01-911-271**	238.00
421	Ag/AgCl	KCl w/AgCl	Glass	Ceramic	0° to 80°C	S7 Screw Head	200cm	6mm	**01-911-272**	194.00
423	Ag/AgCl	KCl w/AgCl	Glass	Ceramic	0° to 80°C	S7 Screw Head	60cm	3mm	**01-911-273**	215.00
426	Ag/AgCl	KCl w/AgCl	Polysulphone	Ceramic	0° to 50°C	S7 Screw Head	120cm	12mm	**01-911-274**	215.00
427	Argenthal	Polymer	Glass	Ceramic	0° to 80°C	S7 Screw Head	25cm	6mm	**01-911-275**	280.00

† With silver ion trap.
‡ With integral 30kΩ temperature sensor.

ACCESSORIES

Mettler Toledo* pH and Metallic Electrode Detachable Cables

For use with InLab* Electrodes.

- Connect to electrodes with S7 screw heads (InLab Models 201, 301, 412, 420, 421, 423, 426, 427, 501)
- Length, 3.9 ft. (1.2m)

For Meter Connector	Mfr. No.	Cat. No.	Each
BNC	52300004	**01-911-278**	55.00
U.S. Standard	52300014	**01-911-280**	63.22
2mm Pin	52300016	**01-911-279**	49.00

*Trademark. See Trademark Reference.

Prices subject to change.

y approved ISE Methods

ods provide simpler, more economical and faster measurement

Thermo
Orion
25.0°C
7.000
10.00
Fluoride with TISAB Standard
ORION

In March of 2007, the EPA released the Methods Update† Final Rule, which approved four new Ion Selective Electrode (ISE) methods for analysis in wastewater and for NPDES permitting. The newly approved EPA methods are:

Parameter	Methodology	Approved Method(s)
Chloride	Ion Selective Electrode	ASTM* D512-89 (1999)
Cyanide	Ion Selective Electrode	SM 4500-CN-F; ASTM D2036-98 A
Sulfide	Ion Selective Electrode	SM 4500-S2-G; ASTM D4658-03 (1996)
Nitrate	Ion Selective Electrode	SM 4500-NO3-D

d Measurement

ve Electrode (ISE)
been popular for many
ods and applications are
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a particular ion in
of the characteristics
sensing membrane.
evelops an electrical
proportional to the
the ion for which the
ective. The most widely
ass-membrane pH
ch Note discusses
es of ISEs.

he indicator electrode—
electrode are placed in
nnected to a pH/ion
a potentiometric cell.

At equilibrium, the meter measures the potential difference between the ISE and the reference electrode. This potential is proportional to the activity of the ion of interest, and the relationship is described by the Nernst equation:

$$E = E^0 \pm 2.3\ (RT/nF)\ (\log A)$$

where E is the measured electrode potential; E^0 is the standard potential of the system; R is the gas constant; T is the temperature in °K; n is the number of electrons involved in the reaction; F is Faraday's constant; and A is the activity of the ion being measured.

Activity [A] is not the same as concentration. The activity of an ion is strongly influenced by the total ionic strength of the solution. When ISE measurements are made, a determination in concentration units is usually desired. This is done by adding an Ionic Strength Adjuster (ISA) to samples and standards. When ionic strength is held constant, the Nernst Equation reduces to:

$$E = E^0 \pm 2.3\ (RT/nF)\ (\log C)$$

where C is the concentration of the ion of interest. This form of the Nernst equation states that the electrode potential varies directly with the log of the concentration, in a straight-line manner. The slope of the line is equal to the value of:

$$2.3\ (RT/nF)$$

The table below gives theoretical slope values at 25°C:

Species	Slope (mV/decade)
Monovalent cation	+59.16
Monovalent anion	–59.16
Divalent cation	+29.58
Divalent anion	–29.58

The equation is as follows:

$$S = E^0 \pm 2.3\ (RT/nF)$$

where S is the electrode's slope.

The Nernst equation thus reduces to:

$$E = E^0 \pm S\ (\log A)$$

Thermo Scientific* Orion* ISEs are designed to provide you with optimum performance and reliability.

Analysis by ISE methods with a pH/ISE meter quickly displays results in concentration units at a cost of a few cents per test. The ISE methods are adaptable to either lab or field, and turbidity and color do not affect the measurement.

No one knows ISEs like Orion.

Trust the name that developed ISE technology to provide you with electrode options, quality standards and solutions, and experienced application notes. The new methods detailed above join the list of Thermo Scientific Orion ISE EPA-approved methods for Ammonia, Chlorine, and Fluoride—methods that provide a simpler, economical and faster measurement.

† *40 CFR Part 122, 136, et al. Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act; National Primary Drinking Water Regulations; and National Secondary Drinking Water Regulations: Analysis and Sampling Procedures; Final Rule.*

*Trademark. See Trademark Reference.

ELECTRODES—ION SELECTIVE

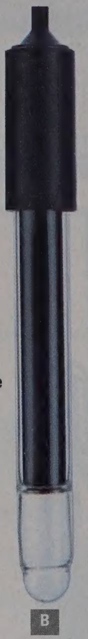
Fisher Scientific* accumet* Ion-Selective Electrodes

Feature continuous electrical shielding and insulation of internal elements, cable and connectors for extremely stable, reproducible readings, with a minimum of electrical noise—and with lower detection limits than many conventional ISEs. Their rapid response time lowers your cost per test. Each electrode is individually tested, serialized to meet GLP requirements, and backed by Fisher Scientific's Technical Applications staff.

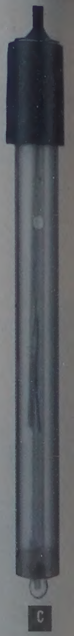
Choose from the following types, described here and on pp. 1354-1360:

- Polymer Membrane ISEs
- Glass Membrane ISEs
- Gas-sensing ISEs
- Solid-state ISEs

Polymer Membrane Combination ISEs
13-620-532
13-620-533
13-620-534
13-620-535
13-620-536
13-620-537



Glass Membrane Sodium Glass Body Half-cell ISEs
13-620-500
13-620-501



Glass Membrane Sodium Epoxy Body Combination ISEs
13-620-502
13-620-503

Polymer Membrane Combination ISEs for Calcium, Nitrate and Potassium Testing

Feature rugged epoxy bodies and refillable reference section. Sensing modules contain a liquid internal filling solution in contact with a gelled organophilic membrane impregnated with a selective ion exchanger for the ion of interest. Sensors are sealed into a durable epoxy body with built-in reference half cell. Permit fast, precise measurements in aqueous solutions over a wide range of concentrations.

Glass-Membrane ISEs for Sodium Determinations

Available in a glass body sodium indicating half cell and an epoxy body sodium combination model. Both have a specially formulated sodium-responsive glass bulb that permits direct measurement of active sodium ion concentration in a wide variety of applications. Feature low drift, fast response, high selectivity ratio, good thermal stability and wide operating range.

Cat. No.	Description	Photo Key	Fill Solution†	Connector	Range M/(ppm)	Interferences Ranges	pH/Temp.	Length/ Dia. (mm)	Each
Polymer Membrane ISEs									
13-620-537	Calcium combination	**A**	1MKN0$_3$†	U.S. Standard	10 to 10^{-2}/	Mg^{2+}, Zn^{2+}, Ba^{2+}, K^+, Na^+, Ni^{2+}, Cu^{2+}, Fe^{2+}, Sr^{2+}, H^+, Hg^{2+}, Pb^{2+}	3 to 10pH/	102/13	561.08
13-620-536		**A**		BNC	0.04 to 400		0° to 40°C		563.97
13-620-535	Nitrate combination	**A**	†	U.S. Standard	7×10^{-6} to 1/	Cl^-, NO^{2-}, Br^-	2.5 to 11pH/	102/13	595.54
13-620-534		**A**	†	BNC	0.5 to 62,000	CN^-, ClO^{-3}, I^-, ClO^{-4}	0° to 40°C		595.54
13-620-533	Potassium combination	**A**	0.1M NaCl†	U.S. Standard	10^{-6} to 1/	Cs^+, NH_4^+, Tl^+, H^+, Ag^+, $Tris^+$, Li^+, Na^+	2.5 to 11pH/	102/13	576.63
13-620-532		**A**	0.1M NaCl†	BNC	0.04 to 39,000		0° to 40°C		576.63
Glass Membrane ISEs									
13-620-500	Sodium half cell,	**B**	-----	U.S. Standard	10^{-6} to 100/	Ag^+, Li^+, NH_4^+	0 to 14pH/	102/13	362.76
13-620-501	glass body	**B**	-----	BNC	0.023 to 23,000		0° to 80°C		362.76
13-620-502	Sodium combination,	**C**	SP138-500	U.S. Standard	10^{-6} to 100/	Ag^+, Li^+, NH_4^+	0 to 14pH/	102/16	484.07
13-620-503	epoxy body	**C**	SP138-500	BNC	0.023 to 23,000		0° to 60°C		484.07
Gas-Sensing Combination ISEs									
13-620-508	Ammonia combination,	**D**	0.1M NH_4Cl†	U.S. Standard	5×10^{-7} to 10^{-1}/	Volatile amines, metal cations that complex ammonia	13pH/	108/12	531.46
13-620-509	epoxy body	**D**	0.1M NH_4Cl†	BNC	0.009 to 1700		0° to 50°C		531.46
13-620-510	Carbon dioxode,	**D**	†	U.S. Standard	10^{-5} to 3×10^{-2}/	Volatile organic acids	4.5pH/	108/12	596.15
13-620-511	epoxy body	**D**	†	BNC	0.440 to 1320		0° to 50°C		596.15

† For SP138-500, see p. 1362. For others contact your Fisher Scientific Customer Service Representative.

*Trademark. See Trademark Reference.

Prices subject to change.

Gas-Sensing Combination ISEs for Ammonia and Carbon Dioxide Analysis

Feature tough, chemical-resistant body and permanently bonded membrane/cap assembly. No difficult user assembly required; preassembled and tested membrane/cap unit assures optimum membrane tension and alignment, and no-leak operation. Capable of extended use in wastewater samples and process streams. Noncrystallizing fill solution won't impede performance or cause membrane rupture. Come with three membrane caps, 50mL fill solution and three 2 oz. (59mL) bottles of standard solution. With 39" (1m) lead.

Accumet
Ammonia
Combination Electrode

D

Gas-Sensing Combination ISEs
13-620-508
13-620-509
13-620-510
13-620-511

	Application/Sample Type																							
																					Water			
	Beverages	Biological/Pharmaceutical	Dairy	Detergents	Etching Baths	Explosives	Fertilizers	Food	Method ASTM*, EPA Approved	Petrochemical	Pickling Baths	Plants	Plating Baths	Pollution Testing	Pulping Liquors	Semisolids (Fruit, Meat, Cheese)	Sewage, Effluents	Silicon	Soil	Stack Gases	Titration	Acid Rain, Boiler Feed, Distilled, Rain, Well	Drinking Water	Sea Water	Wastewater
mer Membrane ISEs																								
-620-537	■	■				■	■	■	■			■									■				
-620-536	■	■				■	■	■	■			■									■				
-620-535	■	■				■	■	■			■	■		■		■									
-620-534	■	■				■	■	■			■	■		■		■									
-620-533	■	■					■	■									■								
-620-532	■	■					■	■									■								
s Membrane ISEs																								
-620-500	■	■						■								■			■			■	■	■	■
-620-501	■	■						■								■			■			■	■	■	■
-620-502	■	■						■								■			■			■	■	■	■
-620-503	■	■						■								■			■			■	■	■	■
Sensing Combination ISEs																								
-620-508							■	■	■								■								
-620-509							■	■	■								■					■			
-620-510	■																■			■		■	■	■	
-620-511	■																■			■		■	■	■	

Contd. on next page.

Fisher Scientific* accumet* Ion-Selective Electrodes, Contd.

Solid-State Half-Cell ISEs for Bromide, Chloride, Fluoride and Silver/Sulfide

Feature a homogenous sensing membrane for wide application, rapid response, minimum sample retention, improved precision, and lower detection limits.

With epoxy bodies, sensing membrane with low microporosity and mirror-like finish to minimize sample retention.

Solid-State Combination ISEs for Bromide, Chloride, Copper, Fluoride, Lead and Silver/Sulfide

Feature a homogenous sensing membrane for wide application, rapid response, minimum sample retention, improved precision, and lower detection limits.

Glass bodies, excellent range and precision.

Solid-State Epoxy Body Half-Cell ISEs
13-620-521
13-620-519
13-620-522
13-620-523
13-620-545

A

Solid-State Glass Body Combination ISEs
13-620-525
13-620-526
13-620-527
13-620-546
13-620-547
13-620-528
13-620-529
13-620-549
13-620-550
13-620-551

B

Cat. No.	Description	Photo Key	Fill Solution†	Connector	Range M/(ppm)	Interferences	pH/Temp. Ranges	Length/ Dia. (mm)	Eac
Solid-State ISEs									
13-620-521	Bromide half cell, epoxy body	A	---- ----	BNC	5×10^{-6} to 1/ 0.4 to 79,000	I^-, CN^-, S^{2-}	0 to 14pH/ 0° to 100°C	102/13	503.4
13-620-525	Bromide combination, glass body	B	13-620-834	BNC	5×10^{-6} to 1/ 0.4 to 79,000	I^-, CN^-, S^{2-}, high levels of Cl^-, NH_3	2 to 14pH/ 0° to 80°C	108/13	668.1
13-620-519	Chloride half cell, epoxy body	A	----	BNC	5×10^{-5} to 1/ 1.8 to 35,500	Br^-, I^-, CN^-, S^{2-}, OH^-	0 to 14pH/ 0° to 100°C	102/13	507.5
13-620-526	Chloride combination,	B	1M KNO_3†	U.S. Standard	5×10^{-5} to 1/	Br^-, I^-, CN^-, S^{2-}, OH^-	2 to 12pH/	108/13	642.4
13-620-527	glass body	B	1M KNO_3†	BNC	1.8 to 35,500		0° to 80°C		642.4
13-620-546	Cupric combination,	B	1M KNO_3†	U.S. Standard	10^{-8} to 10^{-1}/	Ag^+, Hg^{2+}, Cl^-,	2 to 12pH/	108/13	719.4
13-620-547	glass body	B	1M KNO_3†	BNC	6.4×10^{-4} to 6350	Br^-, Fe^{2+}, Cd^{2+}	0° to 80°C		719.4
13-620-539	Cyanide combination,	C	0.1M KNO_3/KCl	U.S. Standard	5–6 to 10–2/	Cl^-, Br^-, I^-,	11 to 13pH/	102/13	503.4
13-620-538	epoxy body	C	0.1M KNO_3/KCl	BNC	0.1 to 260	S^{2-} absent	0° to 80°C		503.4
13-620-522	Fluoride half cell,	A	----	U.S. Standard	10^{-6} to Sat./	OH^-	5 to 9pH/	102/13	506.6
13-620-523	epoxy body	A	----	BNC	0.02 to Sat.		0° to 80°C		506.6
13-620-528	Fluoride combination,	B	SP138-500	U.S. Standard	10^{-6} to Sat./	OH^-	5 to 8pH/	108/13	642.4
13-620-529	glass body	B	SP138-500	BNC	0.02 to Sat.		0° to 80°C		642.4
13-620-549	Lead combination, glass body	B	1M KNO_3†	BNC	10^{-6} to 10^{-1}/ 0.2 to 20,700	Ag^+, Hg^{2+}, Cu^{2+}, Cd^{2+}, Fe^{2+}	3 to 8pH/ 0° to 80°C	108/13	741.0
13-620-545	Silver/sulfide half cell, epoxy body	A	----	BNC	10^{-7} to 10^{-1}M Ag^+/S^{2-} (0.01 to 107,900ppm Ag^+, 0.003 to 32,100ppm S^{2-})	Hg^{2+}	2 to 12pH/ 0° to 80°C	102/13	526.0
13-620-550	Silver/sulfide	B	1M KNO_3†	U.S. Standard	10^{-7} to 10^{-1}M Ag^+/S^{2-}	Hg^{2+}	2 to 12pH/	108/13	661.6
13-620-551	combination, glass body	B	1M KNO_3†	BNC	(0.01 to 107,900ppm Ag^+, 0.003 to 32,100ppm S^{2-})		0° to 80°C		668.0

† *For SP138-500, see p.1362. For other Filling Solutions, contact your Fisher Scientific Customer Service Representative.*

*Trademark. See Trademark Reference.

Prices subject to change.

C

Solid-State Combination ISE for Cyanide

Features a homogenous sensing membrane for wide application, rapid response, minimum sample retention, improved precision, and lower detection limits.

Has durable epoxy body, homogeneous membrane.

Solid-State Cyanide Epoxy Body Combination ISEs
13-620-539
13-620-538

	Application/Sample Type																								
	Beverages	Biological/Pharmaceutical	Dairy	Detergents	Etching Baths	Explosives	Fertilizers	Food	Method ASTM*, EPA Approved	Petrochemical	Pickling Baths	Plants	Plating Baths	Pollution Testing	Pulping Liquors	Semisolids (Fruit, Meat, Cheese)	Sewage, Effluents	Silicon	Soil	Stack Gases	Titration	Acid Rain, Boiler Feed, Distilled, Rain, Well	Drinking Water	Sea Water	Wastewater
olid-State ISEs																									
3-620-521		■						■	■			■					■								■
3-620-525		■						■	■			■					■								■
3-620-519			■					■	■							■									■
3-620-526			■					■	■							■			■						■
3-620-527			■					■	■							■			■						■
3-620-546													■					■	■				■		
3-620-547													■					■	■				■		
3-620-538										■			■				■								
3-620-539												■			■				■						
3-620-522	■	■		■	■	■			■																
3-620-523	■	■		■	■	■			■																
3-620-528	■	■		■	■	■			■																
3-620-529	■	■		■	■	■			■																
3-620-549		■																■							
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3-620-551													■									■	■		

ACCESSORIES

Membrane Caps for Gas-Sensing Combination ISEs

- For Ammonia Gas-Sensing Combination ISEs 13-620-508, 13-620-509; Carbon Dioxide Gas-Sensing Combination ISEs 13-620-510, 13-620-511
- Set of three replacement membrane caps
- With O-rings

Type	Cat. No.	Each
For Ammonia Electrode 13-620-508, 13-620-509	**13-620-512**	124.90
For Carbon Dioxide Electrode 13-620-510, 13-620-511	**13-620-513**	106.04

Ammonia Calibration Standard, 1000ppm NH_3

- 500mL

Cat. No.	Each
ACCU-080-1500	37.24

Ammonia pH/Ionic Strength Adjuster, 10M NaOH

- 500mL

Cat. No.	Each
ACCU-080-2500	37.08

Filling Solution for Ammonia ISE, 0.1M NH_4Cl

- 500mL

Cat. No.	Each
ACCU-080-0500	37.24

Thermo Scientific* Orion* Ion-Selective Electrodes

Gas-Sensing Combination Electrodes

Ammonia, Carbon Dioxide, Nitrogen Oxide combination electrodes have sensing element separated from the sample by a membrane

Use screw-on caps with bonded membrane or loose membranes secured by separate cap.

- Epoxy body, 5⅞" long (15.1cm); 29½" (75cm) cable
- Measuring range: 0° to 50°C (32° to 122°F) range
- Ammonia and Carbon Dioxide types come with Standard/Pin or BNC connectors
- Nitrogen Oxide type comes with BNC connector

Solid-State Electrodes

Bromide, Cadmium, Chloride, Chlorine, Cupric, Cyanide, Fluoride, Iodide, Lead, Silver/Sulfide and Thiocyanate types have solid-state sensing membrane

- 5½" long (14cm) epoxy body; 29½" (75cm) lead
- Ionplus combination models have Sure-Flow* sleeve-junction reference
- Models with Standard connector have separate pin for reference jack
- Chlorine and Thiocyanate types have 0 to 50°C (32° to 122°F) range; all others to 80°C (176°F)

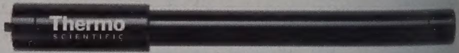
Plastic-Membrane Electrodes

Calcium, Fluoroborate, Nitrate, Nitrite, Potassium, Water Hardness types come with 5⅜" long (13.5cm) electrode body, screw-on sensing module with plastic membrane

- 29½" (75cm) cable
- Water Hardness type has 0 to 50°C (32° to 122°F) range; all others, 0 to 40°C (32° to 104°F)
- Ionplus SureFlow Combination electrodes are available in Calcium, Nitrate, Nitrite and Potassium models
- Replacement sensing modules for these electrodes, as well as Ammonium, Chloride and Perchlorate sensing modules, are available separately; may be used interchangeably in any 93 Series Electrode body. See p. 1359 for ordering information.

Ross* Glass-Membrane Electrodes

- Sodium Half-cell and Sure-Flow Combination types have sodium-sensing glass bulb, Ross internals for stability
- 29½" (75cm) cable, BNC connector
- Combination model also has Sure-Flow sleeve junction to prevent clogging



Gas-Sensing Model 13-643-500

Gas-Sensing Models

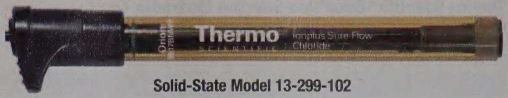
Type	Concentration Range	Interferences[a]	With Waterproof BNC Connector			With BNC Connector			With U.S. Standard/Pin Connectors		
			Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each
Ammonia	1 to 5 × 10^{-7}M; 17,000 to 0.01ppm.	Volatile amines	9512HPBNWP	**13-643-500**	800.00	9512BN	**13-299-96**	556.00	951201S	**13-645-501**	800.00
Carbon Dioxide	10^{-2} to 10^{-4}M; 440 to 4.4ppm.	Volatile weak acids	9502BNWP	**13-645-156**	676.00	----	----	----	950200	**13-641-765**	691.79
Nitrogen Oxide	5 × 10^{-3} to 4 × 10^{-6}M; 230 to 0.18ppm.	CO_2, volatile weak acids	----	----	----	9546BN	**13-299-99**	791.60	----	----	----

[a] *These are lists of possible interferences for each electrode. Under certain conditions, interferences can be tolerated. See electrode instruction manual or contact your Fisher Scientific Customer Service Representative for details.*

Contd. on next page.

no Scientific* Orion* Ion-Selective Electrodes, Contd.

-State Electrodes



Solid-State Model 13-299-102

	Concentration Range	Interferences[a]	Connector[s]	Mfr. No.	Cat. No.	Each
de Half Cell	1 to 5 × 10^{-6}M; 79,900 to 0.40ppm	$S^=$, I^-, CN^-, high levels of Cl^-, NH_3	BNC	9435BN	**13-299-89**[c]	527.00
			U.S. Standard	943500	**13-641-865**[c]	541.00
de Combination	1 to 5 × 10^{-6}M; 79,900 to 0.40ppm	$S^=$, I^-, CN^-, high levels of Cl^-, NH_3	Waterproof BNC	9635BNWP	**13-645-158**[b]	673.00
			U.S. Standard	963500	**13-641-157**[b]	673.74
um Half Cell	10^{-1} to 10^{-7}M; 11,200 to 0.01ppm	Ag^+, Hg^{++}, Cu^{++}, high levels of Pb^{++}, Fe^{++}	U.S. Standard	944800	**13-641-777**[c]	665.00
			Screw Cap	9448SC	**13-641-27**[c]	638.56
um Combination	10^{-1} to 10^{-7}M; 11,200 to 0.01ppm	Ag^+, Hg^{++}, Cu^{++}, high levels of Pb^{++}, Fe^{++}	Waterproof BNC	9648BNWP	**13-645-159**[b]	774.00
de Half Cell	1 to 5 × 10^{-5}M; 35,500 to 0.18ppm	OH^-, $S^=$, Br^-, I^-, CN^-	BNC	9417BN	**13-299-86**[c]	527.00
			U.S. Standard	941700	**13-641-875**[c]	568.00
			Scrrew Cap	9417SC	**13-641-28**[c]	547.00
de Combination	1 to 5 × 10^{-5}M; 35,500 to 0.18ppm	OH^-, $S^=$, Br^-, I^-, CN^-	BNC	9617BN	**13-299-102**[b]	609.00
	1 to 5 × 10^{-5}M; 35,500 to 0.18ppm	OH^-, $S^=$, Br^-, I^-, CN^-	U.S. Standard	961700	**13-641-902**[b]	663.73
ne Combination	3 × 10^{-4} to 10^{-7}M; 20.0 to 0.01ppm	Strong oxidizing agents	Waterproof BNC	9770BNWP	**13642274**[b]	534.00
			BNC	9770BN	**13-299-106**[b]	493.92
			U.S. Standard	977000	**13-641-820**[b]	534.72
Half Cell	10^{-1} to 10^{-8}M; 6350 to 6.4 × 10^{-4}ppm	Ag^+, Hg^{++}, high levels of Cl^-, Br^-, Fe^{++}	BNC	9429BN	**13-299-88**[c]	695.00
			U.S. Standard	942900	**13-641-829**[c]	708.00
Combination	10^{-1} to 10^{-8}M; 6350 to 6.4 × 10^{-4}ppm	Ag^+, Hg^{++}, high levels of Cl^-, Br^-, Fe^{++}	Waterproof BNC	9629BNWP	**13-645-157**[b]	841.63
le Half Cell	10^{-2} to 8 × 10^{-6}M; 260 to 0.2ppm	$S^=$, I^-, Br^-, Cl^-	BNC	9406BN	**13-641-940**[c]	533.00
			U.S. Standard	940600	**13-641-896**[c]	546.79
			Screw Cap	9406SC	**13-642-570**[c]	523.25
le Combination	10^{-2} to 8 × 10^{-6}M; 260 to 0.2ppm	$S^=$, I^-, Br^-, Cl^-	Waterproof BNC	9606BNWP	**13-642-264**[b]	664.95
			U.S. Standard	960600	**13-642-612**[b]	677.00
le Half Cell	Saturated to 10^{-6}M, to 0.02ppm	OH^-	BNC	9409BN	**13-641-942**[c]	565.00
			U.S. Standard	940900	**13-641-870**[c]	577.00
			Screw Cap	9409SC	**13-641-32**[c]	553.64
le Combination	Saturated to 10^{-6}M, to 0.02ppm	OH^{-2}	Waterproof BNC	9609BNWP	**13-642-265**[b]	678.86
			U.S. Standard	960900	**13-641-904**[b]	698.89
Half Cell	1 to 5 × 10^{-8}M; 127,000 to 5 × 10^{-3}ppm	$S^=$, CN^-, NH_3, $S_2O_3^=$	BNC	9453BN	**13-299-91**[c]	527.00
			U.S. Standard	945300	**13-641-868**[c]	541.00
			Screw Cap	9453SC	**13-641-33**[c]	502.12
Combination	1 to 5 × 10^{-8}M; 127,000 to 5 × 10^{-3}ppm	$S^=$, CN^-, NH_3, $S_2O_3^=$	Waterproof BNC	9653BNWP	**13-645-160**[b]	671.00
			U.S. Standard	965300	**13-641-155**[b]	678.74
Half Cel	10^{-1} to 10^{-6}M; 20,700 to 0.2ppm	Ag^+, Hg^{++}, Cu^{++}, high levels of Cd^{++}, Fe^{++}	BNC	9482BN	**13-642-574**[c]	701.00
			U.S. Standard	948200	**13-641-772**[c]	714.71
			Screw Cap	9482SC	**13-641-34**[c]	693.54
ombination	10^{-1} to 10^{-6}M; 20,700 to 0.2ppm	Ag^+, Hg^{++}, Cu^{++}, high levels of Cd^{++}, Fe^{++}	Waterproof BNC	9682BNWP	**13-645-161**[b]	842.39
			U.S. Standard	968200	**13-641-153**[b]	846.00
Sulfide Half Cell	1 to 10^{-7}M. Ag^+: 107,900 to 0.01ppm $S^=$: 32,100 to 0.003ppm	Hg^{++} must be $<10^{-7}$M	BNC	9416BN	**13-641-949**[c]	565.00
			U.S. Standard	941600	**13-641-880**[c]	577.00
Sulfide nation	1 to 10^{-7}M. Ag^+: 107,900 to 0.01ppm.$S^=$: 32,100 to 0.003ppm	Hg^{++} must be $<10^{-7}$M	Waterproof BNC	9616BNWP	**13-642-266**[b]	688.87
			U.S. Standard	961600	**13-642-614**[b]	698.89
anate Half Cell	1 to 5 × 10^{-6}M; 58,100 to 0.29ppm	OH^-, Br^-, C^-, NH_3, $S_2O_3^=$,CN^-, I^-	Screw Cap	9458SC	**13-641-36**[c]	932.95

are lists of possible interferences for each electrode. Under certain conditions, erences can be tolerated. See electrode instruction manual or contact isher Scientific Customer Service Representative for details.

[b] Combination Electrode; no reference needed.

[c] Suggested Reference Electrode, 13-641-900.

Contd. on next page.

Thermo Scientific* Orion* Ion-Selective Electrodes, Contd.

Plastic-Membrane Model 13-642-261

Plastic-Membrane Models

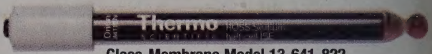
Type	Concentration Range	Interferences[a]	Connector[s]	Mfr. No.	Cat. No.	Each
Calcium Half	1 to 5 × 10^{-7}M; 40,100 to 0.02ppm	Pb^{2+}, Na^+, Hg^{2+}, Na^+, Hg^{2+}, H^+, Sr^{2+}, Fe^{2+}, Cu^{2+}, N	BNC	9320BN	**13-641-933[d]**	671.56
			U.S. Standard	932000	**13-641-801[d]**	683.92
Calcium Combination	1 to 5 × 10^{-7}M; 40,100 to 0.02ppm	Pb^{2+}, Na^+, Hg^{2+}, Na^+, Hg^{2+}, H^+, Sr^{2+}, Fe^{2+}, Cu^{2+}, N^{2+}	Waterproof BNC	9720BNWP	**13-642-272[b]**	755.00
Fluoroborate Half Cell	1 to 7 × 10^{-6}M; 86,800 to 0.61pp.	NO_3^-, Br^-, OAc_3^-, HCO_3^-, F^-, Cl^-, OH^-	U.S. Standard	930500	**13-641-781[d]**	941.00
Nitrate Half Cell	1 to 7 × 10^{-6}M; 14,000 to 0.1ppm as N	ClO_4^-, I^-, ClO_3^-, CN^-, Br^-, NO_2^-	Waterproof BNC	9307BNWP	**13-642-261[c]**	671.00
			U.S. Standard	930700	**13-641-943[c]**	676.63
Nitrate ionplus Combination	1 to 7 × 10^{-6}M; 14,000 to 0.1ppm as N	Na^+, Cu^{++}, Zn^{++}, Fe^{++}, Ni^{++}, Sr^{++}, Ba^{++}, K^+	Waterproof BNC	9707BNWP	**13-642-270[b]**	754.72
			BNC	9707BN	**13-301-10[b]**	724.00
Nitrite Half Cell	1.4 × 10^{-2} to 3.6 × 10^{-6}M; 100 to 0.02ppm	I^-, CH_3COO^-, Br^-, ClO_4^-, F^-, SO_4^-, HCO_3^-	BNC	9346BN	**13-641-950[c]**	676.71
			U.S. Standard	934600	**13-641-951[c]**	691.13
Nitrite ionplus Combination	1.4 × 10^{-2} to 3.6 × 10^{-6}M; 100 to 0.02ppm	I^-, CH_3COO^-, Br^-, ClO_4^-, F^-, SO_4^-, HCO_3^-	Waterproof BNC	9746BNWP	**13-642-273[b]**	768.00
			BNC	9746BN	**13-301-1[b]**	720.00
Potassium Half Cell	1 to 10^{-6}M; 39,000 to 0.04ppm	Cs^+, NH_4^+, Tl^+, H^+, Ag^+, $Tris^+$, Li^+, Na	BNC	9319BN	**13-641-926[c]**	694.71
			U.S. Standard	931900	**13-641-911A[c]**	705.95
Potassium ionplus Combination	1 to 10^{-6}M; 39,000 to 0.04ppm	Cs^+, NH_4^+, Tl^+, H^+, Ag^+, $Tris^+$, Li^+, Na^+	Waterproof BNC	9719BNWP	**13-642-271[b]**	804.00
			BNC	9719BN	**13-301-6[b]**	757.00
Water Hardness Half Cell	1 to 6 × 10^{-6}M; 40.1 to 0.24ppm as Ca; 24.3 to 0.15ppm as Mg	Na^+, Cu^{++}, Zn^{++}, Fe^{++}, Ni^{++}, Sr^{++}, Ba^{++}, K^+	Waterproof BNC	9332BNWP	**13-642-262[d]**	730.00
			BNC	9332BN	**13-641-934[d]**	716.88

[a] *These are lists of possible interferences for each electrode. Under certain conditions, interferences can be tolerated. See electrode instruction manual or contact Thermo Scientific* Orion* Technical Services for details.*

[b] *Combination Electrode; no reference needed.*

[c] *Suggested Reference Electrode, 13-641-900.*

[d] *Suggested Reference Electrode, 13-641-898.*


Glass-Membrane Model 13-641-822

Ross* Glass-Membrane Models

Type	Concentration Range	Interferences[a]	Mfr. No.	Cat. No.	Each
Sodium Half Cell	Saturated to 10^{-6}M; to 0.02ppm	Ag^+, H^+, Li^+, Cs^+, K^+, Tl^+	8411BN	**13-641-822[c]**	387.93
Sodium Combination	Saturated to 10^{-6}M; to 0.02ppm	Ag^+, H^+, Li^+, Cs^+, K^+, Tl^+	8611BNWP	**13-642-245[b]**	540.02
			8611BN	**13-642-506[b]**	491.45

[a] *These are lists of possible interferences for each electrode. Under certain conditions, interferences can be tolerated. See electrode instruction manual or contact your Fisher Scientific Customer Service Representative.*

[b] *Combination Electrode; no reference needed.*

[c] *Suggested Reference Electrode, 13-641-900.*

ACCESSORIES FOR ACTIVITY STANDARDS

ISE Accessories/Standards/Solutions for Thermo Scientific* Orion* Electrodes

All come in 1 pt. (475mL) bottle, except 13-641-211, which comes in pack of 5 x 2 oz. (6mL)

Description	Mfr. No.	Cat. No.	Each
For Ammonia Electrode			
0.1M NH_4Cl	951006	**13-641-923**	62.56
1000ppm as N	951007	**13-641-924C**	63.57
For Bromide Electrode			
0.1M NaBr	943506	**13-641-866**	75.68
For Calcium Electrode			
0.1M $CaCl_2$	922006	**13-641-811**	80.72
For Carbon Dioxide Electrode			
0.1M $NaHCO_3$	950206	**13-641-768**	82.74
$NaHCO_3$, 100ppm as $CaCO_3$	950207	**13-641-769**	82.00
For Chloride Electrode			
0.1M NaCl	941706	**13-641-876**	83.75
100ppm as Cl^-	941707	**13-641-877**	58.53
1000ppm as Cl^-	941708	**13-299-87**	58.53
For Chlorine Electrode			
100ppm as Cl_2	977007	**13-641-824**	69.00
For Cupric Electrode			
0.1M $Cu(NO_3)_2$	942906	**13-641-835**	98.40

Description	Mfr. No.	Cat. No.	Each
For Fluoride Electrode			
0.1M NaF	940906	**13-641-871**	69.62
100ppm as F^-	940907	**13-641-872**	58.53
1ppm as F^- with TISAB	040906	**15-411**	67.61
2ppm as F^- with TISAB	040907	**15-412**	67.61
10ppm as F^- with TISAB	040908	**13-641-752**	67.61
For Iodide Electrode			
0.1M NaI	945306	**13-641-869**	94.84
For Lead Electrode			
0.1M $Pb(ClO_4)_2$	948206	**13-641-773**	94.84
0.1M Na_2SO_4 (Sulfate)	948207	**13-641-774**	98.40
For Nitrate Electrode			
0.1M $NaNO_3$	920706	**13-641-888**	72.64
100ppm as N	930707	**13-641-924**	72.64
1000ppm as N	920707	**13-641-910**	72.64

Description	Mfr. No.	Cat. No.	Each
For Nitrogen Oxide Electrode			
0.1M $NaNO_2$	954606	**13-641-938**	92.83
For Potassium Electrode			
0.1M KCl	921906	**13-641-917**	80.72
For Redox Electrode			
420mV; 1 pt.	967901	**13-641-210**	51.39
420mV; 5 × 2 oz.	967961	**13-641-211**	74.83
For Sodium Electrode			
0.1M NaCl	941706	**13-641-876**	83.75
10ppm as Na^+	941105	**13-641-948**	59.54
100ppm as Na^+	941107	**13-641-909**	58.53
1000ppm as Na^+	841108	**13-641-747**	58.53
Known Addition: 1000ppm as Na^+ with ISA	841109	**13-641-787**	83.76
For Water Hardness Electrode			
100ppm Ca^{2+} as $CaCO_3$	923206	**13-641-862**	82.74

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

pecial Reagents and Kits

escription	Mfr. No.	Cat. No.	Price
or Ammonia Electrode			
Vhen used for Nitrate Testing (NH_3/NO_3) in soils and samples with high Cl or arbonate content.			
educing Agent (refill) 1 pt. (475mL)	700006	**13-641-726**	Ea./276.38
mmonium Std. (refill) 100ppm as . 1 pt. (475mL)	951207	**13-299-98**	Ea./54.27
illing Solution (refill) 2 oz. (60mL)	951203	**13-299-97**	Ea./76.50
itrate Test Kit. Three solutions above lus 1 pt. (475mL) each of Akaline eagent (13-641-853) and Nitrate tandard (100ppm as N, 13-641-924); 2 yringes, instructions.	700005	**13-641-724**	Ea./530.29
or Ammonia, Cyanide Electrodes			
lkaline Reagent. 10M NaOH; 1 pt. 475mL).	951011	**13-641-853**	Ea./86.70
or Chlorine Electrode			
cid Reagent. In 1 pt. (475mL) bottle.	977011	**13-641-854**	Ea./69.00
dide Reagent. In 1 pt. (475mL) bottle.	977010	**13-641-823**	Ea./80.00
or Fluoride Electrode			
tandards Bulk Pack. Has 4 × 1 pt. 475mL) each F^- with TISAB II and 0ppm F^- with TISAB II.	940916	**13-641-879**	Pk. of 4/358.79
or Nitrate Electrode			
itrate Interference Suppressor NISaB). 1 pt. (475mL).	930710	**13-641-802**	Ea./72.42
or Silver/Sulfide Electrode			
AOB* Reagent Pack. 4 × 1 pt. 475mL). Sulfide Antioxidant Buffer	941609	**13-641-882**	Pk. of 4/225.34

ensor Membranes, Gas Sensing

or	Description	Mfr. No.	Cat. No.	Pack of
mmonia Electrodes, 3-643-500, 13-643-501	Pack of 3	951208	**13-643-502**	3/800.00
mmonia Electrodes, 3-641-922, 13-299-96	20, loose	951204	**13-641-929**	20/106.08
mmonia Electrodes, 3-641-922, 13-299-96	3, bonded to caps	951205	**13-641-931**	3/129.93
arbon Dioxide Electrode	4, with O-rings	950204	**13-641-767**	4/156.89

ensor Modules, Plastic Membrane

or Electrode	Mfr. No.	Cat. No.	Price
mmonium	931801	**13-642-568**	Ea./341.70
alcium Comb.	972001	**13-301-5**	Ea./225.15
alcium	932001	**13-641-803**	Ea./218.01
hloride	931701	**13-641-40**	Ea./341.70
itrate Comb.	970701	**13-301-11**	Ea./226.35
itrate	930701	**13-641-944**	Pk. of 3/266.92
itrate	930702	**13-301-20**	Ea./105.59
itrite Comb.	974601	**13-301-4**	Ea./225.15
itrite	934601	**13-641-952**	Pk. of 3/271.68
erchlorate	938101	**13-641-41**	Ea./354.77
H	930101	**13-641-22**	Ea./371.31
otassium Comb.	971901	**13-301-8**	Ea./225.15
otassium	931901	**13-641-912**	Ea./218.01
Vater Hardness	933201	**13-641-947**	Ea./231.25

Replacements

Description	Mfr. No.	Cat. No.	Pack of
For Chlorine Electrode			
Voltage Source -600mV. For U.S. Standard Meters.	977001	**13-641-821**	1/253.67
For Solid-State Electrodes			
Polishing Strips 6" strips	948201	**13-641-771**	24/73.81

Ionic Strength Adjusters

Description	Mfr. No.	Cat. No.	Price
For Ammonia Electrode			
pH Adjusting ISA: 1 pt. (475mL)	951211	**13-641-883**	Ea./79.59
For Bromide, Cadmium, Chloride, Cupric, Iodide, Silver/Sulfide, Thiocyanate Electrodes			
1 pt. (475mL)	940011	**13-641-852**	Ea./69.00
For Calcium Electrode			
4M KCl	932011	**13-641-851**	Ea./87.65
For Carbon Dioxide Electrode			
1 pt. (475mL)	950210	**13-641-770**	Ea./85.00
For Chloride Electrode			
CISA Reagent Pack. Complexation ionic strength adjustor reagents: 2 × 1L 1M HNO_3, 2 × 15g $NaBrO_3$	941709	**13-641-878**	Ea./242.36
For Fluoride Electrode			
TISAB II 1 gal. (3.8L)	940909	**13-642-578**	Ea./114.65
TISAB II 4 × 1 gal. (3.8L)	940999	**13-641-873**	Cs. of 4/342.65
TISAB III (concentrated) 1 pt. (475mL)	940911	**13-641-874**	Ea./123.69
For Fluoroborate, Nitrate, Perchlorate Electrodes			
2M $(NH_4)_2SO_4$	930711	**13-641-850**	Ea./72.54
For Nitrite Electrode			
ISA/Buffer: 1 pt. (475mL)	934610	**13-641-954**	Ea./75.00
For Potassium Electrode			
5M NaCl	931911	**13-641-927**	Ea./89.67
For Sodium Electrode			
1 pt. (475mL)	841111	**13-641-748**	Ea./48.43

Filling/Maintenance Solutions

- All are 2 oz. (60mL) bottles except as noted

For Electrode	Mfr. No.	Cat. No.	Price
Filling Solutions			
Ammonia	951202	**13-641-928**	Ea./60.18
Ammonium	900018	**13-642-576**	Ea./106.08
Carbon Dioxide	950202	**13-641-766**	Ea./69.00
Chloride Combination	900017	**13-641-903**	Pk. of 5/73.44
Nitrite	900046	**13-641-953**	Pk. of 5/85.00
Nitrogen Oxide	954602	**13-641-936**	Ea./97.92
Sodium			
Sodium Electrode Filling Solution: 0.1M NH_4Cl	900012	**13-641-847**	Pk. of 5/106.61
Sodium Electrode Filling Solution: 2M NH_4Cl	900010	**13-641-846**	Pk. of 5/104.04
Sodium Electrode Maintenance Solutions in 1 pt. (475mL) bottles			
Storage Solution	841101	**13-641-743**	Ea./55.30
Reconditioning Solution	841113	**13-641-749**	Ea./82.62

Mettler Toledo* Ion-Selective Electrodes

Ion-selective and gas-sensing electrodes allow the quick and easy determination of concentration and activity of a variety of dissolved ions and gases

Ion-selective electrodes are available in two configurations with built-in reference system or as a half cell. All are 4¾" long (120mm) and ½" (12mm) in diameter. For other ion-selective electrodes and membrane kits not listed here, contact your Fisher Scientific Customer Service Representative.

Ion-selective Half Cells

- Choice of polymer, solid-state or glass membrane for precise determination of specific ions
- Consist of a universal shaft and interchangeable ion-specific membrane module
- Membrane kit specific to ion comes with new module to mount on shaft of half cell
- All ion-selective half cells require InLab* 302 reference cell (see 01-920-101, available separately)
- All have sturdy polyoxymethylene (POM) bodies except the sodium-specific half cell that comes with glass body and membrane

Ion-selective Combination Cells

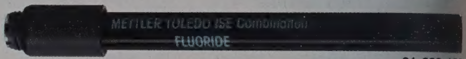
- With polymer-matrix, or solid-state membrane for precise determination of specific ions
- Come with epoxy bodies and reliable built-in driTEK* reference system
- No filling solution required

Gas-sensing Combination Electrodes

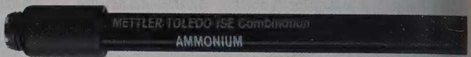
- Sturdy polyphenylsulfide (PPS GF 40) shafts with 40% glass fiber content
- Chemical-resistant PPS GF 40 withstands any known organic chemical present whose temperature is less than 392°F (200°C)
- Optimized membrane module tip is cone shaped to eliminate trapped air bubbles

METTLER TOLEDO

01-920-48



01-928-128



01-928-130

					Electrode†			Membrane Kit†		
For Selective Analysis of	**Membrane Type**	**Body Material**	**Temperature Range**	**Interferences**	**Mfr. No.**	**Cat. No.**	**Each**	**Mfr. No.**	**Cat. No.**	**Each**
Ion-selective Half Cells										
Ammonium	Polymer matrix	POM	0° to 50°C	Cationic surfactants	51340900	**01-911-238**	613.00	----	----	----
Chloride	Solid state	POM	0° to 80°C	S^{2-}	51340400	**01-920-48**	592.00	----	----	----
Fluoride	Solid state	POM	0° to 80°C	OH^- <10% F^-	51340500	**01-920-145**	613.00	51340008	**01-911-241**	252.01
Ion-selective Combination Electrodes										
Ammonium	Polymer matrix	Epoxy	5° to 50°C	Ca^{2+}, K^+, Na^+	51340910	**01-928-130**	420.00	----	----	----
Chloride	Solid state	Epoxy	5° to 50°C	Br^-, I^-, CN^-	51340410	**01-928-127**	420.00	----	----	----
Fluoride	Solid state	Epoxy	5° to 50°C	OH^-	51340510	**01-928-128**	420.00	----	----	----
Nitrate	Polymer matrix	Epoxy	5° to 50°C	Cl^-, NO_2^-	51340810	**01-928-129**	420.00	----	----	----
Gas-sensitive Combination Electrodes										
Ammonia	Polymer matrix	PPS	0° to 50°C	Volatile bases	51341000	**01-911-240**	613.00	----	----	----
Nitrogen Oxides	Polymer matrix	PPS	0° to 50°C	SO_2, CO_2, H_2S	51341100	**01-911-234**	413.01	----	----	----

† For information on additional Ion-selective Electrodes and Membrane Kits, contact your Fisher Scientific Customer Service Representative.

InLab* 302 Reference Electrode

Ag/AgCl reference electrode for use with Mettler Toledo* pH and Ion-selective Half Cells (see 01-911-230, -231, -233, -235, -236, -238 and 01-920-48, -145)

- Glass body measures 4¾" long (120mm) and ½" (12mm) in diameter.
- Operates over a wide temperature range from 32° to 140°F (0° to 60°C)
- Movable PTFE sleeve junction
- Uses 3M* KCl solution saturated with AgCl and 3M KCl bridge electrolyte

REQUIRED ACCESSORIES:

Cable (01-911-279), sold separately

Description	Mfr. No.	Cat. No.	Each
InLab 302	52000129	**01-920-101**	205.00

*Trademark. See Trademark Reference.

Prices subject to change.

herChemical* Certified Buffer Solutions

uracy, ±0.02pH or better

SB Series (500mL sizes)

ade from established formulas,
andardized at 25°C against NIST*
andard reference material
ated values certified accurate to
.02pH or ±0.01pH at time buffer
bottled
bel has temperature correction chart

DERING INFORMATION:

nL and 1L sizes supplied in polyethylene bottles with screw caps and
tic seals. Case contains 6 × 500mL (6 × 1 pt.) or 6 × 1L (6 × ¼ gal.).
er quantities are in 10 and 20L (2⅝ and 5¼ gal.) PolyPac* store-and-
ense containers.

	Ingredients	Size	Cat. No.	Each	Case of 6
02)	Potassium chloride and hydrochloric acid	500mL	**SB140-500**	39.62	190.79
02)	Potassium chloride and hydrochloric acid	500mL	**SB96-500**	30.19	146.25
		1L	**SB96-1**	47.68	227.18
		20L	**SB96-20**	207.63	----
01)	Potassium acid phthalate and hydrochloric acid	500mL	**SB97-500**	31.47	153.72
		20L	**SB97-20**	214.44	----
01)	Potassium acid phthalate	500mL	**SB98-500**	30.54	147.51
		1L	**SB98-1**	46.36	226.35
		10L	**SB98-10**	154.21	----
		20L	**SB98-20**	203.72	----
02)	Sodium acetate and acetic acid	1L	**SB100-1**	53.34	252.06
01)	Potassium acid phthalate and sodium hydroxide	500mL	**SB102-500**	31.35	151.22
		1L	**SB102-1**	42.80	208.73
01)	Monobasic potassium phosphate and sodium hydroxide	500mL	**SB104-500**	30.50	145.52
		1L	**SB104-1**	48.28	233.65
		20L	**SB104-20**	219.46	----
01)	Monobasic potassium phosphate and sodium hydroxide	500mL	**SB108-500**	30.88	145.94
		1L	**SB108-1**	46.02	220.08
		10L	**SB108-10**	146.25	----
01)	Monobasic potassium phosphate and sodium hydroxide	500mL	**SB110-500**	32.34	153.65
		1L	**SB110-1**	49.26	233.82
02)	Monobasic potassium phosphate and sodium hydroxide	500mL	**SB112-500**	27.95	134.74
		1L	**SB112-1**	44.68	210.41
		20L	**SB112-20**	215.37	----
02)	Boric acid, potassium chloride and sodium hydroxide	500mL	**SB114-500**	29.84	144.53
		1L	**SB114-1**	47.87	230.88
		20L	**SB114-20**	219.46	----
0 02)	Potassium carbonate, potassium borate and potassium hydroxide	500mL	**SB116-500**	31.48	149.61
		1L	**SB116-1**	47.46	227.97
		10L	**SB116-10**	150.94	----
		20L	**SB116-20**	213.29	----

FisherChemical* Certified Buffer Concentrates

Prepared in economical concentrated form

SB Series (500mL sizes)

- Dilute one volume of concentrate with number of volumes of distilled water specified in Dilution column
- Dilution ratios on labels

pH	Ingredients	Dil.	Size	Cat. No.	Each	Case of 6
4.00	Potassium acid phthalate	1:4	500mL	**SB99-500**	75.82	355.91
			1L	**SB99-1**	107.23	503.00
6.00	Monobasic potassium phosphate and disodium phosphate	1:9	500mL	**SB106-500**	54.58	259.10
7.00	Monobasic potassium phosphate and sodium hydroxide	1:25	500mL	**SB109-500**	75.82	355.91
			1L	**SB109-1**	107.77	505.49
10.00	Boric acid, potassium chloride and sodium hydroxide (caustic)	1:9	500mL	**SB141-500**	72.30	337.78
11.00	Sodium hydroxide, glycine and sodium chloride	1:9	500mL	**SB142-500**	76.22	357.80

Fisher Scientific* Dry Buffer Salts

Easier to store, more stable than solutions

- Supplied in polyethylene-lined GramPac* envelopes
- Each makes 1L (¼ gal.) of buffer

L. to R.: B79, B82, B78, B80

pH	Ingredients	Cat. No.	Pack of 12	Case of 6 Pk.
4.01	Potassium acid phthalate	**B79**	86.31	406.54
6.86	Monobasic potassium phosphate and disodium phosphate	**B78**	88.57	417.19
7.41	Monobasic potassium phosphate and disodium phosphate	**B82**	89.04	417.75
9.18	Sodium tetraborate decahydrate	**B80**	88.13	415.11
10.4	Tris (Hydroxymethyl) amino methane (THAM*)	**B77**	88.18	413.33

herChemical* Certified Color-Coded
Buffers

st widely used buffers in
or-coded solutions with
tching colored labels

Lower left: SB101-500, SB107-500, SB115-500. Upper left: SB105. Right: SB101-20, SB107-20, SB115-20.

ovide instant recognition, tight toler-
ices: ±0.01pH for pH 4.00 and 7.00
ffers, ±0.02pH for pH 10.00 buffer,
25°C (77°F)
andardized at 25°C against NIST*
andard reference material
olor-coded label includes
mperature correction chart

ORDERING INFORMATION:

Come in dispenser-top 500mL (≈1 pt.) or 4L (≈1 gal.) polyethylene bottles or 20L (≈5 gal.) PolyPac* store-and-dispense containers

pH	Color	Ingredients	Size	Cat. No.	Each	Case of
4.00	Red	Potassium biphthalate	500mL	**SB101-500**	28.13	6/133.23
			4L	**SB101-4**	91.61	4/291.11
			20L	**SB101-20**	178.86	----
7.00	Yellow	Potassium phosphate monobasic and sodium hydroxide	500mL	**SB107-500**	27.61	6/130.77
			4L	**SB107-4**	91.08	4/289.49
			20L	**SB107-20**	177.09	----
10.00	Blue	Potassium carbonate, potassium borate and potassium hydroxide	500mL	**SB115-500**	28.13	6/133.87
			4L	**SB115-4**	94.28	4/309.51
			20L	**SB115-20**	178.86	----

Fisher Scientific* BufferPac* Buffers

- 500mL each of color-coded pH 4.00, 7.00, and 10.00 buffers

Cat. No.	Pack of 3	Case of 6 Pk.
SB105	71.86	349.74

Fisher Scientific* Assorted pH Buffer Pouches

Economical, accurate, convenient

- ±0.01pH accuracy at 25°C (77°F)
- Pack of 20 pouches: five pouches each of pH 4, 7, and 10 buffers and rinse solution

CERTIFICATIONS:

All solutions are certified traceable to NIST* standards.

Description	Cat. No.	Each
Assortment of 5 each: pH 4, pH 7, pH 10 Buffers and Rinse Solution	**13-300-147**	21.70

Fisher Scientific* Electrode Filling Solutio

- In 16 oz. (500mL) bottles

Solution	Use with	Cat. No.	Each	Case
Filling Solution/ Electrolyte; 4M KCl saturated with AgCl	All single-junction Ag/AgCl electrodes, including Calcium Combination ISEs 13-620-536 and 13-620-537; inner chamber of many double-junction electrodes, except Fisher Scientific accupHast*, accupHast R, accuTupH*+, accuTupH*	**SP135-500**	44.95	215
Filling Solution/ Electrolyte; Saturated KCl	All Calomel single-junction models; outer chamber of Ag/AgCl double-junction models; fluoride and sod-ium combination ISEs; Fisher Scientific accupHast, accupHast* R, accuTupH*, accuTupH*+ outer chambers	**SP138-500**	37.24	176.

Hydrion* Buffers

Powdered ingredients make precision buffers: ±0.02pH at 25°C

13-640 and 14-200 Series

- In capsules or pouches; dissolve in distilled water: 100mL for capsules, 500mL for pouches
- **Standard Capsules** come in vials of 10, five vials per pack.
- **Tri-Chek Capsule Set** includes one vial of 10 capsules each for pH 4, 7, and 10 buffers
- **Tri-Chek Chemvelope Set** includes three pouches each for pH 4 and 10, four pouches for pH 7
- Tri-Chek sets also include dispensing vial of Color Key/Buffer Preservative; add to buffer to inhibit mold and to color-code solution: red-orange for pH 4, green for pH 7, blue for pH 10
- Tinted buffers change color if contaminated

Description	pH	Cat. No.	Pack of
Standard Capsules	2.00	**13-640-303A**	5/37.49
	3.00	**13-640-303B**	5/37.49
	4.00	**13-640-303C**	5/37.49
	6.40	**13-640-303D**	5/37.49
	7.00	**13-640-303E**	5/36.77
	8.00	**13-640-303F**	5/37.49
	9.00	**13-640-303G**	5/37.49
	10.00	**13-640-303H**	5/37.49
	11.00	**13-640-303J**	5/37.49
Tri-Chek Chemvelope Set	4.00, 7.00, 10.00	**15-420-2W**	1/20.63
Tri-Chek Capsule Set	4.00, 7.00, 10.00	**15-420-2X**	1/20.63

Thermo Scientific* Orion* perpHect* Buffers and Rinse

Ideal for accuracy and traceability

- Certified, ready-to-use pH 4, 7, and 10 liquid buffers
- Electrode Rinse Solution gives added protection against contaminants
- Single-use sealed pouches are easy to carry, assure accuracy, eliminate waste
- Accurate to ±0.01pH, certified NIST*-traceable
- Lot number and accuracy certification date on each pouch, for attachment to batch records
- Calibrate right in the pouch, so every calibration is as accurate as with a newly opened bottle of buffer
- Solutions are sealed against air, light, and other contamination
- Ideal for field kits

Solution	Mfr. No.	Cat. No.	Pack of 10	Mfr. No.	Cat. No.	Pack of 25
pH 4 Buffer	910410	**13-641-270**	26.00	910425	**13-641-274**	40.97
pH 7 Buffer	910710	**13-641-271**	26.00	910725	**13-641-275**	40.97
pH 10 Buffer	911010	**13-641-272**	26.62	911025	**13-641-276**	40.97
Electrode Rinse	911110	**13-641-273**	26.00	911125	**13-641-277**	43.01

Thermo Scientific* Orion* Color-Coded Buffers

Calibrate electrodes with standard buffers whose true pH values versus temperature are known

- Color coded for ease of use
- Packaged in 475mL (1 pt.) bottles with buffer/temperature tables for accurate calibrations

CERTIFICATIONS:

Traceable to NIST* Standard Reference Materials.

Description	Color Code	Mfr. No.	Cat. No.	Each
pH 4.01 Buffer	Red	910104	**13-301-133**	14.18
pH 5.00 Buffer	Orange	910105	**13-640-8**	16.48
pH 7.00 Buffer	Yellow	910107	**13-641-857**	14.18
pH 10.01 Buffer	Blue	910110	**13-079-319**	14.18

rmo Scientific* Orion* Pure Water pH fers and pHISA* Adjustor

rate calibration for water measurements

13-641-164, -165, -722

ide accurate calibration when suring samples of low ionic ngth

ful for samples from boiler feed and cooling towers, distilled deionized water, well water or water

ommended for applications re pH electrodes typically bit drift, noise and instability

ers supplied in 475mL (1 pt.) les with buffer/temperature es for accurate calibrations

SA Adjustor increases sample ionic strength without changing comes in 50mL bottle

Test Kit provides fast, accurate pH results in high-purity waters

INCLUDES:

Pure Water pH Test Kit includes four 475mL bottles pH Buffer A, two 475mL bottles pH Buffer B, two 50mL bottles pHISA Adjustor, one 1mL syringe, instruction card, and application procedure No. 501, "pH Measurement in Low Ionic Strength Solutions."

CERTIFICATIONS:

Traceable to NIST* Standard Reference Materials.

Description	Mfr. No.	Cat. No.	Price
pH Buffer A, pH 6.97	700702	**13-641-164**	Pk. of 4/214.96
pH Buffer B, pH 4.10	700402	**13-641-165**	Pk. of 4/219.03
pH Buffer C, pH 9.15	700902	**13-641-166**	Pk. of 4/219.03
pHISA Adjustor	700003	**13-641-722**	Pk. of 5/139.57
pH Test Kit	700001	**13-641-735**	Ea./219.03

TEST PAPERS/TEST SOLUTIONS

isherbrand* Alkacid* Test Ribbons

ide-Range Test Ribbons

Left to right: A979, A989, A988, A981

et instant pH values vith these handy pocket ester rolls

rovide five distinct color hanges in pH range 2 hrough 10; color changes: ed (pH 2), orange (pH 4), ellow (pH 6), green pH 8), blue (pH 10)

ntermediate pH values can be stimated

DERING INFORMATION:

nsparent plastic dispenser with color chart for comparison.

Size	Cat. No.	Pack of 3	Case of 12 Pk.
× ¼" (4.6m × 6.4mm)	**A979**	24.93	236.99

il Test Ribbons

ee distinct color changes determine whether soil is:

Sour" (pH 4 to 5)

Medium" (pH 5 to 6)

Sweet" (pH 6 to 8)

DERING INFORMATION:

ude rolls of Alkacid paper, transparent plastic dispenser and manual ing over 300 plants,their pH preference, and soil treatment.

Size	Cat. No.	Pack of 6
L × ¼"W (4.6m × 6.4mm)	**A989**	60.76

Full-Range pH Kit

pH accuracy to ±0.25

Provides sharp color change for each 0.5pH unit. Consists of A979 wide-range paper for determining approximate pH value and six specific short-range papers:

- Range 1 (pH 0.0 to 3.0)
- Range 2 (pH 3.5 to 5.5)
- Range 3 (pH 6.0 to 8.5)
- Range 4 (pH 9.0 to 11.0)
- Range 5 (pH 10.5 to 12.5)
- Range 6 (pH 12.0 to 14.0)

ORDERING INFORMATION:

Each roll supplied with its own plastic dispenser and appropriate color chart mounted inside. Seven rolls packed in hinged plastic box. Replacement short-range paper rolls available separately.

Roll Size	Cat. No.	Pack of 7	Case of 12 Pk.
15'L × ¼"W (4.6m × 6.4mm)	**A988**	67.94	637.52

Short-Range Paper

- Replacement rolls in dispensers for Full Range pH Kit A988 (above) or for specific pH range use

Range No.	pH Range	Cat. No.	Pack of 3	Case of 12 Pk.
1	0.0–3.0	**A981**	29.87	283.40
2	3.5–5.5	**A982**	33.72	316.45
3	6.0–8.5	**A983**	35.54	333.51
4	9.0–11.0	**A984**	29.15	275.23
5	10.5–12.5	**A985**	29.15	275.17
6	12.0–14.0	**A986**	33.74	316.54

Contd. on next page.

Fisherbrand* Alkacid* Test Ribbons, Contd.

Alkacid* Wide-Range Test Strips

Fisherbrand* Test Strips and Papers

- Change to red (pH 2), orange (pH 4), yellow (pH 6), green (pH 8), blue (pH 10)

ORDERING INFORMATION:

In amber vials of 100 with color-comparison chart.

Cat. No.	Pack of 12 Vials	Case of 12 Pk.
A980	52.68	494.29

Acid/Alkali Test Papers

- **Litmus Blue** turns red in acid
- **Litmus Red** turns blue in base
- **Neutral Litmus** turns red in acid, blue in base
- **Congo Red** turns blue in acid—not for weak acid solutions

ORDERING INFORMATION:

100 strips per vial

Strips	Cat. No.	Pack of 24 Vials
Litmus Blue	**14-844**	40.65
Litmus Red	**14-845**	42.92
Litmus Neutral	**14-850**	41.81
Congo Red	**14-861**	57.85

Special Test Papers

- **Lead Acetate** paper turns black in presence of hydrogen sulfide and other soluble sulfides
- **Potassium Iodide/Starch** paper turns blue to deep purple in the presence of low levels of chlorine, iodine, peroxide and ozone

ORDERING INFORMATION:

100 strips per vial

Description	Cat. No.	Pack of 24 Vials
Lead Acetate	**14-862**	21.86
Potassium Iodide/Starch	**14-860**	19.60

Decon* Phenazine pH Test Paper

Packaged in a convenient plastic dispenser with comparative color chart

- Phenazine paper designed for determining pH values in obstetrical applications
- Provides sharp, clear changes within pH range of 4.5 to 7.5
- For in vitro diagnostic use

L x W	Cat. No.	Each
15' × ¼" (4.6m × 6.4mm)	**04-355-76**	57.70

Whatman* Acid/Alkali Test Papers

- **Litmus Blue** turns red in acid
- **Litmus Red** turns blue in base, at pH 5 to 8

ORDERING INFORMATION:

20 leaves per book. 10 x 10 books per pack.

09-876 Series Test Papers and Indicator Strips

Description	Mfr. No.	Cat. No.	Pack of 20
Litmus Blue	2600 601	**09-876-6**	70.72
Litmus Red	2600 602	**09-876-7**	70.72

Whatman* pH Indicator Papers

Type CF Strips

- Hydrophobic plastic supports that retain stiffness in liquids, protect against accidental contact with toxic/hazardous solutions
- Paper segments on each strip have chemically bonded dyes; can't leach into solution
- Complementary indicator charts provide clear comparison
- Full-range strips (0 to 14) graduated in 1pH units; wide-range strips (4.5 to 10pH) in 0.5pH units
- Packs of 100; each strip is approximately ¼ × 3" (6 × 80mm)

Type CS Strips

- Integral color chart, eight or more color segments graduated in 0.2 or 0.3pH units
- Central segment changes color in solution; match color chart for value
- Hydrophobic barrier
- Packs of 200; each strip is 7⁄16 × 3 15⁄16" (11 × 100mm)

Type TC Ribbon

- Three color bands; gives unique color combination for each test
- Compare with 11 color-coded values in chart for reading
- Feed system exposes short length, retracts ribbon when not in use
- Graduated in 1pH units
- In dispenser; ribbon is ⅜" × 16' (10mm × 5m)

Book

- Includes 20 wide-range (pH 1 to 11) strips graduated in 1pH units
- Color-comparison chart inside cover
- 20 leaves per book; 10 sets of 10 books per pack

Range	Packaging	Mfr. No.	Cat. No.	Pack of
CF Strips				
0 to 14pH	100/pack	2613-991	**09-876-17**	100/16.50
4.5 to 10pH	100/pack	2614-991	**09-876-18**	100/16.04
CS Strips				
3.8 to 5.5pH	200/pack	2627-990	**09-876-19**	200/25.63
6.0 to 8.1pH	200/pack	2629-990	**09-876-20**	200/25.78
9.5 to 12pH	200/pack	2631-990	**09-876-21**	200/25.78
TC Ribbon				
1 to 11pH	Reel	2611-628	**09-876-16**	1/20.04
Book				
1 to 11pH	10 × 10 books	2600-500	**09-876-5**	1000/86.57

*Trademark. See Trademark Reference.

lrion* pH Test Papers

ce of dispenser size and pH range

14-850 Series

sable dispensers hold single or ble rolls of standard-size rion pH papers—15'L × 7⁄32"W n × 55mm) and matching color ts

styrene dispensers with stain- -steel cut-off lips on each side

e-range papers provide a sharp color change for each full pH unit

rt-range papers show distinct color change for each half pH unit

le-Roll Dispensers with Papers

MES-51

nge	Cat. No.	Each
sers with Wide-range Paper		
.0	14-853-150N	4.96
.0 Vivid†	MES-51	4.96
0	14-853-150P	4.96
0	14-853-150R	4.96
.0	14-853-150Q	4.96
sers with Short-range Paper		
0	14-853-150A	4.66
5	MES-325	4.87
8	14-853-150C	4.66
5	14-853-150E	7.79
0	MES-345	4.87
4	14-853-150G	5.77
8	14-853-150H	4.84
2.0	14-853-150L	4.96

paper shows specific changes for each 0.2pH.

ble-Roll Dispensers with Papers

nge	pH Papers	Cat. No.	Each	Case of 10
sers with Wide-range Papers				
	1 roll 1–12, 1 roll 12.5–14.0 papers	14-850-13B	7.11	59.23
	2 rolls 1–12 paper	14-850-11B	7.11	59.23
	1 roll 2–4–6–8–10, 1 roll 1–3–5–7–9–11	14-850-12A	7.11	59.23
	2 rolls 1–11 Vivid (excellent in low 1–6pH range)	14-850-12J	7.11	59.23
	2 rolls 1–6 paper	14-850-12C	7.11	59.23
	2 rolls 4–9 paper	14-850-12B	7.11	59.23
	2 rolls 6–11 paper	14-850-12D	7.11	59.23
sers with Short-range Papers				
.5	1 roll 0.0–3.0, 1 roll 3.0–5.5	14-850-10A	7.11	59.23
.5	1 roll 1.0–2.5, 1 roll 3.0–5.5	14-850-10C	7.11	59.23
.5	2 rolls 3.0–5.5	14-850-10E	7.11	59.23
.5	1 roll 3.0–5.5, 1 roll 4.5–7.5	14-850-10G	7.11	59.23
.0	1 roll 3.0–5.5, 1 roll 6.0–8.0	14-850-10J	7.11	59.23
.0	2 rolls 6.0–8.0	14-850-10K	7.11	59.23
.5	1 roll 6.0–8.0, 1 roll 8.0–9.5	14-850-10M	7.11	59.23
2.0	1 roll 8.0–9.5, 1 roll 10.0–12.0	14-850-10P	7.11	59.23
2.0	1 roll 9.0–10.0, 1 roll 10.0–12.0	14-850-10R	7.11	59.23
4.0	1 roll 9.0–12.0, 1 roll 12.5–14.0	14-850-10T	7.11	59.23
14.0	1 roll 10.0–12.0, 1 roll 12.5–14.0	14-850-10V	7.11	59.23

Insta-Chek* Dispenser with Paper

- ▸ Direct reading pH paper with 14 colors for 14 pH values—the widest range available on a single paper
- ▸ Immediate response—colors are distinct and easily read for accurate, reproducible readings
- ▸ Single roll dispenser with on 50' × ½" roll (15.2m × 1.3cm)

pH Range	Cat. No.	Each	Pack of 10
Single-roll dispenser			
0-13	14-850-1	11.12	92.70
Refill			
0-13	14-850-2	9.89	82.40

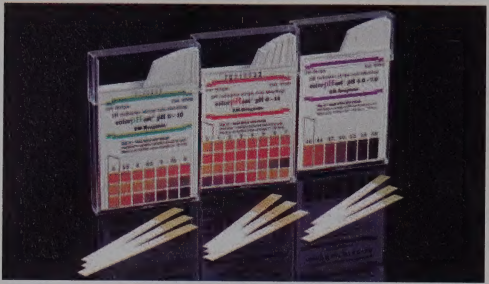
Paper Refills for Hydrion* Dispensers

- ▸ Standard-size rolls—15'L × 7⁄32"W (4.6m × 55mm)—for double-roll and single-roll dispensers
- ▸ Come in pack of five rolls; each pack is a tightly sealed plastic container, complete with two color charts

pH Range	Cat. No.	Pack of 5	Case of 10 Pk.
Wide-range Paper Refills			
2–4–6–8–10	14-853A	7.11	59.23
1–3–5–7–9–11	14-853B	7.11	59.23
1–11	14-853-27	7.11	59.23
1–12	14-853-22	7.11	59.23
3–9	14-853-23	7.11	59.23
1–2–3–4–5–6	14-853-20	7.11	59.23
4–5–6–7–8–9	14-853-24	7.11	59.23
6–7–8–9–10–11	14-853-25	7.11	59.23
11–12	14-853C	7.11	59.23
11–13	14-853D	7.11	59.23
Short-range Paper Refills			
0.0–3.0	14-853-50	7.11	59.23
0.0–1.5	14-853-55	7.11	59.23
1.0–2.5	14-853-60	7.11	59.23
1.2–2.4	14-853-63	7.11	59.23
1.4–2.8	14-853-65	7.11	59.23
3.0–5.5	14-853-70	7.11	59.23
3.4–4.8	14-853-75	7.11	59.23
4.5–7.5	14-853-79	11.12	92.67
5.2–6.6	14-853-80	7.11	59.23
5.6–6.8	14-853-85	7.11	59.23
6.0–8.0	14-853-90	7.11	59.23
6.8–8.4	14-853-95	7.11	59.23
7.2–8.8	14-853-100	7.11	59.23
8.0–9.5	14-853-103	7.11	59.23
8.2–9.8	14-853-105	7.11	59.23
9.0–10.0	14-853-111	7.11	59.23
9.0–12.0	14-853-112	7.11	59.23
10.0–12.0	14-853-120	7.11	59.23
10.2–12.0	14-853-125	7.11	59.23
11.8–13.4	14-853-135	7.98	66.50
12.5–14.0	14-853-140	7.11	59.23

EMD colorpHast* pH Strips

Accurate results are achieved even in weakly buffered, turbid and colored samples



M95883, M95903, M95823

- Unique pH test papers feature covalently bound indicators that will not bleed, dilute, or contaminate trace samples
- Strips give sharp, clear color changes for easy comparison to color scale provided on the colorpHast package
- **Full-range (Universal) Strips** measure 0 to 14pH range in a single test with 0.5pH sensitivity—each strip includes four squares with different indicators
- **Intermediate-range Strips** with three squares each have a sensitivity of 0.3 to 0.5
- **Narrow-range Strips** with one pad have a sensitivity of 0.2 to 0.3

pH Range	Cat. No.	Pack of 100	Case of 6 Pk.
Full Range (Universal)			
0 to 14pH	**M95903**	17.19	103.12
Intermediate Range			
0 to 6pH	**M95863**	17.19	103.12
2 to 9pH	**M95783**	17.19	103.12
5 to 10pH	**M95883**	17.19	103.12
7.5 to 14pH	**M95873**	17.19	103.12
Narrow Range			
0 to 2.5pH	**M95803**	17.19	103.12
2.5 to 4.5pH	**M95813**	17.19	103.12
4 to 7pH	**M95823**	17.19	103.12
6.5 to 10pH	**M95833**	17.19	103.12
11 to 13pH	**M95853**	17.19	103.12

Set of colorpHast* pH Strips

Includes 13 packs of 100 pH strips: two packs each of 0 to 6, 5 to 10, 7.5 to 14 and 0 to 14pH test strips; one pack each of 0 to 2.5, 2.6 to 4.5, 4 to 7, 6.5 to 10.0 and 11.0 to 13.0pH test strips. Total of 1300 test strips per pack.

pH Range	Cat. No.	Pack of 13
0-13	**M7001812**	186.16

FisherChemical* Universal pH Indicator System

For pH determinations between 4.0 to 10.0

- Rapid determinations of approximate pH of aqueous solutions
- Color chart features 12 translucent color standards permanently mounted next to openings of the same size
- pH value of each color standard is printed on included chart

S160-500

ORDERING INFORMATION:

Packaged in amber glass bottles in two sizes. Replacement color chart available separately.

Description	Cat. No.	Each	Case of 6
500mL Solution	**SI60-500**	73.20	349.96
1L Solution	**SI60-1**	93.21	446.05
Replacement Chart			
Color Chart	**I-180**	41.10	----

Fisher Scientific* pH Indicator Solutions

For use in a variety of pH test sets

- Standardized to Clark and Lubs specifications
- In 500mL (1 pt.) amber bottles

Indicator	pH Range	Cat. No.	Each	Case of 6
Thymol Blue, 0.04%	1.2–2.8, 8.0–9.2	**SI6-500**	44.05	210.63
Bromophenol Blue, 0.04%	3.0–4.6	**SI12-500**	80.23	378.19
Bromocresol Green, 0.04%	3.8–5.4	**SI14-500**	60.50	287.23
Methyl Red, 0.02%	4.2–6.2	**SI16-500**	43.08	207.99
Phenol Red, 0.02%	6.8–8.2	**SI24-500**	40.72	192.32
Bromothymol Blue, 0.04%	6.0–7.5	**SI22-500**	62.39	296.19

P* BioDoc-It* Imaging Workstations

nd-alone gel documentation workstations for rescent and colorimetric imaging

for routine acquisition of DNA and protein gels and for multiple-user atories with large volume image capture requirements. No computer ired. Network connectivity is available for image transfer.

Camera
- -chip interline transfer CCD sensor
- mposite monochrome output with 752 × 582 PAL
- 8 zoom lens
- and IR bandpass locking filters
- nsitivity to 0.1ng of ethidium bromide-stained DNA
- nal-to-noise ratio, >56db; dynamic range, >2 orders of magnitude

grated processor and LCD monitor
- -button, touch-control keypad controls camera integration
- preset integration times from 0.04 to 10 sec. at 30fps
- splay live preview of images on the integrated 6⅜" (16.2cm) t-panel LCD
- tosave images in TIFF and JPEG formats to either memory card or twork-retrievable storage
- ersaturation flash warning

ce-saving benchtop darkroom
- ique gel window opens for quick sample viewing without opening e door
- al overhead white lights provided for overhead illumination
- ll access door with safety switch that turns UV off when door is opened
- mensions: 27L × 14W × 12¾"H (68.6 × 35.6 × 32.3cm)
- 5V 60Hz

DERING INFORMATION:

onal Accessories (available separately) include: Doc-It LS Software 0185-02), recommended for use with this system for analysis of gels, es and membranes; Mitsubishi* Thermal Printer (UVP89 0069 02), mmended for low-cost thermal printout of images.

LUDES:

monochrome CCD camera; large 6⅜" (16.2cm) LCD viewing screen for preview of gels; CompactFlash* memory card (64MB) and card reader ave and transfer images; compact darkroom with overhead white light ss door and unique UV-blocking gel viewer; choice of single- or iple-wavelength UV transilluminators or FirstLight* Uniform UV illuminator; ly accessible filter tray for quick exchange of ethidium bromide filters

TE:

refers to its midrange UV products as 302nm; other manufacturers may ify 300nm, 310nm or 312nm. The spectral output of these units is the e as UVP 302nm.

LOOKING FOR MORE PHOTODOCUMENTATION?

he UVP* MultiDoc-It* Imaging Systems combine digital color camera, ark room enclosure, and transilluminator for digital imaging of gels, plates, nd membranes in multiple-user laboratories. For ordering information,

isit www.fishersci.com and search for MultiDoc-It

UVP97-0166-01

Transilluminator	Filter Area	Cat. No.	Each
Single UV (302nm, High/Low Intensity)			
M-20	20 × 20cm	UVP97-0165-01	6389.76
M-26	21 × 26cm	UVP97-0167-01	6545.88
M-26X	25 × 26cm	UVP97-0172-01	6703.06
2UV (302/365nm)			
LM-20E	20 × 20cm	UVP97-0166-01	6525.44
LM-26E	21 × 26cm	UVP97-0168-01	6703.06
3UV (254/302/365nm)			
LMS-20E	20 × 20cm	UVP97-0170-01	7121.24
LMS-26E	21 × 26cm	UVP97-0171-01	7330.33
FirstLight UV (302nm)			
FI-20	20 × 20cm	UVP97-0188-01	7328.30
FI-26X	25 × 26cm	UVP97-0173-01	7734.30

ACCESSORIES

Mitsubishi* Printer and Paper

For UVP BioDoc-It* and VisiDoc-It* Systems

Description	Cat. No.	Each
Thermal Analog Printer	UVP89-0069-02	1859.39
Thermal paper, 4 rolls	UVP89-0038-01	108.25

UVP* DigiDoc-It* Imaging System

Economical gel imaging system with digital color camera, compact hood, sample viewer

Camera-hood system provides low-cost image acquisition and documentation of gels, plates and membranes. Combines 5.1 megapixel digital color camera and compact hood enclosure. Uses your existing computer with Doc-It* capture software on supplied CD.

- High-quality images with low-light capability
- Software enables acquisition, complete camera control, enhancement, annotation and archiving of digital images for publication or quantitative analysis
- Use with a variety of UVP transilluminator models; connect to suitable computer for analysis and printing

Camera and Capture Software

- CCD with 5.1 megapixel effective resolution
- 4:1 zoom lens (5.7 to 22.8mm); maximum field of view, 29.5 × 22.2cm
- Apertures from f/2.8 to f/8.0; automatic or manual focus and exposure; 1⁄4000 to 16 seconds exposure times
- Focusing ranges: normal, 8 to 31" (0.2 to 0.8m); close-up, 1 to 8" (0.03 to 0.2m)
- Multiple image resolution settings from 640 × 480 to 2592 × 1944; interpolated print resolution to 3264 × 2448
- High or low image compression with multiple file formats: JPEG, BMP, TIFF, GIF, TGA, PNG
- Capture software is compatible with Windows* 98SE, ME, XP, 2000
- Camera operates on lithium-ion rechargeable battery
- Additional camera functions available when software is not in use: multi-mode exposure controls, 1⅞" (4.6cm) wide-view color LCD monitor, variable shutter speeds, flash controls, QuickTime Movies, Smart Memory Card, utility and photo software, NTSC video output cable
- Camera measures 4⅜L × 3W × 2¾H" (109.2 × 76.2 × 68.6mm); weight, 11 oz. (307g)

Hood

- Lightweight compact hood with viewport and easy access door
- Measures 12D × 17¾W × 16⅝"H (305 × 451 × 422mm)

INCLUDES:

Digital camera with 55mm ethidium bromide filter and USB interface; Doc-It Capture Software on CD-ROM; hood enclosure; UV filter and adapter ring; battery and charger with universal voltage power supply

REQUIRED ACCESSORIES:

Transilluminator must be ordered separately. Choose from UVP High-Performance 25w transilluminators or combine the system with an 8w benchtop unit and drawer.

Description	Cat. No.	Each
UVP DigiDoc-It System	UVP97-0105-01	3245.88

WARNING

Transilluminators are powerful sources of ultraviolet radiation which can cause serious damage to unprotected eyes and skin. Read the ultraviolet Caution Information before operating any transilluminators.

UVP97-0105-01

ACCESSORIES

UVP* Doc-It* LS Analysis Software

Easy-to-use software package for 1-D analysis of gels, plates and membranes as well as colony counting

Offers many image enhancement tools, gel analysis functions, reporting capabilities; also supports 21 CFR Part 11 compliance. User-friendly design allows users to configure many features to their preferences.

- Image analysis detects straight, curved or slanted lanes and bands automatically or manually and creates histograms for detailed visual analysis
- Generates easy-to-interpret quantitative data of lanes and bands
- Colony Counting function uses wizard commands to set the automatic colony counting of user-defined areas
- Enhance images with brightness, contrast, gamma, emboss, invert and pseudo color
- Annotate with text, lines, arrows, ellipse, and highlighter tools—show, hide or burn into image
- Save images as various file formats including TIFF, JPEG, BMP and GIF for use in presentations or documentation
- Create detailed and user-configured reports
- Compatible with Windows* 2000 SP-4, Windows XP Pro SP-1 or later

Cat. No.	Each
UVP97-0185-02	1493.83

dak* Gel Logic 100 Imaging System

vides accurate detection and quantitative analysis a wide variety of biological labels and sample types

- 4 megapixel scientific-grade monochrome sensor and 6X zoom lens ovide excellent detection sensitivity and resolution
- atures real-time previewing, fast image acquisition, and umination correction
- sy setup and installation
- tended dynamic range yields improved quantitative accuracy
- mprehensive image analysis software for Windows* or Macintosh* lows easy calculation of molecular weight, mass, optical density, d intensity

DERING INFORMATION:
110V 60Hz/220V 50Hz. Optional white-light epi-illumination available.

LUDES:
tal CCD camera; imaging cabinet with integral filter slide, sized to fit t transilluminators; two packages of full feature 1-D Image Analysis ware (v. 3.6); 52mm, 590nm ethidium bromide bandpass filter; framing k kit and user's manual; camera/computer FireWire* interface cable and ware components for Windows and Macintosh platform

TE:
uires USB port for copy protection and one parallel or USB port for ting

cription	Cat. No.	Each
gle License	**05-730-167**	5375.87
ee-License Network	**05-730-168**	6231.49

GEL LOGIC 100
IMAGING SYSTEM

05-730-167

ACCESSORIES

Filter for Gel Logic 100 Imaging Systems

Description	Cat. No.	Each
535 filter, SYBR* Green/Gold	**05-730-176**	431.58

LOOKING FOR MORE PHOTODOCUMENTATION SYSTEMS?

Visit www.fishersci.com and search for Photodocumentation

Fotodyne* FOTO/Analyst* Luminary Workstations

Acquire and store digital images of chemiluminescent, fluorescent, and visible samples, including gels, blots, TLC plates, and Petri plates

- High quantum efficiency (QE) in the chemiluminescent emission range to maximize sensitivity
- Maximize detection of chemiluminescent and other low-signal samples
- Offer picogram-level sensitivity for both nucleic acid and protein gels and blots

FOTO/Luminary* Benchtop Darkroom

- Houses a cooled CCD camera with a hands-free motorized zoom lens
- Gliding transilluminator platform and side-opening door with interlock provide convenient and safe operation
- Choose workstations with either UV or dual light transilluminators
- Lumi/Tray is designed specifically for work with chemiluminescence and positions blots close to the camera for maximum sensitivity
- Dual visible epi-lights allow easy focusing and even illumination of opaque samples
- Dual UV epi-lights are ideal for use with samples stained with fluorescent dyes
- Front-loading filter holder allows simple exchange of filters when changing applications

FOTO/Analyst PC Image Acquisition Software

- Captures and stores images in a choice of nine file formats, including TIFF, JPEG, and BMP
- Offers background subtraction, brightness and contrast adjustment, image inversion, and a saturation indicator to determine when images are exposed beyond the limits of effective digital analysis
- Annotation feature permits labeling with text, date and time stamp, arrows, circles, and boxes
- Up to five exposure times can be set to capture consecutive images of low-signal samples for optimal results

Minimum Computer Requirements

- Windows* 2000 or XP; 2.0 GHz or faster processor, 512MB RAM; 1 GB hard drive space (additional space for images)
- One open full-size PCI slot, USB port open for thermal printer; open serial port
- 15" (38.1cm) monitor
- 800 × 600 resolution video card (1025 × 768 recommended), 24-bit true color

ORDERING INFORMATION:

Also available without thermal printer

INCLUDES:

UV workstations include FOTO/UV* 26 transilluminator. **Dual Light workstations** include FOTO/Convertible* dual-light (UV and visible) transilluminator, and Coomassie* blue interference filter; thermal printer with one roll of paper; ethidium bromide interference filter; cooled CCD camera with motorized zoom lens; FOTO/Luminary Benchtop Darkroom with dual UV epi-lights and dual visible epi-lights; Frame Grabber/Video Card; PC Image software and cable package. Choose an eight-bit, 0.4 megapixel camera for basic gel and blot documentation; choose a 12-bit, 1.4 megapixel camera for more demanding samples.

FD67110

Description	Cat. No.	Each
UV Workstations		
With 8-bit camera and PC	FD67110	20,800.00
Dual Light Workstations		
With 8-bit camera	FD67030	19,885.00
With 12-bit camera	FD68030	32,811.43

ACCESSORIES

TotalLab Analysis Software

Versatile, easy-to-use software for the quantitative analysis of images from a wide range of biological samples

- Fully automated; also features adjustable parameters and comprehensive editing tools for customized reporting
- Results can be viewed in graphical, tabular, and report forms, all of which can be copied or exported into other software packages
- Compatible with Windows* 95, 98, ME, 2000, NT, and XP

INCLUDES:

Modules for 1D electrophoresis gels with molecular weight determination and accurate quantification of band material; array analysis; instant colony counting with 2D spot and image feature measurement; and general data analysis with background subtraction

Description	Cat. No.	Each
TotalLab Software Only		
Single-User Software License	FD60200	999.00
Three–User Network License	FD602003N	1999.00
TotalLab Software Purchased with Luminary System		
Single-User License	FD60200S	1383.75

odyne* FOTO/Analyst* Investigator FOTO/Eclipse* Workstations

ire and store electronic images of electrophoresis samples

ce of UV or Dual-Light Transilluminators

l for obtaining low-light images such as ethidium-bromide-stained gels with as little as 0.1ng per band

ture, manipulate and save images in any of nine file formats, ıding TIFF, BMP and JPEG

t-tight enclosure features a gliding transilluminator platform and -opening door with interlock for safe operation

gral dual sidelights allow easy focusing and even illumination of que samples such as blots

venient front-access filter holders enable simple exchange of filters veen applications

e Acquisition Software

vorkstations are supplied with real-time image acquisition ware, live saturation, and on-chip integration control

ge enhancement tools (including background subtraction and sharpen, ht and contrast controls) allow the user to invert, zoom, mirror, rotate annotate (date, time, text, circle, arrow) images

kstations are also available with TotalLab Analysis Software 50200) for quantitative image analysis

FD61510P with analysis software and computer (not included).

RING INFORMATION:

orkstations include FOTO/UV* 26 transilluminator and an ethidium de interference filter. Dual-Light workstations include /Convertible* dual transilluminator and ethidium bromide and assie* blue interference filters. Electrical requirements: 120V 60Hz.

UDES:

/Eclipse* benchtop darkroom; CCD camera with zoom lens, image sition software, Investigator controller; thermal printer with one roll of ; PCI frame grabber/video card; cables, connectors and power cords

Description	Filters	Cat. No.	Each
UV Workstations			
PC	Ethidium Bromide Interference	**FD61510P**	8755.00
Dual-Light Workstations			
PC	Ethidium Bromide and Coomassie Blue Interference	**FD61530P**	9682.00
PC, with TotalLab Software	Ethidium Bromide and Coomasie Blue interference	**FD61560P**	10,866.50

---

odyne FOTO/Analyst* Express Zoom Lens System with Thermal Printer

kly and easily acquire, print, and store electronic images of electrophoresis samples

graphic workstation provides hard copies of images on high-quality, ost thermal or photographic prints.

troller allows you to view both live and integrated images

image feature lets you adjust camera settings while viewing -time changes on computer monitor

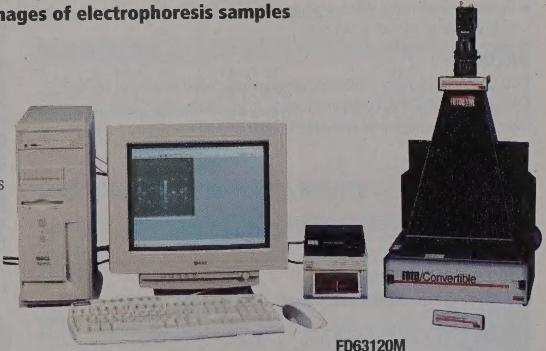
gration feature enables the acquisition of low-light fluorescent gels, ending sensitivity beyond that of conventional photography; detects as e as 0.1ng of ethidium-bromide–stained DNA

tures Scion Image acquisition software

tware captures, manipulates and stores laboratory data in nine erent formats including TIFF, BMP and JPEG

UDES:

camera assembly with zoom lens, controller, photographic hood, um bromide filter, image acquisition software, fluorescent ruler, ıal printer



FD63120M

iption	Cat. No.	Each
ıtosh*	**FD63120M**	6592.00

Fotodyne* FOTO/Analyst* MiniVisionary Fixed-Focus Hood-Mount System

Simply and rapidly document electrophoresis gels without the need for a separate computer

FOTODYNE
FOTO/Phoresis

FD62310

Combines state-of-the-art technology of a CCD video camera with the ease of fixed-focus photographic hood.

- Ideal for research, educational and QC laboratories
- Copy feature lets you quickly produce multiple copies of the same image
- Stand-alone CCD-based imaging systems allow the acquisition of very-low–light fluorescent gels
- Produce inexpensive thermal prints at the touch of a button for a fraction of the price of conventional film

INCLUDES:

CCD Camera assembly, controller, photographic hood (choice of FD55333, FD55334 or FD55335), ethidium bromide filter, Coomassie*/methylene blue filter, thermal printer with one roll of paper and all necessary cables

NOTE:

Specify choice of photographic hood when ordering; see specifications below.

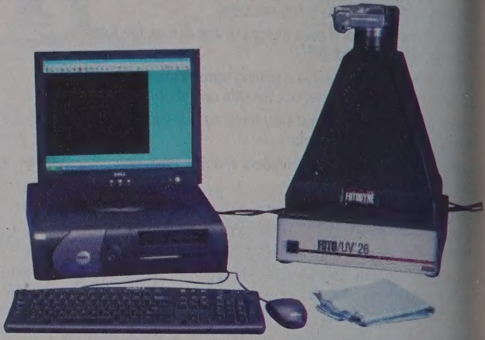
Cat. No.	Each
FD62310	4510.00

HOOD SPECIFICATIONS

Cat. No.	Max. Subject Dimensions	Magnification	Resolution (pixels/mm, RS170)
FD55333	2.9 × 3.8" (7.4 × 9.7cm)	128%	7.9
FD55334	4.25 × 4.4" (8.5 × 11.2cm)	111%	6.9
FD55335	2.7 × 4.6" (6.9 × 7.2cm)	135%	8.3

Fotodyne* FOTO/Analyst* Apprentice System

Combines a digital camera with a photographic hood for affordable digital imaging



FD-64135 (Transilluminator and PC computer sold separately)

Hood-mount camera systems are ideal for small labs with routine sample sizes as well as for teaching labs.

- Images saved on the camera's SmartMedia storage card can be quickly retrieved via USB connection to your PC or Macintosh* computer
- Systems are also capable of imaging with blue light

ORDERING INFORMATION:

Electrical requirements: 120V 60Hz. Choose small (12.7 × 18.4cm) hood with a maximum subject dimension of 12.5 × 18.2cm or large (24 × 31cm) hood with a maximum subject dimension of 23.3 × 30.9cm; specify when ordering.

INCLUDES:

Megapixel digital camera with mount, instruction manual; choice of photographic hood; filter adapter and close-up adapter; UV blocking mat; 16MB memory card; AC adapter; USB cable; lithium batteries; Quick reference guide for gel documentation. The **FOTO/Phoresis System** includes an 8.6 × 10.8cm UV transilluminator plus an 13.5 × 14.5cm hood, ideal for viewing mini-gels

REQUIRED ACCESSORIES:

Transilluminator for 14-700-10, 101,102; included with FD64135.

Description	Cat. No.	Each
Digital Camera System w/ethidium bromide filter	14-700-100	1525.00
Digital Camera System w/fluorescent green filter	14-700-101	1695.00
Digital Camera System w/Coomassie*/methylene blue filter	14-700-102	1295.00
FOTO/Phoresis System w/UV transilluminator	FD64135	2583.00

LOOKING FOR TRANSILLUMINATORS?

Fisher Scientific carries several for use with our photodocumentation systems. For more information and to order, see the Transilluminator section.

*Trademark. See Trademark Reference.

Prices subject to change.

ctronics* GeneLine* Image Documentation Systems

automated gel documentation workstations and digital image software
ide gel analysis in under 10 seconds

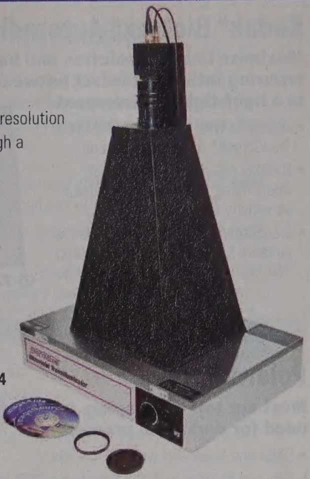
ure laboratory-grade 8-bit CCD camera with on-chip integration for high sensitivity and enhanced pixel resolution

ides a complete solution for acquiring, viewing, transferring, archiving, and analyzing gel images through a
-supplied PC

be used for any fluorescence or absorbance application

JDES:
Aide analysis software. Plus package includes a variable-intensity UV transilluminator,
(Cat. No. 11-992-80). GeneLine components, including thermal printers, paper, and
nsilluminators can be purchased separately.

ption	Mfr. No.	Cat. No.	Each
ne Image Documentation System			
EZE w/Band Matching	GL-3001	**11-992-358**	6347.25
ne System w/Transilluminator			
EZE Plus w/Band Matching	GL-3051	**11-992-364**	7657.00



11-992-364

AUTORADIOGRAPHY CASSETTES

herBiotech* Autoradiography Cassettes

es CS

vide exceptional strength

sed channel, structural girder frame construction features butt-welded
ners and spot-welded flanges

d-foil-lined door attaches with self-adjusting floating hinges to
ommodate screens and samples of any thickness

enolic front panel is laminated to an aluminum plate that won't warp,
suring excellent film/screen contact

inless-steel locking bars close tightly to apply pressure needed for
fect contact at all points

ing makes opening cassette easy

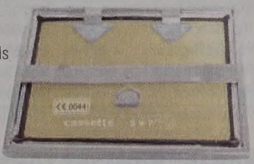
ht-tight—ensure superior autoradiographic images of radioactively
eled electrophoresis

mum Film Size	Cat. No.	Each	Case of
" (13 × 18cm)	**FB-CS-57**	118.33	10/1011.40
0" (20 × 25cm)	**FB-CS-810**	152.32	12/1562.28
17" (35 × 43cm)	**FB-CS-1417**	206.45	6/1058.70
36" (35 × 91cm)	**FB-CS-1436**	462.07	4/1848.28

Series CA

Light-tight cassettes ensure superior autoradiographic images of radioactively labeled electrophoresis gels

- Cassette frame is constructed to hold front panel securely
- Cotton/rayon-covered urethane pads press film and intensifying screen tightly together for better imaging
- Resilient polymer corners prevent damage when dropped



FB-CA-57

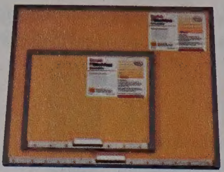
Maximum Film Size	Cat. No.	Each	Case of
5 × 7" (13 × 18cm)	**FB-CA-57**	126.60	10/1082.09
8 × 10" (20 × 25cm)	**FB-CA-810**	146.98	12/1507.44
14 × 17" (35 × 43cm)	**FB-CA-1417**	234.29	6/1201.48

NEED INTENSIFYING SCREENS?
See pp. 1375-1376.

Kodak* BioMax* Autoradiography Cassettes

Maximize image resolution and background clarity by ensuring intimate contact between the film and sample in a light-tight environment

- Available with or without BioMax or TranScreen* intensifying screen
- BioMax MS and TranScreen HE intensifying screens offer maximum sensitivity for ^{32}P and ^{125}I
- TranScreen LE intensifying screen is suitable for ^{3}H, ^{14}C, ^{33}P, ^{35}S, ^{45}Ca and ^{59}Fe isotopes as well as ^{32}P and ^{125}I



05-728-15 (top), 05-728-14 (bottom)

Maximum Film Size	Mfr. No.	Cat. No.	Each	Case
Cassette Only				
8 × 10" (20 × 25cm)	8209140	**05-728-15**	390.05	184
14 × 17" (35 × 43cm)	8197600	**05-728-14**	494.34	231
Cassette with BioMax MS Intensifying Screen				
8 × 10" (20 × 25cm)	8750499	**05-728-17**	651.86	307
14 × 17" (35 × 43cm)	8578825	**05-728-16**	1299.00	612
Cassette with BioMax TranScreen HE Intensifying Screen				
8 × 10" (20 × 25cm)	8356800	**05-728-61**	666.77	314

FILM

Polaroid* Film

Most are self-developing, instant films that eliminate need for darkroom processing

- Color and black-and-white, 3¼ × 4¼"
- Film can be used with the Standard or XLR versions of the MP 4+* Camera System
- Pack films can also be used with FB-PDC-34 Camera

667
667
Polaroid
Polaroid

04-441-91

Description	Type	Size and Format	Speed (ISO); Development Time	Cat. No.	Pack of	Case
PolaColor* ER Color Print Film						
Color Print	Type 59	4 × 5" Sheet	80; 60 sec.	**04-441-77**	20/194.34	10 Pk./1661.0
Color Print	Type 669	3¼ × 4¼" Pack	80; 60 sec.	**04-441-20**	20/52.95	25 Pk./1042.8
Black-and-White Film						
High-speed Print	Type 57	4 × 5" Sheet	3000; 15 sec.	**04-441-59**	20/169.85	10 Pk./1451.7
High-speed Print, Twin Pack	Type 667	3¼ × 4¼" Pack	3000; 30 sec.	**04-441-91**	2/57.58	25 Pk./1262.7
Positive/Negative	Type 55	4 × 5" Sheet	50; 20 sec.	**04-441-60**	20/188.92	10 Pk./1614.6
Fine-grain Print	Type 52	4 × 5" Sheet	400; 15 sec.	**04-441-76**	20/168.60	10 Pk./1441.0
High Contrast	Type 51	4 × 5" Sheet	320† ; 60 sec.	**04-441-105**	20/178.66	10 Pk./1527.0

† *Using tungsten lighting.*

Kodak* BioMax* XAR* Film

Suitable for use with all radioisotopes and chemiluminescent probes

- Coated on both sides of a clear base, making it ideal for both direct autoradiography and exposures with intensifying screens
- Utilizes an improved formulation that eliminates the need for interleaving paper while maintaining the same performance as the original X-Omat* AR (XAR) film
- Suitable for manual and automated processing

BioMax
Kodak

05-728 Series

ORDERING INFORMATION:

Formats include: ReadyPacked film (with each sheet of film individually wrapped in a protective folder for easy handling); Bulk-packed film

Film Size	Sheets/Box	Mfr. No.	Cat. No.	Each	Case of
ReadyPacked Film					
5 × 7" (13 × 18cm)	50	1660760	**05-728-43**	526.82	5/2508.67
8 × 10" (20 × 25cm)	50	1651579	**05-728-41**	529.17	5/2519.85
14 × 17" (35 × 43cm)	50	1651678	**05-728-42**	1392.20	2/2651.80
Bulk-packaged Film					
5 × 7" (13 × 18cm)	50	1651496	**05-728-36**	275.78	5/1264.20
8 × 10" (20 × 25cm)	50	1651454	**05-728-34**	408.66	5/1946.01
14 × 17" (35 × 43cm)	50	1651512	**05-728-35**	1052.30	5/5010.97

ACCESSORIES

Polaroid* Film Holders

Accept all Polaroid 4 × 5" instant sheet films

- Fit most 4 × 5 standard press and view cameras and scientific/recording devices that are equipped with spring backs, lock backs and similar backs, without making any alteration to the camera or the focusing system
- Can also be used with instruments (such as microscope and oscilloscope cameras) equipped with similar backs, and with the Polaroid MP4+ Cameras, the CU-5 4 × 5 camera, and the Polaroid Miniportrait 4 × 5 cameras
- Film holder slides into the back of the camera
- No alterations to equipment or focusing system is needed

Type	For	Mfr. No.	Cat. No.	Each
Model 545i	4 × 5" Sheet film	617878	**04-441-50**	264.51

*Trademark. See Trademark Reference.

Prices subject to change.

dak* BioMax* MR (Maximum solution) Film

ommended for direct autoradiography of weak and lium energy β-radioisotopes, such as ^{35}S,^{33}P, and ^{14}C

- al for the detection of sequencing gels
- ated on only one side of a clear base
- lizes patented "T-grain" technology, which provides a two- to four-fold rease in sensitivity for direct autoradiography when compared to ner films
- proves detection of low-intensity bands
- ovides enhanced resolution and exceptional clarity
- so provides excellent resolution for ^{32}P and ^{125}I, although it offers lower nsitivity than BioMax MS film
- itable for manual and automated processing

ERING INFORMATION:

lable in either Bulk-packed film or ReadyPacked film (with each sheet m individually wrapped in a protective folder).

Size	Sheets/Box	Mfr. No.	Cat. No.	Each	Case of
-packaged Film					
7" (13 × 18cm)	50	8941114	**05-728-26**	332.31	5/1582.47
9½" (18 × 24cm)	50	8736936	**05-728-27**	412.90	5/1966.18
10" (20 × 25cm)	50	8701302	**05-728-24**	475.65	5/2264.98
× 12" (24 × 30cm)	50	8912560	**05-728-29**	634.77	5/3022.69
17" (35 × 43cm)	50	8715187	**05-728-25**	1279.37	5/6092.25
lyPacked Film					
7" (13 × 18cm)	50	8572786	**05-728-33**	601.10	5/2862.42
10" (20 × 25cm)	50	8952855	**05-728-31**	533.57	5/2540.80
17" (35 × 43cm)	50	8567232	**05-728-32**	1657.27	2/3156.69

dak* BioMax* Light Film

eloped specifically for the detection of miluminescent probes

- oduces the highest signal-to-noise ratio of any scientific toradiographic film
- ated on both sides of a clear base
- n be used for direct autoradiography and intensifying screen exposures th commonly used isotopes, but requires longer exposure times than oMax MS, and BioMax XAR* film
- itable for manual and automated processing

DERING INFORMATION:

nats include: Bulk-packaged film; ReadyPacked film (with each sheet m individually wrapped in a protective folder).

Size	Sheets/Box	Mfr. No.	Cat. No.	Each	Case of 5
-packaged Film					
7" (13 × 18cm)	50	8689358	**05-728-47**	305.72	1306.50
10" (20 × 25cm)	50	1788207	**05-728-55**	404.55	1751.33
9½" (18 × 24cm)	50	8194540	**05-728-48**	352.44	1506.17
× 12" (24 × 30cm)	50	1538966	**05-728-49**	558.97	2419.78
17" (35 × 43cm)	50	8625170	**05-728-51**	1095.67	4682.37
yPacked Film					
7" (13 × 18cm)	50	1917012	**05-728-53**	512.31	2439.55
10" (20 × 25cm)	50	8761520	**05-728-52**	552.54	2631.13

Kodak* BioMax* MS (Maximum Sensitivity) Film

Ideal for use with radioisotopes when detection of low-intensity samples or reduction of exposure times is required

Use for detection of Northern, Southern and dot blotting applications. Suitable for manual and automated processing.

- Coated on both sides of a clear base with an advanced technology "T-grain" emulsion
- When used in conjunction with BioMax MS or TranScreen* HE intensifying screens, film provides the fastest and most sensitive system for the detection of ^{32}P and ^{125}I radioisotopes (4 to 8 times faster than any other filter/screen combination)
- When combined with TranScreen LE intensifying screen, film provides similar speeds to BioMax XAR* with a calcium tungstate screen, but with significantly greater resolution
- When used with TranScreen LE, film offers the fastest system for the detection of ^{35}S, ^{14}C, ^{45}Ca, ^{33}P, ^{59}Fe, and even ^{3}H radioisotopes (≥5 times faster)

ORDERING INFORMATION:

Choose noninterleaved, bulk-packed film or ReadyPacked film (each sheet individually wrapped in a protective folder).

NOTE:

May be used with other intensifying screens; however, maximum sensitivity is achieved using BioMax screens.

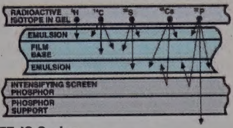
Film Size	Sheets/Box	Mfr. No.	Cat. No.	Each	Case of
Bulk-packaged Film					
5 × 7" (13 × 18cm)	50	1111681	**05-728-3**	331.74	5/1579.71
7 × 9½" (18 × 24cm)	50	8222648	**05-728-4**	365.42	5/1707.60
8 × 10" (20 × 25cm)	50	8294985	**05-728-1**	436.04	5/2076.40
9½ × 12" (24 × 30cm)	50	8326886	**05-728-5**	634.77	5/3022.69
12 × 15¾" (30 × 40cm)	50	8220774	**05-728-6**	830.83	5/3956.36
14 × 17" (35 × 43cm)	50	1435726	**05-728-2**	1132.40	5/5291.60
ReadyPacked Film					
5 × 7" (13 × 18cm)	50	1777853	**05-728-10**	610.17	5/2905.56
8 × 10" (20 × 25cm)	50	8377616	**05-728-8**	670.19	5/2864.04
14 × 17" (35 × 43cm)	50	1764505	**05-728-9**	1548.83	2/2950.16

INTENSIFYING SCREENS

FisherBiotech* Intensifying Screens

Decrease exposure times and lower levels of radioactivity needed for autoradiography of gels

Particles emitted from radioactively labeled samples in gel pass through film and strike intensifying screen. Inorganic phosphors absorb energy, converting it to ultraviolet or blue light, which then exposes the film.



TF-IS Series

- For use with isotopes that emit high-energy beta particles (e.g., ^{32}P, ^{45}Ca) or gamma particles (e.g., ^{125}I)
- Fit autoradiography cassettes for common film sizes

Screen Dimensions	Cat. No.	Pack of 2
5 × 7" (13 × 18cm)	**TF-IS-57**	54.87
8 × 10" (20 × 25cm)	**TF-IS-810**	125.57
14 × 17" (35 × 43cm)	**TF-IS-1417**	371.27
14 × 36" (35 × 91cm)	**TF-IS-1436**	784.94

Kodak* BioMax* Autoradiography Intensifying Screens

MS Intensifying Screens

Conventional format intensifying screens for maximum sensitivity in detection of higher energy radioisotopes such as ^{32}P and ^{125}I

- Four to eight times faster than other autoradiography screens

Available in two formats:

- Intensifying screen only (below)
- With BioMax cassette (see 05-728-17 and 05-728-16 on p.1374)

Kodak
intensifying screens
Kodak
INTENSIFYING SCREENS

05-728-19

Screen Dimensions	Mfr. No.	Cat. No.	Each	Case of 5
5 × 7" (13 × 18cm)	8142358	**05-728-21**	130.26	602.04
7 × 9½" (18 × 24cm)	8757270	**05-728-20**	255.36	1158.98
8 × 10" (20 × 25cm)	8518706	**05-728-23**	302.17	1427.37
9½ × 12" (24 × 30cm)	8967754	**05-728-19**	412.31	1772.97
14 × 17" (35 × 43cm)	8981706	**05-728-22**	811.38	3821.73

TranScreen* HE Intensifying Screen

Patented, innovative intensifying screen developed specifically for detection of higher energy radioisotopes such as ^{32}P and ^{125}I

Equals the sensitivity of the BioMax* MS screen with improved handling features and publication-quality images

Available in two formats:

- Intensifying screen only (below)
- With BioMax cassette (see 05-728-61 on p. 1374)

Screen Dimensions	Mfr. No.	Cat. No.	Each
8 × 10" (20 × 25cm)	8563959	**05-728-63**	310.25
14 × 17" (35 × 43cm)	8811457	**05-728-62**	829.02

TranScreen* LE Intensifying Screen

Novel, patented intensifying screen designed for ^{3}H, ^{14}C, ^{33}P, ^{35}S, ^{45}Ca, and ^{59}Fe

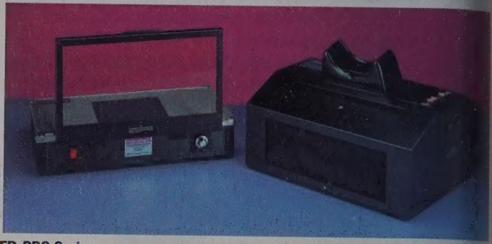
- Achieve a 0.301 O.D. image five or more times faster than direct autoradiography
- Offer greater resolution (2X) in the same time with equal or better sensitivity as BioMax* XAR/calcium tungstate intensifying screen systems, when used with ^{32}P and ^{125}I
- Intensifying screen only

Screen Dimensions	Mfr. No.	Cat. No.	Each
8 × 10" (20 × 25cm)	1622034	**05-728-67**	315.66
14 × 17" (35 × 43cm)	8660789	**05-728-66**	901.94

VIEWING CABINETS

FisherBiotech* Ultraviolet Viewing Cabinets

Ideal for viewing electrophoresis gels and TLC plates



FB-PDS Series

- Available with or without 365/254nm UV lamp
- Cabinet housing is sturdy aluminum with chemical-resistant polyurethane finish; removable bottom panel allows units to be placed underneath cabinet for higher UV intensity and greater fluorescent contrast
- Cabinets can be converted into benchtop photodocumentation systems using any 35mm SLR camera; snap-on adapters can be ordered through your Fisher Scientific Customer Service Representative or by visiting our Web site
- **Small Cabinets** have space to view two 20 × 20cm gels or plates; can accommodate two double-tube UV lamps
- **Large Cabinets** have space for four 20 × 20cm gels or plates; accept two larger lamps

ORDERING INFORMATION:

Small cabinet housing dimensions: 17½L × 20¼W × 9¾"H (45 × 51 × 25cm).
Large cabinet housing dimensions: 19½L × 24¼W × 12¾"H (50 × 62 × 32cm).

INCLUDES:

Built-in 25w white light source with easy-access switches

CERTIFICATIONS:

UL listed

Description	Cat. No.	Each
Small Cabinets		
Without UV lamp	**FB-PDS-80**	1024.83
With FB-UVLS-80 UV lamp	**FB-PDS-81**	1314.50
Large Cabinets		
Without UV lamp	**FB-PDS-150**	1060.20
With FB-UVLS-150 UV lamp	**FB-PDS-151**	1872.79

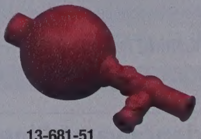
*Trademark. See Trademark Reference.

PIPET FILLERS

BULBS

*sherbrand** Rubber Bulb-Type fety Pipet Fillers

gh 100% natural rubber patented pipet fillers minate mouth pipetting and handling of zardous materials



13-681-51

stainless-steel ball valves control um for precise pipet filling and d delivery with one hand.

pel air by squeezing bulb, then aw up liquid by pressing valve "↑" on stem

release, press valve "↓" on side stem

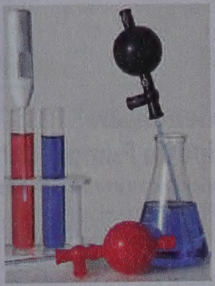
t pipets with O.D. ranging from 3⁄16 to 3⁄8" (4.5 to 9mm)

atented removable valve permits easy inside cleaning

r	Cat. No.	Each	Case of 72
	13-681-51	24.95	1560.92
k	**13-681-50**	24.95	1560.92

*sherbrand** Silicone Bulb-Type fety Pipet Fillers

emical-resistant, resilient, silicone pipet fillers th glass valves improve worker safety



(Top) 13-681-102B; (Bottom) 13-681-102A (Pipet not included)

inate mouth pipetting and dling of hazardous materials. g-lasting silicone is highly stant to organic solvents.

ll and dispense pipets with ne hand

rst expel air by squeezing valve 1" above bulb

hen draw up liquid by pressing alve "2" on stem

release, press valve "3" on ide of stem

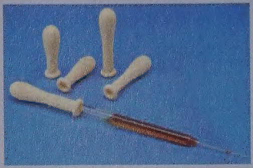
DERING INFORMATION:
pipets with O.D. ranging from to 3⁄8" (4.5 to 9mm)

or	Cat. No.	Each
	13-681-102A	21.95
ck	**13-681-102B**	21.95

*Fisherbrand** Bulbs for Small Pipets

Flexible, easy-to-attach bulbs

- For medicine droppers and small pipets
- Amber latex
- Dry natural rubber



03-448-21, -22

Capacity	Length	Cat. No.	Pack of 72
1mL	1½" (38mm)	**03-448-21**	41.73
2mL	2¼" (57mm)	**03-448-22**	42.13

*Fisherbrand** Dropper Bulbs for Pasteur Pipets

Made of natural blue rubber

Designed for use with Pasteur pipets, small-volume pipets, and medicine droppers.

03-448-26, -25

Capacity	Diameter of Opening	Length	Cat. No.	Pack of 24
1mL	0.265" (6.7mm)	1⅛" (28mm)	**03-448-25**	15.90
3mL	0.275" (7mm)	1⅝" (41mm)	**03-448-26**	29.40

*Fisherbrand** Safety Bulb Pipet Filler

Fits any size pipet; does not attach to pipets

Red rubber bulb attaches to white polypropylene piece with conical silicone adapter that fits small pipets through the largest volumetrics.

- Just squeeze bulb and touch to pipet to form a seal
- Let suction draw fluid, then lift bulb away and control fluid level with index finger
- Attaching a pipet does not require twisting bulb—minimizes the possibility of pipet breakage
- Autoclavable

03-448-23

INCLUDES:
Handy elastic band for hanging on wrist or reagent bottle

Color	Capacity	Cat. No.	Pack of 3
Red	½ oz.	**03-448-23**	27.63

MANUAL

*Fisherbrand** Pipet Filler

Lightweight pipet filler sits comfortably in the hand

Aspirate and pipet liquid samples with precise control. To use, simply squeeze the air out of the silicone bulb, then use the thumb lever to control the aspirate and delivery speeds.

- Mini button blows out the last drop of liquid from pipet when pipetting—ideal for use with blow-out pipets
- Silicone pipet holder is autoclavable and accommodates pipets from 1 to 10mL
- 0.45µm replaceable, nonsterile membrane filter prevents liquid from entering the unit

03-692-35

INCLUDES:
Integral 0.45µm membrane filter and colored pipet cones (white, mint, mauve and pink) for safety coding

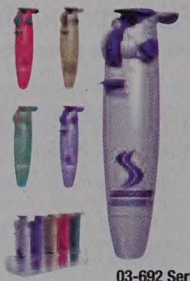
Description	Cat. No.	Price
Pipet Filler	**03-692-35**	Ea./77.50
Replacement Membrane, 0.45µm	**03-692-45**	Pk. of 5/11.90

Jencons Smoothie* Pipet Fillers

Exceptionally smooth, controllable thumb action

Unique range selector allows you to select from two dispense resolutions for maximum accuracy. One range setting delivers fast filling with optimal accuracy when used with 10 to 25mL pipets; the other setting is for use with pipets from 1 to 10mL where accuracy of fill can sometimes be difficult to control.

- Comfortable and simple to use
- Precise and accurate pipetting
- Compatible with blow-out, TD (to deliver) or gravity-dispense pipets
- Eliminate the need to use a range of different sized pipet fillers for a variety of volumes dispensed
- Fit pipets from 1 to 25mL
- Removable and autoclavable silicone pipet holder
- Acrylic stand available to hold up to five Smoothie pipet fillers
- Choose from five colors, each with its own subtle fragrance



03-692 Series

NOTE:
Over a period of time, the fragrance will gradually dissipate.

Description	Color	Mfr. No.	Cat. No.	Each
Vanilla Smoothie	White and blue	475-360	**03-692-200**	30.00
Strawberry Smoothie	Red and green	475-361	**03-692-201**	30.00
Banana Smoothie	Yellow and gray	475-362	**03-692-202**	30.00
Lemon and Lime Smoothie	Green and yellow	475-363	**03-692-203**	30.00
Blueberry Smoothie	Blue and purple	475-364	**03-692-204**	30.00
Stand (holds 5 pipet fillers)	Clear acrylic	475-002	**03-692-205**	30.00

Jencons Safetypette* Pro Pipet Filler

Soft-touch bulb fills pipets from 1 to 100mL

Lightweight, large-capacity silicone bulb (55mL) provides smooth, comfortable pipetting.

- Simply squeeze bulb; thumb lever precisely controls both aspirating and pipetting speed; one-hand operation
- With button to blow out residual contents of pipet
- Integral, replaceable 0.45µm membrane filter prevents liquid from accidentally being drawn into the unit
- Autoclavable pipet holder

03-692-190

ORDERING INFORMATION: For use with all sizes of pipets, 1 to 100mL

Mfr. No.	Cat. No.	Each
475155	**03-692-190**	80.00

Scienceware* Pipette Pump* Filler/Dispensers

Accurate and safe pipetting aid

These individually packaged pipet filler/dispensers can easily be taken apart for cleaning.

- To fill, rotate knurled wheel forward
- Empty slowly by rotating wheel backward, or rapidly by depressing plunger
- Unit never comes in contact with the liquid
- Provides a firm, positive fit for all standard pipets

13-683D, -683A, -683B, -683C

ORDERING INFORMATION: Pipets sold separately.

For Pipets up to	Color	Mfr. No.	Cat. No.	Each	Case of 12
0.2mL	Yellow	378960000	**13-683A**	23.99	246.00
2mL	Blue	378970000	**13-683B**	20.77	213.00
10mL	Green	378980000	**13-683C**	21.65	222.00
25mL	Red	378990000	**13-683D**	29.54	303.00

Scienceware* Fast Release Pipette Pump* III Pipetters

Quick, accurate one-handed operation

Optimally located thumb wheel rotates easily for precision aspirating or dispensing, down to a volume of one drop at a time—all while using a relaxed grip.

03-410-535, -536, -537

- Lightweight
- Fast-release trigger dispenses entire pipette contents
- Thumb wheel can also be used to "blow out" pipet
- Self-stabilizing collar inside silicone chuck holds glass or plastic pipets
- Resistant to acids, alkalis, and most solvents
- Easily disassembled for cleaning

ORDERING INFORMATION:
Color coded. Overall length, 6¾" (171mm).

For Pipets Up To	Color	Mfr. No.	Cat. No.	Each	Case of 12
2mL	Blue	379040002	**03-410-535**	21.94	225.00
10mL	Green	379040010	**03-410-536**	22.25	228.21
25mL	Red	379040025	**03-410-537**	29.54	303.00

nceware* Fast-Release ette Pump* II Filler/Dispensers

pets up to 25mL

13-683-1D, -1C, 1B

- e elastic thermoplastic rubber olds pipet snugly for safe, e.
- ly insert pipet into detachable, -shaped chuck with light r pressure
- l, grasp pump in palm of and rotate knurled wheel thumb
- npty rapidly, lightly press thumb on quick-release lever
- npty gradually, rotate wheel
- disassemble for maintenance

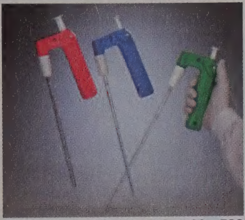
RING INFORMATION:

sold separately.

ets up to	Color	Mfr. No.	Cat. No.	Each	Case of 12
	Blue	379111002	**13-683-1B**	22.17	227.37
	Green	379111010	**13-683-1C**	22.50	230.77
	Red	379111025	**13-683-1D**	29.88	306.44

nceware* Economy Pipette Pump* III etters

nomic design enhances comfort, utility dispensing precision



03-410-534, -532, -533

- de accurate, trouble-free tting with simple, one-handed ation
- ce risk of injury from repetitive awkward pipetting motions
- nb wheel rotates easily for ision aspirating or dispensing, n to one drop at a time
- nb wheel can be used to v out" pipette
- r coded for easy identification
- st acids, alkalis, and most solvents
- y disassembled for cleaning

ets Up To	Color	Mfr. No.	Cat. No.	Each
	Blue	379020002	**03-410-532**	20.00
	Green	379020010	**03-410-533**	19.25
	Red	379020025	**03-410-534**	24.50

MOTORIZED

*Fisherbrand** Motorized Pipet Fillers/Dispensers

Compatible with glass or plastic pipets from 1 to 100mL

Fisherbrand

03-694-164

Ultra-lightweight (just over 6 oz. [173g]) and compact, these pipet controllers operate for eight hours from a single charge; low battery light indicates one hour of use remaining. Environmentally friendly nickel metal hydride battery will not develop memory over time. During recharging, Filler/Dispensers can remain in use.

03-692-171

- Mode switch enables selection of three aspirate/dispense speeds, all of which are easily controllable by the triggers
- "High" setting to aspirate/dispense at full speed with blowout
- "Low" to aspirate/dispense at reduced speeds with blowout
- "G" to aspirate at reduced speed, dispense by gravity (for pipets designed "To Deliver")
- Comfortable, concave finger triggers give you additional variable control of pipetting speed at any setting
- Turbo model adds a powerful, yet quiet motor for faster large-volume pipetting, filling a 25mL pipet in under three seconds
- Standard controller has a streamlined shape to accommodate large or small hands
- Low-profile Plus and Turbo controllers have traditional pistol-shaped body to permit use in laminar flow hoods or biological safety cabinets

ORDERING INFORMATION:

Standard and Plus models come in six different colors, to let you color code according to user, application, and location.

INCLUDES:

Two spare filters (one each 0.45µm and 0.2µm); autoclavable pipet adapter bench stand; AC recharger; space-saving wall stand (Standard models only); and instructions. The Plus and Turbo models also come with a two-position bench stand which allows charging of the units with or without a pipet in place.

Color	Cat. No.	Each
Standard		
Blue	**03-692-171**	318.50
Yellow	**03-692-172**	311.38
Pink	**03-692-173**	311.38
Mauve	**03-692-174**	311.38
Blue/green	**03-692-175**	311.38
Mint	**03-692-176**	311.38
Plus		
Blue	**03-692-164**	318.50
Yellow	**03-692-166**	318.50
Pink	**03-692-168**	318.50
Mauve	**03-692-169**	318.50
Blue/green	**03-692-167**	318.50
Mint	**03-692-165**	318.50
Turbo		
Green	**03-692-170**	340.00

Argos* Omega* Single-Channel Pipet Controller

NEW

Combines single-handed pipetting with fast, precise liquid dispensing

03-391-253, -252, -251, -255, -250

- Available in six colors
- Lightweight (190g), ergonomic design
- Powerful, maintenance-free battery
- Aspirating and dispensing speeds can be continuously adjusted using the thumb dial
- Touch-sensitive contoured buttons enable precise filling and dispensing with one hand
- Compact design—ideal for pipeting liquids in confined spaces
- LED display indicates battery strength and when to recharge
- 45µm hydrophobic filter located in the autoclavable nosecone prevents overfilling and contamination
- Accepts glass or plastic pipets from 1 to 100mL

INCLUDES:

Rechargeable 6.5V lithium-ion battery; provides 10 hours of continuous use.

Color	Mfr. No.	Cat. No.	Each
Gray	P5000	**03-391-250**	325.61
Green	P5015	**03-391-251**	325.61
Red	P5016	**03-391-252**	325.61
Blue	P5017	**03-391-253**	325.61
Clear	P5018	**03-391-254**	325.61
Purple	P5019	**03-391-255**	325.61

ACCESSORIES

Description	Mfr. No.	Cat. No.	Pack of
Silicone Pipet Holder	P1020	**03-391-256**	1/14.57
Omega Barrier Filters	P3106	**03-391-257**	12/50.01
Pipetter Filter Mount	P3225	**03-391-258**	1/12.14
Omega Nosepiece, Red	P5025	**03-391-259**	1/43.27
Omega Nosepiece, Gray	P5070	**03-391-260**	1/43.27
Battery Charger	P3010	**03-391-261**	1/36.41
Pipetter Wall Mount	P1005	**03-391-262**	1/10.94
Omega ID Labels	P5022	**03-391-263**	5/1.34

THERMO SCIENTIFIC* FINNPIPETTE* C1 PIPET AID

The new Finnpipette C1 is a portable, lightweight serological pipet aid. Designed for use with graduated and volumetric glass and plastic pipets from 1 to 100mL, it offers simple, efficient pipetting performance with maximum pipetting comfort. The large illuminated LCD shows battery charge and pump speeds for aspirating and dispensing (Cat. No. 14-487-89).

Visit www.fishersci.com and search for C1 Pipet Aid

Drummond* Portable Pipet-Aid* Filler/Dispensers

Single-speed and multispeed models

13-681-15E

Both units work with 1 to 100mL pipets and run continuously for over two hours, pipetting over 2000 times without recharging. They can be recharged nightly over 1000 times and can be used while recharging. Filter prevents detectable penetration of 0.035µm particles and prevents further use of filler/dispenser if it becomes contaminated with fluid.

Multispeed Model XP

- The smallest (5½" long [14cm]) and lightest (7½ oz. [213g]) of all Pipet-Aid Filler/Dispensers
- Fill and dispense at three speeds: medium (equivalent to normal speed of other Pipet-Aid Filler/Dispensers), slow (one-half medium speed), and fast (twice medium speed)
- Filling and dispensing speeds can be set independently, allowing nine different speed combinations: fill slow, dispense slow; fill slow, dispense medium; fill slow, dispense fast; fill medium, dispense slow; fill medium, dispense medium; fill medium, dispense fast; fill fast, dispense slow; fill fast, dispense medium; fill fast, dispense fast (within each speed designation, vacuum response is directly proportional to finger pressure on the fill/dispense buttons)

Single-Speed Model

Lightweight (<10 oz. [284g]), compact (<7" long [18cm])

INCLUDES:

Tissue Culture Nosepiece/Filter unit that eliminates cross-contamination due to overpipetting with a dual hydrophilic, hydrophobic 0.8µm filter. Both units come complete with a 110V 60Hz recharger, plus four replacement 1" diameter (2.5cm) filters. Replaceable 9V NiMH battery. Wall holster and stand.

REQUIRED ACCESSORIES:

Replacement 13-681-17 rubber inserts also are available (see below).

Model	Mfr. No.	Cat. No.	Each
Multispeed XP	4 000 101	**13-681-15E**	322.03
Single Speed	4 000 100	**13-681-19**	288.97

ACCESSORIES

Replacement Parts for Pipet-Aid* Filler/Dispensers

Description	Mfr. No.	Cat. No.	Price
NiMH Battery, 9V	4 000 035	**13-681-15B**	Ea./18.14
Rubber Inserts	4 000 002	**13-681-17**	Pk. of 2/8.42

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

ummond* Tissue Culture Nosepiece Kits

0% effective with aqueous lutions, but not with other lvents

13-681 Series

\s supplied with 13-681-15E and -19 (at eft), and 13-681-15C and D (next page)

\dapts any Pipet-Aid* Filler/Dispenser o eliminate cross-contamination due o overpipetting

CLUDES:

ur 1" diameter (2.5cm) filters

r Models	Mfr. No.	Cat. No.	Price
sue Culture Nosepiece/Filter Kit			
pet-Aid XP (13-681-15E) and od Mate* (13-682-20)	4 000 087	**13-681-151**	Ea./56.56
pet-Aid models 13-681-15, 5C, -15D, -16, -19	4 000 050	**13-681-18A**	Ea./65.04
placement Filter			
ssue Culture Nosepiece	4 000 051	**13-681-18C**	Pk. of 5/22.33
	4 000 052	**13-681-18E**	Pk. of 50/185.77

ımmond* Repeating Programmable et-Aid* Elite 400

idly dispense aliquots with precision

13-682-00

veight, ergonomic design les an integral stand to allow nit to be easily set down while nting contamination.

r-friendly programming ctions let you quickly select et size and set desired volumes ng easy-touch proportional trol buttons

vrate automatically calibrates to pipet-size setting

urate repetitive pipetting down to 0.1mL

ommodates a range of pipet sizes from 1 to 50mL

ck nosepiece release for easy filter changes

ERING INFORMATION:

ical requirements: 110V 60Hz

UDES:

r supply, four extra filters, holster-type wall bracket

iption	Mfr. No.	Cat. No.	Each
Aid Elite 400, Blue	4 000 400	**13-682-00**	632.88
Aid Elite 400, Clear	4 000 400 C	**13-682-22**	628.17
cement Nosepiece (White)	4 000 079 W	**13-682-01**	14.00

Drummond* Pipet-Aid* Hood Mate* Model 300 Filler/Dispenser

Compact, plug-in unit

13-682-20

Ideal for use in laboratory safety hood. Does not require recharging due to Auto-off energy saver. Two cradle options allow unit to be placed in holster, with or without pipet attached; placing handle in holster turns off pump. During operation, if no button is pushed in three minutes, the pump automatically goes into a "sleep" mode. Capacity, 1 to 100mL.

- Tissue Culture Nosepiece/Filter Unit eliminates cross-contamination due to overpipetting
- If wetted by overpipetting, filter ceases to pass air in either direction, alerting user to possible rubber-insert contamination
- Dual-layered filter permits no detectable penetration of particles and prevents further use of filler/dispenser if it becomes contaminated with liquid
- 100% effective with aqueous solutions, but not with other solvents

Conserves space

- Attaches to side wall of hood on a bracket secured with double-backed tape
- Pump housing is clipped to bracket and is easily removed for cleaning
- 3 to 4' (91 to 122cm) coiled pressure/vacuum line enters handle at top to prevent benchtop spills

Provides nine fill-and-empty speed settings

- Lightweight, 4.3 oz. (122g) handle features a multispeed valve that allows user to set both the fill and/or empty controls to slow-, medium-, or fast-speed ranges
- Fill-and-empty controls are designated by switches with up (fill) and down (empty) arrows
- Speed is selected by rotating button on axis
- Flowrate is proportional to pressure applied to button

ORDERING INFORMATION:

Electrical requirements: 110V

INCLUDES:

Coiled hose, handle hook, pipetting unit with TC nosepiece, Hood Mate body, 6½' (198cm) electrical cord with plug, mounting bracket, adhesive strip, and hose support

Capacity	Mfr. No.	Cat. No.	Each
1 to 100mL	4 000 300	**13-682-20**	304.86

ACCESSORIES

Replacement Parts for the Pipet-Aid* Hood Mate* Filler/Dispenser

Description	Mfr. No.	Cat. No.	Price
TC Gaskets	4 000 057	**13-681-30**	Pk. of 2/6.42
Tissue Culture Housing†	4 000 079	**21-171-3**	Ea./13.67
Coiled Hose	4 000 085	**13-681-68**	Ea./17.15
Hose Support	4 000 086	**13-681-69**	Ea./5.24
Valve Body Assembly	4 000 084	**13-681-67**	Ea./50.97
Backing Plate w/tape‡	4 000 082	**13-681-65**	Ea./17.15
Replacement Tape	4 000 083	**13-681-66**	Pk. of 3/3.63

† Fits Pipet-Aid Hood Mate Model 300 and Multispeed Model XP.
‡ Secures bracket to hood wall for pump housing attachment.

Drummond* Pipet-Aid* Filler/Dispensers

Safe and easy to operate

Standard Model

- Electrically powered pipetting device for dispensing 1 to 100mL volumes
- Just push button to fill and empty pipets
- Accepts most glass and plastic pipets
- Useful in confined spaces such as laminar flow hoods
- Has positive-action check valve to prevent fluid intake into handle
- Handle is autoclavable

Filler/Dispenser with 0.2µm Filter

- Same as Standard Model (13-681-15) except with dual 0.2µm filtration unit
- Filters both pressure and vacuum lines
- Protects against biohazardous materials
- With pump

Filler/Dispenser with Tissue Culture Nosepiece/Filter Unit

- Same as Standard Model (13-681-15), but also supplied with Tissue Culture Nosepiece/Filter unit
- Tissue culture unit eliminates cross-contamination due to overpipetting by using a dual hydrophilic, hydrophobic 0.8µm filter
- Filter prevents detectable penetration of 0.035µm particles and prevents further use of the filler/dispenser if it becomes contaminated with fluid
- Filler/dispenser comes with four replacement 1" diameter (2.5cm) filters

13-681-15D

Filler/Dispenser with 0.2µm Filter and Tissue Culture Nosepiece/Filter Unit

- Same as 13-681-16 model with 0.2µm filter, but also supplied with Tissue Culture Nosepiece/Filter unit
- Tissue culture unit eliminates cross-contamination due to overpipetting by using a dual hydrophilic, hydrophobic 0.8µm filter
- Filter prevents detectable penetration of 0.035µm particles and prevents further use of filler/dispenser if it becomes contaminated with fluid
- Filler/dispenser comes with four replacement 1" diameter (2.5cm) filters

ORDERING INFORMATION:

Electrical requirements: 110V 60Hz

Description	Mfr. No.	Cat. No.	Each
Standard Model	4-000-110	**13-681-15**	212.30
With 0.2µm Filter	4-000-111	**13-681-16**	265.00
With Tissue Culture Nosepiece/Filter Unit	4 000 110 TC	**13-681-15C**	232.15
With 0.2µm Filter and Tissue Culture Nosepiece/Filter Unit	4 000 111 TC	**13-681-15D**	283.33

Jencons Powerpette* Digital and Powerpette Pro Pipet Fillers/Dispensers

Accept glass or plastic pipets in a broad range of sizes

Ergonomic and rechargeable, with precision fingertip control.

- Can be used with either "To Deliver" or "To Blow Out" pipets
- Fitted with a 0.45µm nonsterile hydrophobic filter to protect against liquid and airborne contamination
- Manufactured in ISO 9002-certified facilities

Powerpette Digital

- Rotatable head accommodates left- or right-handed users
- Lightweight (9⅞ oz. [280g]) design and contoured shape ensure user comfort, even during extended use
- Can be used as a macro pipetter and a dispenser either with disposable tips or as a pipetting aid with all types of graduated and ungraduated pipets from 1 to 25mL
- Microprocessor-controlled functions include "multiple" and "sequenced" dispensing, controlled via keypad and LCD display

Powerpette Pro (Motorized)

- Pistol-shaped body fits the hand comfortably and permits use in laminar flow hoods or biological safety cabinets
- Powerful, yet quiet motor speeds large-volume pipetting, filling a 25mL pipet in under three seconds
- Suitable for all pipets from 1 to 100mL
- Controller uses NiMH battery that recharges, even during use
- Mode-selection switch enables selection of high or low aspirate/dispense speeds (with blow out) and gravity dispense (to deliver) in any mode setting
- Concave finger triggers provide comfortable control of suction and dispensing

INCLUDES:

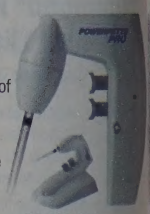
Both models are supplied with two spare nonsterile filters, one each 0.45 and 0.2µm (sterile filter available separately—see chart below), AC adapter and instruction manual. **Powerpette Digital** includes a charging stand and two nose cone adapters (one to accommodate 1 to 25mL pipets, one for 5mL pipet tips). **Powerpette Pro** comes with a two-position bench stand that holds the controller on the bench or wall, with or without a pipet in place.

WARRANTY:

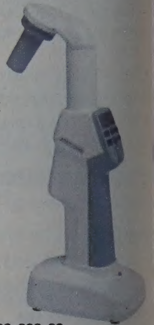
One year

CERTIFICATIONS:

CE marked.



03-692-191



03-692-39

Description	Mfr. No.	Cat. No.	Price
Powerpette Digital	266-010	**03-692-39**	Ea./948.26
Powerpette Pro	266-185	**03-692-191**	Ea./334.95
Replacement Parts			
Silicone Pipet Holder	266-004	**03-692-41**	Ea./3.20
Sterile 0.2µm Filter	266-090	**03-692-104**	Ea./17.75
Nonsterile 0.45µm Filters	266-003	**03-692-45**	Pk. of 5/11.90

PROGRAMMING SPECIFICATIONS FOR POWERPETTE DIGITAL†

Pipet Size	Range in (P)ipet Mode	Range in (D)ispense Mode	Range in (C)ontinuous Mode
1mL	0.1 to 1mL	0.1 to 0.5mL	0 to 1mL
2mL	0.2 to 2mL	0.1 to 1mL	0 to 2mL
5mL	0.5 to 5mL	0.1 to 2.5mL	0 to 5mL
10mL	1 to 10mL	0.5 to 5mL	0 to 10mL
25mL	2 to 25mL	1 to 12.5mL	0 to 25mL

† *Increments in Pipet and Dispense modes are 0.05mL.*

*Trademark. See Trademark Reference.

l Art* Ergopet* Memory Pipetters

itively programmed, memory dispensing or aspirating feature

sers processing many identical samples, simply aspirate or dispense the ed volume and the pipetter will repeat as frequently as required. Multiple omic comfort adjustments and programmable pipetting conform to your ology and needs.

ures

- ee models with extended height raise tip of pipetter by up to 30cm "), dramatically lowering the hand position
- ect a model with one, two or three extensions to lift the pipet tip 10, and 30cm (4, 8 and 12") respectively, allowing user to rest their elbow the bench to support their arm and pipetter
- ler models place the pipet tip on a similar plane as the hand, reasing the precision when placing tip into small vessels; sed pipet also improves accuracy of sighting of the meniscus
- etter rapidly aspirates and dispenses either slowly and accurately with ght touch (gravity dispensing) or quickly with firmer pressure on the pensing button
- t silicone chuck accepts glass or plastic pipets from 1 to 200mL
- nply slip a pipet into the ribbed chuck for a leak-free seal; hydrophobic er within the chuck protects the pipetter from over-aspiration
- help increase pipetting throughput, dispensing and aspirating speed independently variable
- grammed pipetting accuracy: ±3.0%
- chargeable batteries allow maximum freedom of movement
- ep feature conserves battery power when pipetter is idle

gn

- onomic design avoids strain and fatigue of awkward positioning and etitive motions when working inside a hood or on the bench with sero- ical pipets

NEW

03-421-500 Series

- Engineered for lightweight, comfortable grip while feeling totally balanced in the hand
- Easy-to-set swivel head helps to reduce awkward wrist bending associated with using standard pipetters
- Head can be positioned straight ahead in line with the hand or swung up to 90° left or right; allows unobstructed viewing of the pipet while aspirating and dispensing, while maintaining a more natural hand position
- Nose or chuck can also be rotated to change the angle of the pipet from vertical to 10° outwards
- Separate soft-touch aspiration and dispensing buttons are positioned for a relaxed yet secure grip with easy reach for fine control

AVAILABLE ACCESSORIES

Weighted base or wire rack supports the pipetter vertically when not in use.

INCLUDES:

Rechargeable battery, wall battery charger

Description	Mfr. No.	Cat. No.	Each
Ergopet I	F37910-0011	**03-421-504**	599.00
Ergopet II, with one 4" (10cm) extension	F37910-0012	**03-421-505**	628.00
Ergopet III, with two 4" (total 20cm) extensions	F37910-0013	**03-421-506**	652.00
Ergopet IV, with three 4" (total 30cm) extensions	F37910-0014	**03-421-507**	673.00

pendorf* Easypet* Motorized Pipet Filler/Dispenser

ch-control of speed

- rm tedious pipetting procedures in comfort. Lightweight (6¾ oz. g]) design and contoured shape alleviate hand strain during extended ribbed handle permits a comfortable, secure grip
- erates for eight hours on a single charge
- en the low-battery light illuminates, just attach the supplied recharger l continue pipetting
- ch controls let you adjust pipetting speed to suit your application
- eparate extra-fine control of liquid eliminates splashing and disruption cell cultures and other sensitive samples
- 5μm hydrophobic inline filter protects the unit's internal parts from ntamination
- ecessary, the filter/housing and pipet connector can be autoclaved at °C (250°F) to decontaminate

ORDERING INFORMATION:

For 120V 50/60Hz

INCLUDES:

Wall holder, two 0.45μm spare filters, and charger

13-688-177

Description	Mfr. No.	Cat. No.	Each
Easypet Motorized Pipet Filler/Dispenser	22230204	**13-688-177**	379.00
Wall Bracket	22230905	**13-688-178**	24.25
0.45μm Filters, pack of 10	22231006	**13-688-180**	49.25

star* Stripettor Pipet Filler/Dispenser

igned for use with all serological pipets

- htweight with adjustable flow control
- se cones are autoclavable and have a replaceable 0.2μm hydro- bic sterilizing filter
- erates on a rechargeable 9V nickel hydride battery
-) light on handle lets the user know when to recharge
- ly operational while recharging

INCLUDES:

Sterile filter, rechargeable battery, and recharger/adapter

07-200-40

Description	Mfr. No.	Cat. No.	Each
Stripettor with filter, battery and recharger/adapter	4910	**07-200-40**	410.34

Brand* accu-jet* pro Pipet Controller from BrandTech*

Improves upon the original accu-jet with new features and functionality

Range dial allows you to set maximum pipetting speed, but still provides the touch-sensitive, continuously adjustable speed control of the original accu-jet.

- Switch-selectable gravity or powered dispensing offers outstanding volumetric pipetting
- Soft blow-out control minimizes disturbance of cell pellets, or density gradient interfaces
- Reshaped, ergonomic grip fits comfortably in both small and large hands
- Provides eight hours of full-speed operation on a four-hour charge
- LED indicator alerts you when there are two hours of remaining battery time
- Hydrophobic, 0.2μm filter for culture work
- Check valve helps protect internal components
- Lightweight with exceptional balance
- External venting of pipetted vapors

INCLUDES:
NiHM battery pack, wall holder, 120V 60Hz battery charger, and two extra 0.2μm hydrophobic filters

WARRANTY:
One year

03-840-313

Description	Mfr. No.	Cat. No.	Each
Dark Blue	2026330	**03-840-310**	335.64
Magenta	2026331	**03-840-311**	335.64
Forest Green	2026332	**03-840-312**	335.64
Royal Blue	2026333	**03-840-313**	327.45

Scienceware* Minipet* Dispenser

NEW

The chemical resistance of PTFE resin in a self-filling, syringe-type repetitive dispenser

Features a unique PTFE three-way valve and fittings on a borosilicate glass barrel. Self-locking PTFE plunger adjusts over full volume range of the syringe, yet won't move from original setting even after multiple dispensings.

- Safe for use with virtually any solvent or acid except HF
- Autoclavable and suited for dispensing media and other sterile samples
- Once the 18" long (20.3cm) PTFE filling tube is placed in a liquid reservoir, reagent flows through a closed system
- Accuracy: ±0.5% (±1.0% for 30mL)
- Molded plastic handle is ergonomically designed to minimize operator fatigue when used for extended periods

INCLUDES:
Filling tube and sinker

13-689-135C

Capacity	Graduations	Mfr. No.	Cat. No.	Each
1mL	0.01mL	379000010	**13-689-135A**	299.00
4mL	0.05mL	379000040	**13-689-135B**	299.00
10mL	0.2mL	379000100	**13-689-135C**	299.00
30mL	1.0mL	379000300	**13-689-135D**	375.00

*Trademark. See Trademark Reference.

Prices subject to change.

PIPETS

DISPOSABLE — SEROLOGICAL

sherbrand* Polystyrene Disposable Serological Pipets

rile, nonwettable pipets offer a tolerance of ±2% at full ume and have plug-in mouth end

- o pipet styles are available: one with magnifier stripe and one without
- ch pipet lot is tested for sterility, accuracy and endotoxin level

IPLIANCE:
rated "To Deliver/Blow Out"

TIFICATION:
fied nonpyrogenic with an endotoxin level less than 0.5EU/mL following XXII Bacterial Endotoxins Test (85).

50mL
Fisherbrand
50mL
Fisherbrand

13-676-10 and 13-678-11 Series

ological Pipets with Magnifier Stripe

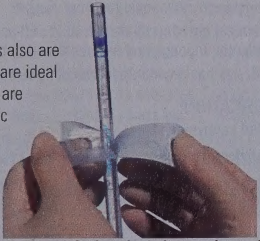
al for tissue culture work

- ack magnifier stripe runs lengthwise ong pipet making meniscus obvious at n's length—reducing reading errors
- pets have improved optical clarity—gh-contrast black markings make lumes easier to read
- 10, 25, and 50mL pipets have ascending d descending graduations; plus, proved tip design on 25 and 50mL pipets creases the effect of surface tension to nimize dripping
- lor coding on each pipet and on inner gs for multipack pipets make it easy to ot the size you need

-4
-3
-2
-1
24
2
23
22
3
21

13-676-10M

ORDERING INFORMATION:
Inner bags are recyclable LDPE; outer boxes also are recyclable. **Individually wrapped pipets** are ideal for small-volume use requiring sterility and are available in either a clear, durable all-plastic wrap, or a color-coded paper/plastic wrap for reduced static cling. **Multipack** for larger-volume use permits easy access to several pipets at a time without contaminating unused pipets.



13-678-11 Series pipets have color-coded, transparent paper/plastic wrappers for easy identification and tear-through.

					Individually Wrapped						Multipack		
					All-Plastic Wrap			Paper/Plastic Wrap					
pac. L)	Subdiv. (mL)	Neg. Grads. (mL)	Tolerance (mL)	Pkg. Color Code	No./ Pack	Cat. No.	Case of	No./ Pack	Cat. No.	Case of	No./ Pack	Cat. No.	Case of
	0.01	0.2	±0.02	Yellow	100	**13-676-10G**	1000/236.94	50	**13-678-11B**	1000/232.81	50	**13-676-10B**	1000/218.41
	0.01	0.2	±0.04	Green	100	**13-675-3C**	500/156.16	50	**13-678-11C**	500/140.13	50	**13-675-2C**	500/139.01
	0.1	2.5	±0.1	Blue	50	**13-676-10H**	200/79.41	50	**13-678-11D**	200/74.22	50	**13-676-10C**	500/170.78
	0.1	3	±0.2	Orange	50	**13-676-10J**	200/83.44	50	**13-678-11E**	200/80.72	50	**13-676-10F**	500/186.57
	0.2	10	±0.5	Red	50	**13-676-10K**	200/199.14	25	**13-678-11**	200/175.89	25	**13-676-10M**	200/187.93
	0.5	----	±1.0	Purple	25	**13-676-10R**	100/209.14	25	**13-678-11F**	100/221.60	25	**13-676-10Q**	100/211.59

ndard Serological Pipets

lor-coded pipets and packaging permit easy identification by size using ISO standard colors

- egative graduations on all sizes
- scending and descending graduations on all but the 1 and mL sizes
- ecyclable outer packaging

DERING INFORMATION:
ilable in multipacks, which permit easy access to several ts at a time without contaminating unused pipets. er packaging is recyclable.

MPLIANCE:
igned from ASTM* E 934; conform to ASTM E 1380 for r coding.

-5
-4
-3
-2
-1
0
1
2
3
4

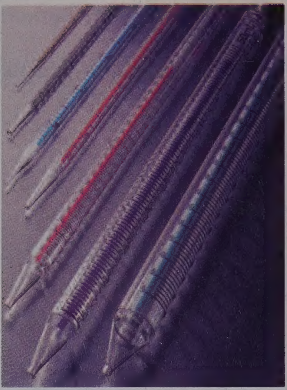
13-678-14B

					Multipack		
Capac. (mL)	Subdiv. (mL)	Neg. Grads. (mL)	Tolerance (mL)	Pkg. Color Code	No./ Pack	Cat. No.	Case of
1	0.01	0.4	±0.02	Yellow	50	**13-678-12B**	1000/203.03
2	0.01	0.6	±0.04	Green	50	**13-678-12C**	500/129.43
5	0.1	2	±0.10	Blue	50	**13-678-12D**	500/151.83
10	0.1	3	±0.20	Orange	50	**13-678-12E**	500/164.81
25	0.2	10	±0.50	Red	25	**13-678-14B**	200/162.60
50	0.5	9	±1.0	Purple	25	**13-678-14C**	100/223.23
With Wide Tip							
10	0.1	3	±0.20	Orange	----	**13-678-14A**	500/251.92

For bulk pricing, contact your Fisher Scientific Customer Service Representative.

Costar* Stripettes* Disposable Polystyrene Serological Pipets

Ideal for cell culture and other applications that require aseptic liquid handling


07-200 Series

Sterile pipettes feature color-coded stripes for easy volume reading and quick size identification.

- Bidirectional graduations allow the choice of using ascending or descending scales
- Negative graduations on the 1, 2, 5, 10, 25 and 50mL Stripettes provide additional working volume.
- 100mL Stripettes allow you to perform large-volume fluid transfers safely and easily; eliminate the need for graduated cylinders and other liquid-handling vessels
- Cylindrical anti-drip tip design on 25, 50 and 100mL sizes reduces accidental drippage and assures accurate delivery
- 10mL size has a wide tip for handling viscous fluids

CERTIFICATION:
Certified nonpyrogenic

Individually wrapped in all-plastic wrap

Capac. (mL)	Subdiv. (mL)	Neg. Grads. (mL)	No./Pack	Mfr. No.	Cat. No.	Case of
1	0.01	0.2	100	4011	**07-200-2**	1000/280.32
1	0.01	0.2	100	4012	**07-200-3**	200/66.36
2	0.01	0.2	100	4021	**07-200-7**	1000/336.84
5	0.1	2.5	50	4051	**07-200-9**	200/88.17
10	0.1	3.0	50	4101	**07-200-12**†	200/96.67
10	0.1	3.0	50	4492	**07-200-619**†	50/31.63
25	0.2	10.0	50	4251	**07-200-15**	200/201.42
50	0.5	10.0	25	4501	**07-200-17**	100/215.86
100	1.0	----	10	4484	**07-200-547**	100/438.33

Individually wrapped in paper/plastic wrap

Capac. (mL)	Subdiv. (mL)	Neg. Grads. (mL)	No./Pack	Mfr. No.	Cat. No.	Case of
1	0.01	0.2	50	4485	**07-200-571**	1000/275.11
2	0.01	0.2	50	4486	**07-200-572**	1000/331.29
5	0.0	2.5	50	4487	**07-200-573**	200/90.80
10	0.1	3.0	50	4488	**07-200-574**	200/95.70
25	0.2	10.0	25	4489	**07-200-575**	200/198.21
50	0.5	10.0	25	4490	**07-200-576**	100/214.72
100	1.0	----	10	4491	**07-200-620**†	10/51.49

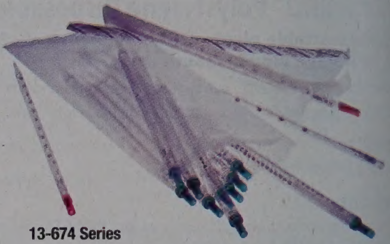
† *For bulk pricing, contact your Fisher Scientific Customer Service Representative.*

Bulk packed

Capac. (mL)	Subdiv. (mL)	Neg. Grads. (mL)	No./Pack	Mfr. No.	Cat. No.	Case of
1	0.01	0.2	50	4010	**07-200-1**	1000/243.43
2	0.01	0.2	50	4020	**07-200-6**	1000/303.75
5	0.1	2.5	50	4050	**07-200-8**	500/189.99
10	0.1	3.0	50	4100	**07-200-11**	500/201.14
25	0.2	10.0	25	4250	**07-200-14**	200/193.11
50	0.5	10.0	25	4500	**07-200-16**	100/210.12

Kimble* Disposable Polystyrene Serological Pipets

Irradiation sterilized and suitable for tissue culture work


13-674 Series

- Have uniform pulled or molded tips and beveled or molded top ends with cotton plugging
- Two rings near top denote that small amount remaining in tip after delivery must be blown out and added to main volume delivered
- 5mL size now has two-piece design
- Color-coded packaging makes choosing correct pipet size quick and accurate
- With negative and reverse graduations

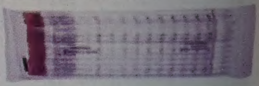
COMPLIANCE:
Designed from ASTM* E 934. Calibrated "To Deliver" to tip.

ORDERING INFORMATION:
Multipacked 10mL pipets available with either regular tip (1.5mm dia.) or wide tip (3.5mm dia.). All sizes available either in paper/plastic individual wraps overpacked in dispensing shelf packs, or in recloseable multipacks overpacked in shipping containers.

Individually wrapped

Capac. (mL)	Subdiv. (mL)	Neg. Grads. (mL)	No./ Pack	Color Code	Mfr. No.	Cat. No.	Case of
1	0.01	0.3	200	Yellow	56900-11100	**13-674-41A**	1000/281.77
1	0.1	0.3	200	Red	56900-1110	**13-674-41**	1000/281.77
2	0.01	0.3	125	White	56900-21100	**13-674-41B**	500/164.74
5	0.1	2	50	Blue	56900-5110	**13-674-41C**	200/93.01
10	0.1	3	50	Orange	56900-10110	**13-674-41D**	200/97.35
25	0.2	10	50	Green	56900-25210	**13-674-41E**	200/195.01
50	0.5	10	25	Purple	56900-50510	**13-674-41F**	100/241.88

Multipacked with standard tip


13-674-40D

Capac. (mL)	Subdiv. (mL)	Neg. Grads. (mL)	No./ Pack	Color Code	Mfr. No.	Cat. No.	Case of
1	0.01	0.3	25	Yellow	56800-11100	**13-674-40A**	1000/251.92
1	0.1	0.3	25	Red	56800-1110	**13-674-40**	1000/265.17
2	0.01	0.3	25	White	56800-21100	**13-674-40B**	500/167.25
5	0.1	2	25	Blue	56800-5110	**13-674-40C**	500/193.24
10	0.1	3	25	Orange	56800-10110	**13-674-40D**	500/216.67
25	0.2	10	10	Green	56800-25210	**13-674-40E**	200/189.91
50	0.5	10	10	Purple	56800-50510	**13-674-40F**	100/234.86

Multipacked with wide tip

13-674-45

Capac. (mL)	Subdiv. (mL)	Neg. Grads. (mL)	No./Pack	Mfr. No.	Cat. No.	Case of
10	0.1	3	25	56825-10110	**13-674-45**	500/296.09

*Trademark. See Trademark Reference.

Falcon* Disposable Polystyrene
ological Pipets

**ma radiation-sterilized, nonpyrogenic,
on-plugged serologicals are made of clear
styrene for optical clarity**

13-675 Series

ture exceptionally crisp, dark,
y-to-read printing with both
erse (except on 1mL) and
ative graduations

exclusive graduation alignment
k allows graduations to be
ught into line of sight before
plete removal of the wrapper

de surface discourages
nation of meniscus, thereby
ucing reading errors

l delivery accuracy of pipets,
, with a 1.5% coefficient
ariation

r coding allows easy identification of size

PLIANCE:

ated "To Deliver/Blow Out"

ERING INFORMATION:

ypes of contamination-resistant packaging are available: individually
ed in thermoformed paper/plastic; individually wrapped in all-plastic
dvantage* thermoform wrap; multipacks in bags; and bulk packaged.

vidually wrapped in paper/plastic package

. Subdiv. (mL)	Neg. Grads. (mL)	No./ Pack	Color Code	Mfr. No.	Cat. No.	Case of
rd tip						
0.01	0.4	100	Yellow	357522	**13-675-15C**	200/56.60
0.1	0.4	100	Yellow	357520	**13-675-12B**	1000/278.00
0.01	0.4	100	Yellow	357521	**13-675-15B**	1000/262.40
0.01	0.8	100	Green	357507	**13-675-17**	1000/324.60
0.1	2.5	50	Blue	357543	**13-675-22**	200/88.30
0.1	3	50	Red	357551	**13-675-20**	200/91.30
0.25	7	50	Purple	357525	**13-668-2**	200/198.30
1	10	25	Black	357550	**13-675-27**	100/209.30
1	15	5	Black	357600	**13-675-73**	50/233.00
rd tip, extended capacity of 36mL						
0.5	11	50	Purple	357535	**13-675-30**	200/185.30

Individually wrapped in BD Advantage* all-plastic package

Capac. (mL)	Subdiv. (mL)	Neg. Grads. (mL)	No./ Pack	Color Code	Mfr. No.	Cat. No.	Case of
Standard tip							
1	0.1	0.4	100	Yellow	356520	**13-675-45**	1000/306.40
1	0.01	0.4	100	Yellow	356521	**13-675-46**	1000/270.40
2	0.01	0.8	100	Green	356507	**13-675-47**	1000/329.30
5	0.1	2.5	50	Blue	356543	**13-675-48**	200/90.20
10	0.1	3	50	Red	356551	**13-675-49**	200/95.50
25	0.25	7	50	Purple	356525	**13-675-50**	200/201.30
50	1	10	25	Black	356550	**13-675-52**	100/218.70
Standard tip, extended capacity of 36mL							
25	0.5	11	50	Purple	356535	**13-675-51**	200/209.40

Multipacked in bags

Capac. (mL)	Subdiv. (mL)	Neg. Grads. (mL)	No./ Pack	Color Code	Mfr. No.	Cat. No.	Case of
Standard tip							
1	0.1	0.4	25	Yellow	357503	**13-675-10BB**	1000/221.60
1	0.01	0.4	25	Yellow	357506	**13-675-10AA**	1000/225.50
2	0.01	0.8	25	Green	357508	**13-675-10DD**	1000/284.30
5	0.1	2.5	25	Blue	357529	**13-675-21**	500/183.00
10	0.1	3	25	Red	357530	**13-675-18**	500/195.50
25	0.25	7	20	Purple	357515	**13-675-10EE**	200/180.30
50	1	10	10	Black	357540	**13-675-26**	100/198.10
Standard tip, extended capacity of 36mL							
25	0.5	11	20	Purple	357585	**13-675-31**	200/187.50

Bulk packed, with standard tip

Capac. (mL)	Subdiv. (mL)	Neg. Grads. (mL)	Color Code	Mfr. No.	Cat. No.	Case of
5	0.1	2.5	Blue	357552	**13-675-25**	500/157.10

*Fisherbrand** Borosilicate Glass Disposable Serological Pipets

Chemically inert pipets have negative graduations as well as bidirectional scales

- Blue markings are easy to read
- Packaging meets requirements of small-, medium-, or large-volume use
- Individually wrapped pipets come in transparent plastic/paper wrappers for easy identification and tear-through, and are further overpacked in handy shelf container/dispensers; ideal for small volumes requiring sterility
- Multipack with resealable flap for larger volume use permits easy access to several pipets at a time without contaminating unused pipets
- Outer packaging is recyclable

ORDERING INFORMATION

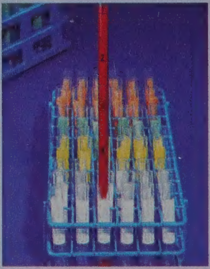
Individually wrapped and multipacked pipets come in sterile and plugged; nonsterile, nonplugged bulk-packed pipets are also available

COMPLIANCE:

Regular-tip styles have volume tolerances that comply with ASTM* E 714. Calibrated "To Deliver/Blow Out." Color-coded packaging on all pipets, except bulk packs, allows easy identification by size using ISO* standard colors.

Serological Pipets with Regular Tip, Standard Length

Regular-tipped pipets have long, slender, tapered tips to speed pipetting



13-678 Series

13-678-27F

					Sterile and Plugged						Nonsterile and Nonplugged		
					Individually Wrapped			Multipack[2]			Packed in Canisters[1]		
Capac. (mL)	Subdiv. (mL)	Neg. Grads. (mL)	Tol. (mL)	Pkg. Color Code[1]	No./Pack	Cat. No.	Case of	No./Pack	Cat. No.	Case of	No./Pack	Cat. No.	Case of
0.5	0.01	0.2	±0.013	Yellow	125	**13-678-27A**	500/192.67	----	----	----	----	----	----
0.5	0.05	0.2	±0.013	----	----	----	----	----	----	----	250	**13-678-31D**	500/147.21
1	0.1	0.2	±0.02	Red	200	**13-678-27B**	1000/290.11	250	**13-678-25A**	1000/283.62	250	**13-678-31E**	1000/231.64
1	0.01	0.2	±0.02	Yellow	200	**13-678-27C**	1000/280.35	250	**13-678-25B**	1000/244.63	50	**13-678-26A**	500/147.20
2	0.01	0.2	±0.04	White	125	**13-678-27D**	500/168.88	250	**13-678-25C**	500/142.89	50	**13-678-26B**	500/168.89
5	0.1	1	±0.15	Blue	100	**13-678-27E**	500/229.47	250	**13-678-25D**	500/182.95	50	**13-678-26C**	500/200.27
10	0.1	2	±0.30	Orange	110	**13-678-27F**	500/234.90	250	**13-678-25E**	500/246.79	50	**13-678-26D**	500/270.62

[1] *Bulk-packaged pipets (regular tip, nonsterile and nonplugged) are not color coded.*

[2] *Vented multipack.*

Serological Pipets with Regular Tip, Short Length

Perfect for tissue culture work or procedures performed under fume hoods or in confined areas

					Sterile and Plugged		
					Individually Wrapped		
Capac. (mL)	Subdiv. (mL)	Neg. Grads. (mL)	Tol. (mL)	Pkg. Color Code	No./ Pack	Cat. No.	Case of
1	0.01	0.5	±0.04	Yellow	200	**13-678-36A**	400/138.56
5	0.1	3	±0.2	Blue	100	**13-678-36B**	200/158.03
10	0.2	4	±0.4	Orange	100	**13-678-36C**	200/181.83
25	0.2	5	±0.5	Green	100	**13-678-36D**	200/232.75
50	0.5	10	±1.5	Purple	25	**13-678-36E**	50/230.57

Serological Pipets with Wide Tip, Standard Length

Sterile and plugged, multipack

					Sterile and Plugged	
					Multipack†	
Capac. (mL)	Subdiv. (mL)	Neg. Grads. (mL)	Tol. (mL)	Pkg. Color Code	Cat. No.	Case of 400
5	0.1	1	±0.02	Blue	**13-678-35A**	205.66
10	0.2	2	±0.4	Orange	**13-678-35B**	230.57

† *Vented multipack.*

*Trademark. See Trademark Reference.

rex* Disposable Glass Serological Pipets

j, slender, tapered tips make pipetting faster easier

rile, plugged

gative graduations and fire-polished tips mit burr-free, even flowrates

PLIANCE:

ated "To Deliver/Blow Out." ISO color coding nted directly on tear strip.

ERING INFORMATION

dually packaged in easy-open Steri-View* pers or multipacked in pastic bags.

13-666-7 Series

vidually wrapped

c.	Subdiv. (mL)	Neg. Grads. (mL)	No./Pack	Mfr. No.	Cat. No.	Case of
	0.01	0.2	200	7077 1N	**13-666-7F**	800/285.27
	0.01	0.2	180	7077 2N	**13-666-7C**	720/300.35
	0.1	1.0	120	7077 5N	**13-666-7D**	720/414.04
	0.1	2.0	100	7077 10N	**13-666-7E**	600/368.33

tipacked in plastic bags

for large-volume users. Permit easy access to several pipets at a without contaminating the entire case

:.	Subdiv. (mL)	Neg. Grads. (mL)	No./Pack	Mfr. No.	Cat. No.	Case of
	0.01	0.2	25	7078 5X	**13-676-33E**	500/204.87
	0.1	0.2	50	7078 1N	**13-676-33A**	1000/331.04
	0.01	0.2	50	7078 1CN	**13-676-33B**	1000/318.79
	0.01	0.2	35	7078 2N	**13-676-33C**	700/248.24
	0.1	1.0	30	7078 5N	**13-676-33D**	960/463.85
	0.1	2.0	20	7078 10N	**13-676-33F**	720/398.68

rex* Shorty Disposable Glass ological Pipets

l for use in confined areas such oods

NEW

rile, plugged pipets have tooled tops

gative graduations make it applicable for both ological and measuring procedures

color coding is printed directly on Steri-View* e side paper, one side plastic) wrapper

PLIANCE:

ated "To Deliver" (TD) with blow-out.

13-676-29J

:.	Subdiv. (mL)	Neg. Grads (mL)	No./Pack	Mfr. No.	Cat. No.	Case of
lually Wrapped						
	0.01	0.5	250	7077B-1	**13-676-29K**	500/211.77
	0.1	3.0	200	7077B-5	**13-676-29J**	400/352.42
	0.2	4.0	200	7077B-10	**13-676-29H**	400/404.79
	0.2	5.0	100	7077B-25	**13-676-29G**	400/581.87
	0.5	3.0	25	7077B-50	**13-676-29E**	50/146.82
ack						
	0.01	0.5	10	7078B-1	**13-664-18A**	500/214.81
	0.2	4.0	10	7078B-10	**13-664-18C**	400/404.75
	0.2	5.0	5	7078B-25	**13-664-18D**	400/581.87

Pyrex* Wide-Tip Disposable Glass Serological Pipets

Ideal for transferring agar, emulsifying or antifoaming agents, thycelial and fermentation broths

- Sterile, plugged, wide-orifice pipets are used for testing viscous liquids or suspensions
- Wider tips allow easier filling and discharging when ground-up particulate matter is used for microbiological tests
- Packaged in plastic bags, so several can be used at a time without contaminating the entire pack
- ISO color coding is printed directly on tear strip for easy identification by size

COMPLIANCE:

Calibrated "To Deliver" (TD) with blow-out.

13-668-81

Capac. (mL)	Subdiv. (mL)	Neg. Grads (mL)	No./ Pack	Mfr. No.	Cat. No.	Case of
5	0.1	1.0	25	7078A 5	**13-668-80**	400/243.82
10	0.1	2.0	20	7078A 10	**13-668-81**	200/178.01

Kimble* Disposable Borosilicate Glass Serological Pipets

Sterile, plugged short-length pipets perfect for tissue culture work or procedures performed under fume hoods or in confined areas

03-340-126B

- Chemically inert
- With easy-to-read blue markings and bidirectional graduations
- Vented, recloseable multipack for larger volume use permits easy access to several pipets at once without contaminating unused pipets

ORDERING INFORMATION:

1mL size comes in two inner packs of 200 each; 5, 10 and 25mL sizes in two inner packs of 100 each. Two packs per case.

COMPLIANCE:

Calibrated "To Deliver/Blow Out". Color coded by size with ISO standard colors

Capac. (mL)	Subdiv. (mL)	Neg. Grad. (mL)	Tol. (mL)	Pkg. Color Code	Mfr. No.	Cat. No.	Case of
1	0.01	0.5	±0.04	Yellow	72110-11100	**03-340-126A**	400/163.80
5	0.1	2	±0.2	Blue	72110-5110	**03-340-126B**	200/167.45
10	0.2	2	±0.4	Orange	72110-10210	**03-340-126C**	200/191.10
25	0.2	5	±1.0	Green	72110-25210	**03-340-126D**	200/276.72
50	0.5	10	±1.5	Purple	72110-50510	**03-340-126E**	50/149.16

DISPOSABLE — ASPIRATING

Costar* Disposable Aspirating Pipets

For aseptically aspirating liquid by using vacuum suction

07-200 Series

- One-piece polystyrene construction
- Sterile and certified nonpyrogenic
- No graduations; unplugged
- Tip shape: round
- Individually wrapped

Capacity	Length	Mfr. No.	Cat. No.	Case of
2mL	277mm	9186	**07-200-19**	1000/401.19
5mL	348mm	9099	**07-200-20**	200/102.18

BD* Falcon* Disposable Aspirating Pipets

Safer alternative to glass Pasteur pipets

- Polystyrene
- Convenient for removing spent media from tissue culture vessels
- No need to autoclave and repackage
- Ungraduated, unplugged, sterile, nonpyrogenic

ORDERING INFORMATION:

All sizes come individually packaged, 200 per case

Capacity	Mfr. No.	Cat. No.	Case of 200
1mL	357528	**13-675-70**	52.30
2mL	357558	**13-675-16**	64.60
5mL	357501	**13-675-10CC**	83.50
10mL	357554	**13-675-71**	79.90
25mL	357556	**13-675-72**	191.20

DISPOSABLE—MICROPIPETS

Kimble* Disposable Micro Capillary Pipets

Color coded for selection of correct size

- Length: 5" (12.7cm) with single black capacity ring
- Clean and ready to use
- To dispense, simply cover hole on rubber bulb and squeeze

ORDERING INFORMATION:

Packaged in easy open cylinders for convenient dispensing. Each cylinder contains 250 pipets and one pipet device.

COMPLIANCE:

Calibrated "To Contain". Made of soda lime glass in compliance with ASTM* Specification E438, Type II glass requirements.

KIMBLE
71900-10
10 microliters

13-678-18A

Capacity	Tolerance	Color	Mfr. No.	Cat. No.	Case of 1000
5µL	±1%	White	71900 5	**K71900-5**	173.39
10µL	±0.5%	Orange	71900 10	**13-678-18A**	173.39
20µL	±0.5%	Black	71900 20	**13-678-18B**	175.07
50µL	±0.5%	Green	71900-50	**K71900-50**	175.07
100µL	±0.5%	Blue	71900-100	**K71900-100**	175.07

Drummond* Calibrated Micropipets

Anticoagulant treatment for clinical applications

21-180-Series

- Ideal for liquid transfer work
- Fire polished
- Accuracy ±0.5%
- Color coded
- Use heparinized 44.7µL pipet for blood transfer work

ORDERING INFORMATION:

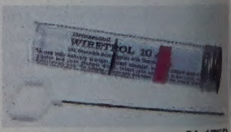
Supplied in pack of 250 micropipets and one 15" (38cm) aspirator tube in easy-to-store cylinder.

Capacity	Color Code	Mfr. No.	Cat. No.	Each
1 to 5µL	White	2-000-001	**21-180-11**	36.79
5µL	White	2-000-005	**21-180-12**	36.79
10µL	Orange	2-000-010	**21-180-13**	36.79
20µL	Black	2-000-020	**21-180-14**	36.79
40µL	Yellow	2-000-040	**21-180-15**	36.79
50µL	Green	2-000-050	**21-180-16**	36.79
75µL	Purple	2-000-075	**21-180-17**	36.79
100µL	Blue	2-000-100	**21-180-18**	36.79
200µL	Red	2-000-200	**21-180-19**	36.79
44.7µL Heparinized	Purple/Green	2-000-044-H	**21-180-20**	44.20
15" Aspirator Tube Assembly		2-000-000	**21-180-10**	1.36

Drummond* Wiretrol* I Calibrated Micropipets

Easy-to-read volume line won't wash off

- Deliver within 1%
- One-handed operation
- Accept both high- and low-viscosity liquids including corrosives
- Color coded
- Micropipets 21-175D, -175E and -175F have PTFE-fluorocarbon-resin tips on plunger



21-175B

INCLUDES:

Handy dispenser cap, handle, stainless-steel plunger

COMPLIANCE:

Calibrated "To Contain"

Capacity	Color Code	Mfr. No.	Cat. No.	Pack of 100
5µL	White	5 000 1005	**21-175A**	18.23
10µL	Orange	5 000 1010	**21-175B**	18.23
20µL	Black	5 000 1020	**21-175C**	18.23
25µL	White†	5 000 1025	**21-175D**	18.23
50µL	Green	5 000 1050	**21-175E**	18.23
100µL	Blue	5 000 1100	**21-175F**	18.23

† Double band.

mmond* Wiretrol* II brated Micropipets

pt both high- and low-viscosity liquids, ding corrosives

er within 1%

handed operation

lar to Wiretrol I micropipets, except each pipet has two capacities, two easy-to-read volume lines (21-176-2A has five capacities, ines) that won't wash off

opipets 21-176-2D, 21-176-3A and 21-176-4A have PTFE-resin on plunger

DES:

ase comes with handy dispenser ndle, and two stainless-steel rs: one full length, plus one ength for noncontact delivery

COMPLIANCE:

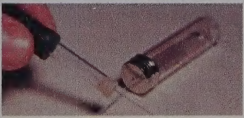
Calibrated "To Contain".

y	Color Code	Mfr. No.	Cat. No.	Pack of 250
4, and 5µL	White	5 000 2005	**21-176-2A**	37.85
.	White	5 000 2010	**21-176-2B**	37.85
L	Orange	5 000 2020	**21-176-2C**	37.85
L	White†	5 000 2050	**21-176-2D**	37.85
µL	Green	5 000 2100	**21-176-3A**	37.85
0µL	Blue	5 000 2200	**21-176-4A**	37.85

band.

mmond* Short-Length ocaps* Micropipets

for handling dangerous materials



21-170 Series

on-made capillary glass tubing, e to within ±1%.

e, insert pipet through cap on of rubber bulb assembly until e through glass tube

in rubber bulb permits free air ation, fills pipet by capillary action

contains stated volume when completely filled from end to end

scharge, hold finger over hole in bulb and squeeze

se, repeat operation with diluent

RING INFORMATION:

pet 21-170L is heparinized. Packed in vials of 100.

DES:

sembly

COMPLIANCE:

Calibrated "To Contain" definite volume from end to end.

y	Mfr. No.	Cat. No.	Pack of 100
	1 000 0010	**21-170A**	10.65
	1 000 0020	**21-170B**	10.65
	1 000 0030	**21-170C**	10.65
	1 000 0040	**21-170D**	10.65
	1 000 0050	**21-170E**	10.65
	1 000 0100	**21-170F**	10.65
	1 000 0200	**21-170G**	10.65
	1 000 0250	**21-170H**	10.65
	1 000 0300	**21-170J**	10.89
	1 000 0400	**21-170K**	10.65
	1 000 0447 H	**21-170L†**	15.46
	1 000 0500	**21-170M**	15.45
	1 000 1000	**21-170N**	10.65

ized.

DISPOSABLE—PASTEUR

Fisherbrand* Disposable Borosilicate Glass Pasteur Pipets

Constriction near top prevents plugs from slipping into pipet body

13-678-20A

- High-quality borosilicate glass
- Plugs not supplied
- Tips held to close diameter tolerances
- Ends are square cut

COMPLIANCE:

Designed from ASTM* E 732 specifications

Approx. Length	Cat. No.	Case of
5¾" (146mm)	**13-678-20A**	720/64.14
5¾" (146mm)	**13-678-20B**	1440/117.23
9" (229mm)	**13-678-20C**	720/65.48
9" (229mm)	**13-678-20D**	1440/122.75

Fisherbrand* Disposable Controlled-Drop Pasteur Pipets

13-678-30 (top), 13-678-6C (bottom).

Perfect for blood typing and crossmatching procedures in blood bank laboratories

- Deliver 22 to 26 drops per mL
- Correspond to drop size from antisera reagent bottle droppers
- Can be cotton plugged (plugs not included)
- Borosilicate or flint glass

ORDERING INFORMATION:

250 pipets per pack, 4 packs per case.

Approx. Length	Glass Type	Cat. No.	Case of 1000
5¾" (146mm)	Borosilicate	**13-678-30**	104.11
5¾" (146mm)	Flint	**13-678-6C**	116.20

Fisherbrand* Disposable Cotton-Plugged Borosilicate-Glass Pasteur Pipets

Made of N-51A borosilicate glass

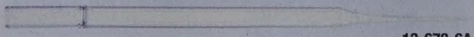
13-678-8A

- Straight-cut tips and smooth, fire-polished tops to facilitate bulb attachment
- A positive constriction at approximately 1" (2.5cm) from top holds supplied cotton plug in place, thereby reducing the chance of aspirating liquid into rubber bulb
- Patented easel box, made of nonlinting material, folds to become a dispenser for easy access to pipets
- Foam pad at bottom of box preserves tips

Approx. Length	Cat. No.	Pack of 250	Case of 4 Pack
5¾" (146mm)	**13-678-8A**	26.79	89.27
9" (229mm)	**13-678-8B**	31.97	106.58

*Fisherbrand** Disposable Soda-Lime Glass Pasteur Pipets

Ideal for transferring samples to sample cups and for drop counting



13-678-6A

- Uniform bore
- Tip openings range from 0.80 to 1.20mm
- Top and tip free of sharp edges
- Can be cotton plugged (plugs not included)
- Carton top folds back—tilts carton into convenient dispensing position

COMPLIANCE:
Conform to government specifications in design, style

Approx. Length	Cat. No.	Pack of 250	Case of 4 Pack
5¾" (146mm)	**13-678-6A**	26.41	88.01
9" (229mm)	**13-678-6B**	30.56	101.89

*Fisherbrand** Disposable Flint-Glass Pasteur Pipets in Stand-Up Case

Tip openings range from 0.80 to 1.40mm

22-230-490

- High-quality flint glass pipets in convenient stand-up case
- Saves bench space
- Approximate volume: 2mL
- Can be cotton plugged (plugs not included)

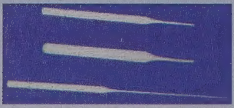
ORDERING INFORMATION:
100 pipets per pack, 10 packs per case

COMPLIANCE:
Designed to meet ASTM* E 732 specifications

Approx. Length	Cat. No.	Case of 1000
5¾" (146mm)	**22-230-482**	100.17
9" (229mm)	**22-230-490**	140.97

*Fisherbrand** Pasteur Pipets

Excellent for use in blood banks, hematology, chemistry, bacteriology and all general laboratory applications



Top to bottom: 22-209-353, 22-063-156, 22-209-361

Strong corrugated packaging is used to provide maximum protection from external shock and each pack contains a foam pad to protect the pipet tips.

- Manufactured from borosilicate or soda lime glass to conform to rigid specifications
- Straight-cut tips and smooth, fire-polished tops to facilitate bulb attachment
- I.D., top: 7mm; tips: 0.9 to 1.25mm
- Positive constriction approximately 1" (25mm) from the top to prevent cotton plugs from slipping into pipet barrel
- Easel configuration of each pack keeps pipets orderly and easily accessible

Approx. Length	Material	Cat. No.	Case of
Plain			
5¾" (146mm)	Soda Lime Glass	**22-063-156**	200/23.70
9" (229mm)	Soda Lime Glass	**22-063-172**	200/26.33
5¾" (146mm)	Soda Lime Glass	**22-042-816**	250/25.37
9" (229mm)	Soda Lime Glass	**22-042-817**	250/32.88
5¾" (146mm)	Borosilicate Glass	**22-183-624**	1000/122.32
9" (229mm)	Borosilicate Glass	**22-183-632**	1000/164.61
Cotton-Plugged			
5¾" (146mm)	Soda Lime Glass	**22-209-353**	250/173.47
9" (229mm)	Soda Lime Glass	**22-209-361**	250/192.47
5¾" (146mm)	Borosilicate Glass	**22-209-379**	250/205.08

Corning* Disposable Glass Pasteur Pipets

Ideal for rapid nonvolumetric transfer work

- Available in convenient bulk packs
- Made from economical soda lime glass
- One-time use eliminates the danger of cross-contamination of valuable specimens or laboratory reagents
- Pipets have a constriction one inch below the top to facilitate plugging
- For nonvolumetric transfer work in bacteriology, immunology, hematology and serology studies, as well as blood bank and clinical chemistry procedures

13-678 Series

Approx. Length	Mfr. No.	Cat. No.	Pack of
5¾" (146mm)	7095B 5X	**13-678-4**	1000/56.14
9" (229mm)	7095B 9	**13-678-4A**	1000/62.01
13" (330mm)	7095B NMR	**13-678-6**	100/87.37

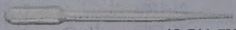
DISPOSABLE—TRANSFER

*Fisherbrand** Disposable Transfer Pipets

Unbreakable all-in-one pipets eliminate the hazards of broken glass and exposure to infectious materials

13-711-5AM

13-711-6M



13-711-7M

13-711-9 Series

Put an end to matching rubber bulb with glass pipet. Since entire unit is disposable, these pipets prevent cross-contamination to samples and reduce airborne contamination to personnel.

- Molded in one piece from see-through low-density polyethylene
- Inert to biological fluids and most acids
- Work well in hematology, urinalysis, chemistry, blood banking—anywhere there is a need for quick, safe transfer of fluids
- In four ready-to-use styles
- One squeeze draws from 2.0 to 3.3mL (depending on style used)
- Overall capacities from 4.6 to 7.5mL
- All deliver repeatable drop sizes
- Can be sealed and refrigerated for sample storage (seal with 02-678 Hemato-Seal* Tube Sealant)

Contd. on next page.

rand* Disposable Transfer Pipets, Contd.

od Bank Pipet

gle squeeze draws up to 2.4mL

pacity: approximately 5mL
livers 24 to 26 drops/mL

ox. Length	Cat. No.	Pack of 500	Case of 10 Pack
(146mm)	**13-711-5AM**	42.67	325.09

row Stem Pipet

illary tip design is ideal for blood banking and od sedimentation applications

gle squeeze draws up to 3.3mL
pacity: approximately 4.6mL
p size depends on technique used

ox. Length	Cat. No.	Pack of 500	Case of 10 Pack
(150mm)	**13-711-6M**	49.66	394.02

ndard Bulb Pipets

gle squeeze draws up to 3.2mL

th or without graduations
711-9D has 0.50mL graduations

	Length	Capacity	Cat. No.	Pack of 500	Case of 10 Pack
raduated	5⅞" (150mm)	7.7mL	**13-711-7M**	41.29	327.83
uated	6" (152mm)	7.5mL	**13-711-9D**	35.00	310.29

duated Pipets

ma radiation-sterilized pipets are ideal for cial applications in microbiology, teriology, research

ilable sterile or nonsterile
h 0.25mL graduations
mL capacity
w 3.4mL per squeeze

ERING INFORMATION:

able individually wrapped in peel-apart sleeve, or bulk packaged sy-open bags of 10 or 20.

x. Length	Inner Packaging	Cat. No.	Pack of 500	Case of 8 Pack
2mm)	Individually wrapped	**13-711-20**	73.48	520.23
2mm)	10/bag	**13-711-9BM**	67.22	452.68
2mm)	20/bag	**13-711-9CM**	62.86	402.65
erile				
2mm)	----	**13-711-9AM**	40.14	306.15

Samco* Polyethylene Transfer Pipets

Single-unit design features a built-in pipet bulb that eliminates need for plugging, packaging, autoclaving; prevents cross-contamination

- Made of shatterproof, nontoxic polyethylene
- Low-affinity surface reduces loss of cells and valuable proteins due to binding
- Can be frozen in liquid nitrogen, or heat sealed for storage

General-Purpose Transfer Pipets

13-711-37

- Excellent for routine sampling of serum and plasma
- Ideally suited for blood culture and urine analysis
- 8⅞ and 11 13/16" long (22.5 and 30.0cm) pipets designed for safe and easy sampling from large containers
- Cat. Nos. 13-711-37 and 13-711-40 are extra-long pipets

Nonsterile

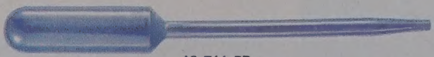
Length	Capac. (mL)	Bulb Draw (mL)	Drops/ mL	Cat. No.	Pack of	Case of
Standard						
3 7/16" (8.7cm)	1.7	0.9	25	**13-711-41**	500/43.74	8 Pk./239.92
8⅞" (22.5cm)	6	2.3	25	**13-711-37**	400/59.76	10 Pk./412.34
11 13/16" (30.0cm)	23	7.3	20	**13-711-40**	100/40.34	10 Pk./336.33
Blood Bank						
5⅛" (12.9cm)	4	1.9	25	**13-711-47**	400/38.53	10 Pk./287.57
Large Bulb						
6⅛" (15.7cm)	8	4.6	20	**13-711-23**	400/40.45	10 Pk./248.66

Sterile

Excellent for tissue culture applications

Length	Capac. (mL)	Bulb Draw (mL)	Drops/ mL	Cat. No.	Pack of	Case of 8 Pack
Standard, Individually Wrapped						
6⅛" (15.6cm)	7.7	3.2	20	**13-711-21**	500/51.18	349.97
8⅞" (22.5cm)	6	2.3	25	**13-711-38**	400/89.74	635.35
Blood Bank, Individually Wrapped						
6" (15.4cm)	6	1.9	23	**13-711-48**	500/68.23	483.03
Standard, Bags of 20						
6⅛" (15.6cm)	7.7	3.2	20	**13-711-22**	500/45.77	312.98
8⅞" (22.5cm)	6	2.3	25	**13-711-39**	400/56.60	386.99
Blood Bank, Bags of 20						
6" (15.4cm)	5	1.9	23	**13-711-49**	500/53.80	367.89

Large-Tip Opening Transfer Pipet



13-711-5B

For sampling and transfer of viscous liquids, such as oil, paint, food, and industrial slurries.

Length	Capac. (mL)	Bulb Draw (mL)	Cat. No.	Pack of 250	Case of 10 Pack
5⅜" (13.7cm)	9.3	4.8	**13-711-5B**	24.32	206.92

Contd. on next page.

Samco* Polyethylene Transfer Pipets, Contd.

Fine-Tip Transfer Pipets

For precise dispensing of small drops into small-volume containers

- Also ideal for removing cell layers, separating blood samples, etc.
- With fine tip or extended fine tip

13-711-31

Nonsterile, Extra-Fine Tip

Length	Capac. (mL)	Bulb Draw (mL)	Drops/ mL	Cat. No.	Pack of	Case of
Small Bulb						
4¹⁄₁₆" (10.4cm)	1.5	1.0	50	**13-711-25**	400/43.01	8 Pk./294.08
Standard Bulb						
6⅛" (15.7cm)	5.8	3.5	50	**13-711-31**	500/48.21	10 Pk./412.02
Large Bulb						
6" (15.3cm)	5.0	3.3	50	**13-711-29**	250/30.74	8 Pk./210.18

Nonsterile, Fine-Tip

Length	Capac. (mL)	Bulb Draw (mL)	Drops/ mL	Cat. No.	Pack of	Case of 10 Pack
Standard Bulb						
5¾" (14.7cm)	5.8	3.3	55	**13-711-26**	500/69.58	383.23
Large Bulb						
5¾" (14.7cm)	8.7	4.8	45	**13-711-30**	400/61.33	341.14

Sterile, Fine-Tip

Length	Capac. (mL)	Bulb Draw (mL)	Drops/ mL	Cat. No.	Pack of	Case of 8 Pack
Individually wrapped						
5¾" (14.7cm)	5.8	3.3	55	**13-711-27**	400/67.50	477.86
Bags of 10						
5¾" (14.7cm)	5.8	3.3	55	**22-030316**	500/42.23	288.72
Bags of 20						
5¾" (14.7cm)	5.8	3.3	55	**13-711-28**	500/77.37	547.76

Narrow-Stem Sedi-Pet* Transfer Pipets

Bend flexible stem to sample from narrow or small tubes

13-711-36

Nonsterile

Length	Capac. (mL)	Bulb Draw (mL)	Drops/ mL	Cat. No.	Pack of	Case of
Short Stem						
2½" (6.4cm)	1.2	0.9	25	**13-711-32**	500/44.85	8 Pk./251.89
3⁹⁄₁₆" (8.5cm)	4	3.0	25	**13-711-33**	500/41.59	10 Pk./355.45
Large Bulb						
6⅛" (15.5cm)	15	8.0	19	**13-711-36**	250/43.07	10 Pk./323.67

Sterile

Length	Capac. (mL)	Bulb Draw (mL)	Drops/ mL	Cat. No.	Pack of 500	Case of 8 Pack
Standard, Individually Wrapped						
6⅛" (15.5cm)	4.6	3.3	25	**13-711-34**	74.40	526.76
Standard, Bags of 20						
6⅛" (15.5cm)	4.6	3.3	25	**13-711-35**	55.20	377.42

Graduated Transfer Pipets

Nonsterile

13-711-24

Length	Capac. (mL)	Grads. (mL)	Bulb Draw (mL)	Drops/ mL	Cat. No.	Pack of 500	Case of
Standard Bulb							
4½" (11.6cm)	1.5	0.10 to 0.3	0.8	21	**13-711-43**	34.90	8 Pk./238.62
5½" (14.0cm)	1	0.25 to 1	2.2	25	**13-711-24**	39.52	10 Pk./295.37
Blood Bank							
6" (15.2cm)	4.8	0.50 to 2	1.8	24	**13-711-42**	42.42	10 Pk./362.61

Sterile

Standard tip with large bulb

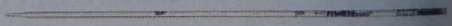
ORDERING INFORMATION:

Supplied in bags of 20.

Length	Capac. (mL)	Grads. (mL)	Bulb Draw (mL)	Drops/mL	Cat. No.	Case of 4000
6⅛" (15.5cm)	7.5	0.50 to 3	3.2	20	**13-711-50**	280.40

MILK BACTERIOLOGICAL

*Fisherbrand** Sterile Disposable Borosilicate Glass Milk Bacteriological Pipets



12-724

12-724-1

1.1mL size also used for milk phosphatase test

ORDERING INFORMATION:

Packed sterile in bags of 250

COMPLIANCE:

Calibrated "To Deliver". Meet APHA requirements for making milk dilutions.

Capacity	Grad.	Tolerance	Cat. No.	Case of 1000
1.1mL	0.5, 1.0, 1.1mL	±0.025mL	**12-724**	312.85
2.2mL	1.0, 2.0, 2.1, 2.2mL	±0.040mL	**12-724-1**	325.80

*Trademark. See Trademark Reference.

Prices subject to change.

*isherbrand** Nonsterile eusable Borosilicate Glass Milk acteriological Pipets

-670C

-670D

th permanent markings, Tuf-Temp* treated

MPLIANCE:

ibrated "To Deliver" indicated amount of milk at 20°C (68°F).
et current APHA specifications.

TE:

ne states require that a special state agency approve these pipets ore use; verify requirements for your state. Accuracy printed on ets applies to milk only.

acity	Grad.	Tolerance	Color Code	Cat. No.	Case of 12
L	----	±0.025mL	Blue	**13-670A**	88.00
mL	1.1, 1.0mL	±0.025mL	2 Green	**13-670B**	67.50
mL	1.1, 1.0, 0.5mL	±0.025mL	----	**13-670C**	72.30
mL	2.2, 2.1, 2.0, 1.0mL	±0.04mL	----	**13-670D**	81.60
L	----	±0.10mL	White	**13-670E**	109.20
nL	----	±0.10mL	Red	**13-670F**	121.40
nL	----	±0.10mL	----	**13-670G**	124.10

ble* Sterile Disposable Polystyrene k Bacteriological Pipet

L polystyrene pipet with plugged mouth end

12-724-12

luations at 0.5, 1.0, and 1.1mL
k scale

LIANCE:

ited "To Deliver/Blow Out" for measurement of diluted and ed milk, as prescribed in *Standard Methods for the Analysis of Products*, APHA

ing	Capacity	Tolerance	Mfr. No.	Cat. No.	Case of 1000
	1.1mL	±0.025mL	FS56400 11	**12-724-10**	343.69
ually wrapped	1.1mL	±0.025mL	56404 11	**12-724-12**	384.04

Falcon* Polystyrene Disposable teriological Pipets

r, easy-to-read graduations

13-669-10B

ed, polystyrene, sterile, nonpyrogenic.

RING INFORMATION:

s of 25.

ity	Graduations	Cat. No.	Case of 1000
	0.5, 1.0, 1.1mL	**13-669-10B**	437.50
	1.0, 2.0, 2.1, 2.2mL	**13-669-11**	449.90

DROPPING

*Fisherbrand** Glass Medicine Droppers

Inexpensive pipets with either straight or curved tips and tapered synthetic rubber bulbs

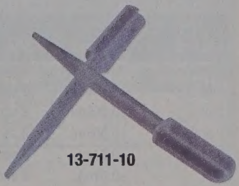
13-705

Tip	Glass Tube Length	Capacity	Cat. No.	Pack of 144	Case of 10 Pack
Straight	3" (76mm)	2mL	**13-700**	60.40	534.47
	4" (102mm)	2.5mL	**13-701**	50.12	374.42
Curved	3" (76mm)	2mL	**13-705**	52.86	451.76

Nalgene* One-Piece Disposable Droppers

Bellows-type bulb provides excellent drop formation—30 to 35 drops/mL

- Molded of one-piece low-density polyethylene
- Nonwetting material, tapered tip
- Easy to clean
- Economical

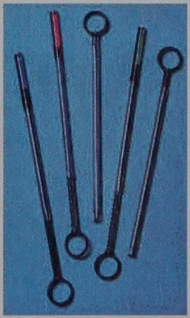

13-711-10

Approx. Length	Capacity	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pack
2^{11}⁄$_{16}$" (68mm)	1.6mL	6219-0068	**13-711-10**	43.69	291.25

Spectrum Transfertube* Combination Dropping Pipets

Combination pipet, dropper, and spatula

- Polypropylene tube with plunger for withdrawing and expelling liquids
- Tube can also be used as a spatula to transfer powders, agar plugs and other solids
- Autoclavable


13-711-2

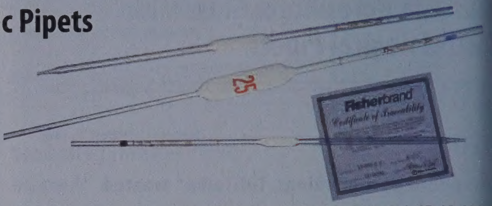
Approx. Length	Capacity	Cat. No.	Pack of 250
6" (152mm)	4mL	13-711-2	154.00

REUSABLE—VOLUMETRIC

*Fisherbrand** Reusable Class A Volumetric Pipets

Standard or serialized

- Borosilicate glass
- Volume accuracy marked on each pipet
- Permanent amber markings
- Tuf-Temp*–treated tempered tips reduce chipping



(Top to bottom) 13-650-3F, 13-650-3P, 13-650-3C

ORDERING INFORMATION:

All pipets are available as PersonaPet* personalized pipets.

COMPLIANCE:

Standard Pipets meet all Class A requirements of ASTM* E 969-95. Letter A near top signifies compliance with requirements for laboratory certification by CAP and other certifying groups. Calibrated "To Deliver". **Serialized Pipets** with Certificates of Traceability are calibrated in accordance with ASTM E 542 and meet accuracy requirements of ASTM E 969. Glass meets the requirements of ASTM E 438 for Type I, Class A.

CERTIFICATIONS:

Serialized Pipets are NIST traceable, and are supplied with individual fused-in serial numbers and Certificates of Traceability, which indicate that each pipet is individually calibrated and certified against equipment whose calibration is traceable to the National Institute of Standards and Technology (NIST). Certificates list the weight set used, the test number, and date of testing.

				Standard			Serialized		
Capacity	Accuracy	Min. Flow Time	Color Code	Cat. No.	Each	Case of	Cat. No.	Each	Case o
0.5mL	±0.006mL	5 sec.	2 Black	**13-650-2A**	----	12/104.50	**13-650-3A**	----	6/103.60
1mL	±0.006mL	8 sec.	Blue	**13-650-2B**	----	12/113.30	**13-650-3B**	----	6/94.40
2mL	±0.006mL	8 sec.	Orange	**13-650-2C**	----	12/113.30	**13-650-3C**	----	6/119.50
2.5mL	±0.006mL	8 sec.	----	**13-650-2Y**	----	12/184.80	**13-650-3Y**	----	6/187.70
3mL	±0.01mL	8 sec.	Black	**13-650-2D**	----	12/113.90	**13-650-3D**	----	6/135.10
4mL	±0.01mL	8 sec.	2 Red	**13-650-2E**	----	12/114.40	**13-650-3E**	----	6/139.60
5mL	±0.01mL	8 sec.	White	**13-650-2F**	----	12/113.30	**13-650-3F**	----	6/143.30
6mL	±0.01mL	10 sec.	2 Orange	**13-650-2G**	----	12/115.10	**13-650-3G**	----	6/143.30
7mL	±0.01mL	10 sec.	2 Green	**13-650-2H**	----	12/115.10	**13-650-3H**	----	6/137.40
8mL	±0.02mL	10 sec.	Blue	**13-650-2J**	----	12/111.70	**13-650-3J**	----	6/137.40
9mL	±0.02mL	10 sec.	Black	**13-650-2K**	----	12/111.70	**13-650-3K**	----	6/137.40
10mL	±0.02mL	15 sec.	Red	**13-650-2L**	----	12/123.20	**13-650-3L**	----	6/154.80
12mL	±0.02mL	25 sec.	----	**13-650-2X**	----	12/313.20	**13-650-3X**	----	6/372.30
15mL	±0.03mL	25 sec.	Green	**13-650-2M**	14.60	12/154.10	**13-650-3M**	47.80	6/253.73
20mL	±0.03mL	25 sec.	Yellow	**13-650-2N**	15.60	12/165.39	**13-650-3N**	47.80	6/253.73
25mL	±0.03mL	25 sec.	Blue	**13-650-2P**	16.70	12/176.51	**13-650-3P**	53.20	6/282.31
30mL	±0.03mL	25 sec.	Black	**13-650-2Q**	22.00	12/232.89	**13-650-3Q**	49.10	6/260.24
40mL	±0.05mL	25 sec.	White	**13-650-2R**	22.00	12/232.72	**13-650-3R**	55.70	6/295.57
50mL	±0.05mL	25 sec.	Red	**13-650-2S**	22.00	12/232.61	**13-650-3S**	58.80	6/311.85
75mL	±0.08mL	30 sec.	Green	**13-650-2T**	31.20	12/330.55	**13-650-3T**	48.60	6/257.76
100mL	±0.08mL	30 sec.	Yellow	**13-650-2U**	31.10	12/330.16	**13-650-3V**	60.20	6/307.91
200mL	±0.16mL	30 sec.	----	**13-650-2W**	43.90	4/155.04	**13-650-3W**	89.50	----

*Trademark. See Trademark Reference.

Prices subject to change.

*sherbrand** Reusable Class B lumetric Pipets

ure highest accuracy, reproducibility

13-650L

rosilicate glass

rmanent amber markings

rge numeral on bulb of 15mL and larger pipets makes capacity sy to identify

curacy printed on each pipet

f-Temp*–treated tempered tips reduce chipping

st outflow

ERING INFORMATION:

lable as PersonaPet* personalized pipets.

IPLIANCE:

rated "To Deliver". Meet Class B volume accuracy and flow time irements of ASTM* E 969-95.

icity	Accuracy	Minimum Flow Time	Color Code	Cat. No.	Each	Case of 12
L	±0.012mL	3 sec.	2 Black	**13-650A**	----	94.70
	±0.012mL	3 sec.	Blue	**13-650B**	----	94.30
	±0.012mL	3 sec.	Orange	**13-650C**	----	94.40
L	±0.012mL	5 sec.	----	**13-650Y**	----	186.60
	±0.02mL	5 sec.	Black	**13-650D**	----	103.00
	±0.02mL	5 sec.	2 Red	**13-650E**	----	101.00
	±0.02mL	8 sec.	White	**13-650F**	----	101.50
	±0.03mL	8 sec.	2 Orange	**13-650G**	----	112.20
	±0.03mL	8 sec.	2 Green	**13-650H**	----	112.50
	±0.04mL	8 sec.	Blue	**13-650J**	----	112.20
	±0.04mL	8 sec.	Black	**13-650K**	----	112.20
L	±0.04mL	8 sec.	Red	**13-650L**	----	112.20
L	±0.04mL	10 sec.	----	**13-650X**	----	318.50
L	±0.06mL	10 sec.	Green	**13-650M**	16.50	174.72
L	±0.06mL	10 sec.	Yellow	**13-650N**	14.80	155.64
L	±0.06mL	15 sec.	Blue	**13-650P**	15.70	166.03
L	±0.10mL	15 sec.	Black	**13-650Q**	23.00	243.41
L	±0.10mL	15 sec.	White	**13-650R**	23.00	243.69
L	±0.10mL	15 sec.	Red	**13-650S**	20.40	215.79
L	±0.16mL	20 sec.	Green	**13-650T**	29.50	304.58
nL	±0.16mL	20 sec.	Yellow	**13-650U**	29.20	309.78
nL	±0.32mL	30 sec.	----	**13-650V**	35.90	380.69

*Fisherbrand** Reusable CulturTek* Volumetric Pipets

Large tip opening fills and drains quickly, speeds cell transfers

13-650-30A

Originally developed for in-house tissue culture cell production at Smith, Kline and French Laboratories. Heavy borosilicate glass provides greater resistance to chipping and breakage than conventional volumetric pipets.

- Tip openings approximately 4mm, or ⅛"
- Reinforced tip and mouthpiece bulb joints
- Shorter length makes pipets easier to handle
- With permanent amber markings
- Top tooled for cotton plugs (plugs not supplied)

ORDERING INFORMATION:

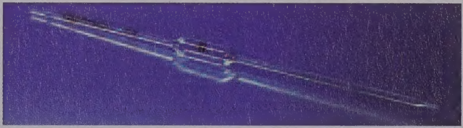
Available as PersonaPet* personalized pipets.

COMPLIANCE:

Calibrated "To Deliver".

Capacity	Accuracy	Color Code	Cat. No.	Each	Case of 12
25mL	±0.10mL	Blue	**13-650-30A**	15.40	163.40
50mL	±0.10mL	Red	**13-650-30B**	20.10	212.74
100mL	±0.20mL	Yellow	**13-650-30C**	28.30	299.84

Pyrex* Reusable Class A, Volumetric Pipets



13-646-60

- Serialized/Certified for easy identification
- Colored graduations and calibration lines are enameled onto the glass

COMPLIANCE:

Calibrated "To Contain" (TC - bottom line) and "To Deliver" (TD - top line)

Capacity	Tolerance	Color Code	Mfr. No.	Cat. No.	Case of 6
1mL	±0.006mL	Blue	7103C-1	**13-646-48**	95.09
2mL	±0.006mL	Orange	7103C-2	**13-646-49**	96.70
3mL	±0.01mL	Black	7103C-3	**13-646-50**	97.95
4mL	±0.01mL	Red	7103C-4	**13-646-51**	103.66
5mL	±0.01mL	White	7103C-5	**13-646-52**	101.36
6mL	±0.01mL	Orange	7103C-6	**13-646-53**	103.60
7mL	±0.01mL	Green	7103C-7	**13-646-54**	106.94
8mL	±0.02mL	Blue	7103C-8	**13-646-55**	110.23
9mL	±0.02mL	Black	7103C-9	**13-646-56**	113.83
10mL	±0.02mL	Red	7103C-10	**13-646-57**	116.37
15mL	±0.03mL	Green	7103C-15	**13-646-58**	128.72
20mL	±0.03mL	Yellow	7103C-20	**13-646-59**	129.21
25mL	±0.03mL	Blue	7103C-25	**13-646-60**	136.59

Pyrex* Reusable Class A Volumetric Pipets

Type 1, Class A borosilicate-glass pipets with fire-polished top and tip

- All pipets have colored graduations enameled onto glass
- Sizes 1 to 25mL are color coded by size for ease in sorting and selecting
- New design of 50mL size allows better drainage

COMPLIANCE:
Calibrated "To Deliver" with tolerances in accordance with ASTM* E 542 and E 969.

CERTIFICATION:
Each serialized pipet has a permanently marked serial number and Certificate of Identification and Capacity traceable to standards provided by NIST*.

NOTE: Do not pipet by mouth. Use mechanical pipetting device.

13-651-11E

Standard

Capacity	Tolerance	Color Code	Mfr. No.	Cat. No.	Case of 12
1mL	±0.006mL	Blue	7100 1	**13-651-1A**	109.51
2mL	±0.006mL	Orange	7100 2	**13-651-1B**	109.51
3mL	±0.01mL	Black	7100 3	**13-651-1C**	109.51
4mL	±0.01mL	Red	7100 4	**13-651-1D**	109.51
5mL	±0.01mL	White	7100 5	**13-651-1E**	109.51
10mL	±0.02mL	Red	7100 10	**13-651-1K**	121.91
15mL	±0.03mL	Green	7100 15	**13-651-1L**	166.94
20mL	±0.03mL	Yellow	7100 20	**13-651-1M**	178.20
25mL	±0.03mL	Blue	7100 25	**13-651-1N**	190.61
50mL	±0.05mL	----	7100 50	**13-651P**	250.73
100mL	±0.08mL	----	7100 100	**13-651Q**	355.25

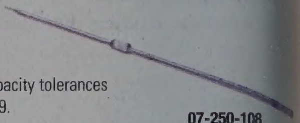
Serialized/Certified

Capacity	Tolerance	Color Code	Mfr. No.	Cat. No.	Case of 6
1mL	±0.006mL	Blue	7101 1	**13-651-11**	76.96
2mL	±0.006mL	Orange	7101 2	**13-651-11A**	97.74
3mL	±0.01mL	Black	7101 3	**13-651-11B**	113.26
4mL	±0.01mL	Red	7101 4	**13-651-11C**	123.97
5mL	±0.01mL	White	7101 5	**13-651-11D**	127.83
10mL	±0.02mL	Red	7101 10	**13-651-11E**	134.42
15mL	±0.03mL	Green	7101 15	**13-651-11F**	168.94
20mL	±0.03mL	Yellow	7101 20	**13-651-11G**	168.94
25mL	±0.03mL	Blue	7101 25	**13-651-11H**	168.94
50mL	±0.05mL	----	7101 50	**13-651-11J**	200.81
100mL	±0.08mL	----	7101 100	**13-651-11K**	243.12

Pyrex* VISTA* Class A Volumetric Pipets

Sizes are color coded for easy identification

- With colored markings
- Reusable



07-250-108

COMPLIANCE:
Manufactured to Class A capacity tolerances as indicated by ASTM* E-969.

Capacity	Color	Mfr. No.	Cat. No.	Case of 12
1mL	Blue	70710-1	**07-250-108**	73.96
2mL	White	70710-2	**07-250-110**	73.96
5mL	Red	70710-5	**07-250-111**	82.32
10mL	Orange	70710-10	**07-250-109**	82.32

Kimax* Reusable Class A Volumetric Pipets

Autoclavable

Meet standards of former NBS circular 602 for accuracy, appearance, quality of glass, calibration lines, and inscription.

COMPLIANCE:
Both serialized and standard volumetric pipets have tempered ends calibrated "To Deliver".

CERTIFICATION:
All pipets are marked with "A" to certify that they are designed from ASTM* Specification E 969, Class A requirements. Each serialized/certified pipet is permanently marked with an individual serial number and comes with a Certificate of Graduation Accuracy. The 20, 25, and 100mL pipets come with six certificates per case; 50mL pipets, eight per case; all other sizes are supplied with two certificates per case.

13-660-5F

Standard

Capacity	Tolerance	Color Code	Mfr. No.	Cat. No.	Pack of
0.5mL	±0.006mL	2 Black	37004 510	**K37004-510**	12/108.53
1mL	±0.006mL	Blue	37004 1	**13-660-5A**	6/75.54
2mL	±0.006mL	Orange	37004 2	**13-660-5B**	6/75.54
3mL	±0.01mL	Black	37004 3	**13-660-5C**	6/75.54
4mL	±0.01mL	2 Red	37004 4	**13-660-5D**	6/75.54
5mL	±0.01mL	White	37004 5	**13-660-5E**	6/74.62
9mL	±0.02mL	Black	37004 9	**13-660-5R**	6/67.17
10mL	±0.02mL	Red	37004 10	**13-660-5F**	6/82.88
15mL	±0.03mL	Green	37004 15	**13-660-5M**	12/165.62
20mL	±0.03mL	Yellow	37004 20	**13-660-5H**	12/179.35
25mL	±0.03mL	Blue	37004 25	**13-660-5J**	12/191.88
30mL	±0.03mL	Black	37004 30	**13-660-5S**	6/137.79
40mL	±0.05mL	White	37004 40	**13-660-5T**	6/137.79
50mL	±0.05mL	Red	37004 50	**13-660-5K**	12/251.71
100mL	±0.08mL	Yellow	37004 100	**13-660-5L**	12/356.73

Note: *1, 2, 3, 4, 5, and 10mL sizes also available in a case of two packs. Contact your Fisher Scientific Customer Service Representative for ordering information.*

Contd. on next page.

*Trademark. See Trademark Reference.

Prices subject to change.

* Reusable Class A Volumetric Pipets, Contd.

13-660D

lized

y	Tolerance	Color Code	Mfr. No.	Cat. No.	Pack of
	±0.006mL	Blue	37010 1	**13-660A**	6/101.52
	±0.006mL	Orange	37010 2	**13-660B**	6/130.12
	±0.01mL	Black	37010 3	**13-660C**	6/150.75
	±0.01mL	2 Red	37010 4	**13-660D**	6/165.14
	±0.01mL	White	37010 5	**13-660E**	6/170.15
	±0.02mL	Red	37010 10	**13-660F**	6/177.31
	±0.03mL	Yellow	37010 20	**13-660H**	12/328.44
	±0.03mL	Blue	37010 25	**13-660J**	12/328.44
	±0.05mL	Red	37010 50	**13-660K**	8/260.24
	±0.08mL	Yellow	37010 100	**13-660L**	6/236.22

2, 3, 4, 5, and 10mL sizes also available in a case of two packs. Contact your cientific Customer Service Representative for ordering information.

ex* Large-Tip Opening Reusable umetric Pipets

ned for schools and laboratories where Class A nces aren't required

13-678-100C

r tip openings result in faster deliveries, which in turn account gher tolerances

coding on all but 50 and 100mL pipets permits easy sorting dentification by size

LIANCE:

ed "To Deliver," with tempered top and tip

y	Tolerance	Color Code	Mfr. No.	Cat. No.	Pack of
	±0.012mL	2 Black	7102 1X	**13-650-5**	12/99.38
	±0.012mL	Blue	7102 1	**13-650-6A**	12/99.38
	±0.012mL	Orange	7102 2	**13-678-100B**†	6/127.60
	±0.02mL	Black	7102 3	**13-678-100C**†	12/130.60
	±0.02mL	Red	7102 4	**13-678-100D**	12/106.07
	±0.02mL	White	7102 5	**13-678-100E**†	6/69.51
	±0.04mL	Red	7102 10	**13-650-6F**	12/118.64
	±0.06mL	Green	7102 15	**13-678-100A**†	6/203.94
	±0.06mL	Yellow	7102 20	**13-650-6H**	12/168.47
	±0.06mL	Blue	7102 25	**13-650-6J**	12/178.23
	±0.10mL	---	7102 50	**13-650-5K**	12/236.65
	±0.16mL	---	7102 100	**13-650-5L**	12/333.29

ilable in alternate quantity. Contact your Fisher Scientific Customer Service ntative.

REUSABLE—SEROLOGICAL

*Fisherbrand** Dual-Purpose Pipets

Sizes through 0.3mL have twice the accuracy required for Ostwald-Folin pipets

11-382-33 Series

- Borosilicate glass, permanent amber markings, Tuf-Temp*-treated to reduce chipping
- Accuracy printed on each pipet
- Capacity marked below mouthpiece

ORDERING INFORMATION:

Available as PersonaPet* personalized pipets.

COMPLIANCE:

Calibrated "To Deliver/Blow Out" (upper graduation) and "To Contain" (lower graduation).

Capacity	Accuracy	Cat. No.	Case of 12
0.1mL	±0.003mL	**11-382-33A**	130.90
0.2mL	±0.003mL	**11-382-33B**	130.90
0.25mL	±0.003mL	**11-382-33C**	130.90
0.3mL	±0.003mL	**11-382-33D**	130.90
0.5mL	±0.006mL	**11-382-33E**	122.00
1.0mL	±0.006mL	**11-382-33F**	122.10
2.0mL	±0.006mL	**11-382-33G**	122.10
2.5mL	±0.01mL	**11-382-33H**	138.30
3.0mL	±0.01mL	**11-382-33J**	138.10
4.0mL	±0.01mL	**11-382-33K**	138.10
5.0mL	±0.01mL	**11-382-33L**	138.30
10.0mL	±0.02mL	**11-382-33M**	162.80

*Fisherbrand** Dye Industry Pipets

Perfect for pipetting dark-color dye solutions

13-671-109M

Just fill pipet to desired volume and read—no time-consuming draining as with conventional pipets.

- White graduations stand out against background of dark dye; easier to see and read than conventional amber markings
- Inverse scale—volume graduations start with 0 at tip
- Color coded for quick, accurate identification
- Catalog number, capacity and accuracy marked on each pipet
- Tough borosilicate glass; Tuf-Temp*-treated to reduce chipping

COMPLIANCE:

Calibrated "To Deliver/Blow Out"

Capacity	Accuracy	Color Code	Cat. No.	Case of 12
1 in 1⁄100mL	±0.02mL	Yellow	**13-671-109F**	99.70
2 in 1⁄10mL	±0.02mL	Green	**13-671-109H**	109.50
5 in 1⁄10mL	±0.04mL	Blue	**13-671-109K**	99.70
10 in 1⁄10mL	±0.06mL	Orange	**13-671-109M**	113.20
25 in ½mL	±0.10mL	White	**13-671-109N**	218.00

*Fisherbrand** Reusable Serological Pipets

Accuracy printed on each pipet

- Borosilicate glass, permanent amber markings
- Tuf-Temp*-treated to reduce chipping
- All Fisherbrand Reusable Serological Pipets also available as PersonaPet* personalized pipets

Standard-Top Pipets

Fast, uniform flow times

13-675 Series

Pipets 13-675D and 13-675E are recommended for VDRL test.

ORDERING INFORMATION:
For 5, 10 and 25mL pipets, see Fisherbrand Cotton-Plug Top Pipets.

COMPLIANCE:
Calibrated "To Deliver/Blow Out." Meet requirements of ASTM* E 1044-96, Style I-General-Purpose Top.

Capacity	Accuracy	Color Code	Cat. No.	Case of 12
1/10 in 1/100mL	±0.005mL	White	**13-675A**	85.60
2/10 in 1/100mL	±0.008mL	Black	**13-675C**	92.00
5/10 in 1/100mL	±0.01mL	2 Yellow	**13-675D**	102.90
5/10 in 1/20mL	±0.01mL	2 Black	**13-675E**	106.50
1 in 1/100mL	±0.02mL	Yellow	**13-675F**	88.80
1 in 1/10mL	±0.02mL	Red	**13-675G**	82.20
2 in 1/10mL	±0.02mL	Green	**13-675H**	91.80
2 in 1/100mL	±0.02mL	2 White	**13-675J**	145.10

Large-Tip–Opening Pipets

Ideal for viscous solutions and tissue culture work

13-671-108 Series

- Tops formed for cotton plugging (plugs not included) will fit cotton plugging machines (not available from Fisher Scientific)
- The 1mL size has approximately 0.1" (2.5mm) tip opening; other sizes have approximately 0.12" (3mm) tip opening

COMPLIANCE:
Calibrated "To Deliver/Blow Out"

Capacity	Accuracy	Color Code	Cat. No.	Case of 12
1 in 1/10mL	±0.05mL	Red	**13-671-108A**	154.80
2 in 1/10mL	±0.05mL	Green	**13-671-108B**	176.20
5 in 1/10mL	±0.10mL	Blue	**13-671-108C**	144.50
10 in 1/10mL	±0.10mL	Orange	**13-671-108D**	142.50
25 in 1/10mL	±0.20mL	White	**13-671-108E**	205.20

Cotton-Plug Top Pipets

Similar to Fisherbrand* Standard-Top Pipets with tops tooled to fit cotton-plugging machines (not available from Fisher Scientific)

13-671-102A

- Constriction in glass top prevents cotton plug from going down into pipet (plugs not included)
- Fast, uniform flow times

ORDERING INFORMATION:
Also available in economical bulk packs. Call your Fisher Scientific Customer Service Representative for ordering information.

REQUIRED ACCESSORIES:
Cotton plugs

COMPLIANCE:
Calibrated "To Deliver/Blow Out." Meet requirements of ASTM* E 1044-96, Style II-Cotton Plugging Mouthpiece.

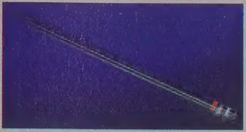
			Standard Pack		Bulk Pack	
Capacity	Accuracy	Color Code	Cat. No.	Case of 12	Cat. No.	Case of 250
1/10 in 1/100mL	±0.005mL	White	**13-671-102A**	97.20	----	----
2/10 in 1/100mL	±0.008mL	Black	**13-671-102C**	104.30	----	----
5/10 in 1/100mL	±0.01mL	2 Yellow	**13-671-102E**	115.40	----	----
1 in 1/100mL	±0.02mL	Yellow	**13-671-102F**	91.30	**13-676-53C**	1273.60
1 in 1/10mL	±0.02mL	Red	**13-671-102G**	78.20	**13-676-53D**	1224.10
2 in 1/10mL	±0.02mL	Green	**13-671-102H**	90.80	**13-676-53F**	1371.00
2 in 1/100mL	±0.02mL	2 White	**13-671-102J**	125.90	----	----
5 in 1/10mL	±0.04mL	Blue	**13-675K**	90.40	**13-676-53G**	1184.40
10 in 1/10mL	±0.06mL	Orange	**13-675M**	96.00	**13-676-53H**	1264.90
25 in 1/10mL	±0.10mL	White	**13-675N**	182.50	**13-676-53J**	2216.00

*Trademark. See Trademark Reference.

x* Reusable, Color-Coded, Glass logical Pipets

coded by size for easy identification and sorting

graduations are enameled glass.


13-671-101G

IANCE:
ed "To Deliver"; must be ut to obtain total rated . Meet ASTM* E-1044.

Grad.	Tolerance	Color Code	Mfr. No.	Cat. No.	Case of
0.01mL	±0.005mL	White	7085-1X	**13-671-101A**	12/90.44
0.01mL	±0.008mL	Black	7085-2X	**11-850-49**	12/97.36
0.1mL	±0.02mL	Red	7085-1	**13-671-101C**	12/87.12
0.01mL	±0.02mL	Yellow	7085-1C	**13-671-101D**	12/97.22
0.1mL	±0.02mL	Green	7085-2	**13-671-101E**	12/97.22
0.01mL	±0.02mL	White	7085-2C	**13-678-97A**	6/157.52
0.1mL	±0.04mL	Blue	7085-5	**13-671-101F**	12/97.22
0.1mL	±0.06mL	Orange	7085-10	**13-671-101G**	12/99.79

x* Large-Tip Opening Serological Pipets

-tip opening speeds intake and delivery of nsions and viscous materials

13-671-111E

d graduations in 0.1mL increments permanently eled onto the glass

olished top and tip

coded by size for easy identification and sorting

IANCE:
d from ASTM* E 1044. Calibrated "To Deliver/Blow Out".

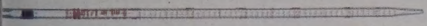
Tolerance	Color Code	Mfr. No.	Cat. No.	Case of
±0.05mL	Red	7087-1	**13-678-97D**†	6/149.42
±0.05mL	Green	7087-2	**13-678-97F**†	6/173.90
±0.1mL	Orange	7087-10	**13-671-111D**	12/149.98
±0.2mL	White	7087-25	**13-671-111E**	12/213.03

ilable in alternate quantity. Contact your Fisher Scientific Customer Service tative.

ıx-51* Reusable Serological Pipets

red tip with permanent brown scale fused niform bore tubing without etching

ndard tips and mouths.


13-674-32H

ANCE:
d "To Deliver/Blow Out." Designed from ASTM* E 1044.

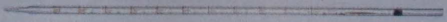
NG INFORMATION:
ilable with tooled opening. Contact your Fisher Scientific Customer Representative to order.

Grad.	Tolerance	Color Code	Mfr. No.	Cat. No.	Case of 12
0.01mL	±0.02mL	Yellow	37033 11100	**13-674-32E**	93.95
0.1mL	±0.04mL	Blue	37033 5	**13-674-32H**	100.58
0.1mL	±0.06mL	Orange	37033 10	**13-674-32J**	100.46

REUSABLE—MOHR (MEASURING)

Fisherbrand* Mohr (Measuring) Pipets

Accuracy printed on each pipet


13-665A

- Borosilicate glass, permanent amber markings, Tuf-Temp*-treated to reduce chipping
- Fast, uniform flow times
- Standard-taper
- Available as PersonaPet* personalized pipets

COMPLIANCE:
Calibrated "To Deliver" to baseline. Meet requirements of Fed. Spec. NNN-P-350C, Style I-Standard Taper and ASTM* E 1293-94.

Capacity	Accuracy	Color Code	Cat. No.	Case of 12
0.1 in 0.01mL	±0.005mL	White	**13-665A**	93.80
1 in 0.01mL	±0.02mL	Yellow	**13-665F**	99.20
1 in 0.1mL	±0.02mL	Red	**13-665G**	88.40
2 in 0.1mL	±0.02mL	Green	**13-665H**	96.30
5 in 0.1mL	±0.04mL	Blue	**13-665K**	100.20
10 in 0.1mL	±0.06mL	Orange	**13-665M**	116.10
25 in 0.1mL	±0.10mL	White	**13-665N**	167.70

Pyrex* Reusable Class A Mohr (Measuring) Pipets

Class A Serialized/Certified Pipets

13-650-4B

Traceable

- Top of 5, 10, and 25mL sizes is constricted (Mohr type)
- Colored graduations are permanently enameled onto the glass
- Color coded by size for easy identification and sorting

COMPLIANCE:
Class A, Type I pipets are calibrated "To Deliver". Tolerances in accordance with ASTM* E 542 and E 1293.

CERTIFICATIONS:
Each pipet has a permanently marked serial number and Certificate of Identification and Capacity traceable to standards provided by NIST*.

Capacity	Tolerance	Subdiv.	Color Code	Mfr. No.	Cat. No.	Case of 6
1mL	±0.01mL	0.1mL	Red	7070 1	**13-650-4**	105.22
2mL	±0.01mL	0.1mL	Green	7070 2	**13-650-4A**	129.83
5mL	±0.02mL	0.1mL	Blue	7070 5	**13-650-4B**	129.83
10mL	±0.03mL	0.1mL	Orange	7070 10	**13-650-4C**	173.99
25mL	±0.05mL	0.1mL	White	7070 25	**13-650-4D**	304.65

WARNING
Do not pipet by mouth. Use mechanical pipetting device.

Pyrex* Brand Reusable Class B Mohr (Measuring) Pipets

Feature fire-polished top and tip

13-665-100F

- Cat. No. 13-678-92A and 13-665-101B have 0.01mL graduations; others have 0.1mL graduations
- Top of 5, 10, and 25mL sizes has Mohr-type construction
- With colored graduations permanently enameled onto the glass
- Color coded by size for easy identification and sorting

COMPLIANCE:
Designed from ASTM* E 1293.

Capacity	Tolerance	Color Code	Mfr. No.	Cat. No.	Case of
0.2mL	±0.008mL	Black	70652X	**13-678-92A†**	6/129.64
1mL	±0.02mL	Red	7065 1	**13-665-101A**	12/97.92
1mL	±0.02mL	Yellow	7065 1C	**13-665-101B**	12/104.78
2mL	±0.02mL	Green	7065 2	**13-665-101C**	12/105.81
5mL	±0.04mL	Blue	7065 5	**13-665-101D**	12/105.81
10mL	±0.06mL	Orange	7065 10	**13-665-101E**	12/122.71
25mL	±0.1mL	White	7065 25	**13-665-100F**	2/171.41

† Also available in alternate quantity. Contact your Fisher Scientific Customer Service Representative.

Kimax* Reusable Mohr (Measuring) Pipets

Intended for chemical laboratory work—tip openings are smaller than usually desired for clinical laboratory operations

- Permanent brown, graduated scale fused into uniform bore tubing ending above taper
- Color coded by size for ease in sorting
- Tempered tips

COMPLIANCE:
Calibrated "To Deliver."

Class A Serialized/Certified Pipets

Subdivisions on all sizes are 0.1mL, except 13-664-10H where subdivisions are 0.01mL

13-664-10M

COMPLIANCE:
Designed from ASTM* E 1293, Style 1, Class A requirements.

CERTIFICATIONS:
Each pipet has a permanently marked serial number and Certificate of Graduation Accuracy traceable to standards provided by NIST*. 25mL pipets come with one certificate for every two pipets; other sizes come with two certificates per case.

Capacity	Tolerance	Color Code	Mfr. No.	Cat. No.	Price
1mL	±0.1mL	Red	37025 1110	**13-664-10G†**	Pk. of 6/138.79
1mL	±0.01mL	Yellow	37025 11100	**13-664-10H**	Cs. of 12/276.71
2mL	±0.01mL	Green	37025 2	**13-664-10J†**	Pk. of 6/192.93
5mL	±0.02mL	Blue	37025 5	**13-664-10K†**	Pk. of 6/171.04
10mL	±0.03mL	Orange	37025 10	**13-664-10L†**	Pk. of 6/229.13
25mL	±0.05mL	White	37025 25	**13-664-10M†**	Ea./67.12

† Also available in alternate quantity. Contact your Fisher Scientific Customer Service Representative.

Class B Pipets

Rugged construction

13-664

COMPLIANCE:
Designed from ASTM* E 1293, Class B, Style 1 requirements.

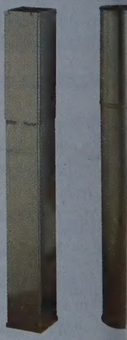
Capacity	Grad.	Tolerance	Color Code	Mfr. No.	Cat. No.	Ca
0.1mL	0.01mL	±0.005mL	White	37020 110	**13-664A**	12/10
1mL	0.01mL	±0.02mL	Yellow	37020 11100	**13-664C**	12/10
1mL	0.1mL	±0.02mL	Red	37020 1110	**13-664D**	12/10
2mL	0.1mL	±0.02mL	Green	37020 2	**13-664E**	12/10
5mL	0.1mL	±0.04mL	Blue	37020 5	**13-664F**	12/10
10mL	0.1mL	±0.06mL	Orange	37020 10	**13-664G**	12/12
25mL	0.1mL	±0.10mL	White	37020 25	**13-664H**	12/17
50mL	0.1mL	±0.16mL	None	37020 50	**13-6641**	8/27

CLEANING EQUIPMENT

*Fisherbrand** Pipet Sterilizing Boxes

Ideal for preventing breakage of costly pipets and glass tubes during sterilization either by autoclavi or dry heat

- Rugged stainless steel
- Standard round and square boxes hold any length pipet
- Use of several boxes permits segregation of pipets by size or function
- With snug-fitting covers


03-475 **03-4**

For Pipet Length	Dimensions	Cat. No.	E
Round Boxes			
Any	2½ dia. × 16½"H (6.4 × 42cm)	**03-465**	42
Square Boxes			
Any	2L × 2W × 16½"H (5.1 × 5.1 × 42cm)	**03-475**	67
Square Boxes for Pasteur Pipets			
5¾" (15cm)	2L × 2W × 6"H (5.1 × 5.1 × 15.2cm)	**03-475-1**	45
9" (23cm)	2L × 2W × 9¼"H (5.1 × 5.1 × 23.5cm)	**03-475-5**	45

*Trademark. See Trademark Reference.

Prices subject to change.

algene* Pipet Washers/Rinsers

r Pipets up to 16 and 24" Long (41 and 61cm)

gh-density polyethylene pipet-
ashing system provides range of
cling speeds, with water input from
to 3³⁄₁₆ gal./min. (1.5 to 12L/min.).

One piece, leakproof, weld-free

Large tubing diameter permits faster
cycles and allows water to drain
completely

Water inlet eliminates back
siphoning of contaminated water
into water line, even if pressure
drops

Slower cycling is achieved without
attachments

Work well on low water pressure

15-350-95A (at right).
15-350-95C and -105A (left and center) are available on our Web site.

CLUDES:

ear plastic tubing for inlet and
tlet

Pipets up to	Overall Height	Mfr. No.	Cat. No.	Each	Case of
"L (41cm)	30½" (78cm)	5245 0040	**15-350-95A**	361.76	6/1447.00
"L (61cm)	38" (97cm)	5245 0050	**15-350-95B**	430.87	4/1149.00

algene* Pipet Cleaning Sets

mplete set includes everything you need to clean pets

ll are made of rugged, high-density
olyethylene

omponents are also available
eparately

CLUDES:

e pipet jar, one basket and one
sher/rinser of size indicated

15-350-111B

Pipets up to	Mfr. No.	Cat. No.	Each
L (41cm)	5250 0040	**15-350-111A**	421.78
L (61cm)	5250 0050	**15-350-111B**	539.25
L (81cm)	DS5250 0060	**15-350-111C**	879.75

LOOKING FOR PIPET JARS?

Fisher Scientific offers a selection of Pipet Jars, ideal for soaking or storing pipets and glassware.

Visit www.fishersci.com and search for Pipet Jars

Boekel* Stainless-Steel Pipet Washers

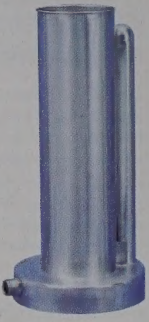
Complete water change occurs every 60 to 70 seconds, depending on flowrate

Pipet Washer

- Uses intermittent siphon to set up turbulent "fill-and-empty" action to wash away dirt and grime from serological and other pipets
- Water inlet above chamber creates air gap to prevent backflow of contaminated contents into water supply in case of sudden system-pressure loss
- Hot or cold water enters bottom of washer through ½" (1.3cm) IPS inlet; drains through 1" (2.5cm) IPS outlet at base

Combination Washer and Dryer

- Includes 195w immersion heating unit to dry pipets in one hour
- When washing and rinsing are completed, water supply is turned off and heated air circulates through cylinder



15-350-5

ORDERING INFORMATION:

Combination Washer and Dryer electrical requirements: 115V, 195w.

INCLUDES:

Washers include pipet holder; cleaning jar sold separately

Description	Diameter × Height	Mfr. No.	Cat. No.	Each
Washer Only	6 × 25¼" (15 × 64cm)	137400	**15-350-5**	822.53
Combination Washer and Dryer	6 × 25¼" (15 × 64cm)	137100	**15-350-15**	1092.85

Boekel* Stainless-Steel Pipet Dryer

Evaporates moisture from pipets by circulating hot air over all surfaces

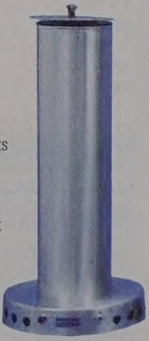
- Holds 200 pipets up to 14¾" long (37.5cm)
- Accepts any standard pipet holder up to 5½" in diameter (14cm)
- Mounted on 10½" diameter (27cm) base

ORDERING INFORMATION:

For use with 15-350-5 Pipet Washer and metal baskets only. Electrical requirements: 115V, 275w

INCLUDES:

Neon pilot lamp and toggle switch, without pipet rack



09-200

Dia. × H	Mfr. No.	Cat. No.	Each
5½ diameter × 23½"H (14 × 60cm)	1372	**09-200**	623.44

PIPETTERS

SINGLE-CHANNEL, AIR DISPLACEMENT

*Fisherbrand** Finnpipette* II Single-Channel Pipetters

Fully autoclavable—for absolute sterility

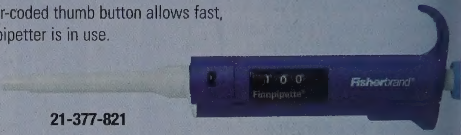
Eleven models with adjustable volumes ranging from 0.2µL to 10mL. Large, color-coded thumb button allows fast, accurate volume setting that is digitally displayed and easy to read even when pipetter is in use.

Feature

- Fast-dial system allows 0.1µL fine adjustment
- Microsize pipetters include "super blow-out" feature that ensures a high level of precision and accuracy at low-volume settings
- Telescopic piston boosts the power of the blow-out step, preventing the capillary action that can hinder delivery of residual liquid
- Soft-touch tip ejection—a gearing mechanism that produces increased downward force for tip release—also helps relieve hand stress
- Reverse pipetting mode allows pipetting of viscous and surface-active solutions
- Easy in-lab calibration using provided tool
- Adhesive safety label can be personalized to ensure easy identification

Design

- Lightweight, ergonomic design with modified "grippy" finger rest and rounded handgrip defends against fatigue
- Slim body allows entry into narrow vials
- Made from inert, biologically inactive polymers
- Pipetter easily disassembles for cleaning or parts replacement
- Stick-on hanger allows storage on shelves, counters, or almost any surface with a square edge



21-377-821

ORDERING INFORMATION:
For optimum performance, use Fisherbrand SureOne*, Fisherbrand Sure Fit* Ergo F tips or Thermo Scientific* Finntip* pipet tips. Also compatible with the following Fisherbrand tips: Redi-Tip* Pipet Tips, Standardization, Low Retention, Micro Tips, SureSeal* Barrier Tips, Aerosol Barrier Tips, Large Orifice, Gel Loading, Stack Rack Space-Saver, and SureGrip*.

INCLUDES:
Calibration certificate, in-lab calibration tool

WARRANTY:
Three years

Range	Increments	Accuracy†	Precision (CV)†	Color Code	Cat. No.	Each
0.2 to 2µL Micro	0.01µL	±12 to 2.5%	10 to 2%	Pink	**21-377-814**	250.00
0.5 to 10µL Micro	0.1µL	±2.5 to 1.0%	2.0 to 0.5%	Gray	**21-377-815**	254.00
0.5 to 10µL	0.1µL	±3.5 to 1.0%	3.0 to 0.8%	Gray	**21-377-816**	254.00
2 to 20µL	0.1µL	±3.0 to 1.0%	1.5 to 0.4%	Orange	**21-377-817**	254.00
5 to 50µL	0.5µL	±3.0 to 0.6%	2.5 to 0.3%	Orange	**21-377-818**	254.00
10 to 100µL	1µL	±3.0 to 0.8%	1.0 to 0.2%	Yellow	**21-377-819**	254.00
20 to 200µL	1µL	±1.8 to 0.6%	0.7 to 0.2%	Yellow	**21-377-820**	254.00
100 to 1000µL	5µL	±1.0 to 0.6%	0.6 to 0.2%	Blue	**21-377-821**	254.00
200 to 1000µL	5µL	±0.9 to 0.6%	0.3 to 0.2%	Blue	**21-377-822**	254.00
1 to 5mL	0.05mL	±0.8 to 0.5%	0.3 to 0.2%	Green	**21-377-823**	254.00
2 to 10mL	0.1mL	±1.0 to 0.5%	0.3 to 0.2%	Red	**21-377-824**	277.00

† When a range is given, the first value applies to the lowest dispensed volume, and the second, to the highest dispensed volume, with one exception: for the 0.5 to 10µL pipetter, the first value is for a dispensed volume of 1µL.

*Fisherbrand** Finnpipette* II Pipetter Set

Set of four single-channel pipetters with volume ranges of 0.5 to 10µL, 5 to 50µL, 20 to 200µL, and 100 to 1000µL (Cat. Nos. 21-377-816, -818, -820, and -821).

INCLUDES
Pipetters stand

SPECIFICATIONS

Range	Increments	Accuracy†	Precision†	Color Code	Cat. No.
0.5-10µL	0.1µL	±3.5 to 1.0%	3.0 to 0.8%	Gray	21-377-816
5-50µL	0.5µL	±3.0 to 0.6%	2.5 to 0.3%	Orange	21-377-818
20-200µL	1µL	±1.8 to 0.6%	0.7 to 0.2%	Yellow	21-377-820
100-1000µL	5µL	±1.0 to 0.6%	0.6 to 0.2%	Blue	21-377-821

† When a range is given, the first value applies to the smallest volume in the stated range; the second, to the largest volume, with one exception: for the 0.5 to 10µL pipetter, the first value is for a dispensed volume of 1µL.

21-377-328

Ranges	Cat. No.	
0.5–10, 5–50, 20–200, 100–1000µL	**21-377-328**	101

Fisherbrand* Finnpipette* II Fixed-Volume Pipetters

uperior comfort, accuracy and precision

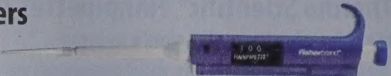
day's laboratories require sophisticated and reliable liquid handling chnology that allows its users to cope with the ever-increasing demands their daily work. This fixed-volume pipetter combines a sleek, ergonom- design, advanced features and uncompromising performance to better spond to those needs.

- Ideal for a variety of general pipetting applications
- Comfortable, lightweight handle with finger rest
- Fully autoclavable
- Patented soft-touch tip ejector (50% reduced force)
- Easy in-lab calibration and service

RDERING INFORMATION:

r optimum performance, use Fisherbrand SureOne*, Fisherbrand ureFit* Ergo F tips or Thermo Scientific* Finntip* pipet tips.

so compatible with the following Fisherbrand tips: Redi-Tip* pet Tips, Standardization, Low Retention, Micro Tips, SureSeal* rrier Tips, Aerosol Barrier Tips, Large Orifice, Gel Loading, ack Rack Space-Saver, and SureGrip*.



14-487-72

WARRANTY:

Three years

Volume	Accuracy	Precision (CV)	Cat. No.	Each
1µL	±4.0%	4.0%	**14-487-65**	169.00
2µL	±2.5%	2.0%	**14-487-66**	169.00
5µL	±1.4%	1.4%	**14-487-67**	169.00
10µL	±0.9%	0.8%	**14-487-68**	169.00
20µL	±0.6%	0.5%	**14-487-69**	169.00
25µL	±0.6%	0.5%	**14-487-70**	169.00
50µL	±0.6%	0.4%	**14-487-71**	169.00
100µL	±0.4%	0.3%	**14-487-72**	169.00
200µL	±0.4%	0.3%	**14-487-73**	169.00
250µL	±0.4%	0.3%	**14-487-74**	169.00
500µL	±0.3%	0.3%	**14-487-75**	169.00
1000µL	±0.3%	0.3%	**14-487-76**	169.00
2000µL	±0.3%	0.2%	**14-487-77**	169.00
3000µL	±0.3%	0.2%	**14-487-78**	169.00
5000µL	±0.3%	0.2%	**14-487-79**	169.00
10mL	±0.3%	0.2%	**14-487-80**	173.00

ermo Scientific* Finnpipette* Digital Pipetters

ly autoclavable

ustable volume ranges from 0.2µL to 10mL. Large, color-coded thumb on allows fast, accurate volume setting that is digitally displayed and to read even while pipetter is in use.

uper blow-out" feature on micro-size (0.2 to 2µL and 0.5 to 10µL) pipet- rs ensures a new level of accuracy and precision at low-volume settings

lescopic piston boosts the power of the blow-out step, preventing the pillary action that can hinder delivery of residual liquid

im body allows entry into narrow vials

ghtweight design with modified grippy finger rest and rounded ndgrip defend against fatigue

ft-touch tip ejection, an innovative gearing mechanism that produces creased downward force for tip release, works to relieve hand stress

rable design disassembles for cleaning or parts replacement

libration is simply performed using tool (provided)

- Convenient stick-on shelf hanger
- Adhesive safety label covered by clear plastic window can be personalized for easy identification

ORDERING INFORMATION:

Accessory stand is available for storage of up to eight pipetters. Optimize performance by using Thermo Scientific Finntip* tips. Also compatible with all Fisherbrand* universal-fit tips, Fisherbrand SureOne*, Sure-Fit Ergo F, Extended Length, and Large-Orifice tips.

INCLUDES:

Calibration certificate, in-lab calibration tool

WARRANTY:

Five years with Web registration

21-377-190

ge	Increments	Accuracy	Precision	Finntip Type	Color Code	Mfr. No.	Cat. No.	Each
o 2µL (Ultra Micro)	0.01µL	±10 to ±2.5%	10 to 2.5%	Micro	Pink	4500000	**21-377-190**	275.00
o 10µL (Ultra Micro)	0.1µL	±1 to ±2.5	0.5 to 2%	Micro 10, 20, 50	Gray	4500010	**21-377-191**	275.00
o 10µL	0.1µL	±1 to ±3.5	0.8 to 3%	250 Universal	Gray	4500020	**21-377-192**	275.00
20µL	0.1µL	±3.0 to ±1.0	2.5 to 0.4%	250 Universal; 200 Ext.	Orange	4500080	**21-377-287**	275.00
40µL	0.5µL	±2 to ±0.5	2.5 to 0.3%	60; Universal; 300; 60 Ext.	Orange	4500100	**21-377-193**	275.00
100µL	1.0µL	±0.8 to ±3.0	1.0 to 0.2%	250 Universal; 200 Ext., 300	Yellow	4500110	**21-377-288**	275.00
200µL	1.0µL	±0.6 to ±1.8	0.7 to 0.2%	250 Universal; 200 Ext., 300	Yellow	4500090	**21-377-289**	275.00
to 1000µL	5.0µL	±0.6 to ±0.9	0.5 to 0.3%	1000, 1000 Extended	Blue	4500050	**21-377-195**	275.00
to 10,000µL	5.0µL	±0.6 to ±1.0	0.6 to 0.2%	1000, 1000 Ext.	Blue	4500120	**21-377-290**	275.00
5mL	0.05mL	±0.5 to ±0.8	0.2 to 0.3%	5mL	Green	4500060	**21-377-196**	275.00
10mL	0.1mL	±0.5 to ±1.0	0.2 to 0.3%	10mL	Red	4500070	**21-377-197**	279.00

ACCESSORIES

ipetter Stand

- Stand holds up to eight pipetters (six when equipped with shelf hangers)—any combination of Thermo Scientific* pipetters and Fisherbrand* Finnpipette* single-channel and multichannel pipetters
- Mini stand holds three pipetters

Description	Mfr. No.	Cat. No.	Each
Pipetter Stand (holds 8)	9420-290	**14-387-14**	45.00
Mini Pipetter Stand (holds 3)	9420-320	**14-387-15**	35.00

Thermo Scientific* Finnpipette* Digital Fixed-Volume Pipetters

Ideal for pipetting of a single volume

Design takes advantage of user's natural pipetting movements; facilitates repetitive routine pipetting of a single volume by saving the user from constant physical strain and other work-related injuries.

- Offer the same features as other Thermo Scientific Finnpipette Digital pipetters
- Streamlined ergonomic design
- Super blow-out feature on micro-size pipetters (1-50µL) ensures accuracy and precision at low-volume settings
- Soft-touch tip ejection produces increased downward force for tip release, relieving hand stress
- Disassembles easily for cleaning or parts replacement
- Adhesive safety label can be personalized for easy identification
- Fully autoclavable

ORDERING INFORMATION:
Accessory stand is available for storage of up to six pipetters (Cat. No. 14-387-14, see p. 1405). Optimize performance by using Thermo Scientific Finntip* Pipetter tips (p. 1429-1430). Also compatible with all Fisherbrand* universal-fit tips, SureOne*, SureFit Ergo F, Extended Length, and Large-Orifice tips.

WARRANTY:
Five years, with Web registration

21-377-221

Volume	Accuracy	Precision (CV)	Finntip Type	Mfr. No.	Cat. No.	E
2µL	±2.5%	2.0%	10, 20, 50	4501-010	**21-377-239**	19
5µL	±1.4%	1.4%	10, 20, 50	4501-020	**21-377-212**	19
10µL	±0.9%	0.8%	10, 20, 50	4501-030	**21-377-213**	19
20µL	±0.6%	0.5%	250 Univ., 300, 200 Ext.	4501-040	**21-377-214**	19
25µL	±0.6%	0.5%	250 Univ., 300, 200 Ext.	4501-050	**21-377-215**	19
50µL	±0.6%	0.4%	250 Univ., 300, 200 Ext.	4501-060	**21-377-216**	19
100µL	±0.4%	0.3%	250 Univ., 300, 200 Ext.	4501-070	**21-377-217**	19
200µL	±0.4%	0.3%	250 Univ., 300, 200 Ext.	4501-080	**21-377-218**	19
250µL	±0.4%	0.3%	1000, 1000 Ext.	4501-090	**21-377-219**	19
500µL	±0.3%	0.3%	1000, 1000 Ext.	4501-100	**21-377-220**	19
1000µL	±0.3%	0.3%	1000, 1000 Ext.	4501-110	**21-377-221**	19
2000µL	±0.3%	0.2%	5mL	4501-120	**21-377-222**	19
3000µL	±0.3%	0.2%	5mL	4501-130	**21-377-223**	19
5000µL	±0.3%	0.2%	5mL	4501-140	**21-377-224**	19
10,000µL	±0.3%	0.2%	10mL	4501-150	**21-377-225**	24

Thermo Scientific* Finnpipette* Focus Pipetters

Available with long or short tip cones

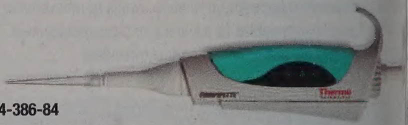
Model with short tip cone is ideal for microplate pipetting or work under fume hoods; longer tip-cone version allows access into deep vessels.

Fixed-Volume Models

- Ideal for repeated pipetting of a single volume
- 1 to 25µL models feature "super blow-out"
- New streamlined design, soft-touch tip ejection
- Constructed of tough, lightweight polymers; fully autoclavable for absolute sterility
- Easily disassembled for cleaning

Adjustable-Volume Models

- Feature "fast-dial" system with 0.01µL fine adjustment on microvolumes
- Large, color-coded thumb button allows fast, accurate volume setting
- Digital display is easy to read even while pipetter is in use
- "Super blow-out" feature on microsize pipetters ensures a new level of accuracy and precision at low-volume settings
- Telescopic piston boosts the power of the blow-out step, overcoming the capillary action that can hinder delivery of residual liquid
- Constructed of tough, lightweight polymers; fully autoclavable for absolute sterility



14-386-84

- Lightweight, ergonomic design defends against user fatigue
- Soft-touch tip ejection, an innovative gearing mechanism that produc increased downward force for tip release, also works to relieve hanc stress
- "Grippy" finger rest ensures a secure grip and correct pipetting angle
- Calibration certificate guarantees accuracy and precision
- Calibration is simply performed using tool (provided)
- Pipetter disassembles easily for cleaning or parts replacement
- Stick-on shelf hanger allows you to store pipetter on a shelf, counte almost any surface with a square edge

ORDERING INFORMATION:
For use with Finntip* tips. Also compatible with all Fisherbrand* Unive Fit tips, Fisherbrand SureOne*, Fisherband Ergo-F, Large Orifice, Large Orifice/Genomic Aerosol Barrier, and Low-Retention tips.

WARRANTY:
Five years, with Web registration

Contd. on next p

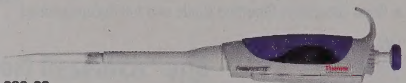
*Trademark. See Trademark Reference.

ermo Scientific* Finnpipette* Focus Pipetters, Contd.

justable-Volume Models

nge	Increments	Accuracy†	Precision†	Finntip* Type	Short Tip Cone		Long Tip Cone		
					Mfr. No.	Cat. No.	Mfr. No.	Cat. No.	Each
to 3µL (Micro)	0.01µL	±10 to 2.5%	8.0 to 2.0%	10	4600100	**14-387-16**	4600150	**14-387-40**	305.00
to 5µL (Micro)	0.01µL	±3.5 to 1.0%	3.0 to 0.8%	10	4600110	**14-387-17**	4600160	**14-387-41**	305.00
o 10µL (Micro)	0.01µL	±2.5 to 1.0%	2.0 to 0.5%	10	4600080	**14-386-89**	4600170	**14-387-42**	305.00
o 10µL	0.01µL	±3.5 to 1.0%	3.0 to 0.5%	250 Univ., 200 Ext.	4600010	**14-386-82**	4600180	**14-387-43**	285.00
o 30µL (Micro)	0.1µL	±2.5 to 0.8%	3.0 to 0.4%	50	4600120	**14-387-18**	4600190	**14-387-44**	285.00
o 30µL	0.1µL	±3.5 to 0.8%	3.0 to 0.4%	250 Univ., 200 Ext., Flex 300	----	----	4600200	**14-387-45**	285.00
o 50µL (Micro)	0.1µL	±3.0 to 0.6%	2.5 to 0.3%	50	4600090	**14-387-19**	4600210	**14-387-46**	285.00
o 50µL	0.1µL	±3.0 to 0.6%	2.5 to 0.3%	250 Univ., 200 Ext., Flex 300	4600020	**14-386-83**	4600220	**14-387-47**	285.00
to 100µL	0.1µL	±3.0 to 0.8%	1.0 to 0.2%	250 Univ., 200 Ext., Flex 300	4600030	**14-386-84**	4600230	**14-387-48**	285.00
to 300µL	1µL	±1.5 to 0.6%	0.6 to 0.2%	300, Flex 300	4600040	**14-386-85**	4600240	**14-387-49**	285.00
to 1000µL	1µL	±1.0 to 0.6%	0.6 to 0.2%	1000, 1000 Ext., Flex 1000	4600050	**14-386-86**	4600250	**14-387-50**	285.00
to 5mL	0.01mL	±2.0 to 0.5%	0.8 to 0.2%	5mL	4600400	**14-386-87**	----	----	285.00
o 10mL	0.01mL	±2.0 to 0.5%	0.8 to 0.2%	10mL, Flex 10mL Ext.	4600410	**14-386-88**	----	----	305.00

en a range is given, the first value applies to the smallest volume in the stated range; the second, to the largest volume.



14-386-98

ed-Volume Models

ume	Accuracy	Precision	Finntip Type	Short Tip Cone		Long Tip Cone		
				Mfr. No.	Cat. No.	Mfr. No.	Cat. No.	Each
L	±4.0%	4.0%	10, 50, 20	4601000	**14-386-98**	4601160	**14-387-51**	204.00
L	±2.5%	2.0%	10, 50, 20	4601010	**14-386-99**	4601170	**14-387-52**	204.00
L	±1.4%	1.4%	10, 50, 20	4601020	**14-387-00**	4601180	**14-387-53**	204.00
µL	±0.9%	0.8%	10, 50, 20	4601030	**14-387-01**	4601190	**14-387-54**	206.00
µL	±0.6%	0.5%	250 Universal; 300; 200 Ext.	4601040	**14-387-02**	4601200	**14-387-55**	206.00
µL	±0.6%	0.5%	250 Universal; 300; 200 Ext.	4601050	**14-387-03**	4601210	**14-387-56**	206.00
µL	±0.6%	0.4%	250 Universal; 300; 200 Ext.	4601060	**14-387-04**	4601220	**14-387-57**	206.00
0µL	±0.4%	0.3%	250 Universal; 300; 200 Ext.	4601070	**14-387-05**	4601230	**14-387-58**	206.00
0µL	±0.4%	0.3%	250 Universal; 300; 200 Ext.	4601080	**14-387-06**	4601240	**14-387-59**	206.00
0µL	±0.4%	0.3%	250 Univ., 300	4601090	**14-387-07**	4601250	**14-387-60**	206.00
0µL	±0.3%	0.3%	1000; 1000 Ext.	4601100	**14-387-08**	4601260	**14-387-61**	206.00
00µL	±0.3%	0.3%	1000; 1000 Ext.	4601110	**14-387-09**	4601270	**14-387-62**	201.00
00µL	±0.3%	0.2%	5mL	4601120	**14-387-10**	----	----	201.00
00µL	±0.3%	0.2%	5mL	4601130	**14-387-11**	----	----	201.00
00µL	±0.3%	0.2%	5mL	4601140	**14-387-12**	----	----	201.00
nL	±0.3%	0.2%	10mL	4601150	**14-387-13**	----	----	250.00

ermo Scientific* Finnpipette* cus* Pipetters Set

ludes four pipetters and a stand

- omes with four single-channel, variable-volume, ort-tip-cone pipetters and a carousel stand (21-377-002)
- petter volumes included are 1-10µL (14-386-82), 50µL (14-386-83), 30-300µL (14-386-85) and 0-1000µL (14-386-86)
- oth the 1-10 and the 5-50µL pipettes require a iversal 250µL tip

cription	Mfr. No.	Cat. No.	Each
tter Set	FOCUSSET	**14-387-20**	1019.00

ACCESSORIES

Carousel Stand

For up to six Thermo Scientific* Finnpipette* Focus* single-channel or multichannel pipetters

- ▸ Rotating, portable
- ▸ Transparent lid protects pipetters from contamination

21-377-002

Description	Mfr. No.	Cat. No.	Each
Carousel Stand (holds 6)	9420-340	**21-377-002**	114.00

Thermo Scientific* Finnpipette* Digital GLP Kits

Everything you need to start using the Finnpipette Digital pipetter

Kit 1 Includes:
- Three Thermo Scientific Finnpipette* pipetters from 0.5 to 1000µL
  - Digital 0.5-10µL Micro
  - Digital 10-100µL
  - Digital 100-1000µL
- Three-position linear benchtop stand
- Three Thermo Scientific Finntip* racks, each with 96 tips
- Good Laboratory Pipetting Guide and full documentation

Kit 2 Includes:
- Three Thermo Scientific Finnpipette* pipetters from 2 to 1000µL
  - Digital 2-20µL Micro
  - Digital 20-200µL
  - Digital 100-1000µL
- Three-position linear benchtop stand
- Three Thermo Scientific Finntip racks, each with 96 tips
- Good Laboratory Pipetting Guide and full documentation

WARRANTY:
Five years

Thermo
FINNPIPETTE

14-386-100

Description	Mfr. No.	Cat. No.	
Finnpipette Digital GLP Kit 1	4700410	**14-386-100**	50
Finnpipette Digital GLP Kit 2	4700420	**14-386-101**	50

Thermo Scientific* Finnpipette* Focus* GLP Kit

Complete kit containing three Finnpipette Focus pipetters

Kit Includes:
- Three Thermo Scientific Finnpipette* pipetters from 1 to 1000µL
  - Focus 1-10µL Micro (long)
  - Focus 10-100µL (long)
  - Focus 100-1000µL (long)
- Three-position linear benchtop stand
- Three Thermo Scientific Finntip* racks, each with 96 tips
- Good Laboratory Pipetting Guide andfull documentation

WARRANTY:
Five years

Thermo
FINNPIPETTE

14-386-102

Mfr. No.	Cat. No.	
4700430	**14-386-102**	54

Thermo Scientific* Finnpipette* Focus* GLP Kit Max

Contains four Finnpipette Focus pipetters with special rotating benchtop stand

Kit Includes:
- Four Thermo Scientific Finnpipette* pipetters from 1 to 10,000µL
  - Focus 1-10µL Micro (long)
  - Focus 10-100µL (long)
  - Focus 100-1000µL (long)
  - Focus 1-10mL
- Rotating six-position benchtop stand
- Four Thermo Scientific Finntip* racks with tips (24 × 10mL tips, 96 tips of other sizes)
- Good Laboratory Pipetting Guide and full documentation

WARRANTY:
Five years

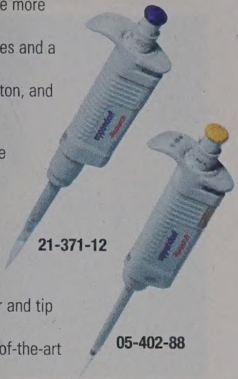
Thermo
FINNPIPETTE

14-386-103

Mfr. No.	Cat. No.	
4700400	**14-386-103**	7

ppendorf Research* Series 2100 Pipetters

signed for high performance, reliability and er comfort



21-371-12

05-402-88

nnovative features make everyday use more fficient, comfortable and strain-free

esigned with reduced operating forces and a arger, separate, tip-ejector button

ounded grip, reshaped operating button, and onger hand rest hook for better, more rgonomic handling

ower portion of pipetter can easily be emoved, cleaned and autoclaved

pendorf PhysioCare Concept teria focuses on all relevant pects of pipetting—the whole rson and process, not just the nd or device.

tegrated systems: Complete pipetter and tip ogram to fit any application

xceptional durability: Made of state-of-the-art aterials

ptimized form and function: Easy operation through all work steps

erfectly balanced: Fit comfortably in the hand, with models weighing to 30% less than other brands

tuitive operation: Color-coded pipetter and tip matching system for asy identification

inimal user exertion: Minimize stress; manual models require up to 0% less pipetting force

mple maintenance: Easy to clean, autoclave and repair

otal support: Certified and ready to use; calibration services also available

DERING INFORMATION:

patible with Eppendorf pipet tips (epTips). Pipetters are color coded rating button and volume display) to make it easy to recognize tip s in color-coded Eppendorf tip racks.

patible Fisherbrand* tips include all Universal-Fit tips, Extended-Length, Loading Aerosol Barrier, Large Orifice, Low-Retention, SureOne*, Grip*, and Aerosol-Barrier.

TIFICATION:

plied with an individual Certificate of Conformity

RRANTY:

e years

ies 2100 Fixed Volume

me	Inacc.	Imprec.	Mfr. No.	Cat. No.	Each
L	±1.2%	≤0.6%	22 44 305 4	**21-371-5**	195.00
L	±1.0%	≤0.3%	22 44 310 1	**21-371-6**	195.00
L	±1.0%	≤0.3%	22 44 315 1	**21-371-7**	195.00
L	±0.7%	≤0.3%	22 44 320 8	**21-371-8**	195.00
μL	±0.6%	≤0.2%	22 44 325 9	**21-371-9**	195.00
μL	±0.6%	≤0.2%	22 44 330 5	**21-371-10**	195.00
μL	±0.6%	≤0.2%	22 44 335 6	**21-371-11**	195.00
μL	±0.6%	≤0.2%	22 44 338 1	**21-371-14**	195.00
μL	±0.6%	≤0.2%	22 44 340 2	**21-371-12**	195.00
μL	±0.6%	≤0.2%	22 44 345 3	**21-371-13**	195.00

Series 2100 Adjustable Volume

Range	Incre.	Inacc.†	Imprec.†	Mfr. No.	Cat. No.	Each
0.1 to 2.5μL‡	0.002μL	±12.0 to 1.4%	≤6.0 to 0.7%	22 47 185 6	**05-402-85**	289.00
0.5 to 10μL‡	0.01μL	±2.5 to 1.0%	≤1.8 to 0.4%	22 47 190 2	**05-402-86**	289.00
2 to 20μL‡	0.02μL	±5.0 to 1.0%	≤1.5 to 0.3%	22 47 195 3	**05-402-87**	289.00
10 to 100μL	0.1μL	±3.0 to 0.8%	≤1.0 to 0.2%	22 47 200 3	**05-402-88**	289.00
20 to 200μL	0.2μL	±2.5 to 0.6%	≤0.7 to 0.2%	22 47 205 4	**05-402-89**	289.00
100 to 1000μL	1.0μL	±3.0 to 0.6%	≤0.6 to 0.2%	22 47 210 1	**05-402-90**	289.00
500 to 5000μL	5.0μL	±2.4 to 0.6%	≤0.6 to 0.15%	22 47 215 1	**05-402-91**	289.00
1 to 10mL	----	±3.0 to 0.6%	≤0.6 to 0.15%	22 47 220 8	**05-403-121**	289.00

† For adjustable-volume pipetters, the first value applies to the smallest volume in the stated range; the second, to the largest volume, with one exception: for the 0.1 to 2.5μL pipetter, the first value is for a dispensed volume of 0.2μL.

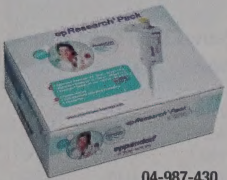
‡ Ultra micro models.

Eppendorf Research* and Reference Pipetters: Three-Packs

NEW

Convenient epResearch³ Packs and epReference³ Packs include everything you need in one box

epResearch³ Pack includes:



04-987-430

- Three PhysioCare Concept* Research single-channel pipetters
- Three refillable boxes of epTIPS pipet tips
- Three wall-mounting pipetter holders
- Eppendorf's pipetter calibration SOP manual
- Four collectable pipetter pens

epReference³ Pack includes:

- Three PhysioCare Concept* Reference single-channel pipetters
- Three refillable boxes of epTIPS pipet tips
- Three wall-mounting pipetter holders
- Eppendorf's pipetter calibration SOP manual
- Four collectable pipetter pens

Description	Mfr. No.	Cat. No.	Each
epResearch³ Pack (pipet volumes 10μL, 100μL, 1000μL)	022474359	**04-987-430**	750.00
epResearch³ Pack (pipet volumes 20μL, 200μL, 1000μL)	022474367	**04-987-431**	750.00
epReference³ Pack (pipet volumes 10μL, 100μL, 1000μL)	022470388	**04-987-433**	809.00
epReference³ Pack (pipet volumes 20μL, 200μL, 1000μL)	022470396	**04-987-434**	809.00

Eppendorf Reference* Series 2000 Pipetters

Compact design includes a single, multifunctional button that controls both pipetting and tip ejection

Designed for pipetting accuracy, a smooth stroke, and superior operating comfort.

- Eppendorf pipetter/tip system ensures outstanding accuracy and precision
- Ejection sleeve can be removed to fit into smaller vessels
- Smooth-running piston is corrosion-free and chemically resistant
- Lateral volume locking safeguards volume selected
- UV-resistant and completely autoclavable without any impairment of accuracy or precision
- Supplied with individual labels for identification
- User calibratable

Eppendorf PhysioCare Concept* Criteria focuses on all relevant aspects of pipetting—the whole person and process, not just the hand or device.

- Integrated systems: Complete pipetter and tip program to fit any application
- Exceptional durability: Made of state-of-the-art materials
- Optimized form and function: Easy operation through all work steps
- Perfectly balanced: Fit comfortably in the hand, with models weighing up to 30% less than other brands
- Intuitive operation: Color-coded pipetter and tip matching system for easy identification
- Minimal user exertion: Minimize stress; manual models require up to 50% less pipetting force
- Simple maintenance: Easy to clean, autoclave and repair
- Total support: Certified and ready to use; calibration services also available

Series 2000 Fixed Volume

Volume	Accu.[†]	Prec.[†]	Mfr. No.	Cat. No.	Each
1µL[‡]	±2.5%	≤1.8%	22 47 040 0	**05-402-52**	266.00
2µL[‡]	±2.0%	≤1.2%	22 47 045 1	**05-402-53**	266.00
5µL[‡]	±1.5%	≤0.8%	22 47 050 7	**05-402-54**	266.00
10µL[‡]	±1.0%	≤0.5%	22 47 055 8	**05-402-55**	266.00
10µL	±1.0%	≤0.5%	22 47 060 4	**05-402-56**	266.00
15µL	±1.0%	≤0.5%	22 47 065 5	**05-402-57**	286.00
20µL	±0.8%	≤0.3%	22 47 075 2	**05-402-58**	266.00
25µL	±0.8%	≤0.3%	22 47 080 9	**05-402-59**	266.00
30µL	±0.8%	≤0.3%	22 47 085 0	**05-402-60**	286.00
40µL	±0.8%	≤0.3%	22 47 090 6	**05-402-61**	286.00
50µL	±0.7%	≤0.3%	22 47 095 7	**05-402-62**	266.00
75µL	±0.7%	≤0.3%	22 47 100 7	**05-402-63**	286.00
80µL	±0.7%	≤0.3%	22 47 105 8	**05-402-64**	285.00
90µL	±0.7%	≤0.3%	22 47 110 4	**05-402-65**	285.00
100µL	±0.6%	≤0.2%	22 47 115 5	**05-402-66**	266.00
150µL	±0.6%	≤0.2%	22 47 120 1	**05-402-67**	286.00
200µL	±0.6%	≤0.2%	22 47 125 2	**05-402-68**	266.00
250µL	±0.6%	≤0.2%	22 47 130 9	**05-402-69**	266.00
300µL	±0.6%	≤0.2%	22 47 135 0	**05-402-70**	266.00
400µL	±0.6%	≤0.2%	22 47 140 6	**05-402-71**	286.00
500µL	±0.6%	≤0.2%	22 47 145 7	**05-402-72**	266.00
750µL	±0.6%	≤0.2%	22 47 150 3	**05-402-73**	286.00
800µL	±0.6%	≤0.2%	22 47 155 4	**05-402-74**	285.00
900µL	±0.6%	≤0.2%	22 47 160 1	**05-402-75**	285.00
1000µL	±0.6%	≤0.2%	22 47 165 1	**05-402-76**	265.00
1500µL	±0.6%	≤0.2%	22 47 170 8	**05-402-77**	265.00
2000µL	±0.6%	≤0.2%	22 47 175 9	**05-402-78**	266.00
2500µL	±0.6%	≤0.2%	22 47 180 5	**05-402-79**	266.00

[†] Ultra micro models.

05-402 Series

ORDERING INFORMATION:

Fixed-volume models accept Eppendorf Geloader* tips; 20µL ultra micro tips; 200µL tips; and 300µL, 1000µL, and 1.25mL tips. Adjustable-volum models accept these, plus 2.5µL ultra micro tips and 2.5 and 5mL tips. Equivalent sizes of epTips tips are also compatible. Compatible Fisherbrand* tips include all Universal-Fit tips, Extended-Length, Gel-Loading Aerosol Barrier, Large Orifice, Low-Retention, SureOne*, SureG and Aerosol-Barrier.

CERTIFICATIONS:

Supplied with individual Certificate of Conformity.

WARRANTY:

Three years

Series 2000 Adjustable Volume

Range (µL)	Incre. (µL)	Accu.[†] (%)	Prec.[†] (%)	Mfr. No.	Cat. No.	E
0.1 to 2.5[‡]	0.002	±12.0 to 1.4%	≤6.0 to 0.7%	22 47 000 1	**05-402-44**	34
0.5 to 10[‡]	0.01	±5.0 to 1.0%	≤2.8 to 0.4%	22 47 005 1	**05-402-45**	34
2 to 20[‡]	0.02	±3.0 to 0.8%	≤2.0 to 0.3%	22 47 010 8	**05-402-46**	34
2 to 20	0.02	±5.0 to 1.0%	≤1.5 to 0.3%	22 47 015 9	**05-402-47**	34
10 to 100	0.1	±3.0 to 0.8%	≤0.7 to 0.15%	22 47 020 5	**05-402-48**	34
50 to 200	0.2	±1.0 to 0.6%	≤0.3 to 0.2%	22 47 025 6	**05-402-49**	34
100 to 1000	1.0	±3.0 to 0.6%	≤0.3 to 0.2%	22 47 030 2	**05-402-50**	34
500 to 2500	2.0	±1.5 to 0.6%	≤0.3 to 0.2%	22 47 035 3	**05-402-51**	34

[†] For adjustable-volume pipetters, the first value applies to the smallest volume in the st range; the second, to the largest volume, with one exception: for the 0.1 to 2.5µL pipe the first value is for a dispensed volume of 0.2µL.

[‡] Ultra micro models.

orning* Lambda* Single-Channel ipetters

esigned for accuracy and ease of use

07-200-809

ck-turn volume adjustment knob and easy-to-read digital volume display vide smooth, easy volume selection.

lunger buttons are color coded by volume range for quick identification

ip ejector sleeve can be removed for use in narrow tubes

omfort grip; ergonomically designed handle with contoured handgrip rovides maximum comfort—even after repeated use

asily dismantled and reassembled

esistant to phenol, chloroform, and most other commonly used boratory reagents

ower assembly is fully autoclavable

DERING INFORMATION:

npatible with all Fisherbrand* universal-fit tips.

LUDES:

tory calibration results; in-lab recalibration tool

RRANTY:

ee years

ge	Incre.	Accu.†	Prec.†	Mfr. No.	Cat. No.	Each
to 2.0µL	0.002µL	±12.0 to 1.4%	≤6.0 to 0.7%	4959	**07-200-809**	390.67
to 10µL	0.01µL	±5.0 to 1.0%	≤2.8 to 0.4%	4960	**07-200-810**	390.67
20µL	0.02µL	±5.0 to 1.0%	≤1.5 to 0.3%	4961	**07-200-811**	361.75
o 100µL	0.1µL	±3.0 to 0.8%	≤1.0 to 0.2%	4962	**07-200-812**	361.75
o 200µL	0.2µL	±2.5 to 0.6%	≤0.7 to 0.2%	4963	**07-200-813**	361.75
to 1000µL	1µL	±3.0 to 0.6%	≤0.6 to 0.2%	4964	**07-200-814**	361.75

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first value applies to the smallest volume in the stated range; the second, to the largest me, with one exception: for the 0.1 to 2.0µL pipetter, the first value is for a dispensed me of 0.2µL.

MULTICHANNEL, AIR DISPLACEMENT

*Fisherbrand** Finnpipette* II Digital Multichannel Pipetters

Advanced pipetting performance in a lightweight, ergonomic design

- 8- and 12-channel pipetters, ideal for multiplate applications
- Patented minimum force allows tips to be ejected with just a gentle push
- Reverse pipetting mode allows pipetting of viscous and surface-active solutions
- Made from inert, biologically inactive polymers
- Easy to disassemble for routine maintenance and cleaning
- Serial number and calibration certificate included
- Easy, in-lab calibration

21-377-830

Superior Design

- Rounded hand grip and modified grippy finger rest ensure secure grip and correct pipetting angle; help minimize hand fatigue
- Large digital display is easy to read, even when pipetting
- Large color-coded knob makes it easy to set and identify desired volume; fast-dial system allows 0.1µL fine adjustment
- Separate soft-touch tip ejector relieves hand stress, prevents accidental detipping
- Super blowout feature on micro models ensures highest level of accuracy and precision at low-volume settings

ORDERING INFORMATION:

For optimum performance, use Fisherbrand SureOne*, Fisherbrand SureFit* Ergo F tips or Thermo Scientific* Finntip* pipet tips. Also compatible with the following Fisherbrand tips: Redi-Tip* Pipet Tips, Standardization, Low Retention, Micro Tips, SureSeal* Barrier Tips, Aerosol Barrier Tips, Large Orifice, Gel Loading, Stack Rack Space-Saver, and SureGrip*.

WARRANTY:

Three years

Range	Increments	Color Code	Cat. No.	Each
8-Channel				
0.5 to 10µL, Micro	0.1µL	Gray	**21-377-825**	596.00
5 to 50µL	0.5µL	Orange	**21-377-827**	596.00
50 to 300µL	5µL	Yellow	**21-377-829**	596.00
12-Channel				
0.5 to 10µL, Micro	0.1µL	Gray	**21-377-826**	747.00
5 to 50µL	0.5µL	Orange	**21-377-828**	747.00
50 to 300µL	5µL	Yellow	**21-377-830**	749.00

Thermo Scientific* Finnpipette* Focus Plus Multichannel Pipetters

Speed up repeat dispensing of reagents into microplates

Available with 8, 12, or 16 channels in 1-10, 5-50 and 30-300µL volume ranges.

- Outstanding accuracy and precision
- Super blow-out for 0.1-10µL volumes
- Comfortable, ergonomic design; same advantages as the Finnpipette Focus single-channel pipetter
- Grippy finger rest lets pipetter balance at optimum pipetting angle
- Soft, snap-on handle can be selected from three sizes: small, medium, or large
- More comfortable and less tiring over long periods of repetitive pipetting
- Soft-touch tip ejection requires less effort
- Fully autoclavable

ORDERING INFORMATION:
For use with Thermo Scientific Finntip* tips. Also compatible with all Fisherbrand* universal-fit tips, Large Orifice, Large Orifice/Genomic Aerosol Barrier, and Low Retention tips.

WARRANTY:
Three years

14-386-09

Range	Increments	Accuracy†	Precision†	Finntip	Color Code	Mfr. No.	Cat. No.	Eac
8-Channel								
1 to 10µL	0.1µL	±2.4/±12%	1.6/8.0%	10, 20, 50	Pink	4610100	**14-386-08**	638.0
5 to 50µL	0.1µL	±1.5/±5%	0.7/2.0%	250 Univ., 200 Ext.	Yellow	4610120	**14-386-09**	638.0
30 to 300µL	1µL	±1/±5%	0.3/2.0%	300, Flex 300	Orange	4610140	**14-386-12**	638.0
12-Channel								
1 to 10µL	0.1µL	±2.4/±12%	1.6/8.0%	10, 20, 50	Pink	4610110	**14-386-13**	781.0
5 to 50µL	0.1µL	±1.5/±5%	0.7/2.0%	250 Univ., 200 Ext.	Yellow	4610130	**14-386-14**	781.0
30 to 300µL	1µL	±1/±5%	0.3/2.0%	300, Flex 300	Orange	4610150	**14-386-15**	781.0
16-Channel								
5 to 50µL	0.1µL	±1.5/±5%	0.7/2.0%	50	Turquoise	4610170	**14-386-16**	842.0

† When a range is given, the first value applies to the smallest volume in the stated range; the second, to the largest volume, with one exception: for the 0.5 to 10µL pipetter, the first volume is for a dispensed volume of 1µL.

Thermo Scientific* Finnpipette* Digital Multichannel Pipetters

Ideal where sterility in liquid handling is a must

- Set volume by turning the thumb button and observing the big digital display—no scales to align
- Thumb button is color coded according to volume range
- "Super-blow-out" feature on microvolume models (Cat. Nos. 21-377-198 and 21-377-365) prevents capillary action and ensures clean delivery of micro-sized drops; provides greater accuracy/precision of low-volume deliveries, and less waste of expensive reagents
- Tips can be ejected with just a gentle push, thanks to an innovative gearing mechanism
- Fully autoclavable (no disassembly required)
- Marked with a serial number to aid in traceability, and supplied with calibration certificate to verify accuracy and precision
- Can be recalibrated in the lab using supplied tools

Design

- Lightweight construction and rounded hand grip help prevent hand fatigue
- Tip ejector is separate from the operating button to prevent accidental detipping
- Modified "grippy" finger rest ensures correct pipetting angle
- Can be easily disassembled for routine maintenance or cleaning
- Clear plastic window on top of finger rest covers an adhesive label where you can write your name or other identifying information

ORDERING INFORMATION:
Microvolume models accept Thermo Scientific Finntip* Micro tips; all other models accept Thermo Scientific Finntip Universal and Finntip 300 tips. Also compatible with all Fisherbrand* universal-fit tips, Fisherbrand Sure One*, Fisherbrand Sure-Fit* Ergo F, Extended Length, and Large Orifice tips. Storage stand is available (Cat. No. 21-377-206).

INCLUDES:
Rack of 96 Thermo Scientific Finntip 300 tips (except the microvolume models which include a rack of 96 Thermo Scientific Finntip Micro tips); four reagent reservoirs (two V-shaped, two 8-channel); 96-well Cliniplate* microplate; stick-on hanger that lets you store pipetterwithout needing a stand—on any lab surface with a square edge such as a shelf or benchtop.

21-377-200

Range	Increments	Accuracy†	Precision†	Color Code	Mfr. No.	Cat. No.	Ea
8-Channel							
0.5–10µL (micro)	0.1µL	±12.0 to 2.4%	8.0 to 1.6%	Gray	0004510000	**21-377-198**	611.
5–50µL	0.5µL	±5.0 to 1.5%	2.0 to 0.7%	Orange	4510-020	**21-377-199**	611.
50–300µL	5µL	±4.6 to 1.0%	1.5 to 0.3%	Yellow	4510-030	**21-377-200**	612.
12-Channel							
0.5–10µL	0.1µL	±12.0 to 2.4%	8.0 to 1.6%	Gray	0004510010	**21-377-365**	755.
5–50µL	0.5µL	±5.0 to 1.5%	2.0 to 0.7%	Orange	4510-040	**21-377-201**	755.
50–300µL	5µL	±4.6 to 1.0%	1.5 to 0.3%	Yellow	4510-050	**21-377-202**	755.
16-Channel							
5–50µL	0.5µL	±1.5 to ±5.0%	2.0 to 0.7%	Turquoise	4510-070	**21-377-807**	806.

† When a range is given, the first value applies to the smallest volume in the stated range; the second, to the largest volume, with one exception: for the 0.5 to 10µL pipetter, the first volum is for a dispensed volume of 1µL.

*Trademark. See Trademark Reference.

Prices subject to change.

ppendorf Research* Multichannel Pipetters

eal for applications in immunology, cell culture, serology

vide high performance and reliability in a multichannel format from 0.5 300µL. Innovative design features make everyday use more efficient, nfortable and strain-free.

atures

esigned with reduced operating forces

arger, separate tip-ejector button

lanifold can be rotated 360° to let user find the most omfortable pipetting position

ounded grip, reshaped operating button and onger hand rest for better, more ergonomic andling

ower portion of pipetter can easily be emoved, cleaned and autoclaved

13-688-501

pendorf PhysioCare Concept* teria focuses on all relevant aspects pipetting—the whole person and ocess, not just the hand or device.

tegrated systems: Complete pipetter and p program to fit any application

xceptional durability: Made of state-of-the-art materials

ptimized form and function: Easy operation through all work steps

erfectly balanced: Fit comfortably in the hand, with models weighing up 30% less than other brands

- ▶ Intuitive operation: Color-coded pipetter and tip matching system for easy identification
- ▶ Minimal user exertion: Minimize stress; manual models require up to 50% less pipetting force
- ▶ Simple maintenance: Easy to clean, autoclave and repair
- ▶ Total support: Certified and ready to use; calibration services also available

ORDERING INFORMATION:

Compatible with Eppendorf pipet tips (epTIPS). Also compatible with all Fisherbrand* universal-fit tips, Extended Length, Gel Loading, Large Orifice and Low-Retention tips. Pipetters are color coded (operating button and volume display) to make it easy to recognize tip sizes in color-coded Eppendorf tip racks.

WARRANTY:

Three years

CERTIFICATIONS:

Supplied with individual Certificate of Conformity.

ge	Increments	Inaccuracy[†]	Imprecision[†]	Mfr. No.	Cat. No.	Each
annel						
-10µL	0.01µL	±8.0 to 2.0%	≤5.0 to 1.0%	22 45 200-2	**13-688-507**	685.00
100µL	0.1µL	±3.0 to 0.8%	≤2.0 to 0.3%	22 45 202-9	**13-688-501**	685.00
300µL	0.2µL	±3.0 to 0.6%	≤1.0 to 0.3%	22 45 204-5	**13-688-502**	685.00
hannel						
-10µL	0.01µL	±8.0 to 2.0%	≤5.0 to 1.0%	22 45 206-1	**13-688-503**	795.00
100µL	0.1µL	±3.0 to 0.8%	≤2.0 to 0.3%	22 45 208-8	**13-688-504**	795.00
300µL	0.2µL	±3.0 to 0.6%	≤1.0 to 0.3%	22 45 210-0	**13-688-505**	795.00

e first value applies to the lowest volume in the stated range; the second, to the highest volume, with one exception: for the 0.5 to 10µL pipetters, the first value is for a dispensed volume 1µL.

ELECTRONIC PIPETTER FEATURES TO CONSIDER

Ease of Use—Intuitive menu and simple button layout are features that allow you to rapidly pro begin using the pipetter. Full graphical display ensures that there are no errors in selecting the app ate pipetting function. The ability to store programs that are commonly used enables fast and effi pipetting for every task. If English is a second language, multilingual options eliminate the chanc programming errors.

Bright and Clear Display—By eliminating surrounding light reflections and improving contrast light conditions such as safety cabinets and fume hoods, backlit displays ensure that the high-res menu characters are shown with more clarity.

Ergonomics—Repetitive strain injuries (RSI) are more common today than ever before. Electronic pipetters allow you to minimize the chance of RSI.

- Trigger action pipetting and adjustable finger rest ensure the most efficient pipetting position.
- Lightweight construction also helps prevent upper body stress and strain, a you to work longer without fatigue.
- Soft touch tip ejection mechanisms lower the force required to eject tip increasing the ergonomics of the pipetter.

BEFORE YOU BUY ELECTRONIC PIPETT

Service and Calibration—Maintaining your electronic pipetter c a time consuming and costly event. Selecting an electronic pipett allows you to do your own service and calibration will eliminate additional cost of owning the pipetter.

Warranty—Electronic pipetters are an investment that you ensure are protected by the best warranty possible. Most electronic pipetters carry a one-year warranty with th exception of the Novus pipetter which has a two-year warranty.

	NOVUS SINGLE CHANNEL	NOVUS 8-CHANNEL	NOVUS 12-CHANNEL	NOVUS 16-CHANNEL
1-10µL, micro version	21377010	1438601	1438604	
1-10µL	21377011			
5-50µL, micro version	21377012			1438607
5-50µL	21377013	1438602	1438605	
10-100µL	21377014			
30-300µL	21377015	1438603	1438606	
100-1000µL	21377016			
100-1200µL	21377017	21377845		
0.5-5mL	21377018			
1-10mL	21377019			

Thermo
SCIENTIFIC

sponsored by
Thermo Fisher Scientific

The Thermo Scientific* Finnpipette® Novus – A new standard of ergonomic pipetting
As the leader in pipetting, the Thermo Scientific Finnpipette Novus combines simplicity, comfort and functio exceptionally intuitive ergonomic design.

For a full selection of Thermo Scientific Electronic Pipetters, see p. 1416.

ELECTRONIC

-165-79

isherbrand* Electronic Pipetters

lectronic tip ejection combined with unique rgonomic design

ser-friendly design takes the effort out of pipetting and duces the risk of work-related upper limb disorders at are common in mechanical pipetting. Choose single, and 12-channel models in a variety of volume ranges.

- Clear LCD readout and easy-to-use keypad
- Electronic tip-ejection buttons, located for eft- or right-handed operation, eliminate tip release pressure
- User-programmable modes, storable routine pipetting protocols, and fully adjustable speed settings for all operations
- Electronic start button activates all piston actions, educing strain on thumb joints and carpal tunnel
- Computerized drive system lets you work more efficiently than with mechanical or other electronic pipetters
- Replaceable tip cone filter on most models helps minimize risk of internal contamination
- Operations include pipetting, reverse pipetting, pipetting with mixing, pipetting with cycle counter, manual pipetting, multi-dispensing, diluting, diluting with mixing, sequential dispensing, multi-aspirating, and automatic multi-dispensing
- Can be charged using single-pipetter charging stand, four-pipetter carousel charging stand, or AC-charging adapter; replacement NiMH battery packs are available

21-165-81

DERING INFORMATION:

adapter and charging stand sold separately. Compatible with all herbrand universal-fit tips.

21-165 Eight-Channel Series

Range	Increments	Test Volume	Inaccuracy	Imprecision	Cat. No.	Each
Single-Channel						
0.2-10µL	0.05µL	10µL	0.90%	0.40%	**21-165-78**	567.00
		0.2µL	12.0%	10.00%		
5-120µL	0.50µL	120µL	0.40%	0.15%	**21-165-79**	567.00
		5µL	3.50%	1.50%		
10-300µL	1.0µL	300µL	0.40%	0.15%	**21-165-80**	567.00
		10µL	3.50%	2.00%		
50-1000µL	5.0µL	1000µL	0.40%	0.15%	**21-165-81**	567.00
		50µL	2.00%	1.00%		
100-5000µL	10.0µL	5000µL	0.50%	0.15%	**21-165-82**	567.00
		500µL	1.00%	0.40%		
8-Channel						
0.2-10µL	0.05µL	10µL	0.90%	0.50%	**21-165-83**	1035.00
		1µL	4.00%	3.00%		
5-120µL	0.5µL	120µL	0.50%	0.20%	**21-165-84**	1035.00
		12µL	2.00%	1.50%		
10-300µL	1.0µL	300µL	0.50%	0.20%	**21-165-85**	1035.00
		30µL	2.00%	1.00%		
50-1200µL	5µL	1200µL	0.50%	0.20%	**21-165-86**	1035.00
		120µL	2.50%	1.00%		
12-Channel						
0.2-10µL	0.05µL	10µL	0.90%	0.50%	**21-165-87**	1262.00
		1µL	4.00%	3.00%		
5-120µL	0.5µL	120µL	0.50%	0.20%	**21-165-88**	1262.00
		12µL	2.00%	1.50%		
10-300µL	1µL	300µL	0.50%	0.20%	**21-165-89**	1262.00
		30µL	2.00%	1.00%		
50-1200µL	5µL	1200µL	0.50%	0.20%	**21-165-90**	1262.00
		120µL	2.50%	1.00%		

ACCESSORIES

For Fisherbrand* Electronic pipetters

Description	Cat. No.	Each
AC Adapter	**21-208-91**	56.25
Charging Stand (for one pipetter)	**21-165-91**	169.00
Carousel Charging Stand (for 4 pipetters)	**21-165-92**	419.00

Thermo Scientific* Finnpipette* Novus Pipetters

Combine simplicity, comfort and functionality in an exceptionally intuitive, ergonomic design

Features

- Clear, easy-to-read, menu-driven display for instant usability
- 10 pipetting options; nine aspirate/dispense speeds
- Functions include forward, reverse, diluting, stepper pipetting, mixing, sequential stepping and more
- Programmable for your own custom applications
- Backlight technology eliminates surrounding light reflections and improves contrast in low-light conditions

Ergonomic Design

- Extremely lightweight construction
- Adjustable finger rest for balance and comfort
- Trigger-action pipetting—index finger controls dispensing with just a soft press of a button
- Soft-touch tip ejection minimizes thumb strain; can be operated by either hand
- Easy in-lab calibration for accuracy and precision
- Fully autoclavable tip cone ensures sterility and avoids cross-contamination
- Long-life battery allows approximately 4000 pipetting operations; recharged in about one hour

ORDERING INFORMATION:
For use with Thermo Scientific Finntip* pipet tips. Also compatible with all Fisherbrand* universal-fit tips.

WARRANTY:
Two years

21-377-016

Range	Increments	Accuracy†	Precision†	Finntip	Mfr. No.	Cat. No.	Ea
1-10µL, micro	0.01µL	±3.5 to 1.0%	3.0 to 0.5%	10	46200000	**21-377-010**	560.
1-10µL	0.01µL	±7.0 to 1.0%	6.0 to 0.5%	250 Univ, 200 Ext.	46200100	**21-377-011**	560.
5-50µL, micro	0.1µL	±3.0 to 0.8%	2.5 to 0.3%	50	46200200	**21-377-012**	560.
5-50µL	0.1µL	±3.0 to 0.8%	2.5 to 0.3%	250 Univ, 200 Ext.	46200300	**21-377-013**	560.
10-100µL	0.1µL	±3.0 to 0.8%	1.0 to 0.2%	250 Univ, 200 Ext.	46200400	**21-377-014**	560.
30-300µL	1µL	±3.0 to 0.6%	0.7 to 0.2%	300	46200500	**21-377-015**	560.
100-1000µL	1µL	±3.0 to 0.6%	0.6 to 0.2%	1000, 1000 Ext.	46200600	**21-377-016**	560.
0.5-5mL	0.01mL	±3.0 to 0.6%	0.8 to 0.2%	5mL	46200700	**21-377-017**	560.
1-10mL	0.01mL	±3.0 to 0.6%	0.8 to 0.2%	10mL	46200800	**21-377-018**	560

† *When a range is given, the first value applies to the smallest volume in the stated range; the second, to the largest volume.*

Thermo Scientific* Finnpipette* Novus Multichannel Pipetters

Speed up repetitive dispensing into microplates with 8-, 12- or 16-channel formats

Ideal for demanding lab applications, such as delivering a series of different volumes in any desired order or mixing after delivery.

Features

- 10 advanced pipetting functions; nine aspirate/dispense speeds
- Intuitive, easy-to-read, menu-driven display for instant usability
- Programmable for your own custom applications
- Easy in-lab calibration for accuracy and precision
- Long-life battery allows approximately 4000 pipetting operations; recharged in about one hour
- Functions include forward, reverse, diluting, stepper pipetting, mixing, sequential stepping and more
- Backlight technology eliminates surrounding light reflections and improves contrast in low-light conditions

Ergonomic Design

- Extremely lightweight construction
- Adjustable finger rest for balance and comfort
- Soft-touch tip ejection minimizes thumb strain; can be operated by either hand
- Trigger-action pipetting—index finger controls dispensing with just a soft press of a button

ORDERING INFORMATION:
For use with Thermo Scientific Finntip* pipet tips. Also compatible with all Fisherbrand* universal-fit tips.

WARRANTY:
Two years

14-386-03

Range	Increments	Accuracy†	Precision†	Finntip	Color Code	Mfr. No.	Cat. No.	E
8-Channel								
1 to 10µL	0.1µL	±12.0 to 2.4%	8.0 to 1.6%	10, 20, 50	Pink	46300000	**14-386-01**	893
5 to 50µL	0.1µL	±5.0 to 1.5%	2.0 to 0.7%	250	Yellow	46300200	**14-386-02**	875
30 to 300µL	1µL	±3.0 to 1.0%	1.0 to 0.3%	300	Orange	46300400	**14-386-03**	875
12-Channel								
1 to 10µL	0.1µL	±12.0 to 2.4%	8.0 to 1.6%	10, 20, 50	Pink	46300100	**14-386-04**	1019
5 to 50µL	0.1µL	±5.0 to 1.5%	2.0 to 0.7%	250	Yellow	46300300	**14-386-05**	999
30 to 300µL	1µL	±3.0 to 1.0%	1.0 to 0.3%	300	Orange	46300500	**14-386-06**	999
16-Channel								
5 to 50µL	0.5µL	±5.0 to 1.5%	2.0 to 0.7%	50	Turquoise	46300700	**14-386-07**	1199

† *When a range is given, the first value applies to the smallest volume in the stated range; the second, to the largest volume.*

ppendorf Research Pro* Pipetters

ovide a variety of programmable application parameters, while still remaining simple to use and easy to handle

- eadily programmable modes allow the user to achieve accurate and recise results for all applications
- ndividual aspiration and dispensing speeds can be programmed for each pplication
- ipetting Mode allows the user to perform standard pipetting functions vith a variety of options (reverse pipetting, blow-out, manual pipetting, nd rinsing)
- ixed-Volume Mode allows the user to program up to five of their most ommonly used volumes for quick recall
- ispensing Mode provides repetitive dispensing of a constant volume
- ipetter can store up to five programs containing specified pipetting nd dispensing sequences
- ser-calibratable; ideal for use with solutions of differing viscosities

sign

- asy-to-read display screen is set at a 45° angle for quick reference, and ll controls are large and easily accessible
- ocker switch controls volume and speed options
- ibbed handle makes the pipetter easy to grip
- eparate tip ejection lever can be adjusted for left- or right-handed users
- ower half of the pipetter is removable and autoclavable

ORDERING INFORMATION:

For use with Eppendorf Geloader* tips, epTIPS tips. Compatible Fisherbrand* tips include: all universal-fit tips, Extended-Length, Gel-Loading Aerosol Barrier, Large Orifice, Low Retention, SureOne*, SureGrip*, and Aerosol Barrier.

Available with or without charger. Charger easily attaches to the top portion of pipetter and ensures that battery is charged when connected.

Note: If purchased without a charging unit, a single or four-place charging stand must be purchased.

INCLUDES:

Rechargeable NIMH battery

21-378-90 (tips not included)

21-378-81

				Without Charging Unit			With Charging Unit		
ıge	Accuracy (%)	Precision (%)	For Use with Eppendorf Tip	Mfr. No.	Cat. No.	Each	Mfr. No.	Cat. No.	Each
gle-channel									
to 10µL	±2.5 to ±1.0	≤1.8 to ≤0.4	20µL†	22 46 135-4	**21-378-80**	575.00	22 46 130-3	**21-378-73**	599.00
100µL	±3.0 to ±0.8	≤1.0 to ≤0.2	200µL	22 46 136-2	**21-378-81**	575.00	22 46 131-1	**21-378-74**	599.00
to 300µL	±2.5 to ±0.6	≤0.7 to ≤0.2	300µL	22 46 137-1	**21-378-82**	575.00	22 46 132-0	**21-378-77**	599.00
to 1000µL	±3.0 to ±0.6	≤0.6 to ≤0.2	1000µL	22 46 138-9	**21-378-83**	575.00	22 46 133-8	**21-378-78**	599.00
to 5000µL	±2.4 to ±0.6	≤0.6 to ≤0.15	5mL	22 46 139-7	**21-378-84**	575.00	22 46 134-6	**21-378-79**	599.00
annel									
to 10µL	±8.0 to ±2.0	≤5.0 to ≤1.0	20µL†	22 46 144-3	**21-378-89**	1019.00	22 46 140-1	**21-378-85**	1065.00
100µL	±4.0 to ±1.0	≤2.0 to ≤0.5	200µL	22 46 145-1	**21-378-90**	1019.00	22 46 141-9	**21-378-86**	1065.00
to 300µL	±1.5 to ±0.6	≤0.8 to ≤0.2	300µL	22 46 146-0	**21-378-91**	1019.00	22 46 142-7	**21-378-87**	1065.00
to 1200µL	±6.0 to ±1.2	≤0.4 to ≤0.3	1.25mL	22 46 147-8	**21-378-92**	1019.00	22 46 143-5	**21-378-88**	1065.00
hannel									
to 10µL	±8.0 to ±2.0	≤5.0 to ≤1.0	20µL†	22 46 151-6	**21-378-96**	1260.00	22 46 148-6	**21-378-93**	1290.00
100µL	±4.0 to ±1.0	≤2.0 to ≤0.5	200µL	22 46 152-4	**21-378-97**	1260.00	22 46 149-4	**21-378-94**	1290.00
to 300µL	±1.5 to ±0.6	≤0.8 to ≤0.2	300µL	22 46 153-2	**21-378-98**	1260.00	22 46 150-8	**21-378-95**	1290.00

use with Eppendorf Micro epTips.

ACCESSORIES

harging Stands

or one or four Research Pro* pipetters

- Provide easy storage and recharging capacity
- Electrical requirements: 115V 60Hz

13-688-201 (Pipetters not included)

Description	Mfr. No.	Cat. No.	Each
For 1 pipetter	022461541	**13-688-200**	207.00
For 4 pipetters	022461559	**13-688-201**	605.00

REPEATING, POSITIVE DISPLACEMENT

Thermo Scientific* Finnpipette* Stepper Pipetter

Lightweight, easy-to-use repeater pipetter—designed for one-handed dispensing

- Makes up to 45 deliveries before refilling is necessary
- Positive displacement design ensures accurate results, even for viscous, volatile, or other problematic liquids
- Lightweight, ergonomic handle and wide "grippy" finger rest minimize operator hand strain
- Operation is simple—just attach the appropriate tip size, fill and prime the tip, and dial the selected volume
- Volume is easy to set, with the aid of the convenient volume-setting chart located on the handle and duplicated here (see Volume Setting Chart for Thermo Scientific Finntip* Stepper tips, p. 1443)

21-377-147

ORDERING INFORMATION:

Universal Stepper handle is also available with an eight-channel module. For convenient storage of the Stepper Pipetter, see Pipetter Stand 14-387-14 on p. 1405.

INCLUDES:

Unit comes with one adapter (nonsterile) necessary for use with 25 or 50mL tips.

REQUIRED ACCESSORIES:

Uses the Thermo Scientific Finntip Stepper tip, a plunger-style tip available in nonsterile or sterile (individually wrapped) form. This tip comes in seven sizes from 0.5 to 50mL, each with five different delivery volumes, for an overall dispensing range of 10 to 5000µL. Only the disposable tip comes in contact with the sample, eliminating the risk of contaminating the pipetter body.

Mfr. No.	Cat. No.	Each
4540-000	**21-377-147**	286.00

ACCESSORIES

Adapters for 25 and 50mL tips

Type	Mfr. No.	Cat. No.	Pack of
Nonsterile	9420-300	**21-377-162**	10/87.00
Sterile	9420-310	**21-377-163**	5/67.00

Thermo Scientific* Finnpipette* Multistepper Pipetter

Reduces the risk of error and increases productivity in immunoassay applications

Eight-channel air-displacement pipetter, designed especially for work with microplates. Easy to use—simply attach, fill, and prime the module and dial the selected volume.

- Delivers 50, 100, 150, 200, or 250µL[†]
- With a single loading, it can deliver 24 × 50µL=192 wells, 12 × 100µL=96 wells, 8 × 150µL=64 wells, 6 × 200µL=48 wells, or 5 × 250µL=40 wells
- All eight channels are calibrated to simultaneously dispense exactly the same volume of liquid
- Pipetter capacity: 1250µL
- Accuracy: ±5.0 to 2.0%; precision: 5.0 to 2.0%[‡]
- Handy volume chart on the handle lets you know the maximum number of deliveries possible at a given volume setting

Design

- Universal handle also fits the seven single-channel Thermo Scientific Finntip* Steppers
- Lightweight construction minimizes hand fatigue during repetitive dispensing
- Separate tip ejector for safe and effortless tip disposal
- Wide "grippy" finger rest minimizes operator hand strain

21-377-370

ORDERING INFORMATION:

Accept Thermo Scientific Finntip Multistepper* 1500µL tips. They are ext long, with more air space between the liquid and tip cone to prevent contamination.

Description	Mfr. No.	Cat. No.	Ea
Handle and module	4540-500	**21-377-370**	677.
8-Channel Module only	2206-590	**21-377-371**	489.

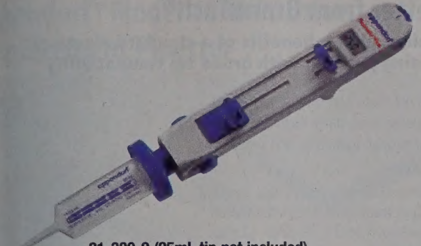
[†] *Per tip.*

[‡] *The first value applies to the lowest dispensed volume, and the second value to the highe dispensed volume.*

*Trademark. See Trademark Reference.

Prices subject to change.

›pendorf* Repeater* Plus Pipetter



21-380-9 (25mL tip not included)

fers expanded dispensing range and makes up to 100 ›etitive deliveries

- xpanded dispensing range of 1.0µL to 10mL including 12µL, 65µL, nd 1.1mL
- erforms a greater number of successive deliveries (up to 100)† from a ngle aspiration of sample—further enhancing efficiency and educing tedium
- ccuracy to ±0.3%; precision to ≤0.25%
- /ith 20 different volume settings for each of the nine Eppendorf ombitips* Plus Tip sizes, fewer tips cover a given dispensing range
- nit automatically recognizes the size tip in use and displays volume election on the digital LCD, reducing dispensing errors
- p mounting is quick and easy; removal is hands-off, by a touch of the jector button
- hoose from sterile and nonsterile Eppendorf Combitips Plus Tips and ppendorf Biopur* Combitips Plus Tips, which are certified sterile as well s pyrogen-, RNase-, DNA-, and ATP-free
- lade of durable materials and designed for smooth operation and ser comfort

DERING INFORMATION:

in Eppendorf Carousel Stand with accessory adapter. For more rmation about the carousel stand, visit our Web site or tact your Fisher Scientific Customer Service Representative.

npatible Tips: The Repeater Plus Pipetter accepts only Eppendorf nbitips Plus Tips; the original Repeater Pipetter accepts these, as well as original Eppendorf Combitips Tips.

LUDES:

vidual Certificate of Conformity, one 5mL Combitip Plus tip

RRANTY:

) years

cription	Mfr. No.	Cat. No.	Each
eater Plus Pipetter	022260201	**21-380-9**	425.00
ousel Stand Adapter	022261592	**21-380-2E**	9.75

th dial setting of 0.5. In all, 20 volume selections (dial settings) can be made, from 0.5 to 10.

ACCESSORIES

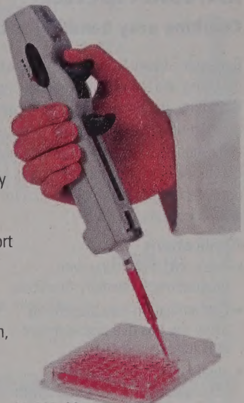
Adapters for Eppendorf* Combitip Plus* Tips

For use with	Mfr. No.	Cat. No.	Pack of
25mL Nonsterile Combitip Plus Tip	022266993	**21-380-5**	1/16.95
50mL Nonsterile Combitip Plus Tip	022266705	**21-381-100**	1/16.95
50mL Biopur* Combitip Plus Tip	022496166	**21-381-408**	7/104.00
25mL Biopur Combitip Plus Tip	022496158	**21-381-308**	7/104.00

Brand* HandyStep* Repeating Pipetter from BrandTech*

Compatible with all standard repeating pipet tips

- Makes serial pipetting quick and easy
- Perfect for filling individual wells in microtiter plates
- Delivers up to 49 repetitive dispensings from a single aspiration
- Positive displacement mechanism is ideal for dispensing difficult samples such as foaming, viscous, high density or high vapor pressure liquids—can also be used for routine dispensing
- Ergonomic shape contoured for comfort
- Durable construction
- Easy to operate
- Five settings to control dispensing volume; a dispensing lever for smooth, consistent dispensing; and a rugged, multifunction lock/filling lever for trouble-free operation



03-837-30

ORDERING INFORMATION:

Tips must be purchased separately. Suitable for Brand PD-Tips* Disposable Tips; Fisherbrand* Dispenser Tips; Combitips* Tips; and Combitips Plus Tips.

INCLUDES:

Wall support for convenient storage

Mfr. No.	Cat. No.	Each
2705100	**03-837-30**	301.25

ELECTRONIC REPEATING, POSITIVE DISPLACEMENT

Eppendorf* Repeater* Stream and Xstream Pipetter

NEW

Combine easy handling with a broad range of features

05-401-041

Repeater Stream is suitable for all standard pipetting and dispensing applications; for added versatility, the Repeater Xstream can also perform titrations, sequential dispensing and aspiration of supernatants. When used with Combitips Plus* tips, both systems form an unbeatable and essential lab tool for all applications.

Applications

- Electronic dispensing with programmable memory functions
- Contamination-free dispensing using the positive displacement principle
- Ideal for viscous solutions (e.g., glycerol, oil) or liquids with high vapor pressure (e.g., acetone, ethanol)
- Dispensing in long series

Features: Repeater Stream and Xstream

- Positive displacement dispensing and pipetting
- Automatic dispensing
- Rapid and ergonomic dispensing with motorized piston
- Single-button tip ejector
- Li-ion battery
- Function selection wheel
- Automatic Combitips Plus tip recognition
- IvD conformity
- Charging possible during operation

asp
seq
tips
1000µl
13
select
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+/−
05-401-041

Additional Features of the Repeater Xstream

- Aspirating of supernatants
- Titration
- Sequential dispensing

ORDERING INFORMATION:
Uses Eppendorf Combitips Plus Tips

INCLUDES:
Charging Adapter

WARRANTY:
Two years

Description	Range	Mfr. No.	Cat. No.	Each
Repeater Stream	1µL to 50mL	022460803	**05-401-040**	800.00
Repeater Xstream	1µL to 50mL	022460811	**05-401-041**	960.00
Charging Stand	----	022460897	**05-401-042**	189.00

Brand* HandyStep* Electronic Repeatin Pipetter from BrandTech*

Combines all the benefits of a standard electronic repeating pipetter with broad tip compatibility

13-688-401
(microplate not includ

Ensures accurate and reliable pipetting and dispensing of many liquids for pharmaceutical, industrial and research laboratories.

- Dispenses volumes from 1.0µL to 50mL, including traditional and nonstandard volumes such as 9.2, 25, 260, 1250µL and more
- Operates in three different modes: single-volume pipetting; repeat dispensing; and Autodispense mode
- Autodispense mode detects operator dispensing rhythm for the first three dispensings, then continues to dispense at that interval for as long as the dispense button is pushed—no time-interval preprogramming required
- Aspirating and dispensing speeds are independently adjustable to en optimal accuracy with different liquids
- Large, easy-to-read LCD readout facilitates referencing of volume, operating mode, dispensing/aspirating speeds, battery charge, and remaining dispensings during operation
- Automatically recognizes and displays the size of Brand PD-Tips* dispenser tips upon insertion; if using alternative tips, just scroll to input the correct tip size
- Lateral tip recognition system ensures long-term reliability
- Motorized design ensures effortless operation, reducing hand strain and error
- Comfortable for use with either hand

ORDERING INFORMATION:
Electrical requirements: 110V, 50/60Hz

Compatible Tips: Brand PD-Tips dispenser tips and most standard syrin tips, including Fisherbrand* Dispenser tips.

INCLUDES:
Charging base, AC adapter, one battery pack, certificate of performanc operating manual, and a selection of PD-Tips tips

WARRANTY:
One year

Mfr. No.	Cat. No.	
705012	**13-688-401**	74

ACCESSORIES

Replacement Battery Pack

Replaceable nickel-metal-hydride battery pack charges in 2.5 hours (3.5 hours inside instrument). Battery packs can be easily interchanged for continuous pipetting.

13-688-

Mfr. No.	Cat. No.	
705025	**13-688-403**	4

ppendorf* Model 4830 Positive isplacement Pipetter

-379-71 pipetter with 21-379-72 tips

eal for pipetting viscous solutions and radioactive or ohazardous materials

ume is continuously adjustable from 1 to 20μL in 0.02μL increments. adjust volume, push in volume lock button, turn control knob to set nbers, and release lock button. Volume setting automatically locks in ce to eliminate accidental changes.

- ll operations—volume adjustment, tip attachment, pipetting and jection—can be performed with one hand
- mooth volume-adjustment knob will not snag or tear safety gloves
- op-view digital display is always visible during pipetting
- isposable integrated tip/piston assembly reduces sample contamination y eliminating carryover and aerosols
- o attach tip/piston assembly, insert pipet nose cone into a tip/piston, ush down on control knob to engage tip/piston, and then release
- o eject tip/piston, push control button all the way down
- emovable tip ejector provides easy access to narrow tubes
- ibbed housing provides a comfortable, secure grip
- ntire pipetter is UV resistant and fully autoclavable for sterilization nd decontamination
- an be easily calibrated in the lab

CLUDES:

assembled tips/pistons packaged in autoclavable rack of 96 pieces for venient handling and sterilization.

pacity	Accuracy†	Precision†	Mfr. No.	Cat. No.	Each
o 20μL	±2.5 to 6.0%	≤0.8 to 4.0%	022440501	**21-379-71**	395.49

curacy and precision ranges figured with bidistilled water at 20° to 25°C, constant to 0.5°C. First value for capacity of 20μL; second for capacity of 2μL.

ACCESSORIES

Tips/Pistons

- Polypropylene tips; polyethylene pistons
- In five autoclavable racks of 96 tips/pistons

21-379-72

Mfr. No.	Cat. No.	Case of 480
22354159	**21-379-72**	220.00

Brand* Transferpettor* Positive Displacement Pipetters from BrandTech*

Accurately pipet high-viscosity, high surface tension, and high vapor-pressure liquids

Ideal for oils, glycerins, solvents, protein solutions, or ether. Handle difficult-to-pipet media such as viscous, foaming, or high vapor pressure liquids with precision and accuracy. Four color-coded models cover range from 100μL to 10mL.

- Tightly fitted piston with seal is in direct contact with the aspirated liquid so results are reproducible
- Walls are wiped clean to the last drop, and tips can be used repeatedly
- Accuracy: ≤±0.5%
- Reproducibility: ≤0.2%

13-688-121

INCLUDES:

One tip and one seal; additional tips are available

Volume Range	Increments	Color Code	Mfr. No.	Cat. No.	Each
100 to 500μL	1μL	Green	2702904	**13-688-252**	300.00
200 to 1000μL	1μL	Yellow	2702906	**13-688-253**	300.00
1 to 5mL	0.01mL	Red	2702910	**13-688-120**	300.00
2 to 10mL	0.01mL	Orange	2702912	**13-688-121**	300.00

Drummond* Fixed-Volume Microdispensers

21-176E

Overall volumetric accuracy of ±1% at full volume

- Contain borosilicate glass bores with stainless-steel plungers, except the 1000μL unit which has precision-molded plastic bores
- All plungers with capacities 25μL and larger have PTFE tips
- The 5μL unit (Cat. No. 21-170-10) will deliver 1 to 5μL

ORDERING INFORMATION:

Repeat Kit is available for 1000μL unit. Custom spacers are available permitting fractional deliveries on all units; contact your Fisher Scientific Customer Service Representative.

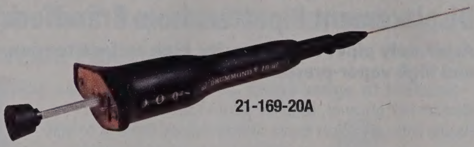
Capacity	Mfr. No.	Cat. No.	Each
5μL	3-000-105	**21-170-10**	92.50
10μL	3-000-310	**21-176A**	92.50
20μL	3-000-320	**21-176B**	92.50
25μL	3-000-325	**21-176C**	92.50
50μL	3-000-350	**21-176D**	92.50
100μL	3-000-375	**21-176E**	92.50
100/200μL	3-000-385	**21-176F**	92.50
1000μL	3-000-390	**21-171**	92.50

LOOKING FOR REPLACEMENT PARTS?

Replacement Parts Kits for Drummond* Microdispensers are available online. Kits contain an assortment of parts such as plungers, O-rings, collets, coil springs, spring guides and more.

Visit www.fishersci.com and search for Microdispensers Replacement

Drummond* Digital Microdispensers


21-169-20A

Positive displacement piston eliminates source of errors found with air displacement types

One-hand-operated positive displacement pipetter with digital reading of delivery volume to 0.01, 0.1, or 1.0µL. Five adjustable models cover volume range 0.01 to 1000µL.

- Adjustable to any volume within capacity rating
- Easy-to-set micrometer-type barrel for exact setting of volume to be pipetted
- Accuracy to ±1% at full volume
- Machined slot in barrel allows visual check for glass bore seating
- Color-coded calibration mark on bore lines up with plunger at full-capacity setting
- Stainless-steel plunger in 10µL size; all others are TFE
- Use with all reagents (except hydrofluoric acid)

ORDERING INFORMATION:

See replacement glass and plastic bores. Microdispenser 21-169-10A converts to a multichannel dispenser with the addition of a stainless-steel manifold.

INCLUDES:

Microdispenser 21-169-20D is supplied with 50 glass bores; 21-169-10A is supplied with 7 polypropylene bores; all other models supplied with package of 100 glass bores.

Capacity	Division	Mfr. No.	Cat. No.	Each
10µL	0.01µL	3 000 510	**21-169-20A**	211.05
25µL	0.1µL	3 000 525	**21-169-20B**	211.05
50µL	0.1µL	3 000 550	**21-169-20C**	211.05
100µL	0.1µL	3 000 575	**21-169-20D**	211.05
1000µL	1.0µL	3 000 590	**21-169-10A**	211.05

Drummond* Dialamatic Microdispensers

21-170-15B

Permit accurate fractional deliveries

Four adjustable models cover volume range 1 to 100µL. Threaded plung graduated for accurate deliveries. Turn plunger to desired volume.

- Two scales on 10 and 100µL sizes simplify volume selection
- Accuracy to ±1% at full volume
- Aluminum construction with TFE plunger

INCLUDES:

100µL size comes with 50 glass bores; all others with 100 glass bores.

Capacity	Division	Mfr. No.	Cat. No.	E
10µL	1µL	3 000 210	**21-170-15A**	110
25µL	1µL	3 000 225	**21-170-15B**	110
50µL	2µL	3 000 250	**21-170-15C**	110
100µL	10µL	3 000 275	**21-170-15D**	110

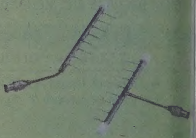
ACCESSORIES

Replacement Bores

Capacity	Mfr. No.	Cat. No.	Pack of 1
Glass			
1-5µL	3-000-105-G	**21-170-11**	13.
10µL	3 000 210 G	**21-169A**	13.
20µL	3-000-320-G	**21-169B**	13.
25µL	3 000 225 G	**21-169C**	13.
50µL	3 000 250 G	**21-169D**	13.
100/200µL	3 000 275 G	**21-169F**	13.
250µL	3-000-388-G	**21-170**	13.
Polypropylene			
1000µL	3 000 590 G	**21-169-10G**	22.

Stainless-Steel Manifolds

Eight-tip manifolds for use with the 21-169-10A Digital Microdispenser or any pipetter that accepts standard Luer-Lok* connector


21-169-10E, 21-169-10D

Available with straight shaft or with hub offset to reduce possibility of contaminating sterile plates.

- Tips are properly spaced for 96-well microtitration plate
- Can deliver as little as 50µL per tip
- Volumes larger than 125µL can be dispensed by repeating
- With Luer connector and TFE end caps

INCLUDES:

Cleaning wire

With	Mfr. No.	Cat. No.	Ea
Straight shaft	3 000 093	**21-169-10D**	124.
Hub offset	3 000 094	**21-169-10E**	124.

*Trademark. See Trademark Reference.

ACCESSORIES

Fisherbrand* Pipetter Stands

Accommodate most major brands of pipetters

- One-position stand has a single insert hole 1¼" (31.8mm) in diameter
- Three-, four-, and six-position stands have both upper (1⅓₂" [26.1mm]) and lower slots (⅝" [16mm] in diameter)
- Multichannel stand is clear acrylic with slots 1" (25.5mm) in diameter

06-667-5

Material	No. of Positions	L × W × H	Cat. No.	Each
or Single-Channel Pipetters				
Acrylic	1	6 × 5½ × 9"	**06-667-3**	77.42
Acrylic	3	6 × 8 × 12"	**06-667-4**	46.55
Acrylic	4	8 × 8 × 12"	**06-667**	41.43
Acrylic	6	8 × 12 × 12"	**06-666-56**	66.84
HDPE	4	8 × 8 × 12"	**06-667-1**	41.63
HDPE	6	6 × 5½ × 9"	**06-667-2**	52.39
or Multichannel Pipetters				
Acrylic	1	5⅝ × 3 × 9½"	**06-667-5**	46.98

Fisherbrand* Pipetter Stand Workstation

Keep pipetters and disposable tips together in one onvenient stand

- Rack holds up to six pipetters
- Bins house a generous supply of two different sizes of tips protected from dust by self-closure lid
- Bottom, sides, and top of rack are white acrylic
- Transparent front and cover on bins allow easy identification of types and quantities of tips on hand

13-681-24 (pipetters and tips not included)

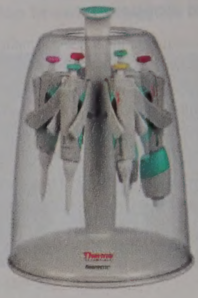
ORDERING INFORMATION:
Overall dimensions: ⅝L × 16⅜W × 9½"H (16.8 × 41.6 × 24.1cm). Each in measures 3L × 8W × 5"H 7.6 × 20.3 × 12.7cm). Pipetters and tips not included.

No. of Positions	Cat. No.	Each
6	**13-681-24**	158.49

Thermo Scientific* Carousel Stand

For up to six Thermo Scientific Finnpipette* Focus single-channel or multichannel pipetters

- ▸ Rotating, portable
- ▸ Transparent lid protects pipetters from contamination



21-377-002 (Pipetters not included)

Description	Mfr. No.	Cat. No.	Each
Carousel Stand (holds 6)	9420-340	**21-377-002**	114.00

Scienceware* Micropipetter Racks

Organize your pipetters in neat, orderly rows and protect their tips

Benchtop or wall-mounted racks, with five or 10 positions.

14-791-8A

Type A: For most Thermo Scientific* Finnpipette*, Socorex*, Eppendorf*, and other similar pipetters

- ▸ Benchtop model holds 10 pipetters in two stepped rows of five each, plus two Drummond* Pipet-Aid* pipet fillers
- ▸ Lower shelf has small holes that accept the tapered ends of the pipetters, keeping them upright
- ▸ Made of epoxy-coated aluminum
- ▸ Measures 5L × 9W × 6¾"H (12.7 × 22.9 × 17.1cm)

Type B: For most brands of pipetters, including Pipetman* pipetters

- ▸ Benchtop model with sloping back holds five pipetters
- ▸ Made of uncoated stainless steel, rack measures 5¾L × 9W × 7¾"H (14.6 × 22.9 × 19.7cm)
- ▸ Does not accommodate Drummond Pipet-Aid pipet fillers

Type C: For most Pipetman pipetters

- ▸ Designed exclusively for Pipetman pipetters
- ▸ Hold 10 pipetters plus two Drummond Pipet-Aid pipet fillers
- ▸ Without bottom shelf
- ▸ Benchtop model measures 5L × 9W × 6¾"H (12.7 × 22.9 × 17.1cm)
- ▸ Wall-mounted model measures 3⅞L × 9W × 8"H (9.8 × 22.9 × 20.3cm)
- ▸ Both made of epoxy-coated aluminum

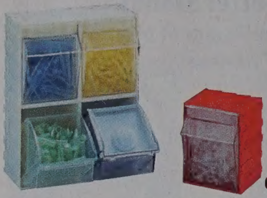
Description	Mfr. No.	Cat. No.	Each
Type A			
Epoxy-coated Aluminum, Benchtop	189620000	**14-791-8A**	67.84
Type B			
Stainless Steel, Benchtop	189620006	**14-791-8D**	57.29
Type C			
Epoxy-coated Aluminum, Benchtop	189620001	**14-791-8B**	57.29
Epoxy-coated Aluminum, Wall-Mounted	189620002	**14-791-8C**	47.23

Brinkmann* Pipet Tip Storage Boxes

Organizer for small laboratory items, including pipet tips, microcentrifuge tubes, filters, vials, stir bars, and stoppers

- Transparent inner compartment allows quick product identification, tilts out for filling or cleaning
- Tight-fitting polypropylene lid
- Both nonautoclavable and autoclavable boxes available; autoclavable boxes are ideal for sterilizing and storing consumables
- For space savings, boxes can be connected or wall mounted

ORDERING INFORMATION:
Approximately the size of a 600mL beaker: 6½L × 4¾W × 5¼"H (16.5 × 12.1 × 13.3cm).



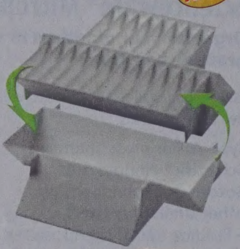
03-491, 03-492

Style	Color	Mfr. No.	Cat. No.	Case o
Nonautoclavable	White	22 36 453 7	**03-491**	56.
Autoclavable	Orange	22 36 455 3	**03-492**	86.

*Fisherbrand** Autoclavable Pipet Basins

Eliminate the need for multiple reagent containers—save bench space

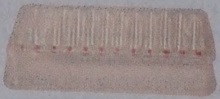
V-shaped basins facilitate easy withdrawal of sample solutions. Numbered chambers ensure accurate sample reference. Chemical-resistant polypropylene.



13-681-802 on the 8- and 12-channel compartment side

12-Channel Pipet Basins

- Designed for serial dilutions or pipetting individual reagents using up to a 12-channel pipetter
- Each chamber holds up to 5mL
- Withstand temperatures from -80° to +121°C (-144° to +218°F)
- Tight-fitting lid minimizes evaporation or contamination during incubation or storage
- Sterile or nonsterile; individually wrapped in easy-open bags
- L × W × H: 5 × 2¼ × 1" (12.7 × 5.7 × 2.5cm)



13-681-800

Multichannel Pipet Basin

- Unique design features three separate compartments: a 50mL single compartment with graduation marks at 10, 25, 40, and 50mL on one side; on the other side, an 8-channel compartment with eight 5mL reagent channels, and a 12-channel compartment with twelve 5mL reagent channels
- 5mL channels are numbered for easy reagent identification
- Use with all brands of multichannel pipetters
- Also ideal for filling multitube blocks and plates
- L × W × H: 4¾ × 4½ × 1" (12.1 × 11.3 × 2.5cm)

Material	Sterile	Packaging	Cat. No.	Case of
12-Channel Pipet Basin with Lid				
Polypropylene	Yes	Indiv. Bagged	**13-681-800**	20/80.60
Polypropylene	No	Indiv. Bagged	**13-681-801**	50/140.79
Multichannel Pipet Basin				
Polypropylene	No	----	**13-681-802**	10/51.57

13-681-500 with -503 Lid

13-681-502

13-681-501

13-681-501

*Fisherbrand** Disposable Pipet Basins

Disposable basins are convenient, allowing fast cleanup

- Printed graduations for more accurate filling
- Easy-pour corners for quick disposal of excess sample solution
- Nonsterile basins are constructed of clear PVC
- Gamma-irradiated sterilized basins are made of natural polystyrene
- Packaged in easy-to-open "Snap Smartly" bags to reduce contamination risks
- Extended writing surface for product I.D.

50mL Basins

- Angled sides and V-shaped bottom permit easy withdrawal of sample solution
- Use with APET plastic lids (L × W × H: 5⅜ × 2½ × ½" [13.7 × 6.4 × 1.3cm]) to allow easy sample observation without exposing solution
- L × W × H: 5¾ × 2¾ × 1" (14.0 × 7 × 2.5cm)

100mL Basins

- Versatile design allows ample clearance for all types of 4-, 8-, and 12-channel pipetters
- Ideal for extended multichannel pipetting into microtiter plates, tubes, and deep-well blocks
- L × W × H: 5¾ × 3½ × 1¼" (14.6 × 9 × 3.2cm)

Material	Sterile	Packaging	Cat. No.	Case
50mL Pipet Basin				
PVC	No	Bulk	**13-681-500**	100/64.
Polystyrene	Yes	Indiv. Bagged	**13-681-501**	80/116.
	Yes	5/Bag	**13-681-502**	200/103.
100mL Pipet Basin				
Polystyrene	Yes	5/Bag	**13-681-504**	200/116.
Pipet Basin Lid (for 50mL basin)				
APET	Yes	Indiv. Bagged	**13-681-503**	20/28.

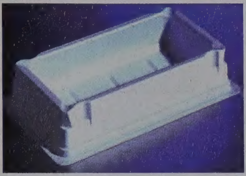
*Trademark. See Trademark Reference.

Prices subject to change.

ostar* Sterile Disposable eagent Reservoirs

leal for repetitive filling of multichannel pipetters

07-200-128



07-200-130

- Manufactured from modified polystyrene
- Bottom of reservoirs slope into a rounded low point to use all solvent present
- 50mL: 51L × 27W × 11"H (145 × 70 × 28mm), color: opaque
- 100mL: 57L × 33W × 35"H (145 × 85 × 35mm), color: white
- Accommodate 1-, 8-, or 12-channel pipetters
- ndividual or bulk packaging

pacity	Packaging	Color	Mfr. No.	Cat. No.	Case of
0mL	Individual	Opaque	4871	**07-200-128**	100/141.80
0mL	Bulk (5/bag)	Opaque	4870	**07-200-127**	200/106.68
00mL	Individual	White	4873	**07-200-130**	100/156.65
00mL	Bulk (5/bag)	White	4872	**07-200-129**	200/120.18

cienceware* Disposable ipetting Reservoirs

eal for extended multichannel pipetting into icrotiter plates, Mini-Tubes and Cube 2ube* tubes, nd deep-well blocks

- 100mL capacity
- Versatile design allows ample clearance for all types of pipetters
- Available individually packed sterile or bulk packed nonsterile

14-512-65

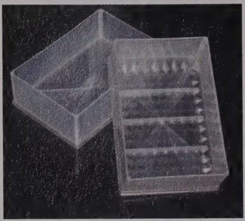
RDERING INFORMATION:

mensions: 6⅛L × 3⅝W × 1¼"H 5.6 × 9.2 × 3.1cm).

ckaging	Sterile	Mfr. No.	Cat. No.	Pack of 50
lk	No	378770000	**13-712-14**	44.77
dividually packed	Yes	378770001	**14-512-65**	62.31

Nalgene* Disposable Robotic Reservoirs

Single-use, disposable reservoirs increase efficiency and minimize cross-contamination in automated life science applications



12-565-573

- ▸ Polypropylene construction withstands robotic liquid handling, making it easier to run automated assays and increasing walk-away time
- ▸ Compatible with most robotic arms, plate stackers (hotels), plate cranes, and platform configurations
- ▸ Reservoir volume is 300mL (345mL brim capacity), with molded-in graduations every 100mL
- ▸ Nestable, for easy automated stacking and handling
- ▸ Accept bar-coded labels on two sides
- ▸ Available sterile and nonsterile with flat bottoms or with convoluted bottoms that minimize dead volume
- ▸ Flat-bottom configuration can be used with single-, 6-, 12-, 96-, 384-, and 1536-well formats
- ▸ Convoluted-bottom design is most effective with a 96-well format

APPLICATIONS:

Molecular biology, immunology, drug discovery, biochemistry, molecular diagnostics, quality control, and cell/tissue culture

ORDERING INFORMATION:

Dimensions: 3⅜L × 5W × 1¾"H (86 × 128 × 43mm).

COMPLIANCE:

Conform to the ANSI* standard microplate footprint

Description	Mfr. No.	Cat. No.	Case of 40
Flat	1200-1300	**12-565-571**	136.51
Flat, Sterile	1200-1301	**12-565-572**	155.33
Convoluted	1200-2300	**12-565-573**	136.51
Convoluted, Sterile	1200-2301	**12-565-574**	155.33

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UNIVERSAL

*Fisherbrand** Standardization Pipet Tips

Eliminate the need to buy pipetter-specific tips

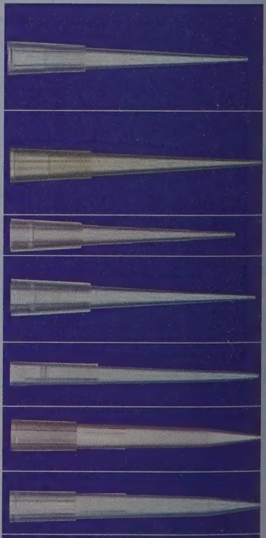
- Pliable top opening allows better fit on different types of pipetters
- Lower costs by reducing the number of redundant products

Pipetter Compatibility

Universal fit for research grade pipetters.

Volume	Length	Color	Packaging†	Cat. No.	Pack of	Case of
0–200µL	2"	Natural	BP	**02-681-134**	1000/37.00	10 Pk./320.75
0–200µL	2"	Natural	LR, 10 × 96	**02-681-135**	960/72.00	5 Pk./320.75
0–200µL	2"	Natural	LRS, 10 × 96	**21-375-12**	960/76.75	5 Pk./340.25
0–200µL	2"	Natural	SR, 5 × 200	**21-375-2**	1000/76.75	10 Pk./679.75
0–200µL	2", Small MLA style	Natural	BP	**21-375G**	1000/63.50	10 Pk./563.75
0–200µL	2"	Yellow	BP	**02-681-140**	1000/37.00	10 Pk./320.75
0–200µL	2"	Yellow	LR, 10 × 96	**02-681-141**	960/69.00	5 Pk./309.50
0–200µL	2"	Yellow	LRS, 10 × 96	**02-681-142**	960/81.47	5 Pk./360.50
0–200µL	2"	Yellow	SR, 5 × 200	**21-197-27**	1000/78.90	10 Pk./698.25
0–200µL	2", Pipetman* style	Yellow	BP	**21-197-25**	1000/68.50	10 Pk./607.50
1–200µL	2", Grad. at 10, 50 and 100µL	Natural	BP	**02-681-145**	1000/56.00	10 Pk./503.00
1–250µL	2", thin wall	Natural	BP	**02-707-102**	1000/52.00	10 Pk./447.75
1–250µL	2", thin wall	Natural	HR, 10 × 96	**02-707-103**	960/64.00	5 Pk./285.00
1–250µL	2", thin wall	Natural	HRS, 10 × 96	**02-707-117**	960/71.00	5 Pk./314.25
1–250µL	2", thin wall	Natural	RI, 5 × 96	**02-707-118**	480/29.00	10 Pk./250.50
200–1000µL	3 7⁄16", Combo	Natural	BP	**02-681-160**	750/55.00	10 Pk./481.75
200–1000µL	3 7⁄16", Combo	Natural	SR, 3 × 200	**02-681-161**	600/55.00	10 Pk./473.50
250–1000µL	3 3⁄8"	Natural	IWS	**02-681-162**	500/109.00	10 Pk./963.75
200–1300µL	3 1⁄8"	Blue	BP	**02-681-172**	1000/49.00	10 Pk./414.75
200–1300µL	3 1⁄8"	Blue	LR, 10 × 100	**02-681-173**	1000/82.00	5 Pk./366.50
200–1300µL	3 1⁄8"	Blue	LRS, 10 × 100	**22-282202**	1000/79.50	5 Pk./352.25
200–1300µL	3 1⁄8"	Natural	BP	**22-023350**	1000/63.87	10 Pk./565.25
200–1300µL	3 1⁄8"	Natural	LR, 10 × 100	**02-681-176**	1000/106.67	5 Pk./472.00
200–1300µL	3 1⁄8"	Natural	LRS, 10 × 100	**02-681-177**	1000/97.41	5 Pk./431.00

† *Packaging Code: BP=Bulk Pack; RI=Rack Inserts; HR=Hinged Rack; HRS=Hinged Rack, Sterile; LR=Lift-off Rack; LRS=Lift-off Rack, Sterile; SR=Stack Rack.*



Pipet tips are not shown to scale.

*Fisherbrand** Redi-Tip* Pipet Tips

Redi-Tip Series

Redi-Tip Reference Tips

- Graduations at 10, 50 and 100µL; 10, 50, 100 and 200µL; or 250, 500 and 1000µL
- Allow visual, qualitative review of pipetting precision

Redi-Tip General-Purpose Tips

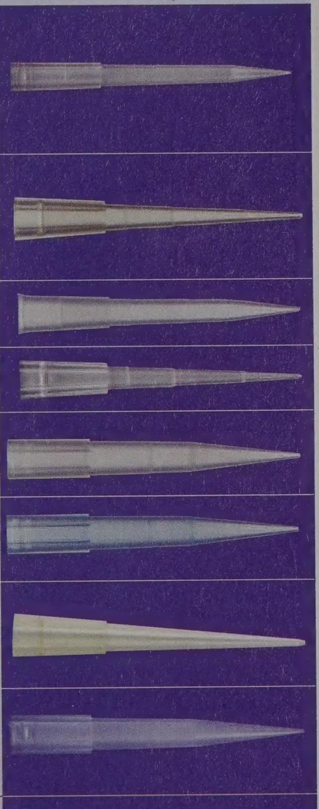
- For use with most 1–200µL and 201–1000µL single and multichannel pipetters
- Hinged racks can be stacked rack-on-rack
- Hinged closure on racks allows top lid to be partially open for steam penetration during autoclaving

Pipetter Compatibility

Universal fit for research grade pipetters.

Volume	Length	Color	Packaging†	Cat. No.	Pack of	Case of
Reference Tips						
1–200µL	2"	Natural	BP	**02-707-504**	1000/57.00	10 Pk./505.25
1–200µL	2"	Natural	HRS, 10 × 96	**02-681-457**	960/84.00	5 Pk./371.50
1–200µL	2"	Natural	HR, 10 × 96	**02-707-505**	960/69.50	5 Pk./307.75
1–200µL	2"	Natural	RI, 5 × 96	**02-707-506**	480/30.50	10 Pk./262.25
1–200µL	2"	Natural	LR, 10 × 96	**02-681-146**	960/81.00	5 Pk./360.75
1–200µL	2"	Natural	LRS, 10 x 96	**02-681-147**	960/83.00	5 Pk./370.75
1–200µL	2"	Natural	SR, 5 × 200	**02-681-150**	1000/76.00	10 Pk./682.75
1–200µL	2"	Yellow	BP	**02-681-151**	1000/39.00	10 Pk./343.25
1–200µL	2"	Yellow	LR, 10 × 96	**02-681-152**	960/79.72	5 Pk./352.75
1–200µL	2"	Yellow	LRS, 10 × 96	**02-681-153**	960/81.70	5 Pk./361.50
1–200µL	2"	Yellow	HR, 10 × 96	**02-681-154**	960/81.25	5 Pk./359.75
1–200µL	2"	Yellow	HRS, 10 × 96	**02-681-155**	960/84.00	5 Pk./371.75
1–200µL	2"	Yellow	SR, 5 × 200	**02-681-156**	1000/75.29	10 Pk./666.25
1–300µL	2"	Natural	BP	**02-681-157**	1000/35.50	10 Pk./303.75
1–300µL	2"	Natural	LR, 10 × 96	**02-681-158**	960/68.50	5 Pk./308.25
1–300µL	2"	Natural	LRS, 10 × 96	**02-681-159**	960/79.00	5 Pk./353.00
1–300µL	2⅚16" Elongated	Natural	BP	**02-681-454**	1000/53.00	10 Pk./454.75
1–300µL	2⅚16"	Natural	LR, 10 × 96	**02-681-455**	960/71.00	5 Pk./314.25
1–300µL	2⅚16"	Natural	LRS, 10 × 96	**02-707-119**	960/81.25	5 Pk./359.50
101–1000µL	2¾"	Natural	BP	**02-681-168**	1000/44.00	10 Pk./382.25
101–1000µL	2¾"	Natural	LR, 10 × 100	**02-681-169**	1000/113.00	5 Pk./486.25
101–1000µL	2¾"	Natural	LRS, 10 × 100	**02-681-170**	1000/100.00	5 Pk./445.00
101–1000µL	2¾"	Natural	SR, 2 × 500	**02-681-171**	1000/79.00	5 Pk./355.75
101–1000µL	2¾"	Blue	BP	**02-681-163**	1000/47.00	10 Pk./409.25
101–1000µL	2¾"	Blue	LR, 10 × 100	**02-681-164**	1000/109.00	5 Pk./474.75
101–1000µL	2¾"	Blue	LRS, 10 × 100	**02-681-165**	1000/99.00	5 Pk./439.25
101–1000µL	2¾"	Blue	SR, 2 × 500	**02-681-166**	1000/84.00	5 Pk./377.00
General-Purpose Tips						
1–200µL	2"	Yellow	BP	**02-707-500**	1000/57.50	10 Pk./508.25
1–200µL	2"	Yellow	HR, 10 × 96	**02-707-501**	960/66.50	5 Pk./294.25
1–200µL	2"	Yellow	HRS, 10 × 96	**02-707-502**	960/84.50	5 Pk./374.50
1–200µL	2"	Yellow	RI, 5 × 96	**02-707-503**	480/30.50	10 Pk./262.25
101–1000µL	2¾"	Blue	BP	**02-707-507**	1000/57.50	10 Pk./508.25
101–1000µL	2¾"	Blue	HR, 10 × 100	**02-707-508**	1000/68.00	5 Pk./301.75
101–1000µL	2¾"	Blue	HRS, 10 × 100	**02-707-509**	1000/86.25	5 Pk./382.00
101–1000µL	2¾"	Blue	RI, 10 × 100	**02-707-510**	1000/65.20	5 Pk./288.50
101–1000µL	2¾"	Natural	HR/T, 10 × 100	**02-707-511**	1000/77.25	5 Pk./341.75
Empty Racks with Tip Inserts						
For 200µL tips	----	----	----	**02-681-436**	1/2.25	96/161.75
For 1000µL tips	----	----	----	**02-681-438**	1/2.75	50/100.50

† Packaging Code: BP=Bulk Pack; RI=Rack Inserts; HR=Hinged Rack; HRS=Hinged Rack, Sterile; HR/T=Hinged Rack, Trace Metal-Free; LR=Lift-off Rack; LRS=Lift-off Rack, Sterile; SR=Stack Rack.



Pipet tips are not shown to scale.

*Fisherbrand** SureGrip* Pipet Tip Reload System

Full line of disposable pipet tips available in preloaded carriers for fast, easy loading into empty racks

Easy-to-use: just load the carrier into an empty pipet tip rack (reuse your old racks or purchase separately, below). Carrier locks onto rack with a quick, press-and-snap action. When empty, recycle or dispose of the carrier and reuse the rack.

- Compatible with most manufacturers' racks
- Reduces waste by 80%

05-408 Series SureGrip Reload System

Pipet Tips in Racks

- All tips are available racked in sturdy, reusable CellRacks
- Withstand numerous autoclave cycles
- Keep tips aligned for pipetter mounting

Several Tip Sizes Available

- 10µL pipet tip has graduation marks at 2µL and 10µL
- 10µL Long Reach tip features extended length (45mm) to reach the bottom of tubes without contaminating pipetter shaft, and graduation marks at 2µL, 5µL and 10µL
- 200µL pipet tip features a soft-fit collar for easy mounting and ejection, and graduation marks at 10µL, 50µL and 100µL
- 1250µL pipet tip features an extended length (103mm), racked on 9mm centers (multi-channel compatible), and graduation marks at 200µL, 500µL and 1000µL

ORDERING INFORMATION:

Each pack consists of 10 preloaded tip carriers of 96 tips each.

CERTIFICATIONS:

Certified DNase, RNase, Human DNA and PCR inhibitor free

Pipetter Compatibility

Universal fit for research-grade pipetters

Description	Tip Color	Cat. No.	Pack of	Case of 5 Pk
Pipet Tips in Reloads				
10µL	Natural	**05-408-184**	960/51.50	235.5
10µL, Long Reach	Natural	**05-408-187**	960/51.50	235.5
200µL	Natural	**05-408-189**	960/41.50	191.0
200µL	Yellow	**05-408-191**	960/41.50	191.0
1250µL	Natural	**05-408-194**	768/40.00	183.5
Pipet Tips in CellRacks				
10µL	Natural	**05-408-186**	960/68.50	307.5
10µL, Long Reach	Natural	**05-408-188**	960/68.50	307.5
200µL	Natural	**05-408-190**	960/56.50	253.2
200µL	Yellow	**05-408-192**	960/57.00	253.2
1250µL	Natural	**05-408-196**	768/55.00	245.2
Empty CellRacks				
For 10µL tips	----	**05-408-185**	10/26.56	----
For 10µL Long Reach and 200µL tips	----	**05-408-193**	10/26.56	----
For 1250µL tips	----	**05-408-195**	8/26.56	----

LOOKING FOR FREE SAMPLES?

You can request samples of Fisherbrand* SureGrip* pipet tips at **www.fisherlab.info.**

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*Fisherbrand** Stack-Rack Space-Saver Tips

Increase limited bench space

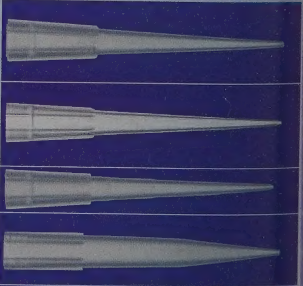
- Racks nest together with each rack serving as a lid for the rack below
- Rack packs contain five racks of tips, with a base and dust cover
- Available in 5 × 96, 5 × 100, or 5 × 200 formats

Pipetter Compatibility

Universal fit for research grade pipetters

Volume	Length	Tip	Color	Packaging	Cat. No.	Pack of	Case of
1–200µL	2"	Standard	Natural	5 racks of 200	**02-707-100**	1000/55.00	10 Pk./469.00
1–200µL	2"	Standard	Yellow	5 racks of 200	**02-707-101**	1000/55.00	10 Pk./470.75
1–200µL	2"	Standard	Natural	5 racks of 96	**02-707-110**	480/27.00	10 Pk./231.50
1–200µL	2"	Standard	Yellow	5 racks of 96	**02-707-111**	480/27.00	10 Pk./236.75
1–200µL	2"	Beveled	Natural	5 racks of 200	**02-707-105**	1000/55.00	10 Pk./468.00
1–200µL	2"	Beveled	Yellow	5 racks of 200	**02-707-106**	1000/55.00	10 Pk./468.00
1–200µL	2"	Beveled	Natural	5 racks of 96	**02-707-112**	480/37.50	10 Pk./320.75
1–200µL	2"	Beveled	Yellow	5 racks of 96	**02-707-113**	480/26.50	10 Pk./227.75
1–200µL	2", Graduated	Beveled	Natural	5 racks of 96	**02-707-114**	480/26.50	10 Pk./227.00
1–200µL	2", Graduated	Beveled	Yellow	5 racks of 96	**02-707-115**	480/27.00	10 Pk./231.50
101–1000µL	2¾"	Standard	Natural	2 stacks/5 racks of 100	**02-707-107**	1000/64.00	5 Pk./284.25
101–1000µL	2¾"	Standard	Blue	2 stacks/5 racks of 100	**02-707-108**	1000/64.00	5 Pk./286.00

02-707 Series in racks



Pipet tips are not shown to scale.

*Trademark. See Trademark Reference.

Prices subject to change.

hermo Scientific* Finntip* Pipetter Tips

utoclavable, chemical-resistant tips, made of gh-quality polypropylene

- Smooth, uniform surface prevents liquid retention
- Volume range from 0.2µL to 10mL
- Available sterile or nonsterile
- Packaging options include racks, bags, bulk, and refill packs
- New colorful rack design with color-coded trays (see Color Code in ordering chart below)

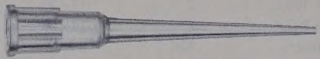
21-377-208

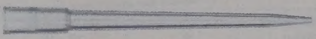
21-377-385

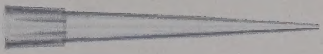
petter Compatibility

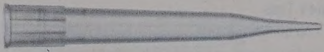
ermo Scientific Finnpipette* Focus, Fisherbrand* Finnpipette, Finnpipette II. iversal fit for most other research grade pipetters

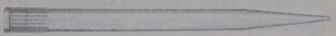
nge	Packaging	Color Code	Mfr. No.	Cat. No.	Case of
ntip 10					
2 to 10µL	Bag of 1000	Pink	9400-310	**21-377-209**	1000/49.00
2 to 10µL	Rack, 10 × 96	Pink	9400-300	**21-377-208**	960/60.00
2 to 10µL	Rack, 10 × 96, sterile	Pink	9400-303	**21-377-210**	960/76.00
2 to 10µL	Rack, 4 × 192 + refill, 10 × 192	Pink	9400-326	**14-245-148**	2688/153.00
2 to 10µL	Refill, 20 × 192	Pink	9400-327	**14-245-149**	3840/218.00
ntip 20					
2 to 20µL	Bag of 1000	Purple	9400-620	**21-377-800**	1000/57.50
2 to 20µL	Rack, 10 × 384, sterile	Purple	9400-613	**21-377-801**	3840/415.00
2 to 20µL	Rack, 10 × 384	Purple	9400-610	**21-377-802**	3840/330.00
ntip 50					
2 to 50µL	Bag of 1000	Turquoise	9400-360	**21-377-296**	1000/56.00
2 to 50µL	Rack, 10 × 384	Turquoise	9400-370	**21-377-385**	3840/450.00
2 to 50µL	Rack, 10 × 384, sterile	Turquoise	9400-373	**21-377-386**	3840/567.00
ntip 250 Universal					
5 to 250µL	Box of 500	Yellow	9400-250	**21-377-144**	500/26.00
5 to 250µL	Bag of 1000	Yellow	9400-230	**21-377-45**	1000/41.00
5 to 250µL	Case of 20,000	Yellow	9400-220	**21-377-297**	20,000/782.00
5 to 250µL	Rack, 10 × 96	Yellow	9400-260	**21-377-2**	960/53.00
5 to 250µL	Rack, 10 × 96, sterile	Yellow	9400-263	**21-377-126**	960/67.00
5 to 250µL	Rack, 4 × 96 + refill, 10 × 96	Yellow	9400-266	**14-245-150**	1344/72.00
5 to 250µL	Rack, Refill, 20 × 96	Yellow	9400-267	**14-245-151**	1920/102.00
ntip 300					
to 300µL	Bag of 1000	Orange	9401-260	**21-377-49**	1000/44.00
to 300µL	Case of 20,000	Orange	9401-240	**21-377-298**	20,000/782.00
to 300µL	Rack, 10 × 96	Orange	9401-250	**21-377-128**	960/61.00
to 300µL	Rack, 10 × 96, sterile	Orange	9401-253	**21-377-77**	960/72.00
to 300µL	Refill pack, 10 × 192	Orange	9401-255	**21-377-241**	1920/103.00
ntip 1000					
0 to 1000µL	Bag of 1000	Blue	9401-030	**21-377-299**	1000/44.00
0 to 1000µL	Case of 10,000	Blue	9401-010	**21-377-300**	10,000/392.00
0 to 1000µL	Box of 200	Blue	9401-070	**21-377-46**	200/12.00
0 to 1000µL	Rack, 10 × 96	Blue	9401-110	**21-377-840**	960/59.00
0 to 1000µL	Rack, 10 × 96, sterile	Blue	9401-113	**21-377-841**	960/72.00
0 to 1000µL	Refill pack, 5 × 192	Blue	9401-115	**21-377-842**	960/51.00
ntip 5mL					
to 5mL	Box of 75	Green	9402-050	**21-377-50**	75/15.00
to 5mL	Bag of 500	Green	9402-030	**21-377-304**	500/75.00
to 5mL	Case of 3000	Green	9402-010	**21-377-305**	3000/329.00
to 5mL	Rack, 5 × 54	Green	9402070	**21-377-510**	270/65.00
to 5mL	Rack, 5 × 54, sterile	Green	9402073	**21-377-511**	270/79.00
ntip 10mL					
to 10mL	Box of 40	Red	9402-150	**21-377-146**	40/10.00
to 10mL	Bag of 100	Red	9402-151	**21-377-52**	100/19.00
to 10mL	Rack, 5 × 24	Red	9402-160	**21-377-167**	120/36.00
to 10mL	Rack, 5 × 24, sterile	Red	9402-163	**21-377-168**	120/41.00

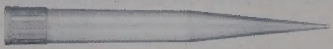












Pipet tips are not shown to scale.

Thermo Scientific* Finntip* Filtered Pipet Tips

Sterile, disposable tips available in standard, digital, 16-channel and multichannel versions

- Fit most common 0.2µL to 10mL pipetters
- Ideal for PCR amplification applications and for pipetting radioactive, infectious, and aerosol-emitting samples
- Inert and nonsealing polyethylene filter
- Tips come vacuum sealed in irradiation-sterilized hinged tip racks
- Not autoclavable

Pipetter Compatibility

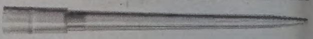
Standard tips are available to fit most common 0.2µL to 10mL pipetters. New configurations available as well: 20µL tip for Thermo Scientific Finnpipette* Digital 2 - 20µL pipetter; 50µL tip for Thermo Scientific Finnpipette* 16-channel pipetter; and 300µL tip for multichannel pipetters. Universal fit accommodates most other research grade pipetters.

Volume	Length	Packaging	Mfr. No.	Cat. No.	Case of
Standard					
0.5–10µL	1¼"	10 × 96	94052-100	**21-377-169**	960/111.00
0.5–20µL	1⅞"	10 × 96	94052-150	**21-377-353**	960/113.00
0.3–30µL	2"	10 × 96	94052-160	**14-387-75**	960/114.00
0.5–100µL	2"	10 × 96	94052-200	**21-377-170**	960/113.00
0.5–200µL	2"	10 × 96	94052-300	**21-377-171**	960/113.00
1–5mL	5¾"	5 × 54	94052-550	**21-377-512**	270/122.00
2–10mL	5⅞"	5 × 24	94052-600	**21-377-357**	120/78.00
Digital (2-20µL)					
0.2–10µL	1"	10 × 96	94052-000	**21-377-354**	960/151.00
0.5–20µL	1⅞"	10 × 384	94052-020	**21-378-01**	3840/834.00
16-Channel					
0.5–20µL	1⅞" micro	10 × 384	94052 060	**21-377-387**	3840/835.00
Multichannel					
5–300µL	2"	10 × 96	94052-350	**21-377-307**	960/113.00
100–1000µL	2¾"	10 × 96	94052-410	**21-377-604**	960/114.00
100–1500µL	2¾"	10 × 96	94052-450	**21-377-356**	960/153.00

21-377-170

21-377-171

21-377-354


21-377-387

21-377-307

Pipet tips are not shown to scale.

Eppendorf* epTIPS

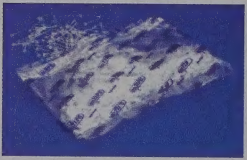
Reliable, reproducible, high-precision pipetting for a wide variety of applications

Pipet Tips

- Drop contour design
- Finely tapered and extended; ideal for small-volume pipetting
- Fine graduations make it easy to check volume
- Soft, flexible tip cone provides better seal to pipetter
- Manufactured under ISO-9001:2001-certified processes
- Available in Eppendorf Quality (for standard laboratory use) and Sterile (for all tissue culture and microbiology applications)

Packaging

- Packaging options include racks, refill trays (epTIPS Reloads), boxes, bulk packs (in resealable bags), individually wrapped tips, and sets (five refill trays and an epTIPS box)
- Box and refill trays offer simple, contamination-free handling
- Trays are color coded for easy volume identification
- Sturdy box design provides secure footprint—ideal for use with multichannel pipetters
- Environmentally friendly—all components of refills completely recyclable
- Refill trays can be autoclaved intact and stored for future use



05-403 Series

Pipetter Compatibility

All Eppendorf pipetters, plus universal fit for most other research grade pipetters

Sterile

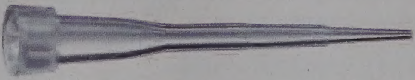
Volume	Packaging	Mfr. No.	Cat. No.	Pack
2–200µL	Indiv. Wrapped	22 49 220-9	**05-403-81**	1000/114.0
50–1000µL	Indiv. Wrapped	22 49 222-5	**05-403-82**	1000/114.0
0.1–20µL	Racks, 10 × 96	22 49 225 0	**05-403-110**	960/95.0
2–200µL	Racks, 10 × 96	22 49 227 0	**05-403-111**	960/74.3
20–300µL	Racks, 10 × 96	22 49 228 4	**05-403-112**	960/74.3
50–1000µL	Racks, 10 × 96	22 49 229 2	**05-403-113**	960/81.5
50–1250µL	Racks, 10 × 96	22 49 230 6	**05-403-114**	960/81.5
100–5000µL	Racks, 5 × 24	22 49 231 4	**05-403-115**	120/47.0

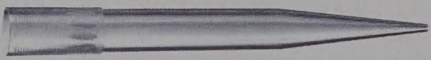
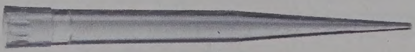
Contd. on next pag

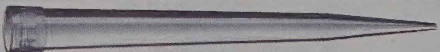
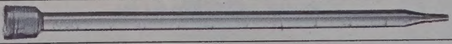
endorf* epTIPS, Contd.

pendorf* Quality, Nonsterile

me	Packaging	Mfr. No.	Cat. No.	Pack of
-10µL	Rack, 10 × 96	022491903	**05-403-63**	960/76.00
-10µL	Refill Trays, 10 × 96	022491504	**05-403-38**	960/69.00
-10µL	Box of 96	022491300	**05-403-21**	96/29.00
-10µL	Bulk, 2 bags of 500	022492004	**05-403-54**	1000/55.00
-10µL	Set, 5 × 96	022491407	**05-403-30**	480/55.00
-20µL	Rack, 10 × 96	022491911	**05-403-64**	960/76.00
-20µL	Refill Trays, 10 × 96	022491512	**05-403-39**	960/69.00
-20µL	Box of 96	022491318	**05-403-22**	96/29.00
-20µL	Bulk, 2 bags of 500	022492012	**05-403-55**	1000/55.00
-20µL	Set, 5 × 96	022491415	**05-403-31**	480/55.00
-20µL, long	Rack, 10 × 96	022491920	**05-403-65**	960/76.00
-20µL, long	Refill Trays, 10 × 96	022491521	**05-403-40**	960/69.00
-20µL, long	Box of 96	022491326	**05-403-23**	96/29.00
-20µL, long	Bulk, 2 bags of 500	022492021	**05-403-56**	1000/55.00
-20µL, long	Set, 5 × 96	022491423	**05-403-32**	480/55.00
00µL	Rack, 10 × 96	022491938	**05-403-66**	960/59.00
00µL	Refill Trays, 10 × 96	022491539	**05-403-41**	960/53.00
00µL	Box of 96	022491334	**05-403-24**	96/29.00
00µL	Bulk, 2 bags of 500	022492039	**05-403-57**	1000/44.00
00µL	Set, 5 × 96	022491431	**05-403-33**	480/44.00
300µL	Rack, 10 × 96	022491946	**05-403-67**	960/59.00
300µL	Refill Trays, 10 × 96	022491547	**05-403-42**	960/53.00
300µL	Box of 96	022491342	**05-403-25**	96/29.00
300µL	Bulk, 2 bags of 500	022492047	**05-403-58**	1000/44.00
300µL	Set, 5 × 96	022491440	**05-403-34**	480/44.00
-1000µL	Rack, 10 × 96	022491954	**05-403-68**	960/64.00
-1000µL	Refill Trays, 10 × 96	022491555	**05-403-43**	960/59.00
-1000µL	Box of 96	022491351	**05-403-26**	96/29.00
-1000µL	Bulk, 2 bags of 500	022492055	**05-403-59**	1000/46.00
-1000µL	Set, 5 × 96	022491458	**05-403-35**	480/46.00
-1250µL	Rack, 10 × 96	022491962	**05-403-69**	960/64.00
-1250µL	Refill Trays, 10 × 96	022491563	**05-403-44**	960/59.00
-1250µL	Box of 96	022491369	**05-403-27**	96/29.00
-1250µL	Bulk, 2 bags of 500	022492063	**05-403-60**	1000/46.00
-1250µL	Set, 5 × 96	022491466	**05-403-36**	480/46.00
)-2500µL	Rack, 10 × 48	022491971	**05-403-70**	240/33.00
)-2500µL	Refill Trays, 10 × 48	022491571	**05-403-45**	480/59.00
)-2500µL	Box of 48	022491377	**05-403-28**	48/29.00
)-2500µL	Bulk, 5 bags of 100	022492071	**05-403-61**	500/55.00
)-2500µL	Set, 5 × 48	022491474	**05-403-37**	240/56.00
)-5000µL	Rack, 5 × 24	022491989	**05-403-71**	120/38.00
)-5000µL	Box of 24	022491385	**05-403-29**	24/29.00
)-5000µL	Bulk, 5 bags of 100	022492080	**05-403-62**	500/76.00
0mL	Bulk, 2 bags of 100	022492098	**05-403-116**	200/42.00
0mL	Rack, 5 × 24	022491997	**05-403-117**	120/54.00
0mL, Long	Bulk, 2 bags of 100	022492101	**05-403-119**	200/47.00



Pipet tips are not shown to scale.

TIPS Reloads

ume	Mfr. No.	Cat. No.	Pack of 5
-10µL	022435507	**13-688-625**	207.00
-20µL	022435515	**13-688-626**	207.00
-20µL	022435523	**13-688-627**	207.00
300µL	022435540	**13-688-629**	159.00
1000µL	022435558	**13-688-630**	177.00
1250µL	022435566	**13-688-631**	177.00
)-2500µL	022435574	**13-688-632**	177.00

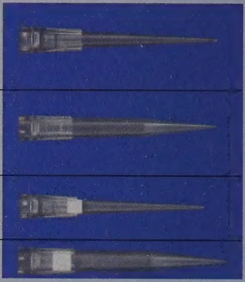
PIPETTER SPECIFIC

*Fisherbrand** Sure-Fit* Ergo-F Pipet Tips

Designed specifically for use with Fisherbrand pipetters

- RNase, DNase, and pyrogen free
- Available in three capacities, with or without aerosol barrier
- Unique wall design provides an extra-strong seal
- Require minimal ejection force

Volume	Packaging[†]	Cat. No.	Pack of	Case of
Nonfilter Tips				
10-200µL	BP	**02-681-469**	1000/23.40	10 Pk./212.75
10-200µL	HR, 10 × 96	**02-681-478**	960/47.50	5 Pk./203.50
10-200µL	HRS, 10 × 96	**02-681-479**	960/53.00	5 Pk./226.50
10-200µL	RI, 5 × 96	**02-681-483**	480/21.50	10 Pk./186.00
100-1000µL	BP	**02-681-470**	1000/26.46	10 Pk./240.50
100-1000µL	HR, 10 × 100	**02-681-480**	1000/57.00	5 Pk./244.00
100-1000µL	HRS, 10 × 100	**02-681-481**	1000/61.50	5 Pk./273.00
100-1000µL	RI, 10 × 100	**02-681-471**	1000/47.00	5 Pk./201.00
Filter Tips				
20-200µL[‡]	HRS, 10 × 96	**02-681-474**	960/123.14	5 Pk./526.25
20-200µL[††]	HRS, 10 × 96	**02-681-473**	960/118.00	5 Pk./526.25
1000µL	HRS, 10 × 100	**02-681-475**	1000/124.00	5 Pk./556.75



Pipet tips are not shown to scale.

[†] Packaging Code: BP=Bulk Pack; HR=Hinged Rack; HRS=Hinged Rack, Sterile; RI=Rack Inserts

[‡] With aerosol barrier at 20µL.

[††] With aerosol barrier at 100µL.

Pipetter Compatibility

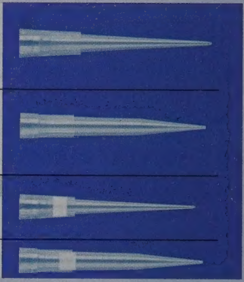
Fisherbrand Finnpipette* I, Finnpipette II, and most Thermo Scientific* Finnpipette series pipetters

*Fisherbrand** Sure-Fit* Ergo-G Pipet Tips NEW

Designed specifically for use with Gilson* Pipetman* Pipetters

- Ergonomic fit requires less force for tip insertion and ejection
- Secure, consistent seal
- Reduce strains and injuries associated with repetitive pipetting
- Patented bi-fabricated wall technology
- Available in reload decks

Volume	Packaging[†]	Cat. No.	Pack of	Case of
Nonfilter Tips				
10-200µL	BP	**02-681-050**	1000/23.05	10 Pk./209.50
10-200µL	HR, 10 × 96	**02-681-051**	960/44.11	5 Pk./200.50
10-200µL	HRS, 10 × 96	**02-681-052**	960/49.17	5 Pk./223.50
10-200µL	RI, 5 × 96	**02-681-053**	480/20.19	10 Pk./183.50
100-1000µL	BP	**02-681-056**	1000/26.07	10 Pk./237.00
100-1000µL	HR, 10 × 100	**02-681-057**	1000/52.91	5 Pk./240.50
100-1000µL	HRS, 10 × 100	**02-681-058**	1000/60.23	5 Pk./266.50
100-1000µL	RI, 10 × 100	**02-681-059**	1000/41.25	5 Pk./198.50
Filter Tips				
10-200µL[‡]	HRS, 10 × 96	**02-681-055**	960/119.57	5 Pk./511.00
10-200µL[††]	HRS, 10 × 96	**02-681-054**	960/105.00	5 Pk./511.00
100-1000µL	HRS, 10 × 100	**02-681-060**	1000/111.00	5 Pk./541.00



Pipet tips are not shown to scale.

[†] Packaging Code: BP=Bulk Pack; HR=Hinged Rack; HRS=Hinged Rack, Sterile; RI=Rack Inserts.

[‡] With aerosol barrier at 20µL.

[††] With aerosol barrier at 100µL.

Pipetter Compatibility

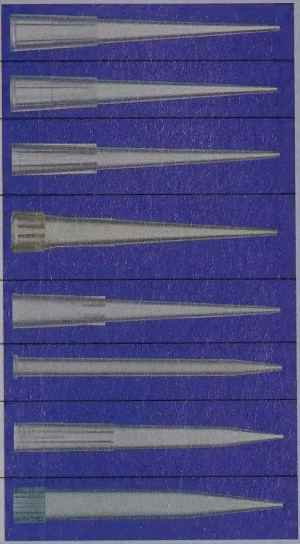
Gilson Pipetman series pipetters

*Trademark. See Trademark Reference.

Fisherbrand* Pipetter Specific Tips

- Tips for specific applications
- Designed to fit distinctive pipetters

Code	Volume	Length	Color	Packaging†	Cat. No.	Pack of	Case of
1	0–200µL	2"	Natural	BP	**21-197-2D**	1000/50.50	10 Pk./431.50
2	0–200µL	2"	Natural	SR, 5 × 200	**22-282-208**	1000/34.50	10 Pk./295.50
3	1–200µL	2 9/16"	Natural	SR, 5 × 200	**21-244-3**	1000/91.50	5 Pk./406.50
	1–200µL	2 9/16"	Natural	SL/SR	**21-240-11**	1000/57.50	5 Pk./247.25
4	1–200µL	1 7/8"	Yellow	BP	**21-375D**	1000/57.75	10 Pk./511.50
	1–200µL	1 7/8"	Yellow	SR, 5 × 200	**21-374D**	1000/82.25	10 Pk./729.25
	1–200µL	1 7/8"	Yellow	LR, 10 × 96	**02-707-121**	960/59.75	5 Pk./263.50
	1–200µL	1 7/8"	Yellow	LRS, 10 × 96	**02-707-122**	960/64.75	5 Pk./291.50
5	5–300µL	2 1/8"	Natural	BP	**02-707-62**	1000/39.00	10 Pk./334.00
	5–300µL	2 1/8"	Natural	LR, 10 × 96	**02-707-63**	960/66.75	5 Pk./295.00
	5–300µL	2 1/8"	Natural	LRS, 10 × 96	**02-707-120**	960/71.75	5 Pk./317.25
6	100–1000µL	4"	Natural	BP	**02-681-182**	500/52.00	10 Pk./441.25
7	100–1300µL	3 1/8"	Natural	LR, 10 × 96	**02-707-126**	960/75.50	5 Pk./333.75
	100–1300µL	3 1/8"	Natural	LRS, 10 × 96	**02-707-127**	960/81.75	5 Pk./361.50
8	101–1000µL	2 13/16"	Blue	BP	**21-375E**	1000/61.00	10 Pk./541.75
	101–1000µL	2 13/16"	Blue	LR	**02-707-123**	1000/63.50	5 Pk./280.25
	101–1000µL	2 13/16"	Blue	LRS	**02-707-124**	1000/69.75	5 Pk./308.25



†Packaging Code: BP=Bulk Pack; LR=Lift-off Rack; LRS=Lift-off Rack, Sterile; SR=Stack Rack; SL=SlimLine.

Pipet tips are not shown to scale.

Pipetter Compatibility

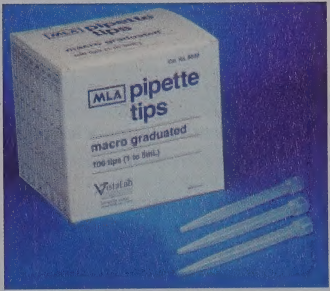
1. Oxford* BenchMate*, Pipetman*
2. MLA* Small Volume
3. Oxford P-3000, P-7000; Helena*
4. Biohit Proline*; Brinkmann Transferpette*; Corning* Lambda*; Costar* Onepette*; Eppendorf* 2000, 2100, 4810 Adj., Repeater Plus 8; Finnpipette* 50-200uL, Digital, Digital MCPs; Labpette Digital VE-20, -100, -200; Mettler Toledo* VoluMate*; Nichiryo 5000, 5000F, 5000V, 7000 Digital Micro, Nichipet EX; Oxford BenchMate; Pipetman P-20, -100, -200; Rainin R-2, -100, -200; Socorex* 811, 821, Calibra* 822, Acura* Analogic 851, Calibra 852, Acura 853; Titertek; Titertek Digital and Plus Electronic
5. Biohit Proline; Costar 8-, 12-Pette, Onepette; Finnpipette; Nichiryo 5000, 5000F Micro, 5000V Micro, Nichipet EX; Oxford BenchMate; Pipetman; Rainin; Titertek; Titertek Digital; Corning Lambda; Mettler Toledo VoluMate
6. Biopet*, Clay Adams*, Selectapette*
7. Matrix-Multi Electrapette
8. Biohit Proline; Eppendorf Tip Ejector 4700, 4710 Digital, 2000 Reference, 2100 Research; Finnpipette Digital; Labpette Digital VE-1000XR; Nichiryo 5000; Oxford BenchMate; Socorex; Titertek Digital; Corning Lambda

MLA*-Brand Pipet Tips

or MLA-Brand pipetters (available on our Web site)

- Four packaging configurations: Dense packs in five and three tray styles—each with 200/tray; bulk packs in Protectainer; and sterile and pyrogen-free sterile packs, both with 200 individual pouches
- Autoclavable

olume	Packaging	Mfr. No.	Cat. No.	Pack of
2mL	Dense (5 trays)	9025	**21-341**	1000/69.77
2mL	Bulk	4025	**21-341-20**	1000/56.75
2mL	Sterile, Individually wrapped	2025	**21-341-10**	200/38.98
2mL	Pyrogen-free Sterile, Individually wrapped	2027	**21-343-21**	200/50.33
0mL	Dense (3 trays)	9026	**21-343**	600/52.65
0mL	Bulk	4026	**21-343-20**	750/59.58
0mL	Sterile, Individually wrapped	2026	**21-343-10**	200/47.75
0mL	Pyrogen-free Sterile, Individually wrapped	2028	**21-343-22**	200/55.56
0µL (Ultra Micro)	Dense (5 trays)	9029	**21-382-25**	1000/78.68
mL (Macro Tip)	Dense	9048	**21-318-602**	100/22.31



21-318-602

Pipetter Compatibility

MLA-Brand pipetters

APPLICATION SPECIFIC — EXTENDED LENGTH

*Fisherbrand** Extended-Length Tips

- Reach the bottom of long tubes
- Access restricted sample areas
- Natural color

Volume	Length	Packaging†	Cat. No.	Pack of	Case of
1–200µL	3⅝"	BP	**02-681-418**	1000/50.00	5 Pk./214.75
1–200µL	3⅝"	LR, 8 × 204	**02-681-419**	1632/190.00	3 Pk./515.50
1–200µL	3⅝"	LRS, 8 × 204	**02-681-420**	1632/190.00	3 Pk./515.50
101–1000µL	3⅝"	BP	**02-681-421**	1000/40.50	10 Pk./350.00
101–1000µL	3⅝"	LR, 10 × 100	**02-681-422**	1000/79.00	5 Pk./350.50
101–1000µL	3⅝"	LRS, 10 × 100	**02-681-423**	1000/90.00	5 Pk./403.00

† Packaging Code: BP=Bulk Pack; LR=Lift-off Rack; LRS=Lift-off Rack, Sterile.

Pipet tips are not shown to scale.

Pipetter Compatibility

For use with, but not limited to:
BrandTech* Transferpette*
Eppendorf* 3130, Eppendorf Reference* 2000, Eppendorf Research* 2100
Thermo Scientific* Finnpipette* Digital
Mettler Toledo VoluMate*
Nichiryo-Nichipet EX
Pipetman*
Rainin*
Socorex* Fixed Volume, Calibra*
Titertek* Digital

Thermo Scientific* Finntip* Extended Tips

Designed for extremely narrow or deep vessels

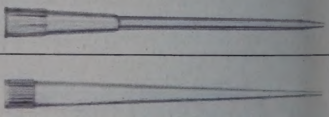
- Autoclavable, chemical-resistant tips, made of high-quality polypropylene
- Smooth, uniform surface prevents liquid retention
- Available sterile or nonsterile
- Packaging options include racks, bags, and boxes
- New colorful rack design with color-coded trays (see Color Code in ordering chart below)
- Finntip 200 Extended is an extra-long tapered tip that fits in extremely narrow vessels
- Finntip 1000 Extended is ideal for use with longer tubes and other deep vessels

Pipetter Compatibility

For use with Thermo Scientific Finnpipette* Focus, Fisherbrand* Finnpipette II, and most other pipetter brands

14-386-54

Range	Length	Packaging	Color Code	Mfr. No.	Cat. No.	Pack of
Finntip 200 Extended						
5 to 200µL	3"	Box of 400	Orange	9400-100	**21-377-43**	400/53.00
5 to 200µL	3"	Rack, 10 x 96	Orange	9400-130	**22-028-146**	960/104.00
5 to 200µL	3"	Rack, 10 x 96, sterile	Orange	9400-133	**21-377-44**	960/114.00
Finntip 1000 Extended						
100 to 1000µL	4⅛"	Bag of 1000	Blue	9401-410	**21-377-303**	1000/114.00
100 to 1000µL	4⅛"	Rack, 5 x 96	Blue	9401-420	**21-377-600**	480/89.00
100 to 1000µL	4⅛"	Rack, 5 x 96, sterile	Blue	9401-423	**21-377-601**	480/107.00



Pipet tips are not shown to scale.

Filter Tips

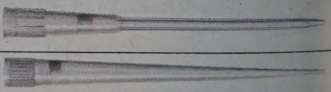
For applications requiring a longer tip

- Ideal for PCR amplification applications and for pipetting radioactive, infectious, and aerosol-emitting samples
- Inert and nonsealing polyethylene filter
- Come vacuum sealed in irradiation-sterilized hinged tip racks
- Not autoclavable

Pipetter Compatibility

Thermo Scientific* Finnpipette* Focus, Fisherbrand* Finnpipette, and most other pipetter brands

Volume	Length	Packaging	Mfr. No.	Cat. No.	Case of
5–100µL	3"	10 × 96/Rack	94052-310	**14-386-54**	960/200.00
5–200µL	3"	10 × 96/Rack	94052-320	**21-377-804**	960/215.00
100–1000µL	3⅞"	5 × 96/Rack	94052-430	**21-377-605**	480/145.00



Pipet tips are not shown to scale.

APPLICATION SPECIFIC — GEL LOADING

*Fisherbrand** Premium Plus Gel-Loading Tips

Narrow delivery orifice dispenses the complete sample to well bottom for higher quality data—ideal for gel electrophoresis

- Easily access bottom of narrow vessels and gel wells
- Universal fit
- Graduated marks for quick volume checks
- Certified DNase-, RNase-, and human DNA-free

Match O.D. to Gel Thickness

- Round 0.57mm O.D. tips are recommended for loading gels ≥0.6mm thick—great for SDS Page and 2-D gels
- Flat tips are recommended for gels up to 0.4mm thick
- Use flat 0.37mm O.D. tips for 0.4mm thick PAGE sequencing gels; flat 0.17mm tips for 0.2mm DNA sequencing gels

MultiFlex Tips

- ▶ 0.5 to 200µL volume
- ▶ Fit research-grade pipetters
- ▶ 83mm long
- ▶ 5µL graduation

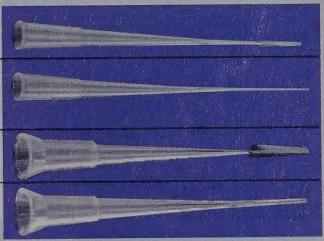
MiniFlex Tips

- ▶ 0.1 to 10µL volume
- ▶ Fit ultra-micro pipetters
- ▶ 45mm long
- ▶ 2µL graduation

LOOKING FOR FREE SAMPLES?

You can request samples of Fisherbrand* Premium Plus Gel-Loading tips at **www.fisherlab.info.**

ip Style	O.D.	Packaging	Cat. No.	Case of
MultiFlex Tips				
Flat	0.37mm	Pack of 200	**05-408-150**	200/46.50
Round	0.57mm	Pack of 200	**05-408-151**	200/25.50
Round	0.57mm	Bag of 1000	**05-408-154**	1000/61.20
MiniFlex Tips				
Flat	0.17mm	Pack of 200	**05-408-152**	200/71.50
Round	0.57mm	Pack of 200	**05-408-153**	200/25.75



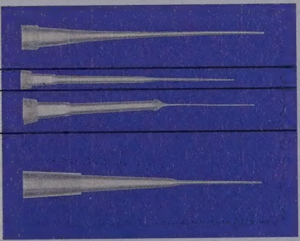
Pipet tips are not shown to scale.

*Fisherbrand** Gel-Loading Tips

Microcapillary tips are ideal for DNA sequencing or loading electrophoresis gels such as SDS PAGE

- Round gel-loading tip
- Natural color

Volume	Length	O.D.	Packaging†	Cat. No.	Pack of	Case of
0.1µL	2¼"	0.6mm	BP	**02-707-82**	1000/66.75	10 Pk./591.25
0.1µL	2¼"	0.6mm	LR, 5 × 204	**02-707-83**	1020/95.00	5 Pk./420.75
0.1µL	2¼"	0.6mm	LRS, 5 × 204	**02-707-84**	1020/95.00	5 Pk./420.75
0.5–10µL	2⅞"	0.6mm	LR, 8 × 204	**02-707-86**	1632/155.90	3 Pk./399.75
0.5–10µL	2⁹⁄₁₆"	0.25mm	LR, 5 × 204	**02-707-88**	1020/274.00	10 Pk./2455.50
0.5–10µL	2⁹⁄₁₆"	0.25mm	LRS, 5 × 204	**02-707-89**	1020/312.00	10 Pk./2805.75
1–200µL	2¾"	0.6mm	BP	**02-707-181**	1000/97.50	10 Pk./865.00
1–200µL	2¾"	0.6mm	LR, 5 × 204	**02-707-182**	1020/120.04	5 Pk./513.00
1–200µL	2¾"	0.6mm	LRS, 5 × 204	**02-707-81**	1020/119.00	5 Pk./529.75
1–200µL	2¾"	0.6mm	HR, 10 × 96	**02-707-138**	960/116.00	5 Pk./516.00
1–200µL	2¾"	0.6mm	HRS, 10 × 96	**02-707-139**	960/128.23	5 Pk./548.00



Packaging Code: BP=Bulk Pack; HR=Hinged Rack; HRS=Hinged Rack, Sterile; LR=Lift-off Rack; LRS=Lift-off Rack, Sterile

Pipet tips are not shown to scale.

Pipetter Compatibility

For use with, but not limited to:

BrandTech* Transferpette*
Eppendorf* Reference 2000
Fisherbrand* Finnpipette*
Fisherbrand* Finnpipette II
Genemate* ISC Bio Express
Hamilton SoftGrip*
Mettler Toledo VoluMate*
Nichiryo 5000, 5000F
Nichiryo-Nichipet EX
Oxford* Benchmate*

APPLICATION SPECIFIC—LOW RETENTION

*Fisherbrand** Low-Retention Pipet Tips

Help minimize sample retention

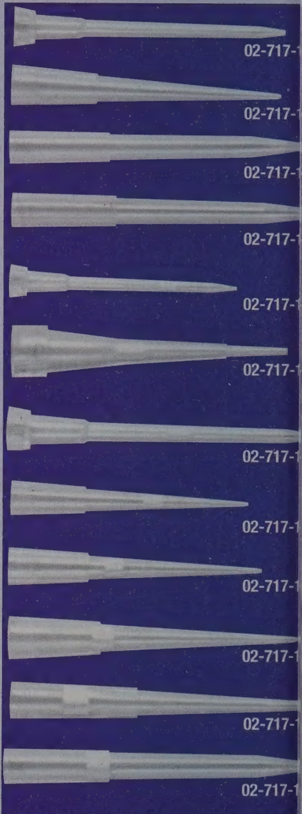
- Certified RNase, DNase, and DNA free
- Precise sample delivery
- Hydrophobic tip reduces loss of sample from adhesion to tip interior
- Natural color

Pipetter Compatibility

Universal fit for research grade pipetters unless otherwise noted.

Volume	Tip Style	Packaging†	Cat. No.	Pack of	Case of
Nonfilter Tips					
10µL	----	BP	**02-717-133**	1000/19.66	10 Pk./178.75
	----	HR, 10 × 96	**02-717-134**	960/36.00	5 Pk./157.00
	----	HRS, 10 × 96	**02-717-135**	960/37.50	5 Pk./170.00
10µL‡	----	BP	**02-717-136**	1000/19.66	10 Pk./178.75
	----	HR, 10 × 96	**02-717-137**	960/36.00	5 Pk./157.00
	----	HRS, 10 × 96	**02-717-138**	960/37.50	5 Pk./170.00
10µL, Long	----	BP	**02-717-130**	1000/19.66	10 Pk./178.75
	----	HR, 10 × 96	**02-717-131**	960/36.00	5 Pk./157.00
	----	HRS, 10 × 96	**02-717-132**	960/37.50	5 Pk./170.00
150µL	Beveled, Graduated	HRS, 10 × 96	**02-717-164**	960/67.46	5 Pk./298.50
200µL	Beveled	BP	**02-717-139**	1000/19.66	10 Pk./178.75
	Beveled	HR, 10 × 96	**02-717-140**	960/36.00	5 Pk./157.00
	Beveled	HRS, 10 × 96	**02-717-141**	960/37.50	5 Pk./170.00
200µL	Graduated	BP	**02-717-142**	1000/19.66	10 Pk./178.75
200µL	Beveled, Graduated	HR, 10 × 96	**02-717-143**	960/36.00	5 Pk./157.00
	Beveled, Graduated	HRS, 10 × 96	**02-717-144**	960/37.50	5 Pk./170.00
	Beveled, Graduated	RI, 5 × 96	**02-717-145**	1000/38.00	10 Pk./335.75
200µL	Large Orifice	HR, 10 × 96	**02-717-153**	960/36.00	5 Pk./157.00
	Large Orifice	HRS, 10 × 96	**02-717-154**	960/37.50	5 Pk./170.00
300µL††	Graduated	BP	**02-717-146**	1000/18.25	10 Pk./178.75
	Graduated	HR, 10 × 96	**02-717-147**	960/36.00	5 Pk./157.00
	Graduated	HRS, 10 × 96	**02-717-148**	960/37.50	5 Pk./170.00
1000µL	----	SR	**02-717-152**	1000/43.00	5 Pk./192.50
1000µL, Long	----	BP	**02-717-149**	1000/24.86	10 Pk./226.25
	----	HR, 10 × 100	**02-717-150**	1000/49.00	5 Pk./217.75
	----	HRS, 10 × 100	**02-717-151**	1000/51.32	5 Pk./233.25
1000µL, Long	Large Orifice	HR, 10 × 100	**02-717-155**	1000/49.00	5 Pk./217.75
	Large Orifice	HRS, 10 × 100	**02-717-156**	1000/51.32	5 Pk./233.25
Filter Tips					
10µL	----	HRS, 10 × 96	**02-717-158**	960/67.46	5 Pk./298.50
10µL‡	----	HRS, 10 × 100	**02-717-159**	1000/67.46	5 Pk./298.50
10µL, Long	----	HRS, 10 × 96	**02-717-157**	960/67.00	5 Pk./298.50
20µL‡	----	HRS, 10 × 100	**02-717-160**	1000/67.46	5 Pk./298.50
20µL	Beveled, Graduated	HRS, 10 × 96	**02-717-161**	960/67.46	5 Pk./298.50
50µL	Beveled, Graduated	HRS, 10 × 96	**02-717-162**	960/67.46	5 Pk./298.50
100µL	Beveled, Graduated	HRS, 10 × 96	**02-717-163**	960/67.46	5 Pk./298.50
200µL	Beveled, Graduated	HRS, 10 × 96	**02-717-165**	960/67.46	5 Pk./298.50
1000µL, Long	----	HRS, 10 × 100	**02-717-166**	1000/80.57	5 Pk./356.50

† Packaging Code: BP=Bulk Pack; HR=Hinged Rack; HRS=Hinged Rack, Sterile; SR=Stack Rack
‡ Designed to fit Eppendorf style pipetters.*
†† Designed to fit Titertek pipetters.



Pipet tips are not shown to sc

olecular BioProducts* and Pure* Advantage Low-Retention Pipet Tips

ecifically designed for eliminating sample retention within the pipet tip

ner surface is extremely hydrophobic; increasing sample reproducibility and sample accuracy

ystal clear tips allow you to easily see transparent samples

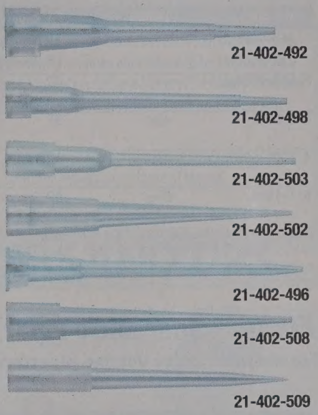
eference marks on many Molecular BioProducts tips provide a quick and convenient guide to sually establish whether you are pipetting desired volume of liquid

l Pure tips are racked, presterilized and certified RNase-, DNase-, DNA- and pyrogen-free

ther Molecular BioProducts racked and bulk tips are nonsterile and autoclavable

scription	Volume	Packaging	Mfr. No.	Cat. No.	Pack of
P 10 Pure	0.1-10µL	Racked†	3501-05	**21-402-491**	960/73.50
P 10	0.1-10µL	Racked	3502-05	**21-402-492**	960/60.00
P 10	0.1-10µL	Bulk	3500-05	**21-402-493**	1000/41.75
P 10 Reach Pure	0.1-10µL	Racked†	3511-05	**21-402-497**	960/74.95
P 10 Reach	0.1-10µL	Racked	3512-05	**21-402-498**	960/61.50
P 10 Reach	0.1-10µL	Bulk	3510-05	**21-402-499**	1000/43.00
P Pure 20L	0.1-20µL	Racked†, SoftFit-L*	3721-05	**21-402-503**	960/76.00
P 20L	0.1-20µL	Racked, SoftFit-L	3722-05	**21-402-504**	960/75.50
P 200	0.5-200µL	Bulk	3550-05	**21-402-502**	1000/39.00
P 200L Pure	0.5-200µL	Racked†	3551-05	**21-402-500**	960/71.50
P 200L	0.5-200µL	Racked	3552-05	**21-402-501**	960/60.00
P Ultra Micro Pure	0.5-20µL	Racked†	3521-05	**21-402-494**	960/73.75
P Ultra Micro	0.5-20µL	Racked	3522-05	**21-402-495**	960/60.00
P Ultra Micro	0.5-20µL	Bulk	3520-05	**21-402-496**	1000/42.00
P 300U Pure	1.0-300µL	Racked†, Multichannel	3771-05	**21-402-507**	960/87.75
P 300U	1.0-300µL	Racked, Multichannel	3772-05	**21-402-508**	960/81.89
P 1000L Pure	100-1000µL	Racked†, SoftFit-L	3781-05	**21-402-509**	768/74.83
P 1000L	100-1000µL	Racked, SoftFit-L	3782-05	**21-402-510**	768/68.00

terile.



Pipet tips are not shown to scale.

olecular BioProducts* Art* Self-Sealing Advantage Low-Retention Barrier Tips

crease sample reproducibility and accuracy

pecifically designed for eliminating sample retention within the pipet tip

xtremely hydrophobic inner surface increases sample reproducibility and sample accuracy

resterilized and precision-molded tips with the patented ART self-sealing barrier

revent carryover contamination during aspiration and delivery of samples

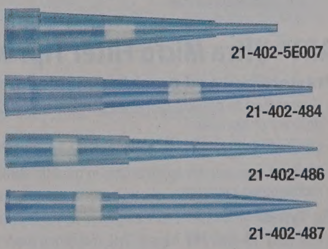
ertified RNase-, DNase-, and pyrogen-free

deal for use in genetic studies, forensics, PCR, and radioisotope sampling

acked, presterilized

Tip†	Volume	Mfr. No.	Cat. No.	Pack of	Case of
	0.1-10µL	2139-05	**21-402-5E007**	960/124.72	5 Pk./533.00
Reach	0.1-10µL	2140-05	**21-402-482**	960/124.72	5 Pk./533.00
F	0.5-10µL	2139F-05	**21-402-481**	960/124.72	5 Pk./533.00
P	0.5-20µL	2149P-05	**21-402-484**	960/124.72	5 Pk./533.00
E	0.5-10µL	2149E-05	**21-402-483**	960/124.72	5 Pk./533.00
L	0.5-10µL	2749-05	**21-402-488**	960/124.72	5 Pk./533.00
0E	0.1-100µL	2065E-05	**21-402-485**	960/124.72	5 Pk./533.00
0	1.0-200µL	2069-05	**21-402-486**	960/124.72	5 Pk./533.00
0L	1.0-200µL	2769-05	**21-402-489**	960/124.72	5 Pk./533.00
00	100-1000µL	2279-05	**21-402-487**	768/124.31	4 Pk./425.00
00L	100-1000µL	2779-05	**21-402-490**	768/124.31	4 Pk./425.00

te: The Art 10 and Art 10F have a 2µL reference mark. Art 20P has a 10µL reference mark. 20L, 200L and 1000L are mpatible with Rainin Scientific Lite Touch System (LTS). 20E Eppendorf style. 10F will fit on a 200µL pipetter as well as µL. 20P will fit on a 200µL pipetter as well as a 20µL pipetter.



Pipet tips are not shown to scale.

APPLICATION SPECIFIC—MAXI

*Fisherbrand** Maxi Pipet Tips

Large-volume tips for pipetters ranging from 250µL to 10mL

Natural color.

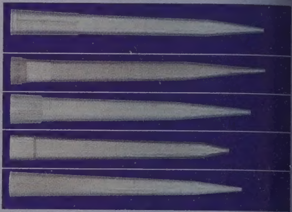
Pipetter Compatibility

For use with, but not limited to:

1. Rainin* EDP2*
2. Eppendorf* Reference 2000
   Socorex*
3. Biohit Proline*
   Eppendorf Research* 2100
   Genemate* ISC Bio Express
   Jencons Sealpette*
   Labnet Labpette* Digital
4. Genemate* ISC Bio Express
   Oxford* Benchmate*
   Pipetman* (P-5000)
   SMI Airpettor
   Socorex
5. Pipetman (P-10mL)

Volume	Length	Packaging	Cat. No.	Pack of	Case of
1. 250–2500µL	4 3/16"	BP	**02-707-131**	500/42.57	10 Pk./387.00
250–2500µL	4 3/16"	LR, 8 × 100	**02-707-132**	800/118.40	5 Pk./506.00
2. 500–2500µL	4½"	BP	**02-681-409**	500/88.50	5 Pk./396.50
3. 5000µL	4¾"	BP	**02-681-410**	250/45.50	10 Pk./398.00
4. 1000–5000µL	4 9/16"	BP	**21-195-3**	250/43.50	10 Pk./375.75
5. 1–10mL	6 7/16"	BP	**02-681-412**	200/58.00	10 Pk./501.50

† Packaging Code: BP=Bulk Pack; LR=Lift-off Rack.



Pipet tips are not shown to scale.

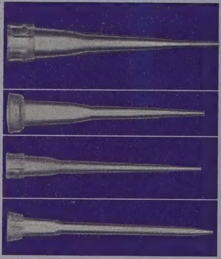
APPLICATION SPECIFIC—MICRO

*Fisherbrand** Micro Pipet Tips

For use with micro volume pipetters

Natural color.

Volume	Length	Packaging†	Cat. No.	Pack of	Case of
0.1–10µL	1¼"	BP	**21-277-2A**	1000/34.00	10 Pk./291.00
0.1–10µL	1¼"	HR, 10 × 96	**21-277-2B**	960/58.75	5 Pk./261.50
0.1–10µL	1¼"	HRS, 10 × 96	**02-681-440**	960/76.00	5 Pk./337.50
0.1–10µL	1¼"	RI, 5 × 96	**02-707-135**	480/57.75	10 Pk./509.76
0.1–10µL	1¼"	BP	**02-707-146‡**	1000/33.50	10 Pk./285.00
0.1–10µL	1¼"	LR, 10 × 96	**02-707-147‡**	960/69.38	5 Pk./307.00
0.1–10µL	1 11/16"	BP	**02-707-149**	1000/33.00	10 Pk./282.25
0.1–10µL	1 11/16"	HR, 10 × 96	**02-707-136**	960/63.00	5 Pk./276.75
0.1–10µL	1 11/16"	HRS, 10 × 96	**02-707-137**	960/68.75	5 Pk./304.00
101–1000µL	1 13/16"	BP	**21-197-2F**	1000/62.00	10 Pk./549.50
0.5–10µL	1 13/16"	HR, 10 × 96	**21-197-2E**	960/77.50	5 Pk./343.00
0.5–10µL	1 13/16"	HRS, 10 × 96	**02-681-437**	960/76.00	5 Pk./335.50



† Packaging Code: BP=Bulk Pack; HR=Hinged Rack; HRS=Hinged Rack, Sterile; LR=Lift-off Rack; LRS=Lift-off Rack, Sterile; RI=Rack Inserts.
‡ With 2.5µL reference mark.

Pipetter Compatibility

For use with, but not limited to:

BrandTech* Transferpette*
Eppendorf* Reference 2000
Eppendorf Research* 2100
Finnpipette* Focus, Thermo Scientific*, (Micro and Multichannel)
Fisherbrand Finnpipette*,
Fisherbrand Finnpipette II
Genemate* ISC Bio Express
Hamilton SoftGrip*
Mettler Toledo* VoluMate*
Nichiryo 5000, 5000F
Nichiryo-Nichipet EX
Oxford* BenchMate*
Pipetman*
Rainin*
Socorex* Calibra*
Vistalab Ovation

Pipet tips are not shown to scale.

ART* Ultra Micro Filter Tips with MicroPoint* Design

Presterilized and precision-molded ultra micro tips with the patented ART self-sealing barrier

- Guaranteed to prevent carryover contamination during aspiration and delivery of samples
- Certified RNase-, DNase-, and pyrogen-free
- Ideal for low-volume applications in genetic studies, forensics, PCR, and radioisotope sampling

Tip Types:

- The **ART 10 and 10F** have a 2µL reference mark and are perfect for pipetting low volumes
- The extended tip length of the **ART 10 Reach** prevents contamination of samples, tubes, and pipetters
- The **ART 20E** is an ultra-micro tip design for Eppendorf* and Nichiryo/BenchMate* pipetters
- The **ART 20P** has a 10µL reference mark and is well suited for low volumes

21-236-3

21-236-

21-236-35

21-236-

ART Tip	Volume	Mfr. No.	Cat. No.	Pack of 960	Case of 5 Pk
10	0.1–10µL	2139	**21-236-3**	114.43	489.0
10 Reach	0.1–10µL, Ext. Length	2140	**21-236-35**	114.43	489.0
10F	0.5–10µL	2139F	**21-236-13**	113.49	485.0
20E	0.5–10µL	2149E	**21-236-5**	113.49	485.0
20P	0.5–20µL	2149P	**21-236-4**	113.49	485.0

Pipet tips are not shown to scale.

IMPORTANT TERMS TO KNOW

Positive Displacement—The piston is located within the disposable tip, and it's the movement of the piston that draws the liquid into the tip.

Reverse Pipetting—In contrast to conventional pipetting, when aspirating the fluid, the button is pressed to the second position to include the blowout. This allows for a greater volume of fluid to be aspirated into the tip, which can be beneficial when using liquids that have high viscosity or tend to foam and/or bubble.

Aerosol—A "mist" of very fine droplets of liquid that remain in the air when aspirating.

CONSIDER SPECIAL REQUIREMENTS

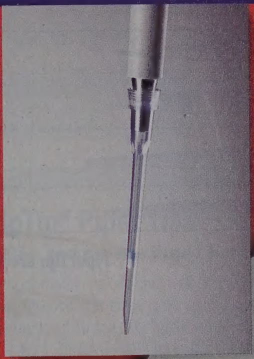
Repetitive dispensing— A specified volume is continually delivered from a previously aspirated volume. In the case of handheld pipetters, it provides a very precise number of deliveries of a preselected volume into a large number of vessels and plates.

Electronic pipetters—These semiautomatic handheld devices have all the functionality of their "manual" counterparts, plus their volumes are controlled by a motorized piston, they are programmable and adjustable, designed to provide highly reproducible dispensing and reduce the fatigue associated with constant and repetitive arm/thumb movements.

Sequential dispensing—The dispensing of different volumes in a predetermined sequence, up to the maximum volume of the tip.

e quality tips. Pipet tips should be
ecisely shaped to ensure pipetting
curacy, and they must be designed
that even the tiniest drops of
uid can be dispensed accurately.
ecially designed tips with built-in
ers provide the ultimate level
protection against cross-
ntamination of samples.

BEFORE YOU BUY PIPETTERS AND TIPS



eppendorf Research
eppendorf Research
eppendorf

certified PCR clean

EPPENDORF BIOPUR

PhysioCare concept

FEATURES TO LOOK FOR

Ergonomic—When products, tasks and environments optimally "fit" the person involved. For example, an ergonomic pipetter makes repetitive daily dispensing physically (and often mentally) easier and more comfortable.

Autoclavable—This thermal process of sterilization subjects a pipetter, for example, to 121°C, 100kPa for 20 minutes, which destroys microorganisms as well as inactivates viruses and enzymes.

Durability—Your pipetter should be made of the highest quality materials and backed with a good warranty that covers all parts. This helps ensure that your pipetter is robust enough to handle the rigors of everyday usage and decontamination.

(In)Accuracy & (Im)Precision—Accuracy points to the amount of scatter that a pipetter varies from its setpoint, while precision points to the scatter around its mean value. Minimizing these two parameters will produce the highest quality samples and readings.

From the earliest piston-stroke pipetter to the latest in automated liquid handling, Eppendorf is there to handle all of your dispensing needs.

nsored by:

ppendorf
North America

For complete details on Eppendorf pipetters, see pp. 1409-1421.

APPLICATION SPECIFIC—PCR CLEAN

Eppendorf* epTIPS, PCR Clean

Nonfilter Tips

For all molecular biology applications

Features

- Free of human DNA-, DNase-, RNase- and PCR inhibitor-free
- Drop contour design at tip provides better tip sealing
- Finely tapered and extended; ideal for small-volume pipetting
- Fine graduations make it easy to check volume
- Soft, flexible tip cone provides better seal to pipetter
- Manufactured using ISO-9001:2001-certified processes

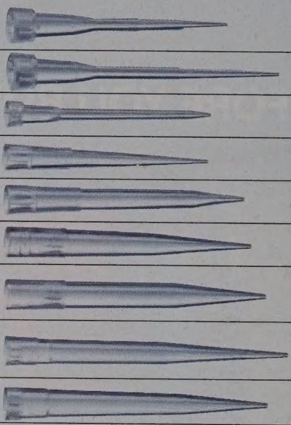
epTips Racks

Packaging

- Refill trays offer simple, contamination-free handling
- Trays are color coded for easy volume identification
- Environmentally friendly—all components of refills completely recyclable
- Refill trays can be autoclaved intact and stored for future use

Pipetter Compatibility
Eppendorf
Most other leading brands of pipetters

Volume	Packaging	Mfr. No.	Cat. No.	Pack of
0.1–10µL	Rack, 10 × 96	022491806	**05-403-72**	960/95.00
0.1–10µL	Refill Trays, 10 × 96	022491709	**05-403-46**	960/80.00
0.1–20µL	Rack, 10 × 96	022491814	**05-403-73**	960/95.00
0.1–20µL	Refill Trays, 10 × 96	022491717	**05-403-47**	960/80.00
0.5–20µL, long	Rack, 10 × 96	022491822	**05-403-74**	960/95.00
0.5–20µL, long	Refill Trays, 10 × 96	022491725	**05-403-48**	960/80.00
2–200µL	Rack, 10 × 96	022491831	**05-403-75**	960/74.00
2–200µL	Refill Trays, 10 × 96	022491733	**05-403-49**	960/63.00
20–300µL	Rack, 10 × 96	022491849	**05-403-76**	960/74.00
20–300µL	Refill Trays, 10 × 96	022491741	**05-403-50**	960/63.00
50–1000µL	Rack, 10 × 96	022491857	**05-403-77**	960/81.00
50–1000µL	Refill Trays, 10 × 96	022491750	**05-403-51**	960/69.00
50–1250µL	Rack, 10 × 96	022491865	**05-403-78**	960/81.50
50–1250µL	Refill Trays, 10 × 96	022491768	**05-403-52**	960/69.00
500–2500µL	Rack, 10 × 48	022491873	**05-403-79**	480/41.25
500–2500µL	Refill Trays, 10 × 48	022491776	**05-403-53**	480/69.00
100–5000µL	Rack, 5 × 24	022491881	**05-403-80**	120/47.00



Pipet tips are not shown to scale.

*Trademark. See Trademark Reference.

pendorf* epTIPS, PCR Clean, Contd.

ter Tips

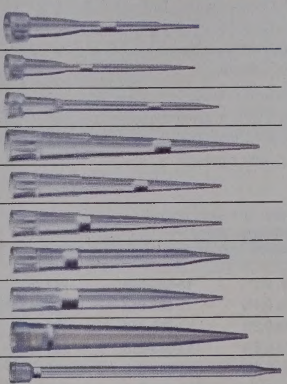
R Clean and Sterile

e of human DNA, DNase, RNase and PCR inhibitors; pyrogen free. Tips have egrated filter made of hydrophobic polyethylene and do not contain self-sealing litives. Sample can be easily recovered, even if filter becomes wet as a result of orrect pipetting. Batch-related certificates of purity are available upon request.

DERING INFORMATION:

kaged in racks of 96 tips.

ume	Packaging	Mfr. No.	Cat. No.	Pack of
–10µL, S	Racks, 10 x 96	2249120-2	**05-403-14**	960/119.00
–10µL, M	Racks, 10 x 96	2249121-1	**05-403-15**	960/119.00
–10µL, L	Racks, 10 x 96	2249122-9	**05-403-16**	960/119.00
20µL	Racks, 10 x 96	2249127-0	**05-403-17**	960/119.00
100µL	Racks, 10 x 96	2249123-7	**05-403-18**	960/109.00
200µL	Racks, 10 x 96	022491296	**04-987-420**	960/109.00
–300µL	Racks, 10 x 96	2249124-5	**05-403-19**	960/109.00
–1000µL	Racks, 10 x 96	2249125-3	**05-403-20**	960/119.00
0–5000µL	Racks, 5 x 24	022491261	**04-987-421**	120/65.00
0mL	Indiv. Wrapped, 100	2249128-8	**05-403-120**	100/55.00



Pipet tips are not shown to scale.

etter Compatibility
pendorf*
st other leading brands of pipetters

APPLICATION SPECIFIC—PROTEIN CHEMISTRY

illipore* ZipTip* Pipet Tips

mple preparation and precise liquid handling in one device

0.6µL bed of C18, C4, or metal chelate chromatography media is fixed at e end of a 10µL pipet tip such that there is no dead volume; concentrated, rified samples are eluted in 1 to 4µL. For applications requiring smaller ition volumes (e.g., <1µL), ZipTip µ-C18 tips feature a microbed format ntaining 0.2µL of media.

Concentrate and purify 1 to 100µL biological samples

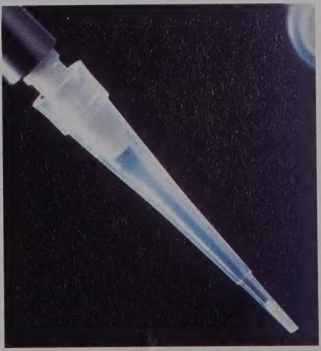
- Ideal for purifying and concentrating femtomoles to picomoles of peptides, proteins or oligonucleotides in minutes prior to mass spectrometry, HPLC, capillary electrophoresis and other analytical techniques

ORDERING INFORMATION:

Available in two packaging configurations: resealable trays (packs of 8 and 24 tips) and 96-place tip racks (packs of 96 and packs of 960 tips).

sin	Application
8/R-C18	Desalting and concentration of peptides, proteins, or oligonucleotides; Step-fractionation of complex peptide or protein mixtures for increased MALDI-TOF MS sensitivity and resolution
	Desalting and concentration of proteins
X	Dilute peptide capture and nonionic detergent removal

etter Compatibility
mpatible with most single-channel and multichannel pipetters and with a variety of automated uid-handling systems



	Pack of 8		Pack of 24		Pack of 96		Pack of 960	
sin	Cat. No.	Each	Cat. No.	Each	Cat. No.	Each	Cat. No.	Each
8	**ZTC1 8S0 08**	28.00	**ZTC1 8S0 24**	61.00	**ZTC1 8S0 96**	191.00	**ZTC1 8S9 60**	1357.00
C18	**ZTC1 8M0 08**	28.00	**ZTC1 8M0 24**	61.00	**ZTC1 8M0 96**†	191.00	**ZTC1 8M9 60**	1357.00
	ZTC0 4S0 08	28.00	**ZTC0 4S0 24**	61.00	**ZTC0 4S0 96**	191.00	**ZTC0 4S9 60**	1357.00
X	**ZTSC XS0 08**	31.00	----	----	**ZTSC XS0 96**	211.00	----	----

Available in Packard Automation Certified model; order ZTC1 8P0 96.

APPLICATION SPECIFIC—REPEATER

*Fisherbrand** Dispenser Tips

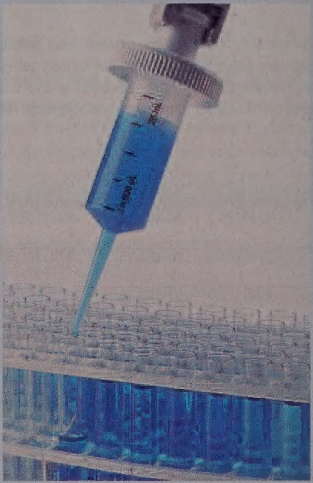
Dispense from 8 to 48 times without refilling

- Designed exclusively to fit Eppendorf* Repeater* Pipetter
- Ideal for accurately filling a large number of sample tubes with a variety of sample volumes in minimal time
- Polypropylene tips with inner plunger of polyethylene (except 0.05mL tips which feature a stainless-steel plunger) provide adequate chemical resistance
- Large liquid reservoir stores the entire liquid volume indicated by tip's size
- Each tip permits selection of five different dispensing volumes by simply turning the dial on the Repeater Pipetter
- Reservoir graduations allow easy monitoring of liquid levels
- Long, thin shape of tips makes it easy to draw samples into liquid reservoir—even from narrow-neck containers
- Sample never comes in contact with pipetter

ORDERING INFORMATION:

Available in nonsterile or presterile packaging options.

Size	Accuracy	Precision	Cat. No.	Pack of 100
Nonsterile				
0.05mL	±2.5%	≤5.0 to 2.5%	**13-683-61H**[1]	242.75
0.5mL	±0.8%	≤0.8 to 0.4%	**13-683-61A**	106.95
1.25mL	±0.8%	≤0.5 to 0.2%	**13-683-61B**	106.95
2.5mL	±0.7%	≤0.4 to 0.2%	**13-683-61C**	106.15
5.0mL	±0.5%	≤0.3 to 0.2%	**13-683-61D**	106.00
12.5mL	±0.3%	≤0.2 to 0.1%	**13-683-61E**	106.95
25mL	±0.3%	≤0.2 to 0.1%	**13-683-61F**[2,3]	110.00
50mL	±0.3%	≤0.2 to 0.1%	**13-683-61G**[2,3]	129.00
Sterile				
0.5mL	±0.8%	≤0.8 to 0.4%	**13-683-62A**	133.50
1.25mL	±0.8%	≤0.5 to 0.2%	**13-683-62B**	133.50
2.5mL	±0.7%	≤0.4 to 0.2%	**13-683-62C**	133.50
5.0mL	±0.5%	≤0.3 to 0.2%	**13-683-62D**	133.15
12.5mL	±0.3%	≤0.2 to 0.1%	**13-683-62E**	133.50
25mL	±0.3%	≤0.2 to 0.1%	**13-683-62G**[2,3]	130.00
50mL	±0.3%	≤0.2 to 0.1%	**13-683-62F**[2,3]	150.00



13-683-61F

FISHERBRAND DISPENSER TIPS SELECTION CHART

Dial Setting	1	2	3	4	5
Max. No. of Deliveries	48	23	15	11	8
Volume/Delivery with					
0.05mL Tip	1µL	2µL	3µL	4µL	5µL
0.5mL Tip	10µL	20µL	30µL	40µL	50µL
1.25mL Tip	25µL	50µL	75µL	100µL	125µL
2.5mL Tip	50µL	100µL	150µL	200µL	250µL
5.0mL Tip	100µL	200µL	300µL	400µL	500µL
12.5mL Tip	250µL	500µL	750µL	1000µL	1250µL
25mL Tip	500µL	1000µL	1500µL	2000µL	2500µL
50mL Tip	1mL	2mL	3mL	4mL	5mL

[1] *Requires Ultra Micro Tip to use with Eppendorf Repeater Pipetter. Tip fits over the end of dispenser tip to reduce dead air volume and increase precision. Order Cat. No. 21-379-76.*

[2] *To use, adapter is required. Order sterile adapter 21-381-306; nonsterile adapter also available. Contact your Fisher Scientific Customer Service Representative.*

[3] *Packed in four boxes of 25 each.*

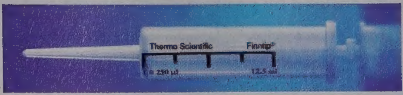
ermo Scientific* Finntip* Stepper Tips

r use with the Finnpipette Stepper Pipetter

lunger style tips

verall dispensing range of 10 to 5000µL

lonsterile tips are bulk packaged; sterile tips are individually wrapped



21-377-156

acity	Type	Dispensing Volume	Mfr. No.	Cat. No.	Pack of
mL	Nonsterile	10, 20, 30, 40,	9404-170	**21-377-148**	100/93.00
mL	Sterile	50µL	9404-173	**21-377-149**	50/63.00
5mL	Nonsterile	25, 50, 75, 100,	9404-180	**21-377-150**	100/93.00
5mL	Sterile	125µL	9404-183	**21-377-151**	50/63.00
mL	Nonsterile	50, 100, 150,	9404-190	**21-377-152**	100/93.00
mL	Sterile	200, 250µL	9404-193	**21-377-153**	50/63.00
mL	Nonsterile	100, 200, 300,	9404-200	**21-377-154**	50/48.00
mL	Sterile	400, 500µL	9404-203	**21-377-155**	25/32.00
5mL	Nonsterile	250, 500, 750,	9404-210	**21-377-156**	50/48.00
5mL	Sterile	1000, 1250µL	9404-213	**21-377-157**	25/32.00
nL†	Nonsterile	500, 1000, 1500,	9404-220	**21-377-158**	20/20.50
nL†	Sterile	2000, 2500µL	9404-223	**21-377-159**	10/14.50
nL†	Nonsterile	1000, 2000, 3000,	9404-230	**21-377-160**	10/13.50
nL†	Sterile	4000, 5000µL	9404-233	**21-377-161**	10/14.50

and 50mL tips must be fitted with adapter before being attached to handle.

Volume Setting Chart for Finntip Stepper Tips

Wheel Position	1	2	3	4	5
Maximum No. of Deliveries	44	22	15	11	9
Volume/Delivery with					
0.5mL Tip	10µL	20µL	30µL	40µL	50µL
1.25mL Tip	25µL	50µL	75µL	100µL	125µL
2.5mL Tip	50µL	100µL	150µL	200µL	250µL
5.0mL Tip	100µL	200µL	300µL	400µL	500µL
12.5mL Tip	250µL	500µL	750µL	1000µL	1250µL
25mL Tip	500µL	1000µL	1500µL	2000µL	2500µL
50mL Tip	1000µL	2000µL	3000µL	4000µL	5000µL

ermo Scientific* Finntip* Multistepper Pipet Tips

r use with Finnpipette* Multistepper Pipetters

xtra long tips, with more air space between the liquid and tip cone to prevent contamination

500µL volume

e	Packaging	Mfr. No.	Cat. No.	Pack of
nsterile	10 Racks of 96	9401-330	**21-377-34**	960/93.00
nsterile	Bag of 400	9401-300	**21-377-78**	400/33.50
rile	10 Racks of 96	9401-333	**21-377-69**	960/115.00

21-377-34

Pipet tips are not shown to scale.

pendorf* Combitips* Tips

r Eppendorf Repeater* Pipetter

ips have polyethylene plunger and polypropylene cylinder, making them ideal for use with most reagents

or volume/delivery information, see Eppendorf Combitips Tips Selection Chart, below

DERING INFORMATION:

nsterile tips are packed in plastic bags. Biopur* tips are individually wrapped.

e	Accu.	Preci.	Tip Style	Mfr. No.	Cat. No.	Pack of
5mL	±2.5%	≤5.0 to 2.5%	Nonsterile†	022260952	**21-380-8J**	50/133.00
5mL	±0.8%	≤0.5 to 0.2%	Nonsterile	022261100	**21-380-8E**	100/111.00
5mL	±0.8%	≤0.5 to 0.2%	Eppendorf Biopur	022495101	**21-381-307B**	100/143.00
5mL	±0.3%	≤0.2 to 0.1%	Nonsterile	022261401	**21-380-8C**	100/111.00
5mL	±0.3%	≤0.2 to 0.1%	Eppendorf Biopur	022495208	**21-381-307E**	100/143.00

utoclavable. For use with Eppendorf Ultra Micro Tips.

EPPENDORF AND EPPENDORF BIOPUR COMBITIPS TIPS SELECTION CHART

Dial Setting	1	2	3	4	5
Max. No. of Deliveries	48	23	15	11	8
Volume/Delivery with					
0.05mL Tip	1µL	2µL	3µL	4µL	5µL
1.25mL Tip	25µL	50µL	75µL	100µL	125µL
12.5mL Tip	250µL	500µL	750µL	1000µL	1250µL

Eppendorf* Combitips* Plus Pipet Tips

Reliable results ensured by positive-displacement system

Tips function according to the positive-displacement principle, ensuring that the correct volume is dispensed with regard to the density and viscosity of the liquid used. The positive displacement system provides safer dispensing of radioactive and toxic substances as well as solutions with high vapor pressure. No aerosols are formed.

- For use with Eppendorf Repeaters* (original, Plus, Pro, stream and Xstream); and EDOS (automatic dispensing system)
- Available in nine volumes from 0.1 to 50mL
- Fine tip of Combitip provides exact dispensing without additional pipet tip
- Polyethylene plunger and polypropylene cylinder make these tips ideal for use with aggressive reagents
- Choose from sterile and nonsterile Combitip Plus Tips and Eppendorf Biopure* tips, which are certified sterile as well as pyrogen-, RNase-, DNA-, and ATP-free

Tip Capac.	Dispens. Range	Incre.	Tip Style	Mfr. No.	Cat. No.	Case of 100
0.1mL	1–20µL	1µL	Nonsterile	22265954	**21-381-325**	92.00
0.1mL	1–20µL	1µL	Sterile	22267001	**21-381-334**	117.00
0.1mL	1–20µL	1µL	Eppendorf Biopur	22496000	**21-381-400**	133.00
0.2mL	2–40µL	2µL	Nonsterile	22266004	**21-381-326**	92.00
0.2mL	2–40µL	2µL	Sterile	22267108	**21-381-335**	117.00
0.2mL	2–40µL	2µL	Eppendorf Biopur	22496026	**21-381-401**	133.00
0.5mL	5–100µL	5µL	Nonsterile	22266101	**21-381-327**	92.00
0.5mL	5–100µL	5µL	Sterile	22267205	**21-381-336**	117.00
0.5mL	5–100µL	5µL	Eppendorf Biopur	22496042	**21-381-402**	133.00
1.0mL	10–200µL	10µL	Nonsterile	22266209	**21-381-328**	92.00
1.0mL	10–200µL	10µL	Sterile	22267302	**21-381-337**	117.00
1.0mL	10–200µL	10µL	Eppendorf Biopur	22496069	**21-381-403**	133.00
2.5mL	25–500µL	25µL	Nonsterile	22266306	**21-381-329**	92.00
2.5mL	25–500µL	25µL	Sterile	22267400	**21-381-338**	117.00
2.5mL	25–500µL	25µL	Eppendorf Biopur	22496085	**21-381-404**	133.00
5.0mL	50–1000µL	50µL	Nonsterile	22266403	**21-381-330**	92.00
5.0mL	50–1000µL	50µL	Sterile	22267507	**21-381-339**	117.00
5.0mL	50–1000µL	50µL	Eppendorf Biopur	22496107	**21-381-405**	133.00
10mL	100–2000µL	100µL	Nonsterile	22266501	**21-381-331**	92.00
10mL	100–2000µL	100µL	Sterile	22267604	**21-381-340**	117.00
10mL	100–2000µL	100µL	Eppendorf Biopur	22496123	**21-381-406**	133.00
25mL	250µL–5mL	250µL	Nonsterile	22266551	**21-381-115**†	115.00
25mL	250µL–5mL	250µL	Sterile	22267655	**21-381-117**†	136.00
25mL	250µL–5mL	250µL	Eppendorf Biopur	22496131	**21-381-118**	152.00
50mL	500µL–10mL	500µL	Nonsterile	22266608	**21-381-332**†	115.00
50mL	500µL–10mL	500µL	Sterile	22267701	**21-381-341**†	136.00
50mL	500µL–10mL	500µL	Eppendorf Biopur	22496140	**21-381-407**†	152.00

† Requires use of adapter, see p. 1419.

Performance Data for Combitip Plus Tips‡

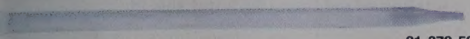
Tip Capacity	Test Volume	Inaccuracy	Imprecision
For Repeater Plus			
0.1mL	2µL	±1.6%	≤3.0%
	20µL	±1.0%	≤2.0%
0.2mL	4µL	±1.3%	≤2.0%
	40µL	±0.8%	≤1.5%
0.5mL	10µL	±0.9%	≤1.5%
	100µL	±0.8%	≤0.6%
1.0mL	20µL	±0.9%	≤0.9%
	200µL	±0.6%	≤0.4%
2.5mL	50µL	±0.8%	≤0.8%
	500µL	±0.5%	≤0.3%
5.0mL	100µL	±0.6%	≤0.6%
	1000µL	±0.5%	≤0.25%
10mL	200µL	±0.5%	≤0.6%
	2000µL	±0.5%	≤0.25%
25mL	500µL	±0.4%	≤0.6%
	5000µL	±0.3%	≤0.25%
50mL	1000µL	±0.3%	≤0.5%
	10L	±0.3%	≤0.25%
For Repeater stream and Xstream			
0.1mL	10µL	±1.6%	≤2.5%
	100µL	±1.0%	≤0.5%
0.2mL	20µL	±1.3%	≤1.5%
	200µL	±1.0%	≤0.5%
0.5mL	50µL	±0.9%	≤0.8%
	500µL	±0.9%	≤0.3%
1mL	100µL	±0.9%	≤0.55%
	1000µL	±0.6%	≤0.2%
2.5mL	250µL	±0.8%	≤0.45%
	2500µL	±0.5%	≤0.15%
5mL	500µL	±0.8%	≤0.35%
	5000µL	±0.5%	≤0.15%
10mL	1000µL	±0.5%	≤0.25%
	10,000µL	±0.4%	≤0.15%
25mL	2500µL	±0.3%	≤0.25%
	25,000µL	±0.3%	≤0.15%
50mL	5000µL	±0.3%	≤0.25%
	50,000µL	±0.3%	≤0.15%

‡ Distilled water at 20° to 25°C; constant to ±0.5°C. Number of determinations: 15 according to DIN 12 650.

*Trademark. See Trademark Reference.

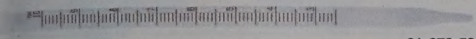
pendorf* Maxitip* Tips

use with Eppendorf Maxipettor*



21-379-52

21-379-59



21-379-58

xitip S* tip

or 2.5 to 10mL volumes, approximately 6¾" long (170mm)

esigned for easy access to tall bottles or narrow-neck vessels

se it for liquids with high vapor pressure or high density

xitip G*

raduated reference tip

an be used to obtain proper volume adjustment when pipetting onaqueous liquids

pendorf Biopur* Maxitip P*

or 1 to 10mL volumes

se it for most other applications, and especially with viscous solutions

Maxitip P is available sterile (and individually wrapped) or nonsterile

omes complete with piston and barrel

DERING INFORMATION:

ves are also available for Maxitip S* and Maxitip G tips to eliminate pping caused by reagents with high vapor pressure (see 21-379-54).

xitip P: Purchase valves and tips separately.

QUIRED ACCESSORIES:

xitip S requires 21-379-53 Barrel/Piston or 21-379-51 Barrel/Piston —order separately on our Web site.

etter Compatibility					
pendorf Maxipettor*					

xitip Type	**Dispensing Range**	**Accuracy**	**Precision**	**Cat. No.**	**Pack of**
isterile					
air)	2.5 to 10mL	±1.0 to ±0.3%	≤0.2%	**21-379-52**	200/132.00
positive)	1 to 10mL	±0.6 to ±0.3%	0.2 to 0.1%	**21-379-59**	100/165.50
reference)	2.5 to 10mL	----	----	**21-379-58**	5/69.00
endorf Biopur, individually wrapped					
positive)	1 to 10mL	±0.6 to ±0.3%	0.2 to 0.1%	**21-379-61**	100/229.00

et tips are not shown to scale.

Brand* PD-Tip* Disposable Syringe Tips from BrandTech*

Syringe tips to fit common repeating pipets

- Made of high-density polyethylene and polypropylene (polypropylene and liquid crystal polymer for 0.1mL size) without lubricants or additives that can contaminate samples
- Tip size is automatically recognized by HandyStep* electronic and AutoRep E
- Available in nonsterile and Bio-Cert* sterile
- Bio-Cert tips are independently certified free from DNA, RNase, ATP and endotoxin for critical biological applications

ORDERING INFORMATION:

Pipetter Compatibility: For use with Brand HandyStep*, HandyStep Electronic, Eppendorf* Repeater*, Ripette*, Rainin* AutoRep* E, AutoRep M, Nichipette Stepper*, and most standard repeating pipetters.

Bottom to top: 13-688-420, 13-688-362 through -368

INCLUDES:

Adapter is supplied with 25 and 50mL tips.

PD-TIP SELECTION CHART

Dial Setting	**1**	**2**	**3**	**4**	**5**
Max. No. of Deliveries	49	24	15	11	9
Volume/Delivery with					
0.1mL Tip	2µL	4µL	6µL	8µL	10µL
0.5mL Tip	10µL	20µL	30µL	40µL	50µL
1.25mL Tip	25µL	50µL	75µL	100µL	125µL
2.5mL Tip	50µL	100µL	150µL	200µL	250µL
5mL Tip	100µL	200µL	300µL	400µL	500µL
12.5mL Tip	250µL	500µL	750µL	1000µL	1250µL
25mL Tip	500µL	1000µL	1500µL	2000µL	2500µL
50mL Tip	1mL	2mL	3mL	4mL	5mL

Capacity	**Mfr. No.**	**Cat. No.**	**Pack of**
Nonsterile			
0.1mL	702402	**13-688-420**	100/101.95
0.5mL	702370	**13-688-362**	100/94.75
1.25mL	702372	**13-688-363**	100/94.75
2.5mL	702374	**13-688-364**	100/94.75
5mL	702376	**13-688-365**	100/94.75
12.5mL	702378	**13-688-366**	100/94.75
25mL	702380	**13-688-367**	50/58.75
50mL	702382	**13-688-368**	25/33.15
Bio-Cert* Sterile (Individually Wrapped)			
0.1mL	702683	**13-642-884**	100/135.00
0.5mL	702684	**13-688-412**	100/136.00
1.25mL	702686	**13-688-413**	100/127.85
2.5mL	702688	**13-688-414**	100/127.85
5mL	702690	**13-688-415**	100/127.85
12.5mL	702692	**13-688-416**	100/127.85
25mL	702694	**13-688-417**	25/37.30
50mL	702696	**13-688-418**	25/38.35

APPLICATION SPECIFIC—RNASE-/DNASE-FREE

*Fisherbrand** SureOne* Pipet Tips

New, improved Fisherbrand SureOne Reload system offers a full line of universal fit pipet tips in both filtered and nonfiltered configurations

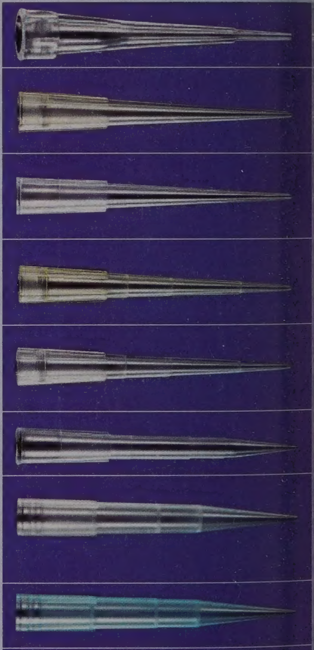
- All racked sterile filtered and nonfiltered tips are shrink wrapped and certified free of RNase, DNase, DNA, ATP
- Pyrogen, PCR inhibitor and bioburden free
- All nonsterile racked and bulk nonfiltered tips are certified free of RNase, DNase, DNA
- Reload packaging format reduces plastic waste by 52%
- Unique reload packaging design saves 58% bench space vs. racked packaging
- Lot traceable—all inserts contain the Fisherbrand part number, tip volume, lot number
- Multichannel design; all inserts are 96 well format
- Reversible lid acts as a hinged rack or a lift-off lid
- Inserts are easy to place into and remove from rack
- Insert clips into rack for a very secure fit preventing spilling of tips

ORDERING INFORMATION:
Packaging options include bulk, rack, rack sterile and reload. Also available in convenient removable/stackable reload decks that snap into empty racks without the need for special tools or precision hole alignment (visit our Web site).

Nonfilter Tips

Volume	Length	Packaging†	Color	Cat. No.	Pack of	Case of
Nonfilter						
0.1–10µL	1¼"	HR, 10 × 96	Natural	**02-707-436**	960/41.50	5 Pk./205.69
0.1–10µL	1¼"	HRS, 10 × 96		**02-707-437**	960/45.85	5 Pk./227.24
0.1–10µL	1¼"	RD, 10 × 96		**02-707-438**	960/36.89	5 Pk./182.85
1–200µL	2"	BP	Yellow	**02-707-451**	1000/19.23	5 Pk./190.62
1–200µL	2"	HR, 10 × 96		**02-707-421**	960/38.87	5 Pk./192.65
1–200µL	2"	HRS, 10 × 96		**02-707-422**	960/43.61	5 Pk./216.14
1–200µL	2"	RD, 10 × 96		**02-707-423**	960/32.94	5 Pk./163.26
1–200µL	2"	BP	Natural	**02-707-450**	1000/19.23	5 Pk./190.62
1–200µL	2"	HR, 10 × 96		**02-707-418**	960/38.87	5 Pk./192.65
1–200µL	2"	HRS, 10 × 96		**02-707-419**	960/43.61	5 Pk./216.14
1–200µL	2"	RD, 10 × 96		**02-707-420**	960/32.94	5 Pk./163.26
1–200µL	2"	BP	Yellow	**02-707-448‡**	1000/32.25	10 Pk./276.00
1–200µL	2"	HR, 10 × 96		**02-707-412‡**	960/40.31	5 Pk./199.80
1–200µL	2"	HRS, 10 × 96		**02-707-413‡**	960/44.80	5 Pk./222.01
1–200µL	2"	RD, 10 × 96		**02-707-414‡**	960/34.26	5 Pk./169.79
1–200µL	2"	BP	Natural	**02-707-449‡**	1000/32.25	10 Pk./276.00
1–200µL	2"	HR, 10 × 96		**02-707-415‡**	960/40.31	5 Pk./199.80
1–200µL	2"	HRS, 10 × 96		**02-707-416‡**	960/44.80	5 Pk./222.01
1–200µL	2"	RD, 10 × 96		**02-707-417‡**	960/34.26	5 Pk./169.79
1–300µL	2"	BP	Natural	**02-707-447‡**	1000/22.51	10 Pk./223.10
1–300µL	2"	HR, 10 × 96		**02-707-409‡**	960/42.04	5 Pk./208.31
1–300µL	2"	HRS, 10 × 96		**02-707-410‡**	960/46.51	5 Pk./230.51
101–1000µL	2¾"	BP	Natural	**02-707-400‡**	1000/27.28	10 Pk./267.76
101–1000µL	2¾"	HR, 10 × 96		**02-707-401‡**	960/49.94	5 Pk./247.49
101–1000µL	2¾"	HRS, 10 × 96		**02-707-402‡**	960/57.62	5 Pk./283.84
101–1000µL	2¾"	RI, 10 × 96		**02-707-403‡**	960/45.46	5 Pk./225.28
101–1000µL	2¾"	BP	Blue	**02-707-405‡**	1000/27.28	10 Pk./267.76
101–1000µL	2¾"	HR, 10 × 96		**02-707-406‡**	960/49.94	5 Pk./247.49
101–1000µL	2¾"	HRS, 10 × 96		**02-707-407‡**	960/57.62	5 Pk./283.84
101–1000µL	2¾"	RI, 10 × 96		**02-707-408‡**	960/45.46	5 Pk./225.28

† Packaging Code, BP: Bulk Pack; HR: Hinged Rack; HRS: Hinged Rack, Sterile; RI: Rack Inserts; RD: Reload Decks (2 stacks of 5 preloaded decks of 80).
‡ With 2.5µL reference mark.



Pipet tips are not shown to scale.

Pipetter Compatibility
Universal fit for research-grade pipetters

*Trademark. See Trademark Reference.

Fisherbrand* SureOne* Aerosol Barrier Pipet Tips

Nase-/RNase-free tips are also pyrogen-free

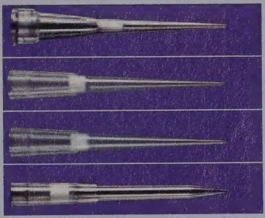
- Engineered for increased accuracy and reduced plastic waste
- Compatible with single-channel, multichannel, and electronic pipetters
- Sterile
- Filter eliminates aerosol cross-contamination without sealing or trapping samples
- Tips allow for noncontaminated sample recovery
- Not autoclavable

Pipetter Compatibility

Universal fit for research grade pipetters

Volume	Length	Packaging†	Color	Cat. No.	Each	Case of 5 Pk.
0.1–10µL	1¼"	HRS, 10 × 96	Natural	**02-707-439**	97.78	481.70
1–20µL	2"	HRS, 10 × 96	Natural	**02-707-432**	97.78	481.70
5–100µL	2"	HRS, 10 × 96	Natural	**02-707-431**	97.78	481.70
1–200µL	2"	HRS, 10 × 96	Natural	**02-707-430**	97.78	481.70

Packaging Code, HRS: Hinged Rack, Sterile



Pipet tips are not shown to scale.

Fisherbrand* Aerosol-Barrier Tips

No RNase or DNase contamination

- Patented, inert, hydrophobic filters prevent aerosol contamination
- Filter tips do not seal or trap samples
- Permit noncontaminated sample recovery
- Autoclavable
- Natural color

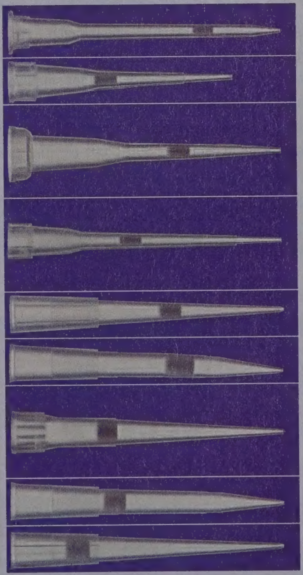
Pipetter Compatibility

Universal fit for research-grade pipetters

Volume	Length	Packaging†	Cat. No.	Pack of	Case of 5 Pk.
0.2–10µL	$1\frac{13}{16}$", Ultra-Micro	LRS, 10 × 96	**02-707-27**	960/123.00	548.00
0.2–10µL	1¼", Micro-P2/P10	HRS, 10 × 96	**02-707-30**	960/123.00	547.75
300µL	1¼", Micro Nano	BP	**02-707-150‡**	1000/106.68	472.03
	1¼", Micro Nano	LRS, 10 × 96	**02-707-152‡**	960/147.00	655.25
10µL	$1\frac{11}{16}$", Reach	BP	**02-707-153**	1000/114.00	491.00
	$1\frac{11}{16}$", Reach	HRS, 10 × 96	**02-707-155**	960/147.00	655.00
30µL	2"	HRS, 10 × 96	**02-707-33**	960/119.00	535.75
50µL	2"	HRS, 10 × 96	**02-707-36**	960/121.00	544.50
300µL	1⅞"	BP	**02-707-159**	1000/112.00	491.00
	1⅞"	LRS, 10 × 96	**02-707-161**	960/244.00	1094.00
100µL	2"	HRS, 10 × 96	**02-707-39**	960/123.00	546.00
150µL	2"	HRS, 10 × 96	**02-707-116**	960/120.00	532.75

Packaging Code: BP=Bulk Pack; HR=Hinged Rack; HRS=Hinged Rack, Sterile; LR=Lift-off Rack; LRS=Lift-off Rack, Sterile.

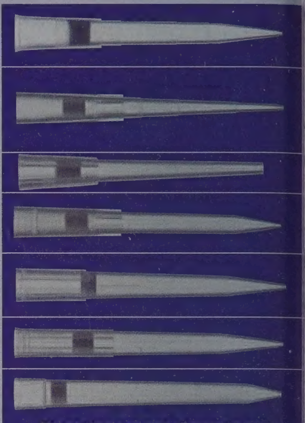
With 2.5µL reference mark.



Pipet tips are not shown to scale.

*Fisherbrand** Aerosol-Barrier Tips, Contd.

Volume	Length	Packaging†	Cat. No.	Pack of	Case of
200µL	2"	BP	**02-707-40**	1000/66.50	10 Pk./589.75
200µL	2"	HR, 10 × 96	**02-707-41**	960/116.00	5 Pk./516.00
200µL	2"	HRS, 10 × 96	**02-707-42**	960/121.00	5 Pk./536.00
200µL	2 5/16", Elongated	BP	**02-707-66**	1000/96.00	5 Pk./425.25
200µL	2 5/16", Elongated	LRS, 10 × 96	**02-707-68**	960/122.00	5 Pk./541.25
200µL	3½", Extended	LR, 8 × 204	**02-707-77**	1632/230.00	3 Pk./612.75
200µL	3½"	LRS, 10 × 100	**02-707-80**	800/125.00	5 Pk./562.25
200µL Large Orifice	2", Large Orifice	LRS, 10 × 96	**02-707-74**	960/130.00	5 Pk./582.75
300µL	2 5/16"	LR, 10 × 96	**02-707-70**	960/120.00	5 Pk./538.50
300µL	2 5/16"	LRS, 10 × 96	**02-707-71**	960/127.00	5 Pk./562.25
1000µL in 1300µL Tip	3⅛"	LRS, 10 × 100	**02-707-51**	1000/128.00	5 Pk./573.50
1250µL	3⅛"	LRS, 10 × 96	**02-707-167**	960/150.00	5 Pk./664.25
5000µL	4⅝"	BPS	**02-707-168**	100/38.00	10 Pk./328.25



Pipet tips are not shown to scale.

† Packaging Code: BP=Bulk Pack; HR=Hinged Rack; HRS=Hinged Rack, Sterile; LR=Lift-off Rack; LRS=Lift-off Rack, Sterile; BPS=Bulk Pack, Sterile.

Pipetter Compatibility

Universal fit for research-grade pipetters

Eppendorf* epTIPS, Eppendorf Biopur*, Racks and Singles

For the most stringent laboratory requirements

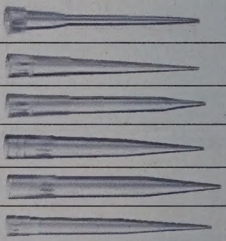
- Sterile; RNase-, DNA-, ATP- and pyrogen-free
- Drop contour design provides better tip sealing
- Finely tapered and extended; ideal for small-volume pipetting
- Fine graduations make it easy to check volume
- Soft, flexible tip cone provides better seal to pipetter
- Manufactured using ISO-9001:2001-certified processes
- Available in racks or individually wrapped

eppendorf
Biopur

Pipetter Compatibility

All Eppendorf pipetters; can also be used universally with most other brands of research-grade pipetters

Volume	Packaging	Mfr. No.	Cat. No.	Pack of
0.1–20µL	Racks, 5 × 96	022491067	**05-403-08**	480/76.00
0.1–20µL	Indiv. wrapped, 100 pcs.	022491130	**05-403-05**	100/25.00
2–200µL	Racks, 5 × 96	022491083	**05-403-09**	480/71.00
2–200µL	Indiv. wrapped, 100 pcs.	022491148	**05-403-06**	100/21.00
20–300µL	Racks, 5 × 96	022491091	**05-403-10**	480/71.00
50–1000µL	Racks, 5 × 96	022491105	**05-403-11**	480/75.00
50–1000µL	Indiv. wrapped, 100 pcs.	022491156	**05-403-07**	100/22.00
50–1250µL	Racks, 5 × 96	022491113	**05-403-12**	480/75.00
500–2000µL	Racks, 5 × 48	022491121	**05-403-13**	240/75.00



Pipet tips are not shown to scale.

BP* and Pure* Pipet Tips

th MicroPoint* Tip Design

croPoint* design means the tip profile is nearly 50% smaller than standard blunt end tips and significantly more narrow than eled-end tips.

ame superior quality and performance as ART* tips, except without the barrier
rystal clear tips allow you to easily see transparent samples
eference marks on many MBP tips provide a quick and convenient guide to visually establish whether you are pipetting the desired volume of liquid
ll Pure tips are racked, presterilized and certified RNase-, DNase-, DNA- and pyrogen-free; other MBP racked and bulk tips are nonsterile and autoclavable
IBP and **Pure 10** tips are ideal for low volume samples
he extended length **Pure 10 Reach*** and **Pure 1000 Reach** prevent contamination of samples, tubes, and pipetters
IBP Ultra Micro and **Pure Ultra Micro** are also well suited for work with low-volume samples
IBP 200 and **Pure 200** are equivalent to the "Universal Yellow" tip and have a reference mark at 10µL

etter Compatibility
versal fit for research-grade pipetters

cription	Volume	Packaging	Mfr. No.	Cat. No.	Pack of
e 10	0.1–10µL	Racked†	3501	**21-236-48**	960/69.29
P 10	0.1–10µL	Racked	3502	**21-402-39**	960/57.15
P 10	0.1–10µL	Bulk	3500	**21-236-47**	1000/40.00
e 10 Reach	0.1–10µL	Racked†	3511	**21-236-50**	960/69.37
P 10 Reach	0.1–10µL	Racked	3512	**21-402-40**	960/58.45
P 10 Reach	0.1–10µL	Bulk	3510	**21-236-49**	1000/41.00
e 200	0.5–200µL	Racked†	3551	**21-236-54**	960/66.22
P 200	0.5–200µL	Racked	3552	**21-402-42**	960/55.40
P 200	0.5–200µL	Bulk	3550	**21-236-53**	1000/37.22
e Ultra Micro	0.5–20µL	Racked†	3521	**21-236-52**	960/68.13
P Ultra Micro	0.5–20µL	Racked	3522	**21-402-41**	960/57.15
P Ultra Micro	0.5–20µL	Bulk	3520	**21-236-51**	1000/38.60
e 1000G	100–1000µL	Racked†	3591	**21-236-78B**	800/68.27
P 1000G	100–1000µL	Racked	3592	**21-236-78C**	800/58.42
P 1000G	100–1000µL	Bulk	3590	**21-236-78A**	10,000/363.91
e 1000 Reach	100–1000µL	Racked†	3791	**21-403-09**	800/67.00
P 1000 Reach	100–1000µL	Racked	3792	**21-403-10**	800/56.25
e 300	1–300µL	Racked†	3571	**21-236-56**	960/66.88
P 300	1–300µL	Racked	3572	**21-402-46**	960/57.15
P 300	1–300µL	Bulk	3570	**21-236-55**	1000/41.77
e 300E	1–300µL	Racked†	3561	**21-402-44**	960/68.13
P 300E	1–300µL	Racked	3562	**21-402-45**	960/57.15
e 200G	40–200µL	Racked†	3531	**21-236-76B**	960/68.11
P 200G	40–200µL	Racked	3532	**21-236-76C**	960/57.50
P 200G	40–200µL	Bulk	3530	**21-236-76A**	1000/41.13
e XLP	5–200µL	Racked†	3541	**21-236-77B**	768/91.20
P XLP	5–200µL	Racked	3542	**21-236-77C**	768/78.71
P XLP	5–200µL	Bulk	3540	**21-236-77A**	1000/62.47

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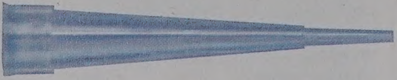
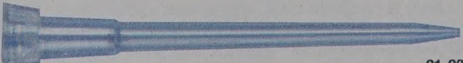

21-236-48

21-236-50

21-402-42


21-236-52

21-236-77C

Pipet tips are not shown to scale.

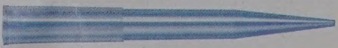
th SoftFit* Tip Design

ftFit feature allows the tips to conform to the barrel of the pipetter, creating a secure fit that is easier to load than normal pipet tips.

esign provides universal fit plus easy loading and ejecting
deal for multichannel pipetting

etter Compatibility
versal fit for research-grade pipetters

cription	Volume	Packaging	Mfr. No.	Cat. No.	Pack of
e 300U	1.0–300µL	Racked†	3771	**21-402-184**	960/79.66
P 300U	1.0–300µL	Racked	3772	**21-402-182**	960/67.41
P 300U	1.0–300µL	Bulk	3770	**21-402-183**	1000/43.96
P 1000	100–1000µL	Racked	3582	**21-402-47**	800/57.15
P 1000	100–1000µL	Bulk	3580	**21-236-57**	1000/39.79
e 1000	100–1000µL	Racked†	3581	**21-236-58**	800/68.12



Pipet tips are not shown to scale.

erile.

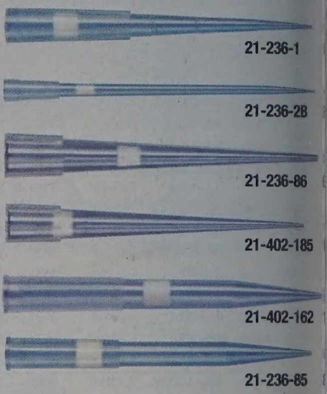
ART* Barrier Tips

Standard Tips with MicroPoint* and SoftFit* Design

- Presterilized and precision-molded tips with the patented ART self-sealing barrier
- Certified RNase-, DNase-, and pyrogen-free
- Guaranteed to prevent carryover contamination during aspiration and delivery of samples
- Ideal for use in genetic studies, forensics, PCR, and radioisotope sampling
- Available in numerous sizes and styles to meet all of your liquid-handling needs
- SoftFit design provides easy loading for a sure fit every time and easy ejecting for reduced hand fatigue

ART Tip	Volume	Mfr. No.	Cat. No.	Pack of	Case of
Standard Tips with MicroPoint Design					
Gel 20P	0.5–20µL	2155P	**21-236-20**	960/143.03	4 Pk./489.00
Gel	0.5–100µL, Gel Loading	2155	**21-236-9**	960/142.74	4 Pk./488.00
100	0.5–100µL	2065	**21-236-7**	960/112.85	5 Pk./482.25
100E	1–100µL	2065E	**21-236-8**	960/112.85	5 Pk./482.25
200	1–200µL	2069	**21-236-1**	960/113.49	5 Pk./485.00
XLP	5–100µL	2159P	**21-236-2B**	768/134.26	4 Pk./459.00
XLP 200	5–200µL	2160P	**21-402-120**	768/137.18	4 Pk./469.00
200G	5–200µL (Genomic)	2069G	**21-236-1A**	960/116.77	5 Pk./499.00
300	1–300µL	2070	**21-236-27**	960/113.49	5 Pk./485.00
1000E	100–1000µL	2079E	**21-236-2A**	800/113.78	4 Pk./389.00
1000G	100–1000µL (Genomic)	2079G	**21-236-2C**	800/113.78	4 Pk./389.00
1000 Reach	100–1000µL Ext. Length	2079	**21-403-03**	800/121.39	4 Pk./415.00
5000	1–5mL	2180B	**21-236-29**	250/79.00	5 Pk./355.00
Standard Tips with SoftFit Design					
50U	0.5–50µL	2780	**21-236-86**	960/113.26	5 Pk./484.00
200U	1–200µL	2770	**21-402-185**	960/113.49	5 Pk./485.00
500	50–500µL	2275	**21-402-162**	800/114.66	4 Pk./392.00
1000	100–1000µL	2279	**21-236-85**	768/112.85	4 Pk./385.80

Pipetter Compatibility
Universal fit for research-grade pipetters



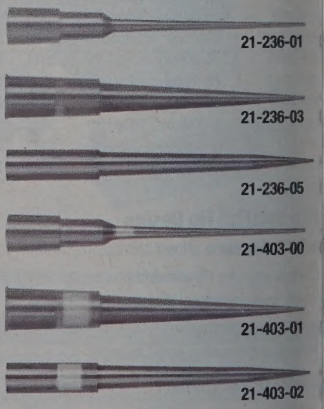
Pipet tips are not shown to scale.

SoftFit-L* Design for Rainin* LTS* LiteTouch* Pipetter

- SoftFit-L tips have thinner walls than conventional tips so they conform more easily to the pipetter barrel, which ensures a better seal and allows the tip to eject with less force
- MBP* tips are nonsterile; ART* and Pure* are sterile
- ART tips have a self-sealing barrier that prevents carryover contamination
- Racked

Volume	Packaging	Mfr. No.	Cat. No.	Pack of	Case of
MBP Tips					
20µL	Tray, 10 × 96	3722	**21-236-02**	960/68.54	5 Pk./308.50
200µL	Tray, 10 × 96	3752	**21-236-04**	960/68.54	5 Pk./308.50
1000µL	Tray, 8 × 96	3782	**21-236-06**	768/63.03	4 Pk./226.95
Pure Tips					
20µL	Tray, 10 × 96, Sterile	3721	**21-236-01**	960/85.74	5 Pk./379.40
200µL	Tray, 10 × 96, Sterile	3751	**21-236-03**	960/85.74	5 Pk./379.40
1000µL	Tray, 8 × 96, Sterile	3781	**21-236-05**	768/75.63	4 Pk./272.35
ART Barrier Tips					
20µL	Tray, 10 × 96, Sterile	2749	**21-403-00**	960/112.85	5 Pk./482.25
200µL	Tray, 10 × 96, Sterile	2769	**21-403-01**	960/112.85	5 Pk./482.25
1000µL	Tray, 8 × 96, Sterile	2779	**21-403-02**	768/112.91	4 Pk./386.00

Pipetter Compatibility
Rainin LTS LiteTouch Pipetter; universal fit also accommodates most other research-grade pipetters



Pipet tips are not shown to scale.

APPLICATION SPECIFIC—ROBOTIC

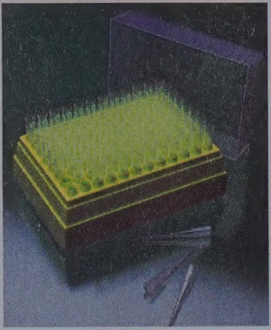
*Fisherbrand** Lab Automation Pipet Tips

isposable tips for robotic workstations—provide maximum performance, accuracy and reproducibility in laboratory utomation procedures

vailable in clear, blue tint, or carbon-black-conductive polypropylene. arbon-black, liquid-level-sensing tips are required by many automated ystems. They are constructed of a highly conductive material that is ecessary to detect presence or absence of sufficient liquid, in order to void short sampling and excessive submersion of tip during aspiration.

eatures

- Ideal for demanding HTS procedures
- Provide maximum performance, accuracy, and reproducibility in lab automation procedures
- Engineered to ensure proper fit and function with several standard and customized automated liquid-handling systems
- Choose tips in an assortment of volume sizes and styles



02-707 Series

Nonfilter Tips

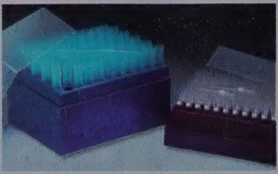
For Robotic Workstation	Volume	Color	Packaging	Cat. No.	Pack of	Case of
Beckman* Biomek* 1000/2000	1–20µL	Natural	10 racks of 96	**02-707-236**	960/46.59	5 Pk./211.75
	1–20µL	Natural	10 racks of 96, sterile	**02-707-237**	960/51.48	5 Pk./234.00
	5–250µL	Natural	10 racks of 96	**02-707-239**	960/46.59	5 Pk./211.75
	5–250µL	Natural	10 racks of 96, sterile	**02-707-240**	960/51.48	5 Pk./234.00
Beckman Multimek* 96 Channel	50µL	Natural	10 racks of 96	**02-707-210**	960/49.01	5 Pk./222.75
	50µL	Natural	10 racks of 96, sterile	**02-707-211**	960/32.63	5 Pk./148.31
	250µL	Blue Tint	10 racks of 96	**02-707-216**	960/52.00	5 Pk./222.75
	250µL	Blue Tint	10 racks of 96, sterile	**02-707-217**	960/54.50	5 Pk./232.75
BioTek* Precision*, Tecan* Te-MO, and Tecan GenMate	50µL	Natural	10 racks of 96	**02-707-344**	960/37.75	5 Pk./161.50
	50µL	Natural	10 racks of 96, sterile	**02-707-345**	960/44.25	5 Pk./189.50
	100µL	Natural	10 racks of 96	**02-707-340**	960/38.00	5 Pk./161.50
	100µL	Natural	10 racks of 96, sterile	**02-707-341**	960/44.25	5 Pk./189.50
	200µL	Natural	10 racks of 96	**02-707-342**	960/37.75	5 Pk./161.50
	200µL	Natural	10 racks of 96, sterile	**02-707-343**	960/44.25	5 Pk./189.50
Molecular Devices FLIPR* 2	250µL	Blue Tint	10 racks of 96	**02-707-216**	960/52.00	5 Pk./222.75
Packard* MultiPROBE* I	1000µL	Natural	Bulk pack	**02-707-271**	1000/36.50	10 Pk./312.00
Packard MultiPROBE I and II	20µL	Black	10 racks of 96	**02-707-273**	960/90.75	5 Pk./401.00
	20µL	Black	10 racks of 96, sterile	**02-707-274**	960/93.25	5 Pk./412.50
	250µL	Black	10 racks of 96, sterile	**02-707-276**	960/93.25	5 Pk./412.50
Qiagen*/Rosys	300µL	Natural	10 racks of 96	**02-707-280**	960/63.94	5 Pk./314.97
	300µL	Natural	10 racks of 96, sterile	**02-707-281**	960/65.01	5 Pk./320.24
	300µL	Black	10 racks of 96, sterile	**02-707-286**	960/104.00	5 Pk./489.25
	1100µL	Natural	10 racks of 96	**02-707-283**	960/69.00	5 Pk./327.75

Pipetter Compatibility

For use with but not limited to: Beckman Biomek 1000/2000, Beckman Multimek 96, BioTek Precision, Molecular Devices FLIPR 2, Packard MultiPROBE I and II, Qiagen/Rosys, Tecan Genesis, Tecan Te-MO, Tecan GenMate, and Zymark* Automation Certified* RapidPlate* 96 and 96/384 liquid-handling systems.

Fisherbrand* Lab Automation Pipet Tips, Contd.

For Beckman* Biomek* 1000/2000



For Zymark* Automated Workstations

Nonfilter Tips, Contd.

For Robotic Workstation	Volume	Color	Packaging	Cat. No.	Pack of	Case of
Tecan* Genesis	20µL	Natural	10 racks of 96	**02-707-244**	960/86.00	5 Pk./382.25
	20µL	Black	10 racks of 96	**02-707-246**	960/115.07	5 Pk./491.75
	50µL	Natural	10 racks of 96	**02-707-249**	960/86.50	5 Pk./382.25
	50µL	Black	10 racks of 96	**02-707-251**	960/95.46	5 Pk./470.22
	200µL	Natural	10 racks of 96	**02-707-254**	960/86.50	5 Pk./383.25
	200µL	Natural	10 racks of 96, sterile	**02-707-255**	960/88.87	5 Pk./393.25
	5–200µL	Black	10 racks of 96	**02-707-256**	960/115.07	5 Pk./491.75
	5–200µL	Black	10 racks of 96, sterile	**02-707-257**	960/117.59	5 Pk./502.50
	1000µL	Natural	10 racks of 96	**02-707-259**	960/87.75	5 Pk./387.75
	1000µL	Natural	10 racks of 96, sterile	**02-707-260**	960/90.12	5 Pk./398.75
	1000µL	Black	10 racks of 96	**02-707-261**	960/115.36	5 Pk./493.00
	1000µL	Black	10 racks of 96, sterile	**02-707-262**	960/117.59	5 Pk./502.50
Zymark RapidPlate* 96 and 96/384	100µL	Natural	10 racks of 96	**02-707-224**	960/50.00	5 Pk./213.00
	100µL	Natural	10 racks of 96, sterile	**02-707-225**	960/63.00	5 Pk./278.50
	200µL	Natural	Bulk pack	**02-707-218**	1000/38.50	10 Pk./368.00
	200µL	Natural	10 racks of 96	**02-707-219**	960/49.50	5 Pk./211.75
	200µL	Natural	10 racks of 96, sterile	**02-707-220**	960/63.00	5 Pk./278.50

Filter Tips

For Robotic Workstation	Max. Capacity	Color	Packaging	Cat. No.	Pack of	Case of
Beckman Biomek 1000/2000	20µL	Natural	10 racks of 96, sterile	**02-707-241**	960/117.35	5 Pk./501.50
	180µL	Natural	10 racks of 96, sterile	**02-707-242**	960/117.35	5 Pk./501.50
Beckman Multimek* 96 Channel	250µL	Blue Tint	10 racks of 96	**02-707-212**	960/96.00	5 Pk./437.00
	250µL	Blue Tint	10 racks of 96, sterile	**02-707-213**	960/47.71	5 Pk./238.52
Packard* MultiPROBE* I and II	180µL	Black	10 racks of 96, sterile	**02-707-278**	960/147.25	5 Pk./669.00
Qiagen*/Rosys	300µL	Natural	10 racks of 96, sterile	**02-707-289**	960/48.21	5 Pk./241.03
	1100µL	Natural	10 racks of 96, sterile	**02-707-290**	960/125.75	5 Pk./571.25
	300µL	Black	10 racks of 96, sterile	**02-707-291**	960/227.00	5 Pk./1016.00
	1100µL	Black	10 racks of 96, sterile	**02-707-292**	960/229.00	5 Pk./1071.00
Tecan* Genesis	50µL	Natural	10 racks of 96, sterile	**02-707-264**	960/119.75	5 Pk./543.50
	200µL	Natural	10 racks of 96, sterile	**02-707-265**	960/120.25	5 Pk./546.50
	1000µL	Natural	10 racks of 96, sterile	**02-707-266**	960/106.61	5 Pk./525.14
	10µL	Black	10 racks of 96, sterile	**02-707-267**	960/127.78	5 Pk./629.43
	50µL	Black	10 racks of 96, sterile	**02-707-268**	960/153.27	5 Pk./655.00
	1000µL	Black	10 racks of 96, sterile	**02-707-270**	960/274.54	5 Pk./1173.25
Zymark RapidPlate* 96 and 96/384	150µL	Natural	10 racks of 96, sterile	**02-707-228**	960/115.00	5 Pk./501.50
	80µL	Natural	10 racks of 96, sterile	**02-707-230**	960/115.00	5 Pk./501.50

*Trademark. See Trademark Reference.

Prices subject to change.

*Fisherbrand** Premium Plus Robotic Tips

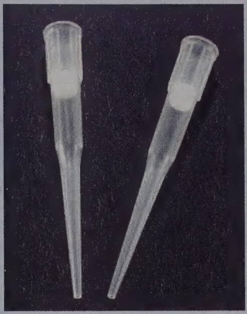
ioGuard* Aerosol Barriers prevent contamination of robot head and cross-contamination of samples

- Color coded for easy size identification
- Reinforced racks provide sturdy platform for loading tips
- Available in all robot-supported volumes
- Reliable alternative to expensive OEM tips
- Available with Low Binding Surface Tension technology
- 100% QC for straight tips

ORDERING INFORMATION:

Biomek* 1000/2000 tips fit MP200 head (250RL tips) and MP20 head (20RL tips). Biomek FX/ Multimek* AP96 tips fit AP96 head on Biomek FX and Multimek. Supplied in racks of 96, 100 racks per pack, five packs per case.

5-408-168



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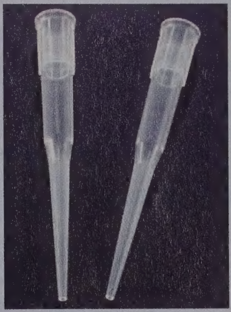

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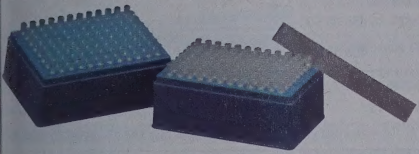
Pipet tips are not shown to scale.



Biomek Fx/Multimek AP96 Racks

Biomek 1000/2000 Racks

			Standard Tips				Low-Binding Tips			
olume	Color	Packaging	Mfr. No.	Cat. No.	Pack of 960	Case of 5 Pk.	Mfr. No.	Cat. No.	Pack of 960	Case of 5 Pk.
iomek 1000/2000 Tips										
1–20µL	Blue	Rack	14752	**05-408-160**	57.00	255.00	14752T	**05-408-172**	58.75	260.25
1–20µL	Blue	Sterile Rack	14772	**05-408-161**	62.00	275.50	14772T	**05-408-173**	63.25	280.50
1–20µL, BioGuard	Blue	Rack	37262	**05-408-162**	134.00	612.00	37262T	**05-408-174**	134.00	617.25
1–250µL	Natural	Rack	14742	**05-408-163**	57.50	255.00	14742T	**05-408-175**	58.75	260.25
1–250µL	Natural	Sterile Rack	14762	**05-408-164**	62.25	275.50	14762T	**05-408-176**	63.25	280.50
1–170µL, BioGuard	Natural	Rack	37272	**05-408-165**	134.00	612.00	37272T	**05-408-177**	134.00	617.25
iomek FX/Multimek AP96 Tips										
1–20µL	Blue	Rack	37132	**05-408-166**	57.50	255.00	37132T	**05-408-178**	58.75	260.25
1–20µL	Blue	Sterile Rack	37142	**05-408-167**	62.00	275.50	37142T	**05-408-179**	63.25	280.50
1–20µL, BioGuard	Blue	Rack	37072	**05-408-168**	138.00	612.00	37072T	**05-408-180**	138.00	617.25
1–250µL	Natural	Rack	37162	**05-408-169**	57.00	255.00	37162T	**05-408-181**	58.75	260.25
1–250µL	Natural	Sterile Rack	37172	**05-408-170**	62.25	275.50	37172T	**05-408-182**	63.25	280.50
1–250µL, BioGuard	Natural	Rack	37082	**05-408-171**	138.00	612.00	37082T	**05-408-183**	138.00	617.25

LOOKING FOR FREE SAMPLES?

You can request samples of Fisherbrand* Premium Plus Robotic tips at **www.fisherlab.info.**

MBP* BioRobotix* Pipet Tips for Automated Workstations

Compatible with a wide range of automated workstations

- Designed for maximum accuracy and repeatability
- Available in two colors: natural (clear) and black (liquid sensing)
- Constructed of premium-grade, virgin polypropylene
- Tips are rigorously tested on the systems for which they were designed

ART* Self-Sealing Barrier Tips

- Block contaminating liquids and aerosols from being drawn into your workstation; help maintain integrity of samples
- Sterile
- Reduce risk of cross-contamination

Volume	Color	Packaging	Mfr. No.	Cat. No.	Pack of	Case of 5 Pk.
For Tecan* Genesis, MiniPrep and Perkin-Elmer*/Packard* MultiPROBE* II HT Workstations						
20µL	Black	TS, 10 × 96	901-011	**21-402-322**	960/146.30	----
50µL	Black	TS, 10 × 96	902-011	**21-402-323**	960/145.75	----
175µL	Black	TS, 10 × 96	903-011	**21-402-320**	960/139.90	----
1000µL	Black	TS, 10 × 96	904-011	**21-402-321**	960/139.90	----
For Tecan Genesis and Perkin-Elmer/Packard MultiPROBE II HT Workstations‡						
10µL	Natural	TS, 10 × 96	901-021	**21-402-330‡**	960/117.05	----
50µL	Natural	TS, 10 × 96	902-021	**21-402-333‡**	960/115.60	----
175µL	Natural	TS, 10 × 96	903-021	**21-402-336‡**	960/112.20	----
1000µL	Natural	TS, 10 × 96	904-021	**21-402-339‡**	960/112.20	----
For Beckman* Biomek* 1000, Biomek 2000 Style Workstations						
20µL	Natural	TS, 10 × 96	915-021	**21-402-324**	960/128.43	548.85
130µL	Natural	TS, 10 × 96	917-021	**21-402-327**	960/128.43	548.85
For Zymark* RapidPlate*, Presto*, and SciClone* Workstations						
20µL	Natural	TS, 10 × 96	921-021	**21-402-303**	960/103.00	465.00
100µL	Natural	TS, 10 × 96	923-021	**21-402-300**	960/108.46	463.50
For Beckman Biomek FX 384 and Multimek AP384 Workstations						
25µL	Natural	TS, 10 × 384	935-021	**21-935-021**	19,200/3550.00	----
For Beckman Biomek FX and Multimek AP96 Workstations						
8µL	Natural	TS, 10 × 96	912-021	**14-754-342**	960/127.81	546.20
20µL	Natural	TS, 10 × 96	918-021	**21-402-190**	960/128.43	548.85
130µL	Natural	TS, 10 × 96	919-021	**21-402-193**	960/128.43	548.85
For Beckman Biomek FX Workstations with a Span-8 Head						
20µL	Black	TS, 10 × 96	918-011	**21-402-522**	960/214.85	918.15
130µL	Black	TS, 10 × 96	919-011	**21-402-525**	960/214.85	918.15
For Rosys and Qiagen Style Workstations						
250µL	Black	TS, 10 × 96	951-011	**21-402-351**	960/138.70	----
1000µL	Black	TS, 10 × 96	953-011	**21-402-353**	960/140.75	----
250µL	Natural	TS, 10 × 96	951-021	**21-402-231**	960/111.00	----
1000µL	Natural	TS, 10 × 96	953-021	**21-402-234**	960/111.00	----
For Beckman Multimek Type II (3772 adapter required)						
175µL	Natural	TS, 10 × 96	2790	**21-402-224**	960/111.00	490.00
50µL	Natural	TS, 10 × 96	2760	**21-402-237**	960/111.00	490.00
For Tecan Genesis, Freedom, Evo and Perkin-Elmer MultiPROBE II HT/HT EX						
175µL	Black	TS, 10 × 96	903-011G	**21-402-243†**	960/138.00	----
1000µL	Black	TS, 10 × 96	904-011G	**21-402-246†**	960/140.00	----

21-402-322

21-402-330

21-402-324

21-402-303

21-935-021

14-754-342

21-402-522

21-402-351

21-402-231

21-402-224

21-402-243

Pipet tips are not shown to sc

Packaging Code: TS=Tray, Sterile.

† Wide-bore, genomic tip.

‡ Note: In order to use BioRobotix filtered tips with Perkin Elmer's MultiPROBE II workstations, you must do one of the following 1.) remove the "stinger" on the Versatip adapter; or 2.) purchase a Versatip adapter that does not have a stinger. For more details, contact your Fisher Scientific Customer Service Representative at 1-800-766-7000.

Contd. on next pag

P* BioRobotix* Pipet Tips, Contd.

21-402 Series

andard Tips

ear polypropylene

ume	Color	Packaging†	Mfr. No.	Cat. No.	Pack of	Case of 5 Pk.
Beckman* Biomek* 1000 and Biomek 2000 Style Workstations						
ıL	Natural	TS, 10 × 96	915-261	**21-402-325**	960/70.76	318.45
ıL	Natural	T, 10 × 96	915-262	**21-402-326**	960/63.45	285.50
)µL	Natural	TS, 10 × 96	917-261	**21-402-328**	960/72.32	320.00
)µL	Natural	T, 10 × 96	917-262	**21-402-329**	960/63.45	285.50
Tecan* Genesis and Perkin-Elmer/Packard MultiPROBE* II HT Workstations						
ıL	Natural	TS, 10 × 96	901-261	**21-402-331**	960/93.40	----
ıL	Natural	T, 10 × 96	901-262	**21-402-332**	960/85.90	----
ıL	Natural	TS, 10 × 96	902-261	**21-402-335**	960/93.40	----
ıL	Natural	T, 10 × 96	902-262	**21-402-334**	960/85.90	----
)µL	Natural	TS, 10 × 96	903-261	**21-402-337**	960/89.65	----
)µL	Natural	T, 10 × 96	903-262	**21-402-338**	960/82.20	----
0µL	Natural	TS, 10 × 96	904-261	**21-402-340**	960/89.64	----
0µL	Natural	T, 10 × 96	904-262	**21-402-341**	960/82.10	----
Zymark* RapidPlate*, Presto*, and SciClone* Workstations						
)µL	Natural	T, 10 × 96	921-262	**21-402-305**	960/55.00	239.85
)µL	Natural	T, 10 × 96	923-262	**21-402-302**	960/56.15	239.85
Perkin-Elmer/Packard PlateTrak*, MiniTrak*, Evolution* P³; Molecular Devices FLIPR* CCS 384 "Type A" d Workstations						
ıL	Natural	TS, 10 × 384	931 261	**21-931-261**	19,200/2404.00‡	----
ıL	Natural	T, 10 × 384	931 262	**21-931-262**	3840/555.90	2375.65
Beckman Biomek FX 384 and Multimek* AP384 Workstations						
ıL	Natural	TS, 10 × 384	935 261	**21-935-261**	19,200/3240.00‡	----
ıL	Natural	T, 10 × 384	935 262	**21-935-262**	19,200/3196.00‡	----
Beckman Biomek FX and Multimek AP96 Workstations						
ıL	Natural	TS, 10 × 96	912-261	**14-754-340**	960/72.39	320.30
ıL	Natural	T, 10 × 96	912-262	**14-754-341**	960/63.00	284.05
ıL	Natural	TS, 10 × 96	918-261	**21-402-191**	960/70.75	318.35
ıL	Natural	T, 10 × 96	918-262	**21-402-192**	960/64.51	285.45
)µL	Natural	TS, 10 × 96	919-261	**21-402-194**	960/70.75	318.35
)µL	Natural	T, 10 × 96	919-262	**21-402-195**	960/63.42	285.45
Molecular Devices FLIPR Workstations with a "Type B" Liberty 384 Head						
ıL	Natural	T, 10 × 384	937-262	**21-931-259**	3840/568.27	2428.50

ckaging Code: T=Tray; TS=Tray, Sterile.
antity includes 10 × 384 × 5.

21-402-326

21-402-329

21-402-332

21-402-334

21-402-341

21-402-305

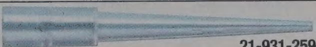
21-931-262

21-935-262

14-754-341

21-402-192

21-402-195



21-931-259

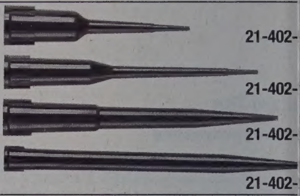
Pipet tips are not shown to scale.

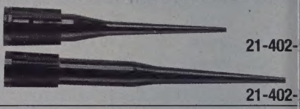
MBP* BioRobotix* Pipet Tips, Contd.

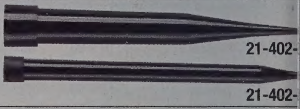
Carbon-impregnated Polypropylene

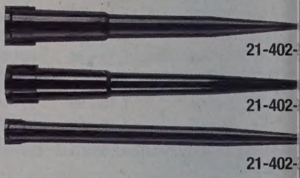
Volume	Color	Packaging†	Mfr. No.	Cat. No.	Pack of	Case of 5 Pk.
For Tecan* Genesis and MiniPrep; Perkin-Elmer*/Packard* MultiPROBE* II HT Workstations						
20µL	Black	TS, 10 × 96	901-251	**21-402-318**	960/116.24	----
20µL	Black	T, 10 × 96	901-252	**21-402-314**	960/107.25	----
50µL	Black	TS, 10 × 96	902-251	**21-402-319**	960/116.59	----
50µL	Black	T, 10 × 96	902-252	**21-402-315**	960/107.25	----
200µL	Black	TS, 10 × 96	903-251	**21-402-316**	960/111.93	----
200µL	Black	T, 10 × 96	903-252	**21-402-312**	960/102.50	----
1000µL	Black	TS, 10 × 96	904-251	**21-402-317**	960/111.93	----
1000µL	Black	T, 10 × 96	904-252	**21-402-313**	960/102.50	----
For Beckman* Biomek* FX Workstations with a Span-8 Head						
20µL	Black	TS, 10 × 96	918-251	**21-402-520**	960/140.67	601.15
20µL	Black	T, 10 × 96	918-252	**21-402-521**	960/134.55	575.00
250µL	Black	TS, 10 × 96	919-251	**21-402-523**	960/140.67	601.15
250µL	Black	T, 10 × 96	919-252	**21-402-524**	960/134.55	575.00
For Rosys* and Qiagen* Style Workstations						
300µL	Black	TS, 10 × 96	951-251	**21-402-352**	960/113.15	----
300µL	Black	T, 10 × 96	951-252	**21-402-350**	960/102.25	----
1000µL	Black	TS, 10 × 96	953-251	**21-402-354**	960/113.00	----
1000µL	Black	T, 10 × 96	953-252	**21-402-355**	960/101.75	----
For Tecan Genesis, Freedom, Evo and Perkin-Elmer MultiPROBE II HT/HT EX						
20µL	Black	T, 50 × 96	901-253	**21-402-186**	4800/421.00	----
50µL	Black	T, 50 × 96	902-253	**21-402-187**	4800/414.00	----
200µL	Black	T, 50 × 96	903-253	**21-402-188**	4800/421.00	----
1000µL	Black	T, 50 × 96	904-253	**21-402-189**	4800/421.00	----
200µL	Black	TS, 10 × 96	903-251G	**21-402-244‡**	960/113.00	----
200µL	Black	T, 10 × 96	903-252G	**21-402-245‡**	960/104.00	----
1000µL	Black	TS, 10 × 96	904-251G	**21-402-247‡**	960/111.00	----
1000µL	Black	T, 10 × 96	904-252G	**21-402-248‡**	960/104.00	----
For Qiagen BioRobot 3000, 8000, 9600, 9604						
1100µL	Black	T, 50 × 96	953-253	**21-402-229**	4800/414.00	----
300µL	Black	T, 50 × 96	951-253	**21-402-230**	4800/414.00	----

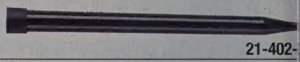
† Packaging Code: T=Tray; TS=Tray, Sterile.
‡ Wide-bore, genomic tip.











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MBP* BioRobotix* Low-Retention Pipet Tips

Clear polypropylene tips are compatible with a variety of automated liquid-handling systems

- ▸ Comprehensive QC process includes tests ranging from percent CV values to tip straightness
- ▸ Low percent coefficient of variation

NEW

Volume	Sterile	Mfr. No.	Cat. No.	Pack of 960	Case of 5 Pk.
For Beckman* Biomek* 2000 Workstations					
20µL	Yes	915-261-05	**21-402-642**	84.50	380.15
200µL	Yes	917-261-05	**21-402-645**	84.45	380.15
200µL	No	917-262-05	**21-402-646**	75.75	340.85
For Beckman Biomek FX, NX, and 3000 Workstations					
20µL	Yes	918-261-05	**21-402-636**	84.45	380.15
200µL	Yes	919-261-05	**21-402-639**	84.45	380.15
200µL	No	919-262-05	**21-402-640**	75.75	340.85
For Perkin-Elmer* PlateTrak, MiniTrak and Evolution P3 Workstations					
20µL	Yes	925-261	**21-402-633**	73.65	331.45
20µL	No	925-262	**21-402-634**	62.50	276.55
50µL	Yes	927-261	**21-402-630**	81.25	359.50
50µL	No	927-262	**21-402-631**	67.55	303.80
235µL	Yes	929-261	**21-403-25**	79.80	359.05
235µL	No	929-262	**21-403-26**	67.50	303.80

Pipet tips are not shown to sca

POLARIMETERS

lyscience Polarimeters

accurate determinations of optically active terials, such as sugar and protein

13-792, 13-793

ptically active material rotates as ht beam is passed through it; e polarimeters accurately sure such rotation in degrees. ier and magnifier directly ate the percent concentration.

curate to ±0.1° over 180° or 0° range using integral vernier

erpolation possible to 0.05°

ouding or slight coloration of test sample won't affect accuracy or clear servation of sample

rection of light beam rotation is easily determined from half-shadow sition—if half-shadow is on right, rotation is to right; if on left, tation is to left

larimeters accommodate measuring tubes of various lengths 0mm maximum)

bes have larger diameter at one end to collect air bubbles and prevent tical disturbance in measuring field

alogen source lamp enables instrument to make precise measurements er wide range of rotations and provides necessary monochromatic light combination with built-in orange filter (589nm)

models available:

alf-Circle Model comes with three-wire cord, halogen lamp, half-circle ale (0° to 90° right and left), magnifier and vernier for direct readings 0.1°, transformer, and one 8" (200mm) measuring tube

ll-Circle Model SR-6 includes three-wire cord, halogen lamp light urce, full-circle scale (0° to 180° right and left), magnifier and vernier for rect readings to 0.1°, transformer, and one 8" (200mm) measuring tube

ERING INFORMATION:

ensions (both models): 15L × 5W × 15"H (38 × 13 × 38cm). 115V 60Hz.

el	Cat. No.	Each
-circle	**13-792**	3950.00
circle	**13-793**	4500.00

ACCESSORIES

leasuring Tubes for Polarimeter

ize	Cat. No.	Each
" (100mm)	**13-792-2B**	235.00
" (200mm)	**13-792-2A**	227.18

olarimeter Replacement Parts

or 13-792 and 13-793 polarimeters.

tem	Cat. No.	Price
Vashers for tube†	**13-793-4**	Pk. of 6/49.00
ilass cover discs for tube†	**13-793-5**	Pk. of 6/71.50
Halogen lamp	**13-793-10**	Ea./96.82

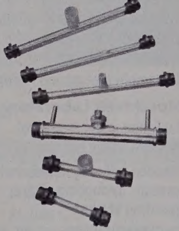
Six two-disc sets per pack.

Bellingham & Stanley ADP220 Digital Polarimeter

Automatic digital polarimeter with improved optics and higher accuracy

13-645-45

- Resolution to 0.01°A
- Direct-read results can be output to printer or computer
- Push-button control for automatic read, print, scale change, zero setting
- Fixed probe monitors sample chamber temperature; second probe monitors sample temperature directly
- Selectable Angular Degree (°A) and International Sugar (ISS) scales; plus up to 5 user-defined scales
- Selectable response time: slow (~30 sec.) for high accuracy or with diluted or high-optical-density samples; fast (~5 sec.) for rapid checks
- Auto temperature compensation
- Accepts polarimeter tubes up to 220mm in length


13-645 Series Accessory Tubes

ORDERING INFORMATION:

Dimensions: (not including power supply): 5$^{15}/_{16}$ L × 11W × 2$^{5}/_{32}$"H (150 × 280 × 55mm). Net weight: 20 lb. (9.0kg).

Options include: Control Plates to verify accuracy; Water Jacketed Tubes for precise temperature control; Funnel Flow Tube for flushing previous sample away with new sample, eliminating cleaning; contact your Fisher Scientific Customer Service Representative for details, or visit our Web site.

INCLUDES:

Polarimeter, one straight center-filling tube (200mm), external temperature probe, instruction manual and external power supply (90 to 230V ±10%, 50/60Hz) for lower internal heat, rapid stabilization.

Description	Mfr. No.	Cat. No.	Each
ADP220 Automatic Digital Polarimeter	36-20	**13-645-45**	9855.00

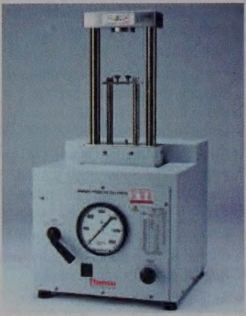
SPECIFICATIONS

Ranges	-355 to +355°A/-255 to +255°Z ISS
Resolution	0.01°A/0.01°Z
Accuracy	±0.02°A/±0.05°Z
Light Source	LED with interference filter (589nm), 4mm dia. beam
Interfaces	Serial RS-232, parallel, temperature probe

PRESSES

Thermo Scientific* IEC* French* Laboratory Press

Non-invasive technique for more uniform and complete cell disruption


05-112-158

Choose the Motor-driven Laboratory Press with either the Standard French Pressure Cell or the Miniature French Pressure Cell.

- Achieve higher pressures than with bombs or decompression systems
- Pressure cell disrupts cellular walls of sample while leaving the cell nucleus undisturbed
- No sample pretreating necessary

Motor-driven Laboratory Press

- Dual-range, single-control pressure selection
- Provides fully regulated working pressure throughout entire operating stroke
- Fine control of internal cell pressure expands system range for a variety of applications
- Three-position control and large, easy-to-read pressure gauge
- Power-driven return stroke and two pressure ratios permit precise settings at low pressure

Standard French Pressure Cell

- 35mL capacity, pressure up to 40,000psi
- Includes one package of 50 O-rings, one package of 50 backup rings, and one snap ring plier
- Requires Laboratory Press for operation
- Optional Rapid Fill Kit allows fast cell filling and processing of large sample volumes in less time; includes all components needed to mount into laboratory press

Miniature French Pressure Cell

- 3.7mL capacity, pressure up to 20,000psi
- Includes one package of 50 O-rings, one package of 50 backup rings, and one package of 100 nylon balls
- Requires Laboratory Press and Spacer (05-112-155) for operation

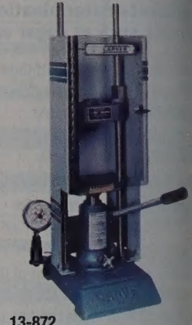
ORDERING INFORMATION:

Press Dimensions: 18¼L × 18¼W × 34½"H (46.4 × 46.4 × 87.6cm). Weight: 240 lb. (109kg). For 115V 60Hz.

Description	Mfr. No.	Cat. No.	Each
Motor-driven Lab Press	FA-078A	**05-112-158**	10,691.00
Standard FRENCH Pressure Cell, 35mL/40,000psi	FA-032	**05-112-157**	4098.00
Miniature FRENCH Pressure Cell, 3.7mL/20,000psi	FA-003	**05-112-154**	2693.00
20,000psi Start-Up Set (Press, Miniature Cell, Spacer)	FA-081A	**05-112-160**	12,618.00
40,000psi Start-Up Set (Press, Standard Cell, Filling Stand)	FA-080A	**05-112-159**	14,356.00
Rapid Fill Kit	FA-021	**05-112-156**	1172.00
Spacer (Required for Miniature Cell, 05-112-154)	FA-010	**05-112-155**	270.49

Carver* Lab Presses

Range of five automatic or manual models; clamping force up to 25 tons


13-872

Manual Pellet Press

- 12-ton clamping force unit with 4" (10.2cm) dia. platen
- Ideal for KBr pellet pressing, glove box applications, and onsite field testing
- Includes integral safety shield, buffer plates, 13mm evacuable die, and counter-bored platen for positive die alignment

Auto Pellet Press

- 25-ton self-contained, semi-automatic unit with 5" (12.7cm) dia. platen
- Rigid slab side construction maintains precise alignment
- Digital pressure display and three-stage decompress rate
- Includes integral safety shield and 13mm evacuable pellet die

Self-contained, Hand-operated Press

- 6 × 6" (15.2 × 15.2cm) work area and integral safety shield
- Dual-scale gauge calibrated in metric tons and pounds
- Adaptable for use in pressing oils, separating liquids from solids, filtering, plastic molding, compression and crush testing

Two-post 15-ton Presses

- Available with or without heated platens
- Self-contained, semi-automatic units with 6 × 6" (15.2 × 15.2cm) work areas
- Solid construction on one base frame
- 10-recipe storage of pressure and time settings
- Adjustable end-of-cycle alarm with auto opening of platens
- Can be operated in automatic or manual modes
- Model with heated platens can be ordered with manual cooling option

ORDERING INFORMATION:

Manual Pellet Press: Dimensions: 8L × 10¼W × 20¼"H (20.3 × 26 × 51.4cm). Weight: 115 lb. (52kg). **Auto Pellet Press:** Dimensions: 31½L × 22¾W × 22"H (80 × 57.8 × 55.9cm), not including handle. Weight: 400 lb. (181kg). **Self-contained, Hand-operated Press:** Dimensions: 16L × 15W × 36"H (40.6 × 38.1 × 91.4cm). Weight: 200 lb. (91kg). **Two-post 15-ton Presses:** Dimensions: 20L × 35W × 40"H (50.8 × 88.9 × 101.6cm). Weight: without heated platens, 350 lb. (159kg); with heated platens, 400 lb. (181kg).

Accessory cage equipment, heated platens, plate and cloth equipment, an swivel-bearing plates are available. Contact your Fisher Scientific Custome Service Representative or visit our Web site for details.

Lab Press	Clamping Force	Electrical Requirements	Cat. No.	Eac
Manual Pellet	12 tons	N/A	**13-872-45**	2450.0
Auto Pellet	25 tons	115V 60Hz	**13-872-46**	9400.0
	25 tons	230V 60Hz	**13-872-47**	9400.0
Self-contained, hand-operated	12 tons	N/A	**13-872**	2584.0
Two-post w/o Heated Platens	15 tons	115V 60Hz	**13-872-48**	10,050.0
Two-post w/Heated Platens	15 tons	115V 60Hz	**13-872-50**	11,600.0

*Trademark. See Trademark Reference.

Prices subject to change.

illipore* Montage* In-Gel Digest$_{ZP}$ Kit

fast, reproducible method to digest proteins and rify peptides from polyacrylamide gel slices

LSKG DZP 96

rocesses as few as eight amples or as many as 96 amples at one time

ses a vacuum-based protocol, /hich eliminates transfer steps nd minimizes sample loss

LUDES:

Plate* Micro-SPE plate; eiver plate; Wash buffers 1 and 2; Promega* Modified Trypsin; Trypsin uspension solution; Trypsin buffer; Extraction/wash solution; ion solution; Incubation bag; Blotting sheets

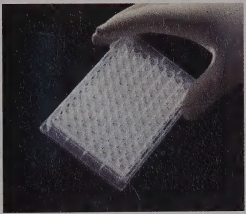
TE:

uum manifold available separately.

cription	No. of Preps	Cat. No.	Each
ntage In-Gel Digest$_{ZP}$ Kit	1 × 96	**LSKG DZP 96**	281.35

illipore* ZipPlate* Micro-SPE Plate

stain, digest, and concentrate with no sample transfers


ZPC1 800 10

ndard 96-well plate is compatible h all liquid-handling systems. Each ll of the plate contains 0.3µL of C$_{18}$ in to capture peptides for sequent cleanup.

ntegrates protein digestion and eptide cleanup steps prior to ass spectrometry (MS) analysis, inimizing sample loss

llows sample elution in IS-compatible buffer

rovides predictable scale-up from ZipTip* Pipetter Tips

laximum binding capacity: 4µg/well

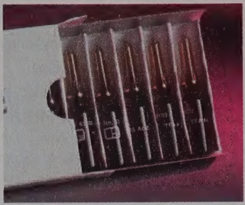
TE:

uum manifold for vacuum-based protocol available separately.

cription	Cat. No.	Pack of 10
Plate Micro-SPE Plate	**ZPC1 800 10**	1136.00

Thermo Scientific* Pierce* Trifluoroacetic Acid

Permits sensitive, nondestructive peptide detection at low UV wavelengths in reverse-phase HPLC protein and peptide separation systems


PI-28904

- Purity of 99.8%
- Exceptional clarity
- Also used in protein sequencing applications, solid-phase peptide synthesis, and as a protein/peptide solubilizing agent
- Packaged in amber glass with protective PTFE-lined fluorocarbon caps or in ampules under nitrogen

STORAGE CONDITIONS:

Store as detailed on product information sheet.

Grade	Quantity	Cat. No.	Each
Sequanal	500mL	**PI-28901**	269.00
	100g	**PI-28903**	112.00
	10 × 1mL	**PI-28904**	68.00

Promega* Trypsin Gold, Mass Spectrometry Grade

Manufactured to provide maximum specificity

Trypsin is a serine protease that specifically cleaves at the carboxylic side of lysine and arginine residues. The stringent specificity of trypsin is essential for protein identification. Native trypsin is subject to autolysis, generating pseudotrypsin, which exhibits a broadened specificity including a chymotrypsin-like activity. Such autolysis products, present in a trypsin preparation, would result in additional peptide fragments that could interfere with database analysis of the mass of fragments detected by mass spectrometry.

- TPCK treatment followed by affinity purification
- Each lot is qualified by mass spectrometry
- Conveniently provided in one vial
- Stability ensured up to five freeze-thaw cycles, thus minimizing leftover reagents

APPLICATIONS:

Tryptic digestion of peptides from 2-D gels

STORAGE CONDITIONS:

Store the lyophilized powder at -20°C. Reconstitute powder in 50mM acetic acid and store at -20°C. For long-term storage, freeze reconstituted trypsin at -70°C. Limit the number of freeze-thaw cycles to five.

Description	Quantity	Cat. No.	Each
Trypsin Gold, Mass Spectrometry Grade	100µg	**PR-V5280**	85.20

Promega* Sequencing Grade Modified Trypsin

Trypsin specifically hydrolyzes peptide bonds at the carboxylic sides of lysine and arginine residues. Unmodified trypsin is subject to autolysis, generating fragments that can interfere with protein sequencing, HPLC or mass spectrometry analysis of the peptides. In addition, autolysis can result in the generation of pseudotrypsin, which has been shown to exhibit an additional chymotrypsin-like specificity[1].

- TPCK treatment followed by affinity purification
- Resuspension buffer provided
- Five tubes of lyophilized product are provided

Component Listing for PRZV5111

- 1 × 1mL Trypsin Resuspension Dilution Buffer
- 5 × 20µg Sequencing Grade Modified Trypsin, Porcine (lyophilized)

Component Listing for PRV5113

- 1 × 1mL Trypsin Resuspension Dilution Buffer
- 5 × 20µg Sequencing Grade Modified Trypsin, Porcine Frozen (liquid 0.5mg/mL)

ORDERING INFORMATION:

Recommended Reaction Buffer: 50mM NH_4HCO_3 (pH 7.8).

STORAGE CONDITIONS:

Store lyophilized at -20°C.

Quantity	Cat. No.	Each
100µg	**PR-V5113**	33.20
5 × 100µg	**PR-ZV5111**	330.75

1. Keil-Dlouha, V.V. et al. (1971) FEBS Letters 16, 291–5.

Takara* *Pfu* Pyroglutamate Aminopeptidase

Liberates the N-terminal pyroglutamic acid from proteins and peptides

Pfu Pyroglutamate Aminopeptidase is a thermostable pyroglutamate aminopeptidase isolated form *Pyrococcus furiosus* and produced as a recombinant protein. This enzyme liberates the N-terminal pyroglutamic a from proteins and peptides whose N-termini are blocked with pyroglutam acid residue. The N-terminal amino acid sequence of such proteins and peptides cannot be directly analyzed on protein sequencers based on Edm degradation. To analyze the N-terminal sequence of these proteins and peptides, the release of pyroglutamic acid is required and this can be effectively achieved by using *Pfu* Pyroglutameate Aminopeptidase.

- Ideal for deblocking of N-terminal pyroglutamates of proteins and peptides prior to sequence analysis using Edman degradation
- Source: *E. coli* carrying plasmids encoding the *Pyrococcus furiosus* pyroglutamate aminopeptidase gene
- Purity: ≥90% on SDS-PAGE
- Format: lyophilized
- Unit Definition: One unit of enzyme activity corresponds to the amount required to hydrolyze 1µmol pyroglutamate p-nitroanilide at 90°C in 1 minute, pH 7.0
- Reaction Buffer (5X): 250mM sodium phosphate (pH 7.0), 50mM DTT, 5mM EDTA

STORAGE CONDITIONS:

Store at -20°C.

Quantity	Cat. No.	Ea
10mU	**TAK 7334**	237.

PROTEIN LABELING AND DETECTION

QUANTITATION

Thermo Scientific* Pierce* BCA Protein Assay Kits

Faster and easier than the classic Lowry method

- Colorimetric method (read at 562nm) with less protein-to-protein variation than dye-binding methods
- Linear working range for BSA is 20 to 2000µg/mL
- Minimum detection level is 5µg/mL with the enhanced protocol
- Formulation is compatible with most ionic and nonionic detergents
- Protocol is adaptable to microplates

STORAGE CONDITIONS:

Working reagent is stable for 24 hours; all reagents are stable at room temperature for two years

INCLUDES:

Reagent A (also available separately); Reagent B (also available separate Ten 1mL ampules of Albumin Standard (2mg/mL)

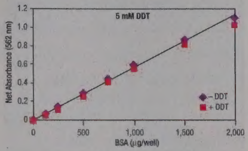
Description	Quantity	Cat. No.	Ea
BCA Protein Assay Kit	500 tube or 5000 microplate assays	**PI-23225**	142.
	250 tube or 2500 microplate assays	**PI-23227**	87.
BCA Protein Assay Reagent A	250mL	**PI-23221**	43.
	500mL	**PI-23228**	67.
	1L	**PI-23223**	101.
	3.75L	**PI-23222**	345.
BCA Protein Assay Reagent B	25mL	**PI-23224**	32.

*Trademark. See Trademark Reference.

Prices subject to change.

ıermo Scientific* Pierce* Reducing jent Compatible BCA Protein Assay Kit

mpatible with reducing agents at concentrations utinely used in protein sample buffers



Reducing Agent Compatible BCA Protein Assay produces a linear standard curve in the presence of reducing agents.

vides all of the advantages of original BCA Assay, plus ıpatibility with reducing agents at centrations routinely used in tein sample buffers.

. Linear Working Range of 25-2,000µg/mL

ample Volume of 25µL

educing Agent Compatibility of : 5mM DTT, < 35mM -mercaptoethanol, < 10mM TCEP

ompatible with most ionic and nonionic detergents

olorimetric detection method; read at 562nm

:LUDES:

\ Reagent A (250mL); BCA Reagent B (25mL); Compatibility ıgent (10 × 20mg); Reconstitution Buffer 15mL; Albumin Standard g/mL, 10 × 1mL ampules)

:cription	Cat. No.	Quantity	Each
ducing Agent Compatible \ Protein Assay Kit	**PI-23250**	1 kit	190.70

ıermo Scientific* Pierce* Micro BCA* otein Assay Kit and Reagents

ecially formulated for measuring dilute otein solutions

xtra-sensitive reagent kit offers the same colorimetric-method dvantages as does the BCA Protein Assay Kit (PI-23225)

inear working range for BSA is 0.5 to 20µg/mL

rotocol is adaptable to microplates

:LUDES:

:ro BCA Reagent A (MA), 240mL; Micro BCA Reagent B (MB), mL; Micro BCA Reagent C (MC), 12mL; Albumin Standard (2mg/mL), × 1mL ampules

:cription	Quantity	Cat. No.	Each
:ro BCA Protein Assay Kit	480 tube or 3200 microplate assays	**PI-23235**	163.61
:ro BCA Reagent A (MA)	240mL	**PI-23231**	41.25
:ro BCA Reagent B (MB)	240mL	**PI-23232**	77.39
:ro BCA Reagent C (MC)	12mL	**PI-23234**	25.15

Thermo Scientific* Pierce* Modified Lowry Protein Assay Reagent Kit

The accuracy of the Lowry method in a ready-to-use formulation

- Uses a preformulated cupric sulfate-tartrate
- Yields linear results from 1 to 1500µg/mL for BSA
- Read at 750nm
- Produces less protein-to-protein variation than do dye-binding methods
- Adaptable to microwell plates

STORAGE CONDITIONS:

Reagent is stable for one year at room temperature.

INCLUDES:

Modified Lowry Protein Assay Reagent, 480mL; Folin-Ciocalteu Phenol Reagent (2N), 50mL; Albumin Standard (2mg/mL), 10 × 1mL ampules

Description	Quantity	Cat. No.	Each
Modified Lowry Protein Assay Reagent	480 tube assays or 2400 microplate assays	**PI-23240**	116.00

Thermo Scientific* Pierce* Prediluted BSA and BGG Protein Assay Standard Sets

Ideal for BCA and Bradford-based protein assays

- Eliminate the need to prepare a diluted standard series for each protein determination
- Provide seven data points within a 125–2000µg/mL range
- Contain sufficient materials to prepare 15–35 standard tube protocol curves or 175–350 standard microplate protocol curves running duplicate data points

INCLUDES:

BSA set contains Bovine Serum Albumin Fraction V diluted in 0.9% saline and preserved with 0.05% NaN_3 **BGG set** contains Bovine Gamma Globulin Fraction II diluted in 0.9% saline and preserved with 0.05% NaN_3

Description	Cat. No.	Each
BSA Set	**PI-23208**	98.00
BGG Set	**PI-23213**	94.00

Thermo Scientific* Pierce* Bovine Gamma Globulin (BGG) and Mouse IgG Standards

Ideal for IgG total protein determination

- BGG is an ideal standard for Coomassie* (Bradford) Assays
- Measures antibody concentration with any protein assay
- Ampules ensure product integrity

INCLUDES:

2mg/mL of Bovine Gamma Globulin Fraction II in 0.9% NaCl solution containing sodium azide

Description	Quantity	Cat. No.	Pack of 10
Bovine Gamma Globulin Standard	10 × 1mL	**PI-23212**	51.26

Thermo Scientific* Pierce* Bovine Serum Albumin (BSA) Standard

Ideal standard for total protein determination

- Sterile-filtered, stable and consistent
- BSA is an ideal standard for BCA Assays
- Ampules ensure product integrity
- 2mg/mL BSA solution

INCLUDES:

Ampules contain Bovine Albumin Fraction V in 0.9% NaCl solution containing sodium azide

Description	Quantity	Cat. No.	Pack of
BSA Standard	10 × 1mL (2mg/mL)	**PI-23209**	10/39.23
	50mL	**PI-23210**	1/38.23

STAINS

Thermo Scientific* Pierce* Coomassie* and Coomassie Plus— The Better Bradford* Protein Assay Kits

High-performance Bradford reagent

- Ready-to-use, dye-binding for protein quantitation; assay performs similarly to Bradford
- Micro protocol is suitable for protein concentrations from 1 to 25µg/mL
- Fast (almost immediate) color development is read at 595nm
- Reagents are compatible with reducing sugars, reducing substances, and thiols
- Protocols are adaptable to microplates

Original Coomassie Protein Assay Kit

- Detects protein concentrations from 100 to 1500µg/mL
- Stable for 12 months when refrigerated
- Includes Coomassie Protein Assay Reagent and Albumin Standard

Coomassie Plus—The Better Bradford Protein Assay Kit

- As fast as the original Coomassie assay, but substantially more accurate
- Detects protein concentrations from 1 to 1500µg/mL
- Stable for up to two years when refrigerated
- Includes Coomassie Plus—The Better Bradford Protein Assay Reagent and Albumin Standard

Description	Quantity	Cat. No.	Each
Coomassie Protein Assay Kit	630 tube assays or 3800 microplate assays	**PI-23200**	80.00
Coomassie Plus—The Better Bradford Protein Assay Kit	630 tube assays or 3160 microplate assays	**PI-23236**	135.00
Reagent			
Coomassie Plus - The Better Bradford Assay Reagent	200 standard assays or 1000 microplate assays	**PI-23238**	107.40

Thermo Scientific* Pierce* GelCode* Blue Stain Reagent

Ready-to-use, Coomassie* dye-based gel stain require no destaining step

- Saves time and preparation costs
- Reduces solvent disposal problems
- No losses from over-destaining
- Provides one-step, one-hour staining, with bands that can be viewed directly in the staining tray
- More sensitive than standard Coomassie gel stain formulations
- Uses an optional one-hour Water Wash Enhancement* step to increase staining sensitivity
- Produces a wide linear range for densitometric gel analysis
- No gel shrinkage

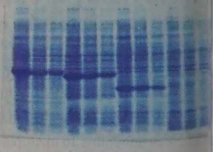
Gels stained with GelCode Blue Stain Reagent

Quantity	No. of Gels Stained	Cat. No.	Ea
500mL	Up to 25 minigels (8 × 10cm)	**PI-24590**	55.
3.5L	Up to 175 minigels (8 × 10cm)	**PI-24592**	219.

Thermo Scientific* Pierce* GelCode* 6xHis Protein Tag-Staining Reagents

Detect 6xHis-tagged protein directly on the gel

- Ready-to-use, two-reagent formula potentially eliminates the need for a membrane transfer step and Western blot detection
- Stain detects as little as 0.2µg of 6xHis-tagged protein
- Fluorescent detection is specific for 6xHis-tagged proteins
- CCD camera detection suggested for low abundance protein; UV transilluminator detection for high abundance protein



Detection of 6xHis-tagged protei in *E. coli* lysates. Gel stained wit GelCode Blue Stain Reagent.

- Formulation is compatible with subsequent staining with GelCode Blue Stain Reagent (PI-24590) for total protein profile determination
- Licensed for research use only under U.S. Patent # 4,569,794 and corresponding foreign patents. For other uses, contact Inproteo, Indianapolis, Indiana, U.S.A.

Description	Quantity	Cat. No.	Ea
GelCode 6xHis Protein Tag Stain Reagent Set	Stains 10 minigels (8 × 10)	**PI-24570**	224.
GelCode 6xHis Protein Control Set	Controls for 50–100 SDS-PAGE runs	**PI-24572**	51.
GelCode 6xHis Protein Tag Staining Kit	Stains 10 minigels; 1 kit	**PI-24575**	250.

ermo Scientific* Pierce* GelCode* Zinc* Reversible Protein Stain Kit

ady-to-use, high-sensitivity stain can be erased m gels

- oduces results in 15 minutes— gel fixing required
- ovides sensititvity to 0.25ng
- llows alternative staining of the ame gel after gel staining and estaining
- ermits protein recovery for ownstream applications
- evelops an opaque white ackground while protein bands main clear

Gels stained with GelCode E-Zinc Reversible Protein Stain

LUDES:

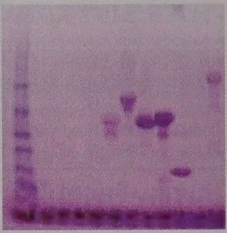
nc Stain; E-Zinc Developer; nc Eraser

ntity	Cat. No.	Each
ns up to 20 minigels (8 × 10cm)	PI-24582	95.48

Thermo Scientific* Pierce* GelCode* Glycoprotein Staining Kit

Detects glycoproteins on SDS-PAGE gels or Western blotting membranes

- Three-reagent protocol yields results in less than two hours vs. four to five hours for other staining methods
- Glycoproteins are detected as magenta bands with light pink or colorless background
- Glycoproteins, such as Avidin and horseradish peroxidase, detected to 0.625ng and 0.16µg respectively
- Stains 10 mini (8 × 10cm) gels
- Compact, easy-to-store kit



Protein gel stained with GelCode Glycoprotein Staining Kit. Magenta bands indicate location of carbohydrate-containing protein.

INCLUDES:

GelCode Glycoprotein Stain (250mL); oxidation Reagent (250mL); Reduction Reagent (250mL); Positive Control ((Horseradish Peroxidase) 1mg); Negative Control ((Soybean Trypsin Inhibitor) 1mg)

Quantity	Cat. No.	Each
Sufficient for 10 minigels	PI-24562	195.73

ermo Scientific* Pierce* Krypton* Glycoprotein Stain Kit

t and easy method for the fluorescent detection of glycoproteins in SDS-PAGE and 2-D gels

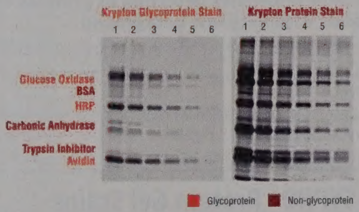
- stain exhibits sensitivity equivalent to, or greater than, other fluorescent oprotein stains and uses well-established periodate-oxidation chemistry
- preferentially reacts with glycoproteins (15- to 20-fold more binding to oproteins)
- citation/emission maxima 654/673nm
- fter glycoprotein staining, gels can be stained with Krypton Protein ain or colorimetric stains
- ghly consistent, reproducible glycoprotein staining
- near quantitative range of three orders of magnitude
- etects down to 15ng of glycoprotein
- tal protocol time of four hours
- orks with mass spectrometry analysis and common imaging systems

PLICATIONS:

ecting proteins in SDS-PAGE and 2-D gels

LUDES:

oprotein Stain Reagent 0.3mL, Staining Buffer 250mL, Oxidizing gent 2.5g, positive Control (Horseradish Peroxidase) 1mg, negative trol (Soybean Trypsin Inhibitor) 1mg



Krypton Glycoprotein Stain provides a fast and sensitive method for detecting glycoproteins in polyacrylamide gels. Lanes 1-6 contain a mixture of the indicated proteins at the following concentrations: Lane 1: 500ng, Lane 2: 250ng, Lane 3: 125ng, Lane 4: 63ng, Lane 5: 31ng and Lane 6: 15ng.

Quantity	Cat. No.	Each
Sufficient for ten 8 x 10cm minigels	PI-53074	180.00

ermo Scientific* Pierce* Krypton* frared Stains

y-to-use, high-performance fluorescent protein stain the near-infrared region of the spectrum

- citation/emission maxima 690/718nm
- mpatible with LI-COR Odyssey Instruments and other CCD strumentation
- mpatible with membrane staining and mass spectrometry
- antitative range three to four orders of magnitude
- 0.25ng protein can be detected with the basic protocol (about two hours)
- Detect down to 2ng protein with the rapid protocol (about one hour)

APPLICATIONS:

Detecting proteins in SDS-PAGE and 2-D gels

Quantity	Quantity	Cat. No.	Each
Sufficient for four minigels	20mL	PI-53070	39.00
Sufficient for twenty minigels or two to four large-format gels	100mL	PI-53071	110.00
Sufficient for one hundred minigels or ten to twenty large-format gels	500mL	PI-53072	399.00

Thermo Scientific* Pierce* Krypton* Protein Stains

Fluorescent stain detects proteins in sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) and 2-D gels

- Detect as little as 2ng protein/band in just 30 min. (using rapid protocol)
- Detection limit is < 0.25ng protein/band
- Maximizes the detection of low-abundance proteins
- Minimal differential staining of proteins
- Linear response to staining for proteins of various sizes and containing post-translational modifications
- Excitation/Emission maxima of 520/580nm
- Compatible with commonly available instrumentation and filter sets
- Versatile, compatible with mass spec analysis and protein sequencing
- Linear quantitative range of three to four orders of magnitude
- Accurately and reproducibly visualize proteins over a broad range of concentrations

Quantity	Quantity	Cat. No.	Each
Sufficient reagent to stain 4 minigels	20mL	**PI-46628**	39.00
Sufficient reagent to stain 20 minigels	100mL	**PI-46629**	110.00
Sufficient reagent to stain 100 minigels	500mL	**PI-46630**	399.00

Thermo Scientific* Pierce* SilverSNAP* Stain Kit II

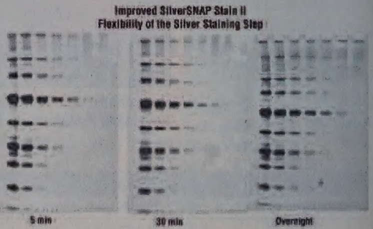
Highly sensitive preparation

- Optimal flexibility built into two key steps – fixing and staining
- Uniform minimal backgrounds with a variety of gels offer contrast to aid band/spot visualization

INCLUDES:

SilverSNAP Sensitizer (2mL); SilverSNAP Stain (500mL); SilverSNAP Enhancer (25mL); SilverSNAP Developer (500mL)

Quantity	Cat. No.	Each
1 kit	**PI-24612**	100.50


Improved SilverSNAP Stain II
Flexibility of the Silver Staining Step
5 min
30 min
Overnight

The gels were stained with SilverSNAP Stain Kit II for 5 min., 30 min. and overnight according to the SilverSNAP Stain Kit II protocol.

Thermo Scientific* Owl* DP140002 Systems Silver Stain Kit

Provides high-sensitivity detection of proteins and nucleic acids with very low background

- Stain detects proteins <10ng per band in as little as 90 minutes
- Enhanced stop solution offers more control over the endpoint of image development
- Monochromatic silver stain enhances sensitivity and eases scanning of polyacrylamide gels, even 2-D gels
- Each kit stains 20 minigels using 100mL of solution per gel

OW DP140002

Cat. No.	Each
OW DP140002	210.00

Lonza SYPRO* Protein Gel Stains

SYPRO Ruby Protein Gel Stain

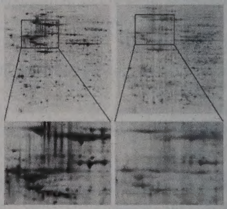
- Ideal for 2-D gel analysis
- Sensitivity rivals silver stain
- Detects nanogram levels of protein
- Broad linear quantitation range and consistent gel-to-gel staining for accurate protein expression comparisons

SYPRO Tangerine Protein Gel Stain

- Provides high sensitivity for detection of proteins in SDS-polyacrylamide gels
- Does not require the use of acids or organic solvents
- Suitable for use with saline solutions
- Ideal for use when eluting active protein complexes from gels because the mild staining conditions are unlikely to affect protein activity

SYPRO Red Protein Gel Stain

- Detects as little as 4 to 8ng of protein per band or proteins as small as 6.5kDa
- Provides linear protein quantitation up to three orders of magnitude, from ng to µg per band
- Offers complete staining in less than one hour—no fixation or destaining required
- Compatible with many types of detection systems
- Recommended for instruments that employ frequency-doubled Nd:YAG or green or red He-Ne lasers



SYPRO Ruby Gel Stain vs. silver stain for 2-D analysis. Proteins from a cell lysate were run on a 2-D gel and stained with SYPRO Ruby Gel Stain (left) or silver stain (right).

Description	Size	Cat. No.	Each
SYPRO Ruby Protein Gel Stain	200mL	**BMA50564**	65.00
	1L	**BMA50562**	221.12
	5L	**BMA50563**	911.20
SYPRO Tangerine Protein Gel Stain	500µL	**BMA50556**	147.00
SYPRO Red Protein Gel Stain	10 × 50µL	**BMA50542**	165.00
	500µL	**BMA50543**	152.00

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Contd. on next page

:a SYPRO* Protein Gel Stains, Contd.

RO GEL STAIN SELECTION GUIDE

ication	SYPRO Ruby	SYPRO Tangerine	SYPRO Red
-performance Staining	√		√
ing prior to Western Blotting		√	
Electrophoresis	√		
an Microsequencing	√	√	√
s Spectrometry	√	√	√
ntitation	√	√	√
ography	√	√	√
troelution	√	√	√
nbrane Staining	√		
ein Expression	√		
ction prior to Immunostaining	√	√	
cult to Stain Proteins	√		
Gels	√		

SUBSTRATES—WESTERN BLOTTING

llipore* Immobilon* Western emiluminescent HRP Substrate

vides high sensitivity over a broad detection range n economical price

Immobilon™ Western
HRP Substrate Peroxide Solution
Immobilon™ Western
HRP Substrate Luminol Reagent

mbines high sensitivity and
v background

ows detection of high- and
v-abundance proteins in the
d-femtogram range

wers antibody consumption by
o to five-fold compared to less
nsitive reagents

mpatible with PVDF and
rocellulose membranes as well
all commonly used buffers and
ocking reagents

LUDES:

nol; Peroxide solution

WBKL-S0-500

tity	Sample Size	Cat. No.	Each
L	500cm² membrane	**WBKL S0 050**	44.00
nL	1000cm² membrane	**WBKL S0 100**	66.00
nL	5000cm² membrane	**WBKL S0 500**	206.00

CIFICATIONS

ction Limit	Mid-femtogram
al Duration	>2 hours
ary Detection Method	X-ray film or imaging equipment
cal Antibody Dilution	Primary: 1:1000 to 1:20,000; Secondary: 1:20,000 to 1:200,000
king Solution Stability	10 days at 2° to 8°C
k Solution Stability	≥9 months at 2° to 8°C
nbrane Compatibility	PVDF or nitrocellulose
mmended Initial Exposure Time	30 sec. (to film)

LOOKING FOR PVDF OR NITROCELLULOSE MEMBRANES?

See the Membranes section.

Thermo Scientific* Pierce* SuperSignal* West Chemiluminescent Substrates

For highly sensitive chemiluminescent detection of horseradish peroxidase (HRP)-labeled probes in Western blotting applications

- ▸ Permit multiple exposures and offer the ability to reprobe and redevelop

Description	Quantity	Cat. No.	Each
West Femto Maximum Sensitivity Substrate	20mL	**PI-34094**	86.00
	100mL	**PI-34095**	310.00
	200mL	**PI-34096**	510.00
West Dura Extended Duration Substrate	20mL	**PI-37071**	81.00
	100mL	**PIA34075**	299.00
	200mL	**PI-34076**	495.00
West Pico Chemiluminescent Substrate	50mL	**PI-34079**	42.00
	100mL	**PI-34077**	67.00
	500mL	**PI-34080**	200.00
	1L	**PI-34078**	325.41

SPECIFICATIONS

	West Femto Maximum Sensitivity Substrate	West Dura Extended Duration Substrate	West Pico Chemiluminescent Substrate
Primary Benefit	Max. sensitivity for HRP detection	Ideal for use w/ imaging equipment	High intensity; low cost per mL
Lower Detection Limit[1]	Low femtogram (10^{-15}) Mid-zeptomole (10^{-20})	Mid-femtogram (10^{-14}) High zeptomole (10^{-19})	Picogram (10^{-12}) Mid-attomole (10^{-17})
Signal Duration	8 hours	24 hours	6 to 8 hours
Primary Detection Method	Film or CCD camera	CCD camera	Film
Suggested Antibody Dilutions	Primary: 1/5000–1/100,000 Secondary: 1/100,000–1/500,000	Primary: 1/1000–1/50,000 Secondary: 1/50,000–1/250,000	Primary: 1/1000–1/5000 Secondary: 1/20,000–1/100,000
Room Temperature (RT) Working Solution Stability	8 hours	24 hours	24 hours
Stock Solution Shelf Life	6 months at RT or 1 year at 4°C	1 year at RT	1 year at RT
Recommended Membrane	Nitrocellulose or PVDF	Nitrocellulose or PVDF	Nitrocellulose

[1] Lower detection limits were determined using Streptavidin-HRP or biotinylated-HRP as the ligand. SuperSignal technology is protected by U.S. Patent 6,432,662.

Thermo Scientific* Pierce* Enhanced Chemiluminescent (ECL) Western Blotting Substrate

An entry-level Western blotting substrate at an economical price

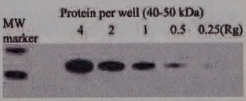
- ▸ No optimization required—switch from other entry-level ECL substrates without the need for optimization or protocol changes

INCLUDES:

Detection Reagent 1 and 2

STORAGE CONDITIONS:

Store from 2° to 8°C



Quantity	Cat. No.	Each
50mL (Sufficient for 400cm² of membrane)	**PI-32109**	40.00
250mL (Sufficient for 2000cm² of membrane)	**PI-32209**	101.00
500mL (Sufficient for 4000cm² of membrane)	**PI-32106**	139.00

Thermo Scientific* Pierce* Lumi-Phos WB Chemiluminescent Substrate (AP)

Provides high sensitivity and low background for alkaline phosphatase

- High signal: noise ratios produce clearer blots
- No need to purchase additional enhancers for nitrocellulose membranes
- Allows you to redevelop blots
- Immediate strong signal
- No mixing required with this one-component system

Description	Quantity	Cat. No.	Each
Lumi-Phos WB	100mL	**PI-34150**	150.00

References: Bruinsma, P., et al. (2004). J. Biol. Chem. 279, 39814-39823. Dhingra, A., et al. (2004). Proc. Nat. Acad. Sci. USA 101, 6315-6320. Tikhonov, I., et al. (2003). J. Virol. 77, 3157-3166.

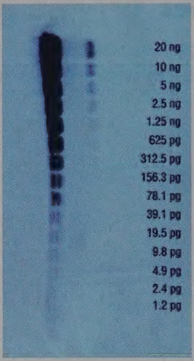


Figure 1. Attomole-range detection and crystal-clear background. Serial dilutions of recombinant mouse IL-2 were separated on a 4%-20% SDS polyacrylamide gel, then transferred to nitrocellulose membrane. After probing primary and secondary antibodies, the membrane was washed and then incubated in Lumi-Phos WB Substrate for five min. prior to film exposure.

Thermo Scientific* Pierce* 1-Step* NBT/BCIP and 1-Step NBT/BCIP Plus Suppressor

Produces intense blue-purple precipitates when reacted with alkaline phosphatase

- One-step, ready-to-use solutions
- Sensitive with low background

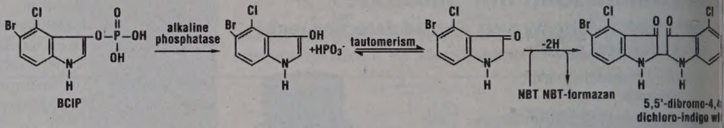
1-Step NBT/BCIP

- Ideal for immunoblotting applications
- Minimal assay-to-assay variability

1-Step NBT/BCIP Plus Suppressor

- Ideal for staining tissues assayed with calf intestinal alkaline phosphatase without the interference caused by endogenous phosphatases
- Contains 1mM levamisole to inhibit endogenous phosphatase activity

STORAGE CONDITIONS:
Store at 4°C.



Description	Quantity	Cat. No.	Eac
1-Step NBT/BCIP	250mL	**PI-34042**	97.0
1-Step NBT/BCIP Plus Suppressor	100mL	**PI-34070**	75.0

SUBSTRATES—ELISA

Thermo Scientific* Pierce* SuperSignal* ELISA Pico Chemiluminescent Substrate

Provides excellent sensitivity for use in luminometers

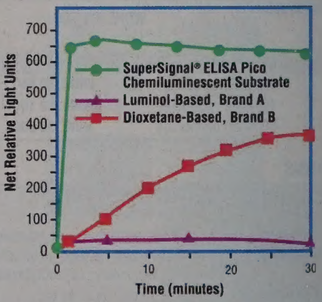
These ELISA's can take place in either a test tube or a microplate and are quantified by measuring relative light units (RLU) in a luminometer.

- Immediate light generation: intense signal is produced immediately at room temperature or at 37°C
- High signal: noise ratio: minimal background
- Detect proteins in ELISAs down to the picogram levels
- Signal can be read in black or white opaque plates
- Emits light at 425nm

INCLUDES:
Luminol/Enhancer Solution (125mL); Stable Peroxide Buffer (125mL)

Quantity	Cat. No.	Each
250mL	**PI-37069**	380.00
100mL	**PI-37070**	208.00

References: Bradley, K.A., et. al. (2004). J. Biol. Chem. 278, 49342-49347. McKevitt, M., et. al. (2003). Genome Res.13, 1665-1674.



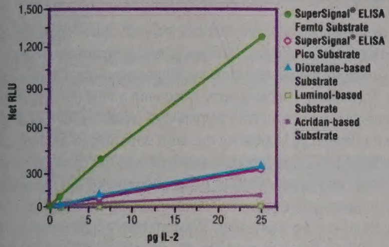
Immediate light generation with SuperSignal ELISA Pico Chemiluminescent Substrate.

*Trademark. See Trademark Reference.

Prices subject to change.

ermo Scientific* Pierce* SuperSignal* ISA Femto Maximum Sensitivity Substrate

verful substrate for high-throughput screening/ gnostic applications with high sensitivity and erior low-end linearity



dose response curve using SuperSignal ELISA Femto Maximum itivity Substrate in an IL-2 ELISA was compared to curves generated dioxetane-based substrate, another luminol-based substrate, lan-based system and TMB. SuperSignal ELISA Femto Maximum itivity Substrate demonstrated immediate light generation with imum peak intensity and high RLU values.

mediate light generation: intense signal generated immediately at both m temperature and 37°C within one minute of addition to trace ounts of soluble HRP, saving up to 30 minutes per assay

sy detection of low quantities of proteins with high signal:noise ratios d low-end linearity of dose response curves

ntogram-level detection of target proteins in an ELISA

h sensitivity allows for reduction in ELISA incubation steps

its light at 425nm

UDES:

nol/Enhancer Solution (125mL); Peroxide Buffer (125mL)

ription	Quantity	Cat. No.	Each
A Femto Chemiluminescent Substrate	250mL	**PI-37074**	399.00
A Femto Maximum Sensitivity Substrate	100mL	**PI-37075**	215.00

nces: Schwake, M., et. al.EMBO Reports4, 76 81. Bakker, A.C., et. al. Gene Therapy8, 1793. Altier, C., et. al. (2002). J. Biol. Chem277, 33598 33603.

Thermo Scientific* Pierce* Soluble TMB Substrates

Produce faster color development than other HRP substrates due to faster oxidation

TMB (3,3',5,5' tetramethylbenzidine) is a chromagen that yields a blue color when oxidized with hydrogen peroxide (catalyzed by HRP) with major absorbances at 370 and 652nm. The color then changes to yellow with the addition of sulfuric or phosphoric acid, with maximum absorbance at 450nm.

- Require less material to obtain the same sensitivity as ABTS
- Suitable for tube- or plate-based assays

1-Step TMB Substrates

- Ready-to-use, one-component substrates
- Do not require hydrogen peroxide
- Noncarcinogenic
- Do not contain DMF or DMSO
- Available in three formulations that vary by sensitivity
  - 1-Step Slow TMB has intermediate sensitivity—more sensitive than ABTS, but less sensitive than OPD or 1-Step Turbo TMB
  - 1-Step Turbo TMB has sensitivity comparable to OPD used at approximately 1mg/mL
  - 1-Step Ultra TMB-ELISA has the highest signal-to-noise ratio and sensitivity in the picogram range

TMB Substrate Kit

- More sensitive than OPD in endpoint ELISAs
- Easy to use
- Provides results in seconds

INCLUDES:

Peroxidase Substrate, (200mL); Peroxide Solution, (200mL)

Description	Quantity	Cat. No.	Each
1-Step Slow TMB	250mL	**PI-34024**	68.00
1-Step Turbo TMB	250mL	**PI-34022**	94.00
1-Step Ultra TMB-ELISA	250mL	**PI-34028**	104.00
TMB Substrate Kit	Kit	**PI-34021**	105.00

BLOCKING/STRIPPING BUFFERS

Thermo Scientific* Pierce* SuperBlock* Blocking Buffers

Provide superior blocking ability plus the ability to maintain high signal-to-noise ratios

- Proteinaceous solutions with protein stabilizers
- Blocking can be performed quickly—ELISA plates can be blocked in only two minutes compared to 30 to 90 minutes for standard blocking protocols
- Blocked ELISA plates can be stored for up to 12 months
- Blotting formulations have been optimized for use with precipitating substrates and yield high signal-to-noise ratios in most applications

Description	Quantity	Cat. No.	Each
SuperBlock Blocking Buffer in PBS	1L	**PI-37515**	127.00
SuperBlock Blocking Buffer–Blotting in PBS	1L	**PI-37517**	119.00
SuperBlock Blocking Buffer in TBS	1L	**PI-37535**	127.00
SuperBlock Blocking Buffer–Blotting in TBS	1L	**PI-37537**	114.00
SuperBlock (TBS) Blocking Buffer Dry Blend	5 pouches†	**PI-37545**	104.00

† Each pouch yields 200mL.

Thermo Scientific* Pierce* Restore* and Restore PLUS Western Blot Stripping Buffer

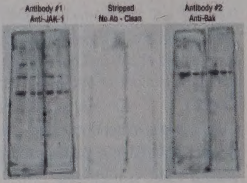
Gentle method for breaking antibody-antigen interactions allows membranes to be reprobed

Restore Western Blot Stripping Buffer

- Provides efficient removal of the primary antibody and associated reagents
- Saves time and sample by eliminating the need to rerun gels
- Does not damage target proteins after stripping
- Does not contain mercaptans, so there are no acrid odors

Restore PLUS Western Blot Stripping Buffer

- Used without dilution
- Effective with nitrocellulose and PVDF membranes, a variety of blocking buffers, horseradish peroxidase (HRP) and alkaline phosphatase (AP) antibody conjugates, and various chemiluminescent substrates
- Allows for the use of a single blot for multiple probes
- Unique formulation efficiently removes high-affinity antibodies (e.g., anti-actin), but it does not decrease the viability of other immobilized proteins, such as cyclophilin B
- Enables detection of phosphorylated and nonphosphorylated proteins on the same membrane



Reprobing with Different Antibodies. Western blots of HeLa cell lysate protein (diluted from 750 to 83.3ng) were detected with SuperSignal* West Dura Chemiluminescent Substrate. The first blot used polyclonal Rabbit anti-JAK-1 primary antibody at 1:2000 dilution with an HRP-secondary conjugate diluted at 1:350,000. The same blot was stripped for five minutes at room temperature in Restore Western Blot Stripping Buffer and then reprobed with purified Mouse anti-Human Bak monoclonal primary antibody at 1:1000 with the HRP-secondary conjugate at 1:100,000. Five-percent nonfat milk with 0.05% Tween*-20 was used for blocking.

Description	Quantity	Cat. No.	Each
Restore Western Blot Stripping Buffer	30mL	**PI-21062**	30.18
	500mL	**PI-21059**	105.00
Restore PLUS Western Blot Stripping Buffer	30mL	**PI-46428**	30.00
	500mL	**PI-46430**	105.00

LABELING

Thermo Scientific* Pierce* Cell Surface Protein Isolation Kit

For the convenient biotinylation and purification of mammalian cell surface proteins

Adherent or suspended cells are first labeled with Sulfo-NHS-SS-Biotin, a cleavable biotinylation reagent. Efficient labeling requires accessible lysine residues, sufficient sequence with extracellular exposure and minimal steri hindrance. The cells are subsequently lysed with a mild detergent and then labeled proteins are isolated with immobilized NeutrAvidin* Gel. The boun proteins are released by incubating the resin with SDS-PAGE sample buffe containing 50mM DTT. The reducing agent cleaves the disulfide bond withi the biotin label, and nearly 100% of the bound proteins are recovered. The protocol is optimized for diverse cell lines, including NIH3T3, HeLa and C6. Isolated proteins can be analyzed by Western blot, allowing for differential expression analysis between treated and nontreated cells or between two or more cell lines.

- Reduces complexity of total cellular protein
- Efficient recovery of labeled proteins, nearly 100% recovery of isolated cell surface proteins from NeutrAvidin Gel
- All reagents are provided in the kit with complete instructions for labeling, cell lysis and purification
- Proteins recovered in SDS-PAGE sample buffer are loaded directly onto SDS-polyacrylamide gels
- Protocol designed for diverse cell lines

INCLUDES:
EZ-Link* Sulfo-NHS-SS-Biotin (8 × 12mg vials); Quenching Solution (16mL); Lysis Buffer (4.5mL); Immobilized NeutrAvidin Gel (supplied as 50% slurry, 4.5mL total volume, 2.25mL settled gel); Wash buffer (34mL); Column Accessory Pack with caps and collection tubes (8 spin columns); No-Weigh Dithiothreitol (DTT) (8 × 7.7mg microtubes); BupH* Phosphate Buffered Saline 2 packs; BupH Tris Buffered Saline one pack

Quantity	Cat. No.	Eac
Sufficient for eight biotinylations and isolations of mammalian cell surface products	**PI-89881**	308.3

Thermo Scientific* Pierce* EZ-Label* Fluorescent Labeling Kits

A convenient method for fluorescent labeling of antibodies or proteins

- Easy-to-use kits designed for any size protein in volumes from 50µL to 1mL at concentrations up to 10mg/mL
- All reagents supplied premeasured—no weighing required
- Ready-to-use desalting columns handle protein samples >100µL
- Slide-A-Lyzer* Mini dialysis units are used for samples ≤100µL

INCLUDES:
Premeasured fluorescent dye; Dimethylformamide (DMF); premeasured borate and phosphate buffer powders; desalting columns; Slide-A-Lyzer Mini Dialysis Units; amber reaction tubes

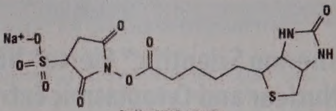
Label	Excitation Wavelength	Emission Wavelength	Quantity	Cat. No.	Eac
Fluorescein	491nm	518nm	5 rxns	**PI-53000**	239.9
Fluorescein Isothiocyanate (FITC)	494nm	520nm	5 rxns	**PI-53004**	239.9
Rhodamine	544nm	576nm	5 rxns	**PI-53002**	239.9

*Trademark. See Trademark Reference.

ermo Scientific* Pierce* EZ-Link* Sulfo-NHS-Biotin (N-Hydroxysulfosuccinimidobiotin)

tinylation reagent is amine reactive and water soluble

eacts with primary amines at pH 7 to 9 in nonamine-containing buffers such as borate, carbonate, phosphate buffers
egative charge of $-SO_3$ group prevents the reagent from passing through the cell membrane
/ater solubility eliminates the use of harmful organic solvents



Sulfo-NHS-Biotin

PI-21217

PLICATIONS:

inylation of rat IgE to study specific receptors on murine lymphocytes; Immunological assay
post-synaptic protein and receptor; Biotinylation of proteins on nitrocellulose paper after transfer from polyacrylamide gels

RAGE CONDITIONS:

e at -20°C with desiccant.

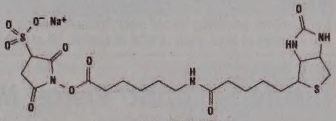
cription	Chemical Reactivity	Water Solubility	Spacer Arm Length	Cleavability	Membrane Permeability	Quantity	Cat. No.	Each
-NHS-Biotin ydroxysulfosuccinimidobiotin)	Primary Amine	Yes	13.5Å	Noncleavable	No	50mg	**PI-21217**	128.00

Patents 5,892,628 and 5,872,261.

ermo Scientific* Pierce* EZ-Link* Sulfo-NHS-LC-Biotin (Sulfosuccinimidyl-6-otinamido] hexanoate)

ine reactive, water-soluble biotinylation reagent with a longer spacer arm than Sulfo-NHS-Biotin

alog of NHS-LC-Biotin
acts with primary amines at pH 7 to 9 in nonamine containing buffers such as borate, carbonate phosphate buffers
gative charge of $-SO_3$ prevents the reagent from passing through the cell membrane



Sulfo-NHS-LC-Biotin

PI-21335

LICATIONS:

nced detection of DNA on nitrocellulose, eliminating the need for radioactive detection in hern, Northern, and dot blotting; Biotinylation of cell surface proteins; In vivo imaging and therapy es

RAGE CONDITIONS:

e at -20°C with desiccant.

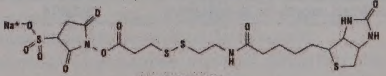
ription	Chemical Reactivity	Water Solubility	Spacer Arm Length	Cleavability	Membrane Permeability	Quantity	Cat. No.	Each
-NHS-LC-Biotin osuccinimidyl-6-namido) hexanoate)	Primary Amine	Yes	22.4Å	Noncleavable	No	100mg	**PI-21335**	164.00

atents 5,892,628 and 5,872,261.

ermo Scientific* Pierce* EZ-Link* Sulfo-NHS-SS-Biotin (Sulfosuccinimidyl 2-otinamido]-ethyl-1, 3-dithiopropionate)

ol-cleavable, amine-reactive biotinylation reagent is also water soluble

alog of NHS-LC-Biotin with cleavable disulfide linkage
ended spacer arm prevents steric hindrance
al for reversible biotinylation—biotin is separated from molecule when spacer arm is aved



Sulfo-NHS-SS-Biotin

PI-21331

LICATIONS:

esis of chemically cleavable biotinylated nucleotides and the subsequent recovery of in-DNA complexes from immobilized avidin columns; Isolation of Herpes virus proteins

RAGE CONDITIONS:

at -20°C protected from moisture.

ription	Chemical Reactivity	Water Solubility	Spacer Arm Length	Cleavability	Membrane Permeability	Quantity	Cat. No.	Each
-NHS-SS-Biotin (Sulfosuccinimidyl 2-namido)-ethyl-1, 3-dithiopropionate)	Primary Amine	Yes	24.3Å	Cleavable	No	100mg	**PI-21331**	184.00

PROTEIN PURIFICATION

EXTRACTION

Thermo Scientific* Pierce* NE-PER* Nuclear and Cytoplasmic Extraction Kit

Facilitates the separation of nuclear extracts and cytoplasmic fractions from the same set of cells in less than two hours

- Kit maintains nuclear and cytoplasmic cell compartments by lysing the cell membrane, recovering the nucleus intact, and then extracting the nuclear proteins separately
- Nuclear extracts and cytoplasmic protein fractions can be used directly in a variety of applications including reporter gene assays, enzyme activity assays, Western blotting, and gel shift assays

INCLUDES:

Cytoplasmic Extraction Reagent I (CER I), (10mL); Cytoplasmic Extraction Reagent II (CER II), (550µL); Nuclear Extraction Reagent, (5mL)

STORAGE CONDITIONS:

Store at 4°C for up to one year.

Quantity	Cat. No.	Each
Sufficient for extracting 50 cell pellet fractions having packed cell volumes of 20µL each (a total of approx. 2g of cell paste)	PI-78833	185.00

Thermo Scientific* Pierce* Mitochondria Isolation Kit for Cultured Cells

Only 40 minutes to isolate intact mitochondria with maximum yield

- Isolate intact mitochondria from 2 × 10^7 cells in approximately 40 min. (post-cell harvest)
- Process several samples simultaneously using the reagent-based method, or obtain highest possible yield with the Dounce homogenization method
- Guidelines provided for optimizing purity vs. yield with the reagent-based method
- Easy isolation performed in a microcentrifuge tube
- Isolated mitochondria may be lysed with detergent or processed for almost any downstream application, including 2-D electrophoresis

INCLUDES:

Mitochondria Isolation Kit Reagent A (50mL); Mitochondria Isolation Kit Reagent B (500µL); Mitochondria Isolation Kit Reagent C (70mL)

Quantity	Cat. No.	Each
Sufficient reagents for 50 applications	PI-89874	185.68

Thermo Scientific* Pierce* Mem-PER* Eukaryotic Membrane Protein Extraction Kit

Enables extraction and selective enrichment of integral and attached membrane proteins from cultured mammalian and yeast cells, as well as from hard and soft mammalian tissues

- Faster, easier, and less expensive than traditional methods for the isolation of membrane proteins
- Produces minimal cross-contamination (typically <10%) of hydrophilic protein into the hydrophobic (membrane) protein fraction
- Utilizes an easy and complete protocol that requires approximately one hour
- Compatible with downstream applications including SDS-PAGE, Western blotting, and protein assays

INCLUDES:

Mem-PER Reagent A, (10mL); Mem-PER Reagent B, (25mL); Mem-PER Reagent C, (40mL)

STORAGE CONDITIONS:

Store Reagent A at room temperature; store Reagent B and Reagent C at 4°

Quantity	Cat. No.	Eac
Sufficient for 50–100 mammalian cell pellet fractions	PI-89826	185.6

Thermo Scientific* Pierce* P-PER* Plant Protein Extraction Kit

Unique method performs plant cell lysis and subseque protein extraction in just 10 minutes

Organic lysing reagent and two aqueous reagents, in conjunction with mil mechanical agitation, effectively extract plant protein.

- Works with multiple plant organs (leaf, stem, root, seed and flowers); multiple plant species (*Arabidopsis*, tobacco, maize, soybeans, peas, spinach and other plant tissues); and fresh, frozen and dehydrated plant tissues
- Requires no liquid nitrogen/freeze-grinding, Dounce homogenization, blade-shearing or glass-bead agitation for cell disruption, although kit is compatible with these alternative mechanical aids
- Downstream applications include 1-D and 2-D gel electrophoresis, Western blotting, activity assays, and protein affinity purifications
- Kit extracts can be quantified using the BCA Protein Assay Kit, Reducing Agent Compatible
- Protein extract does not require filtration through cheesecloth or Miracloth, unlike homebrews
- Assays show extracted proteins are functional

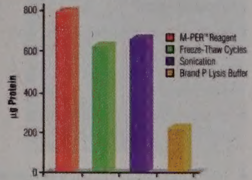
INCLUDES:

P-PER Reagent A (20mL); P-PER Reagent B (225µL); P-PER Reagent C (20m Polypropylene Mesh Bags (20) each

Quantity	Cat. No.	Ea
Sufficient for extracting 20 × 80mg of fresh/frozen plant tissue or 20 × 20mg of dried plant tissue	PI-89803	225.

ermo Scientific* Pierce* M-PER* ammalian Protein Extraction Reagent

rupts mammalian cell membranes at low icentrations without denaturing proteins



- mpletes extraction in five minutes
  room temperature—no freeze-
  aw cycles or sonication required
- oduces 25% more protein than
  eeze-thaw cycles and 20% more
  otein than sonication
- ses adherent cells without scraping
  m the culture dish, enabling use
  the reagent with 96-well plates
- itable for high-throughput cell lysis and subsequent screening assays
- mpatible with downstream reporter assays, kinase assays,
  munoassays, and protein assays

ription	Quantity	Cat. No.	Each
ER Mammalian Protein action Reagent	25mL	PI-78503	53.27
	250mL	PI-78501	217.81
	1000mL	PI-78505	589.00

Thermo Scientific* Pierce* T-PER* Tissue Protein Extraction Reagent

Mild cell-lysing reagent for protein extraction from tissue samples

- ▸ Consists of a proprietary detergent in 25mM bicine and 150mM sodium chloride (pH 7.6) which is dialyzable for quick and easy removal
- ▸ Can be used in combination with other components such as protease inhibitors, salts, reducing agents, or chelating agents
- ▸ Produces cell lysates that may be used for reporter assays, protein kinase assays, immunoassays, and/or protein purifications
- ▸ Compatible with standard protein assays

Quantity	Cat. No.	Each
500mL	PI-78510	242.91

ermo Scientific* Pierce* B-PER* Bacterial Protein Extraction Reagents

over both soluble and insoluble recombinant proteins from bacterial lysates

ER Bacterial Protein Extraction Reagent

- xible enough to use for any scale of protein extraction
- es a patented, mild, nonionic detergent in a Tris-based buffer
- es not solubilize inclusion bodies
- es not require special instrumentation—just add to a bacterial pellet
  d shake for 10 minutes
- mponents such as lysozymes and protease inhibitors may be added
- mpatible with GST, 6xHis, and other affinity purifications; can also be
  ed with baculovirus-expressed proteins

ription	Quantity	Cat. No.	Each
R Bacterial Protein Extraction Reagent	165mL	PI-78243	129.00
	500mL	PI-78248	245.00
R II Bacterial Protein Extraction Reagent	250mL	PI-78260	245.00

B-PER II Bacterial Protein Extraction Reagent

- ▸ Ideal for small-volume recombinant protein extraction
- ▸ Extracts twice the yield of both total soluble protein and recombinant green fluorescent protein after the first round than does original B-PER Reagent (after five rounds, extraction yields are similar) from 1g of bacterial extract and 5mL of reagent
- ▸ Free of enzymatic components

From left to right: Total lysate, extracted GFP, remaining protein.

ermo Scientific* Pierce* I-PER* Insect ll Protein Extraction Reagent

cient, gentle reagent that provides maximum raction of soluble proteins from baculovirus-infected ct cells

cts recombinant (eukaryotic) proteins in cell culture. Proteins
ssed in baculoviral systems can be used for structural analyses,
emical assays and a variety of other applications.

- ▸ Optimized, mild nonionic detergent provides maximum extraction of soluble proteins from insect cells
- ▸ Provides better protein extraction than sonication
- ▸ Downstream compatibility with Western blotting, 6xHis-tagged protein purification, protein assays and ion-exchange chromatography
- ▸ Useful for protein extraction from suspended or adherent cultured insect cells

Quantity	Cat. No.	Each
250mL	PI-89802	165.63

Thermo Scientific* Pierce* Halt* Protease Inhibitor Cocktail

Provides excellent inhibition of a variety of protease activities including serine and cysteine proteases, calpain proteases, and metalloproteases

- Single-use, ready-to-use packaging
- EDTA-containing and EDTA-free formulations
- Effective for suppressing proteolytic activity in detergent-based cell lysis reagents
- No loss of valuable freezer space
- Allows the user to prepare a custom cocktail or increase the concentration of a class of protease inhibitor in the formulation to improve the stability or recovery of a specific target protein

APPLICATIONS:

Protection of intact, active cellular proteins from degradation by endogenous proteases; inhibition of protease activity from lysates; screening of extracts for proteolytic activity; the study of proteolysis in the regulation of cellular processes

STORAGE CONDITIONS:

Cocktail remains stable for months under refrigeration

Description	Quantity	Cat. No.	Each
Protease Inhibitor Cocktail Kit	Sufficient for 200mL sample	**PI-78410**	145.00
Reagent			
Protease Inhibitor Cocktail, EDTA-free	Sufficient for 100mL sample	**PI-78415**	159.00

Thermo Scientific* Pierce* Halt Phosphatase Inhibitor Cocktail

Safeguarding against serine, threonine and protein tyrosine phosphatases activity

Phosphorylation and dephosphorylation is a molecular on/off switch that regulates a number of key biological pathways within the cell, including signal transduction, cell division, and apoptosis. The Halt Phosphatase Inhibitor Cocktail preserves phosphorylation of proteins in cell lysates and tissue extracts. The cocktail contains a mixture of four phosphatase inhibitors of broad specificity, including sodium fluoride, sodium orthovanadate, sodium pyrophosphate and glycerophosphate. Halt Phosphatase Inhibitor Cocktail protects phosphoproteins from both families of phosphatases.

- Compatible with standard protein assays: The BCA Protein Assay Kit and Coomassie* Plus-The Better Bradford* Assay
- Does not require frozen storage
- Convenient size: 1mL of cocktail protects up to 100mL of sample

STORAGE CONDITIONS:

Store at 2° to 8°C

Quantity	Cat. No.	Each
1mL	**PI-78420**	148.56

Thermo Scientific* Pierce* Surfact-Amps* Nonionic Detergents

Purified, prediluted solutions offer unparalleled convenience

PI-28324

- Ready-to-use ampules are packed under nitrogen for maximum shelf life and are prescored for easy opening
- Protect proteins from damaging impurities, preventing loss of protein activity
- Gentle (nondenaturing at low concentrations), clear and pure 10% solutions have less than 1.0μeq/mL peroxides and carbonyl content

STORAGE CONDITIONS:

Store as detailed on product information sheet.

Product	Active Ingredient	Aggregation #	Micelle M.W.	M.W.	CMC (mM)	HLB (mM)	Cloud Point (°C)
Surfact-Amps 20	Tween*-20	----	----	1228	0.06	16.7	95
Surfact-Amps X-100	Triton* X-100	140	90K	628	0.24	13.5	64
Surfact-Amps NP-40	Nonidet* P-40	149	90K	602	0.29	13.1	80

Description	Quantity	Cat. No.	Each
Surfact-Amps 20	6 × 10mL	**PI-28320**	88.00
Surfact-Amps X-100	6 × 10mL	**PI-28314**	88.00
Surfact-Amps NP-40	6 × 10mL	**PI-28324**	88.00

SAMPLE PREPARATION

Millipore* Montage* Albumin Deplete Kit

Reduces albumin levels in plasma or serum samples

montage
PROTEOM
LSKAD0004

- Uses a simple, 15-minute protocol
- Removes 65% of albumin from typical human serum samples
- Processes samples up to 100μL
- Optimized for the depletion of human albumin, but can be used with other mammalian species
- Improves the resolution of lower abundance proteins in chromatographic separations, electrophoresis, or mass spectrophotometry

INCLUDES:

Prepacked centrifugal columns; microcentrifuge tubes; buffers and reagents

STORAGE CONDITIONS:

Store at 2° to 8°C (36° to 46°F).

No. of Preps	Cat. No.	Each
24	**LSKAD0024**	332.00

ermo Scientific* Pierce* Handee* ni-Spin Columns

venient tools for the manipulation of small volumes hromatography supports

PI-69710

- omatography resin volume to 400µL
- nple volumes 50 to 80µL

dee Spin Cup Columns

- mit quick separations using icrocentrifuge

dee Mini-Spin Columns

- lude optional Luer-Lok* adapters for performing shes and elutions with a syringe
- also be used for separations with a microcentrifuge
- oclavable at 120°C

iption	Chromatography Resin Volume	Sample Volume	Quantity Per Pack	Cat. No.	Each
ee Spin Cup nns	20 to 300µL	50 to 300µL	50	**PI-69700**	91.00
ee Mini-Spin nns	20 to 400µL	50 to 500µL	25	**PI-69705**	95.48
ee Resin ators	250µL to 1mL	1 to 10mL	25	**PI-69710**	63.32
ee centrifuge Tubes	----	1.5mL	72	**PI-69715**	39.23

ermo Scientific* Pierce* iCON* tein Concentrators

osable ultrafiltration centrifugal devices for entration and diafiltration/buffer exchange of ogical samples such as enzymes, antigens ntibodies

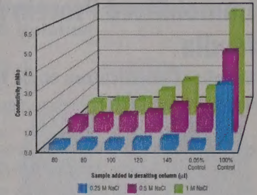
- ieve 150- to 400-fold protein concentrations in less than 30 min.
- ommodate concentration volumes over a wide working range L = 1 to 7mL and 20mL = 5 to 20mL ranges)
- alt and exchange buffers
- the maximum membrane surface area
- npatible with swinging-bucket or fixed-angle rotors
- invert spin required

iption	Quantity	Cat. No.	Pack of 25
WCO iCON Protein entrators	7mL	**PI-89884**	129.48
	20mL	**PI-89885**	232.00
MWCO iCON Protein entrators	7mL	**PI-89886**	129.48
	20mL	**PI-89887**	232.00

Thermo Scientific* Pierce* Protein Desalting Spin Columns

Perform desalting or buffer exchange in less than five minutes

- No cumbersome preparation steps are required
- Provides greater than 95% salt and small molecules retention while providing excellent recovery of proteins greater than 7000 MW
- Designed to desalt or exchange buffer of protein samples with volumes from 30 to 120µL



Increasing load volumes of three different NaCl concentrations. Greater than 95% salt removal was observed for up 120µL 1M NaCl.

Quantity	Cat. No.	Price
25 columns	**PI-89849**	99.50
50 columns	**PI-89862**	163.60

Thermo Scientific* Pierce* Zeba* Desalt Spin Columns

Quickly desalt proteins using a proprietary high-performance resin that offers exceptional desalting and protein-recovery characteristics

- Process multiple samples in approximately 8 min.
- Suitable for samples containing as little as 25µg/mL of protein
- Retain ≥95% of salts and other small molecules <1000MW
- Eliminate the need to monitor fractions for protein
- Easy to use with no cumbersome column preparation or equilibration
- Require minimal sample dilution

STORAGE CONDITIONS:

Store at 4°C.

Column Size	Sample Size	Cat. No.	Pack of
75µL	2–12µL	**PI-89877**	25/103.39
		PI-89878	50/185.69
0.5mL	30–130µL	**PI-89882**	25/93.47
		PI-89883	50/169.63
2mL	200–700µL	**PI-89889**	5/36.21
		PI-89890	25/169.63
5mL	600–2000µL	**PI-89891**	5/47.27
		PI-89892	25/215.81
10mL	1.5–4.0mL	**PI-89893**	5/56.27
		PI-89894	25/255.32

ermo Scientific* Pierce* Zeba* 96-well salt Spin Plates

-throughput removal of salt and small ecules from samples

eba 96-well Desalt Spin Plates contain a high-performance resin exceptional desalting and protein recovery characteristics. sample volumes (20 to 100µL) can be processed providing exceptional n recovery and >95% removal of salts and other small molecules 0 Da, e.g., DTT, Biotin, FITC, Biotin-FITC etc.).

- Desalt 96 samples in 5 min.
- No screening fractions for sample or waiting for samples to emerge by gravity flow
- Easy-to-use with no cumbersome plate preparation or equilibration
- Require no resin dispensing or hydration
- Minimal sample dilution

Quantity	Cat. No.	Price
2 plates	**PI-89807**	190.71
4 plates	**PI-89808**	360.45

PURIFICATION—PROTEIN A/G

Thermo Scientific* Pierce* ImmunoPure* Immobilized Protein A/G on Biosupport Media

Excellent purification tools for most immunoglobulins

- Combines the IgG binding properties of both Protein A and Protein G
- Supports utilize coupling chemistries that are leak-resistant and provide a matrix with minimal nonspecific binding
- Can be regenerated when properly stored
- Agarose supports are useful for gravity-flow procedures
- More rigid UltraLink support is used if flowrates require a pressure >25psi

ORDERING INFORMATION:

A ready-to-use kit containing prepacked columns of ImmunoPure Immobilized Protein A/G is also available online.

INCLUDES:

AffinityPak* Immobilized Protein A/G Column (1 × 2mL); ImmunoPure (A/G) IgG Binding Buffer (240mL); ImmunoPure Elution Buffer (120mL); D-Salt* Dextran Desalting Columns 5K MWCO (5 × 5mL)

Description	Medium	Capacity	Quantity	Cat. No.	Each
ImmunoPure Immobilized Protein A/G	Cross-linked 6% beaded agarose	>7mg of human IgG/mL gel	3mL 15mL	**PI-20421** **PI-20422**	299.00 1039.00
UltraLink Immobilized Protein A/G	UltraLink Biosupport Medium	>20mg human IgG/mL gel	2mL 10mL	**PI-53132** **PI-53133**	245.00 859.00
UltraLink Immobilized Protein A/G Plus	UltraLink Biosupport Medium	>28mg human IgG/mL gel	2mL	**PI-53135**	354.33
ImmunoPure (A/G) IgG Purification Kit	Cross-linked 6% beaded agarose	7mg human IgG/mL gel	Sufficient for isolating at least 6–8mg of mouse IgG	**PI-44902**	472.00

LOOKING FOR WESTERN BLOTTING SUBSTRATES?

Find them in the Protein Labeling and Detection section.

Thermo Scientific* Pierce* ImmunoPure* Immobilized Protein A on Biosupport Medi

Affinity purification supports for the isolation of a wide variety of IgG molecules from several species of mamm

- Leach-resistant coupling prevents Protein A from washing off the support
- High capacity allows efficient antibody purification
- Agarose supports are useful for gravity-flow procedures
- UltraLink Biosupport Medium and Trisacryl GF-2000 provide a stable affinity support durable enough for higher throughput volumes experienced during large-scale chromatographies

INCLUDES:

AffinityPak* Protein A or Protein A Plus Columns (5 × 1mL); ImmunoPure IgG Binding Buffer (1L); ImmunoPure IgG Elution Buffer (500mL); D-Salt* Excellulose* Desalting Columns (5 × 5mL)

Description	Medium	Capacity	Quantity	Cat. No.	E
ImmunoPure Immobilized Protein A	Cross-linked 6% beaded agarose	>12–19mg human IgG/mL gel	5mL 25mL	**PI-20333** **PI-20334**	295 925
ImmunoPure Immobilized Protein A Plus	Cross-linked 6% beaded agarose	>34mg human IgG/mL gel	5mL 25mL	**PI-22811** **PI-22812**	358 1198
ImmunoPure Immobilized Protein A	Trisacryl GF-2000	>15mg human IgG/mL gel	5mL	**PI-20338**	308
UltraLink Immobilized Protein A	UltraLink Biosupport Medium	≥16mg human IgG/mL gel	5mL	**PI-53139**	306
UltraLink Immobilized Protein A Plus	UltraLink Biosupport Medium	>30mg human IgG/mL gel	5mL	**PI-53142**	349
AffinityPak Protein A Columns	Cross-linked 6% beaded agarose	>12–19mg human IgG/mL gel	5 × 1mL	**PI-20356**	324
AffinityPak Protein A Plus Columns	Cross-linked 6% beaded agarose	>34mg human IgG/mL gel	5 × 1mL	**PI-22814**	512
ImmunoPure (A) IgG Purification Kit	Cross-linked 6% beaded agarose	6–8mg mouse IgG/mL gel	Sufficient to perform 45 purifications	**PI-44667**	440
ImmunoPure Plus (A) IgG Purification Kit	Cross-linked 6% beaded agarose	>34mg human IgG/mL gel	Sufficient to perform 45 purifications	**PI-44679**	514

*Trademark. See Trademark Reference.

Prices subject to change.

ermo Scientific* Pierce* ImmunoPure* mobilized Protein G on Biosupport dia

ombinant Protein G reduces nonspecific binding; ds to a wider range of antibodies than do Protein eads

otein G supports utilize coupling chemistries that are leach-resistant

pports can be regenerated when properly stored

arose supports are useful for gravity-flow procedures

e more rigid UltraLink support is used if flowrates require a essure >25psi

UDES:

I-44441) includes: ImmunoPure Immobilized Protein G Column 2mL); ImmunoPure (G) Binding Buffer (240mL); ImmunoPure IgG on Buffer (120mL); Excellulose* Desalting Columns (5 × 5mL)

ription	Medium	Capacity	Quantity	Cat. No.	Each
unoPure obilized ein G	Cross-linked 6% beaded agarose	11–15mg human IgG/mL of gel	2mL 10mL	**PI-20398** **PI-20399**	195.00 699.00
unoPure obilized ein G Plus	Cross-linked 6% beaded agarose	>20mg human IgG/mL of gel	2mL 10mL	**PI-22851** **PI-22852**	244.00 844.00
Link obilized ein G	UltraLink Biosupport Medium	>20mg human IgG/mL of gel	2mL 10mL	**PI-53125** **PI-53126**	248.00 839.00
Link obilized ein G Plus	UltraLink Biosupport Medium	>25mg human IgG/mL of gel	2mL	**PI-53128**	324.00
Link tyPak* ein G mns	UltraLink Biosupport Medium	>40mg human IgG/column	2 × 2mL	**PI-53127**	468.00
unoPure gG cation Kit	Cross-linked 6% beaded agarose	11mg of human IgG/mL of gel when using ImmunoPure buffers	Sufficient for 10 affinity purifications	**PI-44441**	464.00

LOOKING FOR DIALYSIS MEMBRANES?

ee the Dialysis/Devices section.

Thermo Scientific* Pierce* MagnaBind* Protein A and G Beads

An easy-to-use method for immunoprecipitation, protein purification, and cell isolation

MagnaBind Protein A and Protein G Beads are typically used to isolate antibodies from serum and cell culture supernatant and to separate cells of interest from a cell mixture. For antibody purification, the beads are incubated with the antibody solution and then magnetically separated from the supernatant. The antigens and antibodies are then dissociated from the beads using an elution buffer. For cell separation, the monoclonal or polyclonal antibody to the cell surface antigen is incubated with Protein A or Protein G magnetic beads, magnetically separated, and then incubated with the cell suspension.

- Beads respond well to magnetic fields, but have no magnetic memory
- Most separations require a short 5- to 10-minute benchtop procedure
- Cells can be sorted using either positive or negative selection
- Protein purification or immunoassays can be performed using either direct or indirect methods
- Beads can be easily sterilized
- Surface area: >100m^2/g
- Number of beads: 1 × 10^8 particles/mg
- Bead diameter: 1–4μm
- Supplied in PBS with 1mM EDTA and sodium azide, pH 7.4
- Binding Capacity: ~0.20mg rabbit IgG/mL of beads

APPLICATIONS:

Cell sorting using either positive or negative selection; protein purification or immunoassays using either direct or indirect methods

REQUIRED ACCESSORIES:

An external magnetic field is used to remove MagnaBind Beads from suspension. See Accessories for a selection of magnets.

STORAGE CONDITIONS:

Products are shipped at ambient temperature. Upon receipt, store products at 4°C. Do not freeze.

Description	Quantity	Cat. No.	Each
Protein A Beads	5mL	**PI-21348**	272.34
Protein G Beads	5mL	**PI-21349**	272.34

ACCESSORIES

Magnets for Thermo Scientific* Pierce* MagnaBind Beads

Description	Cat. No.	Each
Magnet for 1.5mL Tube	**PI-21357**	127.48
Magnet for 96-well Plate Separator	**PI-21358**	318.40
Magnet for 6 Microcentrifuge Tubes	**PI-21359**	248.93

PURIFICATION—HIS

Nunc* ProPur* Metal Chelate (IMAC) Spin Columns

For simple, rapid His-tagged protein purification from cell lysate

12-656-117

Ready-to-use kits replace lengthy and expensive chromatogenic methods.

Mini Kits

- Based on microcentrifuge tubes
- Yield up to 1mg in approximately 20 min.
- Working volume: 0.65mL

Midi Kits

- Based on 50mL centrifuge tubes
- Yield up to 20mg in approximately 50 min.
- Working volume: 20mL

APPLICATIONS:

Metal chelate affinity chromatography

INCLUDES:

Prepacked spin column plugs; spin column barrels; centrifuge tubes; ultrafiltration concentrators (UFCs); PBS; imidiazole; plug insertion tool

Description	Columns per Kit	UFCs Included	Buffers Included	Mfr. No.	Cat. No.	Each
Mini Kit	4	Yes	Yes	228113	**12-656-113**	105.64
Mini Kit	24	Yes	Yes	228114	**12-656-114**	362.26
Mini Kit w/o UFCs	24	No	Yes	228115	**12-656-115**	293.30
Mini Bulk Pack	72	No	No	228116	**12-656-116**	617.75
Midi Kit	8	Yes	Yes	228117	**12-656-117**	324.69
Midi Kit w/o UFCs	8	No	Yes	228118	**12-656-118**	265.13
Midi Bulk Pack	24	No	No	228119	**12-656-119**	608.50

Promega* Maxwell 16* Polyhistidine Protein Purification System

Easy method for the efficient, automated purification of polyhistidine-tagged protein

Used with the Maxwell 16 Instrument for the automated purification of polyhistidine-tagged protein from bacterial cultures and other sample types including mammalian and insect cells. With minor modifications, the reagents can also be used for purification of HQ-tagged proteins from bacterial cultures.

- Purify from multiple starting cultures including bacterial culture, mammalian cells, insect cells and culture medium
- Consistent purification across all samples
- Prefilled cartridges eliminate reagent preparation, multiple pipetting steps, centrifugation and additional sample manipulation

APPLICATIONS:

Polyhistidine-tagged protein purification, HQ-tagged protein purification

Description	Samples per Kit	Mfr. No.	Cat. No.	Each
Maxwell 16 Polyhistidine Protein Purification System	48 preps	AS1060	**PI-S106**	290.00

LOOKING FOR THE PROMEGA* MAXWELL 16* INSTRUMENT?

Turn to the Nucleic Acid Research section for more information.

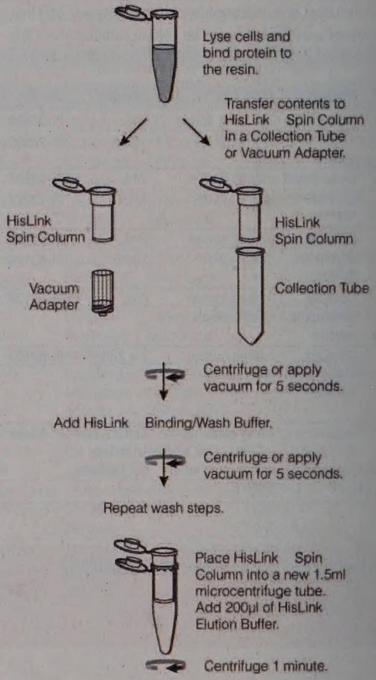
Promega* HisLink* Spin Protein Purification System

Provides a quick method of purifying polyhistidine- or HQ-tagged expressed proteins from *E. coli* using either a centrifuge or vacuum-based method

- Choose between vacuum or centrifugation formats
- Complete system contains all necessary components
- High binding capacity per column

STORAGE CONDITIONS:

Store the system at 4°C. Store spin columns, collection tubes, and FastBreak* Cell Lysis Reagent at room temperature. After reconstitution, store DNase I in aliquots at -20°C.


Lyse cells and bind protein to the resin.
Transfer contents to HisLink Spin Column in a Collection Tube or Vacuum Adapter.
HisLink Spin Column
Vacuum Adapter
HisLink Spin Column
Collection Tube
Centrifuge or apply vacuum for 5 seconds.
Add HisLink Binding/Wash Buffer.
Centrifuge or apply vacuum for 5 seconds.
Repeat wash steps.
Place HisLink Spin Column into a new 1.5ml microcentrifuge tube. Add 200µl of HisLink Elution Buffer.
Centrifuge 1 minute.

Description	No. of Samples	Cat. No.	Each
HisLink Spin Protein Purification System	25 reactions	**PR-V1320**	155.58

omega* MagneHis* Protein rification System

rapid and reliable purification of polyhistidine-tagged teins from 1mL to 1L of bacterial culture

PR-V8550

- lizes paramagnetic echarged MagneHis -Particles to isolate lyhistidine-tagged otein directly from ide cell lysate
- nds up to 1mg of lyhistidine-tagged otein per 1mL of MagneHis Ni-Particles
- mpatible with manual or automated protocol
- ntains all necessary reagents for purification
- agneHis Ni-Particles are also available separately

LUDES:

neHis Binding/Wash Buffer (50mL); FastBreak* Cell Lysis Reagent L); DNase I (lyophilized) (1 vial); MagneHis Elution Buffer (10mL); neHis Ni-Particles (2mL)

RAGE CONDITIONS:

e at 4°C (39.2°F) for up to 18 months; do not freeze MagneHis articles.

ription	Quantity	Cat. No.	Each
plete System	2mL	**PR-V8500**	146.55
	10mL	**PR-V8550**	507.64
neHis Ni-Particles	2mL	**PR-V8560**	107.40
	10mL	**PR-V8565**	366.46

t Pending.
n applications of this product are covered by patents issued and applicable in certain ies. Because purchase of this product does not include a license to perform any ted application, users of this product may be required to obtain a patent license ding upon the particular application and country in which the product is used.

Promega* HisLink* Protein Purification Resins

Purifies His-tagged proteins from cleared or crude bacterial lysates

- High binding capacity, >15mg/mL
- Macroporous silica resin modified to contain a high level of tetradentate chelated nickel (>20mmol Ni/mL settled resin)
- Easily separated from the lysate without filtration or centrifugation
- May be used in standard gravity column chromatography or automated applications
- Also suitable for general applications requiring an immobilized metal affinity chromatography matrix (IMAC)

STORAGE CONDITIONS:

Store at 4°C.

Binding Capacity	Quantity	Cat. No.	Each
>15mg/mL	5mL	**PR-V8823**	26.16
>15mg/mL	50mL (50% slurry)	**PR-V8821**	241.91

U.S. Patent No. 7,112,552 and other patents pending.
Certain applications of this product are covered by patents issued and applicable in certain countries. Because purchase of this product does not include a license to perform any patented application, users of this product may be required to obtain a patent license depending upon the particular application and country in which the product is used.

PURIFICATION—STREPTAVIDIN

ermo Scientific* Pierce* Immobilized Streptavidin Products

iperior alternative to immobilized avidin

- er high biotin affinity and low nonspecific binding
- vide a stable, leach-resistant linkage of streptavidin to the support

iunoPure* Immobilized Streptavidin

- ified recombinant streptavidin
- al for immunoprecipitation

UltraLink* Immobilized Streptavidin

- Offers faster flowrates and overall superior performance in affinity applications
- Recommended for purifying proteins that bind to a biotinylated ligand
- Suitable for the recovery of single-stranded DNA for dideoxy sequencing

ription	Medium	Capacity	Quantity	Cat. No.	Each
inoPure Immobilized Streptavidin Gel	Cross-linked 6% beaded agarose	Approx. 1–3mg biotinylated BSA/mL gel	2mL	**PI-20347**	164.00
			5mL	**PI-20349**	266.00
inoPure AffinityPak* Immobilized tavidin Columns	Cross-linked 6% beaded agarose	Approx. 1–3mg biotinylated BSA/mL gel	5 × 1mL	**PI-20351**	276.00
ink Immobilized Streptavidin Gel	UltraLink Biosupport Medium	≥2mg of biotinylated BSA/mL gel	2mL	**PI-53113**	219.22
			5mL	**PI-53114**	327.00
ink Immobilized Streptavidin Plus Gel	UltraLink Biosupport Medium	≥4mg of biotinylated BSA/mL gel	2mL	**PI-53116**	272.27
			5mL	**PI-53117**	389.00

Thermo Scientific* Pierce* MagnaBind* Streptavidin Beads

An easy-to-use method for immunoprecipitation, protein purification, and cell isolation

PI-21344

MagnaBind Streptavidin Beads are convenient for affinity purification or separation methods involving biotin-labeled molecules. To remove the MagnaBind Beads from the suspension, an external magnetic field is used. Streptavidin is a 60 kDa protein from *Streptomycetes avidinii*. The protein is a tetramer having four biotin-binding sites. Unlike avidin, streptavidin has a low isoelectric point (pI = 5) and no carbohydrate groups, resulting in low nonspecific binding. The high-affinity interaction between streptavidin and biotin cannot be dissociated efficiently except with very harsh conditions, such as boiling in sample loading buffer for SDS-PAGE or 8M guanidine·HCl, pH 1.5. Consequently, it is often possible to elute binding partners in an interaction complex without also eluting the biotinylated component.

- Beads respond well to magnetic fields, but have no magnetic memory
- Most separations require a short 5- to 10-minute benchtop procedure
- Cells can be sorted using either positive or negative selection
- Protein purification or immunoassays can be performed using either direct or indirect methods
- Beads can be easily sterilized
- Surface area: >100m²/g
- Number of beads: 1 × 10^8 particles/mg
- Bead diameter: 1 to 4µm
- Supplied in phosphate-buffered saline (PBS), pH 7.5
- Contains 0.1% BSA, EDTA and sodium azide as stabilizers
- Binding Capacity: ~2µg biotin/mL of beads (~8nmol biotin/mL of beads

APPLICATIONS:

Cell sorting using either positive or negative selection; protein purification or immunoassays using either direct or indirect methods

REQUIRED ACCESSORIES:

An external magnetic field is used to remove MagnaBind Beads from suspension. See p. 1475.

Description	Cat. No.	E
Streptavidin Beads	**PI-21344**	229

Thermo Scientific* Pierce* Immobilized NeutrAvidin* Resins and Proteins

A biotin-binding protein with low nonspecific binding properties

NeutrAvidin Resins are prepared by covalently coupling NeutrAvidin Protein to the porous agarose or UltraLink* Biosupport using efficient and stable chemistries, resulting in NeutAvidin Agarose and UltraLink Resins that are leach-resistant and stable at pH to 2 to 11.

- Low nonspecific binding
- Provide high functionality, low nonspecific binding and leach resistance
- Agarose (polysaccharide-based) and UltraLink Biosupport (acrylamide-based) resins provide two different options for particular experimental conditions and are compatible with gravity-flow, spin and FPLC methods

Description	Capacity	Support	Qty.	Cat. No.	Eac
NeutrAvidin Agarose Resin	≥20µg or 80nmol biotin/mL resin	Crosslinked 6% beaded agarose	5mL	**PI-29200**	178.6
UltraLink Immobilized NeutrAvidin Protein	12-20µg or 48-80nmol of biotin/mL of gel	UltraLink Biosupport	5mL	**PI-53150**	219.8
UltraLink Immobilized NeutrAvidin Protein Plus	≥30µg or 120nmol of biotin/mL of gel	UltraLink Biosupport	5mL	**PI-53151**	308.3

*Trademark. See Trademark Reference.

Prices subject to change.

PURIFICATION—GST

omega* MagneGST* Protein Purification System

ple, rapid, and reliable method for the purification of glutathione-ansferase (GST) fusion proteins from a crude or cleared lysate

ovides one-step purification of multiple samples
alable from 1mL of culture to more than 50mL of culture
oduces high yields with little or no nonspecific background
es not require high-speed centrifugation after cell lysis to clear lysate
mpatible with manual or automated protocols

LUDES:

neGST Glutathione Particles (also available separately) (4mL); athione (2mL); MagneGST Binding/Wash Buffer (80mL); MagneGST Lysis Reagent (12mL); RQ1 RNase-free DNase (1000µL); 0.5M 3.1) Tris Buffer (2mL)

UIRED ACCESSORIES:

netic separation stand, such as the MagneSphere Technology Magnetic ration Stand (PR-Z5342)

RAGE CONDITIONS:

e as detailed on product information sheet; components are stored at r 4°C or -70°C.

www.promega.com

PR-V8600

Description	Quantity	Cat. No.	Each
MagneGST Protein Purification System	40 rxns	**PR-V8600**	132.50
	200 rxns	**PR-V8603**	437.55
MagneGST Glutathione Particles	4mL	**PR-V8611**	99.50
	20mL	**PR-V8612**	355.44

This product or portions thereof is manufactured under license from Amrad Corporation Limited. For noncommercial research use only. All other uses require a license from Amrad Corporation Limited, Unit 6, 663 Victoria Street, Abbotsford, Victoria 3067, Australia, under U.S. Patent 5,654,176, Australian Patent 607511, Canadian Patent 1338903 and other issued patents.

Patent pending.

This product is licensed for use under U.S. Patent 6,174,704.

Certain applications of this product are covered by patents issued and applicable in certain countries. Because purchase of this product does not include a license to perform any patented application, users of this product may be required to obtain a patent license depending upon the particular application and country in which the product is used.

PURIFICATION—CUSTOM

ermo Scientific* Pierce* SulfoLink* upling Resin

rous 6% cross-linked beaded agarose activated with loacetyl groups

en incubated with a solution of peptide or protein that contains reduced eine residues, the iodoacetyl groups react specifically and efficiently the exposed sulfhydryls (-SH) to form covalent and irreversible ether bonds that permanently attach the peptide or protein to the resin. result is a custom-made affinity resin for purification of antibodies, gens and other molecules of interest.

Coupling of -SH/S-S Containing Proteins to SulfoLink Coupling Gel Columns

Protein	Molecular Weight	-SH Groups/ Molecule	S-S Groups/ Molecule	Coupling Efficiency
Ceruloplasm	150,000	1 and 3	----	75%
Aldolase	147,000	7 and 28	----	87%
BSA	66,000	0.7	17	25%
HSA	66,000	0.7	17	72%
Ovalbumin	45,000	3 and 4	1	40%
β-Lactoglobin	36,000	2	2	63%
Trypsin	24,000	0	6	13%
Thioredoxin	11,700	2	1	20%
[Arg^8]Vasopressin	1084	0	1	90%

Description	Medium	Capacity	Quantity	Cat. No.	Each
SulfoLink Coupling Resin	6% cross-linked beaded agarose	1mg of sulfhydryl-containing peptide/mL gel	10mL gel	**PI-20401**	121.11
			50mL gel	**PI-20402**	434.54

LOOKING FOR MORE PROTEIN PURIFICATION OPTIONS?

Visit www.fishersci.com and search for Protein Purification

PUMPS

PERISTALTIC

Fisher Scientific* Variable-Flow Chemical Transfer Pump

Precise, seamless speed control with all-day performance

Achieves all-day pulseless fluid transfer at variable rates by way of stepless "continuous-sweep" variable speed control.

15-077-67

- Direct-drive engineering maximizes power for smooth-rolling pump action
- Pumps fluids from 0.12 to 2.2L/min. with viscosity to 200 centipoise (0.2 Pa•s) and demonstrates suction lift of 10' wet
- Tolerates fluid temperatures from -40° to +93°C (-40° to +200°F)
- Barbed outlet ports accommodate any type of tubing with an inside diameter of 3/16"
- Chemical-resistant, wetted parts are DuPont* Delrin*, Type 304 stainless steel, Buna N, and PTFE
- Chemical-resistant ABS case
- PURGE/PRIME switch allows for high-speed emptying and filling
- Reverses to expedite tube draining

ORDERING INFORMATION:

Dimensions: 8L × 4¾W × 4½"H (20.3 × 12 × 11.5cm).
Net weight: 1 lb. (454g).

INCLUDES:

115V wall power supply

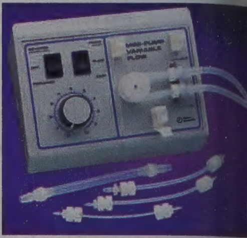
Flowrate Range	Cat. No.	Each
0.12 to 202L/min.	**15-077-67**	233.06

WHAT TUBING SHOULD I USE?

Need help in selecting the right tubing for your pump? You'll find the Tubing Selection Guide in the Tubing section.

Fisher Scientific* Variable-Flow Peristaltic Pumps

Compact peristaltic pumps for use with liquids and gases


13-876-4

- Bidirectional flow with precise measured deliveries
- Excellent flow control and flexibility for transferring and dosing liquids
- Ultralow-, low-, medium-, and medium high-flow models feature flowrates from 0.005 to 600mL/min. and accept up to five different tubing sizes
- Revolution of one roller delivers a precisely measured volume specific to tubing size and motor speed control
- Variable-speed motor control and PURGE/PRIME switch for high-speed emptying and filling
- Reverse mode permits ease in draining tubing
- Three rollers reduce flow pulsation, prevent siphoning, and eliminate the need for check valves
- Packaged in chemical-resistant ABS plastic case
- Autoclavable tubing may be used with fluid temperatures from -62° to +260°C (-80° to +500°F) and is ideal for food, pharmaceutical and other critical solutions

ORDERING INFORMATION:

Dimensions: 6⅝L × 4¾W × 4½"H (16.8 × 12 × 11.5cm).

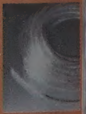
INCLUDES:

Silicone tubing (1/32, 1/16, 3/32, 3/16, and 1/4" I.D.), polypropylene fittings/nipples, 115VAC power supply and accessory battery connector (battery not supplied)

Model	Flowrate Range	Cat. No.	Each
Ultralow Flow	0.005 to 0.900mL/min.	**13-876-4**	186.03
Low Flow	0.03 to 8.20mL/min.	**13-876-1**	199.94
Medium Flow	0.4 to 85.0mL/min.	**13-876-2**	199.94
Medium-High Flow	10.0 to 600mL/min.	**13-876-3**	391.99

LOOKING FOR TUBING?

Fisher Scientific carries a large variety of plastic and rubber tubing as well as connectors and accessories. Find them in the Tubing section.



LOOKING FOR SYRINGE PUMPS?

Single, dual and multiple syringe pumps can be found in the Syringes section and on our Web site. Visit **www.fishersci.com** and search for Syringe Pumps.

*Trademark. See Trademark Reference.

ermo Scientific* Barnant* Manostat* Pumps and Dispensers

iable-flow, general-purpose pumps

ıble for pipetting, media dispensing, sampling, testing, filling, media prep, oil ysis, diagnostics, reagents, pharmaceuticals, and agrichemicals. Choose from : models (Simon* and Vera*) and dispensing models (Spencer* and Kate*).

ndard Features (for all models)

- erating temperature: 0° to 40°C
- ɡhted ON/OFF switch allows operator to maintain flow rate settings ıen pump is turned off
- 0hp motor with soft-start, reversible direction, and back EMF for 3% eed control
- emically resistant pumphead (molded of glass-filled Noryl*) has three lrin* rollers and plexiglass safety cover
- ackable painted steel housing is IP22

on Pump

- r emptying carboys or chemical containers, or for transferring distilled ıter from carboys; ideal for filtration or circulation
- ıwrate: 1 to 3450mL/min.
- e tubing from 1⁄32 to 5⁄16" I.D. (0.8 to 7.9mm)
- ıgle-direction analog speed control
- ımp motor reverses to purge lines
- mote-control model (13-874-652) has DB9 rear connector allowing ıote speed control (Requires 4 to 20mA or 2 to 10VDC input. Optional ıtswitch available; contact your Fisher Scientific Customer Service presentative)

ı Pump with Precision Digital Speed Control

- ɐal for a wide range of applications including general fluid transfer, ɛdium filtration, fluid circulation, and perfusions
- ıwrate: 1 to 3450mL/min.
- e pumped media contacts tubing only
- ature 2-digit digital speed setting for flowrate repeatability
- ck pressure capability: up to 35psi
- nensions: 10¼L × 9W × 5¾"H (26 × 23 × 15cm)

ncer Dispensing Pump

- r repetitive dispensing of volumes from 0.5 to 1700mL/cycle
- wrate: 2 to 5000mL/min.
- ır modes: Manual dispense, timed (with auto stop at preset volume), ıtinuous dispense cycle (with timed pause between discharges), and ıtinuous pump (uninterrupted)

15-078-27A

13-874-650

13-874-654

15-078-26A

- Analog single-turn speed control
- Dispense time control knob permits delay interval from 1 to 10 seconds between dispensing cycles
- Pump Status jack can operate remote relays
- Dimensions: 10¼L × 9W × 5¾"H (26 × 23 × 15cm)

Kate Dispensing Pump

- For repetitive dispensing of volumes from 0.5 to 1070mL/cycle
- Flowrate: 2 to 5000mL/min.
- Three modes: Manual dispense, timed (with auto stop at preset volume), and continuous pump (uninterrupted)
- Pump Status jack can operate remote relays
- Dimensions: 10¼L × 9W × 5¾"H (26 × 23 × 15cm)

INCLUDES:

Pumphead, removable 6' (1.8m) line cord, U.S. standard plug, tubing link; Spencer and Vera come with dispensing handle

COMPLIANCE:

IEC 1010

CERTIFICATIONS:

UL508, cUL listed.

ɐl	Speed Range	Accuracy	Flowrate Range	Dispensing Range	Electrical Requirements	Cat. No.	Each
Models							
n	24 to 720rpm	±3%	1 to 3450mL/min.	----	115V 50/60Hz, 1.5A	**13-874-650**	869.91
n	24 to 720rpm	±3%	1 to 3450mL/min.	----	115V 50/60Hz, 1.5A	**13-874-652**	1062.77
	24 to 720rpm	±3%	1 to 3450mL/min.	----	115V 50/60Hz, 1.5A	**13-874-654**	936.92
nsing Models							
cer	24 to 720rpm	±3%	2 to 5000mL/min.	0.5 to 1700mL/cycle	115V 50/60Hz, 1.5A	**15-078-27A**	1730.00
	24 to 720rpm	±3%	2 to 5000mL/min.	0.5 to 1070mL/cycle	115V 50/60Hz, 1.5A	**15-078-26A**	1315.00

' 50/60Hz models available. Visit our Web site or call your Fisher Scientific Customer Service Representative.

Thermo Scientific* Barnant* CompuLab* 3 Microprocessor Programmable Dispensing System

Modular design: Controller connects to up to four RD1 or RD2 pumps operating in any combination, independently or synchronously

- Eighty-character LCD guides setup and calibration, displays flowrate, cumulative volume and complete program parameters—including setup and running functions.
- Intuitive 20-key control pad with user prompts for parameter settings: volumes, flowrates, speed, up/down ramp time, tube size, direction, units of measure, delay time (speed and volume can be changed during operation)
- Memory stores up to 30 programs which can run manually (with supplied dispensing handle or optional footswitch); semiautomatically (in cycles); automatically (by specifying cycle count from 1 to 999); or by direct control from a PC. (Software is included; compatible with Windows* 95 and Windows NT*.)
- Manual or automatic timed delay cycling from 0.1 sec. to 2.780 hr., with antidrip feature
- Audible end-of-cycle alarm

ORDERING INFORMATION:
Dimensions, controller: 8¾L × 6⅛W × 3¼"H (22 × 16 × 8.2cm)

INCLUDES:
Pump and controller software

COMPLIANCE:
Meet IEC 1010 regulations

CERTIFICATIONS:
UL 508, cUL listed.
CE marked.

13-875 Series

Description	Electrical Requirements	Mfr. No.	Cat. No.	Each
Controller	Supplied by pump drives	72-767-000	**13-875-128**	867.36
RD1 Pump Drive	115/230VAC, 2A	72-777-100	**13-875-129**	1924.17
RD2 Pump Drive	115/230VAC, 2A	72-666-100	**13-875-127**	2196.17

Model	With RD1 Pump	With RD2 Pump
Flowrate Exchange	0.4 to 3450mL/min.	0.5 to 5000mL/min.
Dispensed Volume	Min. 2 to 175mL/cycle; to 5L max.	Min. 3 to 250mL/cycle; to 7L max.
Speed Range	12 to 720rpm, ±0.3%	12 to 720rpm, ±0.3%
Accuracy/Repeatability	±1.0%	±1.0%
Pump Dimensions (L × W × H)	8¾ × 10 × 5" (22 × 25 × 13cm)	9½ × 10½ × 6" (24 × 27 × 15cm)

ACCESSORIES

Transfer Tubing and Tubing Links for Manostat* and CompuLab* 3 Pumps

For use with Barnant Manostat and CompuLab 3 Pumps

- Load pumping links inside pump for accurate flowrates
- Extension tubing easily connects pumping links to pump system

Tubing I.D.			1/32"	1/16"	1/8"	3/16"	1/4"	5/16"
Hose Barb			1/16"	1/16"	1/8"	3/16"	1/4"	3/8"
Max. Pressure			15psi†	25psi†	25psi†	25psi†	15psi†	10psi†
Max. Vacuum			26"Hg	26"Hg	26"Hg	26"Hg	20"Hg	20"Hg
Tubing	**Use with Pumps**							
PharMed* Pumping Links	Vera, Simon, CompuLab RD1	**Cat. No.**	**13-875-400**	**13-875-401**	----	----	**13-875-404**	----
		Pack of 5	105.58	105.58	----	----	105.58	----
	Spencer, CompuLab RD2	**Cat. No.**	**13-875-409**	----	**13-875-411**	----	----	----
		Pack of 5	94.33	----	93.30	----	----	----
PharMed Extension Tubing	All Manostat Pumps	**Cat. No.**	**13-310-329**	**13-310-330**	**13-310-331**	**13-310-332**	----	**13-310-334**
		Each (25')	60.92	74.08	51.78	84.25	----	105.57
Silicone (platinum-cured) Pumping Links	Vera, Simon, CompuLab RD1	**Cat. No.**	**13-875-405**	**13-875-406**	**15-176-129**	----	**13-875-408**	----
		Pack of 5	105.58	105.58	104.81	----	105.58	----
	Spencer, CompuLab RD2	**Cat. No.**	----	**13-875-415**	**13-875-416**	----	**13-875-418**	----
		Pack of 5	----	106.18	105.58	----	105.58	----
Silicone (platinum-cured) Extension Tubing	All Manostat Pumps	**Cat. No.**	**13-310-335**	**13-310-336**	**13-310-337**	**13-310-338**	**13-310-339**	**13-310-340**
		Each (25')	43.72	48.77	54.87	73.10	79.18	84.26
Tygon* Pumping Links	Vera, Simon, CompuLab RD1	**Cat. No.**	**13-310-475**	**13-310-476**	**13-310-477**	**13-310-479**	**13-310-478**	----
		Pack of 5	88.17	88.17	88.17	88.17	89.36	----
	Spencer, CompuLab RD2	**Cat. No.**	**13-310-480**	----	**13-310-482**	----	**13-310-483**	----
		Pack of 5	94.33	----	93.30	----	94.33	----
Tygon Extension Tubing	All Manostat Pumps	**Cat. No.**	**13-310-323**	**13-310-324**	**13-310-325**	**13-310-326**	**13-310-327**	**13-310-328**
		Each (50')	21.49	30.46	61.11	62.94	69.03	91.36

† 10psi max. pressure using platinum-cured silicone.

*Trademark. See Trademark Reference.

Prices subject to change.

ermo Scientific* Barnant* Manostat* "Carter" Multichannel Pumps

al for virtually all pumping applications, including bioassays, electrophoresis, chromatography, and pH control

- ow ranges from 3μL to 760mL/min.
- ature remote control of speed (3.5 to 200rpm for all models), pumping ection, start/stop purge, as well as digital display of pump speed, rcent of maximum speed, or number of dispense cycles
- embrane keypad provides easy operation and protects controls from iid entry
- chometer output: 0–20mA, 4–20mA, 0–10VDC, or TTL pulse
- models come with pumphead and a set of large and/or small ssettes and feature a stainless-steel rotor, Rulon* rollers, and lysulfone ends
- mps offer offset, tangential, and adjustable occlusion
- mps 13-875-245 and -247 feature stainless-steel rollers

ORDERING INFORMATION:
230V (CE certified) models are available through your Fisher Scientific Customer Service Representative.

CERTIFICATIONS:
UL, cUL listed.

13-875-247

f Channels/Rollers	4/6	4/8	8/3	8/4	12/6	12/8
rate Range	0.0064 to 360mL/min.	0.006 to 68mL/min.	0.007 to 760mL/min.	0.007 to 600mL/min.	0.0012 to 74mL/min.	0.0012 to 14mL/min.
ettes Included	2 large	4 small	4 small/2 large	4 small/2 large	8 small/2 large	12 small
Cassettes Accommodated	4 small or 2 large	4 small/no large	8 small or 4 large	8 small or 4 large	12 small or 6 large	12 small/no large
trical Reqts.	115V 50/60Hz, 3.15A	115V 50/60Hz, 3.15A	115V 50/60Hz, 3.15A	115V 50/60Hz, 3.15A	115V 50/60Hz, 3.15A	115V 50/60Hz, 3.15A
No.	74-046-12131	74-048-12131	7-083-12131	74-084-12131	74-126-12131	74-128-12131
No.	**13-875-241**	**13-875-243**	**13-875-245**	**13-875-247**	**13-875-249**	**13-875-251**
	1676.88	1693.12	2044.34	2066.66	2438.17	2425.99

inkmann* Heidolph* Peristaltic Pumps

NEW

al for dispensing and transferring aggressive, abrasive and corrosive solvents as well as sterilized media

k easily under pressure or vacuum are self-priming with no valves eals. Choose from single-channel ultichannel configurations; pump es and heads are sold separately.

13-861-100

np Drive Standard Features

- events contamination—fluid is in ntact with tubing only
- ansports viscous media up to ,000mPa•s
- owrates from 0.3 to 3.644mL/min. $_2$O)
- ockwise and counterclockwise ections
- uble pumphead systems available
- ackable housing—two pump drives can be stacked
- erval dosing available on select drive models

np Drives for General Applications

- nvenient large dials for speed settings
- ectronic speed control with accuracy of ±2%
- otection class: IP 30
- odel PD 5001 can be equipped with single-channel, double-channel, multichannel pumpheads
- odel PD 5006 accepts single-channel pumpheads

np Drives for High Requirements

- ectronic speed control with accuracy of ±5%
- otection class: IP 55
- odel PD 5101 can be equipped with single-channel, double-channel, multichannel pump heads
- odel PD 5106 accepts single-channel pumpheads

Pump Drives for Highest Requirements

- ▸ Microprocessor-controlled
- ▸ Analog and digital RS-232C interface for speed
- ▸ Four-digit display for speed, flowrate, interval dosing and pause settings
- ▸ Calibration of flowrate and flow volume
- ▸ Flowrates of the pumpheads combinated with the various tubing are saved in the program to enable direct digital readout of flowrate/min. in display
- ▸ Dosing volume can be preselected
- ▸ Filling/emptying of tubing can be accelerated at the touch of a button
- ▸ Electronic speed control with accuracy of ±0.5%
- ▸ Protection class: IP 55
- ▸ Model PD 5201 can be equipped with single-channel or multichannel pumpheads
- ▸ Model PD 5206 accepts single-channel pumpheads

Single-Channel Pumpheads

- ▸ Allow fast and convenient tubing changes

ORDERING INFORMATION:
Pump drives and heads are sold separately; order one of each for a complete pump. (See ordering chart for possible combinations.) Pump packages (including drive, pumphead and tubing set) are available online in a variety of configurations. Dimensions (all drives): 10L × 6¼W × 8⅞"H (25.6 × 16.6 × 22.5cm).

REQUIRED ACCESSORIES:
Pumphead and tubing (sold separately); multichannel pumps require a cassette (available online)

COMPLIANCE:
DIN EN 60529 (see Ordering Chart for specific protection class)

Contd. on next page.

Brinkmann* Heidolph* Peristaltic Pumps, Contd.

Description	For Model	Electrical Requirements	Cat. No.	Each	Electrical Requirements	Cat. No.	Each
Single-Channel Pump Drives (Require Single-Channel Pumphead)							
PD 5001	----	115V 60Hz	**13-881-100**	1050.00	230V 50/60Hz	**13-881-101**	1050.00
PD 5006	----	115V 60Hz	**13-881-102**	982.00	230V 50/60Hz	**13-881-103**	982.00
PD 5101	----	115V 60Hz	**13-881-104**	1560.00	230V 50/60Hz	**13-881-105**	1560.00
PD 5106	----	115V 60Hz	**13-881-106**	1490.00	230V 50/60Hz	**13-881-107**	1490.00
PD 5201	----	115V 60Hz	**13-881-108**	2020.00	230V 50/60Hz	**13-881-109**	2020.00
PD 5206	----	115V 60Hz	**13-881-110**	1950.00	230V 50/60Hz	**13-881-111**	1950.00
Single-Channel Pumpheads							
SP Quick, 1.6mm	PD 5001, PD 5006, PD 5101, PD 5106, PD 5201, PD 5206	----	**13-881-138**	471.88	----	----	----
SP Quick, 2.5mm	PD 5001, PD 5006, PD 5101, PD 5106, PD 5201, PD 5206	----	**13-881-139**	471.88	----	----	----
SP Quick d, 1.6mm	PD 5001, PD 5006, PD 5101, PD 5106, PD 5201, PD 5206	----	**13-881-140**	575.00	----	----	----
SP Quick d, 2.5mm	PD 5001, PD 5101, PD 5201	----	**13-881-141**	575.00	----	----	----
SP Standard, 1.6mm	PD 5001, PD 5101, PD 5201	----	**13-881-142**	360.68	----	----	----
SP Standard, 2.5mm	PD 5001, PD 5006, PD 5101, PD 5106, PD 5201, PD 5206	----	**13-881-143**	360.68	----	----	----
SP Vario†	PD 5001, PD 5006, PD 5101, PD 5106, PD 5201, PD 5206	----	**13-881-144**	885.00	----	----	----
Multichannel Pump Drives (Require Multichannel Pumphead)							
PD 5001 MC	----	115V 60Hz	**13-881-112**	1150.00	230V 50/60Hz	**13-881-113**	1150.00
PD 5101 MC	----	115V 60Hz	**13-881-114**	1660.00	230V 50/60Hz	**13-881-115**	1660.00
PD 5201 MC	----	115V 60Hz	**13-881-116**	2125.00	230V 50/60Hz	**13-881-117**	2125.00
Multichannel Pumpheads							
C4	PD 5001 MC, PD 5101 MC, PD 5201 MC	----	**13-881-147**	785.00	----	----	----
C8	PD 5001 MC, PD 5101 MC, PD 5201 MC	----	**13-881-146**	1237.00	----	----	----
C12	PD 5001 MC, PD 5101 MC, PD 5201 MC	----	**13-881-145**	1960.00	----	----	----

† Suitable for most Heidolph tubing due to adjustable roller spacing.

SPECIFICATIONS

Pump Drive Model	**PD 5001**	**PD 5006**	**PD 5101**	**PD 5106**	**PD 5201**	**PD 5206**
For Single-Channel Pumpheads	SP Quick, SP Quick d, SP Standard, SP Vario	SP Quick, SP Quick d, SP Vario	SP Quick, SP Quick d, SP Standard, SP Vario	SP Quick, SP Quick d, SP Vario	SP Quick, SP Quick d, SP Standard, SP Vario	SP Quick, SP Quick d, SP Vario
For Multichannel Pumpheads	C4, C8, C12	N/A	C4, C8, C12	N/A	C4, C8, C12	N/A
Flowrates, Single-channel Pumps (mL)	0.7 to 729	3.3 to 3644	0.3 to 729	1.6 to 3644	0.3 to 729	1.6 to 3644
Flowrates, Multichannel Pumps (mL)	0.01 to 336	N/A	0.005 to 336	N/A	0.005 to 336	N/A
Flowrate Accuracy†	±5%	±5%	±3.5%	±3.5%	±1%	±2%
Speed Range (rpm)	10 to 120	50 to 600	5 to 120	24 to 600	5 to 120	24 to 600
Speed Setting	Scale	Scale	Digital	Digital	Digital	Digital
Speed Control/Accuracy	Analog, ±2%	Analog, ±2%	Digital, ±0.5%	Digital, ±0.5%	Digital, ±0.5%	Digital, ±0.5%
Rotational Direction	2-way	2-way	2-way	2-way	2-way	2-way
Motor Control	Condenser	Condenser	DC	DC	DC	DC
Motor Power	71w	71w	100w	100w	100w	100w
Digital Interface	----	----	----	----	RS-232	RS-232
Flowrate Indicator	----	----	----	----	Digital	Digital
Volume Dosing (mL)‡	----	----	----	----	0.1 to 9999	0.1 to 9999
Interval Dosing (mL)‡	----	----	----	----	0.1 to 9999 in breaks 0.1 sec. to 750 hr.	0.1 to 9999 in breaks 0.1 sec. to 750 hr.
Smooth Start	----	----	----	----	Yes	Yes
Electronic Brake	----	----	----	----	Yes	Yes
Foot-Switch Connection	----	----	Yes	Yes	Yes	Yes
Software	----	----	----	----	Available	Available
Operating Time (per day)	24 hr.	24 hr.	24 hr.	24 hr.	24 hr.	24 hr.
Safety Feature(s)	Overheat protection	Overheat protection	Overheat protection, electric current limiter	Overheat protection, electric current limiter	Overheat protection, electric current limiter	Overheat protection, electric current limiter
Protection Class (DIN EN 60529)	IP 30	IP 30	IP 55	IP 55	IP 55	IP 55
Permissible Ambient Temperature Range (at 80% RH)	0 to 40°C	0 to 40°C	0 to 40°C	0 to 40°C	0 to 40°C	0 to 40°C

† Flowrate accuracy pertains to water without counter pressure.
‡ Tubing size 0.2, 0.5 and 0.9 pertains to μL measurement, not mL.

*Trademark. See Trademark Reference.

atson-Marlow* Sci-Q 300 Series eristaltic Pumps

metering or transfer of fluids at flowrates up to 0mL/min.

14-284-118 with tubing (not included)

ilable in four models to meet laboratory pumping applica-

3D flip-top pumphead for sim-e, error-free tube loading

ate-of-the-art brushless DC otor technology for precise eed regulation and quiet eration

gonomic controls and large LCD display for pump speed in rpm, rection of rotation, and run status

mphead accepts seven tube sizes to meet any flow requirement

S/D Standard

eneral-duty pump for precise metering or transfer duties

ow range: 0.1-2000mL/min.

eed range: 3 to 400rpm (adjustable in 1rpm increments)

E/D

r general metering or transfering

ow range: 0.45-2000mL/min.

eed range: 15 to 400rpm (adjustable in 5rpm increments)

S/MC4 and 32S3/MC8

e-channel pump for metering and transfering

ow range: 0.001-53mL/min. (323S/MC4), 0.001-36mL/min. (323S/MC8)

eed range: 3 to 400rpm

z/D

ogrammable dispensing pump with accuracy ±0.5%

r repeated dosing of volumes from 1 to 10L

ow range: 0.1-2000mL/min.

eed range: 3 to 400rpm (adjustable in 1rpm increments)

DERING INFORMATION:

ensions: 9L × 9W × 5"H (23 × 23 × 13cm); for 110-120/220-240V 0Hz, single phase

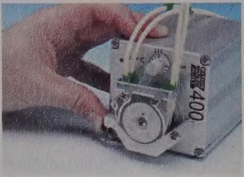
UIRED ACCESSORIES:

ng (sold separately online; see Watson Marlow Pump Tubing)

lel	Flowrate Range [dispensing]	Speed Range	Cat. No.	Each
S/D	0.1 to 2000mL/min.	3 to 400rpm	**14-284-118**	1625.50
E/D	0.45 to 2000mL/min.	15 to 400rpm	**14-284-120**	1075.95
S/MC4	0.001 to 53mL/min.	3 to 400rpm	**14-283-227**	1800.00
S/MC8	0.001 to 36mL/min.	3 to 400rpm	**14-283-228**	1865.50
Dz/D	0.1 to 2000mL/min.	3 to 400rpm	**14-283-6**	3120.00

Watson-Marlow* Sci-Q 401U/D Series Variable Speed Peristaltic Pumps

Compact single-channel or multichannel pumps



14-284-122

- Feature spring-loaded tracks for consistent flows and long tube life
- Single knob controls all functions including start/stop, direction and speed
- Can be remotely controlled

401U/D1 models

- Compact, single-channel pumps flow up to 120mL/min. using continuous tubing

401U/DM2 and 401U/DM3 models

- Multiple-channel pumps accept manifold tubing to match any flow range

ORDERING INFORMATION:

Dimensions: 5⅝L × 3¼W × 3¼"H (14 × 8 × 8cm). For 110-120V 50/60Hz single phase to 15VAC power pack (supplied). Order tubing separately (online).

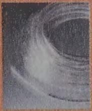
REQUIRED ACCESSORIES:

Tubing (sold separately)

Model	Speed Range	Flowrate Range	Cat. No.	Each
Single-Channel Pumps				
401U/D1	1.2 to 12rpm	0.01 to 7.0mL/min.	**14-284-121**	1012.71
401U/D1	4.0 to 40rpm	0.05 to 23.0mL/min.	**14-284-124**	1012.71
401U/D1	20 to 200rpm	0.23 to 120mL/min.	**14-284-129**	1012.71
2-Channel Pumps				
401U/DM2	1.2 to 12rpm	0.001 to 4.4mL/min.	**14-284-122**	1039.49
401U/DM2	4.0 to 40rpm	0.004 to 15mL/min.	**14-284-125**	1039.49
401U/DM2	10 to 100rpm	0.009 to 36mL/min.	**14-284-127**	1039.49
3-Channel Pumps				
401U/DM3	1.2 to 12rpm	0.001 to 4.4mL/min.	**14-284-123**	1070.00
401U/DM3	4.0 to 40rpm	0.004 to 15mL/min.	**14-284-126**	1070.00
401U/DM3	10 to 100rpm	0.009 to 36mL/min.	**14-284-128**	1070.00

LOOKING FOR TUBING?

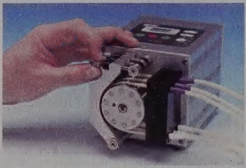
Fisher Scientific carries a large variety of plastic and rubber tubing as well as connectors and accessories. Find them in the Tubing section.



Watson-Marlow* Sci-Q 403U/VM Precision Multichannel Pumps

Precise two-, three- and four-channel pumps designed for flows from 0.001 to 17mL/min.

- Membrane keypad control with LED display for speed and direction
- Can be remotely controlled
- Accept manifold tubing to closely match the flow range
- Feature 10 stainless-steel rollers for low pulsation; spring-loaded tracks for long tube life
- With individual occlusion adjustment on each channel for precise flow control


14-284-131

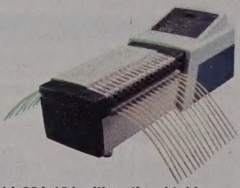
ORDERING INFORMATION:
For 100-120VAC 50/60Hz, single phase. Tubing sold separately

No. of Channels	Speed Range	Flow Range	Dimensions	Cat. No.	
2	0.5 to 10rpm	0.001 to 3.4mL/min.	6⅞L × 4¼W × 4½"H (17.7 × 10.5 × 11.3cm)	**14-284-130**	209
3	0.5 to 10rpm	0.001 to 3.4mL/min.	7⅝L × 4¼W × 4½"H (19.2 × 10.5 × 11.3cm)	**14-284-131**	220
4	0.5 to 10rpm	0.001 to 3.4mL/min.	8⅜L × 4¼W × 4½"H (21.2 × 10.5 × 11.3cm)	**14-284-132**	231
2	2.5 to 50rpm	0.003 to 17mL/min.	6⅞L × 4¼W × 4½"H (17.7 × 10.5 × 11.3cm)	**14-284-136**	209
3	2.5 to 50rpm	0.003 to 17mL/min.	7⅝L × 4¼W × 4½"H (19.2 × 10.5 × 11.3cm)	**14-284-137**	220
4	2.5 to 50rpm	0.003 to 17mL/min.	8⅜L × 4¼W × 4½"H (21.2 × 10.5 × 11.3cm)	**14-284-138**	231

Watson-Marlow* Sci-Q 205U/CA and 205S/CA Multichannel Cartridge Pumps

Precision multichannel pumps provide accurate pulse-free flows in 4-32 channels

- Flowrate: 0.0006 to 22mL/min. (speed range 0.5 to 90rpm) per channel
- Eight roller head and specially designed cartridges minimize pulsation
- Add or remove cartridges without disturbing pumping action of remaining channels
- Auto restart option enables automatic recovery from power failures
- Cartridges can be adjusted individually for precise flow
- Autoanalysis tubing available to match any flow range (tubing sold separately)


14-284-104 with optional tubing

205U/CA Models

- Auto control by a voltage or milliamp signal

ORDERING INFORMATION:
Dimensions: 5¾W × 6⅛"H (14.6 × 15.6cm); length varies with the number of channels. Tubing sold separately

INCLUDES:
Pump only

REQUIRED ACCESSORIES:
Tubing (sold separately)

Flowrate Range	0.0006 to 22mL/min.
Maximum rpm	90
Electrical Requirements	110-120/220-240V (selectable) 50/60
Speed Control	Digital Closed Loop

		205S/CA Manual		205U/CA Manual/Anal	
No. of Channels	**Length (Front to Back)**	**Cat. No.**	**Each**	**Cat. No.**	**E**
4	11½" (29cm)	**14-284-101**	3300.00	**14-284-109**	3720.
8	13" (33cm)	**14-284-102**	3720.00	**14-284-110**	4130.
12	15" (38cm)	**14-284-103**	4010.00	**14-284-111**	4430.
16	17" (43cm)	**14-284-104**	4300.00	**14-284-112**	4720.
20	20⅞" (53cm)	**14-284-105**	5900.00	**14-284-113**	6320.
28	24¾" (63cm)	**14-284-107**	6610.00	**14-284-115**	7035.
32	26¾" (68cm)	**14-284-108**	6900.00	**14-284-116**	7320.

LOOKING FOR SYRINGE PUMPS?

Single, dual and multiple syringe pumps can be found in the Syringes section. Also available online.

Visit www.fishersci.com and search for Syringe Pump

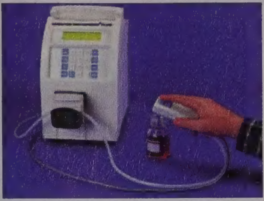
LOOKING FOR TUBING?

Watson-Marlow* Pump tubing is available online.

Visit www.fishersci.com and search for Watson-Marlow

heaton Variable Speed Omnispense* Plus Peristaltic Dispensing Pump

al for dispensing everything from perfume to cell culture media, as well as numerous liquids ranging in cosity from aqueous solutions to medium syrups—all with ≤1% accuracy midrange


13-687-441

microprocessor controls, uding programmable soft start. -step volume calibration. -prompting LCD readout.

licroprocessor stores up to 00 setups for quick recall

ump supports numerous tubing zes (see chart at right) and up three pumpheads for easy ultiple dosing

ispensed liquids remain contained ithin the tubing to allow for quick, noncontaminating changes

everse-flow capability permits aspirating operations and relieves pressure the tubing to help eliminate drips.

uilt-in constant-flowrate dispenser is fully programmable and delivers a reset volume over a specific period of time

ultilanguage display prompts preset to English, but can easily be ianged to French, German, Italian, Portuguese, or Spanish

onvenient handheld tubing holder with START and STOP switch llows remote filling or use under a hood

- ▸ External connection enables remote start/stop
- ▸ Built-in tubing support securely holds the tubing required to fill containers

ORDERING INFORMATION:
Dimensions: 12L × 6W × 10"H (30 × 15 × 25cm). Weight, 15 lb. (6.8kg).

INCLUDES:
2.3mm pumphead

CERTIFICATIONS:
UL listed, CSA approved, CE marked

TUBING SIZES

Extended-life heavy-wall (2.3mm) tubing:	2, 3, 4.5, 6, and 8mm I.D.
Standard-wall (1.6mm) tubing:	0.8, 1.2, 1.6, 1.8, 2.4, 3.2, 4.8, and 6.4mm

Electrical Requirements	Mfr. No.	Cat. No.	Each
100-120V, 50/60Hz, 0.78A	W375020-A	**13-687-441**	2921.23

heaton Unispense* Peristaltic Pumps

croprocessor-controlled dispenser designed to handle liquids from aqueous solutions to medium syrups

ly programmed to store all parameters for up to 10 routine filling ps. Available with standard-size or mini pumphead.

uch membrane keypad for simple parameter entry: volume, tubing size, itomatic delay interval, and dose count

ne-step volume calibration

elay times available: 0.5 to 60 seconds in automatic mode

tegral dose counter helps prevent overdosing

ispensed liquid never touches pump, cannot contaminate pump parts

BS plastic case

h standard-size pumphead

elivery range: up to 5000mL (with optional 8mm I.D. tubing)

clude dispensing unit and one 3 and one 6mm silicone tubing assembly

ee chart for filling ranges and flowrates

h mini pumphead

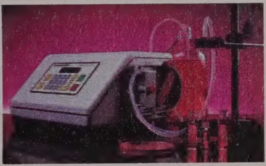
elivery range: 0.25 to 150mL

ame as pump with standard-size pumphead, except with a four-bladed ini pumphead and two 2mm I.D. silicone tubing assemblies

No.	Electrical Requirements	Cat. No.	Each
standard-size pumphead			
301	110-120VAC 60Hz, 1.3A	**13-683-7**	2398.81
302	220-240VAC 50/60Hz, 1.3A†	**13-683-25**	2398.81
mini pumphead			
307	110-120VAC 60Hz, 1.3A	**13-683-26**	2231.12
309	220-240VAC 50/60Hz, 1.3A†	**13-683-19**	2231.12

ernational model.

ORDERING INFORMATION:
Tubing assemblies in silicone and Viton* are available for use with the standard pumphead; (Cat. Nos. 13-683-8 through -13). All tubing is fully autoclavable. Order tubing support stand separately (13-683-4). Dimensions: 13L × 9½W × 6½"H (33 × 24.1 × 16.5cm).


13-683-7

For Use With	Tubing Size (I.D.)	Filling Range	Flowrate
Mini Pumphead	2mm	0.25 to 150mL	0.45mL/sec.
Standard Pumphead	3mm	1.0 to 900mL	2mL/sec.
Standard Pumphead	6mm	2.5 to 3000mL	9mL/sec.
Standard Pumphead	8mm	4.0 to 5000mL	36mL/sec.

ACCESSORIES

Tubing Assemblies

I.D.	Material	Mfr. No.	Cat. No.	Each
3mm	Silicone	374311	**13-683-8**	66.63
6mm	Silicone	374313	**13-683-9**	85.06
8mm	Silicone	374314	**13-683-10**	87.20
3mm	Viton*	374316	**13-683-11**	87.03
6mm	Viton	374318	**13-683-12**	114.80
8mm	Viton	374319	**13-683-13**	157.07

VACUUM—OIL FREE

Fisher Scientific* MaximaDry* Oil-Free Vacuum Pumps

Clean, reliable, oil-free vacuum pumps are ideal for use with rotary evaporators, gel dryers, filtration flasks and manifolds, vacuum ovens and concentrators

Quiet, operation without the hazards of handling pump oil or contaminated water. Excellent replacement for rotary vane pumps and water aspirators, especially in applications where corrosive vapors are encountered.

- Two-stage vacuum to 1.5 torr
- Withstand aggressive gases and vapors—can be used with aggressive solvents without the risk of damaging the pump
- Single-piece diaphragm and molded pumpheads are made from PTFE to provide corrosion resistance
- High-flow multiport valves are made from tough Kalrez* elastomers to withstand pumping heavy solvent vapors and liquid condensate without a loss in performance
- Fan-cooled (TEFC) motor is rated for continuous operation and never needs lubrication
- Compact design fits easily on a benchtop or in a fume hood
- Setup and disassembly are quick and easy and do not require any special tools

MaximaDry
Fisher Scientific

13-880 Se

ORDERING INFORMATION:
Plug into standard electrical outlet; no hardwiring required

REQUIRED ACCESSORIES:
⅜" I.D. tubing

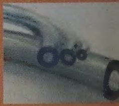
Head Configuration	Capacity	Vacuum	Pressure	Motor	Shipping Weight	Dimensions (L × W × H)	Electrical Requirements	Cat. No.	Ea
One Stage	20L/min.	75 torr	15psig	⅙hp	21 lb. (9.5kg)	13 × 6½ × 8½" (33 × 16.5 × 22cm)	115V 60Hz	**13-880-14**	1250
One Stage	20L/min.	75 torr	15psig	⅙hp	21 lb. (9.5kg)	13 × 6½ × 8½" (33 × 16.5 × 22cm)	230V 50Hz	**13-880-15**	1250
Parallel	40L/min.	65 torr	15psig	⅙hp	21 lb. (9.5kg)	15 × 6½ × 8½" (38 × 16.5 × 22cm)	115V 60Hz	**13-880-16**	1625
Parallel	40L/min.	65 torr	15psig	⅙hp	21 lb. (9.5kg)	15 × 6½ × 8½" (38 × 16.5 × 22cm)	230V 50Hz	**13-880-17**	1625
Two Stage	20L/min.	6 torr	15psig	⅙hp	21 lb. (9.5kg)	15 × 6½ × 8½" (38 × 16.5 × 22cm)	115V 60Hz	**13-880-18**	1550
Two Stage	20L/min.	6 torr	15psig	⅙hp	21 lb. (9.5kg)	15 × 6½ × 8½" (38 × 16.5 × 22cm)	230V 50Hz	**13-880-19**	1550
Two Stage	35L/min.	6 torr	15psig	⅓hp	27 lb. (12.2kg)	16 × 7 × 9" (40.6 × 17.8 × 23cm)	115V 60Hz	**13-880-20**	2100
Two Stage	35L/min	6 torr	15psig	⅓hp	27 lb. (12.2kg)	16 × 7 × 9" (40.6 × 17.8 × 23cm)	230V 50Hz	**13-880-21**	2100
Two Stage	35L/min	1.5 torr	15psig	⅓hp	27 lb. (12.2kg)	16 × 7 × 9" (40.6 × 17.8 × 23cm)	115V 60Hz	**13-880-22**	3100
Two Stage	35L/min	1.5 torr	15psig	⅓hp	27 lb. (12.2kg)	16 × 7 × 9" (40.6 × 17.8 × 23cm)	230V 50Hz	**13-880-23**	3100

LOOKING FOR ROTARY EVAPORATORS?

Evaporation systems are available to work with your pump or for your application. Look for the Brinkmann*/Heidolph* LABOROTA 4000, and Büchi Rotavoror R-210, R-215, and RII in the Evaporators section.

LOOKING FOR TUBING?

For help selecting the right size tubing, please refer to the Tubing Guide in the Tubing section.



NEED A VACUUM OVEN?

Glassware drying, precipitates, degassing, curing, process control—whatever your application, Fisher Scientific has a vacuum oven to suit your needs. Combine it with a vacuum pump for optional performance. For more information see the Ovens section.

*Trademark. See Trademark Reference.

Prices subject to change.

IF Laboport* Chemically Resistant Dry Vacuum Pumps

et, reliable operation without the hazards associated with handling messy pump oils or contaminated stewater generated by aspirators

dle corrosive and
essive vapors
out damage.
l-free
owrates to
L/min.
d vacuums to 1.5 torr
ature solid PTFE heads and diaphragms to protect
ainst corrosives and aggressive vapors
ultiport Kalrez* valves withstand the ingestionof condensed vapors
ithout the risk of damaging the pump or degrading peformance

13-878 Series

APPLICATIONS:

Recommended for: **Rotary evaporators** (13-878-27, -35, and -29), **Vacuum concentrators** (13-878-29 and -35), **Gel dryers** (13-878-27 and -29), **Vacuum ovens** (13-878-27, -29, and -35), **General vacuum applications** (13-878-40, -42, -44, and -46)

ORDERING INFORMATION:

Stand-Alone Vacuum Controller for use with 13-878-27, -29 and -35 Vacuum Pumps is also available on our Web site.

				For 115V 60Hz		For 230V 50Hz	
vrate	End Vacuum	Pressure	Dimensions (L × W× H)	Cat. No.	Each	Cat. No.	Each
/min.	75 torr	15psig	11 × 5½ × 7¼" (27.9 × 13.97 × 18.5cm)	**13-878-40**	1145.00	----	----
/min.	6 torr	15psig	11 × 5½ × 7¼" (27.9 × 13.97 × 18.5cm)	**13-878-25**[1]	1515.00	**13-881-00**	1515.00
/min.	6 torr	15psig	12¼ × 6¼ × 8" (31.2 × 16 × 20.3cm)	**13-878-27**[1]	1740.00	**13-881-01**	1740.00
/min.	75 torr	15psig	12¼ × 6¼ × 8" (31.2 × 16 × 20.3cm)	**13-878-42**[1]	1365.00	----	----
/min.	1.5 torr	15psig	13 × 6¾ × 8¾" (33 × 17.3 × 22.3cm)	**13-878-35**	3500.00	----	----
/min.	6 torr	15psig	13 × 6¾ × 8" (33 × 17.3 × 20.3cm)	**13-878-29**[1]	2350.00	**13-881-02**	2350.00
/min.	75 torr	15psig	13 × 6¾ × 8¾" (33 × 17.3 × 22.3cm)	**13-878-44**[1]	1725.00	**13-881-03**	1725.00
/min.	68 torr	15psig	13 × 6¾ × 8¾" (33 × 17.3 × 22.3cm)	**13-878-46**	2365.00	----	----

230V 50Hz models, contact your Fisher Scientific Customer Service Representative.

OPORT* PUMPS FOR EVERY APPLICATION:

Application:	Use Laboport Pump:
ary Evaporators	**13-878-27, -35, and -29**
uum Concentrators	**13-878-29 and -35**
Dryers	**13-878-27 and -29**
uum Ovens	**13-878-27, -29 and -35**
eral Vacuum Applications	**13-878-40, -42, -44 and -46**

IF Laboport* Vacuum Systems

mpact, modular systems with flexible components using Laboport vacuum pumps

l for use in rotary evaporation, ple distillation and for lications that require precise uum control.

ic Components

ystems include modular
quipment and plug-in connectors
r easy setup and cleanup
turdy baseplate supports system accessories
olid-state, programmable Vacuum Controller cycles the pump on
nd off for precise control of system vacuum
D control panel enables adjustment of the vacuum level between 2
nd 999mbar and storage of five different setpoints and their respective
ysteresis

13-878-54 (13-878-53 inset)

878-54

leal for simple vacuum distillations of low-boiling-point solvents (<80°C)
ncludes a 20L/min., 6 torr end vacuum Laboport pump

878-55

or distillations of solvents with higher boiling points (80° to 100°C)
ncludes a 34L/min., 6 torr end vacuum Laboport pump

13-878-56

- For distillation of highest boiling-point solvents and reflux reactions
- Includes a 34L/min., 1.5 torr end vacuum Laboport pump

ORDERING INFORMATION:

For 115V 60Hz. Dimensions: 13L × 8W × 16"H (33 × 20 × 41cm).

INCLUDES:

Operating and maintenance manuals, service kit list, and troubleshooting guide

Pump Included[1]	Flowrate	End Vacuum	Cat. No.	Each
13-878-27	20L/min.	6 torr	**13-878-54**	4984.00
13-878-29	34L/min.	6 torr	**13-878-55**	5562.00
13-878-35	34L/min.	1.5 torr	**13-878-56**	6648.00

[1] For details on these pumps, see above.

LOOKING FOR ROTARY EVAPORATORS?

Evaporation systems in various configurations can be found in the Evaporators section.

KNF PowerDry* Vacuum Pumps

Ideal for use in rotary evaporation, simple distillation, vacuum ovens and other applications involving wet vapor

During cleaning cycle, the electronically controlled purge valve provides a burst of ambient air that rapidly clears any accumulated moisture from the pumpheads out through the discharge port. Maintains vacuum levels by closing the pump suction valve during the purge cycle.

- Integrated controller cycle times are factory set for optimum performance and are field adjustable
- Premium, corrosion-resistant PTFE and Kalrez* resins used throughout
- Oil-free for contamination-free pumping
- Easily disassembled for occasional cleaning without special tools
- ⅜" hose barbs included

ORDERING INFORMATION:
For 115V 60Hz. 230V 50Hz units are available; contact your Fisher Scientific Customer Service Representative.

PowerDry
KNF
LABOPORT

13-880-

LOOKING FOR VACUUM OVENS?
Fisher Scientific carries a wide variety of vacuum ovens to meet any of your drying needs. See the Ovens section.

Flowrate	End Vacuum	Dimensions (L x W x H)	Cat. No.	E
20L/min.	8 torr	12½ × 6¼ × 7¾" (32 × 16 × 20cm)	**13-880-13**	2190.
34L/min.	3 torr	13 × 6½ × 8½" (33 × 17 × 22cm)	**13-880-11**	3950.
34L/min.	8 torr	13 × 6½ × 8½" (33 × 17 × 22cm)	**13-880-12**	2800.
60L/min.	3 torr	13 × 11¼ × 11" (33 × 29 × 28cm)	**13-880-10**	4450.

KNF Laboport* Filtration Pumps

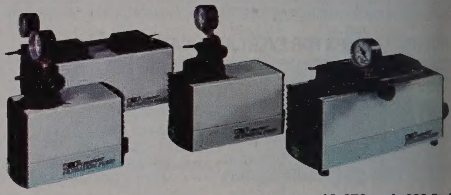
Series of compact and lightweight pumps designed for many filtration applications

No metal or coated-metal parts within the Ryton* pumpheads; prevents pitting and corroding. Structured PTFE diaphragms supply consistent, reliable vacuum levels; not dependent on water pressure or temperature. Multiport Viton* (13-880-34 and 13-878-52 only) or Kalrez* valves exhibit high tolerance to occasional liquid condensate, so a trap is not required except in those applications where large volumes of liquid are anticipated.

- Oil-free
- Low maintenance
- Small footprint; requires little bench space
- Available as stand alone or with vacuum gauge/regulator assembly
- Assembly is comprised of dampened solid-brass gauge and fine needle adjustment valve for convenient regulation of vacuum levels without needle bounce

13-878-38
- For bottletop filtration and disposable filtration assemblies with collection flasks <500mL

13-878-34
- For bottletop filtration, disposable filtration assemblies with collection flasks >500mL; glass filtration assemblies with flasks <1L; and to replace one aspirator



13-878 and -880 Seri

13-880-32
- For vacuum manifold filtration; glass filtration assemblies with flasks >1L; vacuum dot-, spot-, and slot-blots; and to replace a house vacuum port or two aspirators

13-880-30
- Ideal for solvent filtration and degassing, and vacuum desiccation

ORDERING INFORMATION:
For 115V 60Hz. For Dry Ice Cold Trap, search Cat. No. 13-878-57 or call yo Fisher Scientific Customer Service Representative.

					Pump Only		With Vacuum Gauge/Regulator Assembl	
Flowrate	End Vacuum	Pressure	Dimensions (L × W × H) (Pump Only)	Weight	Cat. No.	Each	Cat. No.	Ea
5.5L/min.	120 torr (25.2"Hg)	35psi	7⅛ × 3½ × 6" (18 × 9 × 15cm)	4¼ lb. (1.9kg)	**13-878-38**	450.00	**13-878-50**	540.
13L/min.	75 torr (28"Hg)	N/A[1]	7⅞ × 3½ × 6¾" (20 × 9 × 17cm)	5½ lb. (2.5kg)	**13-880-34**	515.00	**13-878-52**	600.
16L/min.	15 torr (29.3"Hg)	7.5psi	14¼ × 3½ × 5½" (36 × 9 × 14cm)	8¾ lb. (4kg)	**13-880-30**	810.00	**13-880-31**	940.
30L/min.	120 torr (25.2"Hg)	7.5psi	14¼ × 3½ × 5½" (36 × 9 × 14cm)	8¾ lb. (4kg)	**13-880-32**	810.00	**13-880-33**	940.

[1] *Vacuum only.*

*Trademark. See Trademark Reference.

Prices subject to change.

F* Neuberger Chemically Resistant cuum Pumps

l suited for gas transfer, general laboratory pumping, l applications using rotary evaporators, dryers, illers, and filtration devices

13-878-1

 corrosive gases without the need old traps, drinking water, or pump Eliminate the need to dispose of ator-generated wastewater or t pump oil.

aximum pressure, 20psig vo-stage model is vacuum only)

FE/Kalrez* wetted parts ensure ng, trouble-free life

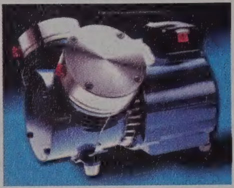
FE-coated diaphragm simplifies eaning and eliminates the need for metal clamping disc

sily disassemble in about 10 minutes without special tools

-Flow acity	End Vacuum	Dimensions (L × W × H)	Electrical Reqts.	Cat. No.	Each
'min. le Head	28"Hg (50 torr)	8 × 4¼ × 7¼" (20 × 11 × 18cm)	115V 60Hz, 1.2A	**13-878-1**	1050.00
'min. llel Head	28"Hg (50 torr)	9¾ × 8 × 7¼" (25 × 20 × 18cm)	115V 60Hz, 2.0A	**13-878-2**	1575.00
'min. Two-stage uum only)	29.5"Hg (10 torr)	9¾ × 8 × 7¼" (25 × 20 × 18cm)	115V 60Hz, 2.0A	**13-878-3**	1540.00

KNF* Neuberger 316SS Vacuum Pumps and Compressors

Ideal for gas transfer applications (except two-stage) and for use with rotary evaporators, dryers, distillers, filtration devices, and as a general vacuum source for the lab


13-878-8

Pump corrosive gases without the need for cold traps, drinking water or pump oil. Eliminate the need to dispose of aspirator-generated wastewater or spent pump oil.

- Maximum pressure, 60psig (two-stage model is vacuum only)
- Type-316 stainless-steel and PTFE wetted parts
- Easily disassemble without the need for special tools
- Pump thread size is ¼ NPTF

ORDERING INFORMATION:

For 115V 60Hz. 230V units are available; contact your Fisher Scientific Customer Service Representative to order.

Free-flow Capacity	End Vacuum	Dimensions (L × W × H)	Cat. No.	Each
30L/min.	27"Hg (75 torr)	10 × 5½ × 10" (25 × 14 × 25cm)	**13-878-4**	1225.00
56L/min.	27"Hg (75 torr)	11 × 10 × 10" (28 × 25 × 25cm)	**13-878-6**	1980.00
30L/min. (Vacuum only)	29.5"Hg (10 torr)	11 × 10 × 10" (28 × 25 × 25cm)	**13-878-8**	1990.00

elch* DryFast* Tuneable Chemical-Duty Vacuum Pumps

NEW

signed for use with rotary evaporators, concentrators and vacuum ovens

01-257-500

eable features allow operator to set vacuum to optimum level. Adjustability enables maximum vacuum while inating bumping, foaming and other high vacuum problems.

mpact and quiet

l-free and corrosion-resistant

rrosion-resistant fluorinated plastic on all wetted surfaces

ses ¼" (7mm) I.D. tubing

DERING INFORMATION:

115V 60Hz. All pumps weigh less than 25 lb. (11.4kg).

lel	Free Air Displacement	Ultimate Pressure	Dimensions (L × W × H)	Cat. No.	Each
: Dry Pumps for <50°C Boiling Point Solvents					
0B-01	12.7L/min.	110 torr (25.2"Hg)	6⅜ × 5½ × 7½" (16 × 14 × 19cm)	**01-129-3**	874.00
2B-01	22L/min.	100 torr (26"Hg)	7 × 10 × 6⅞" (17.8 × 25.4 × 17.5cm)	**01-129-25**	1097.00
ast Pumps for <100°C Boiling Point Solvents					
4B-01[†]	25L/min.	9 torr (29.6"Hg)	13⅞ × 6⅞ × 8⅞" (35.2 × 17.2 × 22.3cm)	**01-257-502**	1534.00
4B-01[†]	35L/min.	9 torr (29.6"Hg)	13⅞ × 6⅞ × 8⅞" (35.2 × 17.2 × 22.3cm)	**01-257-508**	1906.00
7B-01[†]	50L/min.	35 torr (28.5"Hg)	13⅞ × 6⅞ × 8⅞" (35.2 × 17.2 × 22.3cm)	**01-257-504**	1694.00
7B-01[†]	70L/min.	35 torr (28.5"Hg)	13⅞ × 6⅞ × 8⅞" (35.2 × 17.2 × 22.3cm)	**01-257-510**	2119.00
ast Ultra Pumps for <160°C Boiling Point Solvents					
2B-01[†]	25L/min.	2 torr (29.85"Hg)	13⅞ × 6⅞ × 8⅞" (35.2 × 17.2 × 22.3cm)	**01-257-500**	2225.00
2B-01[†]	35L/min.	2 torr (29.85"Hg)	13⅞ × 6⅞ × 8⅞" (35.2 × 17.2 × 22.3cm)	**01-257-506**	2650.00

ustable vacuum model

Welch* Standard-Duty Vacuum Pumps

Compact, economical WOB-L* pumps for aqueous applications

- Ideal for filtration, vacuum ovens, aspiration and chamber roughing
- Protect against accidental ingestion
- Wetted parts resist corrosion from moisture

ORDERING INFORMATION:
For 115V 60Hz. All pumps weigh less than 25 lb. (11.4kg).

INCLUDES:
Gauges, liquid traps on inlet/outlet with protective liquid level shutoff, vacuum/pressure gauges and adjustment valves, exhaust muffler, suction cup feet, and handles for convenient transportation

01-257-113, 01-257-93, 01-051-1A

Model	Free Air Displacement	Maximum Pressure	Ultimate Vacuum	Dimensions (L × W × H)	Cat. No.	Eac
2522B-01	0.76cfm (22L/min.)	100psig	100 torr (133mbar)	8⅛ × 8¾ × 10" (20.6 × 22.3 × 25.4cm)	**01-051-1A**	448.0
2534B-01	1.2cfm (34L/min.)	50psig	70 torr (93mbar)	8⅛ × 8¾ × 10" (20.6 × 22.3 × 25.4cm)	**01-051-1B**	525.0
2546B-01	1.6cfm (45L/min.)	100psig	60 torr (80mbar)	10 × 7½ × 9" (25.4 × 19.1 × 22.9cm)	**01-258-11**	584.0
2561B-50	2.1cfm (60L/min.)	----	5 torr (6.7mbar)	11⅛ × 6½ × 9⅛" (28.2 × 16.5 × 23.1cm)	**01-257-110**	1438.0
2567B-50	3.5cfm (100L/min.)	----	60 torr (80mbar)	15 × 10 × 10" (38.1 × 25.4 × 25.4cm)	**01-258-10**	1146.0
2581B-50	3.5cfm (100L/min.)	----	5 torr (6.7mbar)	11⅛ × 9¼ × 11" (28.2 × 23.4 × 28cm)	**01-257-113**	1953.0
2585B-50	7.1cfm (201L/min.)	----	60 torr (80mbar)	11⅛ × 9¼ × 11" (28.2 × 23.4 × 28cm)	**01-257-73**	1617.0

WARNING
May be used with buffer solutions but are not recommended for use with acids, bases or organic vapors.

Edwards XDS Series Dry Vacuum Pumps for Wet Chemistry

Chemical resistant, oil-, grease- and lubricant-free pumps provide a totally lubricant-free vacuum

11-283-30

- Applications include gel drying, centrifugal concentrations, rotary evaporation and general laboratory use
- Bearings are isolated from the vacuum environment by a patented XDS bearing shield—no bearings, bearing purge grease or oil under the vacuum
- Three-position controllable gas ballast for pumping greater than 200 grams per hour of condensable water vapor
- Portable
- Air-cooled
- User-serviceable without special tools; no oil to change
- Leak tightness for all models: <7.5×10^{-7} torr/Ls

Model	XDS5-C	XDS10-C
Speed	3.5cfm (99L/min.)	6.5cfm (184L/min.)
Air Displacement	4.0cfm (113L/min.)	7.9cfm (224L/min.)
Motor Power	⅜hp	⅜hp
Vibrations	<1.5mm/sec.	<1.5mm/sec.
Noise	55dBA	55dBA
Inlet/Outlet Connections	DN25NW	DN25NW
Dimensions (L × W × H)	16⅞ × 11⅜ × 9⅞" (43 × 29 × 25.1cm)	16⅞ × 11⅜ × 9⅞" (43 × 29 × 25.1cm)
Net Weight	51 lb. (23kg)	54 lb. (24.5kg)
Mfr. No.	A725 01 906	A727 01 906
Electrical Reqts.	115-120/230-240V 60Hz, single-phase	115-120/230-240V 60Hz, single-phase
Cat. No.	**11-283-23**	**11-283-30**
Each	4200.55	5450.85

SERVICE AGREEMENTS
Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

LOOKING FOR MORE EDWARDS PUMPS?
Edwards carries a wide variety of pumps to handle various applications.

Visit www.fishersci.com and search for Edwards Pumps

*Trademark. See Trademark Reference.

cuubrand* Oil-Free Diaphragm Vacuum Pumps

vide high flowrates at working vacuum for improved process times and laboratory efficiency

lable in standard or corrosion-resistant chemical design models, ultimate vacuum as low as 0.6 torr.

mistry Design Models

tire flowpath features PTFE or other fluoropolymer components for cellent performance with aggressive vapors

mps with solvent recovery contain other chemically resistant components, ch as borosilicate glass

egrated gas ballast in multistage pumps allows continuous ndensate purge

dels ME2C and ME4C (60 torr)

itable for filtration, solid-phase extraction, degassing and evaporation volatile solvents in heated applications

dels MZ2C and MZ2C+2AK (7 torr)

cellent for rotary evaporators, most gel-drying applications, and small bletop centrifugal concentrators

Z2C+2AK adds solvent recovery accessories to MZ2C pump

del MD1C

5 torr ultimate vacuum and air displacement of 0.88cfm (25L/min.)

del MD1C + AK + EK (1.5 torr)

ree-stage design in a suitable size for benchtop rotary evaporation and l drying with an SDS-PAGE concentration greater than 10%

odel MD1C+AK+EK adds solvent recovery, including an emissions condenser

del MD4C (1.5 torr)

werful 1.5 torr, three-stage pumps evaporate nearly all solvents at om temperature

odel MD4C is excellent for large rotary evaporators and centrifugal ncentrators; as well as multiple gel dryers

odel MD12C is large enough for many pilot-plant applications

Model MV10C (0.68 torr)

- Provides the deepest vacuum available (0.6 torr) in an uncontrolled chemistry design diaphragm pump

13-878 and -688 Series

Standard Design (Aluminum FPM) Models

- Designed for nonevaporative/noncorrosive applications such as vacuum filtration, degassing and impregnation
- All parts that contact gases and vapors are made of aluminum, FPM and polyamide
- FPM double diaphragm provides high reliability and low maintenance
- Outlet silencer reduces noise

Models ME2, ME4 and ME8 (60 torr)

- Mechanical one-stage vacuum pumps provide flowrates of 1.3, 2.5 and 4.4cfm

Model MZ2 (6.8 torr)

- Flowrate of 1.3cfm

Model MD1 (1.1 torr)

- Flowrate of 0.82cfm and 6mm hose nozzle inlet

Model MD4 (1.5 torr)

- Mechanical three-stage vacuum pump; flowrate of 2.2cfm
- Has a four-head design for greater flowrate and an NW16 small flange inlet connection

ORDERING INFORMATION:

For 120V 60Hz. (Contact your Fisher Scientific Customer Service Representative for other voltage requirements.)

del	Ultimate Vacuum	Air Displacement	Dimensions (L × W × H)	Mfr. No.	Cat. No.	Each
mistry Design Models						
2C	<60 torr	1.3cfm (37L/min.)	10 × 6¾ × 7" (25.8 × 17.3 × 17.8cm)	696124	**13-878-65**	1770.00
4C	<60 torr	2.4cfm (67L/min.)	10½ × 9½ × 6¼" (26.6 × 24.1 × 16cm)	696144	**13-878-76**	2280.00
2C	6.8 torr	1.2cfm (35L/min.)	10½ × 9½ × 6¼" (26.6 × 24.1 × 16cm)	696244	**13-878-66**	2280.00
2C + 2AK	6.8 torr	1.2cfm (35L/min.)	13¼ × 9½ × 12¾" (33.6 × 24.1 × 32.4cm)	688019	**13-878-78**	3070.00
1C	1.5 torr	0.825cfm (23L/min.)	12½ × 5⅝ × 8¾" (31.6 × 14.3 × 22.3cm)	696603	**13-688-285**	2695.00
1C + AK + EK	1.5 torr	0.88cfm (25L/min.)	12⅝ × 11⅜ × 19" (32 × 29 × 48cm)	696633	**13-688-286**	3700.00
4C	1.5 torr	2.1cfm (58L/min.)	12½ × 9½ × 6¼" (31.5 × 24.1 × 16cm)	696293	**13-878-67**	5091.00
10C	0.68 torr	4.4cfm (125L/min.)	20⅝ × 9½ × 11⅞" (51.5 × 24 × 30cm)	710203	**13-688-289**	10,140.00
ndard Design (Aluminum FPM) Models						
2	<60 torr	1.3cfm (37L/min.)	10 × 6¾ × 7" (25.8 × 17.3 × 17.8cm)	696123	**13-878-109**	1150.00
4	<60 torr	2.4cfm (67L/min.)	10½ × 9½ × 6¼" (26.6 × 24.1 × 16cm)	696143	**13-878-110**	1620.00
8	<60 torr	4.6cfm (130L/min.)	12½ × 9½ × 6¼" (31.5 × 24.1 × 16cm)	696183	**13-878-111**	2990.00
2	6.8 torr	1.3cfm (37L/min.)	10½ × 9½ × 6¼" (26.6 × 24.1 × 16cm)	696243	**13-878-112**	1620.00
1	1.1 torr	0.82cfm (23L/min.)	11⅞ × 5⅝ × 8½" (30.3 × 14.3 × 21.5")	696073	**13-878-95**	1810.00
4	1.5 torr	2.2cfm (63L/min.)	12½ × 9½ × 6¼" (31.5 × 24.1 × 16cm)	696291	**13-878-113**	3354.00

WARNING

Standard design models are not for use with organic solvents.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Vacuubrand* Chemistry VARIO* Pumping Systems and Diaphragm Pumps

Corrosion-resistant, oil-free pumps automatically find and follow boiling curves without presets

13-688-287

- Oil-free pumps made of corrosion-resistant materials
- Evaporate up to 30% faster than conventional vacuum systems
- Automatic shutoff after evaporation is complete
- Feature integral pumps constructed of corrosion-resistant fluoropolymers, such as PTFE, for corrosion resistance
- RS-232 port allows computer control and logging for process validation

PC2001 Model

- Compact, cost-effective system, with three-stage 1.5 torr performance suitable for most laboratory-sized rotary evaporators
- Includes solvent recovery system
    - Inlet catchpot to preserve pump performance by collecting condensed solvent in the vacuum line
    - Outlet condenser to reduce emissions
    - Space-saving stand

PC2003 Model

- Provide the deepest vacuum available in a diaphragm pump, as low as 0.45 torr
- Include solvent recovery system (as described above)

INCLUDES:

Pump system (where appropriate) and operating instructions

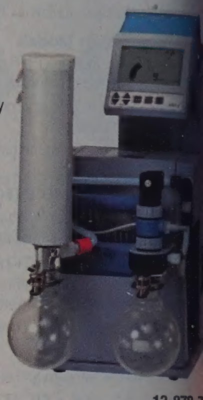
WARRANTY:

One year

Model	Ultimate Vacuum	Air Capacity	Mfr. No.	Electrical Requirements	Cat. No.	Each
PC2001	1.5 torr	0.94cfm (27L/min.)	696643	100-120V 50/60Hz	**13-688-287**	6790.00
PC2003	0.45 torr	1.5cfm (42L/min.)	683443	100-120V 50/60Hz	**13-878-59**	10,060.00

Vacuubrand* Dry Vacuum Systems

Controlled vacuum solutions for evaporation and other applications


13-878-7

Integrated systems for evaporative applications incorporate a quiet, high-performance chemistry-design diaphragm vacuum pump with vacuum control.

- All pumps are constructed with chemically resistant materials, such as PTFE, for operation without cold traps in most applications
- Integrated gas ballast continuously purges pumps of internal condensation, improving performance and significantly increasing pump lifetime
- Powered by either a Vacuubrand MZ2C (7 torr model) or MD4C (1.5 torr model) diaphragm pump for high flowrates at working vacuum
- Inlet catchpot captures most vacuum line condensation to preserve pump performance and ensure long service life
- Outlet condenser recovers solvents and controls solvent vapor emissions
- Condenser and catchpots are borosilicate glass

PC101 and PC201 Vacuum Systems

- Feature Bourdon-type dial gauges using manual flow control for vacuum regulation for general-purpose evaporative applications
- PC101 has 7 torr Vacuubrand MZ2C pump; PC201 has 1.5 torr MD4C pump

PC510 and PC610

- Upgrade the PC101 and PC201, respectively, by adding two-point electronic control and a solenoid valve for more critical applications, such as rotary evaporation

PC520 and PC620

- Compact vacuum systems for two independently controlled vacuum applications
- Incorporate all the features of the PC510 and PC610, respectively; plus a second port with PTFE solenoid valve and vacuum controller

ORDERING INFORMATION:

For other voltages, contact your Fisher Scientific Customer Service Representative.

INCLUDES:

120V pump motor

WARRANTY:

One year

Model	Pump Included	Ultimate Vacuum	Air Capacity	Mfr. No.	Cat. No.	Each
PC101	MZ2C	7 torr	1.2cfm (33L/min.)	688105	**13-878-72**	3180.00
PC201	MD4C	1.5 torr	1.24cfm (35L/min.)	688119	**13-878-73**	5780.00
PC510	MZ2C	7 torr	1.2cfm (33L/min.)	688001	**13-878-70**	5440.00
PC610	MD4C	1.5 torr	1.24cfm (35L/min.)	688010	**13-878-71**	8510.00
PC520	MZ2C	7 torr	1.2cfm (33L/min.)	688004	**13-878-79**	7910.00

*Trademark. See Trademark Reference.

Prices subject to change.

CHOOSE THE RIGHT PUMP FOR THE RIGHT JOB

Applications—The features and performance profile of your vacuum pump should match your application and sample specifics. More vacuum is not always better vacuum.

Performance—Select a pump designed to produce the vacuum you need. Ultimate vacuum levels, pumping flowrates, and sustainable operation at lesser vacuum levels are common initial considerations.

Features—Look for integrated features such as solvent collectors, large oil reservoirs, and/or portability to maximize your pump's performance and utility.

Control—Many applications can be fine-tuned with control features ranging from valve-and-gauge simplicity to multi-parameter programmability.

Materials—Pump materials contacting fumes from your application should be able to resist solvent or corrosive effects.

Maintenance—Dry vacuum pumps generally require less maintenance than oil pumps. For high-vacuum applications requiring an oil pump, Belt Drive models provide the most rugged performance.

BEFORE YOU BUY VACUUM PUMPS

CHEMISTRY APPLICATIONS	STANDARD DUTY	DRYFAST	SELF-CLEANING	BELT DRIVE	DIRECT DRIVE
Automation		01257510			
Centrifugal Evaporation		01257508	0112919		
Corrosive Gases/Vapors		01257508	0112919	011074	
Degassing		01257500			
Filtration		0112925			
Freeze Dryer				011074	0125791
Glove Box				01100	
Mass Spec Roughing				01096	011154
Rotary Evaporation, <100°C		01257508	0112919		
Rotary Evaporation, <160°C		01257506	01257154		
Rotary Evaporation, <200°C				01096	011291
Vacuum Chamber Roughing	01257113			01100	0125713
Vacuum Manifold/Schlenk Line				011073	011291
Vacuum Oven		01257506			

LIFE SCIENCE APPLICATIONS	STANDARD DUTY	DRYFAST	SELF-CLEANING	BELT DRIVE	DIRECT DRIVE
Aspiration/Cell Culture	0105513				
Automation	0125810	01257510			
Bell Jar				01103	011152
Centrifugal Concentrator		01257506		01100	0125713
Filtration	010511A				011292
Freeze Dryer				011074	0125791
Gel Drying		011076	0112919		
Glove Box	01257113			01100	
Vacuum Oven	01257110			01096	

Belt Drive
011074

Model 2042
DRYFAST ULTRA
WELCH

DryFast
01257506

sponsored by:

WELCH
A Gardner Denver Product

HELPFUL HINTS FOR VACUUM

Use a trap—Traps protect your pump, your lab environment, and your work. Cold traps also help drive vacuum.

Safety first—Always shield yourself from your application and ventilate hazardous exhaust.

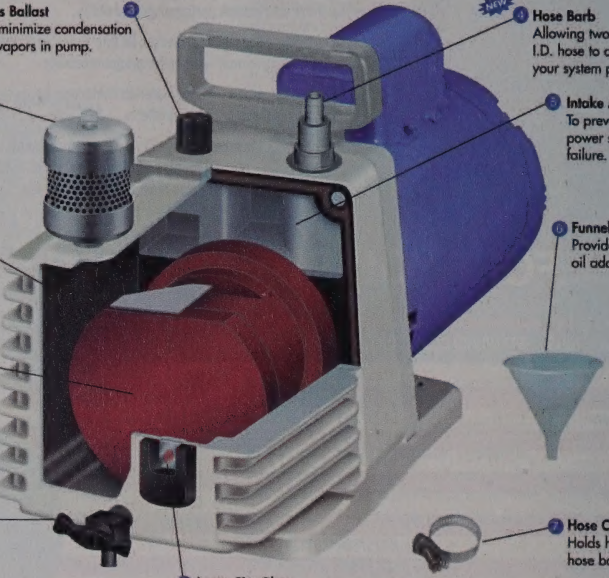
Find system leaks—Many vacuum applications use excess pumping to compensate for system leaks. Methodically isolate system segments to detect vacuum differences with a vacuum gauge and use mild pressurization with a soap bubble solution to find leak sources.

For a full selection of Welch® Vacuum Pumps, see pp. 1491-1492, 1499-1502.

VACUUM—ROTARY

Fisher Scientific* Maxima* C *Plus* Vacuum Pumps

Designed for easy use with lab equipment such as freeze dryers, vacuum ovens, and centrifugal concentrators



③ **Gas Ballast**
To minimize condensation of vapors in pump.

④ **Hose Barb**
Allowing two sizes of I.D. hose to connect to your system per pump.

② **Oil Mist Eliminator**
Trapped oils naturally fall back into the oil case via gravity after pump down.

⑤ **Intake Antisuckback Valve**
To prevent oil back flow on power shut down or power failure.

① **Teflon** Coated Oil Case**
Prevents particles and sludge from clinging to the walls of the oil case to simplify oil change.

⑥ **Funnel**
Provided to allow quick oil adds.

⑩ **Black Oxide Coated Pump Module**
Coated to prevent corrosion when exposed to vapors. Valves, fasteners, flanges and connectors are made of stainless steel.

⑨ **Easy Oil Change Valve**
Drain valve for quick and easy oil changes. No tools required.

⑦ **Hose Clamp**
Holds hose tight to hose barb.

⑧ **Large Site Glass**
Easily assures proper oil level.

01-257 Serie

Design features

- Ultimate vacuum to 1 × 10^{-4} torr
- Convenient carrying handle and nonskid base
- Overload protection on all single-phase models

Corrosion resistance

- Black oxide coating on pump interior
- Stainless-steel valves, fasteners, baffle plates, and Viton* elastomers
- Fisher Scientific Maxima Vacuum Pump Oil (included) is hydrotreated to minimize aromatics and sulfur, providing good resistance to sludge and varnish formation over time in corrosive environments

Accepts different size vacuum tubing

- Eliminates need for specialized tubing reducers
- Inlet connection on all pumps accepts two hose I.D. sizes to easily connect either a large or a smaller I.D. hose from the pump to the apparatus

Easy oil change

- Faucet-style valve opens and closes easily to allow oil to flow out of the case in a steady, controlled manner with minimal mess
- Oil case is coated with PTFE so that particulates do not cling to the side of the case

ORDERING INFORMATION:

International and explosion-proof models are available through your Fisher Scientific Sales Representative.

INCLUDES:

Pump with line cord and plug, hose clamp, funnel, change of oil, oil mist eliminator

CERTIFICATIONS:

CE marked, CSA approved

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Ordering Table, contd. on next pag

*Trademark. See Trademark Reference.

er Scientific* Maxima* C Plus Vacuum Pumps, Contd.

-257-77

01-257-80

01-257-82

del	M2C	M4C	M6C	M8C	M12C	M16C
e Air Displacement						
0Hz	1.8cfm (51L/min.)	2.6cfm (73L/min.)	3.8cfm (108L/min.)	6.1cfm (173L/min.)	7.7cfm (218L/min.)	11.3cfm (320L/min.)
0Hz (international)	2.6m^3/hr. (43L/min.)	3.7m^3/hr. (61L/min.)	5.4m^3/hr. (90L/min.)	8.6m^3/hr. (144L/min.)	10.9m^3/hr. (182L/min.)	16m^3/hr. (267L/min.)
mate Vacuum	2×10^{-3} torr (0.0027mbar)	1×10^{-4} torr (0.00013mbar)	1×10^{-4} torr (0.00013mbar)	1×10^{-4} torr (0.00013mbar)	3×10^{-4} torr (0.0004mbar)	4×10^{-4} torr (0.00053mbar)
ind Level	52dBA	50dBA	50dBA	50dBA	54dBA	55dBA
tor/Pump ed (60Hz)	3450rpm	1725rpm	1725rpm	1725rpm	1725rpm	1725rpm
tor Power	¼hp	½hp	½hp	½hp	½hp	¾hp
Capacity	0.42 qt. (0.4L)	1.0 qt. (0.95L)	0.9 qt. (0.86L)	0.8 qt. (0.76L)	1.3 qt. (1.2L)	1.2 qt. (1.1L)
epts Tubing I.D.	3⁄16, 7⁄16"	13⁄16"	13⁄16"	13⁄16"	9⁄16, 13⁄16"	9⁄16, 13⁄16"
ike Thread Type	Hose barb	Hose barb	Hose barb	Hose barb	Hose barb	Hose barb
aust Thread Type	¾–20	1–20	1–20	1–20	1–20	1–20
ensions W x H)	14⅛ × 5⅛ × 8⅜" (35.9 × 13 × 21.3cm)	18½ × 6½ × 9⅝" (47.1 × 16.5 × 24.3cm)	18½ × 6½ × 9⅝" (47.1 × 16.5 × 24.3cm)	18½ × 6½ × 9⅝" (47.1 × 16.5 × 24.3cm)	20½ × 7⅛ × 10¾" (52.1 × 17.9 × 27.2cm)	21¼ × 7⅛ × 10¾" (53.8 × 17.9 × 27.2cm)
pping Weight	26 lb. (11.8kg)	46 lb. (21kg)	46 lb. (21kg)	53 lb. (24kg)	63 lb. (30.8kg)	77 lb. (34.6kg)
115V 60Hz gle phase						
. No.	**01-257-77**	**01-257-78**	**01-257-79**	**01-257-80**	**01-257-81**	**01-257-82**
ch	1910.15	2225.00	2400.00	2555.00	2910.00	3310.00
230V 50Hz, gle phase						
. No.	**01-257-83**	----	----	**01-257-84**	**01-257-85**	----
ch	2015.00	----	----	2550.00	2910.00	----
h Explosion-Proof tor, 115V 60Hz						
. No.	**01-257-86**	**01-257-87**	----	**01-257-88**	**01-257-89**	**01-257-90**
ch	2326.75	3115.00	----	3375.00	3775.00	4025.00

WARNING

Not recommended for filtration, aspiration, or drying electrophoresis gels. These drying processes occur in the rough vacuum level (above 30 torr [40mbar]). These vane pumps are not designed for high-pressure operation. Pumps should not be operated continuously at pressures above 10 torr.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

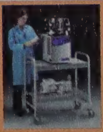
For immediate assistance, call 1-800-395-5442.

LOOKING FOR VACUUM OVENS?

Fisher Scientific carries a wide variety of vacuum ovens to meet any of your drying needs. See the Ovens section.

LOOKING FOR FREEZE DRYERS?

You'll find a selection of environmentally safe, CFC-free systems in bentchtop and floor models in the Freeze Dry section.

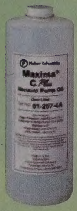


ACCESSORIES

Pump Oil

Designed to resist breakdown in Fisher Scientific* Maxima* C *Plus* pumps

Triple-distilled hydrocarbon oil using severely hydrotreated base stock. Hydrotreating minimizes aromatics and sulfur to give good resistance to sludge and varnish formation over time in corrosive environments. The oil enables pumps to maintain the highest vacuum performance over time. Clear, colorless, and odorless.



01-257-4A

Size	Cat. No.	Each	Case of
1L	**01-257-4A**	31.78	12/325.96
1 gal.	**01-257-4B**	114.87	4/392.71
5 gal.	**01-257-4D**	375.55	----

Standard Exhaust Oil Filters

As supplied with Fisher Scientific* Maxima*C *Plus* pumps

These compact, round filters simply screw into threaded exhaust port to collect oil expelled during operation. A replaceable filter element within the oil filter separates the oil into particles no larger than 0.3µm, and drops collected oil back into the oil case.

01-257-5A

- Filter element is easily replaced
- Reorder number located on filter canister

Fit Models	Dimensions (Dia. × H)	Cat. No.	Each
M2C and M4C[1]	2½ × 2½" (6.3 × 6.3cm)	**01-257-5A**	163.18
M4C[2], M6C, M8C[1]	2½ × 3⅝" (6.3 × 9.1cm)	**01-257-5B**	186.86
M8C[2]	2½ × 4⅝" (6.3 × 11.7cm)	**01-257-50**	260.42
M12C and M16C	5 × 6¼" (12.7 × 15.9cm)	**01-257-5C**	402.59

[1] *For M4C or M8C vacuum pumps designed before September 1999 (S/N before FKK090000).*

[2] *For M4C or M8C vacuum pumps designed after August 1999 (S/N FKK090000 and newer).*

Replacement Elements

For standard exhaust filters supplied with Fisher Scientific* Maxima* C *Plus* pumps.

For Models	Cat. No.	Each
M2C and M4C[1]	**01-257-6A**	87.08
M8C[2]	**01-257-45**	130.55
M12C and M16C	**01-257-6C**	149.61

[1] *For M4C or M8C vacuum pumps designed before September 1999 (S/N before FKK090000).*

[2] *For M4C or M8C vacuum pumps designed after August 1999 (S/N FKK090000 and newer).*

Dry Ice/Liquid Nitrogen Trap

Large cold chamber provides rapid condensation of solvent vapors

01-257-14

- Prevents oil back-streaming
- Dry ice/isopropyl alcohol slurry to produce at a temperature of -79°C or liquid nitrogen (-198°C) may be used as refrigerant
- Accepts ½" O.D. (12.7mm) tubing

For Models	Cat. No.	Each
M2C through M16C	**01-257-14**	902.62

Exhaust Oil Recycler with Built-in Filter Element

Economical mist eliminator is recommended for use when operating the pump at a continuous vacuum pressure of at least 1 torr

Continuously separates air and oil from the pump exhaust, returning captured oil to the pump via the gas ballast inlet (when gas ballast valve is open). This process effectively reduces oil consumption and minimizes maintenance requirements by extending the time between oil changes.

01-257-7B

INCLUDES:

Adapters for direct connection to the pump's threaded exhaust port and gas ballast inlet port

Fits Models	Dimensions (Dia. x H)	Cat. No.	Each
M2C and M4C[1]	2¾ × 6¼" (7 × 15.9cm)	**01-257-7A**	330.97
M4C[2], M6C, M8C, M12C and M16C	4 × 6¾" (10.2 × 17.1cm)	**01-257-7B**	466.59

[1] *For M4C vacuum pumps designed before September 1999 (S/N before FKK090000).*

[2] *For M4C vacuum pumps designed after August 1999 (S/N FKK090000 and newer).*

*Fisherbrand** Vacuum Tubing

Rubber tubing with thick walls for pressure and vacuum work

- 14-175F is black; 14-175H is red.

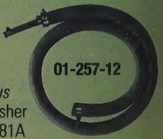
Fit Models	I.D.	Wall Thickness	O.D.	Cat. No.	Price
M2C and M4C[1]	½" (12.7mm)	¼" (6.4mm)	1" (25.4mm)	**14-175F**	Ea./126.05
M4C[2], M6C, M8C, M12C, and M16C	13⁄16" (20.6mm)	⅜" (9.5mm)	1 9⁄16" (39.7mm)	**14-175H**	Pk. of 15/252.63

[1] *For M4C vacuum pumps designed before September 1999 (S/N before FKK090000).*

[2] *For M4C vacuum pumps designed after August 1999 (S/N FKK090000 and newer).*

Hose Adapter Kit

Kit ensures proper-size tubing to a variety of appliances



01-257-12

- Connects Fisher Scientific* Maxima* C *Plus* Vacuum Pump Models M2C and M4C to Fisher Scientific Isotemp* Vacuum Oven Model 281A
- Includes at least 5' (1.5m) of thick-walled rubber vacuum hose

Pump Inlet O.D.	Cat. No.	Each
⅜ to 7⁄16" (9.5 to 11.1mm)	**01-257-12**	149.61

Pump Repair Kits

Include gasket set, exhaust valves, valve springs, lip seals, O-rings, and motor coupling for minor pump repairs.

For Models	Cat. No.	Each
M2C and M4C[1]	**01-257-17A**	147.49
M4C[2], M6C and M8C[2]	**01-257-49**	259.27
M8C[1] and M12C	**01-257-17B**	262.57
M16C	**01-257-17C**	254.43

[1] *For M4C or M8C vacuum pumps designed before September 1999 (S/N before FKK090000).*

[2] *For M4C or M8C vacuum pumps designed after August 1999 (S/N FKK090000 and newer).*

ermo Scientific* Barnant* Direct-Drive Vacuum Pumps

ally suited for vacuum drying, filtration, impregnation, extraction, concentration, trifugation, freeze-drying, degassing and cryogenic studies

- rtical oil sight glass with O-ring seal for accurate oil level inspection
- o/side mount intake and exhaust ports permit mounting into compact tallations
- gh-performance ventilation system cools pump with minimal vibration d noise
- ▸ With antibackstreaming baffle and gas ballast

01-182-006 and 01-182-002

el	Free Air Displacement	Ultimate Vacuum	Motor Speed/Power	Oil Capac.	Intake Opening	Discharge Opening	Dimensions (L × W × H)	Ship Wt.	Mfr. No.	Electrical Requirements	Cat. No.	Each
0	40L/min. (1.41cfm)	2.2µmHg	3600rpm, ¼hp	⅜ qt. (0.35L)	13mm	13mm	7¼ × 5⅜ × 4" (18.4 × 13.7 × 10.2cm)	32 lb. (14kg)	51220220	115V 60Hz, 5.8A	**01-182-000**	2225.00
00	108L/min. (3.8cfm)	0.1µmHg	1800rpm, ¾hp	⅞ qt. (0.82L)	25mm	25mm	9 × 6½ × 8½" (22.9 × 16.5 × 21.6cm)	57 lb. (26kg)	51220221	115 or 230V 50/60Hz, 9.8A	**01-182-002**	2672.00
00	192L/min. (6.8cfm)	0.1µmHg	1800rpm, ¾hp	1.0 qt. (0.95L)	25mm	25mm	9⅝ × 6½ × 8½" (24.4 × 16.5 × 21.6cm)	61 lb. (28kg)	51220225	115 or 230V 50/60Hz, 9.8A	**01-182-006**	3266.00
00	300L/min. (10.6cfm)	0.1µmHg	1800rpm, ¾hp	1.0 qt. (0.95L)	25mm	25mm	10⅝ × 6½ × 8½" (27 × 16.5 × 21.6cm)	70 lb. (32kg)	51220229	115 or 230V 50/60Hz, 13.8A	**01-182-010**	3563.00
20	413L/min. (14.6cfm)	0.1µmHg	1800rpm, ¾hp	1⅓₂ qt. (0.975L)	25mm	25mm	11½ × 6½ × 8½" (29.2 × 16.5 × 21.6cm)	75 lb. (34kg)	51220233	115 or 230V 50/60Hz, 13.8A	**01-182-014**	4160.00

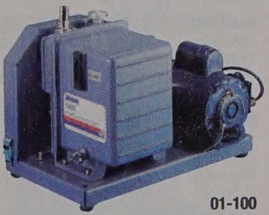
elch* DuoSeal* High-Vacuum Pumps

gged, durable pumps are ideal for demanding applications such as Schlenk drying es, freeze drying, vacuum distillations, concentrating and degassing

- ruggedness is a result of reduced frictional wear (less than 580rpm vs. cal 1750rpm direct-drive pumps) and high contamination tolerance (contaants diluted due to large oil capacity).
- ual-voltage models come wired for lowest voltage listed in specificaons chart; may be converted to higher voltage listed by rewiring
- /iring diagram supplied with each model
- ll models are single phase

INCLUDES:

V-belts, pulleys, belt-guard, oil supply, three-wire cord (except 01-105-1 which must be conduit wired), plug, inline switch and instructions



01-100

el	Free Air Displacement	Vacuum (Ultimate)	Motor Power	Pump Speed	Oil Capac.	Accepts Tubing I.D.	Intake Thread Type	Exhaust Thread Type	Dimensions (L × W × H)	Ship. Wt.	Mfr. No.	Electrical Reqts.	Cat. No.	Each
Stage														
0	160L/min. (5.6cfm)	2Pa (1.5×10^{-2} torr)	½hp	525rpm	3¾ qt. (3.5L)	1³⁄₁₆" (21mm)	1–20 Nipple	1–20	20 × 12 × 15" (51 × 31 × 38cm)	116 lb. (53kg)	1380B 01	115V 60Hz, 8.8/4.4A	**01-107-1**	2380.00
9	35L/min. (1.2cfm)	2Pa (1.5×10^{-2} torr)	⅓hp	750rpm	½ qt. (0.47L)	⁷⁄₁₆" (11mm)	¾–20 Nipple, straight pipe	¾–20	17 × 9 × 10" (43 × 23× 25cm)	61 lb. (28kg)	1399B 01	115V 60Hz, 5.9A	**01-103**	1364.00
Stage														
4	650L/min. (23cfm)	13.3MPa (1×10^{-4} torr)	1½hp	510rpm	1¼ qt. (1.2L)	1⅝" (41mm)	1¾–20 Nipple	1¾–20	26 × 13¾ × 18¾" (66 × 35 × 48cm)	231 lb. (105kg)	1374B 01	115V 60Hz, 8.8A	**01-105-1**	5219.00
7	500L/min. (17.7cfm)	13.3MPa (1×10^{-4} torr)	1hp	400rpm	1¼ qt. (1.2L)	1⅝" (41mm)	1¾–20 Nipple	1¾–20	26 × 13¹¹⁄₁₆ × 18¾" (66 × 35 × 48cm)	224 lb. (102kg)	1397B 01	115V[1] 60Hz, 13.4/6.7A	**01-100-15**	4440.00
6	300L/min. (10.6cfm)	13.3MPa (1×10^{-4} torr)	1hp	525rpm	2½ qt. (2.4L)	1³⁄₁₆" (21mm)	1–20 Nipple	1–20	20 × 14⅛ × 15⅜" (51 × 36 × 39cm)	177 lb. (80kg)	1376B 01	115V 60Hz, 13.4/6.7A	**01-106**	3376.00
2	160L/min. (5.6cfm)	13.3MPa (1×10^{-4} torr)	½hp	525rpm	2¼ qt. (2.1L)	1³⁄₁₆" (20mm)	1–20 Nipple	1–20	20 × 12 × 15" (50 × 30.5 × 38cm)	128 lb. (58kg)	1402B 01	115V 60Hz, 8.8/4.4A	**01-100**	2496.00
5	90L/min. (3.2cfm)	13.3MPa (1×10^{-4} torr)	½hp	525rpm	¼ qt. (0.24L)	⁷⁄₁₆" (11mm)	¼–20 Nipple	1–20	20 × 12 × 15" (50 × 30.5 × 38cm)	128 lb. (58kg)	1405B 01	115V 60Hz, 8.8/4.4A	**01-099**	2253.00
0	25L/min. (0.9cfm)	13.3MPa (1×10^{-4} torr)	⅓hp	580rpm	⅝ qt. (0.59L)	⁷⁄₁₆" (11mm)	Nipple	¾–20	17¾ × 9 × 12⅝" (45 × 23 × 32cm)	68 lb. (31kg)	1400B 01	115V 60Hz, 5.9A	**01-096**	1651.00
0	25L/min. (0.9cfm)	13.3MPa (1×10^{-4} torr)	⅓hp	580rpm	⅝ qt. (0.59L)	⁷⁄₁₆" (11mm)	Nipple	¾–20	6½ × 7½ × 10¾" (16 × 19 × 27cm)	33 lb. (15kg)	1400	----	**01-097**[2]	1374.00

ernational Model for 115/230V 50Hz available on special order.

thout motor, base or belt. Pump only.

Welch* Direct-Drive High-Vacuum Pumps

Compact, portable, two-stage direct-drive pumps suitable for vacuum ovens, freeze dryers, concentrators, and chambers

Each stage is a rotor with two movable vanes. The two stages back each other on the shaft for the mostefficient vacuum possible. Gas ballast valve admits calibrated amount of air at atmospheric pressure to prevent condensation in exhaust stage.

- Available in pumping ranges of 1.8 to 11.3cfm (51 to 320L/min.)
- Ultimate pressure to 1×10^{-4} torr (based on model)
- Aluminum Unibarb* style inlet connector accepts two sets of tubing I.D. (3/16 to 13/16" [5 to 20mm]) and has a screen
- Outlet connector has a 1-20 thread (**Model 8905A** has a ¾-20 outlet connector thread)

Models 8907, 8912, and 8917

- Include integral isolation valve to prevent oil and air contamination of the system in the event of a power failure.

INCLUDES:

Line cord, switch, plug, and vacuum oil

CERTIFICATIONS:

115V models are CSA approved; 230V models are CE marked.

01-115-4

Free Air Displacement	Ultimate Vacuum	Oil Capacity	Accepts Tubing I.D.	Dimensions (L × W × H)	Net Weight	Mfr. No.	Electrical Requirements	Cat. No.	Each
Model 8905									
51L/min. (1.8cfm)	2×10^{-3} torr	½ qt. (0.4L)	3/16, 7/16" (5, 11mm)	14⅛ × 5⅛ × 8⅜" (35.9 × 13 × 21.3cm)	24½ lb. (11.1kg)	8905A	115V 60Hz	**01-115-4**	1800.00
Model 8907									
73L/min. (2.6cfm)	1×10^{-4} torr	1 qt. (1L)	7/16, 13/16" (11, 20mm)	18½ × 6½ × 9⅝" (47.1 × 16.5 × 24.3cm)	40 lb. (18.1kg)	8907A	115V 60Hz	**01-257-11**	2160.00
61L/min. (2.2cfm)	1×10^{-4} torr	1 qt. (1L)	7/16, 13/16" (11, 20mm)	18½ × 6½ × 9⅝" (47.1 × 16.5 × 24.3cm)	40 lb. (18.1kg)	8907C-02	230V 50Hz	**01-257-68**	2160.00
Model 8912									
108L/min. (3.8cfm)	1×10^{-4} torr	⅞ qt. (0.9L)	7/16, 13/16" (11, 20mm)	18½ × 6½ × 9⅝" (47.1 × 16.5 × 24.3cm)	41 lb. (18.6kg)	8912A	115V 60Hz	**01-257-13**	2364.00
90L/min. (3.2cfm)	1×10^{-4} torr	⅞ qt. (0.9L)	7/16, 13/16" (11, 20mm)	18½ × 6½ × 9⅝" (47.1 × 16.5 × 24.3cm)	41 lb. (18.6kg)	8912C-02	230V 50Hz	**01-257-69**	2364.00
Model 8917									
173L/min. (6.1cfm)	1×10^{-4} torr	¾ qt. (0.8L)	7/16, 13/16" (11, 20mm)	18½ × 6½ × 9⅝" (47.1 × 16.5 × 24.3cm)	48 lb. (22kg)	8917A	115V 60Hz	**01-257-15**	2580.00
144L/min. (5.1cfm)	1×10^{-4} torr	¾ qt. (0.8L)	7/16, 13/16" (11, 20mm)	18½ × 6½ × 9⅝" (47.1 × 16.5 × 24.3cm)	48 lb. (22kg)	8917C-02	230V 50Hz	**01-257-70**	2580.00
Model 8920									
218L/min. (7.7cfm)	3×10^{-4} torr	1¼ qt. (1.2L)	9/16, 13/16" (11, 20mm)	20½ × 7 1/16 × 10¾" (52 × 17.9 × 27.2cm)	58½ lb. (26.6kg)	8920A	115V 60Hz	**01-115-8**	2785.00
Model 8925									
320L/min. (11.3cfm)	4×10^{-4} torr	1⅛ qt. (1.1L)	9/16, 13/16" (11, 20mm)	21¼ × 7 1/16 × 10¾" (53.8 × 17.9 × 27.2cm)	69 lb. (31.3kg)	8925A	115V 60Hz	**01-115-10**	3120.00

LOOKING FOR ROTARY EVAPORATORS?

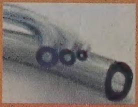
Evaporation systems in various configurations can be found in the Evaporators section.

NEED A VACUUM OVEN?

Glassware drying, precipitates, degassing, curing, process control—whatever your application, Fisher Scientific has a vacuum oven to suit your needs. Combine it with a vacuum pump for optional performance. For more information see the Ovens section.

LOOKING FOR TUBING?

For help selecting the right size tubing, please refer to the Tubing Guide in the Tubing section.



*Trademark. See Trademark Reference.

elch* Chemstar* Belt-Drive Pumps

al for pumping corrosive gases below 1 torr

osion-resistant construction resists chemical attack. Operate at tional speeds of less than 580rpm and feature a large oil reservoir to ntain pumping efficiency—even in dirty applications.

- ugged, low-maintenance pump for tough applications
- timate vacuum, 13.3MPa (1 × 10^{-4} torr)
- w temperatures, degassing and large reservoir extend oil lifetime
- as bubbler allows uniform injection of dry nitrogen into the oil reservoir, egassing the pump fluid and lowering the operating temperature of e oil
- ımp and motor are mounted on steel base

01-107-3

INCLUDES:

Pump, V-belts, pulleys, belt guard, oil supply, three-wire cord, plug, inline switch, and instructions

NOTE:

Use only DirecTorr* Gold Synthetic Pump Oil in Chemstar Vacuum Pumps

el	Free Air Displacement	Motor Power	Pump Speed	Oil Capacity	Intake Thread Type	Exhaust Thread Type	Dimensions (L × W × H)	Ship. Wt.	Mfr. No.	Electrical Reqts.	Cat. No.	Each
0	25L/min. (0.9cfm)	⅓hp	580rpm	⅝ qt. (0.59L)	1–20	1–20	17¾ × 9 × 12⅝" (45 × 23 × 32cm)	68 lb. (31kg)	1400N 01	115V 5.9A	**01-107-3**	1937.00
2	160L/min. (5.6cfm)	½hp	525rpm	2¼ qt. (2.1L)	¾–20	¾–20	19¼ × 12¼ × 15⅝" (49 × 31 × 39cm)	128 lb. (58kg)	1402N 01	115/230V 8.8/4.4A	**01-107-4**	2906.00
6	300L/min. (10.6cfm)	1hp	525rpm	2½ qt. (2.37L)	1–20	1–20	19¼ × 14 × 15⅜" (49 × 36 × 39cm)	177 lb. (80kg)	1376N 01	115/230V 13.4/16.7A	**01-107**	3881.00

elch* Gem* Model 8890A-70 Vacuum Pump

al for rotary evaporations with high boiling point solvents

ged gear pumping mechanism operates over a wide range of ssures. Efficiently pumps vapors without condensing them into the ıp.

- ffective evaporation for DMSO and other high boiling point solvents
- djustable vacuum to prevent bumping
- ear pump mechanism is tolerant of vapors
- xhaust mist eliminator prevents oil loss
- ee air displacement: 31L/min. .1cfm)
- ltimate vacuum: 0.1 torr
- il capacity: 0.5 qt. (0.45L)
- ccepts tubing: 10mm I.D.

ORDERING INFORMATION:

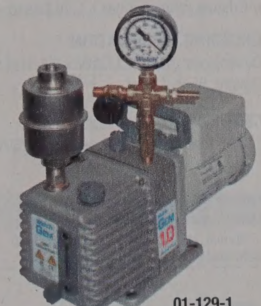
Dimensions: 14½L × 5⅛W × 14⅜"H (36.8 × 13 × 36.3cm). Weight: 27½ lb. (12.5kg). For 115V 60Hz.

INCLUDES:

Vacuum gauge/regulator, exhaust mist eliminator

COMPLIANCE:

CSA approved



01-129-1

Description	Mfr. No.	Cat. No.	Each
For rotovaps and vacuum manifolds	8890A-70	**01-129-1**	1981.00

ACCESSORIES

Welch DuoSeal* Pump Oil

or use in DuoSeal High-Vacuum Pumps. One gallon.

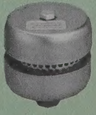
Fisher Scientific
Maxima C Plus
Vacuum Pump Oil
01-257-4A

Mfr. No.	Cat. No.	Each
1407K-15	**01-104B**	56.84

Exhaust Filters for Welch* DuoSeal*, Chemstar* and Direct-Drive Pumps

Easily replaceable filter element captures oil in mist from the exhaust port of the pump and reduces pump's noise.

01-104-5B



01-104-5A

For use with Welch Pump Model No.	Mfr. No.	Cat. No.	Each
With 360° Swivel Outlet with Exhaust Tubing Connector			
1376, 1402, 1376N, 1402N, 8907, 8912, 8917, 8920, 8925	1417A	**01-104-5B**	362.97
1397, 1374	1417B	**01-104-5C**	529.76
Without Swivel Outlet			
1399, 1400, 1400N, 8905	1417	**01-104-5A**	140.43

Welch* Freeze Dryer Pumps

Special application direct-driven pump designed for harsh chemical mixtures like TFA, TFA byproducts, acetonitrile, and HBr that are removed during sample drying

Oil is continuously filtered through micron filter paper and acids are neutralized using Al_2O_3 pellets. The large, ⅜ qt. (1.3L) oil capacity dilutes organic vapors that mix with the pump oil during the freeze drying run. Includes DirecTorr* Gold synthetic oil, which has excellent resistance to chemical attack.

01-257-91

- Continuous acid neutralization and oil filtration
- Large oil capacity extends service intervals
- 1725rpm pump speed, ½hp
- Aluminum Unibarb* style inlet connector accepts two sets of tubing I.D. (7/16 and 13/16" [11 and 20mm]) and has a screen
- Exhaust connector has a 1-20 thread

ORDERING INFORMATION:
Dimensions: 18⅝L × 11½W × 9⅝"H (47.2 × 29.2 × 24.4cm)
Weight: 55 lb. (25kg)

CERTIFICATIONS:
115V 60Hz model is CSA approved; 230V 50Hz model is CE marked.

Free Air Displacement	Ultimate Vacuum	Mfr. No.	Electrical Reqts.	Cat. No.	Each
173L/min. at 60Hz (6.1cfm)	1×10^{-4} torr	8917A-80	115V 60Hz	**01-257-91**	3541.00

Welch* Self-Cleaning Vacuum System

Complete oil-free vacuum system for rotovaps, concentrators and chemical-dry laboratory applications

Ideal for stripping solvents with boiling points <100°C, such as methylene chloride, alcohol, and acetone. Corrosion-resistant PTFE diaphragm pump handles up to 5L evaporation flasks.

01-129-19

- Free air displacement of 34L/min. (1.2cfm)
- Delivers a vacuum to 9 torr (29.6"Hg)
- Automatic self-cleaning purge rids pump of residue at shutdown—ensuring a longer service life and reducing downtime
- Glass inlet separator helps prevent the pump from ingesting liquids or particulates
- Exhaust separator collects any liquid droplets or particulates flushed from the pump during the purge cycle
- Dial pressure gauge and adjustable vacuum regulator enable distillation control
- Ballast switch gives instant control of bumping/foaming

ORDERING INFORMATION:
Dimensions: 13⅝L × 12W × 11⅝"H (34.5 × 30.5 × 28.1cm).
Weight: 30 lb. (13.6kg)

CERTIFICATIONS:
CE marked. CSA approved.

Model	Electrical Requirements	Cat. No.	Each
202501	115V 60Hz	**01-129-19**	2633.00
202503	230V 50Hz	**01-129-20**	2633.00

ACCESSORIES

Welch* DirecTorr* Gold Synthetic Pump Oil

Designed for excellent resistance when pumping corrosive gases or vapors

Offers excellent vacuum pressure in both belt- and direct-driven vacuum pumps over time. Synthetic base stock has no aromatic compounds or sulfur, which accelerate varnishing, sludging and carbon buildup when pumping corrosives.

- Double-distilled synthetic hydrocarbon oil
- High stability in chemical environments with exceptionally low vapor pressure
- Miscible with conventional hydrocarbon oils and can be used without rebuilding the pump
- No additives or inhibitors
- Clear and colorless

Size	Mfr. No.	Cat. No.	Each
1L	8995G 11	**01-184-104**	46.48
1 gal.	8995G 15	**01-184-105**	151.77

Welch
DirecTorr
GOLD
VACUUM
PUMP
OIL

01-184-104

wards Rotary Vane Vacuum Pumps

h-performance pumps suitable for a wide range of difficult applications

ue dual mode allows you to configure pump for very high gas loads out compromising vacuum. Easily reconfigured—even when pump is ing. Choose from models for centrifugal concentrators, rotary orators, freeze dryers, gel dryers, vacuum ovens, or general-purpose irements.

rge, clearly marked, easily accessible controls
erate at quiet 48dBA
sy to use and service (require no special tools)
st-acting inlet valve prevents oil and gas suckback in the event of wer or oil pressure loss
V25 inlet/outlet connections

h vacuum or high throughput from the same pump

sily selectable modes
gh Vacuum mode provides ultimate vacuum down to 1.5 × 10^{-3} torr with gas ballast
gh Throughput mode sustains long-term high-inlet pressures with timate vacuum as low as 2.3 × 10^{-2} torr without gas ballast

ustable gas ballast control maximizes vapor handling ability

s ballast delivered into pump prevents condensation of vapor carried pumped gases
ree user-selectable gas ballast positions—'0' Closed, 'I' Low Flow, 'II' gh Flow—meet most vapor handling requirements

11-283 Series

ORDERING INFORMATION:
For 115V 50/60Hz. Vacuum tubing sold separately.

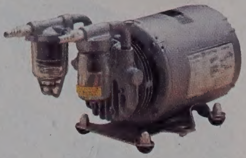
INCLUDES:
Pump, electrical supply cable (2m), inlet screen and Ultragrade 19 oil

el	**RV3**	**RV5**	**RV8**	**RV12**
ping Speed	2.3cfm (65L/min.)	3.7cfm (105L/min.)	5.9cfm (167L/min.)	8.4cfm (238L/min.)
isplacement	2.7cfm (76L/min.)	4.1cfm (116L/min.)	6.9cfm (195L/min.)	10.0cfm (283L/min.)
apacity	¾ qt. (0.7L)	¾ qt. (0.7L)	13⁄16 qt. (0.75L)	1 1⁄16 qt. (1.0L)
or Power	½hp	½hp	¾hp	¾hp
ensions (L × W × H)[1]	17 × 6¼ × 9" (43 × 15.8 × 22.5cm)	17 × 6¼ × 9" (43 × 15.8 × 22.5cm)	18½ × 6¼ × 10¼" (47 × 15.8 × 26.1cm)	19¼ × 6¼ × 10¼" (49 × 15.8 × 26.2cm)
Weight (without oil)	47⅝ lb. (21.6kg)	47⅜ lb. (21.5kg)	57 5⁄16 lb. (26kg)	58 lb. (26.3kg)
trical Requirements	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz	115V 50/60Hz
eral Purpose				
No.	R14000001	R24000001	R34000001	R44000001
No.	**11-283-79**	**11-283-80**	**11-283-81**	**11-283-82**
h	2185.00	2400.00	2629.00	3050.00
Centrifugal Concentrators/ ary Evaporators				
Evaporating Flask Volume	<1.5L	1.5–2.5L	2.5–4L	>4L
No.	R14018601	R24018601	R34018601	R44028601
No.	**11-283-98**	**11-283-99**	**11-283-100**	**11-283-101**
h	2732.02	2962.43	3191.54	3613.50
Freeze Dryers				
Freeze Dryer Volume	<4L	5–12L	15–25L	25–50L
No.	R14018701	R24018701	R34018701	R44028701
No.	**11-283-90**	**11-283-91**	**11-283-92**	**11-283-93**
h	2712.46	2942.73	3171.79	3594.25
Gel Dryers/Vacuum Ovens				
Oven Volume	<1.1 cu. ft. (0.03m³)	1.2–1.7 cu. ft. (0.03–0.05m³)	1.8–2.8 cu. ft. (0.05–0.08m³)	2.8–4.0 cu. ft. (0.08–0.11m³)
No.	R14018301	R24018301	R34018301	R44028301
No.	**11-283-94**	**11-283-95**	**11-283-96**	**11-283-97**
h	2688.26	2906.77	3147.67	3570.00

ght for RV8 and RV12 models includes attached lifting bracket.

Gast* Lubricated Rotary Vane-Type Pressure/Vacuum Pumps

Available with or without gauges and regulator



01-093

- Pressure up to 25psig (172kPag) for intermittent service and 20psig (138kPag) for continuous service
- Maximum vacuum: 27" (69cm) of Hg
- Free-air displacement: 1.3 cu. ft. (37L)/min.
- Free-air delivery, 0.9 cu. ft. (27L)/min. at 10psig (69kPag)
- ⅙hp ball-bearing motor

Standard Pump

- With combined oiler and intake filter, visible oil trap, two serrated hose connections for ¼" (6.4mm) tubing, foot bracket, and cord with switch
- Without gauges, regulators or handle

Pump with Gauges and Regulator

- Same as 01-093 pump, except with 2" (5cm) pressure gauge calibrated from 0 to 30psig (0 to 207kPag); 2" (5cm) vacuum gauge calibrated from 0 to 30"Hg (0 to 102kPag)
- Includes vacuum and pressure regulator and handle

ORDERING INFORMATION:

Dimensions: 12¾L × 8W × 7½"H (32.4 × 20 × 19cm).

Model	Electrical Requirements	Cat. No.	Each
Standard	115V 60Hz, 4.4A	**01-093**	515.15
With Gauges and Regulator	115V 60Hz, 4.4A	**01-093-5**	730.00

Gast* Lubricated Rotary Vane-Type Vacuum Pumps

Similar to 01-093-5 pump, but with higher free-air displacement

01-094 Series

- Pressure to 15psig (103kPag)
- Vacuum to 27"Hg (92kPag)
- With 128L/min. (115V model) free-air displacement or 106L/min. (230V model)
- Fan-cooling, self-adjusting vanes
- Lubricator, exhaust trap, vacuum and pressure gauges and regulators, bleeder, hose nipples
- Carrying handle and foot support
- Intake filter with 10µm filter element

INCLUDES:

Pump, power-supply cord with ON/OFF switch

Air Delivery at 15psig (103kPag)	Electrical Requirements	Cat. No.	Each
3.2cfm (91L/min.)	115V 60Hz, 7.0A	**01-094-25**	732.00
7.1cfm (204L/min.)	115/230V 50/60Hz, 10.8/5.4A	**01-094-24**	1200.65

Gast* Oil-Less Diaphragm-Type Pressure/Vacuum Pump

Pressure/vacuum pumps with ⅛hp motor for medium pressure and solid vacuum applications

Includes vacuum and pressure regulators.

01-092-

- Produce maximum gauge pressure of 60psig (413kPag)
- Vacuum to 25" (84kPag)
- Separate vacuum and pressure gauges, graduated from 0 to 60psig (5psig increments) and 0 to 25"Hg (½"Hg increments)
- ON/OFF switch on pump body
- Aluminum housing with rubber feet and handle
- Hose connection diameters: ⅜" O.D. × ¼" I.D. (9.5 × 6.4mm)

ORDERING INFORMATION:

Overall dimensions: 7¾L × 6½W × 10¾"H (19.7 × 16.5 × 27.3cm). Weight: 15 lb. (6.81kg).

INCLUDES:

Pump and power cord

Electrical Requirements	Cat. No.	Ea
115V 60Hz, 4.2A	**01-092-29**	425.

Gast* Oil-Less Piston-Type Pressure/Vacuum Pumps

For air sampling, pressure/vacuum filtration, degassin solutions

Use with therapeutic equipment and flame photometers.

01-092-

- Pressure/vacuum pumps with ⅙hp motors
- Produce maximum gauge pressure of 100psig (689kPag) or vacuum of 25"Hg (84kPag)
- Separate vacuum and pressure gauges, graduated from 0 to 30"Hg (0 to 102kPag) and 0 to 100psig (0 to 689kPag), respectively
- Free-air flow: 1.3 cu. ft. (37L)/min.

ORDERING INFORMATION:

Dimensions: 15L × 8W × 10¾"H (38 × 20.3 × 27.3cm). For 115V 60Hz.

INCLUDES:

Pump, vacuum and pressure regulators, moisture trap, intake filter, handle rubber suction-cup feet and line cord and plug with ON/OFF switch

Electrical Requirements	Cat. No.	Ea
115V 60Hz, 3.9A	**01-092-25**	582.

*Trademark. See Trademark Reference.

VACUUM—SPECIALTY

Thermo Scientific* Barnant* Air Cadet* Single-Head Vacuum/Pressure Pumps

Compact, economical pumps are ideal for filtration, evacuation, flue-gas sampling, and other gas or air-handling applications

- Maximum pressure: 23psig
- Maximum Vacuum: 23"Hg (23mmHg)
- Dacron-reinforced nitrile, Valox*, PTFE and polyethylene components
- Totally enclosed, fan-cooled⅟45hp motor
- ON/OFF switch for convenientcontrol

INCLUDES:

PTFE sealing tape, two ⅜" (9.5mm) polyethylene hose bar adapters, and 6' (1.8m) three-wire cord

CERTIFICATIONS:

UL, cUL listed; 230V model is also CE marked.

Model	420-1901	420-1902
Flow Capacity	17L/min.	14L/min.
Max. Pressure	23psig	23psig
Max. Vacuum	23"Hg (23mmHg)	23"Hg (23mmHg)
Motor Speed	1550rpm	1290rpm
Motor	⅟45hp	⅟45hp
Operating Temp. Range	0° to 40°C (32° to 104°F)	0° to 40°C (32° to 104°F)
Storage Temp.	-45° to +65°C (-13° to +149°F)	-45° to +65°C (-13° to +149°F)
Dimensions (L × W × H)	8 × 4 × 5½" (20 × 10 × 14cm)	8 × 4 × 5½" (20 × 10 × 14cm)
Weight	7 lb. (3.2kg)	7 lb. (3.2kg)
Electrical Requirements	115V	230V
Mfr. No.	420 1901	420 1902
Cat. No.	**13-310-485**	**13-310-486**
Each	220.24	220.24

VACUUM—HAND

Nalgene* Hand Vacuum Pump

Durable, hand-operated PVC vacuum pump with gauge produces and holds 25"Hg (84kPag)

New trigger design requires one-handed operation. Ideal for siphoning, filtration, liquid transfer, bleeding fluid lines, checking for equipment leaks and adjusting vacuum-operated apparatus.

- Gauge monitors vacuum in kPa and inches and centimeters of Hg
- Fitted with removable cover on exhaust port and trigger to release vacuum without disconnecting pump from line
- Sealed, self-lubricating, corrosion resistant
- Nozzle fits ¼" I.D. (6.4mm) tubing
- Without gauge

INCLUDES:

Pump and 24" (61cm) length of ¼" I.D. (6.4mm) vinyl tubing

Pumping Rate/Stroke	Delivery	Cat. No.	Each	Case of 4
15cc	3psig[1] (21kPag)	**01-071**	113.72	303.25
36cc	3psig[1] (21kPag)	**01-071A**	143.63	383.00

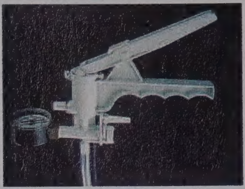
[1] *Positive pressure at outlet port.*

Nalgene* PVC Hand-Operated Vacuum Pumps with Gauge

Durable repairable, hand-operated vacuum pumps

Ideal for siphoning, filtration, liquid transfer, bleeding fluid lines, and checking for leaks.

- Gauge monitors vacuum in kPa and inches of mercury
- Trigger release disassembles for repair or replacement of internal parts
- Lightweight units are sealed and self-lubricating with removable covers on exhaust port and trigger to release vacuum without disconnecting pumps from the line



13-874-612 Series

INCLUDES:

2' (0.6m) Nalgene 180 clear plastic tubing

Pumping Rate/Stroke	Positive Pressure	Cat. No.	Each	Case of 4
15cc	3psig (21kPag)	**13-874-612A**	169.96	453.25
36cc	7psig (48kPag)	**13-874-612B**	209.82	559.50

MANUAL PUMPS

Stainless-Steel/PTFE Drum Pump

Fits 15 to 55 gal. drums

For use with chlorinated and petroleum solvents, such as trichlorethylene, xylene, freon, acetone.

- Measures uniform 8 oz. (220mL) on each upstroke
- Easily adjusts to fit any 15, 30, or 55 gal. drum (57, 114, or 208L)
- Lockable handle prevents tampering
- With 2" (5 cm) opening
- Spout height adjustable to fit various drum sizes
- Thumbscrew lock and packing nut can be tightened to stop leakage that may eventually occur with wear
- With 18" long (46cm) PTFE tube

01-007-5

Cat. No.	Each
01-007-5	176.78

Zinc-Plated Pump

For 5, 6 gal. (19, 23L) pails

Heavy zinc-plated pump fills small bottles from chemical pails without spilling.

- Dispenses 4 oz. (118mL) with each stroke
- Metal strap hooks over bottom of pails and holds dispenser while pumping

09-196

NOTE:

Inside of pump cylinder is bare steel; not recommended for use with water-based liquids.

Cat. No.	Each	Case of 12
09-196	29.07	317.15

PUMP ACCESSORIES

*Fisherbrand** 19 Mechanical Pump Oil

For belt-drive and direct-drive pumps not subject to extreme operating conditions

Also for use in the forepump of a diffusion pump system with polyphenyl ethers, silicone and ester-based pump fluids.

- Permits cooler pump operation, lower maintenance, longer fluid life, reduced power consumption
- Reduces backstreaming
- Protects O-rings
- Ultimate pressure at 25°C (77°F), 8.5 × 10^{-5} torr
- Pour point: -15°C (+5°F)
- Flash point: 212°C (415°F)

01-184-150B

Size	Packaging	Cat. No.	Each	Case of
1L	Plastic bottle	01-184-150A	22.88	12/137.29
4L	Plastic bottle	01-184-150B	41.41	4/141.59
5 gal.	Plastic can	01-184-150C	147.36	----
55 gal.	Metal drum	01-184-150D	1090.36	----

*Fisherbrand** Pressure and Vacuum Rubber Tubing

Red or black rubber tubing with thick walls for pressure and vacuum work

I.D.	Wall Thickness	O.D.	Cat. No.	Each	Case of 4
Black Tubing on reel of 50' (15.2m)					
¼" (6.4mm)	3⁄16" (4.8mm)	⅝" (15.9mm)	**14-150-2J**	377.32	—
5⁄16" (7.9mm)	3⁄16" (4.8mm)	11⁄16" (17.5mm)	**14-150-2K**	216.23	—
⅜" (9.5mm)	¼" (6.4mm)	⅞" (22.2mm)	**14-150-2L**	303.71	—
½" (12.7mm)	¼" (6.4mm)	1" (25.4mm)	**14-150-2H**	333.76	—
Red Tubing in 12' (3.7m) Lengths					
⅛" (3.2mm)	3⁄32" (2.4mm)	5⁄16" (7.9mm)	**14-173A**	49.30	168.45
¼" (6.4mm)	3⁄16" (4.8mm)	⅝" (15.9mm)	**14-173C**	74.10	262.20
⅜" (9.5mm)	5⁄16" (7.9mm)	1" (25.4mm)	**14-173D**	172.11	588.40
Black Tubing in 12' (3.7m) Lengths					
⅛" (3.2mm)	⅛" (3.2mm)	⅜" (9.5mm)	**14-175A**	49.10	167.85
3⁄16" (4.8mm)	3⁄32" (4.8mm)	9⁄16" (14.3mm)	**14-175B**	68.80	243.40
¼" (6.4mm)	3⁄32" (4.8mm)	⅝" (15.9mm)	**14-175C**	78.35	277.25
5⁄16" (7.9mm)	3⁄32" (4.8mm)	11⁄16" (17.5mm)	**14-175D**	92.10	325.95
⅜" (9.5mm)	¼" (6.4mm)	⅞" (22.2mm)	**14-175E**	96.40	341.20
½" (12.7mm)	¼" (6.4mm)	1" (25.4mm)	**14-175F**	126.05	430.95
⅝" (15.9mm)	⅜" (9.5mm)	1⅜" (34.9mm)	**14-175G**	224.93	769.00

Heavy-Wall Gum Rubber Tubing

Red tubing with low vapor pressure

- Suitable for use with vacuum pumps

I.D.	Wall Thickness	O.D.	Cat. No.	Each	Case of 4
In 12' (3.7m) Lengths					
¼" (6.4mm)	⅜" (9.5mm)	1" (25.4mm)	**14-182A**	176.89	604.75
⅜" (9.5mm)	⅜" (9.5mm)	1⅛" (28.6mm)	**14-182B**	209.74	717.05
½" (12.7mm)	⅜" (9.5mm)	1¼" (31.8mm)	**14-182C**	254.08	868.65
¾" (19.1mm)	⅜" (9.5mm)	1½" (38.1mm)	**14-182D**	258.45	883.60
1" (25.4mm)	⅜" (9.5mm)	1¾" (44.5mm)	**14-182E**	267.08	913.10
In 10' (3.1m) Lengths					
1¼" (31.8mm)	½" (12.7mm)	2¼" (57.2mm)	**14-182F**	373.03	----
1½" (38.1mm)	½" (12.7mm)	2½" (63.5mm)	**14-182G**	435.45	----

Vacuum Leak Detector

Generates high-frequency spark to pinpoint leaks in vacuum systems, electronic tubes, insulation, valves, pipes, or any nonconducting material

- Consists of an adjustable interrupter, vibrating spark gap, capacitor, resonator coil and gap tip
- With special electrically isolated electrode
- Voltage output variable from 10,000 to 50,000 at a frequency of approximately 0.5MHz

15-340-7

ORDERING INFORMATION:

Dimensions: 2½ dia. × 13½"L (6.4 × 34cm).
For 120V 50/60Hz, 0.35A, 40w.

Cat. No.	Each	Case of
15-340-75	264.81	1358.0

Dow Corning* Silicone Diffusion Pump Fluids

For demanding high- and ultra-high-vacuum applications

01-185 Serie

Chemically and thermally inert fluids.

Formula 702

- For fast pumping of large volumes of gas
- Vacuum range, 10^{-5} to 10^{-7} torr
- Can be used with vacuum ejector pumps in 10^{-4} to 10^{-5} torr range

Formula 704

- A clear, tetramethyltetra-phenyltrisiloxane, single-component fluid for high vacuums of 10^{-7} to 10^{-8} torr range (untrapped) and 10^{-11} (trapped)

Radiation-resistant Formula 705

- For heavy-duty pumping with vacuums of 10^{-9} to 10^{-10} torr (untrapped) and 10^{-11} torr (trapped)

Formula No.	Size	Cat. No.	Eac
702 500C	500cc	**01-185-1C**	92.9
702 1GAL	8½ lb.	**01-185-1A**	647.5
704 500C	500cc	**01-185-2C**	122.0
704 1GAL	8½ lb.	**01-185-2A**	786.7
705 500C	500cc	**01-185-3C**	351.8
705 1GAL	8½ lb.	**01-185-3A**	1434.3

*Trademark. See Trademark Reference.

Prices subject to change.

RACKS

BOTTLE

/heaton Racks for BOD Bottles

ire frame is coated with Plasticol* to cut noise

- Corrosion-resistant racks hold 60 or 300mL BOD bottles see choices below)
- With interlock for connecting stacked racks (allows safe ransport in stacked position)

02-926-6

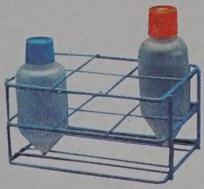
Bottle e	No. of Places	Dimensions (L × W × H)	Mfr. No.	Cat. No.	Each
mL	20	13 × 10 × 7" (33 × 25 × 18cm)	227728	**02-911-294**	49.45
0mL	12	13 × 10 × 7" (33 × 25 × 18cm)	227730	**02-926-6**	38.67
0mL	24	19 × 12 × 7" (48 × 30 × 18cm)	227735	**22-026-906**	57.94

cienceware* Poxygrid* Centrifuge ottle Rack

r round or conical bottom centrifuge bottles to 250mL

- 4" high (10cm) rack secures six bottles in bi-level square grids
- Rails on bottom level hold tips of conical-bottom bottles
- Constructed of blue epoxy-coated steel wire

DERING INFORMATION:
mensions (L × W × H):
16 × 8 3/16 × 4" (14 × 21 × 10cm)



05-663-103

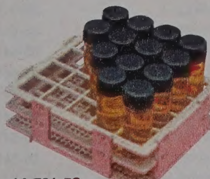
Bottle Size	No. of Places	Mfr. No.	Cat. No.	Each
to 250mL	6	19856 0250	**05-663-103**	22.70

cienceware* No-Wire* Bottle Racks

nall enough to hold in one hand

- Versatile molded polypropylene acks hold most small bottles or vials
- Autoclavable
- Available in five sizes

DERING INFORMATION:
mensions (L × W × H):
4 × 1 11/16" (13 × 11 × 4.3cm)



14-791-5C

Bottles Vials	No. of Places	Mfr. No.	Cat. No.	Each	Case of 8
mm	42	18514 0013	**14-791-5A**	15.85	108.41
mm	30	18514 0016	**14-791-5B**	15.85	108.41
mm	20	18514 0020	**14-791-5C**	15.85	108.41
mm	12	18514 0025	**14-791-5D**	15.85	108.41
mm	6	18514 0030	**14-791-5E**	15.85	108.41

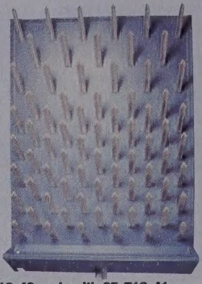
DRYING

*Fisherbrand** Polystyrene Drying Rack

Fits up to 72 pegs

- Injection-molded, high-impact, light blue polystyrene
- Pegs hold cylinders and flasks and snap in or out easily when desired
- Comes with 72 large 4" long (10.2cm) pegs, expansion hanging hooks, draining tubes and fastening stoppers for coupling with additional racks
- Interchangeable pegs for use with test tubes available separately

ORDERING INFORMATION:
Dimensions: 17W × 24"H (43.2 × 61cm) with 3" (7.6cm) ledge



05-718-40 rack with 05-718-41 pegs

Description	No. of Places	Cat. No.	Price
Drying Rack	72	**05-718-40**	Ea./225.52
Test Tube Pegs	----	**05-718-41**	Pk. of 11/17.69

Scienceware* Lab-Aire* Electric Glassware Dryer

Dries small tubes, large flasks quickly

- Dryer blows hot air through 44 hollow nylon support tubes into glassware
- Drying speed helps user keep pace with modern glassware washers
- Drying temperature adjustable from ambient to 95°C (200°F)
- Comes with two integral wall hangers

ORDERING INFORMATION:
Dimensions (L × W × H): 12½ × 7 × 24" (32 × 18 × 61cm). Electrical Requirements: 115V 50/60Hz, 500w.

11-387

No. of Places	Mfr. No.	Cat. No.	Each
44	18816 0000	**11-387**	810.00

Polypropylene Support and Dryer

Three easy-to-clean sizes

- One-piece, molded construction
- For tube sizes from 10 to 32mm
- 14-781A and 14-781B with drying pins

14-781A

For Tube Size	No. of Places	Drying Pins	Dimensions (L × W × H)	Cat. No.	Each	Case of
10–14mm	17	5	7 × 3⅛ × 2" (17.8 × 7.9 × 6cm)	**14-781B**	14.92	24/261.39
18–20mm	12	5	8 × 4 × 2⅜" (20 × 10 × 6cm)	**14-781A**	13.07	36/343.40
28–32mm	12	----	10½ × 4 × 2⅛" (26.6 × 10 × 5.4cm)	**14-781C**	17.14	24/300.24

Polypropylene Holder and Dryer

Stores easily in freezer or refrigerator

- One-piece molded polypropylene support consists of base unit and many individual posts
- Holds tubes placed open-end-up between posts
- Dries tubes placed open-end-down over the posts
- Autoclavable

14-781-16

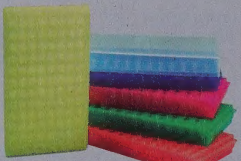
For Tube Size	No. of Places	Drying Pins	Dimensions (L × W × H)	Cat. No.	Each	Case of
10–13mm	80	102	9 × 3½ × 2⅝" (23 × 8.9 × 6.6cm)	**14-781-15**	16.30	24/285.59
14–17mm	50	66	7 × 4 × 2¾" (17.8 × 10 × 7cm)	**14-781-16**	18.14	12/158.92
18–20mm	40	55	9 × 4⅛ × 3" (23 × 10.5 × 7.6cm)	**14-781-17**	18.14	12/158.92
22–25mm	30	44	11 × 4 × 3" (28 × 10 × 7.6cm)	**14-781-18**	18.14	12/158.92
25–32mm	24	36	11½ × 5 × 3" (29.2 × 13 × 7.6cm)	**14-781-19**	20.59	12/180.36

MICROCENTRIFUGE TUBE

*Fisherbrand** Microcentrifuge Tube Racks

Two frosted writing areas for sample identification

- "Reversible," autoclavable polypropylene racks
- Withstand freezer storage to -90°C (-194°F)
- Cone-shaped wells keep tubes centered and upright
- Alphanumeric index permits easy tube identification
- Choose from 13 colors and assorted packs


05-541-38

Capacity: Hold ninety-six 0.5mL tubes on one side or ninety-six 1.5 to 2.0mL microcentrifuge tubes and screw-cap microcentrifuge tubes on the other.

ORDERING INFORMATION:

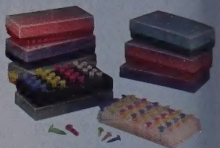
Dimensions (L × W × H): 10⅞ × 10⅝ × 4¾" (27.7 × 27.0 × 12.1cm)

Color	Cat. No.	Pack of 5	Case of 4 Pack
Natural	**05-541-29**	57.47	203.45
Lavender	**05-541-36**	66.02	233.71
Black	**05-541-37**	66.02	233.71
Fluorescent Blue	**05-541-39**	67.39	238.55
Fluorescent Green	**05-541-40**	67.39	238.55
Fluorescent Orange	**05-541-41**	67.39	238.55
Fluorescent Yellow	**05-541-43**	67.39	238.55
Blue	**05-541-45**	69.12	244.69
Green	**05-541-46**	64.50	228.32
Orange	**05-541-47**	66.02	233.71
Pink	**05-541-48**	66.02	233.71
Yellow	**05-541-49**	66.02	233.71
Fluorescent Assorted	**05-541-38†**	67.21	237.92
Nonfluorescent Assorted	**05-541-44†**	65.93	233.39

† Assorted packages include one each (fluorescent or nonfluorescent) blue, green, orange, pink, and yellow.

*Fisherbrand** Microcentrifuge Tube Rack Cover

- For use with Fisherbrand* Microcentrifuge Tube Racks (see bottom left)
- Clear cover slides on to stay in place during transportation or storage
- Accommodates extra height of screw-cap microcentrifuge tubes
- Recessed area allows stacking


05-541-28

Cat. No.	Pack of 5	Case of 4 Pack
05-541-28	15.60	53.33

*Fisherbrand** Polypropylene Microtube Storage Racks

Instantly organize microcentrifuge test tubes in any lab

- Color-coded racks provide easy identification of specific laboratory procedures or individual technician's trays
- Each well is numbered for easy sample location.
- Ideal for freezing
- Autoclavable
- Excellent for benchtop use, in storage or transport of samples
- Choose from 12 colors, including natural, plus assorted packs

05-541 Series

Capacity: Hold 80 screw-cap microcentrifuge tubes up to 2.0mL in a 16 × 5 array.

ORDERING INFORMATION:

Dimensions (L × W × H): 10½ × 9 × 5" (26.7 × 22.9 × 12.7cm)

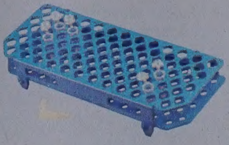
Color	Cat. No.	Pack of 5	Case of 4 Pack
Natural	**05-541**	41.63	142.32
Blue	**05-541-2**	44.70	152.83
Green	**05-541-3**	42.31	144.65
Orange	**05-541-4**	42.31	144.65
Pink	**05-541-5**	42.31	144.65
Red	**05-541-6A**	44.54	152.28
Yellow	**05-541-7**	42.31	144.65
Assorted (Nonfluorescent)	**05-541-1†**	42.66	145.83
Fluorescent Blue	**05-541-20**	58.02	198.35
Fluorescent Green	**05-541-21**	58.02	198.35
Fluorescent Orange	**05-541-22**	57.74	197.41
Fluorescent Pink	**05-541-23**	57.74	197.41
Fluorescent Yellow	**05-541-24**	58.02	198.35
Fluorescent Assorted	**05-541-25†**	58.02	198.35

† Assorted packages include one each (fluorescent or nonfluorescent) blue, green, orange, pink, and yellow.

*Trademark. See Trademark Reference.

Fisherbrand* Microcentrifuge Tube Rack

or 1.5mL micro test tubes



- Blue polypropylene
- Won't float or move in circulating water baths
- Snap together securely
- Racks are stackable even when completely loaded with test tubes

14-810-31

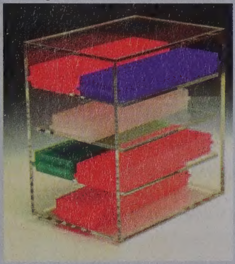
Capacity: Accommodate 50 icrotubes with lid open (without nterfering) or 100 microtubes with lid closed or without lids.

imensions (L × W × H)	Cat. No.	Case of 5
0⅜ × 4½ × 1¾" (26.4 × 11.4 × 4.4cm)	**14-810-31**	106.45

Fisherbrand* Acrylic Rack Holder

Maximizes benchtop or freezer space

- Clear acrylic rack holder has four shelves to hold up to eight trays
- Accommodates fraction collector trays and many different racks



12-009-47

imensions (L × W × H)	Cat. No.	Each
½ × 9 × 9" (16.5 × 23 × 23cm)	**12-009-47**	81.76

Fisherbrand* FlatRack* Microcentrifuge Tube Racks

conomical, disposable racks made of ecycled cardboard

05-544-4

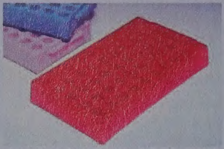
- Easily recyclable and biodegradable—packaged in biodegradable shrink-wrap, making disposal simple and affordable
- Accommodate standard microcentrifuge tubes used in microbiological research
- Autoclavable and can be used in the refrigerator or freezer
- Numbered positions allow for quick and accurate identification
- Feature space on ends for recording notes and dates
- Environmentally sensitive inks are used in printing

Capacity: Racks for 0.5mL tubes hold 30 tubes; racks for 1.5mL tubes old 20.

or Tube ize	No. of Places	Dimensions (L × W × H)	Cat. No.	Pack of 25	Case of 4 Pk.
.5mL	30	2¼ × ⅞ × 7" (5.7 × 2.2 × 17.8cm)	**05-544-1**	65.54	224.05
.5mL	20	2¼ × 1 × 7" (5.7 × 2.5 × 17.8cm)	**05-544-4**	65.54	224.05

Fisherbrand* Micrewtube* Workstation Rack

Compact, stackable rack



- ▸ Autoclavable polypropylene rack
- ▸ Locking system works with many tubes with locking bases; allows you to tighten or remove caps with one hand
- ▸ Features strong handles
- ▸ Supported by five antiskid rubber feet

05-669-45

Capacity: Holds up to fifty 0.5 to 2.0mL microcentrifuge tubes.

ORDERING INFORMATION:
Dimensions (L × W × H): 4 × 8 × 1" (10 × 20 × 2.5cm)

Color	Cat. No.	Case of 4
Blue	**05-669-44**	64.52
Red	**05-669-45**	64.52
Lilac	**05-669-47**	64.52

Fisherbrand* 96-Well Rack for PCR Tubes

Autoclavable polypropylene rack for 0.2mL tubes

- ▸ Ideal for pre- or post-PCR sampling applications
- ▸ Imprinted alphanumeric grid for easy sample identification
- ▸ Removable lid provides flexibility
- ▸ Each pack contains five racks in assorted colors (blue, green, pink, yellow, and orange)

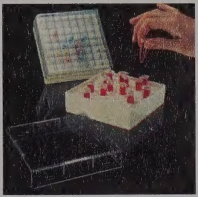
Capacity: Accommodates individual tubes or 8- or 12-tube strips in a 96-well array.

03-448-20

Dimensions (L × W × H)	Cat. No.	Pack of 5	Case of 40 Pk.
5⅛ × 3⅞ × 1¼" (13 × 10 × 3.3cm)	**03-448-20**	36.71	1174.72

Nalgene* Microcentrifuge Tube Box

Three sizes fit tubes from 0.2 to 1.5mL



- ▸ Provides safe sample storage from -135° to +121°C (-211° to +250°F)
- ▸ Bottom constructed of white polycarbonate
- ▸ Transparent polycarbonate lid has printed grid for inventory purposes
- ▸ Lid accepts marker for box and tube identification and is keyed to orient front and back of box

15-350-58

Capacity: High-temperature polyurethane foam insert securely holds sixty-four or eighty-one 0.2, 0.5, or 1.5mL microcentrifuge tubes.

ORDERING INFORMATION:
Dimensions (L × W × H): 5¼ × 5¼ × 2" (13 × 13 × 5cm)

NOTE:
Not for use in liquid phase of liquid nitrogen.

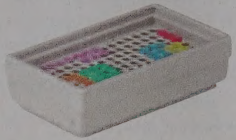
For Tube Size	No. of Places	Mfr. No.	Cat. No.	Pack of 4	Case of 6 Pk.
0.2mL	64	5055 5002	**15-350-58**	59.88	239.50
0.5mL	81	5055 5005	**15-350-59**	59.88	239.50
1.5mL	64	5055 5015	**15-350-60**	59.88	239.50

Scienceware* Styrene Microsample Tube Rack

Light gray molded high-impact styrene

- Two-piece construction—upper section has holes to hold tubes; lower tray section holds water or crushed ice to cool samples
- Stackable

Capacity: For 105 tubes under 8mm diameter.


05-561-11

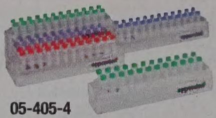
ORDERING INFORMATION:
Dimensions (L × W × H): 8⅝ × 4¾ × 2⅝" (21.9 × 12.1 × 6.7cm)

For Tube Size	No. of Places	Mfr. No.	Cat. No.	Each	Case of 12
Under 8mm dia.	105	18901 0000	**05-561-11**	58.65	612.00

Eppendorf* Microcentrifuge Tube Racks

Stackable polycarbonate racks

- Can be interlocked securely front-to-back or side-to-side
- Numbered tube positions space and elevate tubes properly, making sample identification easy
- Fully autoclavable racks are UV and chemical resistant, and can be stored at temperatures to -80°C (-176°F)


05-405-4

Capacity: Each rack holds 24 tubes, sizes 0.5mL or 1.5 to 2.0mL.

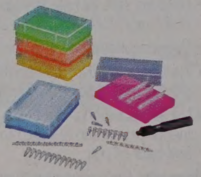
ORDERING INFORMATION:
Dimensions (L × W × H): 10⅜ × 2⅝ × 2⅜" (26.5 × 6.5 × 6.0cm)

For Tube Size	No. of Places	Mfr. No.	Cat. No.	Each
0.5mL	24	22 36 424 3	**05-405-4**	22.00
1.5–2.0mL	24	22 36 422 7	**05-405-3**	22.00

Preparation Racks for Thin-Walled PCR Tubes

For PCR preparation and storage

- Racks with covers designed for preparing and storing 0.2mL thin-walled tubes and strip caps before or after PCR sample processing applications
- Racks include alphanumeric index for easy tube identification
- Transparent plastic covers have a recessed lid that lets you stack racks
- Compatible with other manufacturers' tray/retainer sets or cycler plates, individual tubes, and 8- or 12-strip tubes
- Choice of five fluorescent colors


05-541-55 (Tube, cap strips and tool not included)

Capacity: 96 positions for 0.2mL thin-walled tubes and strip caps.

Color	Cat. No.	Pack of 5	Case of 4 Pk.
Blue	**05-541-50**	60.40	213.81
Green	**05-541-51**	66.70	236.12
Pink	**05-541-53**	63.36	224.29
Yellow	**05-541-54**	63.36	224.29
Assorted (one of each)	**05-541-55**	63.51	224.83

Fisherbrand* Beta Sample Boxes

Help to reduce exposure to radioactive isotopes

- Made of strong ⅜" thick (1.0cm) clear acrylic
- Nonskid feet
- Supplied with one tube rack which fits securely inside box with enough room for ice beneath

12-009-14

Capacity: Available with 36-place racks for 0.5, 1.5, or 2.0mL tubes or a 48-place rack for 1.5mL tubes.

ORDERING INFORMATION:
Additional racks are available; contact your Fisher Scientific Customer Service Representative for details.

For Tube Size	No. of Places	Dimensions (L × W × H)	Cat. No.	Each
0.5mL	36	8 × 4 × 2¼" (20 × 10 × 5.7cm)	**12-009-9A**	112.16
1.5mL	36	8 × 4 × 2¼" (20 × 10 × 5.7cm)	**12-009-14**	111.47
1.5mL	48	10 × 5¼ × 3" (25 × 13.3 × 7.6cm)	**12-009-48A**	131.76
2.0mL	36	8 × 4 × 2¼" (20 × 10 × 5.7cm)	**12-009-9B**	112.09

Fisherbrand* Desktop Beta Box

For holding tubes and racks

- Made from ⅜" thick (0.95cm) acrylic
- Cover has handle
- Base has four nonskid feet

12-009-46

Dimensions (L × W × H)	Cat. No.	Each
6 × 6 × 6" (15.2 × 15.2 × 15.2cm)	**12-009-46**	86.32

MULTIPURPOSE

Fisherbrand* Universal Tube Racks

Organize and store up to 46 tubes of varying sizes

- Polypropylene racks with numbered tube cavities make tracking tubes easy and convenient
- Autoclavable
- Available in five colors

14-809-200 through -204

Capacity: Multilevel design accommodates 24 microcentrifuge tubes (0.5 to 2mL), fourteen 12 × 75mm tubes (including culture tubes, cryovials and a variety of blood collection tubes), seven 15mL centrifuge tubes and one 50mL tube at the same time.

Color	Cat. No.	Each	Case of 50
Red	**14-809-200**	33.85	1353.93
Teal	**14-809-201**	33.85	1353.93
Purple	**14-809-202**	33.85	1353.93
Pink	**14-809-203**	33.85	1353.93
Yellow	**14-809-204**	33.85	1353.93

isherbrand* Interlocking Four-Way ube Racks

asily link together for custom configurations

Left to right: 03-448-14, 03-448-15, 03-448-13

- Rugged polypropylene racks accommodate tubes from 0.5 to 50mL by simply turning the rack
- Autoclavable

apacity: Each rack holds four 50mL onical tubes, twelve 15mL conical tubes, or thirty-two 0.5 and 5mL microtubes.

RDERING INFORMATION:

imensions (L × W × H): 2 × 3½ × 7" (5 × 8.9 × 17.8cm)

olor	Cat. No.	Pack of 5
atural	**03-448-11**	34.86
lue	**03-448-12**	34.86
ssorted	**03-448-17**	34.86
luorescent Green	**03-448-13**	34.86
luorescent Orange	**03-448-16**	34.86
luorescent Pink	**03-448-14**	34.86
luorescent Yellow	**03-448-15**	34.86

gos* Flexirack

NEW

rsatile polypropylene rack functions as a etting workstation

Rack shown with basin (03-395-200) and each of five different 03-395 Series tube inserts

- lodular design; allows you to create rack based on your individual quirements
- an accommodate tubes from 0.5 50mL depending upon which olor-coded insert is used
- asy-release tabs allow user to uickly change inserts for ultiple applications
- ered rack design permits simultaneous viewing of all tubes
- nall 10 × 5 × 3" (25.4 × 12.7 × 7.6cm) footprint and high tube capacity aximize valuable laboratory space

DERING INFORMATION:

k can be purchased individually or as a set of two to double tube age capacity. Disposable polystyrene basin inserts are also available.

LUDES:

nplete rack system (03-395-208) includes six 1.5mL tube inserts, two nL tube inserts, two 15mL tube inserts, two 50 mL tube inserts, two ks, and two brackets.

cription	Mfr. No.	Cat. No.	Price
ks, Brackets, and Basin			
nplete rack system with brackets	R6000	**03-395-208**	Ea./54.81
k without brackets	R6001	**03-395-201**	Pk. of 2/29.01
ckets	R6002	**03-395-202**	Pk. of 6/18.16
haped polypropylene basin	R6008	**03-395-200**	Pk. of 5/34.31
ypropylene Tube Inserts			
twelve 0.5mL tubes (Red)	R6003	**03-395-203**	Pk. of 5/10.11
twelve 1.5mL tubes (Purple)	R6004	**03-395-204**	Pk. of 5/10.11
seven 5mL tubes (Green)	R6005	**03-395-205**	Pk. of 5/10.11
four 15mL tubes (Blue)	R6006	**03-395-206**	Pk. of 5/10.11
three 50mL tubes (Orange)	R6007	**03-395-207**	Pk. of 5/12.11

PIPET SUPPORTS

Scienceware* Polypropylene Support

Holds up to 50 pipets

- Keeps pipets in vertical position for safe, orderly storage
- 5 × 10 array
- Convenient hand grips on both sides
- Autoclavable to 121°C (250°F)

13-712-10

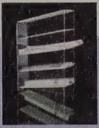
ORDERING INFORMATION:

Holes in top and middle deck are ⅝"diameter (1.6cm).

Bottom deck holes tapered from ⅝ to ¼" (16 to 6mm) prevent pipet tips from touching table beneath.

Dimensions (L × W × H)	Mfr. No.	Cat. No.	Each	Case of 6
8⅜ × 4½ × 8⅞" (21 × 11 × 22cm)	18953 0000	**13-712-10**	31.12	159.60

LOOKING FOR MORE RACKS?



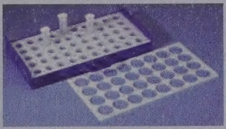
To find other racks—such as the Nalgene Pipet Holder, shown here—be sure to visit our Web site.

Visit www.fishersci.com and search for 13-715

SPECIAL PURPOSE RACKS

*Fisherbrand** Scinti-Rack* System

Ideal for transport and storage of vials



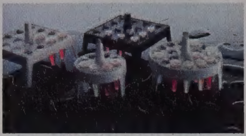
Back, 03-337-44 insert in 03-337-43; 03-337-45

- Suitable for sample preparation when adding scintillation cocktail; for use in water baths, especially for incubation, solubilization or to speed up chemiluminescence decay
- Chemically inert to scintillation liquids; decontaminates easily
- Multipurpose system consists of high-density polypropylene rack body and insert plates (sold separately)
- Holes in rack body prevent floating—assuring good heat transfer
- Insert plates easily transform rack body into convenient tray for Fisherbrand Scinti-6* vials or Fisherbrand 20mL scintillation vials

Description	No. of Places	Cat. No.	Each
Rack Body	----	**03-337-43**	21.42
6mL Insert Plate	50	**03-337-44**	15.99
20mL Insert Plate	32	**03-337-45**	16.54

Nalgene* Polypropylene Floating Microtube Racks

Especially useful in genetic cloning, microbiology and immunology labs



Back (left to right): 14-809-166, 14-809-148G; Front (left to right): 14-809-166B, 14-809-166A

- Square- and round-style racks for incubating 0.5 to 2.0mL microcentrifuge tubes at elevated or reduced temperatures in water or ice baths
- Round-style racks fit conveniently inside 400 or 1000mL beakers
- Racks will float with a full load of filled tubes
- Tubes are supported below the lip while conical ends are immersed in water
- On benchtop, rack legs prevent bottom of tubes from touching bench surface
- Molded-in handle allows convenient transport, agitation and removal from water bath
- Excellent temperature resistance from -70° to +100°C (-94° to +212°F)

ORDERING INFORMATION:

Dimensions: Square racks (L × W × H), 4 × 4 × 2½" (10.3 × 10.3 × 6.5cm); round racks, 2⅝ and 3¾" dia. (6.6 and 9.6cm) for respective 8-place and 20-place racks

For Tube Size	No. of Places	Color	Mfr. No.	Cat. No.	Pack of 4	Case of 4 Pk.
Square Racks						
0.5mL	16	Black	5974 0005	**14-809-148G**	37.92	101.13
1.0, 1.2, and 2.0mL	16	White	5974 0404	**14-809-166**	37.92	101.13
Round Racks						
1.0, 1.2, 1.5, and 2.0mL	8	White	5974 4015	**14-809-166B**	35.73	95.27
1.0, 1.2, 1.5, and 2.0mL	20	White	5974 1015	**14-809-166A**	38.21	101.88

Scienceware* No-Wire* Grip Racks

Ideal for decanting and water bath applications

Left to right: 14-791-9B, 14-791-9C, 14-791-9A

- Molded of autoclavable polypropylene that won't float
- Racks consist of two plates with tiny retainer fingers in each well to hold tubes firmly in any position
- Each rack features end plates for labeling and alphanumeric rows for easy tube identification
- Grid base features 3/16" wide (0.5cm) square holes and fold-up sides that lock into grip plates
- Stackable
- Easy to assemble

ORDERING INFORMATION:

Dimensions (L × W × H): 4⅛ × 9¾ × 2¾" (11 × 25 × 7cm)

For Tube Size	No. of Places	No. of Rows	Mfr. No.	Cat. No.	Each	Case of 8
10–13mm	90	6 × 15	18749 0000	**14-791-9A**	17.91	122.46
15–16mm	60	5 × 12	18749 0001	**14-791-9B**	17.91	122.46
18–20mm	40	4 × 10	18749 0002	**14-791-9C**	17.91	122.46

Scienceware* Supports for Radioimmunoassay Tubes

Ideal for large-volume testing

- Polypropylene racks provide a practical method of pipetting and storing a large number of samples
- Use alternate rows and rotate tubes to easily keep track of the last tube filled
- Steam autoclavable at 121°C (250°F)

14-809-11

For Tube Size	No. of Places	Dimensions (L × W × H)	Cat. No.	Each	Case of 6
10–13mm	216	13 × 9 1/16 × 3" (33 × 23 × 7.6cm)	**14-809-10**	74.75	390.00
13–16mm	120	13⅜ × 10¼ × 3¼" (34 × 26 × 8.9cm)	**14-809-11**	75.90	396.00
16–20mm	120	13⅜ × 10¼ × 3¼" (34 × 26 × 8.9cm)	**14-809-12**	78.20	408.00

Scienceware* Round Bubble Racks

Perfect racks for use in microbiology and immunology labs

14-792-15 (left), 14-792-14

- Made especially for use in beakers—incubate eight to twenty 1.5mL tubes in a beaker of water
- Molded of buoyant polymethylpentene with tiny bubbles throughout for additional buoyancy
- Racks fill at top; tubes remove easily by pressing rack down on bench until legs touch and release tubes
- Tube holes arranged in circular pattern with center rod handle
- Steam autoclavable at 121°C (250°F); can be boiled at 100°C (212°F) for 30 minutes

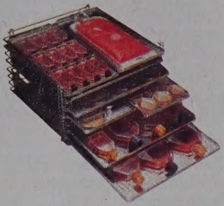
ORDERING INFORMATION:

Eight-place disc measures 2⅝" dia. (6.6cm); 20-place disc measures 3¾" dia. (9.5cm). Discs are ¼" thick (0.6cm). Legs are ¾" long (1.9cm).

For Tube Size	No. of Places	Fits Beaker	Mfr. No.	Cat. No.	Each	Case of 12
1.5mL	8	400mL	18875 0400	**14-792-14**	10.54	105.39
1.5mL	20	1000mL	18875 1000	**14-792-15**	11.74	117.44

cienceware* Stak-a-Tray* Tissue ulture Racks

rmit safe transport of cultures from lab shelf to cubator or coldroom and back



Two 07-910-4 units stacked vertically with 07-910-6 and 07-910-4A trays

- Modular stainless-steel storage ystems maximize incubator, oldroom and bench space
- Stable construction keeps trays and lishes level for even settling of issue culture cells
- Allow for easy labeling and eparation of cultures
- Select 07-910-4 (with four center upports) for storing Petri dishes or maller culture flasks
- or storing larger culture flasks, hoose 07-910-4B (with two center upports) which allows 1$\frac{15}{16}$" (5cm) learance when only two levels of trays are in use
- ive racks interlock for up to 20 levels
- tainless-steel finish allows easy tray movement
- erforated trays permit air, gas and water vapor circulation
- utoclavable

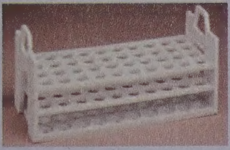
pacity: Each rack holds up to four levels of 14L × 14"W (36 × 36cm) or × 7"W (36 × 18cm) trays with $\frac{15}{16}$" (2.4cm) clearance, or two levels of ys with 1$\frac{15}{16}$" (5cm) clearance.

scription	Mfr. No.	Cat. No.	Each
ck with 2 center supports	18610 0420	**07-910-4B**	248.73
ck with 4 center supports	18610 0440	**07-910-4**	248.73
y, 14 × 7" (36 × 18cm)	18610 0470	**07-910-4A**	46.78
y, 14 × 14" (36 × 36cm)	18610 1440	**07-910-6**	65.58

TEST TUBE RACKS

*Fisherbrand** Three-Tier Polypropylene Test Tube Racks

Won't deteriorate in bath, won't rust



14-809B

- Molded racks provide rigid support when fully loaded—reduce breakage
- Stack neatly empty or filled
- Autoclavable to 121°C (250°F)
- With convenient handles for carrying
- Rows are numbered and lettered for easy referencing

or Tube ize	No. of Places	Dimensions (L × W × H)	Cat. No.	Each	Case of 4
10–13mm	72	9⅜ × 4⅜ × 4⅜" (24 × 11 × 11cm)	**14-809A**	38.39	131.26
13–16mm	40	10⅜ × 4⅜ × 5⅛" (26 × 11 × 13cm)	**14-809AA**	42.56	145.51
16–20mm	40	10⅜ × 4⅜ × 5" (26 × 11 × 13cm)	**14-809B**	38.50	131.62
21–25mm	40	12$\frac{11}{16}$ × 5 × 5" (32 × 13 × 13cm)	**14-809C**	50.31	172.01
26–30mm	24	11¾ × 5 × 5" (30 × 13 × 13cm)	**14-809D**	43.39	148.33

*Fisherbrand** Two-Tier Polypropylene Test Tube Racks

Fit most water baths for elevated temperature incubations

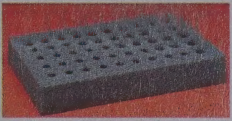
14-809-20

- Hold serum vials, RIA vials, T_3 or T_4 reaction vials, or any other vial or tube of same dimensions
- Won't rust or corrode
- Lightweight
- Autoclavable

For Tube Size	No. of Places	Dimensions (L × W × H)	Cat. No.	Each	Case of 4
10–13mm	72	9⅜ × 4⅜ × 3½" (24 × 11 × 8.9cm)	**03-213**	29.96	102.43
13–16mm	40	10 × 4⅜ × 3½" (25.4 × 11 × 8.9cm)	**14-809-20**	27.90	----
16–20mm	40	10 × 4⅜ × 3½" (25.4 × 11 × 8.9cm)	**14-809-21**	27.90	----
20–30mm	24	11¾ × 5 × 3¾" (29.8 × 12.7 × 9.5cm)	**03-337-13**	40.61	138.84

*Fisherbrand** Foam Culture Tube Racks

Resilient wells grip tubes securely



05-664-15A

- Made from chemical- and solvent-resistant polyester foam
- Five rows of wells and 10 columns per rack
- Float in water bath with full load of tubes and samples
- Flame retardant

ORDERING INFORMATION:

Weight: Less than 2 oz. (56.7g)

For Tube Size	No. of Places	Cat. No.	Pack of 6	Case of
10 × 75, 12 × 75, 13 × 100mm	50	**05-664-15A**	54.31	5 Pk./240.32
15 × 85, 16 × 100, 16 × 125 and 16 × 150mm	50	**05-664-15B**	82.93	3 Pk./220.18

*Fisherbrand** White Vinyl-Coated Test Tube Racks with Legs

Resist chemical attack from dilute mineral acids and alkalis

14-790-3

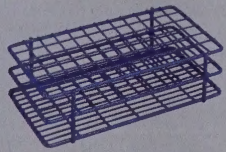
- Epoxy-coated, heavy-gauge steel wire racks with three decks and legs
- Reduce noise; extremely impact resistant
- Usable at temperatures to 100°C (212°F)
- Autoclavable

For Tube Size	No. of Places	No. of Rows	Dimensions (L × W × H)	Cat. No.	Each	Case of 12
13mm	90	6 × 15	9⅝ × 4 × 2¼" (24.4 × 10 × 5.7cm)	**14-790-3**	50.19	514.76
16mm	48	4 × 12	9½ × 3⅜ × 2½" (24.1 × 8.6 × 6.4cm)	**14-790-4**	53.42	547.86
16mm	72	6 × 12	9¼ × 4¾ × 2¾" (23.5 × 12 × 7cm)	**14-802-8**	39.12	401.28
22mm	40	4 × 10	10¼ × 4¼ × 3¼" (26 × 11 × 8.3cm)	**14-790-5**	54.37	557.65

Fisherbrand* Poxygrid* Test Tube Racks

Resist rust, corrosion, abrasives, organic solvents, acids, and alkalis

- Epoxy-coated, heavy-gauge steel wire
- Three decks and no legs
- Square holes hold test tubes securely
- Autoclavable
- Withstand temperatures to 121°C (250°F)



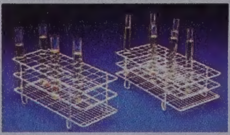
14-793-14

For Tube Size	No. of Places	No. of Rows	Dimensions (L × W × H)	Cat. No.	Each	Case of 12
13mm	72	6 × 12	7⅞ × 4 × 2⅛" (20 × 10 × 5.4cm)	**14-793-14**	52.17	535.11
13mm	108	9 × 12	8 × 6⅛ × 2⅜" (20 × 16 × 6cm)	**14-793-15**	64.78	676.05
16mm	48	4 × 12	9½ × 3⅜ × 2½" (24.1 × 8.6 × 6.4cm)	**14-793-11**	56.37	578.19
16mm	72	6 × 12	9¼ × 4¾ × 2¾" (23.5 × 12 × 7cm)	**14-793-12**	52.17	535.11
16mm	108	9 × 12	9½ × 7⅛ × 2⅝" (24.1 × 18 × 6.7cm)	**14-793-13**	63.22	659.68
20mm	40	4 × 10	9⅜ × 3⅞ × 3¼" (23.8 × 9.8 × 8.3cm)	**14-793-9**	62.87	656.09
20mm	80	8 × 10	9⅝ × 7⅝ × 3" (24.4 × 19 × 7.6cm)	**14-793-10**	61.04	636.96
22mm	40	4 × 10	10¼ × 4⅞ × 3¼" (26 × 11 × 8.3cm)	**14-793-7**	53.75	551.32
22mm	80	8 × 10	10⅜ × 8⅜ × 3½" (26 × 21 × 8.9cm)	**14-793-8**	67.43	703.63
25mm	40	4 × 10	11½ × 4¾ × 3⅝" (29 × 12 × 9cm)	**14-793-6**	50.02	513.06
25mm	80	8 × 10	11½ × 9¼ × 3½" (29 × 23.5 × 8.9cm)	**14-793-5**	72.80	759.61
30mm	24	3 × 8	10⅞ × 4¼ × 3¼" (28 × 11 × 8.3cm)	**14-793-3**	62.87	656.09
30mm	48	6 × 8	10⅞ × 8⅛ × 4" (28 × 21 × 10cm)	**14-793-4**	72.66	758.22
40mm	24	3 × 8	14 × 5½ × 4" (36 × 14 × 10cm)	**14-793-1**	62.87	656.09
40mm	48	6 × 8	14 × 10⅝ × 3⅞" (36 × 27 × 9.8cm)	**14-793-2**	66.08	689.49

Fisherbrand* Zinc-Plated Racks with Legs

Resist rust and corrosion

- Zinc-plated, heavy-gauge steel wire
- Similar to Fisherbrand vinyl-coated racks, see p. 1513
- Lightweight



14-801 (left), 14-802

For Tube Size	No. of Places	No. of Rows	Dimensions (L × W × H)	Cat. No.	Each	Case of 12
16mm	48	4 × 12	9½ × 3⅜ × 2½" (24.1 × 8.6 × 6.4cm)	**14-801**	40.37	414.01
16mm	72	6 × 12	9¼ × 4¾ × 2¾" (23.5 × 12 × 7cm)	**14-802**	42.23	433.11
25mm	40	4 × 10	11½ × 4¾ × 3⅝" (29 × 12 × 9.2cm)	**14-790**	44.29	454.28

Fisherbrand* Poxygrid* Half Racks

Resist abrasion, rust, and corrosion

- Ideal for autoclaving—unaffected by temperatures from -223° to +121°C (-370° to +250°F)
- Constructed of high-quality steel wire, welded and coated with heat-cured, thermosetting, blue epoxy
- Unaffected by salts, weak acids, weak alkalis, and organic solvents such as toluol, heptane, turpentine, and xylol
- Resist chipping
- Two decks with square holes, reinforced edges, and slotted mesh bottom

14-792-12

For Tube Size	No. of Places	No. of Rows	Dimensions (L × W × H)	Cat. No.	Each	Case of 24
10-13mm	36	6 × 6	4¼ × 4 1⁄16 × 2⅛" (10.8 × 10.3 × 5.4cm)	**14-792-10**	23.13	444.00
15-16mm	24	6 × 4	4⅞ × 3½ × 2⅝" (12.4 × 8.9 × 6.7cm)	**14-792-11**	23.13	444.00
18-20mm	20	5 × 4	5 1⁄16 × 4⅜ × 2 5⁄16" (12.9 × 11.1 × 5.9cm)	**14-792-12**	23.13	444.00

Fisherbrand* Poxygrid* Centrifuge Racks

With 30mm square holes

- Hold 50mL plastic centrifuge tubes
- Made of epoxy-coated steel wire
- Autoclavable

14-791-6A

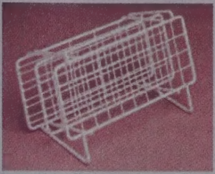
For Tube Size	No. of Places	Dimensions (L × W × H)	Cat. No.	Each	Case of 12
50mL	8	3 × 5½ × 3½" (7.6 × 14 × 8.9cm)	**14-791-6A**	28.86	295.96
50mL	16	5½ × 5½ × 3½" (14 × 14 × 8.9cm)	**14-791-6B**	30.29	310.71
50mL	36	8¼ × 8¼ × 3½" (21 × 21 × 8.9cm)	**14-791-6C**	44.78	459.25

*Trademark. See Trademark Reference.

Prices subject to change.

Fisherbrand* Two-Way Slant Racks

or incubating liquid cultures on slant during tissue ulture processes



14-796-5

- Prepare either 5° or 20° agar slants in same rack
- Autoclave media in rack
- While still hot, set rack on one side for 5° tilt, or other for 20° tilt
- 5° angle usually used for aerobic cultures, 20° for anaerobic
- 20° tilt also prevents media from drying out during long-term storage
- White, epoxy-coated, heavy-gauge steel

or Tube ze	No. of Places	Dimensions (L × W × H)	Cat. No.	Each	Case of 12
6mm	40	7¾ × 3¼ × 2½" (20 × 8 × 6cm)	**14-796-1**	33.12	339.65
0mm	40	9⅜ × 3⅞ × 3¼" (24 × 10 × 8cm)	**14-796-5**	29.91	306.78
2mm	40	10¼ × 4¼ × 3¼" (26 × 11 × 8cm)	**14-796-10**	29.50	302.59

Fisherbrand* Wood Test Tube Racks

our sizes to hold 16 to 26mm tubes

Left to right.: 14-755, 14-765, 14-770, 14-808-5

or 6 Tubes

- Rack has six drying pins (included)
- Base is heavy wood for stability
- Dimensions (L × W × H): 9¼ × 3 9/16 × 2¼" (23.5 × 9 × 5.7cm)

or 12 Tubes

- In two rows
- Without drying pins
- Rack joints won't warp or pull apart
- Dimensions (L × W × H): 7⅞ × 2¾ × 5⅞" (20 × 7 × 14.9cm)

or 13 Tubes

- Holds two different-sized tubes in two rows
- Upper row has seven openings, 20mm diameter
- Lower row has six openings, 26mm diameter
- Joints won't warp or pull apart
- Dimensions (L × W × H): 9 9/16 × 3⅛ × 7⅞" (24.3 × 7.9 × 20cm)

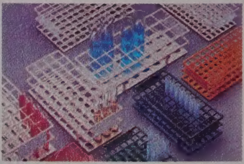
or 15 semimicro tubes

- Hardwood support block
- Holes are slotted so that liquid levels can be seen easily
- Dimensions (L × W × H): 8¼ × 2⅛ × 1¾" (21 × 5.4 × 4.4cm)

or Tube	No. of Places	Cat. No.	Each
6mm	15	**14-808-5**	27.70
0mm/26mm	13	**14-770**	30.29
2mm	12	**14-765**	22.51
4mm	6	**14-755**	20.47

Nalgene* Unwire* Test Tube Racks

Will not float in a water bath



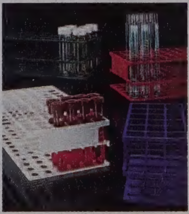
14-809 Series Racks

- Sturdy, durable ResMer* resin racks have no coating to chip, peel or rust
- Will withstand most lab chemicals and temperatures up to 121°C (250°F)
- Repeatedly autoclavable
- Smooth finish leaves fewer places for contaminants to lodge; no welds to break, no sharp edges
- Endplates accept large labels
- For positive tube identification, numbers and letters are molded into top tier
- Come fully assembled

Dimensions (L × W × H)	Color	Mfr. No.	Cat. No.	Each	Case of 8
For 13mm tubes, 72 places					
7¾ × 4 × 2¼" (20 × 10.2 × 5.7cm)	Blue	5970 0313	**14-809-41**	26.04	138.90
	Green	5970 0413	**14-809-45**	26.04	138.90
	Orange	5970 0113	**14-809-32**	26.04	138.90
	Red	5970 0513	**14-809-60**	26.04	138.90
	White	5970 0013	**14-809-22**	26.04	138.90
	Yellow	5970 0213	**14-809-37**	26.04	138.90
For 16mm tubes, 72 places					
9¾ × 5 × 2¾" (24.8 × 12.7 × 7.0cm)	Blue	5970 0316	**14-809-43**	26.04	138.90
	Green	5970 0416	**14-809-47**	26.04	138.90
	Orange	5970 0116	**14-809-35**	26.04	138.90
	Red	5970 0516	**14-809-62**	26.04	138.90
	White	5970 0016	**14-809-24**	26.04	138.90
	Yellow	5970 0216	**14-809-39**	26.04	138.90
For 20mm tubes, 40 places					
9¾ × 4 × 3¼" (25 × 10.2 × 8.3cm)	Blue	5970 0320	**14-809-52**	26.04	138.90
	Green	5970 0420	**14-809-46**	26.04	138.90
	Orange	5970 0120	**14-809-31**	26.04	138.90
	Red	5970 0520	**14-809-64**	26.04	138.90
	White	5970 0020	**14-809-26**	26.04	138.90
	Yellow	5970 0220	**14-809-38**	26.04	138.90
For 25mm tubes, 40 places					
11¾ × 4¾ × 3⅝" (30 × 12.1 × 9.2cm)	Blue	5970 0325	**14-809-42**	28.50	152.00
	Green	5970 0425	**14-809-48**	28.80	153.60
	Orange	5970 0125	**14-809-33**	28.80	153.60
	Red	5970 0525	**14-809-66**	28.50	152.00
	White	5970 0025	**14-809-28**	28.50	152.00
	Yellow	5970 0225	**14-809-40**	28.80	153.60
For 30mm tubes, 24 places					
11 × 4¼ × 3⅝" (28.3 × 10.8 × 9.2cm)	Blue	5970 0330	**14-809-44**	28.50	152.00
	Green	5970 0430	**14-809-49**	28.80	153.60
	Orange	5970 0130	**14-809-36**	28.80	153.60
	Red	5970 0530	**14-809-68**	28.50	152.00
	White	5970 0030	**14-809-30**	28.50	152.00
	Yellow	5970 0230	**14-809-50**	28.80	153.60

Nalgene* Polypropylene Unwire* Test Tube Racks

- Molded from one-piece polypropylene
- Not autoclavable

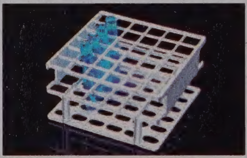

14-809-130 Series

Dimensions (L × W × H)	Color	Mfr. No.	Cat. No.	Each	Case of 8
For 13mm tubes, 72 places					
7⅞ × 4 × 2³⁄₁₆" (20.0 × 10.2 × 5.7cm)	White	5976 0013	**14-809-130**	18.58	99.09
	Blue	5976 0313	**14-809-131**	18.58	99.09
	Green	5976 0413	**14-809-132**	18.58	99.09
	Red	5976 0513	**14-809-133**	18.58	99.09
For 16mm tubes, 72 places					
9¹³⁄₁₆ × 5 × 2⅝" (24.9 × 12.7 × 6.7cm)	White	5976 0016	**14-809-134**	18.58	99.09
	Blue	5976 0316	**14-809-135**	18.58	99.09
	Green	5976 0416	**14-809-136**	18.58	99.09
	Red	5976 0516	**14-809-137**	18.58	99.09

Nalgene* Unwire* Half-Racks

Similar to Unwire test tube racks but more space efficient

- Ideal for use in incubators, refrigerators, freezers, under lab hoods, and on benchtops
- Fit easily in ice or water baths—won't float
- Small enough for storage in lab drawers


14-809-101

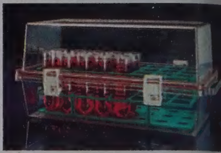
Dimensions (L × W × H)	Color	Mfr. No.	Cat. No.	Each	Case of 8
For 13mm tubes, 36 places					
4 × 4 × 2³⁄₁₆" (10.2 × 10.2 × 5.6cm)	White	5972 0013	**14-809-101**	18.62	99.29
	Blue	5972 0313	**14-809-116**	18.62	99.29
	Green	5972 0413	**14-809-120**	18.62	99.29
	Red	5972 0513	**14-809-126**	18.62	99.29
For 16mm tubes, 36 places					
5 × 5 × 2¹¹⁄₁₆" (12.7 × 12.7 × 6.8cm)	White	5972 0016	**14-809-102**	19.76	105.39
	Blue	5972 0316	**14-809-117**	19.76	105.39
	Green	5972 0416	**14-809-122**	19.76	105.39
	Red	5972 0516	**14-809-127**	19.76	105.39
For 20mm tubes, 20 places					
5 × 4⅛ × 3⁵⁄₁₆" (12.7 × 10.5 × 8.4cm)	White	5972 0020	**14-809-103**	20.23	107.90
	Blue	5972 0320	**14-809-118**	20.23	107.90
	Green	5972 0420	**14-809-124**	20.23	107.90
	Red	5972 0520	**14-809-128**	20.23	107.90
For 25mm tubes, 16 places					
4¹³⁄₁₆ × 4¹³⁄₁₆ × 3" (12.2 × 12.2 × 7.6cm)	White	5972 0025	**14-809-142**	20.23	107.90
	Blue	5972 0325	**14-809-145**	20.23	107.90
For 30mm tubes, 9 places					
4⁵⁄₁₆ × 4⁵⁄₁₆ × 3⁵⁄₁₆" (10.9 × 10.9 × 8.4cm)	White	5972 0030	**14-809-105**	20.23	107.90
	Blue	5972 0330	**14-809-119**	20.23	107.90
	Green	5972 0430	**14-809-125**	20.23	107.90
	Red	5972 0530	**14-809-129**	20.23	107.90

† *Autoclaving reduces strength over time.*

Nalgene* BioTransport Carrier

Offers excellent visibility of contents

- Closed-system carrier accommodates all sizes of Nalgene Unwire* test tube racks
- For transport of racks containing tubes or sample holders filled with potentially infectious materials
- Polycarbonate carrier is tough and break resistant
- Easy-to-grasp handles are molded in
- Clamps securely hold carrier closed and assure leak-resistant seal


15-251-2 (Rack and tubes not included.)

COMPLIANCE:

Meets OSHA Standard 29 CFR Part 1910.1030 for use as protection agai bloodborne pathogens.

NOTE:

To avoid exposure to biohazardous material due to accidental spills withi carrier, autoclave and dispose of carrier and contents without opening clamps.

Dimensions (L × W × H)	Mfr. No.	Cat. No.	Each	Case of
14½ × 7 × 6¹¹⁄₁₆" (36.8 × 17.8 × 17.0cm)	7135 0001	**15-251-2**	98.63	263.0

Nalgene* Polypropylene and Polycarbonate General-Purpose Racks

With handles for easier carrying

- With molded-in numbers and letters for easy identification of tubes
- When empty, can stack with any other racks of the same length
- Autoclavable† **Polycarbonate Racks** have top two transparent tiers with white bottom tier; do not float in water baths
- All white **Polypropylene Racks** offer superior chemical resistance; not autoclavable

14-810-11B (front), 14-810-12B

For Tube Size	No. of Places	Dimensions (L × W)	Mfr. No.	Cat. No.	Each	Case of
Polycarbonate Racks						
10–13mm	72	11 × 4½" (28.5 × 11.5cm)	5929 0013	**14-810-11A**	69.16	184.4
13–16mm	40	11 × 4½" (28.5 × 11.5cm)	5929 0016	**14-810-11B**	69.16	184.4
16–20mm	40	11 × 4½" (28.5 × 11.5cm)	5929 0020	**14-810-11C**	69.16	184.4
25–30mm	24	12½ × 4½" (32 × 11.5cm)	5929 0030	**14-810-11D**	69.16	184.4
Polypropylene Racks						
10–13mm	72	11 × 4½" (28.5 × 11.5cm)	5930 0013	**14-810-12A**	61.07	162.8
13–16mm	40	11 × 4½" (28.5 × 11.5cm)	5930 0016	**14-810-12B**	61.07	162.8
16–20mm	40	11 × 4½" (28.5 × 11.5cm)	5930 0020	**14-810-12C**	61.07	162.8
25–30mm	24	12½ × 4½" (32 × 11.5cm)	5930 0030	**14-810-12D**	61.07	162.8
21–25mm	24	12½ × 4½" (32 × 11.5cm)	5930 0025	**14-810-16**	61.07	162.8

† *Autoclaving reduces strength over time.*

lgene* Polypropylene Test Tube g Racks

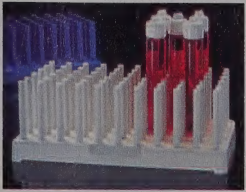
curely hold tubes and allow full visibility

eal for holding sample llection tubes, reaction tubes d test tubes

lso suitable for drying glass plates sed in electrophoresis

nsist of an array of pegs spaced hold given-diameter test tubes hile allowing full view of the be contents

gs also hold tubes in inverted sition for drying



14-810-54G (Tubes not included.)

hen inverted, ribs keep tubes off base to allow drainage through holes d minimize collection of airborne contaminants inside the tubes

utoclavable

r	Dimensions (L × W × H)	Mfr. No.	Cat. No.	Pack of 2	Case of 4 Pk.
0 to 13mm tubes; 96 places					
e	7 × 5 × 2½" (17.9 × 12.7 × 6.4cm)	5977 0313	**14-810-54D**	25.78	68.74
te	7 × 5 × 2½" (17.9 × 12.7 × 6.4cm)	5977 0013	**14-810-54A**	25.78	68.74
4 to 17mm tubes; 50 places					
e	7⅜ × 4⅛ × 2¾" (18.7 × 10.5 × 7.0cm)	5977 0317	**14-810-54K**	29.06	77.49
te	7⅜ × 4⅛ × 2¾" (18.7 × 10.5 × 7.0cm)	5977 0017	**14-810-54G**	29.06	77.49

ienceware* 50mL Tube Holders

ve both hands free for manipulation of 50mL nple tubes

andy base securely holds a 50mL nical centrifuge tube in place, eeing hands for tasks such as petting and adjustment of strumentation

08-647-120

llow better control of procedures volving measurement, analysis d modification

rip Style securely holds the tube in the base and moves with the tube hen it is lifted from the benchtop; remove tubes by holding the base and lling out tube

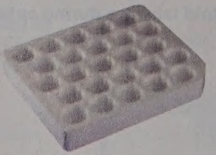
on-Grip Style allows the tube to be lifted freely from the base

e	Color	Mfr. No.	Cat. No.	Pack of 5
)	Blue	187950001	**08-647-120**	20.62
-Grip	White	187950000	**08-647-121**	20.62

Corning* Foam Centrifuge Tube Racks

For conical bottom tubes

- Made of polystyrene foam
- Rugged and lightweight for economical storage of Corning centrifuge tubes
- Standard racks hold single size of 15 or 50mL tubes; universal rack holds both 15 and 50mL tubes



07-202-531

For Tube Size	No. of Places	Mfr. No.	Cat. No.	Case of 20
Standard Racks				
15mL	25	431355	**07-200-611**	34.53
50mL	25	4365	**07-202-531**	34.53
Universal Rack				
15 and 50mL	25	4366	**07-200-610**	34.53

THERMOMETER

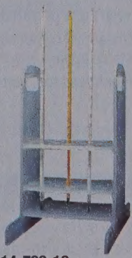
*Fisherbrand** Polyethylene Thermometer Rack

Will not tip

- Holds up to 25 thermometers in the correct vertical position to avoid mercury separation
- Sturdy high-density polyethylene construction
- Sides have large, comfortable handles to make transportation of thermometers easy

ORDERING INFORMATION:

Hole diameter in top and middle plates is ⁵⁄₁₆" (0.8cm). Bottom plate has convenient drain holes of ⅛" diameter (0.3cm).



14-793-16

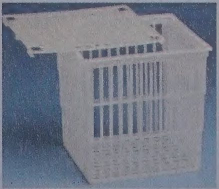
Dimensions (L × W × H)	Cat. No.	Each	Case of 6
5¾ × 8 × 10" (14.6 × 20 × 25cm)	**14-793-16**	47.93	243.73

WASH/STORAGE

*Fisherbrand** Molded Polypropylene Baskets

For incubating or sterilizing tubes

- Won't rust or corrode
- Autoclavable at 121°C (250°F)
- With tapered sides to give good support to tubes, reduce danger of breakage
- With tight-fitting polypropylene covers



14-965A

Dimensions (L × W × H)	Cat. No.	Each	Case of 4
5¾ × 4⅞ × 4¼" (14.6 × 12.4 × 10.8cm)	**14-965A**	19.40	66.33
6½ × 6½ × 6⅛" (16.5 × 16.5 × 15.6cm)	**14-965B**	22.05	75.38
9 × 9 × 9" (23 × 23 × 23cm)	**14-965C**	27.34	93.47

Nalgene* Polypropylene Autoclaving Baskets

Hold labware during autoclaving and washing

- Allow complete venting and draining
- Smooth surface will not scratch plastic or glass
- Nestable for storage

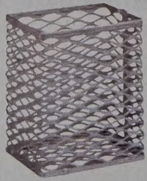
Left to right: 01-812-28 (top), 01-812-29, 01-812-30

Dimensions (L × W × H)	Mfr. No.	Cat. No.	Each	Case of 6
6⅛ × 4⅞ × 4⅛" (15.6 × 12.2 × 10.4cm)	6917 0127	**01-812-28**	23.92	95.68
6⅛ × 6⅝ × 7" (15.6 × 16.8 × 17.8cm)	6917 0150	**01-812-29**	26.91	107.65
9¼ × 9⅛ × 9⅜" (23.3 × 23.0 × 23.9cm)	6917 0230	**01-812-30**	35.94	143.79

Fisher Scientific* Aluminum Baskets without Lids

Lightweight yet strong

- Won't rust or corrode
- Unharmed by hot air or steam sterilization
- Reinforced top, bottom, and seams



13-807-20

Dimensions (L p W p H)	Cat. No.	Each
5 × 4 × 4" (13 × 10 × 10cm)	**13-807-19**	17.14
5 × 4 × 6" (13 × 10 × 15cm)	**13-807-20**	18.56
6 × 6 × 6" (15 × 15 × 15cm)	**13-807-21**	23.26
10 × 6 × 6" (25 × 15 × 15cm)	**13-807-22**	23.78

Fisher Scientific* Aluminum Baskets with Tilt-Top Lids

Won't rust or corrode

- Ideal for rinsing or storing tubes
- Use cover to tilt baskets to a convenient angle for dispensing tubes

13-807-10

Dimensions (L × W × H)	Cat. No.	Each
4 × 4 × 6" (10 × 10 × 15cm)	**13-807-10**	26.57
6 × 6 × 6" (15 × 15 × 15cm)	**13-807-11**	32.06
9 × 9 × 9" (23 × 23 × 23cm)	**13-807-12**	41.45
5 × 4 × 4" (13 × 10 × 10cm)	**13-807-13**	25.47
5 × 4 × 6" (13 × 10 × 15cm)	**13-807-14**	26.52
10 × 6 × 6" (25 × 15 × 15cm)	**13-807-15**	36.49
10 × 8 × 4½" (25 × 20 × 11cm)	**13-807-16**	35.97
11½ × 7⅞ × 7" (29 × 20 × 18cm)	**13-807-17**	40.92
12⅞ × 9 × 7 " (32 × 23 × 18cm)	**13-807-18**	44.25

Fisher Scientific* Stainless-Steel Baskets

Excellent for use in applications involving heat

- Lightweight, strong
- Withstand acid and alkali solutions
- Spot-welded construction

13-814-53

Dimensions (L × W × H)	Cat. No.	Ea
5 × 4 × 4" (13 × 10 × 10cm)	**13-814-53**	30.3
5 × 4 × 6" (13 × 10 × 15cm)	**13-814-54**	31.5
6 × 6 × 6" (15 × 15 × 15cm)	**13-814-55**	37.6
10 × 6 × 6" (25 × 15 × 15cm)	**13-814-56**	43.1

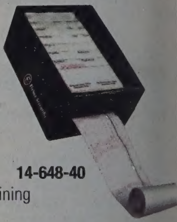
RECORDERS

RECORDERS

Fisher Scientific* Traceable* Temperature Chart Recorders

Provide a permanent record which is easy to read, duplicate, fax, scan, and file

Single-use, disposable recorders for monitoring temperatures in refrigerators, supply rooms, food storage, chemical warehouses, animal quarters, incubators, goods-in-transit, walk-in chambers, biological materials, and manufacturing plants.



14-648-40

- Shock-resistant ABS plastic case
- Eliminates messy pens, expensive instrumentation, confusing software and training
- Display temperature in both °F and °C on large 5½" dia. (14cm) chart
- Battery-operated motor turns the chart with accuracy of ±1 second per day
- Easy-to-read chart shows temperature and time/day of occurrence
- Transparent window on recorder allows viewing of current temperature and history
- Chart, marker, and battery are preloaded—simply pull tab to begin recording
- Tamper-evident seal maintains integrity of unit and results
- Form on front allows you to note start time, date, location and other information

Specifications

- Temperature range: -20° to +100°F and -28° to +38°C
- Accuracy: ±2°F (±1°C)

ORDERING INFORMATION:

Weighs 11 oz. (312g). Case measures 5¼L × 3⅞W × 2½"H (13.3 × 9.8 × 6.4cm).

INCLUDES:

One "AA" alkaline battery

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

Description	Cat. No.	Ea
5-Day Recorder	**14-648-40**	33.7
10-Day Recorder	**14-648-41**	33.7
40-Day Recorder	**14-648-42**	33.7

*Trademark. See Trademark Reference.

ckson* TH8 Remote Sensing mperature/Humidity/Dew Point Recorder

be is perfect for tight locations, cleanrooms, d chambers

NEW

15-074-112

r selectable temperature ranges and recording es. Large, 8" chart offers 84% more readable than a 6" chart. The 1" high, 3.5-digit LCD is vable from 25 feet. (Digital display on TH802, and 805 only.) Portable or wall mount.

tures

- mpact and rugged enclosure
- splay of temperature and humidity
- w point can be recorded and displayed
- p-up pen arm for easy chart and pen changes
- 0V AC adapter with a 9V battery for backup
- mote temperature/RH probe and audio/visual alarms odels TH803 and 805 only)
- cording times: 24-hour, 7-day or 31-day; (31-day available on TH802, 3, and 805 only)
- lay contact (TH805 only)

cifications

- mperature Accuracy: ±1.8°F (±1.0°C)
- midity Range: 0 to 100% (non-condensing)
- midity Accuracy: ±2% from 0 and 60%, ±3% from 60 to 95%
- w Point Range: -22 to +122°F (-30 to +50°C)
- w Point Accuracy: 10% to 95% RH ±7.2°F, ±4°C
- nbient Operating Conditions: 32° to 122°F (0 to 50°C), 0 to 95% RH
- libration: User calibration of all variables

ERING INFORMATION:

ensions (L × W × H): 9.2 × 9.2 × 3.1" (23.4 × 23.4 × 7.9cm). Weight: ox. 4 lb. (1.8kg) with batteries.

el No.	Temp. Ranges	Cat. No.	Each
01	+32 to +120°F, 0 to +50°C	**15-074-110**	402.25
02	+32 to +120°F, 0 to +50°C, +40 to +110°F, +5 to +40°C	**15-074-111**	503.95
03	-20 to +120°F, -20 to +50°C,+ 40 to +110°F, +5 to +40°C, 0 to +185°F	**15-074-112**	599.00
05	-20 to +120°F, -20 to +50°C, +40 to +110°F, +5 to +40°C, 0 to +185°F	**15-174-126**	629.00

ACCESSORIES

eplacement Charts and Pens

Charts measure 8" diameter (20cm); come in box of 60. Pens come in pack of 6

13-940-998

escription	Cat. No.	Pack of
arts		
0° to +120°F/1 day	**13-940-998**	60/28.00
0° to +120°F/7 day	**13-940-1000**	60/50.00
0° to +120°F/31 day	**13-940-1007**	60/28.00
0° to +50°C/7 day	**13-940-1002**	60/50.00
0° to +50°C/31 day	**13-940-1009**	60/28.00
° to 110°F/1 day	**13-940-1003**	60/28.00
° to 110°F/7 day	**13-940-1004**	60/28.00
° to 110°F/31 day	**13-940-1008**	60/28.00
to 40°C/7 day	**13-940-1006**	60/28.00
to 40°C/31 day	**13-940-1010**	60/28.00
ns (3 red, 3 blue)	**13-940-997A**	6/68.05

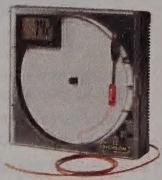
Dickson* K-Thermocouple Sensing Chart Recorders

K-Thermocouple Probe for Flexibility

NEW

User-selectable temperature ranges and recording times. Portable or wall mount.

15-074-113


15-074-115

Features

- Large 8" chart offers 84% more readable area than a 6" chart
- Available temperature range up to +2000°F
- Select from one- or two-pen models
- Large, 1" high digital display (not on KT801 model)
- Audio/visual alarms (KT803, 804, 805, 855 only)
- Compact, rugged enclosure
- Flip-up pen arm for easy chart and pen changes
- 120V AC adapter with 9V battery backup
- Relay contact (KT805 only)

Specifications

- Temperature Accuracy (recorder only): ±1.8°F (±1°C)
- Temperature Sensor: Flexible, 4" bead wire K-thermocouple probe, PTFE coated, suitable for most gas, liquids and semi-solids to +500°F (max.); KT804 6" high-temperature basic K-thermocouple probe with 4' PTFE coated cable suitable to +2100°F (max.)
- Ambient Operating Conditions: +32 to +122°F (0 to +50°C); 0 to 95% RH (noncondensing)
- Calibration: User calibration, zero point
- Recording Time: User selectable: 24 hour, 7 day or 31 day (31 day available on KT802, 803, 805, 855)

ORDERING INFORMATION:

Dimensions: 9.2 × 9.2 × 3.1" (23.4 × 23.4 × 7.9cm). Weight: Approx. 4 lb. (1.8kg) with battery.

COMPLIANCE:

CE marked.

Model No.	Temperature Ranges	Cat. No.	Each
KT801	0 to +100°F/C, -50 to +50°F/C, 0 to +250°F/C	**15-074-113**	321.60
KT802	0 to +100°F/C, -50 to +50°F/C, 0 to +250°F/C, 0 to +500°F/C	**15-074-114**	402.25
KT803	0 to +100°F/C, -50 to +50°F/C, 0 to +250°F/C, 0 to +500°F/C	**15-074-115**	502.15
KT804	0 to +1000°F/C, 0 to +2000°F, -20 to +20°F/C. +20 to +100°F/C, +50 to +150°F/C	**15-074-116**	629.00
KT805	0 to +100°F/C, -50 to +50°F/C, 0 to +250°F/C, 0 to +500°F/C	**15-174-127**	599.00
KT855	0 to +100°F/C, -50 to +50°F/C, 0 to +250°F/C, 0 to +500°F/C	**15-074-117**	599.00

LOOKING FOR ACCESSORIES FOR K-THERMOCOUPLE SENSING CHART RECORDERS?

For accessories including chart, probe, extension cable and AC adapter, find the Dickson* K-Thermocouple Sensing Chart Recorder on the Fisher Scientific Web site and click on "View Accessories."

Visit www.fishersci.com and search for Dickson K.

Dickson* Temperature Chart Recorders with K-Thermocouple Probe

Eight user-selectable temperature ranges

NEW

13-904-85

New family of 6" Temperature Chart Recorders. Features a sleeker look and feel, increased shielding to eliminate electronic noise interference and smoother pen movement. Includes AC power with battery backup, and user-selectable recording times and temperature ranges.

- Temperature ranges: -100° to 0F/C, -50° to 0F/C, -50° to +50°F/C, 0 to +50°F/C, 50° to 100°F/C, 0 to 100°F/C, 0 to 250°F/C, 0 to 500°F
- Remote temperature accuracy: ±0.3% of chart range and ±1.8°F (±1°C) recorder only
- Remote sensor: standard K-Thermocouple (other K-TC probes available)
- AC adapter, 120V 50/60Hz; 9V battery backup powers unit for up to 72 hours
- LED power status indicator
- Rugged black ABS enclosure
- Recording times: 24-hour/7-day
- Response time: 2 minutes at 63% of full scale
- Resolution: 0.1° resolution -9.9° to 199.9°; 1° resolution above 200° and below -9.9°

ORDERING INFORMATION:
Dimensions: 7½ × 7½ × 3¼" (19.2 × 19.2 × 8.3cm). Chart size: 6" diameter. Weight: 7¼ oz. (205.5g). IP rating: IP21.

INCLUDES:
AC adapter, pen, 9V battery and 4' bead wire probe; charts sold seperately

WARRANTY:
12-month, limited

CERTIFICATIONS:
Comes with standard Dickson Certificate of Calibration. NIST* Traceable and A2LA Certification is available; contact your Fisher Scientific Customer Service Representative for details.

Description	Mfr. No.	Cat. No.	Each
With probe	KT621	**13-904-84**	319.80
With probe; 3.5-digit LCD display	KT622	**13-904-85**	400.00
With probe; 3.5-digit LCD display; Audible alarm	KT623	**13-904-86**	500.25
With probe; 3.5-digit LCD display; Audible alarm and relay contacts	KT625	**13-904-87**	529.00

Dickson* Super-Compact SC3 Temperature Recorders

Compact recorder provides the accuracy and resolution required for regulatory compliance and quality control

15-075-100

The reusable SC3 is rugged enough to withstand the rigors of transportation and storage applications. Its low price makes temperature recording affordable for virtually any application.

Features

- Rugged case is ideal for transportation and storage applications
- Super-compact size; low cost
- F/C switchable, 24-hour/7-day switchable
- Easy user calibration
- Security slots for recorder security
- Special ranges for refrigerators, freezers, incubators and ambient conditio
- Optional tamper seals can be used to ensure the integrity of the chart
- Temperature sensor: precise spiral wound bimetallic strip transducer

Specifications

- Recorder accuracy: ±2°F (±1°C)
- Ambient operating temperature: -22° to +122°F (-30 to +50°C)
- Recording time: 24 hour or 7 day
- Power supply: one "AA" battery, up to two years average life
- Free standing, wall mounted or suspended

ORDERING INFORMATION:
Chart size: 3" (7.5cm) dia.; Dimensions: 3¾ × 3¾ × 2¼" (9.3 × 9.3 × 5.7cm
Weight: 0.5 lb. (227g).

INCLUDES:
Battery, pen and instruction manual

Fahrenheit Range	Celsius Range	Cat. No.	Eac
-14° to +32°F	-25° to 0°C	**15-075-100**	150.1
+4° to +50°F	-15° to +10°C	**15-075-103**	150.1
+22° to +68°F	-5° to +20°C	**15-075-101**	150.1
+50° to +96°F	+10° to +35°C	**15-075-102**	150.1
+76° to +122°F	+25° to +50°C	**15-075-104**	150.1

ACCESSORIES

Charts for SC3 Temperature Recorders

Description	Cat. No.	Pack of 60
For 15-075-100		
Fahrenheit Chart	**15-074-61**	28.00
Celsius Chart	**15-074-62**	28.00
For 15-075-103		
Fahrenheit Chart	**15-074-64**	28.00
Celsius Chart	**15-074-65**	28.00
For 15-075-101		
Fahrenheit Chart	**15-074-73**	30.00
Celsius Chart	**15-074-74**	30.00
For 15-075-102		
Fahrenheit Chart	**15-074-67**	28.00
Celsius Chart	**15-074-68**	45.00
For 15-075-104		
Fahrenheit Chart	**15-074-70**	45.00
Celsius Chart	**15-074-71**	45.00

*Trademark. See Trademark Reference.

Prices subject to change.

ickson* TempTrace* Temperature ecorders

ovide permanent record of long-term temperature cording and an easy-to-read digital display

elf-contained, circular chart, ortable, encased in high-impact, ust-resistant plastic
en accuracy is ±2% full scale
isplay accuracy is ±1°C/±2°F
-day/24-hour switchable

15-074-26

DERING INFORMATION:
ensions: 3¾ × 3¾ × 2¼" × 9.3 × 5.7cm). Charts are iameter (10cm).

LUDES:
, one "AA" battery, box of harts

TIFICATIONS:
T* traceable. One-point and three-point NIST-traceable certificates of bration are available for an additional charge; contact your Fisher ntific Customer Service Representative for details.

ording Period	Temperature Range	Cat. No.	Each
y/24 hour	-30° to +50°C	**15-074-26**	360.35
y/24 hour	-20° to +120°F	**15-074-24**	369.36
y/24 hour	0° to +100°F	**15-074-22**	369.36
hour/7 day	-20° to +120°F	**15-074-25**	257.25

ACCESSORIES

Replacement Parts for TempTrace* Temperature Recorder

- Charts come in boxes of 60

escription	Cat. No.	Pack of
harts for 15-074-26	**13-940-987**	60/52.17
harts for 15-074-24	**13-940-984**	60/46.13
harts for 15-074-22	**13-940-982**	60/46.13
harts for 15-074-25	**13-940-1001**	60/51.25
ed Pens	**13-940-997**	6/69.75

LOOKING FOR REFRIGERATORS?

We offer a full line of general- and special-purpose refrigerators to accommodate any application, including Fisher Scientific* Isotemp* and Isotemp Plus Lab Refrigerators, Flammable Materials Storage Refrigerators, Chromatography Refrigerators, Undercounter Refrigerators and more. For the complete selection, see the Refrigeration section of this catalog or

Visit www.fishersci.com and search for Refrigerator

Dickson* Vaccine Temperature Chart Recorder

Designed specifically for vaccine storage applications

NEW

The CDC now recommends using continuous, certified and calibrated chart recorders for vaccine storage monitoring. Easy-to-read charts clearly show when vaccines go out of acceptable temperature range and for how long. This chart recorder highlights ranges for standard refrigerator vaccines and freezer vaccines as well.

15-075-106

- Calibrated and certified
- 24/7 continuous monitoring, even during nights and weekends
- Easy-to-read vaccine chart (sold separately) measures 4" diameter
- Circular bands on chart show acceptable vaccine ranges
- Digital display for quick reference
- Compact size; perfect for refrigerator or freezer
- Pen accuracy, ±2% full scale; display accuracy, ±1.8°F (±1°C)
- Temperature sensor: precise spiral-wound, bi-metallic strip transducer
- Average response time: 11 minutes to move 63% of full scale
- Recording time: 7 days
- LCD display; resolution: 0.1°F (0.1°C)

ORDERING INFORMATION:
Dimensions: 5¼ × 5¼ × 2⅜" (13.2 × 13.2 × 6.1cm). Weight: 0.65 lb. (295g).

INCLUDES:
One "AA" alkaline battery, pen, calibration certificate.

CERTIFICATIONS:
CE approved

Description	Temperature Range	Mfr. No.	Cat. No.	Price
Chart Recorder - Fahrenheit	0 to 70°F	VFC70	**15-075-106**	Ea./250.87
Chart Recorder - Celsius	-18 to +21°C	VFC21	**15-075-107**	Ea./250.87
Vaccine Charts				
For 15-075-106 Chart Recorder	0 to 70°F	C203	**15-075-113**	Pk. of 60/24.29
For 15-075-107 Chart Recorder	-18 to +21°C	C204	**15-075-114**	Pk. of 60/30.00

FOR MORE DICKSON PRODUCTS...

Fisher Scientific* carries a wide selection of Dickson Temperature Chart Recorders, Temperature Dataloggers, Humidity Dataloggers, Recorder Charts and other accessories. Check out our Web site for the full range of Dickson products.

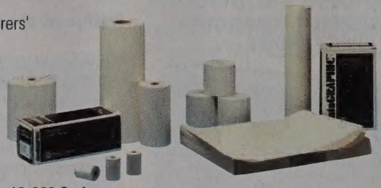
Visit www.fishersci.com and search for Dickson

Graphics Control Recording Chart Paper

Designed for clear and reliable data retrieval

This quality recording paper meets or exceeds manufacturers' specifications.

- Wide selection of paper for virtually all popular recording equipment on the market
- Chart and temperature recorders and laboratory flatbed recorders are available on our Web site



13-939 Series

Manufacturer Name and Models	Width × Length	Description	Cat. No.	Price	Case of
Hewlett-Packard* Company					
HP 5880A	8½" × 184'	Blue, Thermal, Fanfold	**13-939-251**	Ea./9.01	----
HP 3390, 3392, 3393, 8451A, 1040A, HPLC, 5080-8800-1, 5080-8800-2	107mm × 400'	Black, Thermal, Roll	**13-939-247**	Ea./32.63	----
Houston Instrument* (now Allen Datagraph)					
OmniScribe* Series B-5000, DP-10, DP-101	11" × 100'	Range: 0-10 English Grid, Time Axis: 1" 5 Minor Div., Roll	**13-939-321**	Pk. of 4/59.28	----
OmniScribe Series B-5000, DP-10, DP-101	11" × 100'	Range: 0-10 Metric Grid, 100 Div., 1.67mm Div., Roll	**13-939-324**	Pk. of 4/59.56	----
Microspec* 684, 781, 782, 783, 1310, 1320	215mm × 80'	Ord.: %T, Ab.: (4000-200cm^{-1}, 2:1 @2000), Roll	**13-939-395**	Ea./31.05	----
Kipp & Zonen					
BD 40/41	230mm × 66'	Range: 0-100, Roll	**13-939-340**	Ea./14.00	----
BD 60/61	9 1/32" × 150'	Black, Thermal, Roll	**13-939-339**	Ea./13.56	----
Linear Instruments Corp.					
140, 141, 142, 143, 1101, 1110, 1020	120mm × 100' (30m)	Range: 0-100/100-0, Roll	**13-939-343**	Ea./22.35	20/382.07
155, 156	161mm × 100' (30m)	Range: 0-100/100-0, Roll	**13-939-342**	Ea./17.15	----
250, 254, 255, 261, 285, 291, 361, 391, 400, 456, 486, 555, 561, 585, 591, 595, 1800, 1801, 1802, 25	280mm × 100' (30m)	Range: 0-100/100-0, Roll	**13-939-345**	Ea./17.92	----
252, 282	280mm × 100' (30m)	Range: 0-100/100-0, Roll	**13-939-348**	Ea./17.92	----
1200, 1201, 1202, 1210, 2020, 2030	230mm × 83' (25m)	Range: 0-100/100-0, Roll	**13-939-349**	Ea./15.93	----
LEM (formerly NGI)					
SE 120, 124, 420, 460, 461	270mm × 53'	Range: 0-100, 100-0, Fanfold	**13-939-255**	Ea./17.31	2/21.02
SE 120, 124, 420, 460, 461	270mm × 106'	Range: 0-100, 100-0, Fanfold	**13-939-257**	Pk. of 5/72.86	----
SE 120, 124, 420, 460, 461	270mm × 106'	Range: 0-100, 100-0, Roll	**13-939-256**	Ea./17.31	----
SE 430	139mm × 106'	Range: 0-100, 100-0, Roll	**13-939-259**	Pk. of 5/91.22	----
Perkin-Elmer* Corp.					
Sigma 10, 15	8½" × 184'	Black, Thermal, Fanfold	**13-939-241**	Pk. of 5/104.72	----
56, 200, 320, 330, 561	276mm × 100'	Range: 0-100/100-0, Roll	**13-939-406**	Ea./32.44	----
56, 200, 320, 330, 561	276mm × 100'	Range: 0-100, Roll	**13-939-411**	Ea./32.44	----
56, 200, 320, 330, 561	276mm × 100'	Range: 0-100, Roll	**13-939-409**	Ea./12.99	----
983	272mm × 82'	No Range, Roll	**13-939-356**	Ea./46.75	----
Shimadzu* Scientific Instruments, Inc.					
C-R3A	8 3/16" × 167'	Black, Thermal, Roll	**13-939-233**	Pk. of 10/195.63	----
SpectraPhysics*, Inc.					
SP-4000 Series	9 25/64" × 184'	Black, Thermal, Fanfold	**13-939-235**	Pk. of 5/133.20	----
SP-4270, SP-4290	9 11/32" × 167'	Black, Thermal, Roll	**13-939-236**	Ea./27.02	----

LOOKING FOR PAPER?

Fisher Scientific carries several types of **Chart Recorder Paper** to accommodate a wide range of applications. For the complete offering,

Visit www.fishersci.com and search for Chart Recorder Paper

CONTROLLERS

sher Scientific* Traceable* Digital Temperature Controller

ntrols heating elements, cooling blocks, hotplates or incubators

is equipment on or off when temperature rises above or falls below setpoints.

/ith range of -20° to +60°C (-4° to +140°F), it permits maintenance of temeratures both above and below ambient

et in 1°C or °F increments; resolution: 0.1°C or °F

" high (13mm) LCD shows temperature and time to the second

ght indicates if attached equipment is on or off

lanual override switches equipment on or off instantly without sturbing temperature settings

15VAC, UL-rated relay

nit accepts standard three-prong plug and controls equipment to 1800w, 5A

DERING INFORMATION:

ensions: 2¾L × 5½W × 1¼"H (7 × 14 × 3cm).

INCLUDES:

Two "AAA" batteries (provide memory setting backup in case of power failure) and 3½' long (1m) sensor cable.

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

11-463-47A

Cat. No.	Each
11-463-47A	161.79

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gi-Sense* Temperature Controllers

vide excellent control, accuracy and power capabilities

15-176-105

l for pilot process ts, R & D labs OEM requirements. as a benchtop roller or mount on with Panel Mount Kit 76-120 (sold separately).

bes

ntrollers accept J, K, T, E, N, B, R and S thermocouple-type probes ith miniconnectors

lvanced controller also accepts 400 Series thermistor probes with ¼" .3mm) phono plug and RTD probes with 3-pin connectors

d calibration offset

proves accuracy by compensating for individual probe error

esolution is 0.1°C below 999.9°C and 1°C above 999.9°C

ccuracy: for Type J, K, T, E and N probes, ±0.1% of reading, ±0.4°C 0.7°F) above -100°C (-248°F) or ±0.1% of reading, ±1°C (±1.8°F) below 00°C (-248°F); for Type R, S and B probes, ±0.1% of reading, ±1°C 1.8°F); for thermistor and RTD probes, ±0.1% of reading, ±0.4°C (±0.7°F)

grammable

vo-line alphanumeric display of set-up and operational parameters

et temperatures using Celsius, Fahrenheit, Kelvin or Rankine scales

arms are fully programmable with adjustable hysteresis and audible arm option

noose from alarms off; manual reset; or automatic reset

ocess alarms trigger if temperature goes outside a set range and can be t for HIGH, LOW or HIGH/LOW modes

- Deviation alarms trigger if temperature deviates from a single setpoint and can be set for HIGH, LOW, HIGH/LOW or BAND modes
- Advanced controller includes SPDT alarm relay to set a circuit to either open or close when triggered

Safety Features

- Fail-safe operation with adjustable overtemperature shutdown and loop break cutoff
- Output power to load device automatically shuts down if sensor or control loop breaks
- If overtemperature setpoint is exceeded, system shuts down automatically
- Output power receptacle fused separately for added safety
- Nonvolatile memory protects set-up parameters and saves parameters if power is lost

Standard Controller

- Maximum heater output is 115/230V, 10A, 1150/2300w
- Select from ON/OFF, AUTOTUNE for standard proportional integral derivative (PID) applications
- Programmable PID for nonstandard PID applications

Advanced Controller

- All the standard controller's features plus higher heater output capacity of 115/230V, 15A, 1725/3450w, up to nine programmable ramp and soak profiles, bidirectional RS-232-C computer interface, and a Windows* software program†
- Features an isolated 4 to 20mA output, scalable for positive or negative slope, 250ohm resistor for conversion to a 1 to 5V output signal, and an output connector

ORDERING INFORMATION:

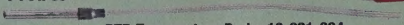
Controllers are available in 115V (with 6' long power cord) or 230V (with a European-style power cord set and power output connector). Dimensions: 10L × 7⅜W × 3¾"H (25 × 18.5 × 9.4cm).

troller†	Ramp/Soak	RS-232-C Connection	Recorder Output	Electrical Rqts./Control Output	Cat. No.	Each
dard Model						
er Only	No	No	None	115V/10A	**15-176-105**	680.96
er Only	No	No	None	230V/10A‡	**15-176-125**	717.69
er and NIST* Certificate	No	No	None	115V/10A	**13-621-858**	812.96
er with Probe and NIST Certificate	No	No	None	115V/10A	**13-621-848**	905.85
er with Probe and NIST Certificate	No	No	None	230V/10A‡	**13-621-849**	923.64
nced Model						
er Only	16 Segments	300 to 9600 Baud	4 to 20/20 to 4mA, Selectable	115V/15A	**15-176-110**	903.57
er Only	16 Segments	300 to 9600 Baud	4 to 20/20 to 4mA, Selectable	230V/15A‡	**15-176-115**	945.85
er and NIST Certificate	16 Segments	300 to 9600 Baud	4 to 20/20 to 4mA, Selectable	115V/10A	**13-621-860**	1025.83
er with Probe and NIST Certificate	16 Segments	300 to 9600 Baud	4 to 20/20 to 4mA, Selectable	115V/10A	**13-621-850**	1118.98

tem requirements: 386 computer or better; Windows 3.1 or higher; EGA, VGA or compatible monitor. ‡ International Model(s).

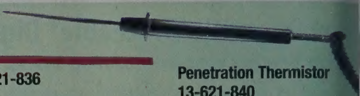
ACCESSORIES

Probes



RTD Temperature Probe 13-621-834

J Type Thermocouple 13-621-836



Penetration Thermistor
13-621-840

Description	Type	Temp. Range	Cat. No.	Each
General Purpose, with 5½" handle	Thermistor	-22 to +212° F (-30 to 100° C)	**13-621-839**	95.76
Penetration, with 5½" handle	Thermistor	-22 to +212° F (-30 to 100° C)	**13-621-840**	95.76
General Purpose, compact	RTD	-58 to +932°F (-50 to 500°C)	**13-621-834**	82.81
Flexible wire, PTFE coated, 10'	J	-310 to +400°F (-190 to 204°C)	**13-621-836**	26.13
General Purpose, with 5½" handle	K	-310 to +1400°F (-190 to +760°C)	**15-078-6**	42.83
Flexible wire, PTFE coated, 10'	T	-418 to +400°F (-250 to 204°C)	**13-621-838**	26.13

DATALOGGERS

*Fisherbrand** Exact-Temp* Dataloggers

Measure and record temperature, humidity and/or pH

Battery-powered dataloggers eliminate the need to carry, set up and operate strip chart recorders. Accurately record data in user-selectable intervals.

- Compact and lightweight
- Connect to PC for real-time monitoring
- Monitor and record in real time
- All data can be viewed graphically or exported to a spreadsheet
- All units connect to a PC through an RS-232 or serial port
- Calibrate and set reproducible parameters such as reading rates, starting time, and minimum/maximum or high/low alarm limits with Windows* 95/98/2000/NT-based software (available separately); this data acquisition software is also used to retrieve temperature, date and time readings, and calculate mean kinetic temperature, dew point and standard deviation
- Display temperatures graphically in °C, °F, °K or °R; print or export to Excel*
- All models have programmable minimum/maximum limits
- Time accuracy: ±60 seconds per month at 20°C (68°F)
- Rugged ABS plastic housing is shock resistant; one-year 3.6V battery

CERTIFICATIONS:

Certificate indicating instrument traceability to standards provided by NIST* is available separately; contact your Fisher Scientific Customer Service Representative for information.

APPLICATIONS:

Ideal for environmental studies, monitoring sensitive environments and recording temperatures of perishables throughout all stages of manufacturing, storage and transport.

Humidity and Temperature Datalogger

Accurately records and stores up to 21,845 temperature readings and 21,845 humidity readings

- Records temperatures ranging from -40° to +75°C (-40° to +167°F) with ±0.5°C (±1.0°F) accuracy and 0.1° resolution in 12 intervals from 15 seconds to 24 hours
- Records humidity over the range of 0 to 95% RH with ±3% RH accuracy and 0.5% resolution
- Automatically measures dew point and percent water vapor
- Programmable minimum and maximum limits with visual alarms

Temperature & Humidity Recorder
RHTemp 101
Fisherbrand

15-059-302

ORDERING INFORMATION:

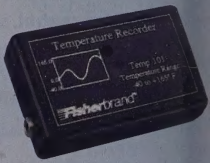
Dimensions: ⅝L × 2¼W × 1⅜"H (15 × 56 × 36mm)

Storage Capacity	Cat. No.	Each
21,845 temperature/21,845 RH readings	**15-059-302**	231.60

Temperature Dataloggers

Store up to 32,767 temperature readings in 15 intervals of two seconds to one per day

- Measure and record temperatures ranging from -40° to +80°C (-40° to +176°F) with ±0.5°C (±0.9°F) accuracy and 0.1° resolution
- Nonvolatile solid-state memory
- 15-059-500 features a START/STOP pushbutton to synchronize multiple devices and delay data collection



15-059-301

ORDERING INFORMATION:

Dimensions: ⅝L × 2¼W × 1⅜"H (15 × 56 × 36mm); weight: 1 oz. (28g).

Datalogger	Storage Capacity	Cat. No.	Each
Temperature	32,767 readings	**15-059-301**	137.00
Temperature with Start/Stop Button	32,767 readings	**15-059-500**	122.30

High-Temperature Datalogger

Records up to 32,767 temperatures

Water- and moisture-proof aluminum tube housing; designed to be used in autoclaves and sterilizers for temperature verification.

- Measure and record temperatures ranging from -40° to +125°C (-40° to +257°F) with ±0.5°C (±0.9°F) accuracy and 0.1 resolution
- User-selectable reading rates range from every two seconds to one per day
- Designed to be used in autoclaves and sterilizers for temperature verification

15-059-303

ORDERING INFORMATION:

Dimensions, ¾ dia. × 4"L. Weight, 2 oz. (56.7g).

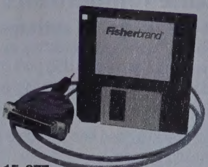
Storage Capacity	Cat. No.	Each
32,767 readings	**15-059-303**	343.95

*Fisherbrand** Exact-Temp* Datalogging Software

NCLUDES:

Vindows* 3.1/95/98/2000/NT-based software for Fisherbrand Exact-Temp Dataloggers, cable or connecting to a PC, and instructions

Cat. No.	Each
15-077	69.50



15-077

ckson* LCD Display Temperature ıtaloggers

wnload data quickly with one-step data transfer

15-174-116

15-174-117

vnload data in just seconds, using new port, compared to 1.5 minutes using ıdard serial port. Or, leave the logger ıe field and use memory cards to sfer data to your PC. Only download data when you need to—24/7 lback through Min/Max or real- display, bolstered by visual and o high/low alarms. (Needs DicksonWare* icksonWare Secure* software to set up and nload the datalogger.)

SB-enabled triple-speed downloading

ASH memory card data transfer-capable

).8°F accuracy

ımbo display plus visual/audio alarms

gh/Low alarm, Min/Max display

ıper high-speed USB 2.0 Connectivity, one-step data transfer using movable SD FLASH memory cards and 1-second sample rate

gh-accuracy temperature models and remote probe models

'all mountable via keyhole slots

mensions: 4 × 3 × 1⅝" (10.2 × 7.7 × 3.9cm); weight, 9 oz.

V420 features a ±0.5°F high-accuracy platinum RTD probe for onitoring critical storage applications and processes

ernet Connectivity

'20 and SM725 Network Dataloggers feature Ethernet connectivity, ng you view graphs, download logged data and modify logger settings ne or multiple loggers connected to your local area network from your r over the Internet using a VPN or pc Anywhere*. (Needs DicksonWare ıre to set up and download the loggers.)

TIFICATIONS:

pproved

el	Network Connectivity	Temp. Range	Accuracy	Remote Probe	Cat. No.	Each
00	MP100	-4° to +158°F/ -20° to +70°C	±0.8°F	None	**15-174-113**	255.25
20	MP100	-4° to +158°F/ -20° to +70°C	±1.8°F	1 K-Thermo couple	**15-174-114**	301.45
25	MP100	-300° to+2000°F/ -184 to +1093°C	±1.8°F	2 K-Thermo couple	**15-174-115**	402.25
20	MP100	-50° to +350°F/ -45° to +176°C	±0.5°F	1 Platinum RTD	**15-174-116**	503.05
20	Ethernet	-300° to+2000°F/ -184° to 1093°C	±1.8°F	1 K-Thermo couple	**15-174-117**	549.00
25	Ethernet	-300° to+2000°F/ -184° to 1093°C	±1.8°F	2 K-Thermo couple	**15-174-118**	599.00

Dickson* Coin-Sized Temperature and Temp/Humidity Dataloggers

Compact, slightly larger than a quarter—fits almost anywhere

15-174 Series

Buy loggers by the dozen for mapping larger warehouses, recording temperature and humidity during shipping, HVAC/R audits, and more. View downloaded data with user friendly DicksonWare* software. It creates a graph of your data in seconds and features include customization of your graph and zooming and viewing of your data in tabular format. You can also view data from several loggers on a single graph, enabling easy comparison of multiple sets of data. Transferring the data into documents or spreadsheets is a snap.

- Easy to use
- Unfailing accuracy
- Available in cost-effective 12 packs
- The SK500 monitors temperature; the TK500 monitors temperature and humidity

APPLICATIONS:

Monitoring goods in storage; logging conditions while goods are in transit; mapping and evaluating HVAC/R systems; place in shipping containers, refrigerators, freezers, coolers, ventilation ducts, or anywhere you need to monitor temperature conditions

Model	Description	Temperature Range	Cat. No.	Each
SK500	Temperature Datalogger	-4° to +158°F/ -20° to +70°C	**15-174-122**	503.05
TK500	Temperature/Humidity Datalogger	-4° to +158°F/ -20° to +70°C	**15-174-124**	899.00

Dickson* Vaccine Temperature Datalogger

Designed for fast-paced clinical settings

Download data in just seconds, using new USB port compared to 1½ minutes using standard serial port. Or, leave the logger in the field and use memory cards to transfer data to your PC.

- High-speed USB 2.0 connectivity and one step data transfer using removable SD Flash memory cards
- Jumbo display with min./max. option and visual/audio alarms
- Temperature range: Internal, -4° to +158°F (-20° to +70°C); external with probe, -20° to +158°F (-29° to +70°C)
- Temperature accuracy: ±1.8°F (±1°C)
- Resolution: 0.1° from 0.0° to 999.9°; 1° over 1000°
- 4' PTFE-coated, K-Thermocouple, bead-wire probe with miniconnector
- Internal sensor: thermistor
- Download: USB, serial, or memory card
- Ambient operating conditions (logger only): -4 to +158°F (-20 to +70°C); 0 to 95% RH noncondensing
- AC adapter: input voltage/current, 120VAC/60Hz/16W; output voltage/current, 9VDC/1A
- Number of samples: 32,000 (16,000 per channel) measurements
- High/Low audible alarm; visual "ALARM" on display
- Glycol bottles provide temperature stabilization, eliminating false alarms due to cycling and frequent door opening
- Wall mountable via keyhole slots

NEW
DICKSON

15-075-10

ORDERING INFORMATION:
Dimensions (enclosure): 4 × 3 × 1.6" (10.2 × 7.7 × 3.9cm).
Weight: 9 oz. (255g).

INCLUDES:
4 "AA" alkaline batteries, instruction manual, AC adapter with 10' exte cable, Velcro* mounting strip, standard certificate of validation, one or K-Type Thermocouple beadwire probes

CERTIFICATIONS:
CE approved

Description	Mfr. No.	Cat. No.
Datalogger with 1 K-Thermocouple Probe	VFC320	15-075-108
Datalogger with 2 K-Thermocouple Probes	VFC325	15-075-109

REFRACTOMETERS

BENCHTOP

Fisher Scientific* Abbe* Benchtop Refractometers

Perform a wide variety of analyses including purity studies, film thicknesses, binary mixtures, soluble sugars (Brix), dispersion studies, and refractive indices of liquids, solids, powders, and opaque materials

- Easy to calibrate and adjust; read both light transmittance and reflectance
- Select from sample illumination, momentary scale illumination, or power OFF by using the three-position switch
- Place sample directly on the measuring prism for reflection measurements
- Sample illuminator swings into position for either transmitted or reflected readings
- Internally illuminated scale gives direct readings in Refractive Index and percent dissolved sugar
- Determine optical dispersion and Nu values from dispersion dial readings

Features

- Adjustment knob sets the dividing line and allows fine adjustments for precise readings to 0.0001 for refractive index (1.30 to 1.71n_D) and 0.05% for dissolved solids readings (0 to 85% sucrose)
- Dual Amici prism compensator produces sharp dividing lines with sodium (D) illumination
- Clip assembly locks the illuminating prism in place
- Rugged, chemically resistant metal housing protects vital parts from dust, fumes, and stray liquids

13-964 Series

INCLUDES:
Glass calibration test piece (calibrated against equipment whose calibration is traceable to NIST*), bottle of 1-bromonaphthalene contact liquid, thermometer, dust cover, instructions, and dispersion table

Electrical Requirements	Cat. No.
115V 60Hz	13-964-10
220V 50Hz	13-964-11

*Trademark. See Trademark Reference.

sher Scientific* Economy Refractometers

termine relative optical dispersion, sugar concentration and total solids in preserves; identify organic mpounds and more over 1.30 to 1.90 N-range or 0 to 80% sucrose range

ccuracy is ±0.002 refractive units and ±1%; needs only 1µL sample
nique illuminated scale ensures maximum visibility

Use

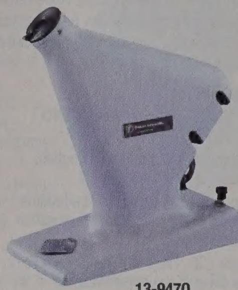
amp casts light beam through 2mm to the eye
ixed glass plate with plane, parallel faces and attached glass prism rest ver aperture, forming small sample well
ight beam passing through sample well provides clear illuminated image of cale plus virtual image (due to refraction through sample prism)
olutions with RI less than glass produce virtual image above slit in cale; Refractive Indices greater than glass produce virtual images elow slit

LUDES:

t source and glass prism

WARRANTY:
12 months

COMPLIANCE:
CSA approved



13-947Q

Electrical Requirements	Cat. No.	Each
For 115V AC/DC	13-947Q	1063.18

ermo Scientific* Tabletop Abbe* 3L Refractometer

r indices of refraction of liquids and solids between 1.30 and 1.71

dustry workhorse, ruggedly built to withstand years of daily use in the b or on the production floor
etermines % dissolved solids (based on International Sucrose Tables) to 0.2% over 0 to 85% range
stimate results to ±0.1%
recision index scale subdivided into 0.0005n_D units
ernier micrometer ensures sharp line settings
ne and scale both visible in one eyepiece
onstant sample temperature is maintained in both prism boxes by water-ath flow system
amp arm is corrosion resistant with all wiring mounted within the arm

PLICATIONS:

d for a wide variety of analyses, including purity studies, film thicknesses, ble sugars (Brix), dispersion studies, refractive index of liquids, solids, ders, opaque materials.

DERING INFORMATION:

115V 50/60Hz.

LUDES:

of prisms, 2X eyepiece, glass test piece, thermometer graduated 0 to 100°C in 1° increments, one 7mL bottle of 1-bromonaphthalene, ration wrench, plastic dust cover, dispersion tables, and instructions

COMPLIANCE:
CSA approved

13-963

Mfr. No.	Cat. No.	Each
334610	13-963	3966.00

Reichert* Abbe* Mark III Refractometer

Manual refractometer with computerized interpretation and data handling

13-975-150

A modern version of the classic Abbe refractometer, with operating features of the Reichert Abbe Mark II Plus and advanced features found on the Reichert Arias 500.

Simple operation

- Five-button operation, with MENU, SELECT, READ and arrow keys
- Multilingual instructions in English, German, Spanish, French
- To operate, just place the shadowline intersect in the center of the crosshair and press the READ button
- Graphic LCD, 1⅞W × 1⅞"H (4.7 × 4.7cm), gives direct measurement readout
- Accuracy is enhanced by Automatic Temperature Equilibration Detection software and Automatic Temperature Compensation
- Set Point or Set Point/Span (user definable) calibration

Modes/Temperature

- Dissolved solids, 0° to 95° Brix; Refractive Index, 1.3000 to 1.7000n_D; accuracy: ±0.0001n_D, ±0.1% solids (0.0 to 95.0%)
- Programmable with up to 14 custom scales, password protected setup, Restore to Factory option
- Temperature compensation range: 10° to 40°C (59° to 104°F); accuracy: ±0.1°C
- Temperature control range, 10° to 80°C (59 to 176°F) via ports for external circulator
- Dual RS-232-C serial ports allow direct connection to computer

Optical Features

- Focusable eyepiece and dispersion correction prism for true 589nm Refractive Index measurement
- Adjustable, built-in illumination provided by long-life LEDs
- Glass prism is sealed with epoxy to 416 Grade stainless-steel housing

APPLICATIONS:
Ideal for medical, pharmaceutical, industrial fluid, chemical, petrochemic plastic, food and beverage industries. Suitable for use with either transparent or translucent liquids and solids.

ORDERING INFORMATION:
Dimensions: 11L × 6¼W × 13¾"H (28 × 25.8 × 34.5cm). Net weight, 17¼ lb. (7.84kg). Electrical requirements: 110-220V, 50/60Hz.

INCLUDES:
Refractometer; universal 110/220V, 50/60Hz power supply; instructions

COMPLIANCE:
CSA approved

WARRANTY:
Two years

CERTIFICATIONS:
UL listed

Model	Mark III Manual Benchtop Refractometer
Operating System	Manual, Transmitted Light
Prism Assembly	Glass prism sealed with epoxy to 416 Grade stainless-steel housing
Sample Types	Transparent and translucent liquids and solids
Display	Graphic LCD, 1⅞W × 1⅞"H (4.7 × 4.7cm)
Illumination	Long-life internal LEDs
Calibration	Water or optional span oil
Ranges	1.3000 to 1.7000 Refractive Index; Full Brix Sc per ICUMSA
Resolution	0.0001 RI, 0.1% Brix
Accuracy	±0.0001 RI, ±0.1% Brix
Temperature Control Type	Ports for external circulator
Temperature Control Range	10° to 80°C (59° to 176°F)
Temperature Compensation	10° to 40°C (59° to 104°F)
Temperature Compensation Accuracy	0.01°C
Electrical Requirements	110–220V, 50/60Hz
Mfr. No.	1310488M
Cat. No.	**13-975-150**
Each	5295.00

Reichert* Abbe* Mark II Plus Refractometer

Provides computerized data handling for Refractive Index measurements

- Provides testing in % solids (Brix), temperature-compensated % solids (Brix), and Refractive Index (n_D) modes
- Electronic temperature sensing and LED readout assure reliability of sample and temperature measurements—numerical result is digitally displayed when pressing READ button; press TEMP button for prism temperature display
- To use, place samples on prism surface, adjust light source and shadow line, then select operating mode via front panel control knob

Modes/Temperature

- Dissolved solids, 0° to 95° Brix and % solids; Refractive Index, 1.3200 to 1.7000n_D; accuracy: ±0.0001n_D, ±0.1% solids (0.0 to 95.0%)
- Temperature compensation range: 15° to 50°C (59° to 122°F); accuracy: ±0.1°C

Connectivity

- Serial port allows direct connection to IBM*-compatible (PC/XT* AT*) computer
- Simultaneous use of standard communications program (Windows* HyperTerminal*) allows data transfer

13-97

Features

- Focusable eyepiece and dispersion correction prism for true 589nm Refractive Index measurement
- Adjustable, built-in illumination system
- Stainless-steel prism assembly is sealed with solvent-resistant epoxy

APPLICATIONS:
Ideal for medical, pharmaceutical, industrial fluid, chemical, petrochemical, plastic, food and beverage industries. Suitable for use with either transparent or translucent liquids and solids.

ORDERING INFORMATION:
Dimensions: 10½L × 6W × 14"H (26.2 × 15.2 × 36cm); net weight, 16 lb. (7.3kg)

COMPLIANCE:
CSA approved

CERTIFICATIONS:
UL listed

Mfr. No.	Cat. No.	E
13104940	**13-975-103**	4995

*Trademark. See Trademark Reference.

Prices subject to change.

eichert* Arias 500 Refractometer

tomatic, dual-array, transmitted-light refractometer ted for transparent, translucent, and semitranslucent uid and solid samples

- ovides direct reading of % solids (Brix), temperature-compensated % olids (Brix), RI, temperature-compensated RI, and temperature
- leasures in RI range of 1.30000 to 1.70000 with ±0.00005 accuracy; easures % solids (Brix) from 0 to 100% with a ±0.03% accuracy; tem- erature compensation range is 10° to 40°C (50 to 104°F)
- x high-intensity monochromatic LED internal lights at standard 589nm nd built-in wavelength filter eliminate need for external light adjustment
- even calibration points—one point is water, six points are ustomizable—and automatically records more than 120 of the most cent calibrations to comply with ISO laboratory maintenance protocols
- ser-friendly 1¾W × 1¾"H display with choice of instructions in nglish, German, Spanish, or French; password-protected setup, nd easy programming of up to 15 custom channels
- vo RS-232-C serial ports allow for data output to computer or printer

Use

- ace a sample directly on the glass prism, bring shadow into the field view; press READ button
- ptiMatrixx* dual array RI system precisely etermines shadowline position by using an array to determine manual positioning of shadowline within the crosshairs, then a second array automatically detects the exact shadowline position
- Thermistor located directly at the prism/sample interface provides accurate sample temperature readings without degree variations
- Also detects thermal equilibrium point between sample and prism, and automatically initiates a reading

13-975-121

ORDERING INFORMATION:

Encased in a sturdy cast-aluminum housing. Dimensions L × W × H: 11 × 6¼ × 13⅝" (28 × 15.9 × 34.5cm); weight: 17¼ lb. (7.8kg).

COMPLIANCE:

UL listed and CE marked.

Electrical Requirements	Mfr. No.	Cat. No.	Each
110–115V, 50/60Hz	1310499SA-US	**13-975-121**	6595.00

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ichert* r^2i300 Automatic Benchtop fractometer

ally suited for applications where bench space is ited, but the application calls for an accurate oratory refractometer

- mpact footprint is about the size of a sheet of paper
- easures a full Refractive Index range plus % Brix
- stom programming memory holds up to seven additional stomer scales
- water bath circulator needed: measurements are automatically tem- rature-compensated to ensure accurate and precise readings
- ores last 1000 measurements and calibration history log in memory
- ports data via RS-232 serial port to a PC for further storage and use
- nter port provides direct connection to a printer

ERING INFORMATION:

ensions: 8½L × 11½W × 3"H (21.6 × 38.1 × 7.6cm).

LUDES:

nd EU power cords, 9 pin /female RS-232 cable

WARRANTY:

Two years

13-975-410

Model	r^2i300
Display	Direct reading LCD
Ranges	1.3300 to 1.5600 RI, 0 to 95.0% Brix
Resolution	0.0001 RI, 0.1% Brix
Accuracy	±0.0001 RI, ±0.1% Brix
Temperature Compensation	15° to 40°C (59° to 104°F)
Temperature Accuracy	±0.1°C
Electrical Requirements	110–220V, 50/60Hz
Calibration	2 to 5 points
Mfr. No.	13980000
Cat. No.	**13-975-410**
Each	4300.00

Reichert* AR700 and AR70 Temperature Controlled Automatic Refractometers

Accurate readings of Brix, Refractive Index, product concentration measurement, purity determination, and chemical identification analysis at specified temperatures

NEW

13-975-118

- AR70 has 1.3300 to 1.6000nD RANGE; AR700 has.expanded reading range of 1.33000 to 1.60000 Refractive Index
- Both read Full Brix Scale per ICUMSA; covers most applications throughout the food and beverage, chemical, and pharmaceutical markets
- Advanced thermal regulation system allows user to select the desired operating temperature from 10° to 100°C; Peltier electronic temperature control eliminates the need for a water bath circulator and improves accuracy
- Optics are durable sapphire prism, 3600 cell detector, and 589nm LED illumination
- Easy to use: simply apply the transparent, translucent, or opaque sample; press read; and obtain the results

ORDERING INFORMATION:
Overall dimensions: 17L × 10½W × 4½"H (43 × 27 × 11cm). Net Weight: 17 lb. (7.7kg). For 110 to 220V.

INCLUDES:
NIST* certified oils

CERTIFICATIONS:
UL listed and CE marked.

Model	AR700	AR70
Reading Range		
Refractive Index	1.33000 to 1.60000n_D	1.3300 to 1.6000n_D
Brix	Full scale per ICUMSA; user definable in custom channels	
Accuracy		
Refractive Index	0.00005n_D	0.0001n_D
Brix	0.03%	0.1%
Temperature Control	10.00° to 100.00° (user definable) in 0.01°C increments	
Temperature Accuracy	0.01°C	0.1°C
Prism and Sample Well	Sapphire prism bonded with solvent-resistant epoxy to 413-grade stainless-steel well	
Data Output	Two RS-232-C serial ports	
Mfr. No.	13107000	13107700
Cat. No.	**13-975-118**	**13-975-132**
Each	11,077.46	8995.00

Reichert* AR600 and AR60 Automatic Refractometers

For concentration measurement, purity determination, and chemical-identification analyses

RE-10600

- AR60 has 1.3200 to 1.5200n_D range; AR600 has expanded 1.32000 to 1.52000n_D range
- Both models read Full Brix Scale per ICUMSA; user definable in custom channels
- Advanced optics with durable sapphire prism and 2600 cell detector
- Automatic temperature compensation corrects readings for temperature variations
- Water-bath circulator ports permit sample temperature control from 10° to 60°C (50° to 140°F)
- Well assembly is 416-grade stainless steel sealed with solvent-resistant epoxy

APPLICATIONS:
Concentration measurement, purity determination, and chemical-identification analyses. Can also read many cloudy, dark, or opaque samples that produce poor resolution and shadowlines on standard refractometers.

ORDERING INFORMATION:
Dimensions: 16L × 11¼W × 6¼"H (40.6 × 28.6 × 15.9cm). For 110–220V 50/60Hz. For additional temperature control, accessories such as a flow cell, funnel flow cell, and sample press are available; contact your Fisher Scientific Customer Service Representative for information.

COMPLIANCE:
CSA approved

CERTIFICATIONS:
UL listed and CE marked.

Model	AR600	AR60
Reading Range		
Refractive Index	1.32000 to 1.52000n_D	1.3200 to 1.5200n_D
Brix	Full Brix Scale per ICUMSA; user definable in custom channels	
Precision		
Refractive Index	0.00002n_D	0.0001n_D
Brix	0.01%	0.1%
Temperature Compensation Range	10°–40°C (50°–104°F)	10°–40°C (50°–104°F)
Temperature Accuracy	0.01°C	0.1°C
Prism and Sample Well	Sapphire prism bonded with solvent-resistant epoxy to 416-grade stainless-steel well	
Data Outputs	RS-232-C serial port, 25-pin parallel port	
Mfr. No.	13106000	13106600
Cat. No.	**RE-10600**	**13-975-131**
Each	9062.50	7395.00

*Trademark. See Trademark Reference.

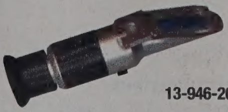
Prices subject to change.

HANDHELD

sher Scientific* Handheld Refractometers

ıe different handheld models

a range of applications and ısurement scales in the field, ory product line, or QC lab. urate, easy to use, and with a ısing eyepiece.



13-946-20

ix Scale Units

leasure sugar concentrations in solutions (fruit juices, soft drinks, wine) ıd concentration of industrial fluids (cutting coolants, glycol solutions, ıd flux rinsing compounds)

lodels with automatic temperature compensation (ATC) are ideal for eld use because they require no recalibration after shifts in ambient orking temperature

ımperature compensation effective between 10° and 30°C 0° and 80°F)

t Water/Brine Unit

vo-scale unit measures both specific gravity and the concentration salt in water (parts per thousand)

cludes ATC; good for use in aquaculture, food processing, and wildlife anagement

omotive Fluids Unit

ıree-scale model measures battery and radiator fluids

easures the recharge level of battery fluid, plus the freezing point of opylene glycol and ethylene glycol on separate scales

LUDES:

-sided, foam-lined storage case with instruction manual and ration screwdriver

e Range	Division	Accuracy	Cat. No.	Each
18° Brix	0.1°	±0.1°	**13-946-20**	171.28
32° Brix	0.2°	±0.2°	**13-946-21**	171.28
-62° Brix	0.2°	±0.2°	**13-946-22**	171.28
-82° Brix	0.5°	±0.3°	**13-946-23**	171.28
-90° Brix	1.0°	±0.5°	**13-946-24**	171.28
10° Brix with ATC	0.1°	±0.1°	**13-946-25**	209.99
32° Brix with ATC	0.2°	±0.2°	**13-946-26**	209.99
ity				
00ppt with ATC, cific Gravity 1.0 to 1.07	1.0ppt	±1.0ppt, ±0.001°	**13-946-27**	209.99
motive				
ylene Glycol -76° to +32°F, lene Glycol -34° to +32°F	10°F	±5.0°F	**13-946-28**	171.28

Fisher Scientific* UriSystem* Refractometer

Solidly built with high chemical resistance to urine

13-962

- Easy to use with a sharp, clear image of the Specific Gravity and Refractive Index scales
- Specific Gravity scale reads from 1.000 to 1.050 in increments of 0.005; RI scale is from 1.333 to 1.356 in 0.001 increments
- "Fisher Blue" filter in the optical path increases the dividing line contrast for extremely easy reading
- Requires only a few drops of uncentrifuged, well-mixed, fresh urine

To Use

- Place a drop of urine on the prism surface
- Close the daylight cover plate
- Point prism end of refractometer toward a bright light
- Adjust image by rotating eyepiece; scale becomes clearly visible
- Specific gravity is obtained by reading the sharp dividing line (between light and dark contrast) where it intercepts the scale values
- Calibrate by placing a few drops of distilled water on the face of the prism and read just as you would a sample
- Check to see if the boundary line coincides with the 1.000 line on the Specific Gravity scale, or 1.333 on the Refractive Index scale (if not, adjust the line by turning the scale-adjustment screw)

ORDERING INFORMATION:

Net weight, 5 oz. (143g).

Dimensions	Cat. No.	Each
7¾L × 1⅛W × 1⅛"H (20 × 3 × 3cm)	**13-962**	462.50

Reichert* r²mini Handheld Refractometer

Big features and performance in a small package!

- LCD readout switches between Refractive Index and % Brix modes
- Wide measurement ranges of 1.3330 to 1.4465 RI and 0.0 to 62.0% Brix cover most applications
- High-contrast five-digit display shows complete measurement—no scrolling of digits
- Automatic readings in seconds at the push of a button—no need to rely on user interpretation of a shadowline
- Electronic Automatic Temperature Compensation from 10° to 40°C (50° to 104°F) for accurate measurements indoors or outdoors
- Automatic power-off mode extends battery life beyond 10,000 measurements; battery life indicator is displayed when the unit is powered on
- Rugged housing has International Protection Class rating of IP65, making it water resistant and dustproof
- Rubber grips on each side provide an anti-slip grip

ORDERING INFORMATION:
Measures 3⅞L × 2⅛W × 1⅛"H (100 × 54 × 27mm). Net weight, ¼ lb. (100g). With carrying case supplied, measures 5¹¹⁄₁₆ × 2¹⁵⁄₁₆ × 1⁹⁄₁₆" (145 × 75 × 40mm). Operates on 2 × "AAA" batteries.

INCLUDES:
Meter, carrying case, batteries, instructions

WARRANTY:
One year

COMPLIANCE:
IP65 water-resistant, dustproof

CERTIFICATIONS:
RoHS and WEEE. CE marked.

13-975-411

Model	r²mini
Display	Direct reading LCD panel; switchable between RI and Brix scales
Ranges	1.3330 to 1.4465 RI, 0.0 to 62.0% Brix
Resolution	0.0001 Refractive Index Units; 0.1% Brix
Accuracy	±0.0002 RI, ±0.2% Brix
Temperature Compensation	10°–40°C (50°–104°F)
Temperature Accuracy	±0.1°C
Battery	2 × "AAA"
Battery Life	Over 10,000 readings with auto/off sleep mode
Calibration	Water
Housing	IP65 Dustproof/Water Resistant
Mfr. No.	13940000
Cat. No.	**13-975-411**
Each	295.00

Reichert* AR200 Handheld Digital Refractometer

Lightweight digital refractometer designed for the food, beverage, agricultural, industrial-fluid, chemical, petrochemical, pharmaceutical, medical, and plastic industries

Use in the lab or in the field for transparent or translucent liquids or semisolids.

- Automatically meaures refractive index from 1.3300 to 1.5600 to an accuracy of ±0.0001, and % solids (Brix) from 0 to 95% to an accuracy of ±0.1; better than most benchtop refractometers
- Results are displayed instantly on direct-reading LCD and can be stored in 225 data-point memory (retrievable using optional IR Link-Up software [13-975-130])
- Calibrate with distilled water setpoint or use up to four customizable calibration points for full compliance with NIST* standards

Accurate

- Features a special coated glass prism hardened to resist scratching from even the highest solids content samples
- 3600-cell, linear-scanned–array imaging achieves accuracy to ±0.0001n_D, 0.1% Brix
- Temperature sensors and automatic temperature compensation (15° to 40°C [59° to 104°F] per ICUMSA, user-definable in custom scales) enhance reading accuracy
- Auto off/sleep mode extends battery life; low-battery detection built in

Durable

- Prism is surrounded by a stainless-steel well; optics and sensing elements are mounted on a fully sealed, ruggedly constructed, diecast frame
- Molded, completely sealed Valox* thermoplastic-resin housing provides environmental protection and chemical resistance; drop tested from 36" (91.4cm)

13-975-111

AR200 software

- Includes single-point or multipoint calibration, four reading modes (RI, temperature-compensated RI, Brix, Brix-TC), and adjustable contrast control
- IR port allows two-way communications with a personal computer if used with optional IR communications package (13-975-130) for stored data retrieval and programming of up to thre user-defined channels

ORDERING INFORMATION:
Dimensions: 7L × 3¾W × 1⅜"H (17.8 × 9.5 × 4cm); net weight: 14 oz. (408g).

REQUIRED ACCESSORIES:
Four "AAA" batteries

CERTIFICATIONS:
CE marked.

Description	Mfr. No.	Cat. No.	Eac
AR200 Refractometer	13950000	**13-975-111**	1099.0
AR200 Refractometer plus IR Communications Package	13952000	**13-975-128**	1445.0

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

eichert* IR Communications Package

**onnects Reichert digital handheld refractometer to
ser's PC**

ncludes IR docking cradle and Reichert Link-Up Software

Combines the refractometer's built-in IR communications port with IR docking cradle and Reichert Link-Up Software to upload up to three custom channels to meet various application needs

r. No.	Cat. No.	Each
951000	**13-975-130**	395.49

- Download the day's readings directly to PC
- View current calibration history and readings with time/date stamp
- IR docking cradle plugs into the RS-232 serial port on PC for two-way communication between the refractometer and PC

13-975-130 Docking Cradle

Brix scales of Reichert's handheld refractometers are based on the International Commission for Uniform Methods of Sugar Analysis MSA) published tables relating Refractive Index to % solids using sucrose solutions. There are many published tables relating Brix readings to solids readings, including refined sugar, high fructose corn syrups (HFCS) and fruit juices. The Brix scale can also be used as an arbitrary scale uickly determine true solids when the relationship between the % solids and the Brix scale is known.

ichert* Rhino Ultra-Durable Handheld Refractometers

**igned specifically for rugged factory and field use—fully IP67 water resistant,
tproof, and impact resistant**

omatic Temperature Compensation eliminates the need for temperae correction charts

ics and instrument scales are permanently sealed inside the refraceter body

gnified scales have easy-to-read markings and divisions for true reads and accurate results

dels are offered with Brix scales of 0-30, 0-50 and 50-90%

200 is designed for wine and grape testing

60 and DC70 Duo-Chek models test engine coolant and battery charge

Rhino Series

ERING INFORMATION:

Model for Industrial Fluid Testing (RE-10440) is also available (see page).

l	Scale Reading	Scale Division	Refractive Index Range	Mfr. No.	Cat. No.	Each
0	0–30% Brix	0.2 and 0.5%	1.3330–1.3811	137530LO	**13-975-109B**	125.00
0	0–50% Brix	0.25%	1.3330–1.4200	137531LO	**13-975-110**	125.00
0	50–90% Brix	0.2%	1.4201–1.5177	137533LO	**13-975-126**	125.00
0	0–200 Oe°, 0–45% Brix, 0–40 Kl° Wine and Grape Tester	0.2 and 0.5 Oe°, 0.5%, 0.5 Kl°	1.3330–1.4100	137528LO	**13-975-129**	125.00
	1.100-1.400 Specific Gravity; 0°C to -48°C Antifreeze Protection; 0 to 70% Ethylene Glycol, 0 to 61% Propylene Glycol; 1.3330-1.4048 Refractive Index	0.01 Sp. Gr.; 3°C; 1%; 0.0001 RI	1.3330–1.4048	137564LO	**13-975-107**	100.00
	1.100-1.400 Specific Gravity; 32°C to -60°F Antifreeze Protection; 0 to 70% Ethylene Glycol, 0 to 61% Propylene Glycol; 1.3330-1.4048 Refractive Index	0.01 Sp. Gr.; 5°F; 1%; 0.0001 RI	1.3330–1.4048	137584LO	**13-645-108**	100.00

Reichert* Industrial Fluid Testing Refractometers

Designed specifically for checking ratio or concentration of water-soluble industrial fluids

Portable testers are ideal for applications including metalworking coolants and lubricants, heat-treating fluids, hydraulic fluids, firefighting foam and plating baths.

- Automatic temperature compensation provides accurate readings without correction tables or temperature measurement
- Temperature-compensation range, 15° to 38°C (59° to 100°F)
- Large, easy-to-read scales and depth of field
- Portable: no batteries or power cord required
- Rugged, chemical-resistant housing

IFT10HP Model

- High precision optical instrument with improved 0-10 scale
- 0.1 scale increments for testing low concentration synthetic cutting and grinding fluids and lubricants
- 10X focusable eyepiece
- Coated antireflection glass optical components improve illumination and shadowline contrast

IFT40 Rhino Model

- Sealed housing and eyepiece; IP67 rated water resistant and dustproof
- Black polycarbonate housing reduces stray light
- 0-30 arbitrary scale is divided into 0.5 increments; accuracy to ±0.25%
- Eyepiece with large depth of focus
- Built for production floor use; impact resistant to withstand repeated drops from three feet

INCLUDES:
Durable plastic carrying case, sample application pipets, calibration adjustment wrench

WARRANTY:
One year

13-975-11

RE-1044

Model	Scale Range	Scale Division	Refractive Index Range	Mfr. No.	Cat. No.	Each
IFT 10HP	0–10%	0.2%	1.3330–1.3478	13851000	**13-975-112**	275.34
IFT40	0–30%	0.5%	1.3330–1.3860	13754000	**RE-10440**	125.00

Reichert* Clinical Handheld Refractometers

Portable, lightweight clinical refractometers provide rapid, reliable urine specific gravity and serum or plasma protein concentration readings

- RI scale can be used for dissolved-solids measurements in other aqueous solutions
- Completely sealed for indoor or outdoor use

TS Meter Refractometer

- High-end precision refractometer requires only 0.005mL of sample on prism for accurate analysis
- Automatically temperature compensated through a liquid-filled prism from 16° to 38°C (61° to 100°F)
- Result accuracy and reproducibility are comparable to those of more costly bench-type Abbe* refractometers

TS400 Total Solids Refractometer

- Economical refractometer designed specifically for clinical, chemistry, and classroom labs
- Temperature compensated by a patented, bearing-actuated, bimetallic element; compensates for variations in sample, air, and unit temperature—no temperature-correction charts or temperature measurements needed
- Provides readings from 16° to 32°C (61° to 90°F)

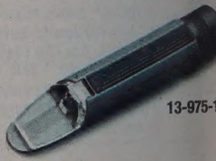
VET360 Veterinary Refractometer

- Determines urine specific gravity and protein concentration in plasma, serum, and peritoneal fluid
- Automatic temperature compensation provides accurate readings regardless of ambient temperature
- Corrects all readings back to standard reference temperature of 20°C (68°F)—provides much greater accuracy than urinometers or reagent strips

INCLUDES:
TS and TS400 Meter Manuals have full sets of conversion tables for protein, urine solids, and refractive index. VET360 Veterinary Refractometer has special scales for large and small animals.

13-946-10

13-975-


13-975-1

Display Range	Scale Div.	Accuracy	Mfr. No.	Cat. No.	Eacl
TS Meter Refractometer					
Urine specific gravity, 1.000–1.035; Serum plasma protein, 2.5–15g/100mL; Refractive index, 0–320 ($n-n_D \times 10^4$)	0.0001 specific gravity units; 0.1g/100mL 2; ($n-n_D \times 10^4$)	±0.001 specific gravity units ±0.1g/100mL ±2 ($n-n_D \times 10^4$)	1310400A	**13-946-100**	925.0
TS400 Refractometer					
Urine specific gravity, 1.000–1.050; Serum plasma protein, 0.0–12.0g/100mL; Refractive Index, 1.333–1.357n_D	0.001 specific gravity units; 0.1g/100mL; 0.0002n_D	±0.001 specific gravity units; ±0.2g/100mL; ±0.0004n_D	13740000	**13-975-117**	280.0
VET360 Refractometer					
Specific gravity, 1.000–1.060; Serum plasma protein, 2–14g/100mL	0.001 specific gravity units; 0.1g/100mL	±0.001 specific gravity units ±0.2g/100mL	137536L0	**13-975-127**	125.0

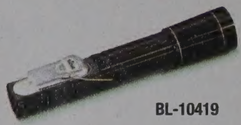
*Trademark. See Trademark Reference.

Prices subject to change.

eichert* Goldberg Ultra-Precision Handheld Refractometers

ffer reading accuracy better than most benchtop laboratory refractometers

- Provide rapid, reliable measurements
- For measuring Brix and salinity
- ncorporate the Goldberg method, recognized as the most accurate and precise for handheld refractometers
- deal for use in quality control, research, and clinical laboratories
- Feature a hermetically sealed liquid-filled optical prism that changes ndex with temperature to compensate instantly and automatically for emperature changes
- ▸ Heavy-duty anodized aluminum body
- ▸ Magnified and focusable scales feature easy-to-read markings and divisions



BL-10419

del	Scale Reading	Scale Division	Accuracy	Refractive Index Range	Mfr. No.	Cat. No.	Each
x	0–30%	0.1%	±0.05	1.3330–1.3811	13104230	**RE-10423**	965.00
linity	0–160ppt	$0.0002n_D$ /2ppt	±$0.0002n_D$/±2ppt	1.3330–1.3730	13104190	**BL-10419**	963.00

eichert* HP Handheld Refractometers

rtable refractometers are ideal for measuring concentration of solutions, fruit juices, and other ater-soluble fluids

- Patented, bearing-activated, automatic temperature-compensation mechanism, accurate to 0.1° Brix
- Allows direct reading without using correction factor for temperature
- Temperature-compensation range, 15° to 38°C (59° to 100°F)
-)ptical design improves image resolution and provides high contrast for easy viewing of scales
- Coated antireflection glass optical components, including a 10X focusable eyepiece, improve illumination and shadowline contrast
- Rugged, chemical-resistant housing for field use
- Completely sealed—no condensation or dirt on lenses

nple to use

- Place a few drops of sample on exposed face of prism and lower cover plate; then take reading by viewing the large, easy-to-read scale through efractometer eyepiece
- No temperature charts required

13-975-113

ORDERING INFORMATION:

Net weight, 8.3 oz (234.9g). Dimensions, 8.2L × 1.9W × 1.8"H (205 × 46 × 44mm).

INCLUDES:

Durable plastic carrying case, sample-application pipets, calibration adjustment wrench

ale Reading (°Brix)	Scale Div.	Refractive Index	Mfr. No.	Cat. No.	Each
15	0.1%	1.3330–1.3557	13851500	**13-975-113**	275.00
35	0.2%	1.3330–1.3903	13853500	**13-975-114**	300.00
–65	0.2%	1.3903–1.4535	13856500	**13-975-115**	325.00
–90	0.2%	1.4535–1.5177	13859000	**13-975-116**	350.00

CONSIDER THE APPLICATION

Do you need a model specifically designed for enzyme, chromatography, cryogenic, plasma or fla storage? Is an explosion-proof design required? Will a general-purpose unit meet your requirem

- Choose an ultralow-temperature freezer (-86° to -50° or -40°C) for sensitive biological produc vaccines or tissue samples
- Preserve cryogenic samples in a -140°C or -150°C freezer
- Select a general-purpose -30°C or -20°C freezer or 1° to 8°C refrigerator for blood, enzyme, re pharmaceutical storage
- Store chromatography supplies in a refrigerator providing access to instrumentation a temperatures from 1° to 8°C

CONSIDER PERFORMANCE

Do you need basic functionality or advanced performance, controls and mon

Basic Control—provides fundamental monitoring, alarm and communi functions such as adjustable temperature setpoint; key-operated ON/OF switch; overtemperature alarm; and remote alarm contacts.

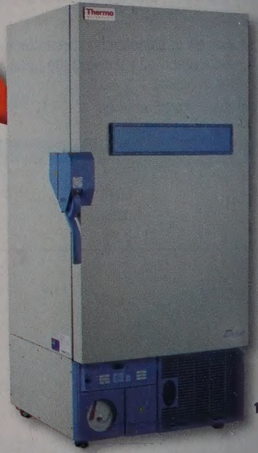
Moderate Control—offers a mid-range level of monitoring, alarm communication functionality that includes programmable micropro control; alarm setpoints; on-board diagnostics; automatic buck/bo system; automatic incident monitor; and audible/visual alarms.

Advanced Control—delivers detailed monitoring, alarm and communication functions: setpoint security; on-board diagnosti automatic buck/boost system; surge protection; automatic inci monitor; audible/visual alarms; alarm test; battery backup; RS-232 data port; and remote alarm contacts.

Protect the materials and samples you need to do your work by choosing the right freezer, refrigerator or combination refrigerator/freezer.

BEFORE YOU BUY A FREEZER OR REFRIGERATOR

MODEL Ultralow-temperature Freezers	VALUE*	VALUE PLUS	ELITE*	ELITE PLUS	ULTIMA*	ULTIMA PLUS
Programmable Microprocessor Control		X	X	X	X	X
On-Board Diagnostics		X		X		X
Plus Time Delay				X		X
Automatic Buck/Boost		X		X		X
Low-Voltage Surge Protection		X		X		X
Setpoint Security	X	X	X	X	X	X
Alarm Setpoints	X	X	X	X	X	X
Battery Backup	X	X	X	X	X	X



13-989-71

Thermo
SCIENTIFIC

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Thermo Fisher Scientific

CONSIDER CAPACITY AND STYLE

While available space is almost always a consideration, the quantity of work and required stora also be taken into account when choosing equipment.

Full-size Uprights—range from 11.5 to 78.8 cu. ft. Slimline* models are narrower than stan upright models and feature thinner walls that optimize capacity.

Chest Models—are available with capacities ranging from 3.1 to 20.5 cu. ft.

Undercounter/Benchtop Models—range from about 4 to 5 cu. ft. Some undercounter mod also be used as freestanding or benchtop units.

For a full selection of Thermo Scientific® Freezers and Refrigerators, see the following pages.

FREEZERS — GENERAL-PURPOSE/LAB

her Scientific* Isotemp* Plus Lab ezers

roprocessor temperature control

nperature range, -30° to -12°C (-22° to +10.4°F), with average
C stability
pacities from 23.1 to 46.6 cu. ft. (654 to 1320L)
erior adjustment control, user-selectable in °C or °F with 0.1°C resolution
erior-mounted digital display
omatic defrost and condensate removal

truction

inless-steel exterior and interior
-free R404A refrigerant
med-in polyurethane insulation
ite epoxy-coated steel-wire shelves, adjustable in ½" (1.2cm)
ements
orescent lighting with door-activated light switch
ged lockable doors
ed ON/OFF power switch
r adjustable leveling legs (casters provided)

ns

el-mounted, factory installed
ital display with minimum/maximum setpoints, audible alarm,
24V, 0.5A SPST N.O. relay contacts
estanding, Standard Remote and Deluxe Remote alarm systems
ilable separately; see p. 1578

n-day Selectable Temperature Recorder

el-mounted, factory installed
lia. (15.2cm) chart
r-selectable temperature ranges

13-986-147

- Single-point calibration; individually calibrated against equipment with calibration certified traceable to NIST*
- Supplied with 60 charts and seven-day scale

ORDERING INFORMATION:
International models are available; contact your Fisher Scientific Customer Service Representative for details.

WARRANTY:
13 months, parts and labor; 5 years, compressor

CERTIFICATIONS:
cUL listed

	Interior D × W × H	No. of Shelves	Exterior L × W × H†	Net Weight‡	Electrical Requirements	NEMA Plug	Amps/ Breaker	Cat. No.	Each
u. ft. (654L), 1 hinged solid door									
	27½ × 21½ × 59½" (70 × 55 × 151cm)	4	34 × 26 × 84½" (86 × 66 × 215cm)	320 lb. (145kg)	115V 60Hz	5-15P	12/15	**13-986-142**	8135.32
Alarm								**13-986-142A**	8345.99
Recorder								**13-986-142R**	9062.33
Recorder/Alarm								**13-986-142RA**	9812.40
ft. (850L), 1 hinged solid door									
	27½ × 30 × 60" (70 × 76 × 152cm)	4	33½ × 35 × 84½" (85 × 89 × 215cm)	440 lb. (200kg)	115V 60Hz	5-20P	12/15	**13-986-144**	8810.23
Alarm								**13-986-144A**	9057.82
Recorder								**13-986-144R**	10,254.50
Recorder/Alarm								**13-986-144RA**	10,575.45
u. ft. (1320L), 2 hinged solid doors									
	26 × 48 × 59" (66 × 122 × 150cm)	8	34 × 52 × 84½" (86 × 132 × 215cm)	527 lb. (239kg)	208/230V 60Hz	L14-20P	12/15	**13-986-147**	10,251.91
Recorder/Alarm								**13-986-147RA**	11,062.50

3" (7.6cm) clearance top, back and sides.
5 lb. (2kg) to models with recorder and with recorder/alarm.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Fisher Scientific* Isotemp* Lab Freezers

Preserve temperature-sensitive reagents, samples and specimens

- Adjustable temperatures between -40° and -18°C (327L Series), -29° and -18°C (all others)
- Capacities from 23.1 to 74.0 cu. ft. (654 to 2096L)
- Average temperature stability: ±3°C
- Exterior-mounted digital display with 0.1°C resolution
- Automatic defrost

Construction

- Steel exteriors (epoxy-coated on 327L Series; white enamel-coated on others)
- Anodized aluminum interior
- CFC-free refrigerant and insulation
- White epoxy-coated steel-wire shelves, adjustable in ½" (1.2cm) increments
- Incandescent lighting with door-activated light switch (except 327L Series)
- Hinged doors with keylocks
- 327L Series models have two insulated inner doors in addition to outer door
- Keyed ON/OFF power switch

Alarms

- Panel-mounted, factory installed
- Digital display with minimum/maximum setpoints, audible alarm, and 24V, 0.5A SPST N.O. relay contacts
- Freestanding, Standard Remote and Deluxe Remote alarm systems available separately; see p. 1578

Seven-day Selectable Temperature Recorder

- Panel-mounted, factory installed
- 6" dia. (15.2cm) chart
- User-selectable temperature ranges
- Single-point calibration; individually calibrated against equipment with calibration certified traceable to NIST*
- Supplied with 60 charts and seven-day scale

13-986-327L

13-986-274FA

ORDERING INFORMATION:

International models are available; contact your Fisher Scientific Customer Service Representative for details.

WARRANTY:

13 months, parts and labor; five years, compressor

Model	Temperature Range	Interior D × W × H	No. of Shelves	Exterior L × W × H†	Net Weight‡	Electrical Reqts.	NEMA Plug	Amps/ Breaker	Cat. No.	Eac
23.1 cu. ft. (654L), 1 hinged solid door										
Basic	-29° to -18°C	28 × 22 × 60" (71 × 56 × 152cm)	3	33½ × 26 × 84½" (85 × 66 × 215cm)	342 lb. (155kg)	115V 60Hz	5-20P	10/20	**13-986-223F**	5948.0
With Recorder/Alarm									**13-986-223FA**	7909.4
27.3 cu. ft. (773L), 1 hinged solid outer/2 insulated inner doors										
Basic	-40° to -18°C	27½ × 26 × 60¼" (70 × 66 × 153cm)	4	35½ × 31 × 84" (90 × 79 × 213cm)	460 lb. (209kg)	115V 60Hz	5-15P	6/15	**13-986-327L**	7080.8
With Recorder/Alarm									**13-986-327LA**	9170.9
46.6 cu. ft. (1320L), 2 hinged solid doors										
Basic	-29° to -18°C	28 × 48 × 60" (71 × 122 × 152cm)	6	33½ × 52 × 84½" (85 × 132 × 215cm)	614 lb. (278kg)	230V 60Hz	L14-20P††	12/20	**13-986-247F**	7021.3
With Recorder/Alarm									**13-986-247FA**	9776.8
74.0 cu. ft. (2096L), 3 hinged solid doors										
Basic	-29° to -18°C	28 × 74 × 60" (71 × 188 × 152cm)	9	33½ × 78 × 84½" (85 × 198 × 215cm)	838 lb. (380kg)	230V 60Hz	L14-20P††	16/20	**13-986-274F**	9426.8
With Recorder/Alarm									**13-986-274FA**	12,421.0

† Allow 3" (7.6cm) clearance top, back, and sides.

‡ Add 5 lb. (2kg) to models with recorder/alarm.

†† Requires 4-wire, 220V service.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

*Trademark. See Trademark Reference.

Prices subject to change.

her Scientific* Isotemp* General-Purpose Freezers

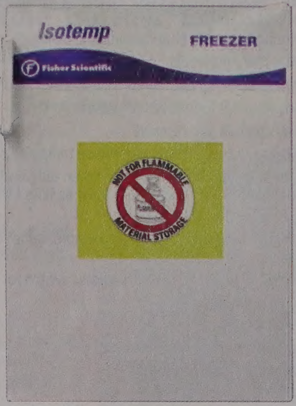
ipped with manual defrost for sensitive biological sample storage

djustable temperature from -20° to -12°C, with ±3°C stability
apacities: 5.0, 20.6 and 30.0 cu. ft. (142, 583 and 849.5L)
C-free R404A refrigerant
ellow warning label on door "Not For Flammable Material Storage"
urable, textured white enamel-coated steel exterior
amed-in polyurethane insulation
he solid hinged door opens to a 90° angle, closes with a gentle push
ur adjustable legs ensure cabinets are level on irregular floors
-986-328FA equipped with factory-installed alarm

DERING INFORMATION:
115V 60Hz, 12/15 amps per breaker. Equipped with NEMA 5-15P
cord plug; requires NEMA 5-15R receptacle.

RRANTY:
onths, parts and labor; five years, compressor

TIFICATIONS:
sted; 13-986-148 and -154 also CSA approved



13-986-148

acity	Interior D × W × H	No. of Shelves	Exterior L × W × H†	Shipping Weight	Cat. No.	Each
cu. ft. (142L)	16 × 18 × 27" (41 × 46 × 69cm)	2 fixed	26 × 21½ × 33¾" (66 × 55 × 86cm)	90 lb. (41kg)	**13-986-154**	1090.23
cu. ft. (583L)	22½ × 27 × 57" (57 × 69 × 145cm)	4 fixed	28½ × 32 × 70¼" (72 × 81 × 178cm)	230 lb. (105kg)	**13-986-148**	1786.17
cu. ft. (849.5L)	22½ × 32 × 65" (57.2 × 81.3 × 165.1cm)	3 fixed, 5 adjustable, 1 half	35 × 35½ × 77" (88.9 × 90.2 × 195.6cm)	340 lb. (154.2kg)	**13-986-328F**	4604.65
cu. ft. (849.5L)‡	22½ × 32 × 65" (57.2 × 81.3 × 165.1cm)	3 fixed, 5 adjustable, 1 half	35 × 35½ × 77" (88.9 × 90.2 × 195.6cm)	340 lb. (154.2kg)	**13-986-328FA**	6839.00

w 3" clearance top, back, and sides.
h factory-installed alarm.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Fisher Scientific* General-Purpose Undercounter Freezer

Convenient storage in small spaces

- Adjustable temperatures from -20° to -15°C (-4° to +5°F)
- Capacity: 5.6 cu. ft. (159L)
- Manual defrost
- R-134a CFC-free refrigerant
- Base-mounted 360w compressor
- Hydraulic thermostat
- Baked-on, acrylic enamel exterior
- Easy-to-clean formed interior
- Three fixed shelves
- Solid door is mounted to open from left

97-926-1

ORDERING INFORMATION:
Interior dimensions: 15D × 18W × 27½"H (38 × 46 × 70cm). Exterior: 25¼L × 21¼W × 33½"H (64 × 54 × 85cm)†. Net weight: 90 lb. (40.8kg); shipping weight 120 lb. (54.5kg). 120V 60Hz, 3/15 amps/breaker.

WARRANTY:
Two years parts, one year labor

Cat. No.	Each
97-926-1	1380.21

† When using leveling legs supplied with unit, add ½" (1.3cm) to the total height.

Thermo Scientific* Revco* General-Purpose Lab Freezers

IntrLogic* microprocessor control simplifies operation, delivers greater accuracy

Ideal for storing reagents, pharmaceuticals, biologicals, enzymes, and other common laboratory materials.

- Temperature factory-preset at -20° or -30°C
- Capacities from 4.9 to 51.1 cu. ft. (139 to 1447L)
- Icon-based controls and displays
- Large, easy-to-read digital display shows temperature within 1°C
- Graphic thermometer is steady green when temperature is normal, flashes top bar for overtemperature, flashes bulb for undertemperature

Microprocessor Control

- Audible/visual warnings for overtemperature, undertemperature or power failure
- Key-operated OFF/ON/ALARM ON master switch for setpoint security
- Push-button alarm test
- Remote alarm contacts
- Alarm silence, ringback and auto reset
- Controller battery backup system

Construction

- Epoxy-coated, scratch-resistant cold-rolled steel interior and exterior finishes
- High-density, 2" thick (5.1cm) CFC-free urethane foam insulation protects against ambient temperature fluctuations
- CFC-free, HFC-blend refrigerant
- Single-door models are hinged on right
- Full-length door handle and keylock
- Doors self-close and lock open at 90°
- Adjustable zinc-plated wire shelves
- 1" (2.5cm) dia. access port with plug on undercounter model

-30°C Freezers

- Automatic defrost and condensate removal
- Sensor automatically initiates defrost cycle on demand, eliminating need for a defrost timer, minimizing frost buildup, and optimizing coil efficiency
- Forced-air circulation improves temperature uniformity, provides faster recovery after door is opened

Left to right: 22-285-655, 22-285-651, 13-991-127 with optional temperature chart recorder.

IntrLogic Microprocessor Control

-20°C Freezers

- Suitable for applications in which slight intermittent coil warming during an automatic defrost cycle is not desired (such as enzyme storage)
- Gravity convection air system for maximum stability without a blower or fan
- Manual defrost

ORDERING INFORMATION:

Alarm systems, temperature chart recorders and power monitors are available separately (see Accessories).

WARRANTY:

Two years, parts and labor

COMPLIANCE:

UL, cUL listed. CE marked.

Capacity	Doors/ Shelves	Interior D × W × H[†]	Exterior L × W × H[†]	Shipping Weight	Elec. Reqts.[‡]	Amps/ Breaker	NEMA Plug	Mfr. No.	Cat. No.	Eac
-30°C Undercounter Model										
4.9 cu. ft. (139L)	1 solid/3	20 × 20 × 20" (51 × 51 × 51cm)	26 × 24 × 33⅜" (66 × 61 × 85cm)	212 lb. (96kg)	115V 60Hz	8/15	5-15P	ULT430A	**13-990-266**	4608.0
-30°C Space-Saver Model										
11.5 cu. ft. (326L)	1 solid/4	21 × 20 × 52" (53 × 51 × 133cm)	28¾ × 24 × 72" (73 × 61 × 183cm)	280 lb. (127kg)	115V 60Hz	8/15	5-15P	ULT1230A	**22-285-655**	5856.0
-30°C Upright Models										
23.3 cu. ft. (659L)	1 solid/4	29 × 24 × 58" (74 × 61 × 147cm)	35½ × 28 × 77½" (90 × 71 × 197cm)	370 lb. (168kg)	115V 60Hz	16/20	5-20P	ULT2330A	**13-990-70**	7855.0
29.2 cu. ft. (826L)	1 solid/4	29 × 30 × 58" (74 × 76 × 147cm)	35½ × 34 × 77½" (90 × 86 × 197cm)	445 lb. (202kg)	115V 60Hz	16/20	5-20P	ULT3030A	**13-991-127**	8448.0
51.1 cu. ft. (1447L)	2 solid/8	29 × 52 × 58" (74 × 133 × 147cm)	35½ × 56½ × 77½" (90 × 144 × 197cm)	600 lb. (272kg)	115V 60Hz	16/20	5-20P	ULT5030A	**22-285-651**	9852.0
51.1 cu. ft. (1447L)	2 solid/8	29 × 52 × 58" (74 × 133 × 147cm)	35½ × 56½ × 77½" (90 × 144 × 197cm)	600 lb. (272kg)	208/230V 60Hz	12/15	6-15P	ULT5030D	**22-285-652**	9852.0
-20°C Upright Models										
23.3 cu. ft. (659L)	1 solid/4	29 × 24 × 58" (74 × 61 × 147cm)	35½ × 28 × 77½" (90 × 71 × 197cm)	425 lb. (193kg)	115V 60Hz	13.5/20	5-20P	UGL2320A	**13-990-205**	7024.0
23.3 cu. ft. (659L)	1 solid/4	29 × 24 × 58" (74 × 61 × 147cm)	29 × 24 × 58" (74 × 61 × 147cm)	425 lb. (193kg)	208/230V 60Hz	5.6/15	6-15P	UGL2320D	**13-990-207**	7024.0

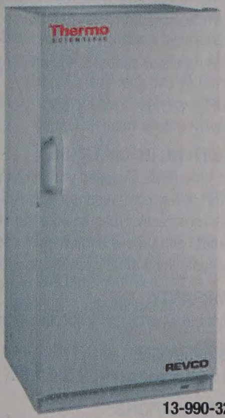
[†] *Published interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.*

[‡] *Additional voltages are available; contact your Fisher Scientific Customer Service Representative for details.*

ɪermo Scientific* Revco* Basic eneral-Purpose Freezer

nomical choice for common noncritical requirements

- djustable operating mperature from -20° to -12°C
- apacity: 20.7 cu. ft. (586L)
- anual defrost
- ermetically sealed compressor r quiet operation
- C-free refrigerants
- urable, white acrylic exterior d seamless interior
- agnetic door gaskets for sitive seal
- eyed door lock
- gh-strength fixed shelves inside, 6 on door)
- gh-density urethane foam sulation



13-990-321

ERING INFORMATION:

rior dimensions: D × 32W × 70¼"H (77 × 81 × 178cm). Interior dimensions: D × 27W × 57"H (60 × 68 × 144cm)†. Shipping weight, 250 lb. (114kg). A 5-15P power cord and plug supplied; requires 5-15R receptacle. For / 60Hz; 1.8/15 amps/breaker. Alarm systems, temperature chart recorders power monitors are available separately; see ssories.

RRANTY:

years, parts and labor

TE:

basic laboratory use only.

No.	Cat. No.	Each
2117A	**13-990-321**	1636.00

lished interior volumes are nominal, and usable capacities may be offset by shelves, ding preferences and storage methods. For verification of clearance tolerances, tact your Fisher Scientific Customer Service Representative.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

FREEZERS—SPECIAL PURPOSE

Fisher Scientific* Isotemp* Explosion-Proof Freezers

For storing volatile materials in areas with explosive atmospheres or in hazardous locations

- Temperature range: -20° to -12°C or -30° to -18°C, depending on model
- Average temperature stability: ±3°C
- Adjust setpoint while running
- Capacities: 20.6 and 30 cu. ft. (583 and 850L)
- Manual defrost

13-986-150

Safety Features

- Red warning label on front: "Explosion-Proof Freezer"
- Compressors have enclosed overloads, relays
- Top-mounted, explosion-proof thermostats
- Static hot-wall condensers and evaporators are free of electric fans

Construction

- White, baked-on polyester enamel exteriors
- Hinged solid door with keylock
- White epoxy-coated steel interiors with ABS plastic door liner
- CFC-free R404A refrigerant, polyurethane foam insulation

ORDERING INFORMATION:

For 115V 60Hz. Not equipped with line cord and plug; must be hardwired into an appropriately rated conduit box to comply with NEC code.

WARRANTY:

13 months, parts and labor; five years, compressor

COMPLIANCE:

30 cu. ft. model complies with OSHA 29CFR1910.307

CERTIFICATIONS:

UL listed, CSA approved

Capacity	20.6 cu. ft. (583L)	30 cu. ft. (850L)
Temperature Range	-20° to -12°C	-30° to -18°C
Interior D × W × H	22½ × 27 × 57" (57 × 69 × 145cm)	22½ × 32 × 65" (57 × 81 × 165cm)
No. of Shelves	4 fixed	3 fixed, 5 adjustable
Exterior L × W × H†	31 × 32 × 76" (79 × 81 × 193cm)	35 × 35½ × 82" (89 × 90 × 208cm)
Net Weight	200 lb. (91kg)	330 lb. (150kg)
Amps/Breaker	12/15	4/15
Cat. No.	**13-986-150**	**13-986-525F**
Each	3383.56	5244.32

† Allow 4" (10cm) clearance top, back and sides.

Fisher Scientific* Isotemp* Flammable-Materials Storage Freezers

For storing volatile materials, pharmaceuticals, clinical reagents and biological samples

13-986-428FR

20.6 cu. ft. (583L) Model

- Temperature range: -20° to -12°C with average stability ±3°C
- Manual defrost
- Four fixed shelves (13.5 sq. ft. capacity)

30 cu. ft. (850L) Models

- User-settable temperatures from -25° to -10°C (-13° to +14°F)
- Average ±4° temperature stability at 20°C
- Manual defrost
- Digital display in °C or °F
- Keyed power switch
- Nine shelves (3 fixed, 5 adjustable, 1 bottom; 38.75 sq. ft. capacity)
- With Alarm: Digital display with minimum/maximum setpoints; audible alarm, and 24V, 0.5A SPST N.O. relay contacts; factory-installed, panel-mounted
- With Seven-day Selectable Temperature Recorder: 6" dia. (15.2cm) chart; user-selectable temperature ranges; single-point calibration; individually calibrated against equipment with calibration certified traceable to NIST*; with 60 charts and 7-day scale; factory-installed, panel-mounted

Safety Features

- Sparkproof interiors separate contents from compressor and motor
- Top-mounted hydraulic thermostat and door stop
- Magnetic door gaskets provide airtight seals that insulate and prevent release of hazardous fumes
- Compressors have enclosed overloads, relays and thermostats to prevent sparks from escaping during opening and closing
- Static hot-wall condensers and evaporators are free of electric fans

Construction

- One hinged solid door with keylock
- White, baked-on polyester enamel exteriorwith orange warning label
- White epoxy-coated steel interior with ABS plastic door liner
- CFC-free R404A refrigerant, polyurethane foam insulation

ORDERING INFORMATION:

For 115V 60Hz. Supplied with NEMA 5-15P power cord; requires NEMA 5-15R wall receptacle. Freestanding, Standard Remote and Deluxe Remote alarm systems available separately; see Accessories.

WARRANTY:

13 months parts, and labor; five years, compressor

COMPLIANCE:

30 cu. ft. models comply with NFPA Code 99

CERTIFICATIONS:

UL listed, CSA approved

Model	Temperature Range	Interior D × W × H	Exterior L × W × H†	Shipping Weight‡	Amps/Breaker	Cat. No.	Each
20.6 cu. ft. (583L)	-20° to -12°C	22½ × 27 × 57" (57 × 69 × 145cm)	30 × 32 × 73" (76 × 81 × 185cm)	200 lb. (91kg)	12/15	**13-986-149**	2920.61
30 cu. ft. (850L)							
Basic	-25° to -10°C (-13° to +14°F)	22½ × 32 × 65" (57 × 81 × 165cm)	35 × 35½ × 77" (89 × 90 × 183cm)	340 lb. (154kg)	6.8/15	**13-986-428F**	4189.29
With Recorder/Alarm						**13-986-428FA**	6312.84
With Recorder						**13-986-428FR**	5935.69

† Allow 12" for top, 4" for side and back air clearances. ‡ Add 5 lb. (2kg) to models with recorder or recorder/alarm.

Fisher Scientific* Special-Purpose Undercounter Freezers

Compact flammable-materials storage and explosion-proof models

- Adjustable temperatures from -20° to -15°C (-4° to +5°F)
- Capacity, 5.6 cu. ft. (159L)
- Manual defrost
- R-134a CFC-free refrigerant
- 360w compressors
- Baked-on, acrylic enamel exterior
- Easy-to-clean formed interior
- Solid door mounted to open from left

Flammable-Materials Storage Model

- Accidental ignition of refrigerator contents is prevented by specially designed compressor with enclosed overload, relay and hydraulic thermostat
- Static condenser free of electric fan
- Aluminum evaporator coil
- Two fixed shelves, three door shelves
- Requires extra clearance when recessed†

Explosion-Proof Model

- Mechanical assembly design prevents accidental explosion of environmental vapors
- Wiring totally enclosed in sealed pipes
- Hydraulic thermostat enclosed by precision-machined housing
- Two fixed shelves, three door shelves
- Must be hardwired to an appropriately rated conduit box

ORDERING INFORMATION:

Interior dimensions: 15D × 18W × 27½"H (38 × 46 × 70cm). Exterior: 25¼L × 21¼W × 33½"H (64 × 54 × 85cm)†. Net weight: 90 lb. (40.8kg); shipping weight 120 lb. (54.5kg). 120V 60Hz, 3/15 amps/breaker.

WARRANTY:

Two years parts, one year labor

COMPLIANCE:

Flammable-Materials Storage Model complies with NFPA Standard Numbers 45 and 99 and OSHA 29CFR1910.308. Explosion-Proof Model wiring complies with NEC Articles 500-501 for use in Class 1, Groups C and D hazardous locations.

CERTIFICATIONS:

UL listed

Model	Cat. No.	Each
Explosion-Proof	**97-928-1**	2511.04
Flammable-Materials Storage	**97-925-1**	2453.28

† When using leveling legs supplied with unit, add ½" (1.3cm) to the total height. Both models require an additional 1" (2.5cm) clearance from top and sides and 1½" (3.8cm) from back for proper condenser ventilation when recessed.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

hermo Scientific* Revco* Enzyme Freezer

gital electronic technology ensures temperature accuracy and stability

al for applications in which slight intermittent coil warming during an omatic defrost cycle is not desirable.

torage temperature: -20°C
reset temperature setpoint
pright 23.3 cu. ft. (659L) capacity†
iravity convection air system for maximum stability without blowers r fans
Aanual defrost

rLogic* Microprocessor ntrol System

con-based controls and displays
iraphic thermometer is steady green when temperature is normal; ashes top bar for overtemperature, bulb for undertemperature
arge, easy-to-read digital display of temperature within 0.1°C
udible/visual warnings for overtemperature, undertemperature or ower failure
ey-operated OFF/ON/ALARM ON master switch for setpoint security
ush-button alarm test
emote alarm contacts
larm silence, ringback and auto reset
ontroller battery backup system

nstruction

cratch-resistant, painted cold-rolled steel interior and exterior finishes re easy to clean
olid door with full-length handle and keyed lock—self-closes against losed-cell peripheral gasket
igh-density, CFC-free urethane foam insulation protects cabinet from mbient temperature fluctuations and minimizes operating costs
ermetically sealed heavy-duty, industrial-grade compressor
line zinc-plated, open-wire shelves, adjustable in 1" (2.5cm) increments
djustable leveling feet

DERING INFORMATION:

rior D × W × H†: 29 × 24 × 58" (74 × 61 × 147cm). Exterior L × W × H†: ½ × 28 × 77½" (90 × 71 × 197cm). Shipping weight: 425 lb. (193kg). V 60Hz; 13.5/20 amps/breaker. With NEMA 5-20P cord and plug; requires MA 5-20R receptacle. Contact your Fisher Scientific Customer Service resentative for information about international models. Alarm systems, perature chart recorders and power monitors available separately; Accessories.

LUDES:

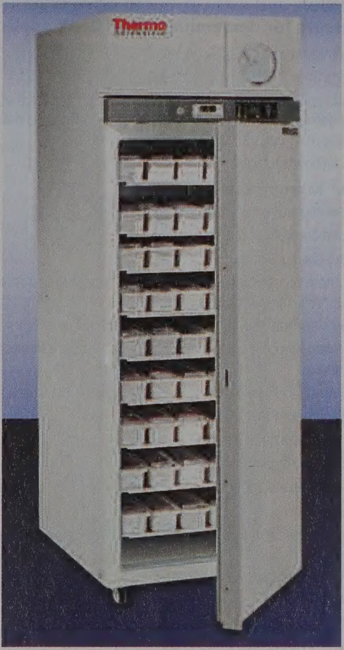
high-impact plastic enzyme storage bins for easily accessible inventory. exterior L × W × H: 25¼ × 4¼ × 3" (64 × 11 × 8cm); labels not provided.

RRANTY:

years, parts and labor

MPLIANCE:

cUL listed. CE marked.



13-990-206 with optional temperature chart recorder

IntrLogic Control Panel

Mfr. No.	Cat. No.	Each
UEN2320A	13-990-206	8106.00

† Published interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Thermo Scientific* Revco* Plasma Freezers

Microprocessor control, industrial-quality cabinet construction, and extra-strength refrigeration compressors for demanding blood bank applications

- Preset temperature at -30°C
- Capacities from 4.9 to 51.1 cu. ft. (133 to 1447L)
- Automatic condensate removal and defrost, with sensor that automatically initiates defrost cycle on demand, eliminating need for a defrost timer, minimizing frost buildup, and optimizing coil efficiency
- Positive airflow systems

IntrLogic* Microprocessor Control

- Simplifies operation, delivers greater accuracy
- Icon-based controls and displays
- Preset temperature setpoint
- Graphic thermometer is steady green when temperature is normal; flashes top bar for overtemperature, bulb for undertemperature
- Large, easy-to-read digital display shows temperature within 1°C
- Audible/visual warnings for overtemperature, undertemperature or power failure
- Key-operated OFF/ON/ALARM ON master switch for setpoint security
- Push-button alarm test
- Remote alarm contacts
- Alarm silence, ringback and auto reset
- Controller battery backup system

Construction

- Cold-rolled steel cabinet surfaces finished with high-impact powder paint coating
- One solid door, hinged on right (except 51.1 cu. ft. model: two solid doors with keyed lock, self-close against closed-cell peripheral gasket)
- Full-length door handles
- Adjustable leveling feet
- High-density CFC-free urethane foam insulation protects cabinet interior from ambient temperature fluctuations, minimizes operating costs
- Positive, forced-air circulation maintains uniformity at all shelf levels
- Directional airflow assures quick recovery after door openings
- Heavy-duty, hermetically sealed compressors
- CFC-free refrigerant
- 1" (2.5cm) access port with plug on undercounter model only

Left to right: 22-285-706, 22-285-707, 13-990-83 with optional temperature chart recorder.

IntrLogic Control Panel

ORDERING INFORMATION:
Alarm systems, temperature chart recorders and power monitors available separately (see Accessories). For additional voltages, contact your Fisher Scientific Customer Service Representative.

INCLUDES:
Space-saver and upright models come with a 6" (15.2cm) 7-day circular chart temperature recorder and extra-long probe for manual alarm testing.

WARRANTY:
Two years, parts and labor

COMPLIANCE:
UL, cUL, listed. CE marked. TUV criteria; AABB, ANRC, and FDA guidelines.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Capacity†	Capacity, Plasma Red Cell Packs†	No. of Doors/ Drawers	Interior D × W × H†	Exterior L × W × H†	Shipping Weight	Elec. Reqts.	Amps/ Breaker	NEMA Plug	Mfr. No.	Cat. No.	Eac
Undercounter											
4.9 cu. ft. (133L)	78	1/2	20 × 20 × 20" (51 × 51 × 51cm)	26 × 24 × 34" (66 × 61 × 85cm)	212 lb. (96kg)	115V 60Hz	8/15	5-15P	UFP 430A	**13-991-148**	5904.0
Space Saver											
11.5 cu. ft. (326L)	273	1/7	21 × 20 × 52" (55 × 51 × 133cm)	28¾ × 24 × 71⅞" (73 × 61 × 183cm)	365 lb. (166kg)	115V 60Hz	8/15	5-15P	UFP 1230A	**13-990-83**	8162.0
Upright											
23.3 cu. ft. (659L)	532	1/7	29 × 24 × 58" (74 × 61 × 147cm)	35½ × 28 × 77½" (90 × 71 × 197cm)	425 lb. (193kg)	115V 60Hz	16/20	5-20P	UFP 2330A	**22-285-706**	10,543.0
29.2 cu. ft. (826L)	665	1/7	29 × 30 × 58" (74 × 76 × 147cm)	35½ × 34 × 77½" (90 × 86 × 197cm)	580 lb. (263kg)	115V 60Hz	16/20	6-15P	UFP 3030A	**13-991-124**	11,741.0
						208/230V 60Hz	12/15	5-20P	UFP 3030D	**13-991-125**	11,741.0
51.1 cu. ft. (1447L)	1064	2/14	29 × 52 × 58" (74 × 133 × 147cm)	35½ × 56½ × 77½" (90 × 144 × 197cm)	650 lb. (295kg)	115V 60Hz	16/20	5-20P	UFP 5030A	**22-285-707**	14,172.0

† *Interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. Actual storage capacity will vary according to loading methods, size of containers, and loading preferences. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact your Fisher Scientific Customer Service Representativ*

*Trademark. See Trademark Reference.

ULTRALOW-TEMPERATURE

sher Scientific* Isotemp* -86°C Ultralow-Temperature Upright Freezers

d-level monitoring and alarm functions

grammable microprocessor control provides reliable sample protection, erior performance, excellent energy efficiency, and low noise levels.

- mperature range: -86° to -50°C
- apacities: 17.2, 20.2 and 24.4 cu. ft. (487, 572 and 691L)
- asy-to-read door-mounted LED with touchpad data entry

roprocessor Control

- ontinuously monitors sensors to ensure proper performance
- ey-operated main power and alarm switch
- ontrol setpoint in 1°C increments
- mperature deviation or power failure triggers audible/visual alarms
- D shows temperature deviation due to power or temperature failure
- me Delay, Alarm Test, Alarm Reset push-button controls
- ean Filter, Alarm Battery Low and Voltage indicators
- ltage Buck/Boost corrects incoming line voltage
- w Voltage Surge Protection minimizes voltage spikes
- attery backup supplies control panel in case of power failure

struction

- C-free refrigerants
- p industrial-grade compressors
- ownfeed evaporator
- ashable condenser filter
- vo 1" (2.5cm) dia. access ports
- eel cabinet with corrosion-resistant coating
- inimum 5" (12.7cm) CFC-free, foamed-in-place urethane insulation
- ilt-in key lock (padlock compatible)
- ter door gasket seals with five points of sealing contact
- ner doors are high-impact ABS plastic with recessed handles
- ainless-steel interior shelves
- avy-duty 2" (5cm) locking, tandem wheel casters

ERING INFORMATION:

nal factory-installed or freestanding chart recorders and CO_2/LN_2 backup ems available. Factory-installed options must be purchased at same time as er. Contact your Fisher Scientific Customer Service Representative for information.

13-990-89 with optional temperature chart recorder

WARRANTY:

Two years, parts and labor; four years, compressor

CERTIFICATIONS:

Meet NEMA, UL, cUL listed. CE marked. TUV, IEC60335-2-89/Climate Class T (Tropical) criteria.

ior D x W x H[†]	Exterior L × W × H[†]	Shipping Weight	Electrical Requirements	Amps/ Breaker	NEMA Plug	Cat. No.	Each
cu. ft. (487L)							
23½ × 50½" (64 × 60 × 128cm)	35½ × 36¾ × 77⅞" (90 × 93 × 198cm)	720 lb. (326kg)	115V 60Hz	16/20	5-20P	**13-990-87**	14,505.00
			208/230V 60Hz	12/15	6-15P	**13-990-88**	14,505.00
cu. ft. (572L)							
× 28½ × 50½" (62 × 72 × 128cm)	36¼ × 41¾ × 77⅞" (92 × 106 × 198cm)	770 lb. (349kg)	115V 60Hz	16/20	5-20P	**13-990-89**	15,047.00
			208/230V 60Hz	12/15	6-15P	**13-990-90**	15,047.00
cu. ft. (691L)							
× 34½ × 50½" (62 × 88 × 128cm)	36¼ × 48⅞ × 77⅞" (92 × 121 × 198cm)	830 lb. (376kg)	115V 60Hz	16/20	5-20P	**13-990-91**	15,899.00
			208/230V 60Hz	12/15	6-15P	**13-990-92**	15,899.00

lished interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for fication of clearance tolerances, contact your Fisher Scientific Customer Service Representative.

Fisher Scientific* Isotemp* Basic -86°C Ultralow-Temperature Upright Freezers

Basic monitoring and alarm electronics

Programmable microprocessor control provides reliable sample protection, excellent energy efficiency, and low noise levels.

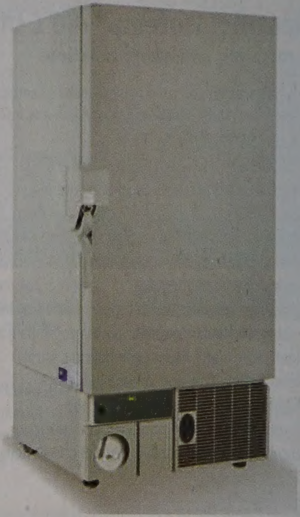
- Temperature control from -86° to -50°C, adjustable in 1°C increments
- Capacities: 17.2, 20.2, 24.4 cu. ft. (487, 572, 691L)
- Manual defrost

Microprocessor Control

- Continuously monitors sensors to ensure proper performance
- Easy-to-read LED mounted on door at knee level
- Touchpad data entry
- Key-operated main power and alarm switch
- Control setpoint in 1°C increments; alarm setpoints in 5°C increments
- Temperature deviation or power failure triggers audible/visual alarms
- Alarm Battery Low indicator
- Time Delay feature delays restart after power failure
- Voltage Buck/Boost corrects incoming line voltage
- Low Voltage Surge Protection minimizes voltage spikes
- Battery backup supplies control panel in case of power failure

Construction

- Steel cabinet with corrosion-resistant coating
- CFC-free refrigerants
- 1hp industrial-grade compressors
- Downfeed evaporator
- Washable condenser filter
- Two 1" (2.5cm) dia. access ports
- Minimum 5" (12.7cm) CFC-free, foamed-in-place urethane insulation
- Built-in key lock (padlock compatible)
- Outer door gasket seals with five points of sealing contact
- Inner doors are high-impact ABS plastic with recessed handles
- Stainless steel interior shelves
- Heavy-duty 2" (5cm) locking, tandem wheel casters



13-990-09 with optional temperature chart recorder.

ORDERING INFORMATION:

Optional built-in Temperature Chart Recorder and/or LN_2/CO_2 Backu System must be specified at time of order. Contact your Fisher Scientific Customer Service Representative for more information.

WARRANTY:

Two years, parts and labor

CERTIFICATIONS:

Meet NEMA, UL, cUL listed. CE marked. TUV, IEC60335-2-89/Climat Class T (Tropical) criteria.

Interior D x W x H†	Exterior L x W x H†	Electrical Requirements	Amps/Breaker	NEMA Plug	Cat. No.	Ea
17.2 cu.ft. (487L)						
25 × 23½ × 50½" (64 × 60 × 128cm)	35½ × 36¾ × 77⅞" (90 × 93 × 198cm)	115V 60Hz	16/20	5-20P	**13-990-05**	10,492
		208/230V 60Hz	12/15	6-15P	**13-990-06**	10,492
		230V 50Hz	12/16	European	**13-990-07**	10,492
20.2 cu. ft. (572L)						
24⅜ × 28½ × 50½" (62 × 72 × 128cm)	36¼ × 41¾ × 77⅞" (92 × 106 × 198cm)	115V 60Hz	16/20	5-20P	**13-990-09**	11,108
		208/230V 60Hz	12/15	6-15P	**13-990-11**	11,108
		230V 50Hz	12/16	European	**13-990-12**	11,108
		230V 50Hz	12/13	British	**13-990-13**	8,815
24.4 cu. ft. (691L)						
24⅜ × 34½ × 50½" (62 × 88 × 128cm)	36¼ × 47¾ × 77⅞" (92 × 121 × 198cm)	115V 60Hz	16/20	5-20P	**13-990-14**	11,862
		208/230V 60Hz	12/15	6-15P	**13-990-15**	11,862
		230V 50Hz	12/16	European	**13-990-16**	11,862

† Published interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.

*Trademark. See Trademark Reference.

Prices subject to change.

her Scientific* Isotemp* Ultrafreezers: Upright Models

secure storage of biological products, viruses, vaccines, and tissue samples

1hp industrial-strength compressors and advanced microprocessor rolled systems ensure precise temperature control. Ideal for both low ient temperature and flexibility testing.

- mperature range: -86° to -50°C
- pacity: 13.4 cu. ft. (379L)†
- anual defrost

roprocessor Control

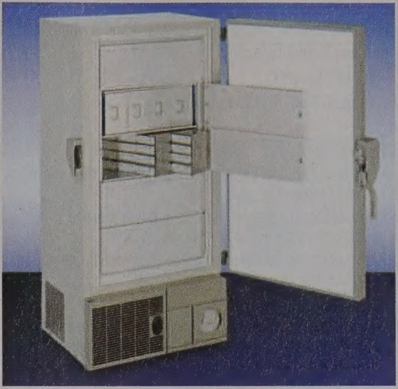
- e-level controls in door
- mperature setpoints, overtemperature, and undertemperature alarm nits adjust in 1°C increments
- mper-resistant touchpad data entry maintains reliable storage temperature, aranteed in ambient temperatures to 32°C
- -board AC power monitoring with digital readout of actual line voltage vises of unsafe source voltage
- w-voltage safeguard
- lean filter" indicator advises when to clean condenser intake filter
- y-operated switch for power and alarm provides extra security
- itomatic continuous-charge battery backup for full function in case of wer failure

rm Monitoring System

- mperature deviation or power failure triggers audible and visual warning
- gital display of actual alarm battery standby capacity advises when to place battery
- uchpad alarm test function warms internal probe to simulate arm condition
- ilt-in remote alarm contacts allow easy connection to remote systems

struction

- scade refrigeration system uses CFC-free refrigerant‡; CFC-free sulation and packaging
- oor has minimum of 3½" (8.9cm) thick, high-density, CFC-free insulation
- onvenient, one-handed, positive-open door latch for easier opening
- ilt-in keyed door lock for security
- vo independent gaskets form a tight seal to help eliminate frost buildup
- ur stainless-steel interior shelves (three adjustable)
- e ABS plastic inner doors reduce exposure when open
- dia. (2.5cm) access port for adding instrumentation to interior
- avy-duty casters for mobility
- usable air filters



13-990-85

ORDERING INFORMATION:

Interior D × W × H:† 19½ × 23½ × 50½" (48 × 60 × 128cm). Exterior L × W × H:† 31⅓ × 37⅛ × 77½" (80 × 94 × 197cm). Optional factory-installed or freestanding chart recorders and CO_2/LN_2 backup systems available. Factory-installed options must be purchased at same time as freezer. Contact your Fisher Scientific Customer Service Representative for more information.

WARRANTY:

13 months, parts and labor; five years, compressor

Electrical Requirements	Amps/Breaker	Cat. No.	Each
115V 60Hz	16/20	**13-990-85**	13,201.00
208/230V 60Hz	12/15	**13-990-86**	13,201.00

† *Published interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.*

‡ *Cascade system includes first-stage (blend of R-134a and R-404a) and second-stage (R-404a) refrigerants; CFC-free.*

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Fisher Scientific* Isotemp* Ultrafreezers: Chest Models

For secure storage of biological products, viruses, vaccines, and tissue samples

Two 1hp industrial-strength compressors and advanced microprocessor-controlled systems ensure precise temperature control. Ideal for both low ambient temperature and flexibility testing.

- Temperature range: -86° to -40°C
- Capacities from 6.8 to 20.5 cu. ft. (193 to 580L)[†]
- Manual defrost

Microprocessor Control

- Temperature setpoints, overtemperature, and undertemperature alarm limits adjust in 1°C increments
- Tamper-resistant touchpad data entry maintains reliable storage temperature, guaranteed in ambient temperatures to 32°C
- On-board AC power monitoring with digital readout of actual line voltage advises of unsafe source voltage
- Low-voltage safeguard
- "Clean filter" indicator advises when to clean condenser intake filter
- Key-operated switch for power and alarm provides extra security
- Automatic continuous-charge battery backup for full function in case of power failure

Alarm Monitoring System

- Temperature deviation or power failure triggers audible and visual warning
- Digital display of actual alarm battery standby capacity advises when to replace battery
- Touchpad alarm test function warms internal probe to simulate alarm condition
- Built-in remote alarm contacts allow easy connection to remote systems

Construction

- Cascade refrigeration system uses CFC-free refrigerant[‡]; CFC-free insulation and packaging
- 1" dia. (2.5cm) access port for adding instrumentation to interior
- Heavy-duty casters for mobility
- Reusable air filters
- Heavy-duty counter-balanced lid has keyed lock
- Double-seal lid gaskets and sublids eliminate frost buildup

13-990-93 with optional temperature chart recorder

ORDERING INFORMATION:

Optional factory-installed or freestanding chart recorders and CO_2/LN_2 backup systems available. Factory-installed options must be purchased at same time as freezer. Contact your Fisher Scientific Customer Service Representative for more information.

WARRANTY:

13 months, parts and labor; five years, compressor

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442

Capacity	Interior D × W × H†	Exterior L × W × H†	Shipping Weight	Electrical Requirements	Amps/Breaker	Cat. No.	
6.8 cu. ft. (193L)	19 × 23½ × 26½" (48 × 60 × 67cm)	31¾ × 48½ × 41" (81 × 123 × 104cm)	525 lb. (238kg)	115V 60Hz	16/20	**13-990-93**	10,6
13.7 cu. ft. (388L)	19 × 47 × 26½" (48 × 119 × 67cm)	31¾ × 72 × 41" (81 × 183 × 104cm)	680 lb. (308kg)	115V 60Hz	16/20	**13-990-95**	12,8
17.1 cu. ft. (484L)	19 × 58¾ × 26½" (48 × 149 × 67cm)	31¾ × 83¾ × 41" (81 × 213 × 104cm)	770 lb. (349kg)	115V 60Hz	16/20	**13-990-97**	12,4
20.5 cu. ft. (580L)	19 × 70½ × 26½" (48 × 179 × 67cm)	31¾ × 95½ × 41" (81 × 243 × 104cm)	940 lb. (426kg)	115V 60Hz	16/20	**13-990-99**	14,4
20.5 cu. ft. (580L)	19 × 70½ × 26½" (48 × 179 × 67cm)	31¾ × 95½ × 41" (81 × 243 × 104cm)	940 lb. (426kg)	208/230V 60Hz	11.2/15	**13-990-100**	14,4

[†] *Published interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.*

[‡] *Cascade system includes first-stage (blend of R-134a and R-404a) and second-stage (R-404a) refrigerants; CFC-free.*

isher Scientific* Isotemp* Basic Ultralow-Temperature Freezers: Upright Models

ost-effective freezers ideal for a variety of industrial-process and general storage uses

ovide secure storage of anatomy components, DNA, biological products, ruses, vaccines, and tissue samples.

- Temperature range: -86° to -50°C
- Capacity: 13 cu. ft. (368L)
- Manual defrost

olid-state Control and Alarm Systems

- Adjustable temperature setpoint with push-button digital display
- Key-operated main power switch
- Integrated overtemperature safety alarm with battery backup
- Temperature deviation or prolonged power failure triggers audible alarm
- Exterior alarm contacts for connection to remote monitoring system
- Automatic voltage boost compensates for low voltage and brownout conditions

ir-cooled Refrigeration System†

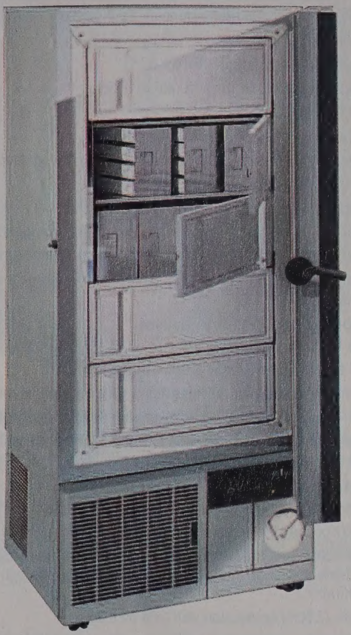
- Two 1hp Copeland* compressors
- CFC-free DuPont* Suva* 95 low-stage refrigerants
- Downfeed evaporator provides highly efficient refrigerant flow
- High-capacity air-cooled condenser with dual condenser fans
- Washable condenser filter (no tools required for removal) keeps fins free of dust to maintain peak cooling efficiency

onstruction

- Heavy-gauge steel exterior with high-impact powder paint finish
- Heavy-gauge steel interior with rounded corners for easy cleaning
- Minimum 5" thick (12.7cm) foamed-in-place, closed-cell, CFC-free urethane insulation in walls and door protects against high-ambient conditions
- 1" dia. (2.5cm) access port with cap on back
- Four stainless-steel interior shelves (three are adjustable), creating five interior compartments
- Five high-impact ABS inner doors with independent door hinges and positive magnetic latches close off compartments, reducing sample exposure when the main door opens
- Convenient, one-hand positive-open latch for easy opening
- Built-in keyed door lock for security
- Recessed, heavy-duty swivel casters with two leveling legs

RDERING INFORMATION:

terior L × W × H: 31¼ × 37 × 77½" (80 × 94 × 197cm).‡ Interior D × W × H: ½ × 23½ × 50½" (50 × 60 × 128cm).‡ Shipping weight: 650 lb. (295kg). ainless-steel interior, replacement shelves, accessories and equipment lidation service available; contact your Fisher Scientific Customer Service epresentative.



13-990-01 with optional temperature chart recorder.

WARRANTY:

Two years, parts and labor (extended 12-month warranty available; must be purchased at time of order)

CERTIFICATIONS:

Individually calibrated against equipment with calibration certified traceable to standards provided by NIST*; UL and cUL listed.

Electrical Requirements	Amps/Breaker	Cat. No.	Each
115V 60Hz	16.0/20	**13-990-01**	9612.00
208/240V 60Hz	7.5/15	**13-990-02**	9612.00
220V 50Hz	7.5/15	**13-990-03**	9612.00

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† Cascade system includes first-stage (blend of R-134a and R-404a) and second-stage (R-404a) refrigerants; CFC-free.

‡ Published interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Fisher Scientific* Isotemp* Basic Ultralow-Temperature Freezers: Chest Models

Ideal for a variety of industrial-process and general storage uses

Secure storage for anatomy components, DNA, biological products, viruses, vaccines, and tissue samples. Low-profile design for easy access to contents.

- Temperature range from -86° to -40°C
- Capacities from 3 to 14 cu. ft. (85 to 396L)
- Manual defrost

Solid-state Control and Alarm Systems

- Adjustable temperature setpoint with push-button digital display
- Key-operated main power switch
- Integrated overtemperature safety alarm with battery backup
- Temperature deviation or prolonged power failure triggers audible alarm
- Exterior alarm contacts for connection to remote monitoring system
- Automatic voltage boost compensates for low voltage and brownout conditions

Air-cooled Refrigeration System†

- Two 1hp Copeland* compressors
- CFC-free DuPont* Suva* 95 low-stage refrigerants
- Downfeed evaporator provides highly efficient refrigerant flow
- High-capacity air-cooled condenser with dual condenser fans
- Washable condenser filter (no tools required for removal) keeps fins free of dust to maintain peak cooling efficiency

Construction

- Heavy-gauge steel exterior with high-impact powder paint finish
- Heavy-gauge steel interior with rounded corners for easy cleaning
- Minimum 5" thick (12.7cm) foamed-in-place, closed-cell, CFC-free urethane insulation in walls and lid protects against high-ambient conditions
- 1" dia. (2.5cm) access port with cap on back
- Heavy-duty counterbalanced lid has built-in keyed lid lock for security
- Double-seal lid gaskets and Styrofoam* sublids minimize frost buildup
- Recessed, heavy-duty swivel casters with two leveling legs

13-990-28 with optional temperature chart recorder.

ORDERING INFORMATION:

Stainless-steel interior, accessories and equipment validation service available; contact your Fisher Scientific Customer Service Representative.

WARRANTY:

Two years, parts and labor (extended 12-month warranty available; must be purchased at time of order)

CERTIFICATIONS:

Individually calibrated against equipment with calibration certified traceable to standards provided by NIST*; UL and cUL listed.

Capacity	Interior D x W x H‡	Exterior L x W x H‡	Shipping Weight	Electrical Requirements	Amps/Breaker	Cat. No.	Each
3 cu. ft. (85L)	17 × 19 × 17" (43 × 48 × 43cm)	30 × 30 × 45" (76 × 76 × 116cm)	415 lb. (188kg)	115V 60Hz	16.0/20	**13-990-18**	7393.00
				208/240V 60Hz	11.2/15	**13-990-19**	7393.00
				220V 50Hz	11.2/15	**13-990-22**	7393.00
7 cu. ft. (198L)	19 × 23½ × 26½" (48 × 60 × 67cm)	30 × 48½ × 41" (76 × 123 × 104cm)	525 lb. (238kg)	115V 60Hz	16.0/20	**13-990-24**	8426.00
				208/240V 60Hz	11.2/15	**13-990-25**	8426.00
				220V 50Hz	11.2/15	**13-990-26**	8426.00
10 cu. ft. (283L)	19 × 35¼ × 26½" (48 × 90 × 67cm)	30 × 60½ × 41" (76 × 154 × 104cm)	680 lb. (308kg)	115V 60Hz	16.0/20	**13-990-28**	9105.00
				208/240V 60Hz	11.2/15	**13-990-29**	9126.00
				220V 50Hz	11.2/15	**13-990-30**	9105.00
14 cu. ft. (396L)	19 × 47 × 26½" (48 × 119 × 67cm)	30 × 72 × 41" (76 × 183 × 104cm)	680 lb. (308kg)	115V 60Hz	16.0/20	**13-990-32**	9794.00
				208/240V 60Hz	11.2/15	**13-990-33**	10,252.00
				220V 50Hz	11.2/15	**13-990-34**	9794.00

† Cascade system includes first-stage (blend of R-134a and R-404a) and second-stage (R-404a) refrigerants; CFC-free.

‡ Published interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

sher Scientific* Isotemp* Ultralow-Temperature Undercounter Freezer

signed for convenient storage on or under the lab bench, or stacked two high

- mperature range: -86° to -50°C, with control in 1° increments
- pacity: 3.6 cu. ft. (101L)
- aximum box capacity: 60 × 2", 36 × 3", 24 × 4"
- ser-programmable temperature and alarm settings
- sual/audible high/low temperature alarms adjustable in 1° increments
- ttery backup with indicator for monitoring in event of power loss
- ntrol system S.M.A.R.T software allows service to diagnose eezer issues
- emote contacts provide connections to external user-supplied alarm onitoring system

rigeration System

- vo-stage sealed hermetic cascade system provides years of orry-free operation
- vironmentally friendly CFC/HCFC-free refrigerant
- vo commercially available low-noise, heavy-duty compressors for iet in-lab operation

nstruction

- wder-coated steel exterior and stainless-steel interior for easy eaning and increased durability
- pace-saving vacuum insulation panel technology maximizes storage pacity while minimizing footprint
- vo internal compartments with inner doors and high-efficiency seals event cold air loss, reduce energy consumption
- eated vent with plunger to clear icing prevents vacuum formation, lowing door to be easily opened repeatedly
- ck and key on outer door for added security
- vo access ports for external probes or optional CO_2/LN_2 backup system

isotemp
Fisher Scientific

14-278-36

ORDERING INFORMATION:

Dimensions: 32⅚H × 35½W × 22¼"D (83 × 90 × 56.6cm). Shipping weight: 256 lb. (235kg). 115V 60Hz single phase.

CERTIFICATIONS:

UL listed, CE marked

Cat. No.	Each
14-278-36	8865.00

ACCESSORIES

or Fisher Scientific* Isotemp* Ultralow-emperature Undercounter Freezers

em	Description	Cat. No.	Each
O_2 Backup System	120-220V 60Hz	14-286-37	2500.00
N_2 Backup System	120-220V 60Hz	14-286-38	2500.00
emperature Chart Recorder	7-Day	14-286-39	1998.18
ir Filter	Washable	14-286-40	16.55
utodialler	For up to 8 Freezers	14-286-41	444.00
oltage Stabilizer	External; 120V 60Hz	14-286-42	1762.73
nventory Rack	For 2" (50mm) Boxes	14-286-43	166.73
nventory Rack	For 3" (75mm) Boxes	14-286-44	166.73
nventory Rack	For 4" (100mm) Boxes	14-286-45	166.73

Thermo Scientific* Revco* Ultima* PLUS -86°C Upright Freezers

Advanced control platform for labs requiring sophisticated monitoring, alarm and communication functions

Programmable microprocessor control, patented refrigeration system, and state-of-the-art electronics ensure the highest level of sample protection. Plus, these units offer 20% more heat removal capacity, 15% less power consumption, 15% less heat emission, and 40% less noise than other ultralow-temperature freezers.

- Precise temperature control from -86° to -50°C, adjustable in 1°C increments
- Capacities from 17.2 to 24.4 cu. ft. (487 to 691L)
- Easy-to-read LED door-mounted at eye level, with touchpad data entry

Monitoring and Alarm Systems

- On-Board Diagnostics continuously monitor sensors to ensure proper performance
- Life-Guard Alert monitors compressor performance, automatically adjusts to internal and external conditions
- Clean Filter, Alarm Battery Low and Voltage indicators
- Key-operated main power and alarm switch lock temperature and alarm setpoints
- Control Setpoint sets cabinet temperature, Cabinet Temperature displays the temperature
- Audible/visual power and temperature failure alarms automatically activate during a temperature deviation
- Automatic Incident Monitor (AIM) identifies temperature deviation due to power or temperature failure
- Time Delay feature delays restart after power failure
- Extreme Ambient Alert warns if room temperature may affect performance
- Alarm Test simulates temperature alarm condition
- Alarm Reset mutes audible alarm and resets AIM
- Battery backup supplies control panel in case of power failure

Patented Refrigeration System

- CFC-free DuPont* low-stage refrigerants
- 1hp industrial-grade compressors
- Downfeed evaporator
- Washable condenser filter

Construction

- Voltage Buck/Boost corrects line voltage into the unit
- Low Voltage Surge Protection minimizes voltage spikes
- Remote alarm contacts for external alarm/monitoring system
- Two 1" (2.5cm) dia. access ports
- RS-232 data port

13-989-719 with optional built-in temperature chart recorder.

Ultima PLUS Control Panel

- High-strength steel cabinet with corrosion-resistant coating
- Minimum 5" (127mm) CFC-free, foamed-in-place urethane insulation (outer door: minimum 3½" [89mm])
- Integrated Cryolatch* door handle for one-handed operation
- Built-in key lock (padlock compatible)
- Outer door gasket seals with five points of sealing contact
- Inner doors are high-impact ABS plastic with recessed handles
- Stainless-steel interior shelves
- Heavy-duty 2" (5cm) locking, tandem wheel casters

ORDERING INFORMATION:

Optional built-in Temperature Chart Recorder (7-day, 6" dia.) and/or LN_2/CO Backup System must be specified at time of order. Freestanding LN_2/CO_2 Backup System also available. Contact your Fisher Scientific Customer Service Representative for more information.

WARRANTY:

Two years, parts and labor

CERTIFICATIONS:

Meet NEMA, UV, IEC60335-2-89/Climate Class T (Tropical) criteria, UL, cUL listed. CE marked.

Interior D × W × H	Exterior L × W × H	Electrical Requirements	Amps/Breaker	NEMA Plug	Shipping Weight	Mfr. No.	Cat. No.	Each
17.2 cu. ft. (487L)								
25 × 23½ × 50½" (63.5 × 59.7 × 128.3cm)	35½ × 36¾ × 77⅞" (90.1 × 93.1 × 197.5cm)	115V 60Hz	16/20	5-20R	720 lb. (325kg)	ULT1786 10 A	**13-989-717**	14,278.00
		208-230V 60Hz	12/15	6-15P		ULT1786 10 D	**13-989-718**	14,278.00
20.2 cu. ft. (572L)								
24⅜ × 28½ × 50½" (61.6 × 72.4 × 128.3cm)	36¼ × 41¾ × 77⅞" (92 × 105.8 × 197.5cm)	115V 60Hz	16/20	5-20R	770 lb. (349kg)	ULT2186 10 A	**13-989-719**	14,928.00
		208-230V 60Hz	12/15	6-15P		ULT2186 10 D	**13-989-720**	14,928.00
24.4 cu. ft. (691L)								
24⅜ × 34½ × 50½" (61.6 × 87.6 × 128.3cm)	36¼ × 47¾ × 77⅞" (920 × 121 × 197.5cm)	115V 60Hz	16/20	5-20R	830 lb. (376kg)	ULT2586 10 A	**13-989-721**	15,685.00
		208-230V 60Hz	12/15	6-15P		ULT2586 10 D	**13-989-722**	15,685.00

*Trademark. See Trademark Reference.

ıermo Scientific* Revco* Elite* PLUS -86°C Upright Freezers

d-range control platform for labs requiring moderate monitoring and alarm functions

grammable microprocessor control, patented refrigeration system, and te-of-the-art electronics ensure the highest level of sample protection. PLUS freezers feature 20% more heat removal capacity, 15% less power ısumption, 15% less heat emission, and 40% less noise than other alow-temperature freezers.

recise temperature control from -86° to -50°C, adjustable in
°C increments
apacities: 17.2, 20.2 and 24.4 cu. ft. (487, 572 and 691L)
asy-to-read LED mounted at knee level, with touchpad data entry

onitoring and Alarm Systems

)n-board diagnostics continuously monitor sensors to ensure
roper performance
lean Filter, Alarm Battery Low and Voltage indicators
ey-operated main power and alarm switch
ontrol Setpoint sets cabinet temperature, Cabinet Temperature displays
ıe temperature
udible/visual power and temperature failure alarms automatically
ctivate during a temperature deviation
utomatic Incident Monitor (AIM) identifies temperature deviation due
o power or temperature failure
ime Delay feature delays restart after power failure
larm Test simulates temperature alarm condition
larm Reset mutes audible alarm and resets AIM
attery backup supplies control panel in case of power failure

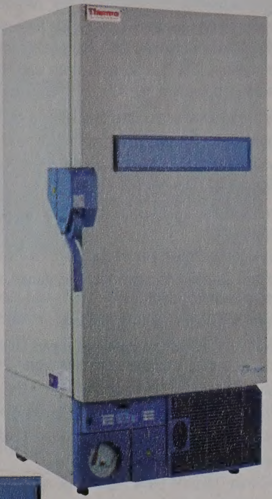
tented Refrigeration System

FC-free DuPont* Suva* low-stage refrigerants
hp industrial-grade compressors
)ownfeed evaporator
Vashable condenser filter

nstruction

oltage Buck/Boost corrects incoming line voltage into the unit
ow Voltage Surge Protection minimizes voltage spikes
wo 1" (2.5cm) dia. access ports
ligh-strength steel cabinet with corrosion-resistant coating
Minimum 5" (127mm) CFC-free, foamed-in-place urethane insulation
outer door: minimum 3½" [89mm])
ntegrated Cryolatch* door handle for one-handed operation
uilt-in key lock (padlock compatible)
)uter door gasket seals with five points of sealing contact
nner doors are high-impact ABS plastic with recessed handles

NEW


13-989-706 with optional built-in temperature chart recorder.

Elite PLUS Control Panel

- Stainless-steel interior shelves
- Heavy-duty 2" (5cm) locking, tandem wheel casters

ORDERING INFORMATION:

Optional built-in Temperature Chart Recorder (seven-day, 6" dia.) and/or LN_2/CO_2 Backup System must be specified at time of order. Freestanding LN_2/CO_2 Backup System also available. Contact your Fisher Scientific Customer Service Representative for more information.

WARRANTY:

Two years, parts and labor

CERTIFICATIONS:

Meet NEMA, TUV, IEC60335-2-89/Climate Class T (Tropical) criteria. UL, cUL listed. CE marked.

erior D × W × H	Exterior L × W × H	Electrical Requirements	Amps/Breaker	NEMA Plug	Shipping Weight	Mfr. No.	Cat. No.	Each
2 cu. ft. (487L)								
× 23½ × 50½" .5 × 59.7 × 128.3cm)	35½ × 36¾ × 77⅞" (90.1 × 93.1 × 197.5cm)	115V 60Hz, 1A	16/20	5-20P	720 lb. (326kg)	ULT 1786 6A	**13-989-704**	12,434.00
		208/230V 60Hz, 1A	12/15	6-15P	720 lb. (326kg)	ULT 1786 6D	**13-989-705**	12,434.00
2 cu. ft. (572L)								
⅜ × 28½ × 50½" .6 × 72.4 × 128.3cm)	36¼ × 41¾ × 77⅞" (92.0 × 105.8 × 197.5cm)	115V 60Hz, 1A	16/20	5-20P	770 lb. (349kg)	ULT 2186 6A	**13-989-706**	13,139.00
		208/230V 60Hz, 1A	12/15	6-15P	770 lb. (349kg)	ULT 2186 6D	**13-989-707**	13,139.00
4 cu. ft. (691L)								
⅜ × 34½ × 50½" .6 × 87.6 × 128.3cm)	36¼ × 47¾ × 77⅞" (92.0 × 121.0 × 197.5cm)	115V 60Hz, 1A	16/20	5-20P	830 lb. (376kg)	ULT2586 6A	**13-989-715**	13,916.00
		208/230V 60Hz, 1A	12/15	6-15P	830 lb. (376kg)	ULT2586 6D	**13-989-716**	13,916.00

Thermo Scientific* Revco* Value* PLUS -86°C Upright Freezers

Basic performance and controls for labs requiring fundamental monitoring and alarm electronics

Programmable microprocessor control, patented refrigeration system, and state-of-the-art electronics ensure the highest level of sample protection. All PLUS freezers feature 20% more heat removal capacity, 15% less power consumption, 15% less heat emission, and 40% less noise than other ultralow-temperature freezers.

- Precise temperature control from -86° to -50°C, adjustable in 1°C increments
- Capacities: 17.2, 20.2, 24.4 cu. ft. (487, 572, 691L)
- Easy-to-read LED mounted at knee level, with touchpad data entry

Monitoring and Alarm Systems

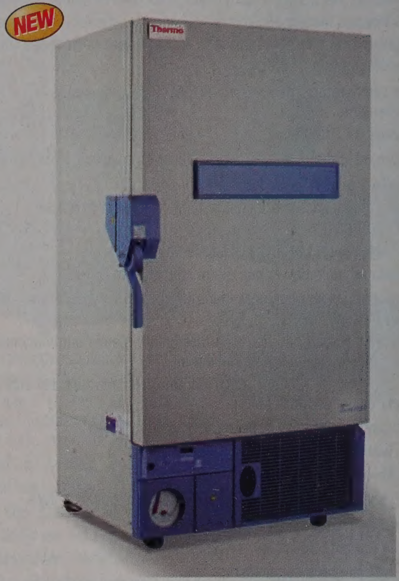
- On-board diagnostics continuously monitor sensors to ensure proper performance
- Key-operated main power and alarm switch
- Control Setpoint sets cabinet temperature, Cabinet Temperature displays the temperature
- Alarm setpoints in 5°C increments
- Audible/visual temperature and power failure alarms automatically activate during a temperature deviation
- Alarm Battery Low indicator
- Time Delay feature delays restart after power failure
- Battery backup supplies control panel in case of power failure

Patented Refrigeration System

- CFC-free DuPont* Suva* low-stage refrigerants
- 1hp industrial-grade compressors
- Downfeed evaporator
- Washable condenser filter

Construction

- Voltage Buck/Boost corrects incoming line voltage into the unit
- Low Voltage Surge Protection minimizes voltage spikes
- Two 1" (2.5cm) dia. access ports
- High-strength steel cabinet with corrosion-resistant coating
- Minimum 5" (127mm) CFC-free, foamed-in-place urethane insulation (outer door: minimum 3½" [89mm])
- Integrated Cryolatch* door handle for one-handed operation
- Built-in key lock (padlock compatible)
- Outer door gasket seals with five points of sealing contact
- Inner doors are high-impact ABS plastic with recessed handles
- Stainless-steel interior shelves
- Heavy-duty 2" (5cm) locking, tandem wheel casters



13-989-723 with optional built-in temperature chart recorder.

Value PLUS Control Panel

ORDERING INFORMATION:

Optional built-in Temperature Chart Recorder (seven-day, 6" dia.) and/or LN_2/CO_2 Backup System must be specified at time of order. Freestanding LN_2/CO_2 Backup System also available. Contact your Fisher Scientific Customer Service Representative for more information.

WARRANTY:

Two years, parts and labor

CERTIFICATIONS:

Meet NEMA, TUV, IEC60335-2-89/Climate Class T (Tropical) criteria. UL, cUL listed. CE marked.

Interior D × W × H	Exterior L × W × H	Electrical Requirements	Amps/ Breaker	NEMA Plug	Shipping Weight	Mfr. No.	Cat. No.	Eac
17.2 cu. ft. (487L)								
25 × 23½ × 50½" (63.5 × 59.7 × 128.3cm)	35½ × 36¾ × 77⅞" (90.1 × 93.1 × 197.5cm)	115V 60Hz, 1A	16/20	5-20P	720 lb. (326kg)	ULT1786 4A	**13-989-723**	11,028.0
		208/230V 60Hz, 1A	12/15	6-15P	720 lb. (326kg)	ULT1786 4D	**13-989-724**	11,028.0
20.2 cu. ft. (572L)								
24⅜ × 28½ × 50½" (61.6 × 72.4 × 128.3cm)	36¼ × 41¾ × 77⅞" (92.0 × 105.8 × 197.5cm)	115V 60Hz, 1A	16/20	5-20P	770 lb. (349kg)	ULT2186 4A	**13-989-702**	11,704.0
		208/230V 60Hz, 1A	12/15	6-15P	770 lb. (349kg)	ULT2186 4D	**13-989-703**	11,704.0
24.4 cu. ft. (691L)								
24⅜ × 34½ × 50½" (61.6 × 87.6 × 128.3cm)	36¼ × 47¾ × 77⅞" (92.0 × 121.0 × 197.5cm)	115V 60Hz, 1A	16/20	5-20P	830 lb. (376kg)	ULT2586 4A	**13-989-713**	12,491.0
		208/230V 60Hz, 1A	12/15	6-15P	830 lb. (376kg)	ULT2586 4D	**13-989-714**	12,491.0

*Trademark. See Trademark Reference.

Prices subject to change.

ermo Scientific* Revco* Ultima II* Ultralow-Temperature est Freezers

re biological samples at temperatures as low as -86°C

ure IntrLogic* microprocessor control and Legaci* refrigeration ems, plus advanced self-diagnosing, self-adjusting freezer monitoring multilevel security systems.

mperature range: -86° to -40°C or -40° to -10°C, depending on model

apacities: 6.8 to 20.5 cu. ft.

anual defrost

Logic Microprocessor Control

gital display with touchpad controls

dependent operating temperature and high/low alarm setpoints

ey-operated ON/OFF/ALARM ON master switch for setpoint security

udible/visual warnings for overtemperature, undertemperature or ower failure

oltage Boost automatically compensates for low voltage

feguard Compressor Protection monitors performance and automatically djusts to conditions

utomatic Incident Monitor identifies temperature deviation beyond arm setpoint

xtreme Ambient Alert warns if room temperature can affect performance

isplay parameters include Incoming Line Voltage, Surge Suppressor dicator, Voltage Boost Indicator, Digital Battery Indicator, and Clean lter Light

S-232-C data port

oftware package for datalogging and management

ush-button alarm test

ontroller battery backup system

aci Cascade Refrigeration System

ssures unprecedented temperature reliability for the most critical orage applications

esigned specifically for use in ultralow-temperature freezers

ully integrated technology uses environmentally safe DuPont* Suva* efrigerants that cool the load as well as system components

wo custom-designed 1hp Copeland* compressors provide the splacement required for optimum efficiency

ubricating oils maintain proper viscosity

alanced condensers and fans complement the cooling capacity of refrigerants

IntrLogic Microprocessor Control (shown with optional backup system)

Thermo
REVCO

13-990-194 with optional factory-installed temperature chart recorder.

Construction

- Cold-rolled steel with high-impact powder paint exterior finish
- Washable condenser intake filter can be removed easily without tools
- CFC-free refrigerant
- Double-gasket lid ensures tight four-point seal
- 1" (2.5cm) port for access to interior cabinet
- Hermetically sealed industrial compressors are designed to operate safely in ambient temperatures up to 32°C (90°F)
- 5" (12.7cm) thick CFC-free urethane insulation in cabinet, 3½" (8.9cm) in lid
- Recessed heavy-duty swivel casters

ORDERING INFORMATION:

Alarm systems, temperature chart recorders, and power monitors are available separately (see Accessories). Additional voltages are available; contact your Fisher Scientific Customer Service Representative.

WARRANTY:

Two years, parts and labor

COMPLIANCE:

Meet TUV standards for safety and performance. UL, cUL listed. CE marked.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

acity	Interior L × W × D†	Exterior L × W × H†	Shipping Weight	Electrical Requirements	Amps/ Breaker	NEMA Plug	Mfr. No.	Cat. No.	Each
to -10°C									
cu. ft. (193L)	19 × 23½ × 26½" (48 × 60 × 67cm)	30 × 48½ × 41" (76 × 123 × 104cm)	470 lb. (213kg)	115V 60Hz	8.5/15	5-15P	ULT750-9A	**13-990-242**	7960.00
7 cu. ft. (388L)	19 × 47 × 26½" (48 × 119 × 67cm)	30 × 72 × 41" (76 × 183 × 104cm)	650 lb. (295kg)	115V 60Hz	8.5/15	5-15P	ULT1450-9A	**13-990-246**	9217.00
to -40°C									
cu. ft. (88L)	17 × 19 × 17" (43 × 48 × 43cm)	30 × 30 × 45½" (76 × 76 × 116cm)	415 lb. (188kg)	115V 60Hz	16/20	5-20P	ULT390 9 A	**13-990-185**	10,038.00
cu. ft. (193L)	19 × 23½ × 26½" (48 × 60 × 67cm)	32 × 48½ × 41" (80 × 123 × 104cm)	525 lb. (238kg)	115V 60Hz	16/20	5-20P	ULT790 9 A	**13-990-187**	11,193.00
3 cu. ft. (292L)	19 × 35¼ × 26½" (48 × 90 × 67cm)	32 × 60¼ × 41" (80 × 153 × 104cm)	680 lb. (308kg)	115V 60Hz	16/20	5-20P	ULT1090 9 A	**13-990-188**	12,118.00
				208/230V 60Hz	11.2/15	6-15P	ULT1090 9 D	**13-990-189**	12,118.00
7 cu. ft. (388L)	19 × 47 × 26½" (48 × 119 × 67cm)	32 × 72 × 41" (80 × 183 × 104cm)	650 lb. (295kg)	115V 60Hz	16/20	5-20P	ULT1490 9 A	**13-990-190**	13,351.00
				208/230V 60Hz	11.2/15	6-15P	ULT1490 9 D	**13-990-191**	13,351.00
1 cu. ft. (484L)	19 × 58¾ × 26½" (48 × 149 × 67cm)	32 × 83¾ × 41" (80 × 213 × 104cm)	770 lb. (349kg)	115V 60Hz	16/20	5-20P	ULT1790 9 A	**13-990-192**	14,213.00
				208/230V 60Hz	11.2/15	6-15P	ULT1790 9 D	**13-990-193**	14,213.00
5 cu. ft. (580L)	19 × 70½ × 26½" (48 × 179 × 67cm)	32 × 95½ × 41" (80 × 243 × 104cm)	940 lb. (426kg)	115V 60Hz	16/20	5-20P	ULT2090 9 A	**13-990-194**	14,820.00
				208/230V 60Hz	11.2/15	6-15P	ULT2090 9 D	**13-990-195**	14,820.00

blished interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for rification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.

Thermo Scientific* Revco* Ultima II* SI Ultralow-Temperature Freezers

Super-insulated thin-wall construction, IntrLogic* microprocessor control and Legaci* refrigeration system

Super-insulated, composite wall design maintains insulation R value while reducing wall thickness from typical 5" (12.7cm) to 2" (5.1cm)—increasing interior storage capacity without increasing required space.

- Temperature range: -86° to -50°C
- Capacity: 24.4 cu. ft. (691L)
- Manual defrost

IntrLogic Microprocessor Control

- Independent operating temperature and high/low alarm setpoints
- Key-operated OFF/ON/ALARM ON master switch for setpoint security
- Audible/visual warnings for overtemperature, undertemperature or power failure
- Voltage Boost automatically compensates for low voltage
- Lifeguard Compressor Protection monitors performance and automatically adjusts to conditions
- Automatic Incident Monitor identifies temperature deviation beyond alarm setpoint
- Extreme Ambient Alert warns if room temperature may affect performance
- Display parameters include incoming line voltage, Surge Suppressor Indicator, Voltage Boost Indicator, Digital Battery Indicator, and Clean Filter Light
- RS-232-C data port
- Software package for datalogging and management
- Push-button alarm test
- Controller battery backup system

Legaci Cascade Refrigeration System

- Assures unprecedented temperature reliability for the most critical storage applications
- Designed specifically for use in ultralow-temperature freezers
- Fully integrated technology uses environmentally safe DuPont* Suva* refrigerants that cool the load as well as system components
- Two custom-designed 1hp Copeland* compressors provide the displacement required for optimum efficiency
- Lubricating oils maintain proper viscosity
- Balanced condensers and fans complement the cooling capacity of refrigerants

Construction

- Cold-rolled steel walls
- Super-insulated: panels constructed of a vacuum insulation core, encapsulated by a sealed and evacuated film laminate, and wrapped in DuPont Mylar*
- CFC-free refrigerant

Electrical Requirements	Amps/ Breaker	Plug Type	Mfr. No.	Cat. No.	Each
115V 60Hz	16/20	NEMA 5-20P	ULT2586-9SI-A	**13-989-169**	16,820.00
208/230V 60Hz	8.5/15	NEMA 6-15P	ULT2586-9SI-D	**13-989-170**	16,820.00
220V 50Hz†	8.5/15	European	ULT2586-9SI-V	**13-989-171**	16,820.00

† *International Model.*

13-989-169 with optional temperature chart recorder.

IntrLogic Microprocessor Control (shown with optional backup syst

- Five inner doors—independently mounted with adjustable hinges—for five different storage compartments
- Four shelves (one fixed and three adjustable in 1" [2.5cm] increments) allow varying inventory configurations
- Integrated door handle and latch for easy, one-handed operation
- Key lock with padlock accommodation for extra security
- Manually activated door de-icer/heater minimizes ice buildup around doors
- Pressure equalization port and full-time vacuum relief inside freezer allow rapid re-entry after door closings
- Dual-wheel swivel casters provide easy mobility

ORDERING INFORMATION:

Shipping weight: 790 lb. (358kg). Alarm systems, temperature chart recorders, and power monitors are available separately (see Accessories).

WARRANTY:

Two years, parts and labor

COMPLIANCE:

Meet TUV standards for safety and performance. UL, cUL listed. CE marke

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

hermo Scientific* Revco* Elite* Ultralow-Temperature Chest Freezers

eal for long-term storage of biological materials

- Temperatures range: -86° to -40°C or -40° to -10C°, depending on model
- Capacities: 3.1 to 20.5 cu. ft. (88 to 580L)

icroprocessor Controls

- Extra-large, liquid-crystal digital temperature display
- Tamper-resistant electronic temperature controller
- Low-voltage safeguard
- Clean Filter indicator
- Three-position key switch for main power and alarm system

gaci* Cascade Refrigeration System

- Designed specifically for use in ultralow-temperature freezers
- Assures unprecedented temperature reliability for the most critical storage applications
- Uses environmentally safe DuPont* Suva* refrigerants that cool the load as well as system components
- Two custom-designed 1hp Copeland* compressors provide optimum efficiency
- Lubricating oils maintain proper viscosity
- Balanced condensers and fans complement refrigerant cooling capacity

uilt-in Alarm System

- Continuously charging battery backup support system in case of power failure
- Independent tamper-resistant high/low alarm setpoints in 1°C increments
- Touchpad alarm test to verify alarm readiness
- Audible and visual warnings of power failure and temperature deviation
- Automatic Incident Monitor warns when an alarm has occurred and has been self-corrected, then remembers warmest chamber temperature achieved
- Exterior alarm contacts for remote monitoring included

Construction

- Heavy-gauge, cold-rolled steel with powder paint finish
- Insulating sublids eliminate cold air loss during cabinet openings
- Minimum of 5" (12.7cm) foamed-in, CFC-free urethane insulation in cabinets
- CFC-free refrigerant
- Independent double-gasket lid forms a four-point seal to minimize frost buildup
- Built-in key lock and full-length lid handle for easy access, except 3.1 cu. ft. model, which has a locking provision only
- 1" dia. (2.5cm) port for access to the cabinet interior
- Mounted on dual-wheel casters for easy mobility

ORDERING INFORMATION:

Alarm systems, temperature chart recorders, and power monitors are available separately (see Accessories). Additional models (including international models) are available; contact your Fisher Scientific Customer Service Representative.

WARRANTY:

Two years, parts and labor

COMPLIANCE:

Meet TUV standards for safety and performance. UL, cUL listed. CE marked.

Thermo SCIENTIFIC
REVCO

13-989-111 with optional factory-installed temperature chart recorder.

Elite Series Freezer Controller

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

apacity	Interior D × W × H†	Exterior L × W × H†	Shipping Weight	Electrical Requirements	Amps/ Breaker	NEMA Plug	Mfr. No.	Cat. No.	Each
0° to -10°C									
1 cu. ft. (88L)	17 × 19 × 17" (43 × 48 × 43cm)	30 × 30 × 45½" (76 × 76 × 116cm)	365 lb. (166kg)	115V 60Hz	10/15	5-15P	ULT 350 5A	**13-989-109**	6263.00
8 cu. ft. (193L)	19 × 23½ × 26½" (48 × 60 × 67cm)	32 × 48½ × 41" (80 × 123 × 104cm)	470 lb. (213kg)	115V 60Hz	8.5/15	5-15P	ULT 750 5A	**13-989-111**	6887.00
.3 cu. ft. (291L)	19 × 35¼ × 26½" (48 × 90 × 67cm)	32 × 60¼ × 41" (80 × 153 × 104cm)	500 lb. (227kg)	115V 60Hz	8.5/15	5-15P	ULT 1050 5A	**13-989-113**	7519.00
7.1 cu. ft. (484L)	19 × 58¾ × 26½" (48 × 149 × 67cm)	32 × 83¾ × 41" (80 × 213 × 104cm)	650 lb. (295kg)	115V 60Hz	8.5/15	5-15P	ULT 1750 5A	**13-989-117**	8631.00
.5 cu. ft. (580L)	19 × 70½ × 26½" (48 × 179 × 67cm)	31⅞ × 95½ × 41" (80.8 × 243 × 104cm)	685 lb. (311kg)	115V 60Hz, 1A	8.5/15	5-15P	ULT 2050 5A	**13-989-119**	9124.00
6° to -40°C									
.1 cu. ft. (88L)	17 × 19 × 17" (43 × 48 × 43cm)	30 × 30 × 45½" (76 × 76 × 116cm)	415 lb. (188kg)	115V 60Hz	16/20	5-20P	ULT 390 5A	**13-989-129**	8882.00
.8 cu. ft. (193L)	19 × 23½ × 26½" (48 × 60 × 67cm)	32 × 48½ × 41" (80 × 123 × 104cm)	525 lb. (238kg)	115V 60Hz	16/20	5-20P	ULT 790 5A	**13-989-131**	10,007.00
0.3 cu. ft. (292L)	19 × 35¼ × 26½" (48 × 90 × 67cm)	32 × 60¼ × 41" (80 × 153 × 104cm)	680 lb. (295kg)	115V 60Hz	16/20	5-20P	ULT 1090 5A	**13-989-133**	10,907.00
				208/230V 60Hz	11.2/15	6-15P	ULT 1090 5D	**22-025-043**	10,907.00
3.7 cu. ft. (388L)	19 × 47× 26½" (48 × 119 × 67cm)	32 × 72 × 41" (80 × 183 × 104cm)	650 lb. (295kg)	115V 60Hz	16/20	5-20P	ULT 1490 5A	**13-989-135**	11,806.00
7.1 cu. ft. (484L)	19 × 58¾ × 26½" (48 × 149 × 67cm)	32 × 83¾ × 41" (80 × 213 × 104cm)	770 lb. (349kg)	115V 60Hz	16/20	5-20P	ULT 1790 5A	**13-989-137**	12,593.00
				208/230V 60Hz	11.2/15	6-15P	ULT 1790 5D	**13-989-138**	12,593.00
0.5 cu. ft. (580L)	19 × 70½ × 26½" (48 × 179 × 67cm)	32 × 95½ × 41" (80 × 243 × 104cm)	940 lb. (426kg)	115V 60Hz	16/20	5-20P	ULT 2090 5A	**13-989-139**	13,268.00
				208/230V 60Hz	11.2/15	6-15P	ULT 2090 5D	**13-989-140**	13,268.00

Published interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.

Thermo Scientific* Revco* Value* Series Ultralow-Temperature Chest Freezers

Economical freezers for a variety of industrial process and noncritical storage uses

- Temperatures range from -40° to -10°C or -86° to -40°C, depending on model
- Capacities from 3.1 to 20.5 cu. ft. (88 to 580L)
- Manual defrost

Solid-state Control System

- Adjustable temperature setpoint
- LED temperature and push-button setpoint displays
- Key-operated ON/OFF power switch
- Low-voltage safeguard
- Nonadjustable overtemperature alarm with battery backup and remote alarm contacts

Legaci* Cascade Refrigeration System

- Assures unprecedented temperature reliability for the most critical storage applications
- Designed specifically for use in ultralow-temperature freezers
- Fully integrated technology uses environmentally safe DuPont* Suva* refrigerants that cool the load as well as system components
- Two custom-designed, hermetically sealed, energy-efficient 1hp Copeland* compressors provide the displacement required for optimum efficiency
- Lubricating oils maintain proper viscosity
- Balanced condensers and fans complement the cooling capacity of refrigerants

Construction

- High-quality, cold-rolled steel with powder paint finish
- Minimum of 5" thick (12.7cm) foamed-in CFC-free urethane insulation
- Lids have 2½" (6.4cm) of insulation
- CFC-free refrigerant
- Independent double-gasket, four-point lid seal ensures positive seal
- Insulating sublids eliminate cold air loss during openings
- Built-in key lock (except 3.1 cu. ft. [88L] models)
- Full-length lid handle for easy access
- Dual-wheel casters for easy mobility
- 1" dia. (2.5cm) port for access to cabinet interior

ORDERING INFORMATION:

Alarm systems, temperature chart recorders, and power monitors are available separately (see Accessories). Additional models (including international models) are available; contact your Fisher Scientific Customer Service Representative for details.

Thermo SCIENTIFIC
REVCO

13-989-64

Value Series Freezer Controller

WARRANTY:

Two years, parts and labor

COMPLIANCE:

Meet TUV standards for safety and performance. UL, cUL listed. CE marked.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Capacity†	Interior D × W × H†	Exterior L × W × H†	Shipping Weight	Electrical Requirements	Amps/Breaker	NEMA Plug	Mfr. No.	Cat. No.	Each
-40° to -10°C									
3.1 cu. ft. (88L)	17 × 19 × 17" (43 × 48 × 43cm)	30 × 30 × 45½" (76 × 76 × 116cm)	355 lb. (161kg)	115V 60Hz	10/15	5-15P	ULT 350 3A	**13-989-64**	5215.00
				208/230V 60Hz	5.4/15	6-15P	ULT 350 3D	**13-989-65**	5215.00
6.8 cu. ft. (193L)	19 × 23½ × 26½" (48 × 60 × 67cm)	32 × 48½ × 41" (80 × 123 × 104cm)	470 lb. (213kg)	115V 60Hz	8.5/15	5-15P	ULT 750 3A	**13-989-66**	5834.00
13.7 cu. ft. (388L)	19 × 47 × 26½" (48 × 119 × 67cm)	32 × 72 × 41" (80 × 183 × 104cm)	650 lb. (295kg)	115V 60Hz	8.5/15	5-15P	ULT 1450 3A	**13-989-70**	6879.00
17.1 cu. ft. (484L)	19 × 58¾ × 26½" (48 × 149 × 67cm)	32 × 83¾ × 41" (80 × 213 × 104cm)	650 lb. (295kg)	115V 60Hz	8.5/15	5-15P	ULT 1750 3A	**13-989-72**	7434.00
20.5 cu. ft. (580L)	19 × 70½ × 26½" (48 × 179 × 67cm)	32 × 95½ × 41" (80 × 243 × 104cm)	685 lb. (311kg)	115V 60Hz	8.5/15	5-15P	ULT 2050 3A	**13-989-74**	7927.00
-86° to -40°C									
3.1 cu. ft. (88L)	17 × 19 × 17" (43 × 48 × 43cm)	30 × 30× 45½" (76 × 76 × 116cm)	415 lb. (188kg)	115V 60Hz	16/20	5-20P	ULT 390 3A	**13-989-84**	7927.00
6.8 cu. ft. (193L)	19 × 23½ × 26½" (48 × 60 × 67cm)	32 × 48½ × 41" (80 × 123 × 104cm)	525 lb. (238kg)	115V 60Hz	16/20	5-20P	ULT 790 3A	**13-989-86**	9036.00
10.3 cu. ft. (292L)	19 × 35¼ × 26½" (48 × 90 × 67cm)	32 × 60¼ × 41" (80 × 153 × 104cm)	680 lb. (308kg)	115V 60Hz	16/20	5-20P	ULT 1090 3A	**13-989-88**	9822.00
				208/230V 60Hz	11.2/15	6-15P	ULT 1090 3D	**22-291-780**	9822.00
13.7 cu. ft. (388L)	19 × 47 × 26½" (48 × 119 × 67cm)	32 × 72 × 41" (80 × 183 × 104cm)	650 lb. (295kg)	115V 60Hz	16/20	5-20P	ULT 1490 3A	**13-989-90**	10,518.00
				208/230V 60Hz	11.2/15	6-15P	ULT 1490 3D	**13-989-91**	10,518.00
17.1 cu. ft. (484L)	19 × 58¾ × 26½" (48 × 149 × 67cm)	32 × 83¾ × 41" (80 × 213 × 104cm)	770 lb. (349kg)	208/230V 60Hz	11.2/15	6-15P	ULT 1790 3D	**13-989-93**	11,195.00
20.5 cu. ft. (580L)	19 × 70½ × 26½" (48 × 179 × 67cm)	32 × 95½ × 41" (80 × 243 × 104cm)	940 lb. (426kg)	115V 60Hz	16/20	5-20P	ULT 2090 3A	**13-989-94**	11,810.00
				208/230V 60Hz	11.2/15	6-15P	ULT 2090 3D	**13-989-95**	11,810.00

† *Published interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.*

*Trademark. See Trademark Reference.

Prices subject to change.

ermo Scientific* Revco* Value* SI Series Ultralow-Temperature Freezers

per-insulated, with Legaci* refrigeration system

- emperature range: -86° to -50°C
- apacity: 24.4 cu. ft. (691L)
- Aanual defrost

gaci Cascade Refrigeration System

- ssures unprecedented temperature reliability for the most critical torage applications
- esigned specifically for use in ultralow-temperature freezers
- ully integrated technology uses environmentally safe DuPont* Suva* efrigerants that cool the load as well as system components
- wo custom-designed 1hp Copeland* compressors provide the isplacement required for optimum efficiency
- ubricating oils maintain proper viscosity
- alanced condensers and fans complement the cooling capacity of efrigerants

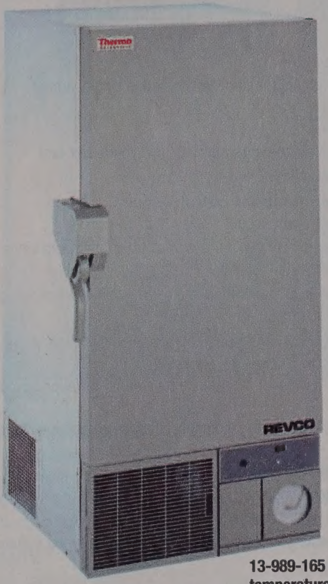
lid-state Electronic Control

- Aodular electronic circuit with overtemperature safety alarm system nd battery backup—warns of elevated storage temperatures
- xterior alarm contacts permit connection to remote monitoring system available separately)
- asy-to-read digital temperature display shows setpoint and emperature at the push of a button
- utomatic voltage boost system compensates for low source power

nstruction

- uper-insulated cold-rolled steel cabinets: panels constructed of a acuum insulation core, evacuated and encapsulated by a sealed uPont Mylar* film laminate
- omposite wall design maintains insulation R value while decreasing vall thickness from typical 5" (12.7cm) to just 2" (5.1cm)
- hin-wall design increases interior storage capacity without increasing equired floor space
- eyed ON/OFF power switch
- ey lock and padlock accommodation padlock for extra security
- ntegrated door handle and latch for easy, one-handed operation
- ive inner doors—independently mounted with adjustable hinges—reate five different storage compartments for optimal organization
- ressure equalization port and full-time vacuum relief inside freezer llow rapid re-entry after door closings
- Aanually activated door heater/de-icer minimizes ice buildup round door
- olds up to 30 stainless-steel inventory racks (available separately)
- our shelves (one fixed and three adjustable in 1" [2.5cm] increments) llow for varying inventory configurations
- FC-free refrigerant
- ual-wheel casters

Value Series Freezer Controller



13-989-165 with optional temperature chart recorder.

ORDERING INFORMATION:

Exterior dimensions: 37¼L × 44W × 77½"H (94 × 112 × 197cm)†. Interior dimensions: 24D × 34½W × 50½"H (62 × 88 × 128cm)†. Shipping weight: 790 lb. (358kg). Alarm systems, temperature chart recorders, and power monitors are available separately (see Accessories).

WARRANTY:

Two years, parts and labor

COMPLIANCE:

Meet TUV criteria for safety and performance. UL, cUL listed. CE marked.

ectrical Requirements	Amps/Breaker	NEMA Plug	Mfr. No.	Cat. No.	Each
5V 60Hz	16/20	5-20P	ULT 2586 3SIA	**13-989-165**	13,379.00
8/230V 60Hz	8.5/15	6-15P	ULT 2586 3SID	**13-989-166**	13,379.00

ublished interior volumes are nominal; usable capacities may be offset by shelves, drawers, lower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for erification of clearance tolerances, contact your Fisher Scientific Customer Service epresentative.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Thermo Scientific* Revco* Ultima II* Series Cryogenic Storage Freezer

Designed for long-term storage of biologicals in cryogenic temperatures—without liquid nitrogen

Safer, more convenient than LN_2—lower operating costs, too. Plus, top-to-bottom temperature uniformity is dramatically improved when compared to LN_2 vapor. Cell viability is improved because biologically relevant, thermally driven reactions are not known to occur.

- Uniform temperature of -140°C, safely below the -130°C glass transition temperature
- 10.3 cu. ft. (292L) capacity stores up to 21,600 samples
- Manual defrost

Refrigeration System

- Exclusive mixed refrigerant autocascade with a single, orbital air-cooled compressor
- Downfeed evaporator
- High-capacity air-cooled condenser with dual condenser fans
- Washable condenser filter

IntrLogic* Microprocessor Control System

- Touchpad data entry with digital display of all functions
- Key-operated main power and alarm switch for setpoint security
- Setpoints adjustable in 1°C increments
- Independent operating temperature and high/low limit alarm functions

Alarm System

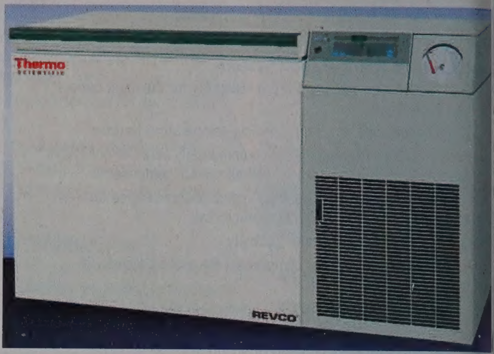
- Power failure or temperature deviation triggers audible and visual warning
- Automatic Incident Monitor identifies temperature deviation beyond alarm setpoints
- Adjustable safety alarm with automatic, continuous charge battery backup
- Digital battery indicator
- Touchpad alarm test function
- RS-232 data port with system software
- Exterior alarm contacts for connection to remote monitoring system

Monitoring System

- Lifeguard compressor protection monitors performance and automatically adjusts to internal and external conditions
- Extreme Ambient Alert warns if room temperature can affect performance
- Voltage Boost Indicator advises of low source voltage below safe parameters and indicates voltage boost system is activated
- On-board power monitoring with digital readout of incoming line voltage
- Built-in surge suppressor
- "Clean Filter" indicator

Mfr. No.	Cat. No.	Each
ULT101409D	**13-990-21**	29,796.00

† *All dimensions and specifications subject to change without notice. External dimensions include allowances for cabinet door, hinges, latches, handles and control panel protrusions.*



13-990-21

Construction

- Low-profile design for easy access to inventory
- Heavy-gauge steel cabinet with high-impact powder paint finish
- Heavy-duty counterbalanced lid with integrated keyed lock and indepen sublids
- Double-seal lid gaskets minimize frost buildup
- Minimum 5" (12.7cm) foamed-in-place closed-cell, CFC-free urethane insulation
- Access port, 1" (2.54cm) diameter, with cap
- Recessed heavy-duty swivel casters

ORDERING INFORMATION:

Interior D × W × H: 19 × 35¼ × 26½" (48 × 89 × 67cm).† Exterior L × W × 29 × 69 × 42¾" (74 × 176 × 109cm).† Shipping weight: 1065 lb. (483kg). F 208/230V 60Hz, 20/30 amps/breaker, NEMA 6-30P plug; requires 6-30R receptacle. Uses standard Revco inventory racks and fiberboard boxes; see Accessories.

WARRANTY:

Two years, parts and labor

COMPLIANCE:

UL, cUL listed. CE marked.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

*Trademark. See Trademark Reference.

ermo Scientific* Revco* Cryovault* Ultralow-Temperature Freezer

oer-insulated, space-saving design

- usive thin-wall super insulation and composite wall construction ntain insulation R value while decreasing wall thickness from 5" 7cm) to just 2" (5cm) for maximum interior capacity.
- ependable temperatures from -86° to -50°C
- 2 cu. ft. (906L) freezer with 37¼ × 48" (95 × 122cm) footprint
- tores up to 70,000 vials using standard 2" (5cm) fiberboard boxes with) × 10 grid cell dividers (available separately; see Accessories)
- lanual defrost

rLogic* Microprocessor Control

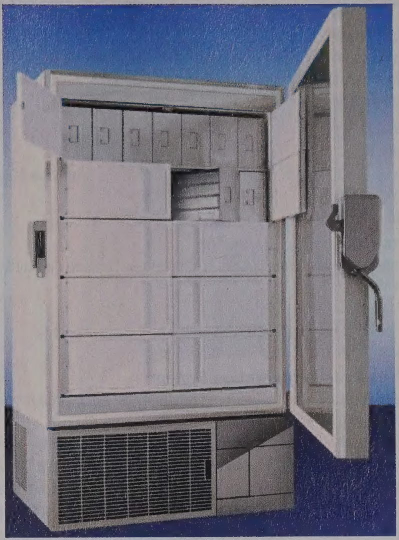
- oor-mounted digital temperature display within 0.1°C
- eyed power and alarm switch
- ouchpad data entry
- lonitors and automatically adjusts compressor performance conditions
- oltage Boost automatically compensates to required voltage
- udible and visual alarms broadcast parameter deviations
- utomatic Incident Monitor and Extreme Ambient Alarm warn of onditions affecting freezer performance
- ow-battery alarm indicator, "clean filter" light, push-button alarm test

nstruction

- owered by two custom-designed, semi-hermetic 1hp Copeland* ompressors that use propane-free refrigerants
- old-rolled steel walls are insulated with high-density, foamed-in-place rethane insulation
- acuum insulation core is encapsulated by a sealed, evacuated film aminate and wrapped in DuPont* Mylar*
- en inner doors—independently mounted with adjustable hinges— reate five independent storage compartments with uniform chamber nsulation
- our shelves (one fixed and three adjustable in 1" [2.54cm] increments) llow varying configurations
- even standard racks per shelf and five shelf positions
- ryoLatch* heavy-duty latch with handle is integrated into outer door for asy, one-handed operation
- ey lock and padlock accommodation for extra security
- ressure equalization port minimizes door open/close pressurization ifferential, allowing rapid re-entry

. No.	Cat. No.	Each
T-3286-9SI-D	13-986-73	18,076.00

ublished interior volumes are nominal; usable capacities may be offset by shelves, drawers, ower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for rification of clearance tolerances, contact your Fisher Scientific Customer Service epresentative.



13-986-73

ORDERING INFORMATION:
Exterior dimensions: 37¼L × 48W × 77½"H (94 × 122 × 197cm)†. Interior dimensions: 26¾L × 39W × 50½"H (68 × 99 × 128cm)†. Shipping weight: 1015 lb. (461kg). For 208/230V 60Hz. With NEMA 6-15P plug; requires 6-15R receptacle.

WARRANTY:
Two years, parts and labor

COMPLIANCE:
UL, cUL listed. CSA approved. CE marked.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Thermo Scientific* Revco* Slimline* Ultralow-Temperature Freezer

Super-insulated, super-narrow freezer fits smaller spaces

Exclusive thin-wall super insulation and composite wall design maintain insulation R value while decreasing wall thickness from 5" (12.7cm) to just 2" (5cm) for maximum interior storage space. Slim 26½" (94cm) wide freezer moves easily on heavy-duty swivel casters.

- Temperature range: -86° to -50°C
- Capacity: 11 cu. ft. (311L)
- Stores up to 180 standard 2" (5cm) fiberboard boxes with 10 × 10 grid cell dividers (available separately; see Accessories)
- Manual defrost

Solid-state Electronic Controller

- Door-mounted with easy-to-read LED digital temperature display at eye level
- Keyed ON/OFF power switch
- Preset overtemperature alarm and automatic voltage boost to compensate for low voltage and brownout conditions

Legaci* Cascade Refrigeration System

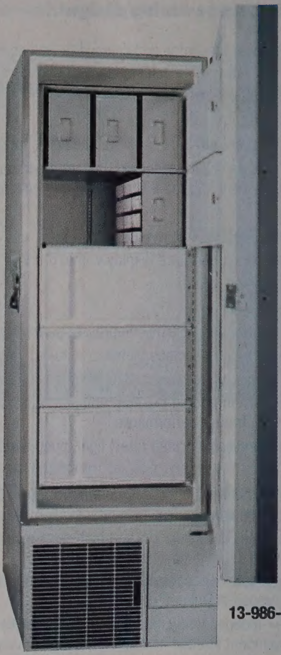
- Assures unprecedented temperature reliability for the most critical storage applications
- Designed specifically for use in ultralow-temperature freezers
- Fully integrated technology uses environmentally safe DuPont* Suva* refrigerants
- Two custom-designed 1hp Copeland* compressors provide optimum efficiency
- Lubricating oils maintain proper viscosity
- Balanced condensers and fans complement the cooling capacity of refrigerants

Construction

- Super-insulated cold-rolled steel walls: vacuum insulation core encapsulated by sealed and evacuated film laminate, wrapped in DuPont Mylar*
- Door handle and latch are integrated into outer door
- Key lock with accommodation for padlock
- Pressure equalization port minimizes door open/close pressurization differential, allowing rapid re-entry
- Five inner doors—independently mounted with adjustable hinges—create five uniformly insulated storage compartments for optimal organization
- Four shelves (adjustable in 1" [2.54cm] increments) allow varying configurations

Electrical Requirements	120V 60Hz	208/230V 60Hz
Amps/Breaker	16/20	7.5/15
Plug Type	NEMA 5-20P	NEMA 6-15P
Mfr. No.	ULT-1186-3SI-A	ULT-1186-3SI-D
Cat. No.	**13-986-71**	**13-986-72**
Each	10,155.00	10,155.00

†Published interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.



13-986-71

ORDERING INFORMATION:

Exterior dimensions: 37L × 26½W × 75½"H (94 × 67 × 190cm)†.
Interior dimensions: 20L × 18½W × 50½"H (50 × 46 × 128cm)†.
Shipping weight: 605 lb. (274kg).

WARRANTY:

Two years, parts and labor

COMPLIANCE:

UL, cUL listed. CSA approved. CE marked.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

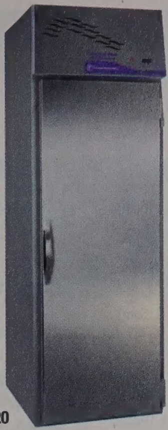
For immediate assistance, call 1-800-395-5442.

*Trademark. See Trademark Reference.

Prices subject to change.

REFRIGERATORS · GENERAL-PURPOSE/LAB

13-986-128S


13-986-120

13-986-126

sher Scientific* Isotemp* Plus Lab Refrigerators

croprocessor-controlled temperatures in a choice of capacities and styles

- emperature range from 1° to 12°C (33.8° to 53.6°F) with ±3° average tability; adjustable in °C or °F using interior control
- xterior-mounted ½" LED display with 0.1° temperature resolution
- apacities from 23.1 to 74 cu. ft. (654 to 2100L)
- utomatic defrost

nstruction

- Vhite enamel-coated steel cabinets, stainless-steel interiors
- eylocked solid or glass doors
- olid doors are hinged, white enamel-coated steel
- hermopane* glass doors (hinged or sliding) provide easy access and isual inventory control
- liding doors require no swing-out space—a valuable benefit in high raffic or narrow areas
- Vhite epoxy-coated steel-wire shelves (14.8 to 44.4 sq. ft.), adjustable n 1" (2.5cm) centers
- FC-free R134A refrigerant and polyurethane insulation
- nterior fluorescent lighting with exterior light switch
- eyed ON/OFF power switch
- our adjustable legs ensure cabinets are level on irregular floors asters provided)

arms

- anel-mounted, factory installed
- igital display with minimum/maximum setpoints, audible alarm, and 4V, 0.5A SPST N.O. relay contacts
- reestanding, Standard Remote and Deluxe Remote alarm systems vailable separately; see p. 1578

Seven-day Selectable Temperature Recorder

- ▶ Panel-mounted, factory installed
- ▶ 6" dia. (15.2cm) chart
- ▶ User-selectable temperature ranges
- ▶ Single-point calibration; individually calibrated against equipment with calibration certified traceable to NIST*
- ▶ Supplied with 60 charts and seven-day scale

ORDERING INFORMATION:

With or without recorder or alarm. For 115V 60Hz. Equipped with NEMA 5-15P line-cord plug, require NEMA 5-15R receptacle.

WARRANTY:

13 months, parts and labor; five years, compressor

CERTIFICATIONS:

UL listed, CSA approved

NOTE:

Contact your Fisher Scientific Customer Service Representative for details about accessories, replacement components, and international models.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Contd. on next page.

Fisher Scientific* Isotemp* Plus Lab Refrigerators, Contd.

Model	Interior D x W x H	No. of Shelves	Exterior L x W x H†	Net Weight††	Amps/Breaker	Cat. No.	Each
23.1 cu. ft. (654L), 1 hinged solid door‡							
Basic	26 × 21½ × 60"	4 full size	34 × 26 × 84½"	320 lb. (145kg)	10/15	**13-986-120**	5600.92
With Alarm	(66 × 55 × 151cm)		(86 × 66 × 215cm)			**13-986-120A**	6259.82
With Recorder						**13-986-120R**	7059.89
With Recorder/Alarm						**13-986-120RA**	7748.36
30 cu. ft. (850L), 1 hinged solid door							
Basic	27½ × 30 × 60"	4 full size	33½ × 35 × 85"	440 lb. (200kg)	10/15	**13-986-122**	6710.62
With Alarm	(70 × 76× 152cm)		(85 × 89 × 215cm)			**13-986-122A**	7408.73
With Recorder						**13-986-122R**	8254.16
With Recorder/Alarm						**13-986-122RA**	8945.16
30 cu. ft. (850L), 1 hinged glass door‡							
Basic	27½ × 30 × 60"	4 full size	33½ × 35 × 84½"	440 lb. (200kg)	10/15	**13-986-124**	7161.30
With Alarm	(70 × 76× 152cm)		(85 × 89 × 215cm)			**13-986-124A**	7721.25
With Recorder						**13-986-124R**	8532.08
With Recorder/Alarm						**13-986-124RA**	9283.59
45.4 cu. ft. (1290L), 2 sliding glass doors							
Basic	27 × 48½ × 54½"	8 full size	31½ × 52 × 78"	498 lb. (226kg)	10/15	**13-986-128S**	7825.28
With Alarm	(67 × 123 × 138cm)		(80 × 132 × 198cm)			**13-986-128SA**	8421.82
With Recorder						**13-986-128SR**	9126.35
With Recorder/Alarm						**13-986-128RAV**	9781.60
46.6 cu. ft. (1320L), 2 hinged solid doors‡							
Basic	26 × 48 × 59½"	8 full size	34 × 52 × 84½"	527 lb. (239kg)	10/15	**13-986-126**	7903.96
With Alarm	(66 × 122 × 151cm)		(86 × 132 × 215cm)			**13-986-126A**	8372.98
With Recorder						**13-986-126R**	7982.14
With Recorder/Alarm						**13-986-126RA**	9977.68
74 cu. ft. (2100L), 3 hinged solid doors‡							
Basic	27½ × 74 × 59½"	12 full size	34 × 78 × 84½"	805 lb. (366kg)	12/15	**13-986-130**	10,109.97
With Alarm	(70 × 188 × 151cm)		(86 × 198 × 215cm)			**13-986-130A**	10,601.19
With Recorder/Alarm						**13-986-130RA**	12,055.09
74 cu. ft. (2100L), 3 hinged glass doors‡							
Basic	27½ × 74 × 59½"	12 full size	34 × 78 × 84½"	805 lb. (366kg)	12/15	**13-986-132**	10,952.78
With Alarm	(70 × 188 × 151cm)		(86 × 198 × 215cm)			**13-986-132A**	11,617.74
With Recorder						**13-986-132R**	12,570.90
With Recorder/Alarm						**13-986-132RA**	13,232.60

† Allow 4" (10cm) clearance top, sides and back of unit.

‡ Top-mounted compressor.

†† Add 5 lb. (5kg) to models with recorder and with recorder/alarm.

*Trademark. See Trademark Reference.

Prices subject to change.

sher Scientific* Isotemp* Lab Refrigerators

croprocessor temperature control

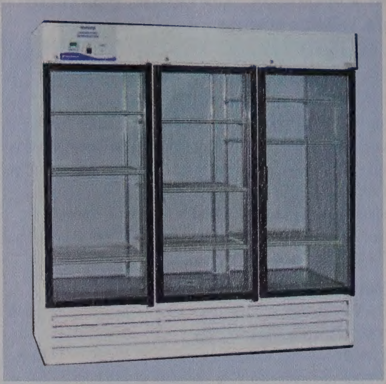
djustable temperatures from 1° to 12°C, with ±3°C average stability
xterior-mounted ½" LED displays temperature with 1°C resolution
apacities from 27 to 72 cu. ft. (765 to 2040L)

nstruction

namel- or epoxy-coated steel cabinets
ockable solid-steel doors have hinge mechanism that holds doors open at 95° ngle, close with a gentle push
hermopane* glass doors (hinged or sliding) provide easy access and visual nventory control; sliding doors require no swing-out space—a valuable benefit n high traffic or narrow areas
FC-free (R134A) refrigerant
Vhite epoxy, powder-coated steel wire shelves (up to 46.7 sq. ft.), adjustable on 1" 2.5cm) centers
nterior fluorescent lighting with exterior light switch standard on 27 cu. ft. (765L) nd larger models
eyed ON/OFF power switch
our adjustable legs ensure cabinets are level on irregular floors

ven-day Selectable Temperature Recorder with Alarm

anel-mounted, factory installed
" dia. (15.2cm) chart size
Jser-selectable temperature ranges
ingle-point calibration; individually calibrated against equipment with alibration certified traceable to NIST*
upplied with 60 charts and seven-day scale
Digital alarm display with minimum/maximum setpoints, audible alarm, and 4V, 0.5A SPST N.O. relay contacts
reestanding, Standard Remote and Deluxe Remote alarm systems available eparately; see p. 1578



13-986-272G

ORDERING INFORMATION:

For 115V 60Hz. Equipped with NEMA 5-15P line cord plug; require NEMA 5-15R receptacle.

WARRANTY:

13 months, parts and labor; five years, compressor

CERTIFICATIONS:

UL listed, CSA approved

del	Interior D × W × H	No. of Shelves	Exterior L × W × H†	Net Weight‡	Amps/ Breaker	Cat. No.	Each
cu. ft. (765L), 1 hinged glass door							
sic	28½ × 27 × 55" (72 × 69 × 140cm)	4 full size	35 × 30 × 78" (89 × 76 × 198cm)	342 lb. (155kg)	8.5/15	**13-986-227G**	4645.52
th Recorder/Alarm						**13-986-227GA**	6118.71
cu. ft. (765L), 1 hinged solid door							
sic	28½ × 27 × 55" (72 × 69 × 140cm)	4 full size	35 × 30 × 78" (89 × 76 × 198cm)	342 lb. (155kg)	8.5/15	**13-986-227R**	4717.00
th Recorder/Alarm						**13-986-227RA**	6221.33
cu. ft. (1076L), 2 sliding glass doors							
sic	25½ × 41 × 55" (65 × 104 × 140cm)	8 half width	31½ × 44 × 78" (80 × 112 × 198cm)	421 lb. (191kg)	11/15	**13-986-238G**	5450.32
th Recorder/Alarm						**13-986-238GA**	6943.73
cu. ft. (1270L), 2 sliding glass doors							
sic	25½ × 49 × 55" (65 × 124 × 140cm)	8 half width	31½ × 52 × 78" (80 × 132 × 198cm)	498 lb. (226kg)	11/15	**13-986-245G**	6694.12
th Recorder/Alarm						**13-986-245GA**	8234.31
cu. ft. (1390L), 2 hinged glass doors							
sic	28½ × 49 × 55" (72 × 124 × 140cm)	8 half width	35 × 52 × 78" (89 × 132 × 198cm)	527 lb. (239kg)	11/15	**13-986-249G**	6493.51
th Recorder/Alarm						**13-986-249GA**	8327.44
cu. ft. (1390L), 2 hinged solid doors							
sic	28½ × 49 × 55" (72 × 124 × 140cm)	8 half width	35 × 52 × 78" (89 × 132 × 198cm)	527 lb. (239kg)	11/15	**13-986-249R**	6252.56
th Recorder/Alarm						**13-986-249RA**	8154.35
cu. ft. (2040L), 3 hinged glass doors							
sic	28½ × 72 × 55" (72 × 183 × 140cm)	12 third width	35 × 75 × 78" (89 × 190 × 198cm)	704 lb. (319kg)	12/15	**13-986-272G**	8407.47
th Recorder/Alarm						**13-986-272GA**	10,236.52

or specific cabinet dimensions and allowances, or for verification of clearance tolerances, ontact your Fisher Scientific Customer Service Representative.
dd 5 lb. (2kg) for models with Recorder/Alarm.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Fisher Scientific* Isotemp* General-Purpose Refrigerator

For safe, reliable storage

- Thermostat control of temperatures ranging from 1° to 8°C with ±3° stability
- Capacity, 17 cu. ft. (481L)
- Automatic defrost
- CFC-free (R404A) refrigerant, polyurethane insulation
- White enamel-coated steel cabinet, white epoxy powder-coated steel interior
- Solid door has hinge mechanism that holds door open at 95° angle, closes with a gentle push
- Four adjustable legs ensure cabinet is level on irregular floors
- Five fixed white epoxy-coated steel-wire shelves resist most acids, solvents and chemicals

13-986-151B

ORDERING INFORMATION:

Interior D × W × H: 18 × 27 × 52" (46 × 69 × 132cm). Exterior L × W × H: 29 × 32 × 65" (74 × 81 × 165cm)[†]. Net weight: 200 lb. (91kg). Shipping weight: 230 lb. (105kg). Equipped with NEMA 5-15P line cord plug; requires NEMA 5-15R receptacle. For 115V 60Hz.

WARRANTY:

13 months, parts and labor; five years, compressor

CERTIFICATIONS:

UL listed, CSA approved

Cat. No.	Each
13-986-151B	2740.90

[†] *For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.*

SERVICE AGREEMENTS

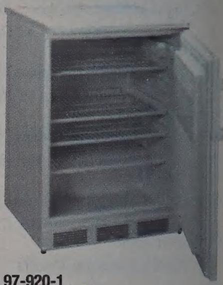
Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Fisher Scientific* General-Purpose Undercounter Refrigerator

5.6 cu. ft. (159L) of convenient undercounter storage

- Temperature range: 2° to 7°C (36° to 45°F)
- CFC-free (R134A) refrigerant
- Manual defrost
- 240w compressor
- Static condenser free of electric fans
- Key-locked door with flat door liner, mounted to open from left
- Seamless, easy-to-clean interior, vacuum-formed from refrigeration-grade plastic
- Exterior baked-on acrylic enamel


97-920-1

ORDERING INFORMATION:

Exterior dimensions: 24½L × 23½W × 33"H (62 × 60 × 84cm)[†]. Interior dimensions: 13D × 19W × 27½"H (33 × 48 × 70cm). Net weight, 90 lb. (40.8kg). Shipping weight, 120 lb. (54.5kg). For 120V 60Hz, 2A; 15A breaker.

INCLUDES:

Power cord with plug

WARRANTY:

Two years, parts; one year, labor

CERTIFICATIONS:

UL listed

Cat. No.	Each
97-920-1	1122.90

[†] *Add ½" (1.3cm) to total height when using the leveling legs supplied with unit.*

ermo Scientific* Revco* General-Purpose Lab Refrigerators

inet sizes to fit your space and storage needs

justable temperatures between 1° and 8°C (factory preset at 4°C)
oacities range from 4.9 to 78.8 cu. ft. (139 to 2231L)†
tomatic defrost and condensate removal

.ogic* Microprocessor Control

gital electronic technology designed to simplify operation and deliver eater accuracy
n-based controls
ge, easy-to-read digital display of temperature within 0.1°C
aphic thermometer is steady green when temperature is normal, shes top bar for overtemperature, flashes bulb for undertemperature
nsor automatically initiates defrost cycle on demand, eliminating need a defrost timer, minimizing frost buildup, and optimizing coil efficiency

m System

dible/visual warnings for temperature deviations or power failure
y-operated ON/OFF/ALARM ON master switch for setpoint security
shbutton alarm test and remote alarm contacts
arm silence, ringback and auto reset
ntroller battery backup system
arm setpoints are preset to warn of temperature deviation at 5.5°C ertemperature and 1.5°C undertemperature

struction

sitive forced-air circulation systems
lustrial-grade cabinet construction and compressors
gh-density CFC-free urethane foam insulation
lf-closing, key-locked doors
nc-plated, open-wire shelves adjustable in 1" (2.5cm) increments
ld-rolled steel interior and exterior finished with high-impact powder int coating
erior lights with door-activated ON/OFF switch, independent switch on ntrol panel, adjustable leveling feet (except 4.9 cu. ft. undercounter model)
.8 cu. ft. (1297L) units have double sliding glass doors, base-mounted ntrols and refrigeration systems, independent switch-activated lights, d dual-wheel 2" (5cm) casters instead of leveling feet
dercounter model has a 1" (2.5cm) dia. access port with plug

ERING INFORMATION:

n systems, temperature chart recorders and power monitors are avail- separately (see Accessories). Other voltages are available; contact your r Scientific Customer Service Representative for more information.

RRANTY:

years, parts and labor

IPLIANCE:

nd cUL listed. TUV approved. CE marked.

Thermo
REVCO

13-991-139

IntrLogic Microprocessor Control

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Ordering Table on next page.

Thermo Scientific* Revco* General-Purpose Lab Refrigerators, Contd.

Capacity†	No. of Doors/ Shelves	Interior D × W × H†	Exterior L × W × H†	Shipping Weight	Electrical Requirements	Amps/ Breaker	NEMA Plug	Mfr. No.	Cat. No.	
Undercounter										
4.9 cu. ft. (139L)	1 solid/3	20 × 20 × 20" (51 × 51 × 51cm)	26 × 24 × 33⅜" (66 × 61 × 85cm)	212 lb. (96kg)	115V 60Hz	8/15	5-15P	REL 404A	**13-990-156**	4325.
Space Saver										
11.5 cu. ft. (326L)	1 solid/4	21 × 20 × 52" (55 × 51 × 133cm)	28¾ × 24 × 72" (73 × 61 × 183cm)	280 lb. (127kg)	115V 60Hz	9.4/15	5-15P	REL 1204A	**13-991-89**	4611.
Upright										
23.3 cu. ft. (659L)	1 solid/4	29 × 24 × 58" (74 × 61 × 147cm)	35½ × 28 × 77½" (90 × 71 × 197cm)	405 lb. (184kg)	115V 60Hz 208/230V 60Hz	9.4/15 6/15	5-15P 6-15P	REL 2304A REL 2304D	**13-991-52** **13-991-1**	5422. 5422.
29.2 cu. ft. (826L)	1 solid/4	29 × 30 × 58" (74 × 76 × 147cm)	35½ × 34 × 77½" (90 × 86 × 197cm)	435 lb. (197kg)	115V 60Hz 208/230V 60Hz	9.4/15 6/15	5-15P 6-15P	REL 3004A REL 3004D	**13-991-130** **13-991-131**	6394. 6394.
45.8 cu. ft. (1297L)	2 sliding glass/8	26 × 52 × 58" (66 × 132 × 147cm)	35 × 56½ × 77½" (89 × 144 × 197cm)	670 lb. (304kg)	115V 60Hz 208/230V 60Hz	15/20 8.5/15	5-20P 6-15P	REL 4504A REL 4504D	**13-991-139** **13-991-140**	7764. 7764.
51.1 cu. ft. (1447L)	2 solid/8	29 × 52 × 58" (74 × 132 × 147cm)	35½ × 56½ × 77½" (90 × 144 × 197cm)	585 lb. (265kg)	115V 60Hz 208/230V 60Hz	15/20 8.5/15	5-20P 6-15P	REL 5004A REL 5004D	**13-991-53** **13-991-2**	7422. 7422.
78.8 cu. ft. (2231L)	3 solid/12	29 × 81 × 58" (74 × 206 × 147cm)	35½ × 85 × 77½" (90 × 216 × 197cm)	805 lb. (365kg)	115V 60Hz 208/230V 60Hz	16/20 10.5/15	5-20P 6-15P	REL 7504A REL 7504D	**13-991-3** **13-991-4**	9646. 9646.

† Published interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.

Thermo Scientific* Revco* General-Purpose Refrigerators

An economical choice for common non-critical lab requirements

NEW

- Temperature range: 2° to 10°C
- Capacities from 14.5 to 28.9 cu. ft. (411 to 818L)
- Manual defrost with built-in condensate drain on 14.5 and 20.7 cu. ft. models
- Automatic defrost on 28.9 cu. ft. model
- CFC-free refrigerants

Construction

- Durable, white acrylic exterior and seamless interior
- High-density, CFC-free, foamed-in-place urethane insulation
- Hinged solid door on 14.5 and 20.7 cu. ft. models
- Hinged glass door on 28.9 cu. ft. model
- Magnetic door gaskets for positive seal
- Keyed door lock
- High-strength shelves with interior door shelving
- Interior lights on 28.9 cu. ft. mode

ORDERING INFORMATION:
Alarm systems, temperature chart recorders and power monitors are available separately (see Accessories). For 115V 60Hz. Has NEMA 5-15P plug, requires 5-15R receptacle.

INCLUDES:
Power cord and plug

Thermo
SCIENTIFIC
REVCO

13-990-330

WARNING

Units are intended for basic laboratory use only. Storage of high-value life science materials or critical biologicals may require alarm, monitoring, backup and temperature performance features. The need to add these features should be determined by your industrial hygienist or safety officer. Not suitable for corrosive environments.

Capacity	Door	Interior/Door Shelves	Interior D × W × H†	Exterior L × W × H†	Shipping Weight	Amps/ Breaker	Mfr. No.	Cat. No.	Ea
14.5 cu. ft. (411L)	Solid	3/5	18 × 27 × 51½" (45 × 68 × 131cm)	26½ × 32 × 65½" (67 × 81 × 166vcm)	235 lb. (107kg)	1.8/15	RLR1611A	**13-990-327**	2238.
20.7 cu. ft. (586L)	Solid	4/6	23 × 27 × 57" (58 × 68 × 145cm)	28½ ×32 × 70¼" (72 × 81 × 178cm)	250 lb. (114kg)	1.8/15	RLR2111A	**13-990-328**	2583.
28.9 cu. ft. (818L)	Glass	4/0	24 × 32 × 65⅛" (60 × 81 × 165cm)	32 × 36 × 76" (82 × 92 × 193cm)	350 lb. (159kg)	7.2/15	RLR314A	**13-990-330**	4896.

†Published interior volumes are nominal, and usable capacities may be offset by shelves, loading preferences and storage methods. For verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.

REFRIGERATORS—SPECIAL-PURPOSE

sher Scientific* Isotemp* Plus Chromatography Refrigerators

esigned specifically for liquid chromatography applications

13-986-138

ature hinged or sliding glass doors for visual monitoring, protected interior ctrical outlets with vaporproof circuit breakers, and two 2" dia. (5.1cm) cess ports—one on each side wall—for connection of leads, probes, d tubing.

emperature range: 1° to 12°C (33.8° to 53.6°F)

emperature stability: ±3° average

apacities from 23.1 to 74 cu. ft. (654 to 2100L)

licroprocessor-controlled interior temperature set and adjustment

xterior-mounted ½" LED display with 0.1° resolution

utomatic defrost

eyed ON/OFF power switch

nstruction

teel cabinets with stainless-steel interiors for durability and unctionality, easy cleanup and disinfection, and corrosion resistance

)ne, two or three Thermopane* glass doors—all with key locks

liding doors require no swing-out space—a valuable benefit in high raffic or narrow areas

FC-free R134A refrigerant, polyurethane insulation

nterior fluorescent lighting with exterior light switch

Vhite epoxy-coated steel-wire shelves (9.25 to 37.0 sq. ft.) resist most cids, solvents and chemicals; adjustable on 1" (2.5cm) center

our adjustable legs ensure cabinets are level on irregular floors; asters provided

arms

anel-mounted, factory installed

)igital display with minimum/maximum setpoints, audible alarm, and 24V, .5A SPST N.O. relay contacts

reestanding, Standard Remote and Deluxe Remote alarm systems vailable separately; see p. 1578

Seven-day Selectable Temperature Recorder

- Panel-mounted, factory installed
- 6" dia. (15.2cm) chart
- User-selectable temperature ranges
- Single-point calibration; individually calibrated against equipment with calibration certified traceable to NIST*
- Supplied with 60 charts and 7-day scale

ORDERING INFORMATION:

115V 60Hz models are equipped with NEMA 5-20P line cord plug, require NEMA 5-20R receptacle.
208/230V models have L14-20P plugs, require L14-20R receptacle. Contact your Fisher Scientific Customer Service Representative for international models.

WARRANTY:

13 months, parts and labor; five years, compressor

CERTIFICATIONS:

UL listed, CSA approved

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

del	Interior D x W x H	No. of Shelves	Exterior L x W x H†	Net Weight††	Electrical Reqts.	Amps/Breaker	Cat. No.	Each
1 cu. ft. (654L), 1 hinged glass door								
sic	26 × 21½ × 59½" (66 × 55 × 151cm)	1 full, 3 half	34 × 26 × 84½" (86 × 66 × 215cm)	320 lb. (145kg)	115V 60Hz	13/20	**13-986-134**	6427.84
th Alarm							**13-986-134A**	7102.68
th Recorder/Alarm							**13-986-134RA**	7872.77
sic					208/230V 60Hz		**13-986-135**	5887.59
5 cu. ft. (1288L), 2 sliding glass doors								
sic	27 × 48½ × 54½" (68 × 123 × 137cm)	6 full, 2 half	31½ × 52 × 78" (80 × 132 × 198cm)	498 lb. (226kg)	115V 60Hz	16/20	**13-986-136S**	8348.50
th Alarm							**13-986-136SA**	9034.12
th Recorder/Alarm							**13-986-136SR**	9801.79
th Recorder							**13-986-136RAV**	10,457.89
sic					208/230V 60Hz		**13-986-137S**	8248.10
th Alarm							**13-986-137SA**	8901.95
6 cu. ft. (1320L), 2 hinged glass doors								
sic	26 × 48 × 59½" (66 × 122 × 151cm)	6 full, 2 half	34 × 52 × 84½" (86 × 132 × 215cm)	527 lb. (239kg)	115V 60Hz	16/20	**13-986-138**	8806.48
th Alarm							**13-986-138A**	9399.49
th Recorder							**13-986-138R**	10,434.80
th Recorder/Alarm							**13-986-138RA**	11,043.51
sic					208/230V 60Hz		**13-986-139‡**	8771.35
cu ft. (2095L), 3 hinged glass doors								
sic	27½ × 74 × 59½" (70 × 188 × 151cm)	9 full, 2 half	34 × 78 × 84½" (86 × 198 × 215cm)	805 lb. (365kg)	115V 60Hz	16/20	**13-986-140**	11,080.24
th Alarm							**13-986-140A**	11,697.93
th Recorder/Alarm							**13-986-140RA**	13,274.16

llow 4" clearance sides and back. ‡ Top-mounted compressor. †† Add 5 lb. (5kg) to models with Recorder or Recorder/Alarm.

Fisher Scientific* Isotemp* Chromatography Refrigerators

Ideal for use with entire TLC assemblies, tanks, plates, columns, developing tanks and rack/tank assemblies

Capped 2" I.D. (5.1cm) access portholes in each side wall permit the insertion of thermocouples and other wiring without disturbing temperature settings. Push-button lights and circuit breaker-protected duplex electrical receptacles simplify equipment operation and allow observation of ongoing separations.

- Temperature range: 1° to 12°C (33.8° to 53.6°F)
- Average ±3° temperature stability
- Capacities: 27 to 72 cu. ft. (765 to 2039L)
- Microprocessor temperature set and adjust interior control
- Exterior-mounted ½" LED display with 1° resolution
- Automatic defrost
- Keyed ON/OFF power switch

Construction

- Rust-resistant, phosphate-impregnated steel coated with durable baked-on enamel
- One, two or three Thermopane* glass doors—all with key locks
- Hinged or sliding doors provide easy access and visual monitoring
- Sliding doors require no swing-out space—a valuable benefit in high traffic or narrow areas
- Cam lift on hinged doors locks open at a 95° angle, close with a gentle push
- White epoxy, powder-coated steel interiors and stainless-steel floors
- White epoxy-coated steel-wire shelves (7.2 to 39 sq. ft.) resist most acids, solvents and chemicals; adjustable on 1" (2.5cm) centers
- 2½" thick (6.4cm) foamed-in-place, CFC-free urethane insulation
- Deluxe stainless-steel adjustable legs

Seven-day Selectable Temperature Recorder with Alarm

- Panel-mounted, factory installed
- 6" dia. (15.2cm) chart
- User-selectable temperature ranges
- Single-point calibration; individually calibrated against equipment with calibration certified traceable to NIST*
- Supplied with 60 charts and seven-day scale
- Digital alarm display with minimum/maximum setpoints, audible alarm, and 24V, 0.5A SPST N.O. relay contacts
- Freestanding, Standard Remote and Deluxe Remote alarmsystems available separately; see p. 1578

13-986-145G

ORDERING INFORMATION:

For 115V 60Hz. Equipped with NEMA 5-20P line cord plug; require a NEMA 5-20R receptacle.

WARRANTY:

13 months, parts and labor; five years, compressor

COMPLIANCE:

UL listed, CSA approved

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Model	Interior D × W × H	No. of Shelves	Exterior L × W × H†	Net Weight‡	Amps/Breaker	Cat. No.	Each
27 cu. ft. (765L), 1 hinged glass door							
Basic	28½ × 27 × 55" (72 × 69 × 140cm)	1 full, 3 half	35 × 30 × 78" (89 × 76 × 198cm)	342 lb. (155kg)	13.5/20	**13-986-127G**	6094.84
With Recorder/Alarm						**13-986-127GA**	7527.59
38 cu. ft. (1076L), 2 sliding glass doors							
Basic	25½ × 41 × 55" (65 × 104 × 140cm)	6 full, 2 half	31½ × 44 × 78" (80 × 112 × 198cm)	421 lb. (191kg)	16/20	**13-986-138G**	6111.74
With Recorder/Alarm						**13-986-138GA**	7267.42
45 cu. ft. (1274L), 2 sliding glass doors							
Basic	25½ × 49 × 55" (65 × 124 × 140cm)	5 full, 2 half	31½ × 52 × 78" (80 × 132 × 198cm)	498 lb. (226kg)	16/20	**13-986-145G**	6960.48
With Recorder/Alarm						**13-986-145GA**	8978.23
49 cu. ft. (1388L), 2 hinged glass doors							
Basic	28½ × 49 × 55" (72 × 124 × 140cm)	5 full, 2 half	35 × 52 × 78" (89 × 132 × 198cm)	527 lb. (239kg)	16/20	**13-986-149G**	7728.16
With Recorder/Alarm						**13-986-149GA**	9644.44
72 cu. ft. (2039L), 3 hinged glass doors							
Basic	28½ × 72 × 55" (72 × 183 × 140cm)	9 full, 2 half	35 × 75 × 78" (89 × 190 × 198cm)	704 lb. (319kg)	16/20	**13-986-172G**	9720.85
With Recorder/Alarm						**13-986-172GA**	11,603.55

† Allow 3" (7.6cm) clearance top, sides, and back.
‡ Add 5 lb. (2kg) to models with Recorder/Alarm.

*Trademark. See Trademark Reference.

Prices subject to change.

her Scientific* Isotemp* Explosion-Proof Refrigerator

al for storing volatile materials in areas with explosive atmospheres or in hazardous locations

ljustable temperature between 2° and 10°C
lows setpoint adjustment while running
erage temperature stability of ±3°C
pacity: 20.6 cu. ft. (583L)
anual defrost

ety Features

d warning label on front that reads "Explosion-Proof Refrigerator"
mpressor with enclosed overload and relay
p-mounted, explosion-proof hydraulic thermostat
atic hot-wall condenser and evaporator free of electric fans

struction

hite, baked-on polyester enamel exterior
e hinged solid door with key lock
hite epoxy-coated steel interior with ABS plastic door liner
C-free polyurethane foam insulation and R404A refrigerant
ur shelves providing 13.5 sq. ft. of storage space

ERING INFORMATION:

rior dimensions: 31L × 32W × 76"H (79 × 81 × 193cm) (allow 3" clearance back, and sides). Interior dimensions: 22½D × 27W × 57"H " 69 × 145cm). Net weight, 200 lb. (91kg). For 115V 60Hz. Not equipped line cord and plug; must be hardwired into an appropriately rated uit box.

RRANTY:

onths, parts and labor; five years, compressor

TIFICATIONS:

sted, CSA approved

13-986-153

Cat. No.	Each
13-986-153	3875.56

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

her Scientific* Special-Purpose Undercounter Refrigerators

ice of flammable materials or explosion-proof models

mperature range: 2° to 7°C (36° to 45°F)
pacity: 5.6 cu. ft. (159L)
C-free (R134A) refrigerant
anual defrost
or has flat liner
0w compressor
atic condenser free of electric fans

nmable-Materials Storage Model

mplies with NFPA Standard Number 99 and OSHA 29CFR1910.308
y-locked door
uminum evaporator coil
mpressor with enclosed overloads, relays, and hydraulic thermostat

losion-Proof Model

iring complies with NEC Articles 500-501 for Class 1, Groups C d D environments
mpressor has totally enclosed overloads, relays, and wiring
closed hydraulic thermostat
it must be hardwired to an appropriately rated conduit box

ORDERING INFORMATION:

Exterior dimensions: 24½L × 23½W × 33"H (62 × 60 × 84cm)†. Interior dimensions: 13D × 19W × 27½"H (33 × 48 × 70cm). Net weight, 90 lb. (40.8kg). Shipping weight, 120 lb. (54.5kg). For 120V 60Hz, 2A; 15A breaker.

CERTIFICATIONS:

UL listed

97-938-1

Model	Cat. No.	Each
Flammable-Materials Storage	97-938-1	2216.12
Explosion-Proof	97-950-1	2453.28

† Flammable-materials storage and explosion-proof models require an additional 1" (2.5cm) top and sides and 1½" (3.8cm) back clearance for proper condenser ventilation when recessed.

Fisher Scientific* Isotemp* Flammable-Materials Storage Refrigerators

For reliable, safe storage of volatile materials, pharmaceuticals, clinical reagents, and biological samples

- Adjustable temperatures from 1° to 10°C, depending on model
- Capacities: 20.6, 30 and 50 cu. ft. (583, 850 and 1420L)
- 30 and 50 cu. ft. (850 and 1420L) models feature digital temperature display in 0.1° increments, °C or °F, and keyed power switches
- Manual defrost

Safety Features

- Orange warning label on front
- Sparkproof interiors separate contents from compressor and motor
- Compressors have enclosed overloads, relays, and thermostats that prevent sparks from escaping during door opening and closing
- Static hot-wall condensers and evaporators are free of electric fans
- Magnetic door gaskets provide airtight seals that insulate and prevent release of hazardous fumes
- Top-mounted hydraulic thermostat and door stop

Construction

- White, baked-on polyester enamel exteriors
- CFC-free polyurethane foam insulation and refrigerant
- Solid door(s) with key lock

Alarms (30 and 50 cu. ft. models only)

- Panel-mounted, factory installed
- Digital display with minimum/maximum setpoints, audible alarm, and 24V, 0.5A SPST N.O. relay contacts
- Freestanding, Standard Remote and Deluxe Remote alarm systems available separately; see p. 1578

Seven-day Selectable Temperature Recorder (30 and 50 cu. ft. models only)

- Panel-mounted, factory installed
- 6" dia. (15.2cm) chart
- User-selectable temperature ranges
- Single-point calibration; individually calibrated against equipment with calibration certified traceable to NIST*
- Supplied with 60 charts and seven-day scale

ORDERING INFORMATION:

For 115V 60Hz. Equipped with NEMA 5-15P power cord; require NEMA 5-15R wall receptacle.

13-986-428R

WARRANTY:

13 months, parts and labor; five years, compressor

COMPLIANCE:

NFPA Code 99 (30 and 50 cu.ft. models only)

CERTIFICATIONS:

UL listed, CSA approved

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Model	Temperature Range/Stability	Interior D × W × H	No. of Shelves	Exterior L × W × H†	Net Weight‡	Amps/Breaker	Cat. No.	Eac
20.6 cu. ft. (583L), 1 hinged solid door								
Basic	2° to 10°C/±3°	22½ × 27 × 57" (57 × 69 × 145cm)	4 fixed	30 × 32 × 72" (76 × 81 × 183cm)	200 lb. (91kg)	12/15	**13-986-152**	3301.2
30 cu. ft. (850L), 1 hinged solid door								
Basic	3° to 10°C (37° to 50°F)/±4°	22½ × 32 × 65" (57 × 81 × 165cm)	3 fixed, 5 adjustable	35 × 35½ × 77" (89 × 90 × 196cm)	310 lb. (141kg)	6.8/15	**13-986-428R**	4986.6
With Recorder							**13-986-428RR**	6723.4
With Recorder/Alarm							**13-986-428RA**	7097.9
50 cu. ft. (1420L), 2 hinged solid doors								
Basic	1° to 8°C (34° to 46°F)/±4°	31½ × 48 × 59½" (80 × 122 × 151cm)	8 adjustable	35½ × 52 × 83½"†† (90 × 132 × 212cm)	390 lb. (177kg)	10/15	**13-986-450R**	6791.3
With Recorder							**13-986-450RR**	8507.5
With Recorder/Alarm							**13-986-450RA**	8881.3

† Allow 3" (7.6cm) clearance top, back, and sides. Add 3" (7.6cm) to height of models with Recorders and Recorder/Alarms.

‡ Add 5 lb. (2kg) to model with Recorders or Recorder/Alarms.

†† With legs.

*Trademark. See Trademark Reference.

ermo Scientific* Revco* Chromatography Refrigerators

signed for applications requiring close temperature control

r full access to chromatography instrumentation and easy setup of umentation and apparatus within the chamber.

djustable temperatures between 1° and 8°C, factory-preset setpoint 4°C

sitive forced-air circulation maintains temperature uniformity at all elf levels

ripheral closed-cell door gaskets maintain temperature integrity

pacities range from 23.3 to 78.8 cu. ft. (659 to 2231L)†

tomatic condensate removal and defrost

Logic* Microprocessor Control

gital electronic technology designed to simplify operation and deliver eater accuracy

strumentation and controls mounted at cabinet bottom on 45.8 cu. ft. odels, top on other models

on-based controls

rge, easy-to-read digital display that shows temperature within 0.1°C

aphic thermometer is steady green when temperature is normal, shes top bar for overtemperature, flashes bulb for undertemperature

nsor automatically initiates defrost cycle on demand, eliminating need r a defrost timer, minimizing frost buildup, and optimizing coil efficiency

dible/visual warnings for temperature deviations or power failure

y-operated ON/OFF/ALARM ON master switch for setpoint security

sh-button alarm test and remote alarm contacts

arm silence, ringback and auto reset

ntroller battery backup system

arm setpoints are preset to warn of temperature deviation at 5.5°C ertemperature, 1.5°C undertemperature

struction

terior and exterior cold-rolled steel surfaces finished with gh-impact, powder paint coating

ultipane sliding glass doors on 45.8 cu. ft. models, keylocked vinging doors with spring-loaded closures on others stay open at 90°

vo 2" dia. (5.1cm) access ports with hinged covers

C-free refrigerant

.8 cu. ft. units have independent, switch-activated interior light; hers have externally operated interior lights

uplex vaporproof outlet (live)

djustable zinc-plated, open-wire shelves

al-wheel casters

13-990-17A with optional temperature chart recorder.

ORDERING INFORMATION:

Alarm systems, temperature chart recorders and power monitors are available separately (see Accessories).

INCLUDES:

Separate power cord for interior outlets on 45.8 and 78.8 cu. ft. models

WARRANTY:

Two years, parts and labor

CERTIFICATIONS:

UL and cUL listed. CE marked.

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

acity†	No. of Doors/Shelves	Interior D x W x H†	Exterior L x W x H†	Shipping Weight	Electrical Requirements	Amps/Breaker	NEMA Plug	Mfr. No.	Cat. No.	Each
cu. ft. L)	1, swinging/ 2 half-size	29 × 24 × 58" (74 × 61 × 147cm)	36¼ × 28 × 79⅛" (92 × 71 × 201cm)	425 lb. (193kg)	115V 60Hz	9.4/15	5-15P	REC 2304A	**22-245-957**	5996.00
cu. ft. L)	1, swinging/ 2 half-size	29 × 30 × 58" (74 × 76 × 147cm)	36¼ × 34 × 79⅛" (92 × 86 × 200cm)	500 lb. (227kg)	115V 60Hz 208/230V 60Hz	9.4/15 6/15	5-15P 6-15P	REC 3004A REC 3004D	**13-991-136** **13-991-137**	6995.00 6995.00
cu. ft. 7L)	2, sliding/ 2 half-size, 4 full-size	26 × 52½ × 58" (66 × 133 × 147cm)	33 × 56½ × 79⅛" (84 × 144 × 200cm)	605 lb. (274kg)	115V 60Hz 208/230V 60Hz	15/20 8.5/15	5-20P 6-15P	REC 4504A REC 4504D	**13-991-142** **13-991-143**	8251.00 8251.00
cu. ft. 7L)	2, swinging/ 2 half-size, 4 full-size	29 × 52½ × 58" (74 × 133 × 147cm)	36¼ × 56½ × 79⅛" (92 × 144 × 200cm)	640 lb. (290kg)	115V 60Hz	15/20	5-20P	REC 5004A	**13-990-17A**	8345.00
cu. ft. 1L)	3, swinging/ 2 half size, 8 full-size	29 × 81 × 58" (74 × 206 × 147cm)	36¼ × 85 × 79⅛" (92 × 216 × 200cm)	965 lb. (438kg)	115V 60Hz 208/230V 60Hz	16/20 10.5/15	5-20P 6-15P	REC 7504A REC 7504D	**13-991-85** **13-991-86**	10,6380.00 10,6380.00

lished interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, r verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.

REFRIGERATOR/FREEZERS—GENERAL- PURPOSE

Fisher Scientific* Isotemp* General-Purpose Refrigerator/Freezer

Ideal for storing nonvolatile reagents, samples and specimens

- Temperature range from 2° to 13°C (refrigerator), -18° to -10°C (freezer)
- Total capacity: 17.9 cu. ft. (507L)
- Refrigerator capacity: 12.9 cu. ft. (365L)
- Freezer capacity: 5.0 cu. ft. (142L)
- Manual or automatic defrost
- Controls at front of refrigerator for easy access
- Separate adjustment of refrigerator and freezer temperatures
- CFC-free R134-A refrigerant
- Yellow warning label reads: "Laboratory Refrigerator"
- Foamed polyurethane insulation ensures temperature uniformity
- Textured white enamel steel exterior resists marking
- Refrigerator has two white vinyl-coated–steel slide-out adjustable shelves, two tinted slide-out bottom drawers, four door shelves
- Freezer has one compartment and two door shelves
- Two adjustable, two fixed rollers on bottom for easy installation and leveling

ORDERING INFORMATION:

Exterior dimensions, 30¾L × 30W × 66"H (78 × 76 × 168cm). Requires air clearance of 3" (7.6cm) around top, back, and sides. Shipping weight, 240 lb. (109kg). For 115V, 60Hz. Has NEMA 5-15 plug, requires NEMA-15 receptacle.

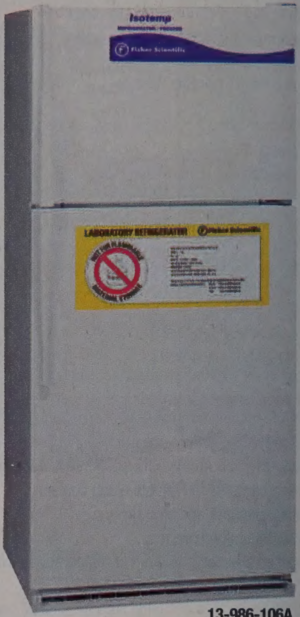
WARRANTY:

13 months, parts and labor; five years, compressor

CERTIFICATIONS:

UL listed, CSA approved

Cat. No.	Each
13-986-106A	2561.21



13-986-106A

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

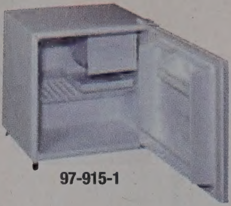
*Trademark. See Trademark Reference.

Prices subject to change.

her Scientific* General-Purpose dercounter Refrigerator/Freezers

table and undercounter models

- nual defrost
- C-free (R134A) refrigerant
- Dw compressor and static condenser



97-915-1

able Model

- frigerator temperature range: to 7°C (32° to 45°F)
- ezer temperature range: to 0°C (23° to 32°F)
- al capacity: 1.7 cu. ft. (48L)
- e under counter or on bench or shelf
- ezer has ice cube tray and one sturdy, plastic-coated removable shelf
- or with lock has two storage shelves and tight-fitting magnetic gasket

ercounter Model

- frigerator temperature range: 2° to 7°C (36° to 45°F)
- ezer temperature range: -6° to +1°C (21° to 34°F)
- oacity: 5.6 cu. ft. (159L)
- justable temperature control
- l-width freezer compartment
- or with shelves open from left
- amless, easy-to-clean interior is vacuum-formed from refrigeration-de plastic
- ked-on acrylic enamel exterior
- o adjustable wire shelves, three door shelves
- mes with power cord with plug

ERING INFORMATION:
20V 60Hz

RANTY:
years, parts; one year, labor

TIFICATIONS:
sted, except portable model

l	Portable	Undercounter
Capacity	1.7 cu. ft. (48L)	5.6 cu. ft. (159L)
ior Refrigerator D × W × H	9 × 16 × 15" (23 × 41 × 38cm)	15¼ × 18 × 21" (39 × 46 × 53cm)
ior Freezer D × W × H	8 × 6 × 6" (20 × 15 × 15cm)	11 × 15¼ × 5¼" (28 × 39 × 13cm)
all L × W × H	21½ × 18½× 19" (55 × 47 × 48cm)	25¼ × 21¼ × 33½"† (64 × 54 × 85cm)†
Shelves	----	3, fixed
ior Shelves	1, removable	2, adjustable
Veight	46 lb. (20.9kg)	90 lb. (40.8kg)
ping Weight	52 lb. (23.6kg)	120 lb. (54.5kg)
s/Breaker	1/15	2/15
No.	**97-915-1**	**97-960-1**
	588.56	1274.02

½" (1.3cm) to total height when using leveling legs supplied with unit.

SERVICE AGREEMENTS

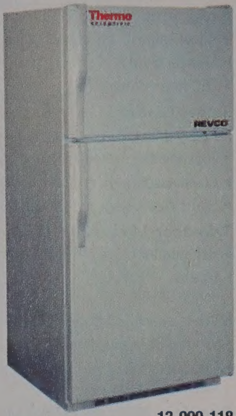
Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment epairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Thermo Scientific* Revco* General-Purpose Lab Refrigerator/Freezers

Ideal for common non-critical lab requirements

- 18.5 cu. ft. (522L) and 24.6 cu. ft. (699L) capacities
- Automatic defrost
- CFC-free refrigerant
- High-density foam insulation
- Textured steel cabinets and doors with easy-to-clean white finish
- Leveling glides on all corners



13-990-118

18.5 cu. ft. (522L)† Model

- Refrigerator: 2° to 8°C, 13.1 cu. ft. (370L), two adjustable shelves
- Freezer: -18° to -12°C, 5.4 cu. ft. (152L), one fixed shelf
- Separate thermostat controls and energy-saver switch
- Inner doors have additional inventory compartments
- Exterior dimensions: 30⅞D × 29⅝W × 67¼"H (78 × 75 × 171cm)
- Shipping weight: 225 lb. (102kg)

24.6 cu. ft. (699L)† Model

- Refrigerator: 2° to 10°C, 17.1 cu. ft. (484L), six interior shelves, three door shelves
- Freezer: -18° to -12°C, 7.6 cu. ft. (215L), three interior shelves
- Forced-air circulation
- Interior light
- Leveling legs
- Exterior dimensions: 33L × 34½W × 68"H (84 × 88 × 173cm)
- Shipping weight: 300 lb. (136kg)

ORDERING INFORMATION:
For 115V 60Hz. Amps/breaker 7.2/15. With NEMA 5-15P plug, require 5-15R receptacle.

WARRANTY:
Two years, parts and labor

Capacity (Total)	18.5 cu. ft. (522L)	24.6 cu. ft. (699L)
Temperature Range, Refrigerator	2° to 8°C	2° to 10°C
Temperature Range, Freezer	-18° to -12°C	-18° to -12°C
Mfr. No.	RCRF192A	RCRF252A
Cat. No.	**13-990-118**	**13-991-90**
Each	1674.00	1625.00

† Published interior volumes are nominal; usable capacities may be offset by shelves, drawers, blower coils or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact your Fisher Scientific Customer Service Representative.

WARNING

These units are intended for basic laboratory use only. Storage of high-value life science materials or critical biologicals may require alarm, monitoring, backup and temperature performance features. The need to add these features should be determined by your industrial hygienist or safety officer. Not suitable for corrosive environments.

REFRIGERATOR/FREEZERS—SPECIAL-PURPOSE

Fisher Scientific* Isotemp* Explosion-Proof Refrigerator/Freezers

For storage of volatile materials in areas with explosive atmospheres

- Total capacities: 11 and 30 cu. ft. (311 and 850L)
- Allow setpoint adjustment while running
- Manual defrost
- CFC-free refrigerant

Safety Features

- Red warning label on front reads: "Explosion-Proof Refrigerator"
- Top-mounted hydraulic thermostats and door stops
- Compressors with enclosed overloads and relays
- Static condensers and evaporators free of electric fans

Two-door 11 cu. ft. (311L) Model

- Refrigerator: 2° to 10°C, 8.5 cu. ft. (241L), four fixed shelves
- Freezer: -18° to +5°C, 2.5 cu. ft. (71L), one fixed shelf, one door compartment
- White enamel-coated steel exterior
- White ABS plastic interior
- Two adjustable, two fixed pads on bottom for easy installation and leveling

One-door 30 cu. ft. (850L) Model

- Internal door separates stainless-steel freezer compartment from refrigerator
- Temperatures are user-selectable in °C or °F with 0.1° resolution, ±4°C stability
- Refrigerator: 3° to 13°C (37° to 55°F), 25 cu. ft. (708L)
- Freezer: -15° to +4°C (5° to 30°F), 5 cu. ft. (142L)
- White baked-on polyester enamel exterior
- White epoxy-coated steel interior with ABS plastic door liner and key-locked power switch
- White epoxy-coated steel shelves: three fixed, five adjustable, and one half-depth shelf
- Four legs on bottom allow easy installation and leveling

ORDERING INFORMATION:

For 115V 60Hz. Not equipped with line cord and plug; must be hardwired into an appropriately rated conduit box to comply with NEC code.

Total Capacity	11 cu. ft. (311L)	30 cu. ft. (850L)
Overall L x W x H[1]	24½ × 23 ½ × 69 (62 × 60 × 175cm)[2]	35 × 35½ × 82" (89 × 90 × 208cm)[3]
Shipping Weight	195 lb. (88.5kg)	370 lb. (168kg)
Cat. No.	**13-986-116D**	**13-986-525D**
Each	4369.00	5945.06

[1] *Length includes handles, height includes top-mounted controls.*

[2] *Requires air clearance of 3" (7.6cm) around top and back, ½"(1.3cm) on sides.*

[3] *Requires air clearance of 4"(10cm) around top, back and sides.*

13-986-525D

13-986-116D

WARRANTY:

13 months, parts and labor; five years, compressor

COMPLIANCE:

OSHA 29CFR1910.307

CERTIFICATIONS:

UL listed (two-door for Class 1 and Groups C and D hazard locations); CSA approved

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

*Trademark. See Trademark Reference.

Prices subject to change.

sher Scientific* Isotemp* Flammable-Materials Storage Refrigerator/Freezers

r storage of volatile materials

- ely stores ethyl ether, hexane, naphtha, benzol, epoxies, solvents, fuels, rmaceuticals, clinical reagents and biologicals.
- apacities: 11 and 24.5 cu. ft. (311 and 694L)
- lanual defrost
- FC-free refrigerant
- oamed polyurethane insulation ensures temperature uniformity
- /hite enamel steel exteriors
- BS white plastic interiors
- /hite epoxy-coated steel shelves
- oors open from left

ety Features

- range warning label reads: "Flammable Material Storage Refrigerator"
- parkproof interiors separate contents from compressor and motor
- op-mounted hydraulic thermostat and door stop
- lagnetic door gaskets provide airtight seals that insulate and prevent elease of hazardous fumes
- ompressors have enclosed overloads, relays and thermostats to prevent parks from escaping during opening and closing
- tatic condensers and evaporators are free of electric fans

o-door 11 cu. ft. (311L) Unit

- efrigerator: 2° to 10°C, 8.6 cu. ft. (243L)
- eezer: -18° to -5°C, 2.4 cu. ft. (68L)
- ve white epoxy-coated steel adjustable shelves, four fixed shelves, ne full-width slide-out bottom drawer in refrigerator
- ne fixed shelf, one door compartment in freezer
- wo adjustable and two fixed pads allow easy installation and leveling

e-door 24.5 cu. ft. (694L) Unit

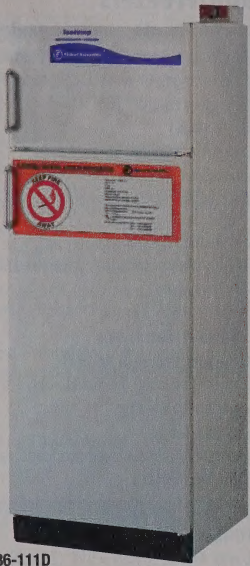
- efrigerator: 3° to 13°C (37° to 55°F), 22 cu. ft. (623L)
- eezer: -15° to +4°C (5° to 39°F), 2.5 cu. ft. (71L)
- ser-settable temperatures in °C or °F (average ±4° stability)
- igital display shows temperatures in 0.1° increments
- eyed power switch
- ternal freezer door
- our adjustable shelves
- our adjustable legs allow easy installation and leveling

rms (24.5 cu. ft. unit only)

- anel-mounted, factory installed
- igital display with minimum/maximum setpoints, audible alarm, and 4V, 0.5A SPST N.O. relay contacts
- eestanding, Standard Remote and Deluxe Remote alarm systems vailable separately (see p. 1578)

/en-day Selectable Temperature Recorder .5 cu. ft. unit only)

- anel-mounted, factory installed
- ' dia. (15.2cm) chart
- ser-selectable temperature ranges



13-986-111D

- ▸ Single-point calibration; individually calibrated against equipment with calibration certified traceable to NIST*
- ▸ Supplied with 60 charts and seven-day scale

ORDERING INFORMATION:

For 115V 60Hz. Supplied with NEMA 5-15P plug; require NEMA 5-15R wall receptacle.

WARRANTY:

13 months, parts and labor; five years, compressor

COMPLIANCE:

Two-door (11 cu. ft.) model complies with OSHA 29CFR1910.106 and NFPA Standard Numbers 45, 56C and 99. One-door (24.5 cu. ft.) model complies with NFPA Code 99.

CERTIFICATIONS:

UL listed, CSA approved

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

acity	11.0 cu. ft. (311L)	24.5 cu. ft. (694L)		
lel	Basic	Basic	With Recorder/Alarm	With Recorder
erior L × W × H†	24½ × 23½ × 65" (62 × 60 × 165cm)‡	33 × 35½ × 80" (85 × 80 × 203cm)††	33 × 35½ × 85" (85 × 80 × 216cm)††	33 × 35½ × 85" (85 × 80 × 216cm)††
pping Weight	170 lb. (77kg)	340 lb. (154kg)	355 lb. (161kg)	355 lb. (161kg)
. No.	**13-986-111D**	**13-986-426D**	**13-986-426DA**	**13-986-426DR**
h	2912.33	4560.00	6874.44	6503.28

ıgth includes handles, height includes top-mounted controls.
quires air clearance of 3" (7.6cm) around top, back, and sides.
quires air clearance of 4" (10cm) around top, back and sides.

Fisher Scientific* Special-Purpose Undercounter Refrigerator/Freezers

Flammable-materials storage and explosion-proof models

- Refrigerator temperature range: 2° to 7°C (36° to 45°F)
- Freezer temperature range: -6° to +1°C (21° to 34°F)
- Adjustable temperature control
- Capacity: 5.6 cu. ft. (159L)
- Full-width freezer compartment
- Doors with shelves open from left
- Seamless, easy-to-clean interior is vacuum-formed from refrigeration-grade plastic
- Baked-on acrylic enamel exterior
- Two adjustable wire shelves (interior), three fixed shelves (door)
- CFC-free (R134A) refrigerant
- Manual defrost
- Static condenser free of electric fans

Flammable-Materials Storage Model

- 120w compressor has enclosed overloads, relays, thermostat
- Comes with power cord with plug

Explosion-Proof Model

- 120w compressor has totally enclosed overloads, relays, wiring
- Enclosed hydraulic thermostat
- Unit must be hardwired to an appropriately rated conduit box

ORDERING INFORMATION:
Interior freezer L × W × H: 11 × 15¼ × 5¼" (28 × 39 × 13cm). Interior refrigerator D × W × H: 15¼ × 18 × 21" (39 × 46 × 53cm). Overall L × W × H: 25¼ × 21¼ × 33½" (64 × 54 × 85cm).† Net weight, 90 lb. (40.8kg); shipping weight, 120 lb. (54.5kg). For 120V 60Hz, 2/15 amps/breaker.

97-935-1

WARRANTY:
Two years, parts; one year, labor

COMPLIANCE:
Flammable-Materials Storage Model complies with NFPA Standard Number 99 and OSHA 29CFR1910.308. **Explosion-Proof Model wiring** complies with NEC Articles 500-501 for Class 1, Groups C and D environments.

CERTIFICATIONS:
UL listed

Description	Cat. No.	Each
Flammable-Materials Storage	**97-935-1**	2240.96
Explosion-Proof	**97-952-1**	2333.91

† *Requires an additional 1" (2.5cm) clearance from top and sides and 1½" (3.8cm) from back for proper condenser ventilation when recessed. Add ½" (1.3cm) to the total height when using the leveling legs supplied with unit.*

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

ACCESSORIES

Fisher Scientific* Isotemp* Refrigerator and Freezer Alarm Systems

For Fisher Scientific Isotemp and Isotemp Plus refrigerators and freezers

Freestanding Alarm System

- Use with basic freezers, refrigerators, and one section on refrigerator/freezer combinations
- With key switch in ALARM position, system provides audio and visual alarms if chamber temperature reaches high or low alarm limit (adjustable, set by user) or if power is lost for more than 30 seconds
- Housed in a painted metal cabinet with digital temperature display
- Alarm silencing and test features
- Can be used to trigger Standard or Deluxe Remote Alarm systems

Standard Remote System†

- Use with refrigerators and freezers equipped with panel-mounted or freestanding alarm (Alarm or Recorder/Alarm models)
- Can be located up to one-third mile from unit
- Emits audible and visual signals in the event of power failure, temperature deviation, or if door is open for more than three minutes
- Alarm sounds if line between unit and alarm is cut

Deluxe Remote System†

- Use with refrigerators and freezers equipped with panel-mounted or freestanding alarm (Alarm or Recorder/Alarm models)
- Can monitor up to four individual or four groups of refrigerators or freezers
- User-programmable to call up to eight telephone or pager numbers when activated by power failure, temperature deviation, or if door is open for more than three minutes
- Alarm sounds if line between unit and alarm is cut
- Stores four outgoing messages
- Automatic redial for busy or unanswered numbers
- Works with any standard telephone system
- Battery backup allows alarm to sound in the event of a power failure

ORDERING INFORMATION:
Freestanding and remote systems must be ordered when the refrigerator or freezer is ordered. Installation by owner.

REQUIRED ACCESSORIES:
Remote systems require an existing alarm system, with dry alarm contacts, to be installed on the refrigerator or freezer in order to be compatible.

Alarm System	Cat. No.	Each
Freestanding for Basic Models	**13-986-160**	1105.78
Standard Remote for Alarm and Recorder/Alarm Models†	**13-986-32A**	522.43
Deluxe Remote for Alarm and Recorder/Alarm Models†	**13-986-100**	1314.58

† *Requires an existing alarm system, with dry alarm contacts, to be installed on the refrigerator or freezer in order to be compatible.*

ermo Scientific* Revco* Alarms and Alarm Systems

rm Delay Module

minates false alarms due to intermittent voltage flux from lightning or ief power outages

ljustable delay releases signal to alarm/monitoring system only when arm condition continues for specified time period

gital timer can be set from 30 seconds to 32 minutes

d alarm light flashes to indicate transient event; must be manually set

odule installs easily in any alarm/monitoring system: simply remove ver and connect relay and terminal strips to open or closed contacts alarm system

wered by 9V battery (not included)

erall dimensions, 1⅝L × 2½W × 4¾"H (1.6 × 6.4 ×12.1cm)

uxe Electronic Remote Alarm System

e with Thermo Scientific Revco General-Purpose Refrigerators and eezers; Chromatography Refrigerators equipped with accessory cal Alarm System; and Ultima*, Elite*, and Value* PLUS tralow-Temperature Freezers

er-programmed to sound alarm in the event of power failure or mperature deviation

n call up to four telephone numbers to advise of emergency conditions ing any pulse dialing system

e unit can monitor up to four individual freezers or refrigerators, or ee groups of freezers or refrigerators

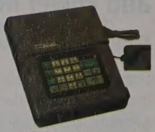
ust be customer installed

quires dedicated telephone line

tronic Local Alarm Systems

e with Thermo Scientific Revco Refrigerators and Enzyme, General-rpose, and Plasma Freezers

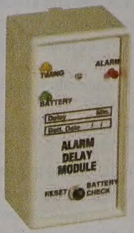
- Freestanding system includes keyed ON/OFF alarm switch, audible and visual alarms for power failure and temperature deviation, audio silence button, and alarm test button
- Painted metal cabinet with digital temperature display and keyed alarm switch
- Must be customer installed



13-991-111

Standard Remote Alarm System

- Use with Thermo Scientific Revco General-Purpose Freezers and Refrigerators; Chromatography Refrigerators equipped with accessory Electronic Local Alarm System; and with Ultima, Elite, and Value PLUS Ultralow-Temperature Freezers
- Can be located up to one-third mile from unit and used with either normally open or normally closed contacts
- Emits both audible and visual signal in the event of power failure or temperature deviation
- Wire not included
- For 115V
- Requires factory-installed alarm system



13-992-91

Description	Mfr. No.	Cat. No.	Each
Alarm Delay Module	6903	**13-992-91**	209.17
Deluxe Remote Alarm	6224	**13-991-111**	1459.49
Electronic Local Alarm (for Refrigerators)	6715	**13-990-161**	1005.53
Electronic Local Alarm (for Freezers)	6714	**13-990-160**	1005.53
Standard Remote Alarm	5612A	**13-986-32**	505.31

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ermo Scientific* Revco* Temperature Chart Recorders

most Thermo Scientific Revco freezers and refrigerators†

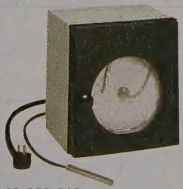
n-day chart recorders record eratures from -100° to 0°C.

(15.2cm) chart

e pressure-sensitive paper, uire no inking

eestanding model is stomer installed

nel-mounted model is factory talled; order when purchasing refrigerator or freezer



13-990-219

ERING INFORMATION:

able in range of voltages; specify voltage when ordering.

LUDES:

of 50 charts

For Use With Thermo Scientific Revco Models	Mfr. No.	Cat. No.	Each
Panel-mounted Recorder			
Ultima* PLUS, Ultima II SI, Elite* PLUS, Value* PLUS, Value SI Freezers	6183-6	**13-990-216**	1038.40
General-Purpose, Blood Bank, Chromatography Refrigerators; General-Purpose, Enzyme Freezers	6183-7	**13-990-217**	1444.00
Freestanding Recorder			
Ultima PLUS, Ultima II SI, Elite PLUS, Value PLUS, Value SI Freezers	6383-6	**13-990-219**	2708.86
General-Purpose, Chromatography Refrigerators	6383-7	**13-990-220**	1701.00
Replacement Chart Paper (Pack of 50)			
13-990-220, 13-990-217	6184	**13-990-16A**	76.02
13-990-219, 13-990-216	6185	**13-990-16B**	76.02

† *Recorders are standard on 11.5 cu. ft. (326L) and larger blood bank refrigerators and plasma freezers.*

Thermo Scientific* Revco* Temperature and Power Monitors

Easily installed on or near any refrigerator or freezer

13-992-88

Display temperature and activate audible and visual alarms to warn of overtemperature and power failure. Available in single-probe digital models and two- probe microprocessor-based model for monitoring multiple freezers or multiple sites in one freezer.

- Temperature range: -100° to +25°C
- Probe size: 1¼L × ¼" dia. (3.2 × 0.6cm)
- Solid-state probes
- High-temperature alarm with adjustable setpoint
- Alarm mute and chirp
- Audio delay timer
- Battery backup
- Remote alarm contacts

Single-probe Monitors

- High-contrast numeric LED display
- Red visual alarm
- Include Velcro* fasteners

Multiple-probe Monitor

- Alphanumeric LED display with adjustable backlight
- Two-color visual alarm
- Low-temperature alarm with adjustable setpoint
- Color-coded lead wire on probe
- Programmable relay delay with range of 0 to 30 minutes
- Alarm/battery test function
- Brackets included

ORDERING INFORMATION:

For 120V 60Hz

Type	Digital		Microprocessor
No. of Probes	1	1	2
Probe	8' (2.4m) Teflon*	8' (2.4m) 24 gauge	20' (6.1m)
Display/Setpoint Resolution	1°C	1°C	0.1°C
Case Dimensions (L × W × H)	5 × 4½ × 2" (13 × 11 × 5cm)	5 × 4½ × 2" (13 × 11 × 5cm)	6¼ × 3¼ × 2" (16 × 8 × 5cm)
Mfr. No.	6898	6899	6900
Cat. No.	**13-992-86**	**13-992-87**	**13-992-88**
Each	528.24	546.33	914.63

Thermo Scientific* Revco* CO_2 and LN_2 Backup Systems

For ultralow-temperature freezers

22-266-267

Systems inject liquid CO_2 or LN_2 into cabinet when cabinet temperature warms to preset level.

- Adjustable in 1°C increments to -75°C (CO_2), -150°C (LN_2)
- Digital display constantly indicates actual cabinet temperature
- Indicator lights when system is activated
- Additional indicator lights when cylinder is empty
- Liquid flow is shut off automatically when freezer door or lid is opene
- Powered by continually rechargeable battery
- Low-battery light indicates when battery requires charging

ORDERING INFORMATION:

Thermo Scientific Revco Ultima* II and Elite* 3.1 cu. ft. (88L) models an Value* series models require freestanding system; only Ultima II and Eli series models larger than 3.1 cu. ft. (88L) accept built-in systems. Speci freezer model and voltage when ordering.

INCLUDES:

All required hardware except CO_2 or LN_2 cylinder

REQUIRED ACCESSORIES:

CO_2 or LN_2 cylinder

Description	Mfr. No.	Cat. No.	E
CO_2 Systems			
Freestanding, 115V	6593A	**13-986-52**	173
Freestanding, 208V	6593D	**13-986-53**	177
Built-in, 115V	6594A	**13-986-54**	186
Built-in, 208V	6594D	**13-986-55**	186
LN_2 Systems			
Built-in	6595	**13-990-112**	226
Freestanding	6214	**22-266-267**	224

*Trademark. See Trademark Reference.

Prices subject to change.

ermo Scientific* Revco* bCooler* Modules

re, transport, and protect samples from perature fluctuations

chtop Modules

lp maintain enzymes and other frozen materials stable temperatures when used at the bench

aintain temperature stability in stored mples in microtubes during handling

hen stored in a freezer, insulate enzymes d other biological samples from periodic nperature fluctuations due to door openings, frost cycles, or temporary power outages

ovide nominal control over pull-down during tial freeze cycles

ctangular module (13-992-100) maintains zyme temperatures at stable -20°C for up two hours; holds twenty-four 1.5mL tubes d eight 0.5mL tubes

und module (13-992-101) maintains enzyme nperatures from -20° to -10°C for up to e hour outside freezer; holds up to seven mL tubes

13-992-100 (Benchtop)

13-992-101 (Benchtop) and 13-992-99 (Cryopreservation)

preservation Modules

signed to freeze mammalian and insect cells with greater control over ldown freezing prior to storage in an ultralow-temperature (-86°C) freezer

eful for nominal control over pulldown during initial freeze cycles and intaining temperature stability of stored samples in vials during handling

ical pulldown rates of 0.4° to 0.6°C per minute improve cell viability m 80% to 90%

ctangular module (13-992-98) holds 32 cryovials

und module (13-992-99) holds 7 cryovials

UDES:

interlocking lid

tube or Cryovial Capacity	Mfr. No.	Cat. No.	Each
top Modules			
.5mL	6745	**13-992-101**	278.95
1.5mL and 8 × 0.5mL	6744	**13-992-100**	406.42
reservation Modules			
ovials	6743	**13-992-99**	218.42
yovials	6742	**13-992-98**	383.72

SERVICE AGREEMENTS

sher Scientific offers several types of service agreements for the quipment featured here. For details on these agreements, equipment epairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

ermo Scientific* Revco* Freezer Rack

32 cu. ft. Thermo Scientific Revco Ultima* PLUS es freezers

inless steel with handle

h clips, adjustable

or 3" (5.0 or 7.6cm) box configurations (boxes and dividers sold arately; see next page)

o.	Cat. No.	Each
	13-993-23	213.78

Thermo Scientific* Revco* Microtitration Plate Racks

- Store microtitration plates in upright Thermo Scientific Ultima* PLUS, Ultima II SI, Elite* PLUS, Value* PLUS, and Value SI Series Ultralow-Temperature Freezers
- Stainless steel

No. of Plates	For Freezer Capacity	Mfr. No.	Cat. No.	Each
44	13.4 cu. ft.	6734	**13-990-211**	181.36
66	17.2, 20.2, 24.4 cu. ft.	6733	**13-990-212**	198.48

Thermo Scientific* Revco* Microplate Freezer Rack

NEW

For 6.8 to 20.5 cu.ft. chest freezers

- Holds 35 plates with lids or 42 plates without lids
- Seven compartments
- With locking rods
- Stainless-steel

ORDERING INFORMATION:

Measures 23⅜H × 5½D × 3⅝"W (59 × 14 × 9cm)

Mfr. No.	Cat. No.	Each
7158	**10-549-289**	103.69

Freezer Capacity	Vial Capacity (Array)
6.8 cu. ft.	18 (3 × 6)
10.3 cu. ft.	27 (3 × 9)
13.7 cu. ft.	36 (3 × 12)
17.1 cu. ft.	45 (3 × 15)
20.5 cu. ft.	57 (3 × 19)

Thermo Scientific* Revco* Dual-Wheel Casters

For General-Purpose Freezers and Chromatography Refrigerators

- As option or for replacement on most models
- 2" (5.1cm) dia.; set of four
- Factory installed when ordered with unit; customer installed if ordered separately

For Capacity	Mfr. No.	Cat. No.	Set of 4
45.8 cu. ft. with sliding glass doors	6041	**13-990-176**	130.25
23.3, 29.2, 51.1, 78.8 cu. ft.	6694	**13-990-162**	139.18

Thermo Scientific* Revco* Replacement Shelves

For General-Purpose Freezers and Chromatography Refrigerators

- Zinc-plated, open-wire shelves
- Designed to fit individual cabinets
- Full and half sizes

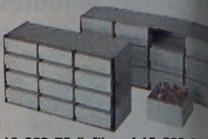
For Capacity	Mfr. No.	Cat. No.	Each
Full depth			
29.2 cu. ft. (827L)	6695	**13-990-165**	266.47
All others	6696	**13-990-163**	92.21
Half depth			
All others	6698	**13-990-164**	85.31

Thermo Scientific* Revco* Freezer Inventory System Kits

For Thermo Scientific Revco Ultima* II, Ultima PLUS, Ultima II SI, Elite*, Elite PLUS, Value*, Value PLUS, and Value SI Ultralow-Temperature Freezers

Contains all of the racks, storage boxes, and 100-cell dividers needed to outfit a complete freezer inventory system.

- Designed to optimize space of upright and chest models with 3.1 to 24.4 cu. ft. (28 to 691L) capacities
- Boxes are 5¼L × 5¼"W (13.3 × 13.3cm)
- Dividers accommodate 12mm vials in 10 × 10 grid
- Each kit includes a divider for each box it contains

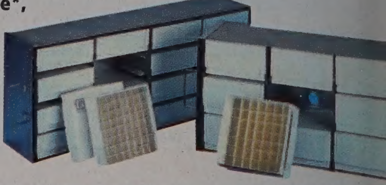


13-992-76 (left) and 13-992-82

For Freezer Capacity	Racks in Kit	Boxes/Rack	Rack Capacity (No. of Boxes)	Boxes in Kit	Dividers in Kit	Mfr. No.	Cat. No.	Ea
Upright Freezers								
13.4 cu. ft. (379L)	20	12	240	240 fiberboard, 2" high (5.1cm)	240	6880	**13-992-70**	2417.
13.4 cu. ft. (379L)	20	9	180	180 fiberboard, 3" high (7.6cm)	180	6887	**13-992-72**	2350.
17.2 cu. ft. (487L)	20	16	320	320 fiberboard, 2" high (5.1cm)	320	6882	**13-992-74**	2910.
17.2 cu. ft. (487L)	20	12	240	240 fiberboard, 3" high (7.6cm)	240	6889	**13-992-76**	3036.
20.2 cu. ft. (572L)	25	16	400	400 fiberboard, 2" high (5.1cm)	400	6884	**13-992-78**	3924.
20.2 cu. ft. (572L)	25	12	300	300 fiberboard, 3" high (7.6cm)	300	6891	**13-992-80**	4574.
24.4 cu. ft. (691L)	30	16	480	480 fiberboard, 2" high (5.1cm)	480	6893	**13-992-82**	5499.
24.4 cu. ft. (691L)	30	12	360	360 fiberboard, 3" high (7.6cm)	360	6896	**13-992-84**	4556.
Chest Freezers								
3.1 cu. ft. (87L)	9	7	63	63 fiberboard, 2" high (5.1cm)	63	6852	**13-992-42**	765.
3.1 cu. ft. (87L)	9	5	45	48 fiberboard, 3" high (7.6cm)	48	6859	**13-992-44**	622.
6.8 cu. ft. (192L)	12	11	132	132 fiberboard, 2" high (5.1cm)	132	6856	**13-992-50**	1277.
10.3 cu. ft. (291L)	18	11	198	198 fiberboard, 2" high (5.1cm)	198	6865	**13-992-54**	1934.
10.3 cu. ft. (291L)	18	8	144	144 fiberboard, 3" high (7.6cm)	144	6872	**13-992-56**	1783.
13.7 cu. ft. (388L)	24	11	264	264 fiberboard, 2" high (5.1cm)	264	6867	**13-992-58**	2548.
13.7 cu. ft. (388L)	24	8	192	192 fiberboard, 3" high (7.6cm)	192	6874	**13-992-60**	2375.
17.1 cu. ft. (484L)	30	11	330	330 fiberboard, 2" high (5.1cm)	330	6869	**13-992-62**	3203.
20.5 cu. ft. (580L)	36	11	396	396 fiberboard, 2" high (5.1cm)	396	6878	**13-992-66**	3817.
20.5 cu. ft. (580L)	36	8	288	288 fiberboard, 3" high (7.6cm)	288	6885	**13-992-68**	3566.

Thermo Scientific* Revco* Inventory Systems and Components

For Thermo Scientific Revco Ultima* II, Ultima PLUS, Ultima II SI, Elite*, Elite PLUS, Value*, Value PLUS, and Value SI Ultralow-Temperature Freezers



11-678-29C and 13-999-22 racks with 11-678-24A and 11-678-24B boxes and 11-678-26D dividers.

Fiberboard Storage Boxes

- Sturdy, water-resistant fiberboard boxes for sample storage
- Available in 2 and 3" high (5.1 and 7.6cm) sizes
- Both are 5¼L × 5¼"W (13.3 × 13.3cm)
- With covers

Height	Mfr. No.	Cat. No.	Pack of 12
2" (5.1cm)	5954	**11-678-24A**	36.32
3" (7.6cm)	5956	**11-678-24B**	50.92

Fiberboard Box Dividers

- Use with fiberboard storage boxes to divide box into grids for vial stor

Vial Size	Grid Size	Cell Size	Mfr. No.	Cat. No.	P of
12mm	10 × 10	7⁄16 × 7⁄16" (1.1 × 1.1cm)	5958	**11-678-24C**	28
13mm	9 × 9	¼ × ¼" (0.6 × 0.6cm)	6212	**13-989-218**	22
14mm	8 × 8	9⁄16 × 9⁄16" (1.4 × 1.4cm)	5960	**13-992-33**	40
16mm	7 × 7	⅝ × ⅝" (1.6 × 1.6cm)	5959	**11-678-26D**	41

Contd. on next p

*Trademark. See Trademark Reference.

Prices subject to change.

rmo Scientific* Revco* Inventory Systems and Components, Contd.

ainless-Steel Inventory Racks

2" (5.1cm) High Storage Boxes

	Boxes/ Racks	Rack Height	Racks/ Freezer	Mfr. No.	Cat. No.	Each
ht Models						
cu. ft.	12	Full	20	6112-1	**11-678-29C**	183.79
u. ft.	12	Full	20	7138	**10-549-272†**	138.03
cu. ft.	16	Full	20	6113-1	**11-678-29E**	201.44
cu. ft.	16	Full	20	7145	**10-549-279†**	174.58
cu. ft.	16	Full	25	6113-1	**11-678-29E**	201.44
cu. ft.	16	Full	25	7145	**10-549-279†**	174.58
cu. ft.	16	Full	20	6113-1	**11-678-29E**	201.44
cu. ft.	16	Full	30	7145	**10-549-279†**	174.58
t Models						
u. ft.	7	Full	9	5972	**11-678-28A**	145.33
u. ft.	11	Full	12	5978	**11-678-28C**	160.68
cu. ft.	11	Full	18	5978	**11-678-28C**	160.68
cu. ft.	11	Full	24	5978	**11-678-28C**	160.68
cu. ft.	11	Full	30	5978	**11-678-28C**	160.68
cu. ft.	11	Full	36	5978	**11-678-28C**	160.68
u. ft.	6	Half	24	6230	**13-992-21**	55.52
cu. ft.	6	Half	36	6230	**13-992-21**	55.52
cu. ft.	6	Half	48	6230	**13-992-21**	55.52
cu. ft.	6	Half	60	6230	**13-992-21**	55.52
cu. ft.	6	Half	72	6230	**13-992-21**	55.52

d side-access vial rack.

For 3" (7.6cm) High Storage Boxes

Fits	Boxes/ Racks	Rack Height	Racks/ Freezer	Mfr. No.	Cat. No.	Each
Upright Models						
13.4 cu. ft.	9	Full	20	6112-1	**11-678-29C**	183.79
17.2 cu. ft.	12	Full	20	6113-1	**11-678-29E**	201.44
20.2 cu. ft.	12	Full	25	6113-1	**11-678-29E**	201.44
24.4 cu. ft.	12	Full	30	6113-1	**11-678-29E**	201.44
Chest Models						
3.1 cu. ft.	5	Full	9	5973	**11-678-28B**	103.47
6.8 cu. ft.	8	Full	12	6096	**11-678-28J**	162.61
10.3 cu. ft.	8	Full	18	6096	**11-678-28J**	162.61
13.7 cu. ft.	8	Full	24	6096	**11-678-28J**	162.61
17.1 cu. ft.	8	Full	30	6096	**11-678-28J**	162.61
20.5 cu. ft.	8	Full	36	6096	**11-678-28J**	162.61
6.8 cu. ft.	4	Half	24	6231	**13-992-22**	37.10
10.3 cu. ft.	4	Half	36	6231	**13-992-22**	37.10
13.7 cu. ft.	4	Half	48	6231	**13-992-22**	37.10
17.1 cu. ft.	4	Half	60	6231	**13-992-22**	37.10
20.5 cu. ft.	4	Half	72	6231	**13-992-22**	37.10

enceware* FreezGuard* Freezer and Refrigerator Alarm

tects against valuable sample loss due to temperature change

ble for use in freezers and refrigerators containing blood samples, bio-al products, pharmaceuticals, and other temperature-sensitive items.

- onitors temperatures from -5° to +55°F (-20° to +13°C)
- ud, continuous alarm (up to three days) when interior or sample temperature drifts above adjustable activation point
- n be set to register upward or downward temperature drift with accu-y of ±1%
-) variance indicator remains lit after temperature correction, indicating ere had been a problem
- v-battery indicator
- ounts with self-adhesive tape or screw mounting

ORDERING INFORMATION:
Dimensions, 1½L × 3$\frac{5}{16}$W × 5$\frac{1}{16}$"H (3.8 × 8.4 × 12.9cm). Weight (without batteries), 5.1 oz. (144.3kg). Uses 9V battery (not supplied).

INCLUDES:
10' (3m) probe for use with remote freezer; additional battery connector

Freez Guard
Exceleware

07-910-21

Mfr. No.	Cat. No.	Each
37866-0000	**07-910-21**	150.56

RNA INTERFERENCE

TRANSFECTION

Thermo Scientific* Dharmacon* DharmaFECT* siRNA Transfection Reagents

Provide high efficiency of siRNA delivery with minimal impact on cell viability across a broad range of cell types

Key Features

- Optimized for siRNA delivery
- Superior transfection efficiency
- Extremely low cellular toxicity
- Simplified transfection optimization
- Improved experimental reproducibility

Four Choices and their Top Ten Cell Lines

- DharmaFECT1 exhibits the highest transfection efficiency across the broadest range of cell types: A549, BX-PC3, CHO K1, COS 7, HEK293, HeLa, HeLa S3, HepG2, HT29, SKBR3
- DharmaFECT2: BX-PC3, COS 7, HEK293, HeLa, HeLa S3, HT29, MCF7, MDA-MB453, PC-3, SKBR3
- DharmaFECT3: BX-PC3, COS 7, DU145, LNCaP, HeLa, HeLa S3, HT29, NIH3T3L1, PC-3, SKBR3
- DharmaFECT4: BX-PC3, CHO K1, DU145, HEK293, HeLa, HeLa S3, HT29, HepG2, MCF7, SKBR3

STORAGE CONDITIONS:

Store at 4°C (do not freeze).

Description	Quantity	Cat. No.	Each
DharmaFECT-1 Reagent	0.2mL	**T-2001-01**	75.00
	0.75mL	**T-2001-02**	209.00
	1.5mL	**T-2001-03**	349.00
	5 × 1.5mL	**T-2001-04**	1650.00
DharmaFECT-2 Reagent	0.2mL	**T-2002-01**	75.00
	0.75mL	**T-2002-02**	209.00
	1.5mL	**T-2002-03**	349.00
	5 × 1.5mL	**T-2002-04**	1650.00
DharmaFECT-3 Reagent	0.2mL	**T-2003-01**	75.00
	0.75mL	**T-2003-02**	209.00
	1.5mL	**T-2003-03**	349.00
	5 × 1.5mL	**T-2003-04**	1650.00
DharmaFECT-4 Reagent	0.2mL	**T-2004-01**	75.00
	0.75mL	**T-2004-02**	209.00
	1.5mL	**T-2004-03**	349.00
	5 × 1.5mL	**T-2004-04**	1650.00
DharmaFECT Set (1-4)	4 × 0.2mL	**T-2005-01**	280.00
	4 × 0.75mL	**T-2005-02**	790.00
	4 × 1.5mL	**T-2005-03**	2640.00

LOOKING FOR MORE DHARMACON* RNAi PRODUCTS?

Visit www.fishersci.com and search for RNAi

Mirus Bio TransIT-TKO* siRNA Transfection Reagent

A high efficiency, low toxicity, siRNA transfection reagent for mammalian cells

MIR 215 series

- Broad Spectrum siRNA Delivery: Utilize one transfection reagent and protocol for a wide variety of cells
- Low Cellular Toxicity: Maintain cell density and reduce experimental biases
- Reproducible Results: Obtain consistent, targeted gene knockdowns from day to day
- High Knockdown Efficiency: Achieve optimal gene silencing in a large percentage of cells to ensure experimental success

STORAGE CONDITIONS:

Store for twelve months at 4°C (do not freeze).

Quantity	Cat. No.	E
0.4mL	**MIR 2154**	212
1mL	**MIR 2150**	342
5 × 1mL	**MIR 2155**	1527
10 × 1mL	**MIR 2156**	2884

Mirus Bio *Trans*IT-si*QUEST** siRNA Transfection Reagent

Ideal for siRNA-mediated gene-silencing studies

- Unique lipopolyplex formulation provides effective knock-down of targ gene expression across a wide range of cell types; offers advantages select cell types
- Enables efficient siRNA transfection with reduced levels of cell damag as compared to cationic-liposome–based transfection reagents
- Produces higher transfection efficiencies when transfection is perform in the presence of serum and media changes are eliminated

STORAGE CONDITIONS:

Store at 4°C (do not freeze).

Quantity	Cat. No.	E
0.4mL	**MIR 2114**	220
1mL	**MIR 2110**	355
5 × 1mL	**MIR 2115**	1527
10 × 1mL	**MIR 2116**	2884

LOOKING FOR MORE siRNA PRODUCTS?

Fisher Scientific carries a complete offering of siRNA products.

Visit www.fishersci.com and search for siRNA

*Trademark. See Trademark Reference.

TRANSFECTION — CONTROLS

ermo Scientific* Dharmacon* si*CONTROL* Basic Kits

tain panels of controls to facilitate interpretation of siRNA-mediated silencing assays

with a wide variety of controls enable optimization of siRNA delivery and :ion as well as the validation of siRNA-induced gene suppression in any ine. Aid in the distinction between target-specific and off-target effects.

.UDES:

c Kits Include

:ONTROL Targeting siRNAs (Lamin A/C siRNA, Human/Mouse; :lophilin B siRNA, Human/Mouse) provide positive silencing for idation of experimental design and detection methodologies

:ONTROL Non-Targeting siRNAs, Pool #1 and #2, and RISC-free :NA #1, to distinguish general cellular responses to delivery methods and :ential off-target effects from siRNA-mediated sequence-specific silencing

;TABLE Non-Targeting siRNA pool (Stable siRNA) that is ideal for use th si*STABLE* modified target gene siRNA; bioformatically designed with least four mismatches to any known human or mouse genes

plete Kits Include all of the above, plus

OX Transfection Control, which causes cell death upon successful nsfection; simple, cost-effective method for transfection optimization l measurement of transfection efficiency

K-002800-C3-01, -C1-01

- siGLO Transfection Efficiency and Positive Silencing Controls (Cyclophilin B siRNA, Human/Mouse; Lamin A/C siRNA, Human/Mouse) that provide reliable visualization of transfection efficiency; stable, fluorescent
- siGLO RISC-free siRNA that can be transfected with the experimental target gene siRNA without interfering with target gene silencing; stable, fluorescent

STORAGE CONDITIONS:

Store at -20° to -80°C.

Description	Control Qty.	Cat. No.	Each
Basic Kit	2nmol	**K-002800-C3-01**	275.00
	5nmol	**K-002800-C4-01**	655.00
Complete Kit	2nmol	**K-002800-C1-01**	375.00
	5nmol	**K-002800-C2-01**	895.00

TRANSFECTION—LOCALIZATION

rus Bio *Label* IT* miRNA Labeling Kits

urate and sensitive covalent labeling of microRNA RNA) for expression profiling

:urate—labels all miRNAs present in the sample

iversal—labels miRNAs from all organisms including plants

quence Independent Labeling—labels all nucleotides with equal efficiency

nsitive—detects subfemtamole amounts of miRNA species

/e time—Simple, one-step, one hour labeling protocol

.UDES:

/ IT* miRNA Cy*3/Cy*5 or Biotin labeling reagents, reconstitution on, 10X Labeling Buffer M, 10X Stop Solution, Precipitation Enhancer ion, and 1X Hybridization Solution

NEW

STORAGE CONDITIONS:

Label IT* reagent as a dry pellet or as a reconstituted solution store at -20°C. All other components should be stored at 4°C.

Description	Quantity	Cat. No.	Each
Cy3/Cy5 Labeling Kit	2 × 5 Reactions	**MIR 8305**	272.82
	2 × 25 Reactions	**MIR 8325**	988.00
Cy3 Labeling Kit	10 Reactions	**MIR 8510**	260.00
	50 Reactions	**MIR 8550**	988.00
Cy5 Labeling Kit	10 Reactions	**MIR 8610**	260.00
	50 Reactions	**MIR 8650**	988.00
Biotin Labeling Kit	10 Reactions	**MIR 8410**	208.00
	50 Reactions	**MIR 8450**	728.00

'us Bio *Label* IT* siRNA Tracker* racellular Localization Kits

el, transfect, and track any siRNA containing guanine dues in an efficient and nondestructive manner

nitor both subcellular localization and functional inhibition of target ie expression simultaneously following introduction of the labeled NA into mammalian cells

ilable with a variety of labels for multicolor tracking

h kit contains sufficient reagents to label 50µg of siRNA

e Kit Choices

NA produced using kits without TransIT transfection reagent can be vered to cells in vitro or in vivo using the transfection reagent of r choice

: with TransIT-TKO* Transfection Reagent are compatible with a wide ge of cell types; they contain sufficient quantities to perform up to 500 isfections in 24-well plates

nsIT-siQUEST* Transfection Reagent, available with some kits, :ures a unique lipopolyplex formulation offering advantages for select types

INCLUDES:

Label IT siRNA Tracker Reagent, Label IT Reconstitution Solution, 10X Labeling Buffer A. Certain kits also contain TransIT Transfection Reagent, providing high efficiency siRNA delivery.

STORAGE CONDITIONS:

Store Label IT siRNA Tracker Reagent at -20°C, other reagents at 4°C.

Description	Cat. No.	Each
Without Transfection Reagents		
Biotin Labeling Kit	**MIR 7217**	294.00
Cy5 Labeling Kit	**MIR 7213**	330.75
Cy3 Labeling Kit	**MIR 7212**	330.75
Fluorescein Labeling Kit	**MIR 7216**	294.00
TM-Rhodamine Labeling Kit	**MIR 7215**	294.00
With TransIT-TKO Reagent		
Cy3 Labeling Kit	**MIR 7200**	384.24
CX-Rhodamine Labeling Kit	**MIR 7202**	338.92
Fluorescein Labeling Kit	**MIR 7205**	338.92
TM-Rhodamine Labeling Kit	**MIR 7203**	338.92
With *TransIT-siQUEST* Reagent		
Cy5 Labeling Kit	**MIR 7207**	369.46

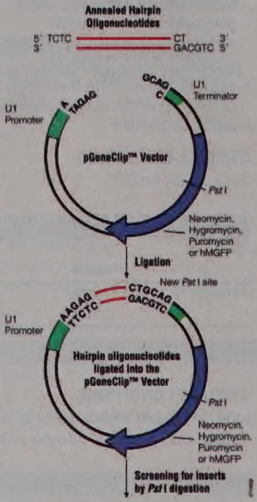
TRANSFECTION—CLONING SYSTEMS

Promega* GeneClip* U1 Hairpin Cloning Systems

Designed for fast and easy cloning of human hairpin target sequences to allow expression of siRNA target sequences in human cells

Use pGeneClip* vectors containing the human U1 promotor, which allows transcription of the hairpin target sequences and generation of hairpin siRNA in vivo.

- Utilize predigested vectors to eliminate time-consuming vector preparation
- Allow easier identification of desired clones using a *Pst* I digestion
- Available with a choice of vectors
    - The Basic System is intended for transient suppression of the gene of interest
    - The hMGFP System enables easy determination of transfection efficiency
    - The other systems offer antibiotic marker options for selecting stably transfected eukaryotic cells so that experimental results do not depend on transfection efficiency


Annealed Hairpin Oligonucleotides
5' TCTC
3'
CT 3'
GACGTC 5'
GCAG
C
U1 Terminator
A
TAGAG
U1 Promoter
pGeneClip™ Vector
Pst I
Neomycin, Hygromycin, Puromycin or hMGFP
Ligation
New Pst I site
CTGCAG
GACGTC
AAGAG
TTCTC
U1 Promoter
Hairpin oligonucleotides ligated into the pGeneClip™ Vector
Pst I
Neomycin, Hygromycin, Puromycin or hMGFP
Screening for inserts by Pst I digestion

Overview of the GeneClip U1 Hairpin Cloning System (PR-C87 series) Protocol.

INCLUDES:

2X Rapid Ligation Buffer, 200RL; nuclease-free Water, 1.25mL; Oligo Annealing Buffer, 1mL; pGeneClip Vector (varies with system), 1.2μg; T4 DNA Ligase, 100U

STORAGE CONDITIONS:

Store at -20°C.

Description	No. of Reactions	Cat. No.	Each
U1 Hairpin Cloning System—Basic	20	**PR-C8750**	291.36
U1 Hairpin Cloning System—hMGFP	20	**PR-C8790**	323.40
U1 Hairpin Cloning System—Puromycin	20	**PR-C8760**	291.36
U1 Hairpin Cloning System—Hygromycin	20	**PR-C8770**	291.36
U1 Hairpin Cloning System—Neomycin	20	**PR-C8780**	291.36

Patent pending.
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Certain applications of this product may require licenses from others.
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Promega* siLentGene*-2 U6 Hairpin Cloning Systems (Human)

Can be directly transfected into human cells for rapid screening of optimal target sequences of generated shRNAs

- May also be subcloned into the psiLentGene*-Basic Vector for transient suppression of the gene of interest
- Ideal for DNA-directed RNA interference in human cells
- Provide vectors containing a variety of eukaryotic antibiotic-selectable markers
- Predigested to eliminate time-consuming vector preparation; one-step PCR for generation of shRNA-expressing constructs
- Easy identification of desired clones using blue/white screening in conjunction with *Eco*R V digestion

INCLUDES:

High Fidelity PCR Master Mix, 2 × 800μL; U6 Cassette DNA, 60μL; Upstream Primer, 60μL; T4 DNA Ligase, 2 × 100U; 2X Rapid Ligation Buffe 200μL; psiLentGene Vector1.2μg; and nuclease-free water, 2 × 1.25mL

Description	Quantity	Cat. No.	Eac
Basic System	20 tests	**PR-C7860**	268.3
Puromycin System	20 tests	**PR-C8060**	268.3
Hygromycin System	20 tests	**PR-C8070**	268.3
Neomycin System	20 tests	**PR-C8080**	268.3

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LOOKING FOR CUSTOM siRNA VECTORS?

Fisher Scientific offers custom siRNA vector construction services for gene silencing of any construct. Please refer to Custom Services section.

LOOKING FOR ADDITIONAL siRNA CLONING VECTORS?

For more siRNA cloning vectors, see the Cloning and Expression section.

omega* psiCHECK* Vectors

vide a quantitative and rapid approach for initial imization of RNA interference (RNAi)

Renilla luciferase as the primary reporter gene. Enable monitoring of ges in expression of a target gene fused to the reporter gene based on eases in *Renilla* activity.

otocols allow measurement in live cells or crude cell lysates

antitation can be performed with any luminometer; requires no pensive equipment

ovide higher sensitivity than GFP or flag-tag assays

- No need to wait for phenotypic changes
- No requirement for transfection normalization when using the psiCHECK-2 Vector

Description	Quantity	Cat. No.	Each
psiCHECK-1	20µg	**PR-C8011**	268.34
psiCHECK-2	20µg	**PR-C8021**	289.36

RULERS AND MEASURING DEVICES

isherbrand* Rulers

hoose from three sizes

in. (150mm) Ruler

Blue vinyl

Dual-scale rule; 1/16" and 1mm increments

With cork and stopper size guide

Temperature conversion scale on back for -20° to +100°C and -10° to +212°F ranges

in. (300mm) Ruler

Hardwood

Dual-scale rule; 1/16" and 1mm increments

Brass strip inserted for straight-edge work; grooved on top to hold pencil

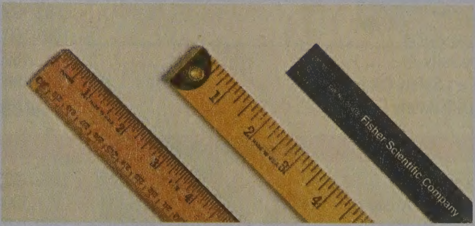
Protractor on back

n (3.3') Ruler

Select wood

Scaled on one face with 1mm increments—on the other in inches with 8" increments

With or without brass ends



12-096, 12-095, 09-016

Description	Cat. No.	Price	Case of
6" long (150mm)	**09-016**	Pk. of 100/73.70	----
12" long (300mm)	**12-090**	Pk. of 12/24.11	12 Pk./247.24
3.3' (1m) with brass ends	**12-095**	Ea./13.77	12/141.21
3.3' (1m) without brass ends	**12-096**	Pk. of 12/146.07	12 Pk./1498.19

LOOKING FOR MEASURING DEVICES?

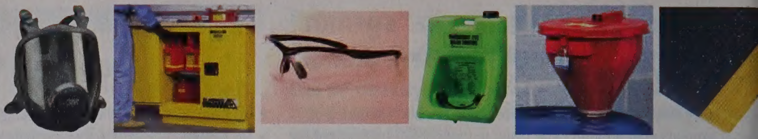
See the Tape and Labels sections.

LOOKING FOR RULERS?

For more types of rulers and measuring devices, see our Web site.

Visit www.fishersci.com and search for Rulers

Safety Quick Index



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*Trademark. See Trademark Reference.

Prices subject to change.

CABINETS

trite* Flammables Cabinets

ires of All Justrite Flammables Cabinets

ble-wall construction provides 1½" (3.8cm) of insulating air space to prevent the spread of flames

-visibility Haz-Alert* reflective warning labels offer added safety ng power outages or fires

vents with flame arresters at top and opposite bottom allow rdous vapors to be piped away

-closing, self-latching doors facilitate fire protection of the cabinet

latch engages critical three-point latching system for protection er fire conditions

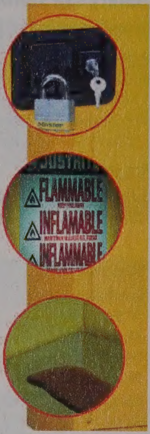
-door models hinged left and right have self-closing mechanism ensures proper closing sequence regardless of which door is ased first

ble links hold self-closing doors wide open, flush with front of net for easy access and resupply; automatically release and doors shut at 74°C (165°F)

cealed self-close mechanism provides optimum storage space and ruction-free access to contents

- SpillSlope* safety shelves direct incidental spills to the back and bottom of leakproof sump
- Adjustable leveling feet ensure solid positioning and alignment for tight door closure
- Exterior side panel has built-in grounding connector for easy grounding
- Finished inside and out with durable lead-free powder paint

WARRANTY:
10 years



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y Can Storage Cabinets

door and bifold door cabinets for flammables or combustibles

ring on door reads: "FLAMMABLE—KEEP FIRE AWAY"

pt padlock (not included)

RING INFORMATION:
yellow; except 19-160-376, which is white. Additional and capacities available on our Web site.

LIANCE:
NFPA Code 30 and comply with OSHA regulations

FICATIONS:
proved

JUSTRITE
FLAMMABLE
INFLAMABLE
INFLAMMABLE
JUSTRITE

17-152D

y	No. of Shelves	L × W × H	Weight	Mfr. No.	Cat. No.	Each
nual Doors with Lever Handle						
(114L)	1	18 × 43 × 44" (46 × 109 × 112cm)	231 lb. (105kg)	25300	**17-152B**	681.00
(114L)	1	24 × 36 × 35" (61 × 91 × 89cm)	204 lb. (93kg)	25330	**17-985-61C**	727.00
(170L)	2	18 × 43 × 65" (46 × 109 × 165cm)	310 lb. (141kg)	25450	**17-152D**	843.00
(227L)	2	34 × 34 × 65" (86 × 86 × 165cm)	387 lb. (176kg)	25600	**17-152F**	1010.00
f-closing Doors with Lever Handle						
(114L)	1	18 × 43 × 44" (46 × 109 × 112cm)	237 lb. (108kg)	25302	**17-152C**	885.00
(170L)	2	18 × 43 × 65" (46 × 109 × 165cm)	313 lb. (142kg)	25452	**17-152E**	990.00
(227L)	2	34 × 34 × 65" (86 × 86 × 165cm)	392 lb. (178kg)	25602	**17-152G**	1097.00
(227L)	2	34 × 34 × 65" (86 × 86 × 165cm)	392 lb. (178kg)	25602W	**19-160-376**[†]	1390.00
elf-closing Door						
(114L)	1	18 × 43 × 44" (46 × 109 × 112cm)	246 lb. (112kg)	25530	**17-985-57A**	863.00
(170L)	2	18 × 43 × 65" (46 × 109 × 165cm)	330 lb. (150kg)	25545	**17-985-57B**	938.00

vhite.

Contd. on next page.

Justrite* Flammables Cabinets, Contd.

Safety Can Storage Cabinets with Sure-Grip* EX Handles

Nonslip gripper allows fingertip opening

- Flush-mounted door handle doesn't interfere with traffic
- Come with two keys for security; can be padlocked (padlock not included)
- Exclusive self-latching feature ensures that cabinet doors are safely closed without manually engaging door handle

COMPLIANCE:
Meet NFPA Code 30 and OSHA regulations; models with self-closing doors also comply with the Uniform Fire Code.

CERTIFICATIONS:
FM approved except 19-120-2336

19-120-2335 (left), 19-120-2333

Capacity	L × W × H	Weight	Mfr. No.	Cat. No.	Ea
Two Manual Doors					
30 gal. (114L)	18 × 43 × 44" (46 × 109 × 112cm)	231 lb. (105kg)	893000	**19-120-2333**	737.
45 gal. (170L)	18 × 43 × 65" (46 × 109 × 165cm)	310 lb. (141kg)	894500	**19-120-2335**	906.
60 gal. (227L)	34 × 34 × 65" (86 × 86 × 165cm)	387 lb. (176kg)	89600	**19-120-2337**	1113.
90 gal. (341L)[1]	34 × 43 × 65" (86 × 109 × 165cm)	480 lb. (218kg)	899000	**19-120-2339**	1503.
Two Self-Closing Doors[2]					
30 gal. (114L)	18 × 43 × 44" (46 × 109 × 112cm)	237 lb. (108kg)	893020	**19-120-2334**	956.
45 gal. (170L)	18 × 43 × 65" (46 × 109 × 165cm)	313 lb. (142kg)	894520	**19-120-2336**	1127.
60 gal. (227L)	34 × 34 × 65" (86 × 86 × 165cm)	392 lb. (178kg)	896020	**19-120-2338**	1266.
90 gal. (341L)[1]	34 × 43 × 65" (86 × 109 × 165cm)	480 lb. (218kg)	899020	**19-120-2340**	1622.

[1] *No more than 60 gal. may be Class I and Class II liquids.*
[2] *Comply with Uniform Fire Code.*

Single-Door Benchtop Cabinets

Allow every lab to have a small flammables storage cabinet

Ideal for localized storage of small quantities of flammable laboratory chemicals.

- Much safer than temporary storage under a fume hood
- 1½" (4cm) air space between 18-gauge steel walls
- 2" (5cm) vent openings
- Feature three-point lock, self-latching door, and leveling feet
- Self-close cabinet utilizes hidden mechanism to optimize shelf space

17-985-59A

ORDERING INFORMATION:
Capacity: 4 gal. (15L). Dimensions: 17L × 17W × 22"H (43 × 43 × 56cm). Weight: 62 lb. (28kg).

INCLUDES:
One adjustable shelf

Door Type	Mfr. No.	Cat. No.	Each
Manual	25040	**17-985-59A**	397.30
Self-closing	25042	**17-985-59B**	505.00

LOOKING FOR HANDS-FREE LIQUID TRANSFER?

See the Justrite* Pass-Thru Valve on our Web site.

Visit www.fishersci.com and search for 19-075-390B

Two-Door Wall-Mount Cabinets

Safe and convenient storage of small containers of liquid flammables

- Can be wall mounted or placed on a workbench to keep floor space free
- Two self-latching manual doors hinged left and right

INCLUDES:
Five adjustable shelves and mounting hardware

COMPLIANCE:
Meet OSHA and NFPA requirements

CERTIFICATIONS:
17-985-60 FM approved

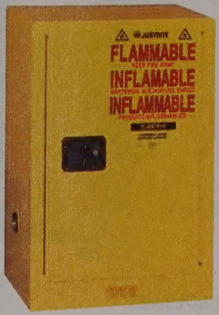
17-985-60 (shown with two-shelf arrangement)

Capacity	L × W × H	Weight	Mfr. No.	Cat. No.	E
17 gal. (64.4L)	18 × 43 × 24" (45.7 × 109.2 × 61cm)	181 lb. (82kg)	25804	**19-018-479**	648
20 gal. (75.7L)	12 × 43 × 44" (30.5 × 109.2 × 111.8cm)	221 lb. (100kg)	25720	**17-985-60**	748

*Trademark. See Trademark Reference.

pac Cabinets

ude all the features of standard-size Justrite* mables cabinets



17-153A

- -door cabinets store up to 12 5 gal. (45.4 or 56.7L) of mmables
- adjustable SpillSlope* safety lf directs spills to back and tom of leakproof sump
- neatly under counter or d alone
- ering on door reads: AMMABLE—KEEP FIRE AWAY"
- -Grip U-Loc* flush handle comes two keys or accepts padlock included) for extra security
- -visibility Haz-Alert* reflective ning labels provide added safety ng power outages or fires
- shed inside and out with a durable lead-free hybrid epoxy and ester powder paint for chemical resistance

UDES:

djustable shelf

PLIANCE:

NFPA and OSHA requirements. Self-closing models comply with m Fire Code.

IFICATIONS:

proved. Self-closing models are UL listed.

ity	L × W × H	Weight	Mfr. No.	Cat. No.	Each
l Door with Lever Handle					
.)	18 × 23¼ × 35" (46 × 59 × 89cm)	129 lb. (59kg)	25710	**17-153A**	488.03
.)	18 × 23¼ × 44" (46 × 59 × 112cm)	154 lb. (69kg)	25315	**17-152A**	587.33
osing Door with Lever Handle					
.)	18 × 23¼ × 35" (46 × 59 × 89cm)	131 lb. (60kg)	25712	**17-153B**	538.97
.)	18 × 23¼ × 44" (46 × 59 × 112cm)	154 lb. (69kg)	25317	**19-160-368**	633.00
l Door with Flush-mounted Sure-Grip U-Loc Handle					
.)	18 × 23¼ × 35" (46 × 59 × 89cm)	129 lb. (69kg)	891200	**19-121-852**	548.00
osing Door with Flush-mounted Sure-Grip U-Loc Handle					
.)	18 × 23¼ × 35" (46 × 59 × 112cm)	131 lb. (69kg)	891220	**19-121-853**	603.22

Undercounter Cabinets

Help to keep work area safely organized

17-985-61A

- Safe, convenient way to store liquid flammables
- Dual vents with flame arresters in back walls
- Two self-latching doors
- 3½ × 2½" kickplate mounts flush with other cabinetry
- Leveling feet adjust to 1⅛" for alignment on uneven floors

ORDERING INFORMATION:

Capacity: 22 gal. (83L). Dimensions: 22L × 35W × 35"H (56 × 89 × 89cm).

INCLUDES:

One adjustable shelf

CERTIFICATIONS:

FM approved

Door Type	Weight	Mfr. No.	Cat. No.	Each
Manual	190 lb. (86kg)	25730	**17-985-61A**	706.00
Self-closing	204 lb. (93kg)	25732	**17-985-61B**	821.00

ACCESSORIES

Justrite* Cabinet Shelves

With built-in troughs to help contain spills

17-985-58A

- Made from heavy-gauge galvanized steel, ribbed for extra rigidity and strength
- Each shelf holds up to 350 lb. (159kg)
- Adjust at 3" (7.6cm) intervals for versatile storage

Fits Models	L × W	Mfr. No.	Cat. No.	Each
17-985-56A, B; 17-985-57A, B; 17-152B to E; 17-985-66A to C	40 × 15" (102 × 38cm)	25901	**17-985-58A**	47.38
17-152F, G	31 × 31" (79 × 79cm)	25909	**17-985-58B**	90.20
17-153A, B; 17-152A	19½ × 14½" (49.5 × 36.8cm)	25935	**17-985-58C**	33.99

LOOKING FOR MORE FLAMMABLES CABINETS?

Justrite* flammables cabinets are also available with a crossbar for additional security.

Visit www.fishersci.com and search for High-Security Cabinet

Eagle* Flammables Floor Model Cabinets

Safely keep flammable liquids near work areas

- Top and bottom vents, with baffle and cap, fitted with 2" (5cm) pipe thread on sidewalls for outside venting
- Double walls of 18-gauge steel provide 1½" (3.8cm) air space
- 2" (5cm) raised sill contains spills
- Three-point key lock
- Four adjustable leveling feet
- Adjustable galvanized steel shelves supported by four brackets hold over 500 lb. (227kg) each
- Labeled "FLAMMABLE—KEEP FIRE AWAY"

Door Choices

- Available with one or two hinged doors or with bifold door, hinged left, with piano hinge in the middle (4, 12, and 16 gal. units have one door)
- Self-closing doors have fusible link that melts at 71°C (160°F), automatically closing doors
- Mechanism on two-door self-closing models ensures doors close in proper sequence

FLAMMABLE
KEEP FIRE AWAY
EAGLE
SAFE

17-156B

COMPLIANCE:

Meet OSHA and NFPA Code 30 requirements.

CERTIFICATIONS:

Cabinets 17-156A, B, C, and D are FM approved.

ORDERING INFORMATION:

Extra shelves available; call your Fisher Scientific Customer Service Representative for ordering information.

Capacity	Exterior L × W × H	No. of Shelves	Weight	Mfr. No.	Cat. No.	E
One Manual Door						
4 gal. (15L)	18 × 17½ × 22¼" (46 × 45 × 57cm)	1	80 lb. (36kg)	1904	**17-987-411**	492
12 gal. (45L)	18 × 23 × 35" (46 × 58 × 89cm)	1	135 lb. (61kg)	1925	**17-988-397**	621
16 gal. (61L)	18 × 23 × 44" (46 × 58 × 112cm)	1	150 lb. (68kg)	1906	**17-987-413**	706
One Self-closing Door						
4 gal. (15L)	18 × 17½ × 22¼" (46 × 45 × 57cm)	1	80 lb. (36kg)	1903	**17-987-410**	567
12 gal. (45L)	18 × 23 × 35" (46 × 58 × 89cm)	1	135 lb. (61kg)	1924	**17-988-396**	687
16 gal. (61L)	18 × 23 × 44" (46 × 58 × 112cm)	1	150 lb. (68kg)	1905	**17-987-412**	754
Bifold Self-closing Door						
30 gal. (114L)	18 × 43 × 44" (46 × 109 × 112cm)	1	253 lb. (115kg)	1930	**17-156A**	861
45 gal. (170L)	18 × 43 × 65" (46 × 109 × 165cm)	2	340 lb. (154kg)	1945	**17-156C**	1115
60 gal. (227L)	31¼ × 31¼ × 65" (79 × 79 × 165cm)	2	358 lb. (162kg)	1960	**17-156E**	1364
Two Manual Doors						
30 gal. (114L)	18 × 43 × 44" (46 × 109 × 112cm)	1	247 lb. (112kg)	1932	**17-156B**	892
45 gal. (170L)	18 × 43 × 65" (46 × 109 × 165cm)	2	342 lb. (155kg)	1947	**17-156D**	1049
60 gal. (227L)	31¼ × 31¼ × 65" (79 × 79 × 165cm)	2	354 lb. (161kg)	1962	**17-156F**	1246
90 gal. (340L)	65 × 43 × 34" (165 × 109 × 86cm)	2	475 lb. (216kg)	1992	**19-045-466**	1988
Two Self-closing Doors						
30 gal. (114L)	18 × 43 × 44" (46 × 109 × 112cm)	1	257 lb. (117kg)	3010	**17-156-5**	941
45 gal. (170L)	18 × 43 × 65" (46 × 109 × 165cm)	2	353 lb. (160kg)	4510	**17-156-6**	1229
60 gal. (227L)	31¼ × 31¼ × 65" (79 × 79 × 165cm)	2	364 lb. (165kg)	6010	**17-987-416**	1351
90 gal. (340L)	65 × 43 × 34" (165 × 109 × 86cm)	2	485 lb. (220kg)	9010	**19-045-465**	2110

*Trademark. See Trademark Reference.

Prices subject to change.

gle* Flammables Wall-Mount Cabinets

e flammables conveniently at eye level or over k area

19-038-434

/ 12" (30cm) deep to save space
rs feature continuous piano
ges, and handle has a three-point
ed lock
ble-wall 18-gauge steel
struction has a yellow high-gloss
der finish
cm) raised sill keeps inside
s contained

RING INFORMATION:
ity: 24 gal. (91L). Exterior dimensions:
43W × 44"H (30 × 109 × 112cm).

UDES:
adjustable shelves

PLIANCE:
OSHA and NFPA Code 30 specifications. 19-038-434 meets UFC 79.

ype	Weight	Mfr. No.	Cat. No.	Each
l	225 lb. (102kg)	1976	**19-038-434**	819.91
osing	235 lb. (107kg)	1975	**19-038-432**	974.53

le* Flammables Space-Saver Cabinets

l for small spaces

19-038-435

23" (58cm) wide to fit in places other
nets can't
le door attaches with a continuous piano
e and includes a three-point keyed lock
ble-wall, 18-gauge steel construction has
llow high-gloss powder finish
gh (5.1cm) leakproof sill keeps spills
ained

UDES:
adjustable shelves, each 14¾" deep
n)

PLIANCE:
OSHA and NFPA Code 30 specifications.
-436 meets UFC 79.

ty	L × W × H	Weight	Mfr. No.	Cat. No.	Each
Door					
(91L)	16L × 21W × 63"H (41 × 53 × 160cm)	260 lb. (118kg)	1923	**19-038-435**	779.59
sing Door					
(91L)	16L × 21W × 63"H (41 × 53 × 160cm)	270 lb. (123kg)	2310	**19-038-436**	825.91
(182L)	34L × 23W × 65"H (86 × 58 × 165cm)	370 lb. (167kg)	4610	**19-160-512**	1162.00

Eagle* Flammables Undercounter Cabinets

Save space with convenient under-the-counter design

19-038-431

- Designed to fit under a counter, fume hood, or window
- Doors have continuous piano hinges and a three-point keyed lock
- Double-wall 18-gauge steel construction has a yellow high-gloss powder finish
- Recessed kickplate for improved ergonomics
- 2" (5cm) raised sill contains interior spills

ORDERING INFORMATION:
Capacity: 22 gal. (83L). Exterior dimensions: 22D × 35W × 35"H (56 × 89 × 89cm).

INCLUDES:
One adjustable shelf

COMPLIANCE:
Meet OSHA and NFPA Code 30 specifications. 19-038-430 meets UFC 79.

Door Type	Weight	Mfr. No.	Cat. No.	Each
Manual	205 lb. (93kg)	1971	**19-038-431**	843.66
Self-closing	215 lb. (98kg)	1970	**19-038-430**	995.72

SciMatCo* Nonmetallic Flammables Cabinets

Protect contents as well as metal cabinets

17-988-472

Wooden flammables cabinets constructed from 1" thick (2.5cm) 9-ply plywood, using specifications developed by both OSHA and NFPA.

- Unlike metal, wood provides good thermal insulation and won't bend or distort when exposed to heat
- All sizes have continuous piano-style hinges on doors and liquid-tight trough floors
- All joints are rabbeted for strength, and cabinets are finished with yellow epoxy paint inside and out
- Cabinets have 10 × 10" (25 × 25cm) "FLAMMABLE" hazard label on door(s), and a "KEEP FIRE AWAY" warning
- Adjustable shelves feature metal shelf standards and supports
- All hardware is corrosion resistant

ORDERING INFORMATION:
Four- and 18-gallon cabinets have one door and one adjustable shelf; 45-gallon cabinet has two doors and two adjustable shelves.

INCLUDES:
Lock and two keys

COMPLIANCE:
Meet all applicable OSHA 1910 and NFPA 30 standards.

Capacity	L × W × H	Weight	Mfr. No.	Cat. No.	Each
4 gal. (15L)	15¾ × 16¾ × 2¼" (40 × 43 × 54cm)	55 lb. (25kg)	SC8021	**17-988-471**	431.54
18 gal. (68L)	23⅞ × 23⅞ × 36½" (61 × 61 × 93cm)	125 lb. (56.7kg)	SC7021	**17-988-472**	724.52
45 gal. (170L)	18 × 43 × 44¾" (46 × 109 × 114cm)	225 lb. (102kg)	SC7131	**17-988-473**	1159.23

Justrite* Nonmetallic Cabinets for Highly Corrosive Acids

For safely storing nitrics, dichlorics, phenols and other highly corrosive acids

- Durable and highly chemical resistant
- Made from ¾" (1.9cm) particle board clad internally and externally with a chemical-resistant laminate—no internal metal parts to corrode
- **Model 17-985-62**: Ideal for easy access as a benchtop cabinet; holds up to six 2.5L bottles and has nonlocking sliding doors
- **Model 17-985-64A**: High-density polyethylene top with slightly raised, curved lip that contains spills; makes cleanup easy
- **Model 17-985-64B**: Suitable for large storage jobs and floor placement

17-985-64B, 17-985-64A

Capacity	L × W × H	No. of Shelves	Weight	Mfr. No.	Cat. No.
6 × 2.5L bottles	16 × 24 × 18" (41 × 61 × 46cm)	0	51 lb. (23kg)	24120	**17-985-62**
36 × 2.5L bottles	22 × 36 × 36" (56 × 91 × 91cm)	1	233 lb. (106kg)	24140	**17-985-64A**
49 × 2.5L bottles	22 × 43 × 61" (56 × 109 × 155cm)	2	320 lb. (145kg)	24150	**17-985-64B**

Justrite* Metallic Acids and Caustics Cabinets

18-gauge steel construction with heat-fused powder coating

- Self-latching mechanism to ensure proper closure and engagement of three-point lock for protection under fire conditions
- Hidden mechanism on self-close style optimizes shelf space, provides obstruction-free access to contents
- Fusible link holds doors wide open—melts at 165°F (74°C) to automatically close doors in case of fire

COMPLIANCE:
Meet NFPA Code 30 and comply with OSHA regulations.

CERTIFICATIONS:
FM approved

NOTE:
Not recommended for storage of phenol, nitric acid, or sulfuric acid.

JUSTRITE
ACID
ACIDO
ACIDE

17-154A

Capacity	Exterior D × W × H	No. of Shelves	Weight	Mfr. No.	Cat. No.
Two Manual Doors					
30 gal. (114L)	18 × 43 × 44" (46 × 109 × 112cm)	1	246 lb. (112kg)	25703	**17-154A**
45 gal. (170L)	18 × 43 × 65" (46 × 109 × 165cm)	2	328 lb. (149kg)	25705	**17-154B**
60 gal. (227L)	34 × 34 × 65" (86 × 86 × 65cm)	2	401 lb. (182kg)	25600B	**18-954A**
Two Self-closing Doors					
30 gal. (114L)	18 × 43 × 44" (46 × 109 × 112cm)	1	242 lb. (110kg)	25704	**17-988-445**
45 gal. (170L)	18 × 43 × 65" (46 × 109 × 165cm)	2	324 lb. (147kg)	25707	**17-154D**
60 gal. (227L)	34 × 34 × 65" (86 × 86 × 165cm)	2	406 lb. (184kg)	25602B	**18-954B**

*Trademark. See Trademark Reference.

trite* Blue Polyethylene Acid rage Cabinets

imum protection against harsh liquids and highly osive acids

arly labeled with "ACID"

ept a padlock (not included) for ed security

18-999-4413B

ntertop model

es 2 × 4L bottles

r can be hinged from either side best countertop space utilization

ethylene spill tray inside contains s and removes for easy cleaning

eparate polyethylene tray stores under cabinet and can be used as a k tray

rcounter model

es 30 × 1L bottles or a variety of containers

n segregated compartment has an adjustable shelf and storage in n doors for small containers

removable sumps slide out for easy cleaning of incidental spills

vent holes (with removable caps) on backside accommodate ssurized vapor removal systems

udes hardware to secure cabinet to wall

ity	D × W × H	Weight	Mfr. No.	Cat. No.	Each
rtop					
L s	22 × 36 × 35" (56 × 91 × 89cm)	120 lb. (59kg)	24040	**18-999-4413A**	488.30
ounter					
Bottles	16¼ × 14¼ × 19½" (41 × 36 × 50cm)	30 lb. (14kg)	24160	**18-999-4413B**	1074.00

Justrite* Metallic Undercounter Cabinet

Helps keep floor space free

- Fitted with a 3½H × 2½"D (8.9 × 6.4cm) kickplate to mount flush with other cabinetry or used without counter
- Dual vents with flash arresters are located for easy connection if ventilation is needed
- Features vent openings in back wall, one adjustable shelf and two manual or self-closing doors

17-154C

ORDERING INFORMATION:

Capacity: 22 gal. (83L). Exterior dimensions: 22L × 35W × 35"H (56 × 89 × 89cm).

COMPLIANCE:

Meet OSHA and NFPA requirements. 19-033-720 also complies with Uniform Fire Code.

CERTIFICATIONS:

FM approved. UL listed.

NOTE:

Not recommended for storage of phenol, nitric, or sulfuric acid.

Door Type	Mfr. No.	Cat. No.	Each
Manual	25702	**17-154C**	758.00
Self-closing	25742	**19-033-720**	958.00

---

le* Floor Model Corrosives Cabinets

se in storing small containers up to 5 gal. (18.9L) capacity

able for storage of flammable and nonflammable acids and corrosive liquids

ged 18-gauge steel cabinets are coated with tough blue epoxy powder on interior and exterior aces, including shelves, for extra protection against corrosive acids and caustics

ted surfaces are superior to epoxy- or enamel-painted surfaces in case of spill or splash

rs clearly labeled "CAUTION—CORROSIVES"

-density polyethylene trays for shelves and bottom remove for easy cleaning; drip edge contains d spills

CAUTION
CORROSIVES

17-156-2B

FICATIONS:

proved, except models 17-120-2933, 19-120-714, and 19-120-715.

:

commended for storage of phenol, nitric or sulfuric acid.

ype	Capacity	L × W × H	No. of Shelves	Weight	Mfr. No.	Cat. No.	Each
or Models							
l	4 gal. (15L)	18 × 17½ × 22½" (46 × 45 × 57cm)	1	69 lb. (31kg)	CRA-1904	**19-120-714**	669.92
osing	4 gal. (15L)	18 × 17½ × 22½" (46 × 44 × 57cm)	1	70 lb. (32kg)	CRA-1903	**19-120-2933**	832.06
l	16 gal. (61L)	18 × 23 × 44" (46 × 58 × 112cm)	1	150 lb. (68kg)	CRA-1906	**19-120-715**	945.74
l	24 gal. (91L)	18 × 23 × 65" (46 × 58 × 165cm)	3	270 lb. (122kg)	CRA-1923	**19-120-716**	1049.41
or Models							
l	30 gal. (114L)	18 × 43 × 44" (46 × 109 × 112cm)	1	253 lb. (115kg)	CRA-32	**17-156-2B**	1073.06
osing	30 gal. (114L)	18 × 43 × 44" (46 × 109 × 112cm)	1	257 lb. (117kg)	CRA-3010	**19-120-717**	1391.89
l	45 gal. (170L)	18 × 43 × 65" (46 × 109 × 165cm)	2	351 lb. (159kg)	CRA-47	**17-156-2D**	1182.70
osing	45 gal. (170L)	18 × 43 × 65" (46 × 109 × 165cm)	2	353 lb. (160kg)	CRA-4510	**19-120-718**	1708.10
l	60 gal. (227L)	31¼ × 31¼ × 65" (79 × 79 × 165cm)	2	363 lb. (164kg)	CRA-62	**17-156-2E**	1434.77
osing	60 gal. (227L)	31¼ × 31¼ × 65" (79 × 79 × 165cm)	2	364 lb. (165kg)	CRA-6010	**19-120-719**	1850.08

SciMatCo* Wooden Acid Cabinets

No interior metal parts to corrode

Because acids attack even coated or painted metal once it's scratched, these cabinets offer an economical alternative—no interior metal components to rust or corrode.

17-988-468 with optional nitric acid compartment, 17-988-484

- Constructed of 1" thick (2.5cm) plywood and available fully or partially lined with ⅛" thick (3mm) polypropylene
- Doors have integral wooden hinges; nylon screws and other plastic fittings ensure corrosion-free service
- All joints specially milled for strength
- Units have one fixed-position shelf, two interlocking doors, recessed top with liquid-tight polypropylene tray (for use as dispensing area), and four leveling feet
- Recessed floor contains spills
- Finished with blue epoxy paint, with "ACID" printed on cabinet in 6" (15cm) red letters

ORDERING INFORMATION:

Fully lined cabinets have lining on the floor, interior walls, shelf, interior top, and top tray. **Partially lined units** are covered on the floor, shelf, and top tray only. Bottle capacity: 30 × 2.5L (approx. 75L) or 90 × 500mL (approx. 45mL). Exterior dimensions: 20L × 31W × 36"H (51 × 79 × 91cm).

INCLUDES:

Polypropylene lock assembly, with padlock and two keys; accept optional nitric acid compartment (sold separately).

Description	Mfr. No.	Cat. No.	Each
Fully lined	SC8051	**17-988-468**	1290.38
Partially lined	SC8041	**17-988-469**	1071.35

ACCESSORIES

Nitric Acid Storage Compartment

Helps avoid reaction between nitric and acetic acid

- Polypropylene compartment slides into top half of floor model cabinet to provide semi-isolation for nitric acid
- Has its own polypropylene door
- Holds 5 × 2.5L bottles
- Fits all SciMatCo* acid cabinet floor models (compartment will not fit mini Stak-a-Cab stackable or bench cabinets)

L × W × H	Mfr. No.	Cat. No.	Each
15 × 12½ × 13$\frac{9}{16}$" (38 × 32 × 34cm)	SC8071	**17-988-484**	131.15

SciMatCo* Acid Bench Cabinet

For safe storage of small quantities of acid on your benchtop

- Same all-wood construction as floor models—no interior metal parts to corrode
- Cabinet has liquid-tight trough floor, polypropylene padlock assembly, wooden-hinged door with 10" (25cm) "CORROSIVE" label and chemical-resistant blue epoxy paint finish

ORDERING INFORMATION:

Capacity: 5 × 2.5L or 16 × 500mL bottles (approximately 2 to 3 gal./ 8 to 12.5L).

SciMatCo
CORROSIVE
8

17-988-479

L × W × H	Mfr. No.	Cat. No.	Eac
15¾ × 16¾ × 21" (40 × 43 × 53cm)	SC8063	**17-988-479**	534.1

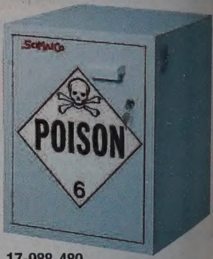
SciMatCo* Bench Poison Cabinet

Compact, secure storage for toxic chemicals on your benchtop

- Durable wooden cabinet with gray chemical-resistant finish
- Continuous piano-type door hinge
- Liquid-tight trough floor retains accidental spills
- One fixed-position shelf at half-cabinet depth
- Prominent 10" (25cm) "POISON" label permanently affixed to door

ORDERING INFORMATION:

Capacity: 2 × 1 gal. (3.8L) bottles in front and multiple smaller bottles in back and on shelf.



17-988-480

L x W x H	Mfr. No.	Cat. No.	Each
15¾ × 16¾ × 21" (40 × 43 × 53cm)	SC6080	**17-988-480**	576.44

*Trademark. See Trademark Reference.

MatCo* Stak-a-Cab* Stackable Cabinets

gn your own storage system and save valuable space

mize storage with stackable poison, corrosives, flammables and combination sives/flammables cabinets.

be used singly on a benchtop or safely stacked up to three high with floor stand d separately)

ture liquid-tight trough floors, 10 × 10" (25 × 25cm) hazard labels on both doors, epoxy paint finish inside and out

a-Cab Corrosives Cabinet

interior metal parts to corrode—has wooden hinges and handles, polypropylene ng on cabinet floor, and polypropylene padlock assembly

acity: 22 × 2.5L (approximately 14½ gal./55L)

accept accessory nitric acid compartment (sold separately)

a-Cab Flammables Cabinet

ude lock with two keys and piano-style door hinges (all hardware is osion resistant)

acity: 16 × 1 gal. (approximately 60.5L)

a-Cab Combination Cabinet

ıbination corrosives/flammables cabinet

osives compartment capacity: 10 × 2.5L (approximately 6½ gal)

nmables compartment capacity: 8 × 1 gal. (approximately 30L)

a-Cab Poison Cabinet

udes lock with two keys and piano-style door hinges (all hardware is osion resistant)

acity: 16 × 1 gal. (approximately 60.5L)

a-Cab Floor Stands

essory floor stands allow cabinets to be safely elevated from floor level

e epoxy paint finish as cabinets

ght: 4½" (11cm)

RING INFORMATION:

or dimensions: 18L × 47W × 18"H (46 × 119 × 46cm).

PLIANCE:

OSHA and NFPA requirements.

CORROSIVE
8
CORROSIVE
8
FLAMMABLE
3
CORROSIVE
8
FLAMMABLE
3
FLAMMABLE
3
KEEP FIRE AWAY

Top to bottom: 17-988-476, 17-988-478 and 17-988-477 on accessory floor stand (17-988-485)

Door Type	Color	Mfr. No.	Cat. No.	Each
Corrosives Cabinet				
Manual	Blue	SC1460	**17-988-476**	913.00
Flammables Cabinets				
Manual	Yellow	SC1860	**17-988-477**	814.42
Self-closing	Yellow	SC1863	**19-041-858**	1056.46
Combination Cabinets				
Manual	Gray	SC2060	**17-988-478**	1006.92
Self-closing	Gray	SC2063	**19-041-859**	1184.79
Poison Cabinet				
Manual	Gray	SC2460	**17-988-475**	874.71
Floor Stands				
----	Blue	SC1461	**17-988-486**	115.29
----	Yellow	SC1861	**17-988-485**	114.23
----	Gray	SC2061	**17-988-487**	115.29

CANS

trite* Type I Steel Safety Cans

y-duty steel cans with double seal seams

um steel construction with double seams to protect against leaks.

ight, self-closing spout with built-in positive pressure relief atically vents pressure between 3 and 5psig.

ole seams protect against leaks

ole-wire mesh flame arresters protect contents from ignition while wing liquids to flow rapidly

ed bottom provides extra strength and is raised to prevent dental punctures

ble polyester-powder paint finish resists chemicals and stands up ouse

(1L) and 1 gal. (3.8L) sizes have convenient one-hand t-opening mechanism for easy pouring

jer sizes have ergonomically designed swing handles that are not of dispensing mechanism for greater balance and easy carrying

COMPLIANCE:
Meet OSHA and NFPA requirements.

CERTIFICATIONS:
UL and ULC listed.
FM approved.

17-175 **17-176B** **17-176C**

Capacity	Mfr. No.	Cat. No.	Each
1 qt. (1L)	10101	**17-987-11B**	46.35
1 gal. (3.8L)	10301	**17-175**	39.52
2 gal. (7.6L)	10501	**17-176A**	41.48
2½ gal. (9.5L)	10555	**19-018-382**	48.04
3 gal. (11.4L)	10701	**17-176B**	48.04
5 gal. (19L)	10801	**17-176C**	46.85

Justrite* Nonmetallic Oval Type I Safety Cans

Oval shape provides 30% more storage capacity than round model

Constructed of high-density polyethylene, these cans are dent and puncture-resistant and practically chemically inert. Less expensive than stainless-steel cans, they can be used to store liquids that will corrode stainless steel or coated steel safety cans.

17-177B

- Equipped with flame arresters to protect contents from sparks
- Stainless-steel hardware for acids, corrosives, or high-purity liquids
- Red color is molded in polyethylene body
- Pressure-relief mechanism prevents buildup of vapors
- Convenient trigger-spout mechanism and built-in handle for ease in dispensing and carrying

CERTIFICATIONS:

FM approved.

Capacity	Mfr. No.	Cat. No.	Each
½ gal. (1.9L)	14065	**17-177A**	61.17
1 gal. (3.8L)	14160	**17-177B**	71.00

Justrite* Type II Steel Safety Cans

Convenient filling, spill-free pouring

- Constructed of heavy-duty, premium-coated steel with reinforcing ribs and powder-paint finish for exceptional durability
- Self-closing openings are equipped with full-length, dual-density flame arresters
- Front opening is equipped with a flexible metal hose for accurate, spill-free pouring (hose also serves as a bonding path to receiving vessel)
- Rear opening provides convenient filling and automatically vents between 3 and 5psig
- Double-lock seams at base and top for added durability
- Free-swinging handle for greater ease in carrying, pouring

17-179D

CERTIFICATIONS:

FM and UL approved; 3 and 5 gal. cans also ULC approved.

Capacity	Mfr. No.	Cat. No.	Each
1" (2.5cm) Hose Diameter			
3 gal. (11.4L)	10721	**17-179A**	92.19
5 gal. (19L)	10821	**17-179B**	92.75
⅝" (1.6cm) Hose Diameter			
1 gal. (3.8L)	10327	**17-179C**	88.66
2 gal. (7.6L)	10527	**17-179D**	91.00
5 gal. (19L)	10828	**17-179E**	92.75

Justrite* Nonmetallic Self-Close Corrosive Safety Containers

Designed to resist acids and caustics

- Safely holds nonflammable corrosives
- Translucent white HDPE construction resists dents, punctures, and chemicals
- Marked in liters, quarts, and gallons for accurate filling and dispensing
- Flame arrester-free spout allows quick pouring; spring-close cap provides a tight seal
- Wide mouth on Cat. Nos. 17-985-89B, -89C, and -89D makes filling and pouring easier

17-985-89D

Capacity	Mfr. No.	Cat. No.	Each
Plated Steel Fittings			
5 gal. (19L)	12745	**17-985-89B**	122.25
Stainless-steel Fittings			
1 gal. (3.8L)	12161	**17-985-73†**	54.72
2 gal. (7.6L)	12762	**17-985-89C**	134.85
2½ gal. (9.5L)	12260	**17-985-89A**	102.50
5 gal. (19L)	12765	**17-985-89D**	148.38

† Oval-shaped shape.

Justrite* Nonmetallic Liquid Disposal Safety Cans

Large opening and lock-open cap for easy filling/pouring

- Red or white high-density polyethylene cans resist dents, punctures, and chemicals
- Less expensive than stainless-steel cans—safely store liquids that corrode stainless- or coated-steel safety cans
- Available with plated-steel or stainless-steel fittings
- Double-wall flame arrester guards against outside ignition
- Between 3 and 5psig, cap automatically vents to prevent pressure buildup
- Builtin pop-up fill gauge on can 17-985-72C indicates when recommended liquid level has been reached

17-182B

CERTIFICATIONS:

FM approved except 17-985-72C.

Capacity	Color	Mfr. No.	Cat. No.	Each
Plated Steel Fittings				
2 gal. (7.6L)	Red	14722	**17-182A**	117.59
2 gal. (7.6L)	Red	14724	**17-985-72C†**	133.75
5 gal. (19L)	Red	14755	**17-182B**	132.69
Stainless-Steel Fittings				
2 gal. (7.6L)	Red	14762	**17-985-72D**	159.53
2 gal. (7.6L)	White	12751	**19-159-313**	156.00
5 gal. (19L)	Red	14765	**17-985-72E**	147.74
5 gal. (19L)	White	12754	**19-159-312**	182.00

† With popup fill gauge.

*Trademark. See Trademark Reference.

trite* Steel Shelf Cans with Faucet

design facilitates on-shelf dispensing

losing faucet, mounted 2" (5cm)
oottom of can, allows convenient
elf use.

No. 17-180A

oenses liquids quickly
with accessory ¾" (1.9cm) brass
cet extension (Cat. No. 17-185C)
a more controlled flow
cet has a heavy-duty steel handle

No. 17-180C

udes ¾" (1.9cm) brass flow-control
cet for slow, accurate dispensing
tic handle on faucet

17-180A

ORDERING INFORMATION:
Red. Capacity: 5 gal. (19L).

CERTIFICATIONS:
FM approved

Faucet Type	Mfr. No.	Cat. No.	Each
¾" NPT	10809	**17-180A**	129.62
¾" Control Flow	10807	**17-180C**	173.19

---

trite* Centura* Disposal Can with ck Disconnect

continuous collection of HPLC waste flow

hylene can with quick-disconnect system permits "hands-free" liquid
accumulation for maximum protection against chemicals. Suitable for
fed or gravity flow HPLC waste methods.

ws free flow of liquid from outside source into FM-approved polyeth-
e disposal can
fittings accommodate tubing with ¼ to ⅜" diameter (0.6 to 1.0cm)
-in pressure-relief prevents excessive pressure in extreme temperatures
slucent white color makes detection of liquid level easy
lable with stainless-steel fitting with PTFE O-rings or economical
propylene fitting with EPDM O-rings

RING INFORMATION:

not supplied with containers. Contact your Fisher Scientific Customer
sentative to order replacement stainless-steel fitting (Cat. No.
)-367), replacement filter for stainless steel fittings (19-052-373),
acement filter for polypropylene fittings (19-052-372).

al two-stage coalescing/carbon filters snap into the quick-disconnect
to minimize odors by capturing 99% of liquid particulates in gaseous
; available separately (19-052-373 for stainless-steel fittings and
?-371 for polypropylene fittings).

JDES:

ntinuous process monitoring, Cat. No. 19-120-187 comes with built-in
ss-steel liquid-level sensor that connects to an alarm to warn when
full or to a board to automatically shut off unit.

COMPLIANCE:
Meets OSHA and EPA requirements.

19-040-880 (left), 19-059-378

CERTIFICATIONS:
FM approved.

Capacity	Mfr. No.	Cat. No.	Each
With Stainless-Steel Fittings			
2 gal. (8L)	TF12752	**19-059-379**	570.18
5 gal. (19L)	TF12755	**19-059-378**	595.58
With Stainless-Steel Fittings and Liquid-Level Sensor			
5 gal. (19L)	12756	**19-120-187**	3549.00
With Polypropylene Fittings			
1 gal. (3.8L)	12160	**19-052-376†**	231.55
2 gal. (8L)	PP12752	**19-040-880**	287.52
5 gal. (19L)	PP12755	**19-040-858**	310.75
With Stainless-Steel/Polypropylene Fittings			
2 gal. (8L)	BY12752	**19-130-2718**	441.56
5 gal. (19L)	BY12755	**19-160-382**	422.00

† Oval-shaped can.

Eagle* Nonmetallic Safety Cans

High-density polyethylene safety cans help reduce danger of explosion from ignition of flammable liquid vapors

17-987-405B, 17-987-404E, 17-987-404D, 17-988-395

Cans are rust-, corrosion-, and impact-resistant. All metal fittings and flame arresters are stainless steel. Use red cans for flammables; white cans for acids and corrosives.

Type I Safety Cans

- Feature a single spout with self-closing cap, pressure-relief vent, and flame arrester
- 2 qt. (2L) and 1 gal. (3.8L) sizes are oval in shape; larger sizes are round
- Available in red or white

Disposal Safety Cans

- For temporary storage of liquid waste
- Spout cap covers 4" wide (10.2cm) mouth; opens to 80° angle and can be locked open for easy filling
- Cap assembly opens automatically to vent internal vapor pressure
- Available in red or white

Safety Plunger Cans

- For dispensing cleaning and flammable fluids
- Press lightly on spring-mounted plunger to dispense measured amount of liquid for dampening swab, sponge, or cloth
- Red only

COMPLIANCE:
Meet OSHA requirements.

CERTIFICATIONS:
FM approved.

Capacity	Color	Mfr. No.	Cat. No.	Each
Type I Safety Cans				
2 qt. (2L)	Red	1510	**17-988-392**	80.50
1 gal. (3.8L)	White	1513	**17-988-395**	83.28
1 gal. (3.8L)	Red	1511	**17-988-393**	83.25
3 gal. (11.4L)	White	1535	**17-987-404E**	110.20
3 gal. (11.4L)	Red	1537	**17-987-404F**	101.65
5 gal. (19L)	White	1541	**17-987-404G**	125.12
5 gal. (19L)	Red	1543	**17-987-404H**	122.17
Disposal Safety Cans				
3 gal. (11.4L)	White	1517	**17-987-404A**	155.90
3 gal. (11.4L)	Red	1519	**17-987-404B**	155.90
5 gal. (19L)	White	1523	**17-987-404C**	168.82
5 gal. (19L)	Red	1525	**17-987-404D**	168.82
Safety Plunger Cans				
1 qt. (1L)	Red	P711	**17-987-405A**	48.28
2 qt. (2L)	Red	P712	**17-987-405B**	51.00
4 qt. (3.8L)	Red	P714	**17-987-405C**	59.70

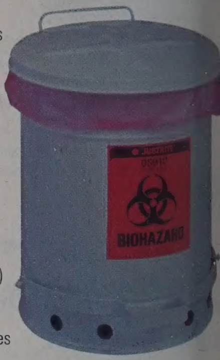
DRUMS & CONTAINERS

Justrite* FM-Approved Biohazard Waste Container

For safe, temporary collection of biological waste

Safely segregate biohazard waste to ensure proper disposal of laundry items contaminated with dry blood or other infectious materials and pathological and microbiological wastes containing blood or other potentially infectious materials.

- Features leakproof, sturdy steel construction with foot-operated, self-closing lid
- Eliminates any reason to reach into the waste area or touch the can
- Holds biohazard bag (sold separately) securely around circumference of can top
- Large biohazard label clearly identifies the contents and alerts workers



19-033-725

COMPLIANCE:
Complies with OSHA 29CFR1910.1030.

CERTIFICATIONS:
FM approved.

NOTE:
Not to be used for disposal of sharp items.

Capacity	Mfr. No.	Cat. No.	Eac
6 gal. (23L)	05910	**19-033-725**	100.4
10 gal. (38L)	05930	**19-033-755**	121.1

ACCESSORIES

Replacement Biohazard Bags

Red liners fit both 6- and 10-gallon biohazard waste containers.

Size	Mfr. No.	Cat. No.	Pack of 10
33 × 24" (83.8 × 61cm)	05901	**19-033-712**	60.92

ungstown Barrel & Drum Steel Drums and Pails

transport of hazardous solids or liquids

ld-rolled carbon steel construction
alified for safe transport of noncorrosive hazardous liquids or solids
vage drum designed to overpack and ship damaged and/or leaking drums
o qualify for direct containment of hazardous solids

SALVAGE DRUM

Clockwise, beginning with lower left:
18-931C, 18-930A, 18-933, 18-929B, 18-935

city	DOT/UN Marking	Description†	Mfr. No.	Cat. No.	Each
(19L)	1A2/Y27/S	26 gauge; side lever lock ring; pancake lid; gray; OH	2169	**18-931A**	48.83
(19L)	1A1/X1.8/300	24 gauge; unlined; 1¾" cap seal; black; TH	2322	**18-931C**	47.95
(19L)	1A2/X36/S + Y2.2/100	Lug cover; unlined; black; OH	2177	**19-120-014**	30.55
s					
l. (114L)	1A1/Y1.8/250	20 gauge; unlined; with 2" and ¾" Tri-sure bungs; black; TH	457	**18-930A**	137.15
l. (114L)	1A1/Y1.8/250	20/18 gauge; lined; 2" and ¾" Tri-sure bungs; black; TH	457-L	**19-130-4687**	81.55
l. (114L)	1A2/Y1.5/150 + X250/S	18 gauge; unlined; plain cover; plain body; bolt ring; black; TH	445	**18-930C**	156.40
l. (114L)	1A2/Y1.5/150/X250/S	18 gauge; lined; plain cover; bolt ring; black; TH	445-L	**19-130-4689**	89.65
l. (208L)	1A1/X1.8/300	20/18 gauge; lined; 2" and ¾" Tri-sure bungs; black; TH	345-L	**19-130-4848**	81.36
l. (208L)	1A2/Y1.8/150 + X400S	18/16 gauge; lined; plain cover; plain body; bolt ring; black; OH	194-L	**19-130-4849**	107.14
l. (208L)	1A2/Y1.8/150/X400/S	18/16 gauge; unlined; plain body; 2" and ¾" Tri-sure bungs; black/white; OH	220	**19-130-4692**	98.45
l. (208L)	1A2/Y1.8/150+X400S	Unlined; plain cover; plain body; bolt ring; black/white; OH	194	**18-929B**	209.98
l. (208L)	1A1/X1.8/300	20/18 gauge; unlined; with 2" and ¾" Tri-sure bungs; black/white; TH	345	**18-929C**	159.99
ge Drum					
l. (322L)	1A2/X428/S	Unlined; plain cover; green; OH	104	**18-933**	318.86

= open head; TH = tight head

ungstown Barrel & Drum Plastic Containers

-density polyethylene containers for transport of hazardous ds or liquids

nt head drums for transport of hazardous liquids
en head drums for transport of hazardous solids

Clockwise, beginning with lower left:
18-938, 18-936A, 19-130-4850, 18-941

ity	DOT/UN Marking	Description†	Mfr. No.	Cat. No.	Each
. (53L)	1H2/Y100/S	Blue; side lever lock; plain cover; OH	1720	**18-940**	95.27
. (57L)	1H1/Y1.8/100	Blue; TH	1420	**18-939**	70.68
. (76L)	1H2/X75/S	Gray; side lever lock; plain cover; OH	1595	**18-938**	127.95
. (114L)	1H1/Y1.9/150	Blue; TH	1395	**18-937A**	127.54
. (114L)	1H2/X120/S; 1H2/Y180/S	Blue; lever lock ring; nestable; OH	1556	**19-130-4850**	80.39
. (208L)	1H2/Y165/S	Blue; side lever lock; plain cover; OH	1495	**18-936B**	176.98
. (208L)	1H1/Y1.9/150	Blue; TH	1295	**18-936A**	132.21
(19L)	1H2/Y30/S	White; nesting; screw lid; OH	2375	**19-120-017**	29.25
(19L)	1H1/Y1.8/100	White; 70mm screw cap; TH	2520	**18-999-2149**	31.22
(19L)	1H2/Y1.5/30 and Y43/S	Black; long skirt cover with gasket; OH	2400	**18-941**	25.84

open head; TH = tight head

Youngstown Barrel & Drum Fiber Drums

Constructed of sturdy fiberboard

- Open head drums qualify for transport of dry, nonreactive solid materials only
- Available with all-fiber construction or with steel chime bands and metal cover

18-943B

Capacity	DOT/UN Marking	Mfr. No.	Cat. No.	Ea
With Fiber Cover				
5 gal. (19L)	1G/Y30/S	2015	**18-943D**	24.
12 gal. (45L)	1G/X60/S	2012	**19-120-012**	25.
With Steel Chime Bands, Lock-Rim and Metal Cover				
15 gal. (57L)	1G/Y72/S	1985	**19-120-010**	33.
20 gal. (76L)	1G/Y105/S	1995	**18-943C**	50.
30 gal. (114L)	1G/X106/S	1975	**18-943B**	63.
55 gal. (208L)	1G/Y260	1948	**18-943A**	73.

Eagle* Spill Containment Drums

Approved for use with Packing Groups I, II and III

Lightweight drums for safe storage, transportation, cleanup, and containment of containers from 5 to 55 gallons (19 to 208L). Made of chemical- and weather-resistant HDPE with UV inhibitors that incinerates completely. Nestable for ideal storage.

18-999-4471

Lab Packs

- For use with bottles, cans, carboys and 5-gallon pails
- Yellow or blue

Salvage Drums

- Meet 3psi pressure test for Salvage Drum Compliance
- Require "Salvage Drum" labeling (included)
- Yellow

Overpacks

- For use with larger containers up to 55 gal.
- Pass 3psi pressure test
- Yellow

ORDERING INFORMATION:

Lab Packs and Overpacks cannot contain free liquids. Sufficient sorbents must be used with any leaking containers to absorb all liquids.

COMPLIANCE:

All drums meet FDA 21CFR177.1520. Lab packs meet DOT 49CFR173.12. Overpacks meet DOT 49CFR173.25. Salvage drums meet DOT 49CFR173.3.

CERTIFICATIONS:

UN certified to HM-181. UL 94HB Flammability Rating.

Capacity	Closure	Mfr. No.	Cat. No.	Price
Lab Packs				
20 gal. (76L)	Plastic lever-lock‡	1652	**18-999-4474**	Ea./51.00
20 gal. (76L)	Screw top lid	1650	**19-039-668**	Ea./46.58
30 gal. (114L)	Screw top lid	1600SL	**19-120-707**	Ea./62.96
30 gal. (114L)	Metal lever-lock	1601MB	**19-045-477**†	Cs. of 10/665.80
Salvage Drums				
20 gal. (76L)	Metal lever-lock	1654	**19-039-669**	Ea./24.88
30 gal. (114L)	Metal lever-lock	1602	**19-811-054**	Ea./67.71
65 gal. (247L)	Metal band with bolt	1665	**18-999-4471**	Ea./218.13
95 gal. (361L)	Metal band with bolt	1695	**18-999-4472**	Ea./226.89
Overpacks				
65 gal. (246L)	Screw top lid	1661	**19-999-348**	Ea./198.31
95 gal. (361L)	Screw top lid	1690	**19-999-349**	Ea./220.26

† Includes a poly bag.
‡ Blue.

Eagle* Drum Trays

Inexpensive and practical way to prevent spills

- Ideal for placing under drums during dispensing or filling
- Reservoir has raised supports to keep container away from spills
- Use optional drum tray dolly to easily move drum trays

18-999-4467 on 19-002-860

ORDERING INFORMATION:

18-999-4467 fits 55 gal. (209L) drums; 18-999-4468 has grating for 5-gal. containers or batteries.

Description	Mfr. No.	Cat. No.	Eac
Drum Tray	1614	**18-999-4467**	82.
Drum Tray with Grating	1615	**18-999-4468**	106.
Drum Tray Dolly	1618	**19-002-860**	156.

Justrite* Drum Funnels

Prevent dangerous spills when transferring flammable liquids

- Large funnels have a 10¾" diameter (27cm) mouth and 2.6 gal. (9.8L) capacity
- Fit 2" bung on 30- and 55-gal. drums
- Available with brass flame arrester which absorbs and dissipates heat and prevents any external ignition sources from reaching drum contents
- Galvanized steel with durable epoxy powder-coat finish
- Hinged, stay-open lid includes fusible link that melts at 71°C (160°F) and shuts cover to extinguish fire
- Funnels accommodate padlock (not included)

17-986-56

COMPLIANCE:

Meet EPA and OSHA requirements. FM approved.

NOTE:

Drummed wastes should always be properly labeled and stored. Always segregate incompatible wastes to avoid chemical reactions or explosions.

Description	Mfr. No.	Cat. No.	Eac
For use with flammable liquids			
With 6" flame arrester	08207	**17-986-56**	240.
With 32" flame arrester	08205	**17-187A**	317.
For use with viscous liquids			
Without flame arrester	08208	**19-018-560**	335.

bbermaid* Drum and Container Dollies

y mobility and maneuverability of heavy loads

- ove heavy, bulky items as well as kinds of metal, fiber and plastic ntainers of all sizes
- ade of rugged, seamless gh-density polyethylene that on't rust, chip or dent
- eavy-duty swivel wheels

19-120-411

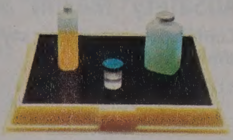
icity	Dia. x H	Mfr. No.	Cat. No.	Each
lb. (113kg)	18¼ × 6⅝" (46.4 × 16.8cm)	2640	**19-120-409**	76.63
lb. (227kg)	24⅜ × 7⅛" (62 × 18cm)	2650	**19-120-411**	138.60

pac* Poly-Labtray*

al for mixing or transfer of liquids and free-flowing wders in the laboratory or at production sites

- lyethylene construction—no etal parts to rust or corrode
- ptures spills where they happen; mp holds 2½ gal. (9L)
- rge surface holds four 1 gal. (4L) ttles and up to 40 lb. (18kg)

MPLIANCE:
ts U.S. EPA 40CFR264.175.



18-999-540

V × H	Mfr. No.	Cat. No.	Each
22 × 3" (63.5 × 55.9 × 7.6cm)	5248-YE	**18-999-540**	103.44

strite* Bottle Jacket

vides added protection of a yethylene bottle without taminating high-purity solvents

- al for 4L and 1 gal. bottles
- ce a bottle in the bottom half of the jacket d rotate lid for secure containment
- ndle offers balanced pouring
- ts as a shock absorber to minimize breakage d spills due to bumps or falls

17-985-79

× H	Mfr. No.	Cat. No.	Each
4" (15.2 × 35.6cm)	12009	**17-985-79**	23.23

Multi-Meter* Flo-Rite* Plastic Faucet

Fits all standard ¾" (1.9cm) drum openings

- Made of polyethylene for chemical resistance and postive thread resistance
- Fast flow and instant control—opens/closes with only a quarter turn
- No gasket or wrench needed to screw into drum opening
- Resilient tapered threads prevent leaking and eliminate need for separate gasket
- Vertical ribs inside spout eliminate dribble and spit

14-540-1

ORDERING INFORMATION:
Barrel wall thickness: ¼" (0.6cm).

Mfr. No.	Cat. No.	Each
DF103 503	**14-540-1**	5.46

WARNING
Always test to ensure that your product is compatible with faucet. Never use in temperatures exceeding 52°C (126°F) or with heated containers. Failure to follow these instructions may lead to a hazardous condition.

EYE PROTECTION

Fisherbrand* Contempo Spectacles

Offer single-lens styling with a dual-lens look

- Polycarbonate, high-visibility lens absorbs >99.9% of harmful UV light
- Permanent anti-fog coating
- Wraparound frame with sideshields and browguard
- Adjustable temple lengths
- Lightweight

19-130-2093

COMPLIANCE:
Meet ANSI* Z87.1-2003 standards.

Lens Color	Cat. No.	Pack of 12	Case of 10 Pack
Black Frame			
Clear	**19-130-2092**	69.35	688.09
Tinted	**19-130-2093**	75.45	748.80
Blue Frame			
Clear	**19-130-2094**	69.35	688.09

Fisherbrand* 200 Series Spectacles

Economical, lightweight protection

- One-piece lens provides a full and unobstructed field of vision
- Absorbs >99.9% of harmful UV light
- Molded-in sideshields and browguards
- Adjustable spatula temples

COMPLIANCE:
Meet ANSI* Z87.1-2003 standards.

CERTIFICATIONS:
CSA approved.

19-130-2088

Lens/Frame	Cat. No.	Pack of 12	Case of 10 Pack
Clear/Black Frame	**19-130-2088**	31.31	310.50
Clear/Blue Frame	**19-130-2089**	31.31	310.50

*Fisherbrand** Racer Series Eyewear

Offers exceptional protection and style at an affordable price

- Scratch-resistant polycarbonate lenses block >99.9% of harmful UV radiation
- Eight-base curve with wraparound design for superior side coverage
- Lightweight frames are durable and comfortable

Qualifier Eyewear

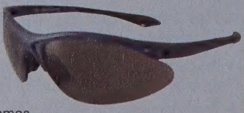
- Flared single-lens design provides sleek protection
- A soft nose bridge and bayonet-style side arms grip the face and temples lightly but firmly for a comfortable, confident fit
- Choose from black or red nylon frames

19-042-1000

Lens Tint	Cat. No.	Pack of 12	Case of 10 Pk.
Black Frames			
Clear	**19-042-1000**	70.45	640.45
Dark Gray	**19-042-1001**	70.45	640.45
Flash Mirror	**19-042-1002**	68.09	680.90
Red Frames			
Clear	**19-042-1003**	70.45	640.45
Dark Gray	**19-042-1004**	60.00	600.00

Top Fuel Eyewear

- Single-lens design with a sporty, dual-lens look
- A soft nose bridge and soft, bayonet-style side arms offer a comfortable fit
- Choose from black or blue nylon frames



19-042-1009

Lens Tint	Cat. No.	Pack of 12	Case of 10 Pk.
Black Frames			
Clear	**19-042-1005**	70.45	640.45
Dark Gray	**19-042-1006**	60.95	587.63
Colorful Mirror	**19-042-1007**	69.44	694.38
Blue Frames			
Clear	**19-042-1008**	70.45	640.45
Dark Gray	**19-042-1009**	70.45	640.45

Vortex Eyewear

- High-visibility unilens provides maximum field of vision
- A soft nose bridge and rubber-tipped side arms offer a comfortable grip
- Choose from black nylon or stylish, nickel-silver metal frames

19-042-1010

Lens Tint	Cat. No.	Pack of 12	Case of 10 Pk.
Black Frames			
Clear	**19-042-1010**	80.45	731.34
Dark Gray	**19-042-1011**	80.45	731.34
Silver Frames			
Clear	**19-042-1012**	70.00	700.00
Dark Gray	**19-042-1013**	80.45	731.34
Colorful Mirror	**19-042-1014**	77.31	773.13

Crew Chief Eyewear

- True dual-lens styling makes this a fashionable choice
- Rubber-tipped side arms, soft nose bridge make for a comfortable fit
- Choose from black nylon or stylish, nickel-silver metal frames

19-042-1019

Lens Tint	Cat. No.	Pack of 12	Case of 10 Pk.
Black Frames			
Clear	**19-042-1015**	80.45	731.34
Flash Mirror	**19-042-1016**	76.27	762.69
Dark Gray	**19-042-1017**	70.00	690.14
Silver Frames			
Clear	**19-042-1018**	80.45	731.34
Dark Gray	**19-042-1019**	80.45	731.34

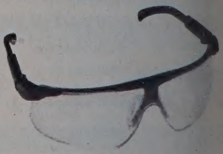
COMPLIANCE:

All Racer Series Eyeware meets ANSI* 287.1-2003 Standards.

AOSafety* Maxim* Spectacles

Contemporary, athletic styling that's 15% lighter than similar spectacles

- Patented dual-aspheric plano lens gives wearers prescription-quality, distortion-free vision
- DX*-coated lenses resist fogging, scratching, static, and chemicals
- Available in five lens tints, including the MinimizeR* lens for use in low-light welding applications
- Ventilation channel moves warm, moist air out and cool air in for comfort
- Universal-fit nose bridge pivots to adjust to almost any nose profile
- Dual-injected cushion browguard provides softness and impact absorptio
- Choice of adjustable temples with changeable lengths or Sport Grip* temples to fit under headgear and earmuffs
- Black frames with adjustable temple length offer maximum comfort and slip-proof performance



19-121-575

COMPLIANCE:

Meet ANSI* Z87.1-2003 and CSA Z94.3 high-velocity tests and Military V_0 Test Regimen for high-velocity impact.

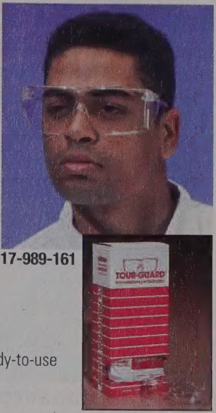
Lens Tint	Mfr. No.	Cat. No.	Each	Pack of 10
Adjustable Temples				
Clear	13250-00000	**19-121-575**	11.66	97.20
Bronze	13251-00000	**19-121-576**	----	106.80
I/O Mirror	13252-00000	**19-121-577**	14.32	122.40
Amber	13253-00000	**19-121-578**	12.50	106.80
MinimizeR	12289-00000	**19-130-0086**	----	51.51
Sport Grip Temples				
Clear	13254-00000	**19-121-583**	11.66	97.20

*Trademark. See Trademark Reference.

Prices subject to change.

Safety*
ır-Guard* III
itor's Spectacles

nomical protection
visitors



17-989-161

- h-impact polycarbonate construction
- egral sideshields provide
paparound protection
- ge lens fits comfortably—even over
scription eyewear
- ntoured nasal design for a universal fit
- atula temples for facial comfort

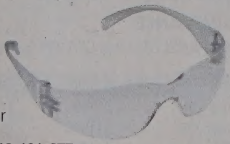
ERING INFORMATION:
able in bulk quantities or in handy, ready-to-use
dispensers.

PLIANCE:
ANSI* Z87.1-2003 standards.

ging	Mfr. No.	Cat. No.	Pack of	Case of
ard Frame				
nser	41110	**17-989-161**	20/56.87	5 Pk./243.04
	41120	**17-989-162**	1/2.58	100/198.23
Frame				
nser	41200	**18-999-555**	20/49.98	5 Pk./213.60
	41210	**18-999-556**	----	100/189.60

Safety* Virtua* Eyewear

tweight, comfortable protection



19-121-277

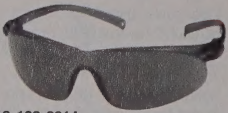
- gh polycarbonate construction
sts impact and 99.9% of UV rays
- ilable with antifog or hardcoat
s to guard against scratching,
ic, and chemical attack
- ek, 9.5 base lens wraps for superior
ection and unobstructed view
- versal nose bridge fits most
files and prevents slippage
- ntoured flexible temples for comfortable fit
- ight: <1 oz.

PLIANCE:
s ANSI* Z87.1-2003 standards.

Tint	Lens Coating	Mfr. No.	Cat. No.	Each	Case of 100
emples					
	Hardcoat	11326-00000	**19-121-275**	2.96	228.00
	Antifog	11329-00000	**19-121-277**	3.59	276.00
rror	Hardcoat	11328-00000	**19-121-279**	4.65	357.60
emples					
	Hardcoat	11327-00000	**19-121-276**	3.28	252.00
	Antifog	11330-00000	**19-121-278**	3.90	300.00

AOSafety* Virtua* Sport Eyewear

Sport styling with maximum protection



19-130-3914

- High-impact polycarbonate filters 99.9% UV
- Clear or gray lens available with hardcoat or antifog coating
- 9.0 base curve lens for excellent wrap and front/side coverage
- Sleek unisex styling in a comfortable, ultralight polycarbonate frame

COMPLIANCE:
Meets ANSI* Z87.1-2003 and CSA Z94.3 standards.

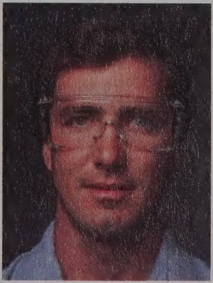
Lens Tint	Lens Coating	Mfr. No.	Cat. No.	Pack of 10
Clear Temples				
Clear	Antifog	11384-00000	**19-130-3911**	33.28
Clear	Hardcoat	11385-00000	**19-130-3912**	28.16
Gray	Antifog	11386-00000	**19-130-3913**	35.84
Gray Temples				
Gray	Hardcoat	11387-00000	**19-130-3914**	34.80
I/O Mirror	----	11388-00000	**19-130-3915**	40.96

North* Norton 180* Safety Spectacles

Molded polycarbonate wraparound spectacles

- Scratch-resistant lens absorbs 99.9% of UV radiation up to 380nm
- One-piece, impact-resistant lens offers a large field of vision
- Frosted browguard reduces glare from overhead lighting
- Vented sideshields

COMPLIANCE:
Meet ANSI* Z87.1-2003 standards.

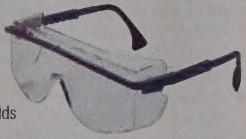


17-230A

Lens Tint	Mfr. No.	Cat. No.	Each	Case of
Clear	T18000	**17-230A**	5.29	50/264.50
Amber	T18010	**17-230B**	6.01	10/50.12
Light green	T18020	**17-230C**	5.33	10/44.38
Dark green	T18030	**17-230D**	1.64	10/16.40
Gray	T18040	**17-230E**	6.15	10/51.23
Pouch	1080	**19-068-388**	2.52	----

uvex* astro OTG* 3001 Spectacles

Over-the-glasses style



18-029

- Clear polycarbonate lenses with ultradura* hardcoat (UD) resist scratches and absorb 99.9% of UV radiation up to 385nm
- Lightweight, impact-resistant nylon frames feature polycarbonate sideshields and browguard for protection against UV, dust, and flying particles
- Patented adjustable lens inclination and adjustable temple length offer one-size-fits-all flexibility
- duoflex* temples have soft comfort cushions for the sensitive mastoid area behind the ear

ORDERING INFORMATION:

Customization with a company name, logo, or department is available. For details, call your Fisher Scientific Customer Service Representative.

COMPLIANCE:

Meet ANSI* Z87+ and CSA Z94.3 standards.

Frame	Mfr. No.	Cat. No.	Each	Pack of 10
Black	S2500	**18-029**	12.63	107.98
Blue	S2510	**18-028**	12.63	107.98
Red, White, and Blue	S2530	**18-031**	12.94	110.63

uvex* astrospec 3000* Slim Spectacles

Slim styling for small faces

18-611C

- Available in three frame colors with a selection of lens tints and coatings, including ultradura* hardcoat (UD) and uvextreme* AF (XTR) coating for extra protection against scratching, fogging, and UV exposure
- Smaller frame size with adjustable lens inclination and temple length provides a custom fit for slim faces
- Polycarbonate browguard and sideshields offer added protection against UV, dust, and flying particles
- Lightweight (33g)

COMPLIANCE:

Meet ANSI* Z87+ and CSA Z94.3 standards.

Lens Tint	Mfr. No.	Cat. No.	Each	Pack of 10
Black Frame				
Clear UD	S2700	**18-610A**	10.47	87.24
Clear XTR	S2700C	**18-610B**	11.43	95.28
Gray UD	S2701	**18-610C**	11.75	97.95
Gray XTR	S2701C	**18-610D**	----	105.22
Blue Frame				
Clear UD	S2710	**18-610M**	10.47	87.24
Clear XTR	S2710C	**18-610N**	11.43	95.28
Gray UD	S2711	**18-610P**	11.75	97.95
Red, White, and Blue Frame				
Clear UD	S2730	**18-611C**	10.79	89.92
Clear XTR	S2730C	**18-611D**	11.75	97.95
Gray UD	S2731	**18-611E**	11.77	100.63

uvex* astrospec 3000* Spectacles

Available with economical spatula temples or adjustable duoflex* temples for added comfort

17-985-30A

- Adjustable lens inclination and temple length—as well as nose bridge—provide a comfortable fit
- Choice of lens with scratch-resistant ultradura* (UD) hardcoat that absorbs 99.9% of UV radiation or uvextreme* (XTR) coating that resists UV, scratching, fogging, and static
- Polycarbonate browguard and sideshields provide added protection against UV, dust, and flying particles
- Weight: 35g

COMPLIANCE:

Meet ANSI* Z87.1-2003 and CSA Z94.1-1999 standards.

With Spatula Temples

Lens Tint	Mfr. No.	Cat. No.	Each	Pack of 1
Clear UD	S135	**17-985-30A**	10.47	87.2
Clear XTR	S135C	**19-025-318**	11.43	95.2
Gray UD	S136	**17-985-31A**	11.75	97.9
Gray XTR	S136C	**19-003-146**	12.31	105.2
Amber UD	S145	**17-985-32A**	11.75	97.9
Silver Mirror UD	S137	**17-985-33A**	13.26	113.2
Light Gray UD	S1360	**19-003-281**	12.10	103.4

With duoflex* Temples

COMPLIANCE:

Meet ANSI Z87+ and CSA Z94.3 standards.

Lens Tint	Mfr. No.	Cat. No.	Each	Pack of 1
Clear UD	S1169	**17-985-30J**	10.79	89.9
Clear XTR	S1169C	**19-025-334**	11.75	97.9
Gray UD	S1179	**17-985-31J**	11.77	100.6
Amber UD	S1159	**17-985-32J**	11.77	100.6

x* genesis* Protective Spectacles

ee-position ratchet lens inclination system and stable temples enable wearer to customize fit

act-resistant polycarbonate
ses block >99.9% of
mful UVA and UVB radiation
adura* hardcoat (UD) and
xtreme* AF (XTR) coating for
litional protection against
atching, fogging, and UV exposure
tilation channel between frame
l lens prevents moisture buildup
se bridge covered with small,
asoft "fingers" that hug the nose
improved fit and comfort
t elastomer browguard cushions
oints of contact with face

19-040-168

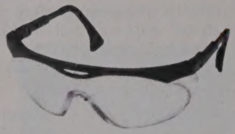
RANTY:
me frame guarantee.

PLIANCE:
d ANSI* Z87.1-2003 and CSA Z94.3-1999, and meet stringent military
listic impact requirements.

Tint	Mfr. No.	Cat. No.	Each	Pack of 10
Frame				
UD	S3200	**19-040-143**	12.31	105.22
XTR	S3200X	**19-040-144**	13.26	113.29
sso UD	S3201	**19-040-145**	13.57	115.95
sso XTR	S3201X	**19-040-146**	14.50	123.93
Mirror UD	S3203	**19-040-151**	15.43	131.90
Frame				
UD	S3220	**19-040-154**	12.31	105.22
XTR	S3220X	**19-040-155**	13.26	113.29
sso UD	S3221	**19-040-156**	13.57	115.95
sso XTR	S3221X	**19-040-157**	14.50	123.93
r UD	S3222	**19-040-158**	13.57	115.95
Mirror UD	S3223	**19-040-159**	15.43	131.90
Blue Frame				
UD	S3240	**19-040-168**	12.31	105.22
XTR	S3240X	**19-040-169**	13.26	113.29
sso UD	S3241	**19-040-170**	13.57	115.95
sso XTR	S3241X	**19-040-171**	14.50	123.93
Mirror UD	S3243	**19-040-173**	15.43	131.90

uvex* skyper* Spectacles

Custom fit with superior peripheral protection


19-037-656

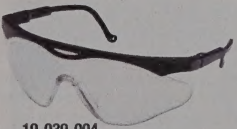
- Polycarbonate lenses with single-lens design feature ultradura* hardcoat (UD) or uvextreme* AF (XTR) antifog, antiscratch, and anti-static coating
- Wraparound, impact-resistant lenses block 99.9% of harmful UVA and UVB radiation
- Black frames with molded-in browguard reduce the danger of flying particulates
- Molded-in nose bridge offers comfort and safety in a variety of work applications
- Patented, adjustable, comfort-cushioned duoflex* temples
- Simple lens replacement system with ratcheting lens inclination

COMPLIANCE:
Meet ANSI* Z87.1-2003 and CSA Z94.3-1999 standards.

Lens Tint	Mfr. No.	Cat. No.	Each	Pack of 10
Clear UD	S1900	**19-037-656**	10.47	87.24
Clear XTR	S1900X	**19-037-657**	11.43	95.28
Espresso UD	S1901	**19-037-658**	11.75	97.95
Espresso XTR	S1901X	**19-037-659**	12.31	105.22
Mirror UD	S1903	**19-037-661**	13.26	113.29
SCT-Reflect 50 UD	S1905	**19-038-474**	----	43.21
SCT Gray XTR	S1904X	**19-040-868**	12.31	105.22

uvex* skyper* X2 Safety Spectacles

Simplicity of a unilens with sleek, sporty appeal


19-039-004

- Impact-resistant wraparound polycarbonate lenses block 99.9% of harmful UVA and UVB radiation
- Black frames available with ultradura* hardcoat (UD) or uvextreme* AF (XTR) antifog, antiscratch, and antistatic lens coatings
- Molded-in nose bridge for comfort and safety
- Molded-in browguard reduces the danger of flying particulates
- Patented, adjustable, comfort-cushioned duoflex* temples for custom fit with superior peripheral protection for a variety of work applications
- Ratcheting lens inclination

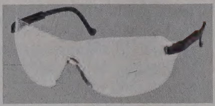
COMPLIANCE:
Meet ANSI* Z87.1-2003 and CSA Z94.3-1999 standards.

NOTE:
Replacement lenses available on our Web site.

Lens Tint	Mfr. No.	Cat. No.	Each	Pack of 10
Clear UD	S2810	**19-039-004**	10.47	87.24
Clear XTR	S2810X	**19-039-007**	11.43	95.28
Espresso UD	S2812	**19-039-005**	11.75	97.95
Espresso XTR	S2812X	**19-039-008**	12.31	105.22
SCT-Gray	S2813X	**19-039-009**	12.31	105.22
SCT-Reflect 50	S2815	**19-039-010**	13.26	113.29
Gold Mirror UD	S2814	**19-039-011**	13.26	113.29

uvex* spitfire* Spectacles

Eyewear without distractions or distortions



19-034-161

- Frameless spectacles with sleek, patented wraparound dual nine-base unilens for maximum visibility
- Impact-resistant lenses block >99.9% of harmful UV radiation
- Available with ultradura* hardcoat (UD) or exclusive uvextreme* AF (XTR) coating for additional protection against scratching, fogging, and UV exposure
- Lenses may be quickly and easily changed to meet any work application
- Weight: 28g

COMPLIANCE:

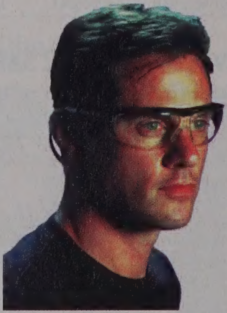
Meet ANSI* Z87+ and CSA 294.3 standards.

Lens Tint	Mfr. No.	Cat. No.	Each	Pack of 10
Clear UD	S1800	**19-034-161**	9.50	79.21
Clear XTR	S1800X	**19-034-162**	10.47	87.24
Espresso UD	S1801	**19-034-163**	10.79	89.92
Espresso XTR	S1801X	**19-034-164**	11.75	97.95
Amber UD	S1802	**19-034-165**	10.79	89.92

Willson* Millennia* Protective Spectacles

Superior side and brow protection with temple-to-temple coverage

Stylish, comfortable safety spectacles were computer-designed using 3-D modeling of human head.



19-039-208

- Single high-impact, abrasion-resistant polycarbonate lens with Parallel Vision Control* provides 180° distortion-free vision with 99.9% UV protection
- Lightweight frame and a universal nose bridge offer increased comfort
- Frames feature Sensitive Tension Design* for a nonslip, pressure-free fit at the temples
- Adjustable, breakaway retainer adds security and convenience

ORDERING INFORMATION:

Lenses with Fog-Ban* coating available for clear vision in humid ambient conditions.

COMPLIANCE:

Meet or exceed ANSI* Z87+ and CSA Z94.3 standards.

Lens Tint	Mfr. No.	Cat. No.	Each	Case of 10
Black Frame				
Clear	11150350	**19-039-208**	7.02	58.48
Clear Fog-Ban	11150355	**19-087-375A**	7.43	62.56
TSR* Gray	11150351	**19-039-209**	8.05	67.05
TSR Gray Fog-Ban	11150356	**19-087-375B**	8.50	71.38
I/O* Silver Mirror	11150353	**19-039-211**	9.64	80.34
Silver Mirror	11150354	**19-039-212**	9.64	80.34
Blue Frame				
Clear	11150370	**19-039-213**	6.97	58.09
Gray Frame				
Clear	11150360	**19-039-227**	6.97	58.09
TSR Gray	11150361	**19-039-228**	8.05	67.05
I/O Silver Mirror	11150362	**19-039-229**	9.64	80.34

*Fisherbrand** Chemical Splash and Impact Goggles

Lens coated to minimize scratching and fogging

19-181-504

- Built for comfortable protection with a soft, flexible PVC body that conforms to facial contours
- Large frames fit over most prescription eyewear
- Coated, clear polycarbonate lens resists impact, scratching, and fogging
- Headstrap easily adjusts for a custom fit
- **Impact goggles** protect eyes from dust, mist and other airborne particles; perforations on goggle top and sides provide direct ventilation
- **Chemical-splash goggles** resist a wide range of chemicals and feature indirect ventilation to direct airflow over the lens

COMPLIANCE:

Meet ANSI* Z87.1 and CSA standards.

Description	Cat. No.	Each	Pack of 12
Impact Goggles	**19-181-503**	5.50	108.61
Chemical Splash Goggles	**19-181-504**	6.05	108.61

*Fisherbrand** Disposable Faceshields

Fit well over glasses and protective spectacles

19-181-505

- Constructed from high-quality, optically clear, distortion-free 7mil film
- Polyester lens is treated with antifog and antistatic coating
- Headpiece is held in place by a stretch strap and includes a latex-free, hypoallergenic foam band for comfortable extended wear

COMPLIANCE:

Conform to OSHA 29CFR Part 1910.1030 for bloodborne pathogens and CDC recommendations for protective eyewear.

Description	Cat. No.	Pack of 24	Case of 12 Pk
Full Faceshield	**19-181-505**	51.45	486.27

WARNING

Faceshields should be used in conjunction with protective spectacles or goggles to ensure appropriate eye protection against chemical splash or impact.

fety Choice* Economy Goggles

ordable goggles in impact and chemical splash styles

ar polycarbonate lens resists impact
t, flexible PVC body molds to facial
tours for a comfortable fit
ustable headstrap ensures
tom fit
pact goggles shield eyes from dust,
t, and other airborne particles;
ture direct vents on goggle top
l sides
emical-splash goggles resist a broad range of chemicals; circular
ts allow air to flow freely through goggle body

19-181-502

PLIANCE:
ANSI* Z87.1 and CSA standards.

iption	Cat. No.	Each	Pack of 12
ct Goggles	**19-181-501**	3.00	84.63
ical Splash Goggles	**19-181-502**	3.45	84.63

sherbrand* Polycarbonate Faceshield

ge, 8½" high (21.6cm) molded polycarbonate ndow offers outstanding splash protection

ovides 99.9% UV protection
to 380nm
dge on headgear prevents fluid
om splashing down inside the
indow
nlock headgear can be sterilized
d disinfected; window can be
eam autoclaved

18-999-4542

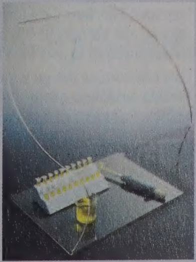
MPLIANCE:
ts ANSI* Z87+ and CSA
3 standards.

. No.	Each	Case of 5
999-4542	20.71	177.05

sherbrand* Splash Shield

n be used while sitting or standing

lade from ¼" thick (0.6cm) clear
rylic for durability
ovides excellent visibility while
otecting the face and neck from
ccidental splashes
wer end of shield is just 12"W
0.5cm), so it's easy to pipet or to
rform other functions behind the shield
onskid feet for added stability
ase: 12L × 20"W (30.5 × 50.8cm)
ce: 20W × 15"H (50.8 × 25.6cm)


17-987-421

TE:
suitable for radiation protection.

. No.	Each
987-421	75.54

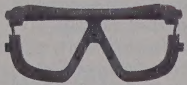
AOSafety* Dust GoggleGear* with Lexa* Lenses

Wider view than traditional impact goggles

- Enhance worker compliance with these lightweight, comfortable goggles with Lexa safety glass
- Provide ideal protection from particulates
- Top and bottom vent channels increase airflow, minimize fogging
- Soft polyurethane foam backing seals out dust particles, is self-extinguishing and easy to clean
- Comfortable enough to wear all day
- Available with adjustable temple for individualized fit or strap for secure fit in active applications

19-038-484A

COMPLIANCE:
Meet ANSI* Z87.1-2003 impact goggle requirements and CSA Z94.3-2002 safety spectacle standards.



Style	Size	Mfr. No.	Cat. No.	Each	Pack of 10
Adjustable Temples	Medium	16615 00000	**19-038-484A**	15.02	128.40
	Large	16616 00000	**19-038-484B**	15.02	128.40
Strap	Medium	16617 00000	**19-145-423**	15.02	128.40

uvex* classic* Chemical Splash Goggles

Integrated ventilation system

- Clear polycarbonate lens treated with patented uvextreme* AF coating to protect against fogging, scratching, static dust, and 99% of harmful ultraviolet rays up to 385nm
- Large, soft body ensures excellent fit, even over most prescription spectacles
- Indirect ventilation system allows air to flow freely through goggle body
- Wide neoprene headstrap withstands acids, caustics, solvents, and alcohols

17-253

COMPLIANCE:
Meets ANSI* Z87+ and CSA Z94.3 standards.

Mfr. No.	Cat. No.	Each	Case of 50
S360	17-253	10.04	401.51

uvex* stealth* Chemical Splash Goggle

Sleek, low-profile design fits well with respirators, hard hats, or welding helmets

18-999-2312

- Clear polycarbonate lens is coated with uvextreme* AF coating for protection against fogging, scratches, static dust, and 99.9% of harmful UV rays up to 385nm
- Gray and amber lenses protect up to 400nm
- Toric lens provides superior optics and improves peripheral vision
- Combines durable polypropylene frame and soft, flexible elastomer inner flange
- Provides superior splash protection
- Indirect ventilation system directs airflow over the lens to minimize fogging and improve vision—without compromising splash and impact protection
- Neoprene headband is textured to prevent slipping and features quick-adjust clips for easy and secure fit
- Snap-off/snap-on lens replacement system suits many applications and environments

ORDERING INFORMATION:

Visit our Web site (keyword: uvex stealth) for replacement lenses and Rx carrier adapter that allows prescription glasses to be used with goggles.

COMPLIANCE:

Meets ANSI* Z87.1+ and CSA Z94.3 standards.

Lens Tint	Mfr. No.	Cat. No.	Each	Pack of
Light Gray/Charcoal Gray Body				
Clear	S3960C	**18-999-2312**	18.14	50/756.00
Gray	S3961C	**18-999-2314**	19.44	50/810.00
Amber	S3962C	**18-999-2313**	19.44	50/810.00
Teal/Light Gray Body				
Clear	S39610C	**18-999-2315**	18.14	50/756.00
Gray	S39611C	**18-999-2316**	19.38	10/165.65

Allsafe-SMC* MonoGoggle* Safety Goggles

Durable two-piece PVC frame for outstanding impact resistance and comfort

19-062-307

- Standard or fog-resistant FogGard* Plus polycarbonate lens provides 99.9% UV protection up to 380nm
- Patented ventilation system minimizes condensation while internal baffles protect eyes from dust and chemical splash
- Soft pliable nosepiece molds to facial contours, and headband attaches at the back of the frame for full peripheral vision
- **FogGard Plus lens** available with standard PVC frame or with foam-padded frame for additional impact resistance and comfort
- **Respirator-fit MonoGoggle** designed to be worn with a half-mask cartridge or disposable respirator, without inhibiting protective fit

COMPLIANCE:

Meet ANSI* Z87.1-2003 standards.

Description	Mfr. No.	Cat. No.	Each	Case of 36
Standard Lenses				
Standard Frame	3000005	**17-277A**	7.31	210.52
FogGard Plus Lenses				
Standard Frame	3000013	**17-277-1A**	9.87	220.71
Foam-padded Frame	19062307	**19-062-307**	14.53	431.86
Respirator-fit MonoGoggle	3005057	**17-277-1B**	9.95	276.44

Allsafe-SMC* MonoGoggle* VPC Goggles

Flat lens design accommodates bifocals

17-283-2

- Wide-angled polycarbonate lens is molded flat to eliminate distortion, reduce eye fatigue, and improve visibility—especially for workers who wear bifocals
- Patented ventilation ports permit generous airflow across the lens for clear, fog-free vision
- FogGard* Plus lens further reduces fogging and absorbs 99.9% of UV radiation up to 380nm
- Two-piece frame design with soft flexible nosepiece gently molds to facial contours

COMPLIANCE:

Meet ANSI* Z87.1-1989 standards. SEI certified.

Mfr. No.	Cat. No.	Each
10195	**17-283-2**	9.75

*Trademark. See Trademark Reference.

Prices subject to change.

*isherbrand** Lens Paper

r cleaning glass lenses

oklet

Never scratches glass lenses, bjectives, or other delicate surfaces

Doesn't become harsh; doesn't eadily collect dust or grease

Virtually lint-free

Sheets are glued and bound in a booklet for easy removal

11-996

spenser Box

Same paper as above, but packaged in a convenient dispenser box or fast, single-sheet removal

ndividual sheets measure 5L × 7"W (13 × 18cm)

W	No. of Sheets Each	Cat. No.	Pack of
klets			
6" (10 × 15cm)	50	**11-996**	12/38.30
8" (15 × 20cm)	100	**11-995**	12/64.67
penser Box			
7" (13 × 18cm)	2000	**11-997**	2000/58.72

usch & Lomb* Disposable Plastic ns-Cleaning Station

veniently stores and dispenses lens cleaners

ble and attractive, compact station is the economical e for storing and dispensing lens-cleaning supplies.

17-227A

ERING INFORMATION:

able with silicone or silicone-free for use in ronics assembly or spray-painting applications.

LUDES:

(237mL) spray bottle of Sight Savers* liquid cleaner 760 Sight Savers all-purpose tissues.

y Type	Mfr. No.	Cat. No.	Each	Case of 10
ne	143060	**17-227A**	16.09	137.51
ne-free	143060GM	**17-227B**	16.09	137.51

usch & Lomb* Sight Savers* Disposable ns-Cleaning Station

uires no maintenance and is perfect for factory, lab, office locations

rdy heavy-duty cardboard station with frontal cess allows for easy hanging in tight corners

sily dispenses from countertops with minimal eral space

LUDES:

sheets of Sight Savers all-purpose tissues and oz. (473mL) spray bottle of antifog Sight Savers d cleaner.

17-225C

No.	Cat. No.	Case of 4
GM	**17-225C**	85.18

Chums* Eyewear Retainers

Keep spectacles within easy reach

- Sturdy adjustable cords securely hold spectacles and help to reduce loss or breakage
- Slide bead holds spectacles securely to head or can be loosened to allow passive retention
- Cotton construction provides durable wear, eliminates irritation from prolonged use
- Cords fit most spectacle frames, come in an assortment of colors

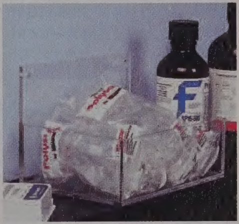
19-087-037

Color	Mfr. No.	Cat. No.	Each
Black	RCH100S	**18-999-2211**	6.33
Marine blue-green	ORIGMARINE	**19-087-034**	6.33
Navy	RCH105S	**18-999-2212**	6.33
Rainbow tie dye	RCH701	**19-087-035**	6.33
Red	RCH102S	**18-999-2214**	6.33
Royal blue	RCH101S	**18-999-2213**	6.33
Sky dye blue	ORIGSKYDYE	**19-087-037**	6.33

Sellstrom* Acrylic Spectacles Tray

Provides convenient access to spectacles

- Designed for countertop or wall mounting
- Roomy acrylic tray holds up to eight spectacles
- For easy access to protective eyewear, mount near entrances to rooms where proper protection is required



17-987-206A

ORDERING INFORMATION:

Dimensions: 6½L × 9½W × 3"H (17 × 24 × 8cm).

Mfr. No.	Cat. No.	Each
90800FS	**17-987-206A**	48.59

FIRST AID

*Fisherbrand** Alcohol Prep Pads

Convenient nonwoven applicators impregnated with isopropyl alcohol 70%

- Ready to use, individually sealed in easy-to-tear-open foil packs
- Measure 2⅝L × 1³⁄₁₆"W (67 × 30mm) with single fold

06-669-62

Cat. No.	Case of 4000
06-669-62	122.42

*Fisherbrand** Latex Cohesive Wrap Bandages

NEW

Act as excellent pressure bandages without cutting off circulation

- Cohesive and flexible with excellent porosity
- Maintain consistent compression with nonslip support
- Maintain original size and do not shrink in width
- Adhere to themselves—no clips or fasteners needed
- Quick, easy removal without scissors
- Length: 5 yd. (4.6m)
- Multi-color packs include an assortment of neon green, neon pink, purple, red, light blue, and dark blue

22-270 Series

Color	Cat. No.	Case of
1" Width (2.5cm)		
Dark Blue	**22-270-301**	30/33.76
Light Blue	**22-270-302**	30/33.76
Green	**22-270-303**	30/34.77
Neon Green	**22-270-304**	30/43.89
Pink	**22-270-305**	30/33.76
Purple	**22-270-306**	30/33.76
Red	**22-270-307**	30/40.51
Tan	**22-270-308**	30/37.81
White	**22-270-309**	30/34.77
Multi-Color	**22-270-310**	30/34.89
1½" Width (3.8cm)		
Dark Blue	**22-270-332**	48/88.74
Neon Green	**22-270-333**	48/97.61
Neon Pink	**22-270-334**	48/88.74
Purple	**22-270-335**	48/88.74
Red	**22-270-336**	48/88.74
Tan	**22-270-337**	48/88.74
White	**22-270-338**	48/88.74
Multi-Color	**22-270-339**	48/97.07
2" Width (5.1cm)		
Black	**22-270-312**	36/68.05
Dark Blue	**22-270-313**	36/68.05
Light Blue	**22-270-314**	36/68.05
Green	**22-270-315**	36/68.05
Neon Green	**22-270-316**	36/68.05
Neon Pink	**22-270-317**	36/68.05
Purple	**22-270-318**	36/68.05
Red	**22-270-319**	36/68.05
Tan	**22-270-320**	36/68.05
Teal	**22-270-321**	36/68.05
White	**22-270-322**	36/68.05
Yellow	**22-270-323**	36/68.05
Multi-Color	**22-270-324**	36/68.05
3" Width (7.6cm)		
Tan	**22-270-326**	24/55.02
White	**22-270-327**	24/55.02
Multi-Color	**22-270-328**	24/70.37
4" Width (10.2cm)		
Purple	**22-270-329**	18/43.93
Multi-Color	**22-270-330**	18/43.93

Hygenic* Disposable Latex Tourniquet Straps

Tear-resistant, satin-smooth latex

- Disposable to prevent possibility of cross-contamination
- Easily tied and untied
- Individually precut to measure 1 × 18 × 0.025" (2.5 × 46 × 0.06cm)

15-235-2

Cat. No.	Pack of	Case of
15-235-2	100/32.15	10 Pk./281.63
15-235-1	250/92.59	4 Pk./273.11

Stat Strip* Bandages

Available in sheer and flexible styles

- Sterile and latex free
- Both styles feature snap-open wrapper for easy handling, even with gloved hands
- Measure ¾ × 3" (1.9 × 7.6cm) or 1 × 3" (2.5 × 7.6cm)

17-442-3D, 17-442-3C

Size	Cat. No.	Pack of 100	Case of 12 Pk.
Sheer			
¾ × 3" (1.9 × 7.6cm)	**17-442-3A**	7.30	72.98
1 × 3" (2.5 × 7.6cm)	**17-442-3B**	11.07	79.10
Flexible Fabric			
¾ × 3" (1.9 × 7.6cm)	**17-442-3C**	10.71	82.11
1 × 3" (2.5 × 7.6cm)	**17-442-3D**	11.78	92.67

North* First Aid Stations

Ideal for large office or plant settings

NEW

- Contain large quantities of color-coded first aid supplies for most minor injuries, aches, and pains
- Tablet medicinals are nondrowsy formulations in tamper-resistant packs
- Equipped with handles for portability and mounting bracket for wall mounting
- Latex free
- All items labeled for easy refill ordering
- Supplies housed in rustproof steel cabinet

19-130-2501

NOTE:
For more information about kit inclusions (bandage sizes, medicinal types, etc.), contact your Fisher Scientific Customer Service Representative.

COMPLIANCE:
Meet ANSI* Z308.1-2003 standards.

Size	Mfr. No.	Cat. No.	Each
100 person	019720-4516	**19-130-2499**	145.00
150 person	019721-4517	**19-130-2500**	205.85
200 person	019722-4518	**19-130-2501**	304.00

SUPPLIES PER KIT

Kit Size	Bandages	Medicinals	Burn Treatment	Eye Treatment
100 person	227	100	1	5
150 person	360	100	2	12
200 person	332	800	1	5

*Trademark. See Trademark Reference.

Prices subject to change.

rth* Bloodborne Pathogen sponse Kit

vides fast, effective cleanup of potentially ctious materials

NEW

19-130-2508

les necessary supplies to clean spill containing bloodborne gens, such as blood, vomit and bodily fluids.

y to use—simply cover spill h absorbent beads, allow to geal, scoop up spill with vel, and place into biohazard bag

kaged in sealed plastic bags

nded for single use

PLIANCE:

les PPE necessary to protect employees in accordance with OSHA 130.

E:

se of contaminated items and waste properly in accordance with state, and federal regulations.

	Mfr. No.	Cat. No.	Each
it	019748-4530	**19-130-2509**	25.45
it	019746-4528	**19-130-2508**	36.75
it	019740-4526	**19-130-2507**	46.85

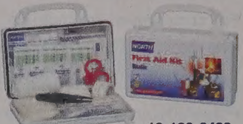
CONTENTS

ription	10-Unit	16-Unit	24-Unit
rbent towel	1	1	1
eptic wipes, BZK (6/Pk.)	1	1	1
azard bag, 24 × 24", with ties	1	2	2
icidal surface wipe	1	1	1
n	----	1	1
cal gloves	1	2	2
n Control Directory	----	1	1
per	----	1	1
covers	----	2	2
el	1	1	1
ical mask and shield	----	1	1
1 absorbent, 2 oz.	1	1	1

North* Bulk First Aid Kits

Designed for large facilities

NEW



19-130-2483

- Contain economical bulk supplies that can be readily accessed when needed
- Ideal for manufacturing settings where a wide variety of first aid items are required
- Latex free
- Weatherproof
- Housed in waterproof metal or plastic case

ORDERING INFORMATION:

Rapid refill kits available separately.

COMPLIANCE:

ANSI* Z308.1-2003 compliant.

Size	Mfr. No.	Cat. No.	Each
With Plastic Case			
10 person	019700-4500	**19-130-2483**	20.55
25 person	019702-4502	**19-130-2485**	35.72
50 person	019704-4504	**19-130-2487**	53.25
75 person	019706-4506	**19-130-2489**	79.65
With Metal Case			
10 person	019701-4501	**19-130-2484**	34.45
25 person	019703-4503	**19-130-2486**	41.25
50 person	019705-4505	**19-130-2488**	72.85
75 person	019707-4507	**19-130-2490**	97.85

KIT CONTENTS

	Units per Kit			
Description	10 Person	25 Person	50 Person	75 Person
Adhesive bandage, 1 × 3" plastic	16	32	100	100
Adhesive bandage, fingertip, cloth	1	3	4	8
Adhesive bandage, extra large	1	1	2	3
Adhesive bandage, knuckle, cloth	----	2	3	6
Adhesive tape, ½" × 2½ yd.	2	2	2	3
Antimicrobial towelettes	6	6	12	12
Conforming bandage, 2" × 6 yd., nonsterile	1	2	3	4
Conforming bandage, 3" × 6 yd., nonsterile	1	1	2	2
CPR filtershield	----	1	1	1
Elastic bandage, 2"	----	----	1	1
Eye-Lert*, 1 oz. eyewash	----	1	1	2
Eye pad, sterile	----	1	2	3
First aid/burn cream with aloe	6	6	12	12
First aid guide	1	1	1	1
Forceps, pointed plastic	1	1	1	1
Gauze pads, 2 × 2", sterile	4	4	10	10
Gauze pads, 3 × 3", sterile	1	1	2	10
Instant cold pack	1	1	2	2
Medical gloves, synthetic	4 Pr.	4 Pr.	4 Pr.	10 Pr.
Pain-A-Rest*, nonaspirin (2 per pack)	3 Pk.	3 Pk.	6 Pk.	6 Pk.
Poison control directory	1	1	1	1
Scissors, angled, red handle	1	1	1	1
Single antibiotic packet	6 Pk.	6 Pk.	12 Pk.	12 Pk.
Sting relief wipe	6	6	12	12
Trauma pad, 5 × 9"	1	1	1	1
Triangular bandage	1	1	1	1

North* Rapid Refill Packs for Bulk First Aid Kits

NEW

For convenient restocking

- No need to inventory and reorder individual first aid supplies
- Simply order Rapid Refill Packs to quickly replace several first aid supplies at once
- Come prepackaged with an ample assortment of first aid supplies based on their frequency of use
    - Rapid Refill Pack 1 is stocked with the most frequently used first aid items: adhesive bandages and pads
    - Rapid Refill Pack 2 contains commonly used supplies including antiseptics, skin and eye treatments, and cold packs
    - Rapid Refill Pack 3 contains supplies used on a less-frequent basis including personal protection, tape, and miscellaneous items

Description	Mfr. No.	Cat. No.	Each	Case of 10
Rapid Refill Pack 1	013035	**19-130-4509**	38.55	329.29
Rapid Refill Pack 2	013036	**19-130-4510**	21.75	185.93
Rapid Refill Pack 3	013037	**19-130-4511**	22.95	195.82

RAPID REFILL PACK CONTENTS

Description	Quantity
Rapid Refill Pack 1	
Adhesive bandage, 1 × 3", plastic	6
Adhesive bandage, extra large, plastic	6
Adhesive bandage, fingertip, cloth	10
Adhesive bandage, knuckle, cloth	8
Conforming bandage, 2", nonsterile	1
Conforming bandage, 3", nonsterile	1
Eye pad, sterile	1
Sterile gauze pad, 2 × 2"	10
Sterile gauze pad, 3 × 3"	25
Rapid Refill Pack 2	
Antibiotic ointment pouch	1
Antiseptic wipes, BZK	10
Eye-Lert* eyewash, 1 oz.	1
First aid/burn cream with aloe pouch	6
Instant cold pack	1
Pain-A-Rest* (nonaspirin), 2-tablet pack	13
Sting relief wipes	10
Rapid Refill Pack 3	
Adhesive tape, ½" × 2½ yd.	2
CPR Filtershield*	1
Elastic bandage, 2"	1
Sterile trauma pad, 5 × 9"	1
Synthetic medical gloves	2 pr.
Triangular bandage, nonsterile	1

North* Unitized First Aid Kits

Sturdy, durable and waterproof

NEW

- Color-coded cartons hold individual sealed unit dose applications
    - Yellow for bandages and compresses
    - Orange for personal protection
    - Blue for antiseptics and wound cleaners
    - Red for burn treatment
    - Green for special and miscellaneous items
- Cases have carrying handles for portability
- Available in plastic or metal housing
- Supplied with brackets for wall mounting

19-130-2497

COMPLIANCE:

ANSI* Z308.1-2003 compliant.

Size	Mfr. No.	Cat. No.	Eac
With Plastic Case			
10 person	019708-4508	**19-130-2491**	24.5
16 person	019710-4510	**19-130-2493**	41.1
25 person	019712-4512	**19-130-2495**	24.4
36 person	019714-4514	**19-130-2497**	76.8
With Metal Case			
10 person	019709-4509	**19-130-2492**	38.8
16 person	019711-4511	**19-130-2494**	60.0
25 person	019713-4513	**19-130-2496**	86.0
36 person	019715-4515	**19-130-2498**	113.2

KIT CONTENTS

	Units per Kit			
Description	10-unit	16-unit	25-unit	36-unit
Adhesive bandage, 1 × 3" plastic	16	32	48	64
Adhesive bandage, fingertip, cloth	----	----	10	20
Adhesive bandage, knuckle, cloth	----	8	8	16
Adhesive tape, ½" × 2½ yd.	2	2	2	4
Bandage compress, 3"	----	----	----	1
Bandage compress, 4"	----	1	1	1
Eye-Lert*, 1 oz. eyewash	----	1	1	2
First aid/burn cream with aloe	6	6	12	12
First aid guide	1	1	1	1
Forceps and scissors	1	1	2	1
Gauze bandage, 2" × 6 yd.	----	----	2	4
Gauze compress, 36" square	1	1	1	2
Gauze pads, 3 × 3", sterile	4	4	8	8
Instant cold pack	1	1	1	2
Poison control directory	1	1	1	1
PVP iodine wipes	10	10	20	20
Sting relief wipe	----	10	10	20
Synthetic medical gloves	4 pr.	4 pr.	8 pr.	8 pr.
Triangular bandage	1	1	1	1

*Trademark. See Trademark Reference.

Prices subject to change.

rth* Rapid Refill Packs for Unitized st Aid Kits

, easy refills

need to inventory and reorder individual first aid supplies

nply order Rapid Refill Packs to conveniently replace several first aid pplies at once

me prepackaged with an ample assortment of first aid supplies based their frequency of use

- Rapid Refill Pack A is stocked with the most frequently used first aid items: adhesive bandages and cold packs
- Rapid Refill Pack B contains commonly used supplies including antiseptics, skin and eye treatments, and gloves
- Rapid Refill Pack C contains supplies used on a less frequent basis including gauze, pads, compresses and miscellaneous items

ription	Mfr. No.	Cat. No.	Each	Case of 10
l Refill Pack A	013038	**19-130-4506**	9.45	78.41
l Refill Pack B	013039	**19-130-4507**	13.20	112.50
l Refill Pack C	013040	**19-130-4508**	21.65	184.89

ID REFILL PACK CONTENTS

ription	Quantity
id Refill Pack A	
nesive bandage, 1 × 3", plastic	10
nesive bandage, fingertip, cloth	10
nesive bandage, knuckle, cloth	8
tant cold pack	1
d Refill Pack B	
t aid/burn cream with aloe, 1 oz.	6
-Lert* eyewash, 1 oz.	1
iodine wipes	10
ng relief wipes	10
thetic medical gloves	2 pr.
d Refill Pack C	
nesive tape, ½" × 2½ yd.	2
ndage compress, 3"	2
ndage compress, 4"	2
uze compress, 36 × 36"	2
uze bandage, 2" × 6 yd.	2
rile gauze pad, 3 × 3"	4
ngular bandage, nonsterile	1

rth* Instant Cold Paks

expiration date

aintain temperature below 4.4°C (40°F) for 10 minutes

easure 4 × 5" (10.2 × 12.7cm)

No.	Cat. No.	Pack of 10	Case of 12 Pk.
42	**19-027-357**	18.15	186.00

Water-Jel* Burn Kits

For treatment of common "spot" burns as well as larger, more serious burns

- Water-based Burn Jel* draws out heat
- Immediate application helps halt burn progression
- Relieves pain with lidocaine
- Carrying bag measures 10L × 7W × 3"H (25.4 × 17.8 × 7.6cm)

19-160-322 and 19-160-321

INCLUDES:

Small Burn Kit: five sterile burn dressings (one each 12 × 16" dressing for facial burns, two each 4 × 4" and 2 × 6" dressings), two conforming bandages, and one pair of paramedic scissors

Large Burn Kit: one small Water-Jel fire blanket, five sterile burn dressings (one each 12 × 16" dressing for facial burns, two each 8 × 18" and 4 × 16" dressings), four conforming bandages, one pair of paramedic scissors, and one carrying bag

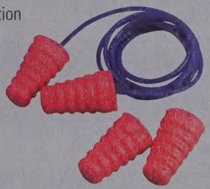
Description	Mfr. No.	Cat. No.	Each
Small Burn Kit	49055	**19-160-321**	112.50
Large Burn Kit	49056	**19-160-322**	210.45

HEARING PROTECTION

*Fisherbrand** Excel* Ear Plugs

NRR: 30dB

- Preshaped and tapered for easy insertion
- Smooth, soil-resistant surface won't irritate the ear canal
- Plugs roll to extremely small size and expand slowly for comfortable fit
- Integrated flexing action adjusts to head and jaw movements—helps keep employees comfortable all day without irritating pressure
- One size fits all—including those with small, hard-to-fit ear canals



19-067-524 and 19-070-476

COMPLIANCE:

Attenuation tested in accordance with ANSI* S3.19-1974.

Style	Cat. No.	Pack of	Case of 10 Pack
Uncorded	**19-070-476**	200/29.71	252.41
Corded	**19-067-524**	100/30.42	259.98

*Fisherbrand** DeciDamp^{2}* Ear Plugs

NRR: 29dB

- Made from nontoxic, nonirritating PVC foam
- Plug expands to fit ear contours, ensuring maximum comfort and positive fit while attenuating noise levels
- Lightweight and disposable
- One size fits all
- Sealed pouches provide maximum cleanliness

Fisherbrand
DECIDAMP
Hearing Protectors
29
19-003-127

19-003-127

ORDERING INFORMATION:

One pair per cellophane pouch; 200 pairs per dispenser pack.

COMPLIANCE:

Attenuation tested in accordance with ANSI* S3.19-1974.

Description	Cat. No.	Pack of 200 Pair	Case of 10 Pack
Uncorded	**19-003-127**	29.09	248.66

Moldex* SparkPlugs* Ear Plugs

NRR: 33dB

Highest independently tested NRR. Officially licensed earplugs of NASCAR*.

- Made from extra-soft, extra-light foam with nonirritating surface
- Tapered for easy insertion and removal
- Seal the ear canal comfortably, without pressure
- Disposable (not intended for reuse)
- Every package reveals random colored SparkPlugs
- Provide a snug fit in even the smallest ear canals
- Hygienically packaged

18-999-2271

ORDERING INFORMATION:

Available uncorded, in a pack of 200 pair (one pair/polybag) to a dispenser box, or corded, in a pack of 100 pair to a dispenser box.

COMPLIANCE:

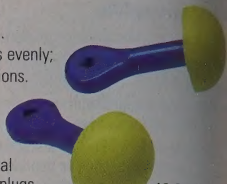
Attenuation tested in accordance with ANSI* S3.19-1974.

Style	Mfr. No.	Cat. No.	Pack of	Case of
Uncorded	6604	**18-999-2271**	200 Pr./31.46	10 Pk./268.85
Corded	6654	**18-999-2272**	100 Pr./31.87	20 Pk./544.77

E•A•R* Express* Pod Plugs

NRR: 25dB

Ideal for noisy, dirty work environments where clear communication is essential. Reduce high- and low-frequency sounds evenly; need not be removed to hear conversations.



18-587

- Slow-recovery foam compresses easily without wrinkles
- Grips suit workers who experience discomfort when inserting conventional plugs or who have difficulty rolling—plugs require no sizing or rolldown
- Unique design creates secure, gentle seal
- Slides gently into ear canal, expanding slowly to seal completely without excess pressure
- Patented insertion grip eliminates need to touch pod surface
- Easy to clean and store
- Reusable

ORDERING INFORMATION:

Packaged one pair per PillowPac*, 100 PillowPacs per dispenser pack. Corded plugs come with grips of assorted colors; uncorded plugs are available with either blue grips or grips of assorted colors.

COMPLIANCE:

Attenuation tested in accordance with ANSI* S3.19-1974.

Grip Color	Mfr. No.	Cat. No.	Pack of 100	Case of 4 Pack
Corded				
Assorted	311-1115-000	**18-763**	121.44	441.60
Uncorded				
Assorted	321-2200-000	**18-586**	77.29	273.60
Blue	321-2100-000	**18-587**	77.29	273.60

Howard Leight* Max* Ear Plugs

NRR: 33dB

- Soft foam plugs are bell shaped and tapered for easy insertion
- Expand to provide a self-adjusting, custom fit
- Smooth, orange, soil-resistant outer skin keeps foreign material from penetrating the surface while being rolled prior to insertion, providing maximum comfort and hygiene

19-021-230, 19-021-229

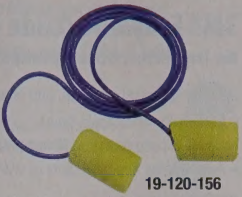
COMPLIANCE:

Attenuation tested in accordance with ANSI* S3.19-1974.

Style	Mfr. No.	Cat. No.	Pack of	Case of 10 Pack
Disposable Polybag Packaging				
Uncorded	MAX-1	**19-021-229**	200 Pr./36.34	310.61
Corded	MAX-30	**19-021-230**	100/31.86	272.29
Resealable Polybag Packaging				
Uncorded	MAX-5	**19-063-072**	250/55.58	475.00

·R* Classic* Ear Plugs

: 29dB



19-120-156

to use: simply compress the soft
plug, insert in ear canal, and
ug expand.
ade from slow-recovery,
nallergenic PVC foam for
timal comfort
lindrically shaped
quire no sizing, so inventories are reduced
oisture resistant and nonflammable
onoPack makes hearing protection as easy as reaching into a box

IPLIANCE:

nuation tested in accordance with ANSI* S3.19-1974.

	Mfr. No.	Cat. No.	Pack of 200 Pair	Case of
wPac*	310-1001	17-380	44.37	10 Pk./379.20
ags				
orded	312-1201	17-380-1	44.09	10 Pk./376.80
ed	311-1101	17-380-2	80.00	10 Pk./708.00
oPaks				
ed	3111081	19-120-156	----	1500/475.56
orded	3121082	19-120-157	----	3000/438.48
orded	3121080	19-120-155	----	5000/946.43
Pack Dispenser Box (Pair packaged in polybags)				
orded	3901000	18-858L	37.18	10 Pk./317.76

·R* TaperFit* 2 Foam Ear Plugs

: 32dB

17-379-1

ft, smooth material is dermatologically
fe, nonirritating to skin
lf-adjusting foam provides low
essure seal
esigned for ultimate comfort

IPLIANCE:

nuation tested in accordance
ANSI* S3.19-1974.

	Mfr. No.	Cat. No.	Pack of 200 Pair	Case of 10 Pk.
rded				
ular	312-1219	**18-999-4441**	42.68	364.80
	312-1221	**17-379-1**	42.88	366.50
ed				
ular	312-1223	**18-999-2291**	80.28	710.40
	312-1224	**19-087-852**	71.47	----

MATTING

Wearwell* Electrically Conductive Antifatigue Mat

Protects facilities and electronic equipment from high levels of electrostatic discharge

18-999-821

- Quickly drains static electricity from workers before it can be passed onto sensitive equipment
- Volume resistivity and resistance to ground of 106ohms; can drain up to 200,000V in less than one second
- Grounding snap attached to lower left corner of each mat to attach ground cord (sold separately)
- ½" (1.3cm) thick with diamond-plate vinyl surface for traction and beveled edges for safety
- Nitricell* sponge base offers immediate rebound and exceptional support to reduce standing worker fatigue
- For maximum effectiveness, keep clean and ground the mat

ORDERING INFORMATION:

Call your Fisher Scientific Customer Service Representative for ordering information on custom mat sizes and heel grounders.

Size	Mfr. No.	Cat. No.	Each
Mats			
2 × 3' (64 × 91cm)	786 916X3X5DPBK	**19-042-700**	80.45
3 × 5' (91 × 152cm)	786 916X3X5DPBK	**18-999-821**	201.26
Ground Cord			
15' (4.6m)	793 15Cord	**19-003-149**	12.00

WARNING
Mat must be grounded. Employees must wear heel grounders or shoes with conductive soles.

Wearwell* Lab Mats

Provide durability and excellent cushioning support

19-003-153B

No-wax vinyl surface for use in dry work areas. Made of 3⁄32"-thick (0.2cm) virgin vinyl permanently bonded to a ⅜" thick (1.0cm) moisture-resistant, closed-cell sponge base.

- Tough, nonporous surface resists abuse even in the most heavily used work areas
- Supercompression sponge base relieves overall body fatigue
- Surface resists breakdown when exposed to most laboratory and industrial chemicals
- Edges are safety beveled to prevent tripping and falling

Size	Color	Mfr. No.	Cat. No.	Each
Raised Circular				
2 × 3' (61 × 91cm)	Black	402 12X2X3BK	**17-986-100**	72.36
2 × 3' (61 × 91cm)	Gray	402 12X2X3GY	**17-986-101**	72.36
3 × 5' (152.4 × 91.4cm)	Black	402 12X3X5BK	**17-986-103**	178.89
3 × 5' (152.4 × 91.4cm)	Gray	402 12X3X5GY	**17-986-104**	178.89
Smooth Marble				
2 × 3' (61 × 91cm)	Black	420 12X2X3BK	**19-003-153A**	51.34
2 × 3' (61 × 91cm)	Blue	420 12X2X3BL	**19-003-153B**	51.34
3 × 5' (152.4 × 91.4cm)	Black	420 12X3X5BK	**19-003-153C**	128.09
3 × 5' (152.4 × 91.4cm)	Blue	420 12X3X5BL	**19-003-153D**	128.09

Wearwell* Tuf Sponge Mat

For use in all dry work areas

- Blown-vinyl sponge ergonomically designed to reduce floor hardness up to 50%
- Mats can be easily cut to fit work areas
- All edges are rounded for safety

ORDERING INFORMATION:
Call your Fisher Scientific Customer Service Representative for cut lengths to 60' (18.3m).

18-999-873

Size	Mfr. No.	Cat. No.	Each
Black			
2 × 3' (61 × 91cm)	451 38X2X3BK	**17-986-128**	21.53
3 × 5' (91 × 152cm)	451 38X3X5BK	**17-986-129**	55.26
3 × 60' (91cm × 18.3m)	451 38X3X60BK	**18-999-2994**	515.80
Gray			
2 × 3' (61 × 91cm)	451 38X2X3GY	**19-042-711**	20.34
3 × 5' (91 × 152m)	451 38X3X5GY	**19-042-712**	50.91
3 × 60' (91cm × 18.3m)	451 38X3X60GY	**19-042-713**	542.98
Black with Yellow Borders			
2 × 3' (61 × 91cm)	451 38X2X3BYL	**18-999-873**	20.41
3 × 5' (91 × 152cm)	451 38X3X5BYL	**18-999-874**	50.92
3 × 60' (91cm × 18.3m)	451 38X3X60BYL	**19-820-246**	560.63

Wearwell* WorkRite Mats

Lightweight for easy handling and cleaning

17-986-121

- All-purpose natural rubber black mats designed for use in dry areas and around water
- Built-in beveled edges on all sides for safety and cart access
- Spills pass directly through holes, keeping feet dry
- ½" thick to provide cushioned support, reduce stress on feet, legs, and back

Size	Mfr. No.	Cat. No.	Each
3 × 5' (91 × 152cm)	474 12X3X5BK	**17-986-121**	100.34
3 × 10' (91cm × 3m)	474 12X3X10BK	**18-999-892**	189.90
3 × 20' (91cm × 6.1m)	474 12X3X20BK	**18-999-893**	379.69

LOOKING FOR MORE MATTING?

Fisher Scientific offers a complete selection antifatique, nonslip, cleanroom, and non-conductive matting.

Visit www.fishersci.com and search for Matting

MONITORS

3M* Ethylene Oxide Monitor

No batteries, hoses, pumps, or equipment to calibrate

Ideal for chemical, medical, and pharmaceutical labs.

- Sensitivity of 0.24ppm-hours
- Upper exposure limit of 600ppm-hours
- Available as a monitor only or with prepaid analysis

COMPLIANCE:
Meets OSHA accuracy requirements.

NOTE:
These safety products must be used in accordance with OSHA regulations and the user instructions, warnings, and limitations accompanying each product.

17-985-363B

Description	Mfr. No.	Cat. No.	Case of 5
Monitor only	3551	**17-985-363B**	129.97
Monitor with prepaid analysis	3550	**10-030-85**	357.69

3M* Formaldehyde Monitor

Complies with OSHA formaldehyde standard

Valuable for use in chemical, textile, and pulp and paper industries; histology; and healthcare.

- Sensitivity of 0.8ppm-hours (0.1ppm over an eight-hour period)
- Upper exposure limit of 40ppm-hours (5ppm over an eight-hour period)
- Available as a monitor only or with prepaid analysis

COMPLIANCE:
Exceeds OSHA accuracy requirements for eight-hour sampling.

NOTE:
Not for 15-minute STEL (short-term exposure limit) sampling. These safety products must be used in accordance with OSHA regulations and the user instructions, warnings, and limitations accompanying each product.

17-985-363C

Description	Mfr. No.	Cat. No.	Case of 5
Monitor only	3721	**17-985-363C**	160.11
Monitor with prepaid analysis	3720	**10-030-84**	398.45

* Organic Vapor Monitors

tweight, self-contained monitors record time-ghted average (TWA) vapor concentrations in factories industrial, histology, cytology, and clinical labs

10-030-80

antages

- v per-test cost
- ort-term and workshift sampling can be conducted sily so you can quantify vapor exposure by employee, category, or area

lications

- iodic sampling and screening of zardous areas and jobs
- icating trouble spots
- ecking ventilation
- eping accurate employee health records

ge

- use, simply remove a monitor from its package d clip it to clothing near the breathing zone
- monitoring a specific work area, place the monitor in a location where flow is unrestricted
- er monitoring, seal the badge with the supplied cap; replace it in the ckage; record the time, date, and vapors to be analyzed; and send it to lab for analysis†
- frigerate and/or expedite for analysis to help ensure accurate results

itor Types

- **onitors 3500 and 3510** are designed to provide precise TWA ncentration measurements for an eight-hour period
- **onitors 3500 and 3520** allow you to collect data for analysis by an lependent laboratory
- **onitors 3510 and 3530** include prepaid analysis for up to three mpounds per badge
- **onitors 3520 and 3530** are designed with a special backup section for mpling environments that include compounds like acetone, methylene loride, and isopropyl alcohol

ERING INFORMATION:

is available from 3M on sampling rate and measuring range for more 135 vapors that these monitors can sample. Contact your Fisher ntific Customer Service Representative for a complete list of organic pounds sampled.

MPLIANCE:

t or exceed OSHA accuracy requirements of ±25% for many workplace aminants.

TE:

one, methyl ethyl ketone, and vinyl acetate may show a decreased very when sampled in high relative humidity. These safety products t be used in accordance with OSHA regulations and the user instruc-s, warnings, and limitations accompanying each product.

cription	Mfr. No.	Cat. No.	Price
itor only	3500	**10-030-80**	Ea./19.66
itor with analysis†	3510	**10-030-91**	Cs. of 5/604.12
itor with backup	3520	**17-985-363A**	Cs. of 5/111.18
itor with backup and analysis	3530	**17-988-407**	Cs. of 5/815.32

analysis service will analyze only the compounds shown in the 3M Compounds Analysis rt. Up to three of the listed compounds can be analyzed per monitor with prepaid lysis. For analysis of unlisted compounds, contact your Fisher Scientific Customer Service resentative at 1-800-772 6733.

Dräger* accuro* Bellows Pump

Ergonomic design allows easy measurement of more than 350 gases—including formaldehyde

17-986-70A

Provides a means of direct, onsite measuring of more than 350 gases, vapors, and aerosols. Internal scissors mechanism provides stability so that a uniform, even pump stroke of 100cm³ can be completed.

- ▸ Convenient, built-in stroke counter records strokes performed
- ▸ Recessed counter reset button prevents accidental resetting; a white dot in clear optical window of pump rises to indicate completion of each stroke cycle, preventing incomplete measurements
- ▸ Ergonomic design fits comfortably in one hand
- ▸ Soft rubber grips on pump body make it easier to hold and squeeze
- ▸ Built-in ceramic tube opener adds safety and convenience
- ▸ Corrosion-resistant construction provides years of reliable service
- ▸ Components are easily replaceable and snap together for quick reassembly
- ▸ Designed and manufactured using ISO 9001: 2000-certified processes
- ▸ **Hardside Kit** has a durable, hard plastic carrying case
- ▸ **Softside Kit** includes a nylon transport case with shoulder strap

ORDERING INFORMATION:

Pump dimensions 6¾L × 1¾W × 3⅜"H (17.1 × 4.5 × 8.5cm). Net weight: ½ lb. (225g). Stroke volume: 100cm³ ±5%.

INCLUDES:

Available alone or as part of a pump kit that contains the accuro pump, deluxe tube opener, a pack of rubber caps for tubes, a screwdriver, an Allen wrench, and spare parts for the pump.

REQUIRED ACCESSORIES:

Drager Short-Term Detector Tubes (see separate entries, pp. 1621-1623)

Description	Mfr. No.	Cat. No.	Each
accuro pump (alone)	6400000	**17-986-70A**	390.37
accuro softside kit	4053473	**17-988-408**	506.76
accuro hardside kit	4056443	**19-046-750**	543.00
accuro hard case	4056442	**19-046-749**	83.00

Dräger* Haz Mat Simultaneous Test Kit

Simultaneously detects multiple contaminants

Provides Haz Mat teams with onsite information about levels of inorganic/organic gases and vapors encountered during fires and afterward during salvage and overhaul operations.

- Easy to use—just score and remove tube tips, insert special five-tube holder into manifold, and connect manifold to pump
- After 10 complete pump strokes, tubes are ready for evaluation

ORDERING INFORMATION:

Individual test sets and adapter also sold separately.

INCLUDES:

Accuro* pump; pump spare parts kit; air currents kit; 39" (1m) extension hose with adapter (includes scoring tool and manifold); simultaneous test set opener; deluxe tube opener; laminated instruction cards.

Three each of Simultaneous Test Set† I (tests for hydrogen chloride, hydrogen cyanide, carbon monoxide, ammonia, and nitrous fumes).Three each of Simultaneous Test Set† II (tests for sulfur dioxide, chlorine, hydrogen sulfide, carbon dioxide, and phosgene).

Four each of Simultaneous Test† Set III (tests for alcohols, aliphatic hydrocarbons, aromatics, chlorinated hydrocarbons, and ketones).

Hard-plastic carrying case.

19-046-643

Description	Mfr. No.	Cat. No.	Each
Haz Mat Simultest Kit	4056098	**19-046-643**	1675.00
Haz Mat Simultest Kit without accuro pump	4056447	**19-500-221**	1265.00
Adapter	6400090	**17-985-354Z**	53.56

†Each Simultaneous Test Set consists of five detector tubes in a rubber holder—ready for use. Each test set can be completed in one minute or less.

ACCESSORIES

Individual Haz Mat Simultest Test Sets

Test for five different gases simultaneously in less than one minute

Test Set I. Includes detector tubes for hydrogen chloride, hydrogen cyanide, carbon monoxide, ammonia, and nitrous fumes.

Test Set II. Includes detector tubes for sulfur dioxide, chlorine, hydrogen sulfide, carbon dioxide, and phosgene.

Test Set III. Includes detector tubes for alcohols, aliphatic hydrocarbons, aromatics, chlorinated hydrocarbons, and ketones.

ORDERING INFORMATION:

Packs of 10 test sets.

REQUIRED ACCESSORIES:

Require adapter and a Dräger* pump (sold separately) for the semi-quantitative determination of inorganic gases and organic vapors.

Description	Mfr. No.	Cat. No.	Pack of 10
Test Kit Set I	8101735	**18-556R**	70.56
Test Kit Set II	8101736	**18-556S**	70.56
Test Kit Set III	8101770	**18-556T**	70.56

WARNING

No other type of tube should be substituted for use with these kits.

*Trademark. See Trademark Reference.

ger* Short-Term Detector Tubes

measuring concentration of specific contaminants instantaneously

ss detector tubes are filled with an inert reagent carrier material (silica gel, aluminum oxide, or aluminum silicate) impregnated with an indicating reagent

gent produces a colorimetric indication in the presence of a particular gas, vapor, or aerosol

centrations can be read directly from the color change on the tube's printed scale

es are hermetically sealed; most have a two-year shelf life (when stored at room temperature)

E:

tests require a pretube or comparison tube in addition to the detector tube. These tubes are included in the box of 10, thus reducing the number of tor tubes. The actual number of detector tubes is cited in the ordering charts.

r Vapor to be Measured	Dräger Tube to Be Used	No. of Tubes	Measurement Range[1]	Mfr. No.	Cat. No.	Pack
ne	Acetone 100/b	10	100–12,000ppm	CH22901	**17-985-173**	64.38
lene	Petroleum hydrocarbons 100/a	10	100–2500ppm	6730201	**17-985-286**	64.38
compounds in air	Acid test	10	Qualitative	8101121	**17-985-174**	64.38
nitrile	Acrylonitrile 0.5/a	5	0.5–20ppm	6728591	**17-985-175**	64.38
rrent	Smoke tube	10	----	CH25301	**17-985-297**	53.05
ol	Alcohol 100/a	10	100–3000ppm	CH29701	**17-985-176**	65.92
	Alcohol 25/a	10	Qualitative	8101631	**18-565**	79.31
atic hydrocarbons (boiling range 50° to C [122° to 392°F])	Hydrocarbon 2	10	2–23mg/L	CH25401	**17-985-239**	70.56
onia	Ammonia 0.25/a	10	0.25–3ppm	8101711	**18-556A**	75.71
	Ammonia 2/a	10	2–30ppm	6733231	**17-985-177**	65.92
	Ammonia 5/a[2]	10	5–700ppm	CH20501	**17-985-178**	61.80
	Ammonia 5/b	10	2.5–100ppm	8101941	**19-038-830**	62.50
	Ammonia 0.5%/a	10	0.05–10 vol. %	CH31901	**17-985-179**	70.56
e	Arsine 0.05/a	10	0.05–3ppm	CH25001	**17-985-184**	88.07
e and organic arsenic compounds	Organic arsenic compounds and arsine	10	Qualitative	CH26303	**17-985-183**	101.97
line	Ammonia 0.25/a	10	0.25–3ppm	8101711	**18-556A**	75.71
compounds in air	Amine test	10	Qualitative	8101061	**17-985-185**	64.38
ene	Benzene 0.5/a	10	0.5–10ppm	6728561	**17-985-186**	70.56
	Benzene 0.5/c (specific)	5	0.5–10ppm	8101841	**17-988-416**	70.56
	Benzene 2/a[2]	5	2–60ppm	8101231	**17-985-187**	70.56
	Benzene 5/b[2]	10	5–50ppm	6728071	**17-985-188**	64.38
	Benzene 15/a	10	15–420ppm	8101741	**18-556B**	70.56
ine	Chlorine 0.2/a	10	0.2–30ppm	CH24301	**17-985-206**	58.71
tylene	Olefins 0.05%/a	10	0.04–3.2 vol. %	CH31201	**17-985-277**	70.56
tane	Hydrocarbons 0.1%/b	10	0.1–0.8 vol. %	CH26101	**17-985-238**	64.38
on dioxide	Carbon dioxide 100/a	10	100–3000ppm	8101811	**18-556C**	60.77
	Carbon dioxide 0.1%/a[2]	10	0.1–6 vol. %	CH23501	**17-985-191**	57.17
	Carbon dioxide 0.5%/a	10	0.5–10 vol. %	CH31401	**17-985-192**	64.38
	Carbon dioxide 1%/a	10	1–20 vol. %	CH25101	**17-985-193**	58.71
	Carbon dioxide 5%/A	10	5–60 vol. %	CH20301	**17-985-194**	88.07
on disulfide	Carbon disulfide 30/a	10	32–3200ppm	CH23201	**17-985-197**	77.77
on monoxide	Carbon monoxide 2/a	10	2–300ppm	6733051	**17-985-198**	59.74
	Carbon monoxide 5/c[2]	10	5–700ppm	CH25601	**17-985-199**	60.77
	Carbon monoxide 8/a (only for CO in H_2)	10	8–150ppm	CH19701	**17-985-200**	88.07
	Carbon monoxide 10/b[2]	10	10–3000ppm	CH20601	**17-985-201**	57.17
	Carbon monoxide 0.3%/b	10	0.3–7 vol. %	CH29901	**17-985-202**	64.38
on tetrachloride	Carbon tetrachloride 1/a	5	1–15ppm	8101021	**17-985-203**	78.28
	Carbon tetrachloride 5/c	10	5–50ppm	CH27401	**17-985-204**	93.22
rine	Chlorine 0.3/b[2]	10	0.3–10ppm	6728411	**17-985-205**	73.65
	Chlorine 0.2/a	10	0.2–30ppm	CH24301	**17-985-206**	58.71
	Chlorine 50/a	10	50–500ppm	CH20701	**17-985-207**	73.65
robenzene	Chlorobenzene 5/a	5	5–200ppm	6728761	**17-985-208**	73.65
roform	Chloroform 2/a	5	2–10ppm	6728861	**17-985-209**	112.27
roprene	Chloroprene 5/a	10	5–60ppm	6718901	**17-985-211**	81.89
mic acid	Chromic acid 0.1/a	9	0.1–0.5mg/m^3	6728681	**17-985-212**	112.27
ide	Cyanide 2/a	10	2–15mg/m^3	6728791	**17-985-213**	101.97
ogen chloride	Cyanogen chloride 0.25/a	10	0.25–5ppm	CH19801	**17-985-214**	93.22

nsion of measuring range listed is possible for some detector tubes. Call your Fisher Scientific Customer Service Representative for more information.

ty Equipment Institute (SEI) certified.

Dräger* Short-Term Detector Tubes, Cont'd.

Gas or Vapor to be Measured	Dräger Tube to Be Used	No. of Tubes	Measurement Range[1]	Mfr. No.	Cat. No.	Pack o
Cyclohexane	Cyclohexane 100/a	10	100–1500ppm	6725201	**17-985-215**	70.
Cyclohexylamine	Cyclohexylamine 2/a	10	2–30ppm	6728931	**17-985-216**	101.
Demeton	Thioether	10	Qualitative	CH25803	**17-985-305**	93.
1,2-Dichloro-1,1,2,2-tetrafluoroethane	Halogenated hydrocarbons 100/a	8	200–2800ppm	8101601	**17-985-217**	233.
Diethyl ether	Diethyl ether 100/a	10	100–4000ppm	6730501	**17-985-218**	73.
Dimethyl formamide	Dimethyl formamide 10/b	10	10–40ppm	6718501	**17-985-219**	130.
Dimethyl sulfate	Dimethyl sulfate 0.005/c	9	0.005–0.5ppm	6718701	**17-985-220**	112.
Dimethyl sulfide	Dimethyl sulfide 1/a	5	1–15ppm	6728451	**17-985-221**	76.
Epichlorohydrin	Epichlorohydrin 5/b	10	5–50ppm	6728111	**17-985-222**	73.
Ethyl acetate	Ethyl acetate 200/a	10	200–3000ppm	CH20201	**17-985-223**	76.
Ethyl alcohol	Alcohol 100/a	10	100–3000ppm	CH29701	**17-985-176**	65.
Ethyl benzene	Ethyl benzene 30/a	10	30–600ppm	6728381	**17-985-224**	70.
Ethyl mercaptan	Mercaptan 20/a	10	20–100ppm	8101871	**18-556G**	88.
Ethyl formate	Ethyl formate 20/a	10	20–500ppm	8103541	**19-166-776**	74.
Ethylene	Ethylene 0.1/a	5	0.1–5ppm	8101331	**17-985-226**	88.
	Ethylene 50/a	10	50–2500ppm	6728051	**17-985-227**	88.
Ethylene glycol	Ethylene glycol 10	5	10–180mg/m³	8101351	**17-985-228**	76.7
Ethylene oxide	Ethylene oxide 1/a	5	1–15ppm	6728961	**17-985-229**	76.7
	Ethylene oxide 25/a	10	25–500ppm	6728241	**17-985-230**	88.0
Fluorotrichloromethane	Halogenated hydrocarbons 100/a	8	200–2800ppm	8101601	**17-985-217**	233.8
Formaldehyde	Formaldehyde 0.2/a	10	0.2–5ppm	6733081	**17-985-232**	78.2
	Formaldehyde activation tube (used w/Formaldehyde 0.2/a)	10	To extend measuring range to 0.04ppm	8101141	**17-985-362**	64.3
	Formaldehyde 2/a	10	2–40ppm	8101751	**18-556E**	93.2
n-Hexane	n-Hexane 100/a	10	100–3000ppm	6728391	**17-985-235**	71.5
Hydrazine	Hydrazine 0.25/a	10	0.1–10ppm	CH31801	**17-985-237**	76.7
Hydrochloric acid	Hydrochloric acid 1/a	10	1–10ppm	CH29501	**17-985-240**	77.2
	Hydrochloric acid/nitric acid 1/a	10	1–10ppm HCl	8101681	**19-038-826**	94.5
	Hydrochloric acid 50/a	10	50–5000ppm	6728181	**17-985-241**	73.6
Hydrocyanic acid	Hydrocyanic acid 2/a[2]	10	2–150ppm	CH25701	**17-985-242**	65.9
Hydrogen fluoride	Hydrogen fluoride 0.5/a	10	0.5–90ppm	8103251	**19-046-630**	76.0
	Hydrogen fluoride 1.5/b	10	1.5–15ppm	CH30301	**17-985-243**	76.7
Hydrogen peroxide	Hydrogen peroxide 0.1/a	10	0.1–3ppm	8101041	**17-985-244**	90.6
Hydrogen sulfide	Hydrogen sulfide 0.2/a	10	0.2–5ppm	8101461	**19-038-824**	76.0
	Hydrogen sulfide 0.2/b	10	0.2–6ppm	8101991	**19-038-832**	68.5
	Hydrogen sulfide 0.5/a	10	0.5–15ppm	6728041	**17-985-245**	62.8
	Hydrogen sulfide 1/d	10	1–200ppm	8101831	**18-556F**	57.1
	Hydrogen sulfide 2/a	10	2–200ppm	6728821	**17-985-247**	64.3
	Hydrogen sulfide 2/b	10	1–60ppm	8101961	**19-038-831**	57.3
	Hydrogen sulfide 5/b	10	5–600ppm	CH29801	**17-985-248**	57.1
	Hydrogen sulfide 100/a	10	100–2000ppm	CH29101	**17-985-249**	59.7
	Hydrogen sulfide 0.2%/a	10	0.2–7 vol. %	CH28101	**17-985-250**	78.2
	Hydrogen sulfide 2%/A	10	2–40 vol. %	8101211	**17-985-251**	93.2
Iodine	Iodine 0.1a	10	0.1–5ppm	8103521	**19-166-775**	74.0
Mercaptan	Mercaptan 0.5/a	10	0.5–5ppm	6728981	**17-985-253**	89.6
	Mercaptan 20/a	10	20–100ppm	8101871	**18-556G**	88.0
Mercury vapor	Mercury 0.1/b	10	0.05–2mg/m³	CH23101	**17-985-255**	70.5
Methane	Natural gas test	5	Qualitative	CH20001	**17-985-265**	58.7
Methanethiol	Mercaptan 20/a	10	20–100ppm	8101871	**18-556G**	88.0
Methyl acrylate	Methyl acrylate 5/a	10	5–200ppm	6728161	**17-985-257**	88.0
Methyl alcohol (methanol)	Alcohol 100/a	10	100–3000ppm	CH29701	**17-985-176**	65.92
Methyl bromide	Methyl bromide 0.5/a	10	0.55–30ppm	8101671	**18-556H**	123.60
	Methyl bromide 5/b	10	5–50ppm	CH27301	**17-985-260**	88.07
	Mercaptan 20/a	10	20–100ppm	8101871	**18-556G**	88.07
Methylene chloride	Methylene chloride 100/a	10	50–2000ppm	6724601	**17-985-261**	70.56
Monostyrene (styrene)	Monostyrene 10/a	10	10–200ppm	6723301	**17-985-262**	72.62
	Monostyrene 10/b	10	10–250ppm	6733141	**17-985-263**	73.65
	Monostyrene 50/a	10	50–400ppm	CH27601	**17-985-264**	76.74

[1] *Extension of measuring range listed is possible for some detector tubes. Call your Fisher Scientific Customer Service Representative for more information.*

[2] *Safety Equipment Institute (SEI) certified.*

*Trademark. See Trademark Reference.

Prices subject to change.

er* Short-Term Detector Tubes, Cont'd.

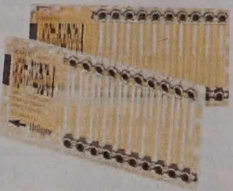
r Vapor to be Measured	Dräger Tube to Be Used	No. of Tubes	Measurement Range[1]	Mfr. No.	Cat. No.	Pack of 10
l tetracarbonyl	Nickel tetracarbonyl 0.1/a	9	0.1–1ppm	CH19501	**17-985-267**	112.27
acid	Nitric acid 1/a	10	1–50ppm	6728311	**17-985-268**	78.28
	Hydrochloric acid/nitric acid 1/a	10	1–10ppm HCl	8101681	**19-038-826**	94.50
gen dioxide	Nitrogen dioxide 0.5/c[2]	10	0.5–25ppm	CH30001	**17-985-269**	59.74
	Nitrogen dioxide 2/c	10	2–100ppm	6719101	**17-985-270**	70.56
us fumes (NO + NO_2)	Nitrous fumes 0.5/a	10	0.5–10ppm	CH29401	**17-985-272**	57.17
	Nitrous fumes 2/a	10	2–100ppm	CH31001	**17-985-273**	58.71
	Nitrous fumes 20/a	10	20–500ppm	6724001	**17-985-274**	70.56
	Nitrous fumes 50/a	10	50–2000ppm	8101921	**19-038-829**	57.56
	Nitrous fumes 100/c	10	100–5000ppm	CH27701	**17-985-275**	64.38
ane	Petroleum hydrocarbons 10/a	10	10–300ppm	8101691	**17-986-71A**	88.07
	Petroleum hydrocarbons 100/a	10	100–2500ppm	6730201	**17-985-286**	64.38
ist	Oil mist 1/a	10	1–10mg/m^3	6733031	**17-985-276**	93.22
	Oil 10/a-P	10	25–100µg	6728371	**17-985-321A**	88.07
ns (butylene, propylene)	Olefins 0.05%/a	10	0.04–3.2 vol. %	CH31201	**17-985-277**	70.56
e	Ozone 0.05/b	10	0.05–1.4ppm	6733181	**17-985-280**	70.56
	Ozone 10/a	10	10–300ppm	CH21001	**17-985-281**	88.07
ntane	Pentane 100/a	10	100–1500ppm	6724701	**17-985-282**	71.59
loroethylene	Perchloroethylene 0.1/a	10	1–4ppm	8101551	**19-046-631**	207.00
	Perchloroethylene 2/a	10	2–300ppm	8101501	**17-985-283**	64.38
	Perchloroethylene 10/b	10	10–500ppm	CH30701	**17-985-284**	67.47
ol	Phenol 1/b	10	1–20ppm	8101641	**17-985-287**	79.31
gene	Phosgene 0.02/a	10	0.02–1ppm	8101521	**17-985-288**	88.07
	Phosgene 0.25/b	10	0.25–15ppm	CH28301	**17-985-289**	88.07
phine	Phosphine 0.01/a	10	0.01–1.0ppm	8101611	**17-985-290**	88.07
	Phosphine 0.1/a	10	0.1–4ppm	CH31101	**17-985-291**	64.38
	Phosphine 25/a	10	25–10,000ppm	8101621	**17-985-292**	112.27
	Phosphine 50/a	10	15–1000ppm	CH21201	**19-018-612**	70.56
phoric acid esters	Phosphoric acid esters 0.05/a	10	Up to 0.05ppm	6728461	**17-985-294**	112.27
opanol	Alcohol 100/a	10	100–3000ppm	CH29701	**17-985-176**	65.92
ylene imine	Ammonia 0.25/a	10	0.25–3ppm	8101711	**18-556A**	75.71
ening tube	Polytest	10	Qualitative	CH28401	**17-985-296**	58.71
ke tube	Smoke tube	10	----	CH25301	**17-985-297**	53.05
r dioxide	Sulfur dioxide 0.1/a	10	0.1–3ppm	6727101	**17-985-298**	70.56
	Sulfur dioxide 0.5/a[2]	10	0.5–25ppm	6728491	**17-985-299**	64.38
	Sulfur dioxide 1/a	10	1–25ppm	CH31701	**17-985-300**	59.74
	Sulfur dioxide 20/a	10	20–2000ppm	CH24201	**17-985-301**	70.56
	Sulfur dioxide 50/b	10	50–8000ppm	8101531	**17-986-71C**	70.56
ric acid	Sulfuric acid 1/a	10	1–5mg/m^3	6728781	**17-985-303**	98.37
ether	Thioether	10	Qualitative	CH25803	**17-985-305**	93.22
ene	Toluene 5/b	10	5–300ppm	8101661	**18-556J**	78.28
	Toluene 50/a	10	50–400ppm	8101701	**18-556K**	59.74
	Toluene 100/a	10	100–1800ppm	8101731	**18-556L**	88.07
ene diisocyanate (TDI)	Toluene diisocyanate 0.02/A	9	0.02–0.2ppm	6724501	**17-985-308**	168.92
l-Trichloroethane thyl chloroform)	Trichloroethane 50/d	5	50–600ppm	CH21101	**17-985-310**	58.71
loroethylene	Trichloroethylene 2/a[2]	10	2–250ppm	6728541	**17-985-311**	64.38
hylamine	Triethylamine 5/a	10	5–60ppm	6718401	**17-985-313**	71.59
l chloride	Vinyl chloride 0.5/b	10	0.5–30ppm	8101721	**18-556M**	70.56
	Vinyl chloride 100/a	10	100–3000ppm	CH19601	**17-985-316**	88.07
er vapor	Water vapor 0.1/a	10	0.05–1mg/L	8101321	**17-985-317**	88.07
	Water vapor 1/b	10	1–40mg/L	8101781	**18-556Q**	88.07
	Water vapor 3/a	10	3–60 lbs/mmcf	8103031	**18-556N**	94.76
	Water vapor 20/a-P	10	20–1000mg/m^3	8103061	**19-046-633**	68.50
ne	Xylene 10/a	10	10–400ppm	6733161	**17-985-320**	64.38

ension of measuring range listed is possible for some detector tubes. Call your Fisher Scientific Customer Service Representative for more information.

ety Equipment Institute (SEI) certified.

Dräger CMS* Chip Measurement System

Uses an analyzer and substance-specific chips to obtain accurate, reliable measurements of gas and vapor concentrations



Chips for use with CMS Analyzer

Bar code on each chip contains specific information such as gas type, measurement range, and other necessary parameters for measurement evaluation; when a chip is inserted into the analyzer, the bar code is read and interpreted. Choose from more than 50 interchangeable chips (sold separately, at right).

- Mass-flow-regulated pump system draws a constant flow of sample through the chip, compensating for any pressure fluctuation
- Easy to use, with simple menu commands and one-switch operation
- Chip contains 10 measurement channels filled with a substance-specific reagent that provides a quick reaction with the contaminant
- Intelligent interaction ensures high level of accuracy
- Data recorder gives contaminant, concentration, date, time, and location; stores up to 50 measurements

18-999-1916

ORDERING INFORMATION:

Compact, rugged housing measures approximately 1½L × 3½W × 8"H (3.8 × 8.9 × 20.3cm). Net weight: 1⅝ lb. (730g). Uses four "AA" alkaline batteries (included).

INCLUDES:

Comes with carrying case and batteries. Optional remote system (sold separately) includes an additional pump, a screwdriver, and a 9' (3m) extension hose to sample contaminants in inaccessible areas.

REQUIRED ACCESSORIES:

CMS chips (sold separately)

CERTIFICATIONS:

Intrinsically safe and certified according to UL, MSHA and CENELEC standards.

Description	Mfr. No.	Cat. No.	Each
Analyzer	6405300	**18-999-1915A**	1775.00
Remote System	6405060	**18-999-1916**	602.55

Chip Type	Measurement Range	Mfr. No.	Cat. No.	Each
Acetic Acid	2–50ppm	6406330	**19-040-947**	85.00
Acetone	40–600ppm	6406470	**19-040-949**	85.00
Ammonia	0.2–5.0ppm	6406550	**19-046-640**	85.00
Ammonia	2–50ppm	6406130	**18-999-1917**	60.77
Ammonia	10–150ppm	6406020	**18-999-1918**	60.77
Benzene	0.2–10ppm	6406030	**18-999-1919**	172.01
Benzene	0.5–10ppm	6406160	**19-034-568**	172.01
Benzene	10–250ppm	6406280	**19-034-569**	172.01
Butadine	1–25ppm	6406460	**19-640-460**	85.00
Carbon Dioxide	200–3000ppm	6406190	**19-034-570**	60.77
Carbon Dioxide	1000–25,000ppm	6406070	**18-999-1920**	58.71
Carbon Dioxide	1–20% by volume	6406210	**19-034-571**	60.77
Carbon Monoxide	5–150ppm	6406080	**18-999-1921**	58.71
Chlorine	0.2–10ppm	6406010	**18-999-1922**	60.77
Ethanol	100–2500ppm	6406370	**19-640-370**	85.00
Formaldehyde	0.2–5ppm	6406540	**19-042-723**	85.00
Hydrochloric Acid	1–25ppm	6406090	**18-999-1923**	78.28
Hydrochloric Acid	20–500ppm	6406140	**18-999-1924**	78.28
Hydrogen Cyanide	2–50ppm	6406100	**18-999-1925**	73.13
Hydrogen Peroxide	0.2–2ppm	6406440	**19-046-642**	89.00
Hydrogen Sulfide	0.2–5ppm	6406520	**19-046-641**	85.00
Hydrogen Sulfide	2–50ppm	6406050	**18-999-1926**	60.77
Hydrogen Sulfide	20–500ppm	6406150	**18-999-1927**	60.77
Hydrogen Sulfide	100–2500ppm	6406220	**19-034-572**	60.77
Isopropanol	40–1000ppm	6406390	**19-640-390**	102.00
Mercaptan	0.25–6.0ppm	6406360	**19-640-360**	102.00
Methanol	20–500ppm	6406380	**19-640-380**	102.00
MTBE	2–40ppm	6406530	**17-985-357**	87.55
Methylene Chloride	10–200ppm	6406510	**19-046-204**	85.00
Nitrogen Dioxide	0.5–25ppm	6406120	**18-999-1928**	60.77
Nitrous Gases	0.5–15ppm	6406060	**18-999-1929**	58.71
Nitrous Gases	10–200ppm	6406240	**19-640-240**	59.00
Oxygen	1–25% by volume	6406490	**19-042-722**	105.00
Ozone	25–1000ppb	6406430	**19-040-950**	85.00
Perchloroethylene	5–150ppm	6406040	**18-999-1930**	73.13
Petroleum Hydrocarbons	20–500ppm	6406200	**19-038-778**	89.54
Petroleum Hydrocarbons	100–3000ppm	6406270	**19-034-574**	87.55
Phosgene	0.05–2.0ppm	6406340	**19-640-340**	102.00
Phosphine	0.10–2.5ppm	6406400	**19-041-692**	75.00
Phosphine	1–25ppm	6406410	**19-640-401**	75.00
Phosphine	20–500ppm	6406420	**19-640-420**	75.00
Phosphine	200–5000ppm	6406500	**19-640-500**	76.38
Propane	100–2000ppm	6406310	**19-640-310**	89.00
Styrene	10–200ppm	6406560	**19-046-202**	85.00
Sulfur Dioxide	0.4–10ppm	6406110	**18-999-1931**	60.77
Sulfur Dioxide	5–150ppm	6406180	**19-034-575**	73.13
Toluene	10–300ppm	6406250	**19-034-576**	77.25
Training Chip	----	6406290	**19-640-290**	23.04
Trichloroethylene	5–100ppm	6406320	**19-640-320**	71.00
Vinyl Chloride	0.3–10ppm	6406170	**19-034-577**	77.25
Vinyl Chloride	10–250ppm	6406230	**19-034-578**	77.25
Xylene	10–300ppm	6406260	**19-034-579**	73.13

*Trademark. See Trademark Reference.

A* Altair Pro Single-Gas Detector

gle-button access to any function

ires superior dust and water protection, excellent impact resistance, RFI performance, and an extremely effective alarm system.

ghly accurate electrochemical sensors measure concentrations of toxic s or percent oxygen

ormation displays on large, clear backlit LCD

stem automatically records the last 50 alarm or test events; active ta-logging records peak value every 3 minutes

ble alarm system consists of two bright flashing LEDs, a piercing audi- alarm, and internal vibrating alarm

justable alarm set points are offered for LOW and HIGH levels on all ts; toxic gas versions also have TWA and STEL alarm points

bberized armor housing resists dust, water and impact

ilt-in IR communication port connects detector to MSA infrared adapter read data or change alarm set points

ilt-in gas delivery adapter for gas response tests

From left : 19-165-562, 19-165-558, 19-165-559

ORDERING INFORMATION:

Dimensions: 3.4 × 2 × 1" (8.6 × 5 × 2.5cm). Weight (including clip): 4 oz. (113g).

COMPLIANCE:

Complies with Class 1, Div 1, Groups A, B, C, D and G requirements in the U.S. and Canada. IP67 rated for ingress protection. Meets ATEX and Australian standards. UL, cUL listed.

Sensor	Measuring Range	Mfr. No.	Cat. No.	Each
O_2	0-25%	10074137	**19-165-558**	325.00
CO	0-1500ppm	10074135	**19-165-559**	325.00
H_2S	0-200ppm	10074136	**19-165-562**	325.00

A* Passport* FiveStar* Gas Detectors

ultaneously detect and display concentrations of combustible gases, oxygen, and toxic gases

or bay accommodates up to five sensors and is designed for easy or upgrade or replacement. "Smart sensors" automatically configure itor for detection of selected gases; sensors also automatically pensate for changes in temperature and pressure to provide dependable ection in a range of ambient conditions and in both high-altitude and rground applications.

tures

gged, molded plastic case with silver-plated body resists water and st and features static spark resistance/RFI protection

rge backlit display is designed to face user when monitor is clipped to lt for hands-free operation

ree pushbuttons control all functions; allow access to peak readings, ne-weighted average (TWA), short-term exposure level (STEL), and ttery status

nique "gas gauge" indicates amount of time remaining on battery charge

ternal datalogger stores up to 15 hours of continuous operational data; nerates periodic and session reports for downloading to PC

gh-decibel audible tone and flashing display alert user of presence of zardous gases, concentrations that exceed STEL and TWA, and low ttery voltage

clusive Lockalarm* circuit provides added level of protection in monitoring mbustible gases; if atmosphere reaches 100% LEL, alarm is reset only by oving to fresh-air environment then turning the unit off and back on again

TIFICATIONS

approved for use in Class I, Division 1, Groups A, B, C, and D; Class II, sion 1, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; ss III hazardous locations.

ERING INFORMATION

ensions: 6½L × 3⅜W × 2⁵⁄₁₆"H (16.5 × 8.6 × 5.8cm). Weight: 17.3 oz. (491g).

TE: Silver nickel-plated alarm is not appropriate for chlorine. The choice harsh chemical environments where corrosion is a concern, the ABS stic version of the FiveStar is available as a special order. For ordering rmation, contact your Fisher Scientific Customer Service Representative.

INCLUDES:

Alarm and listed sensors; rechargeable NiCd battery pack; fast charger; pump module; 10' (3m) sampling line; 12" (30.5cm) probe; leather instrument jacket; heavy-duty carrying case with video and space for cylinder

19-042-520 Series

Type	Mfr. No.	Cat. No.	Each
LEL, O_2, CO_2, H_2S	10018002	**19-042-522**	3814.00
LEL, O_2, H_2S	10018004	**19-042-525**	3589.00

ACCESSORIES

Sensors for Passport* Personal Alarm

Type	Mfr. No.	Cat. No.	Each
LEL	478537	**19-082-838**	210.00
O_2	480566	**19-082-837**	210.00
CO	636240	**18-999-2719**	210.00
H_2S	636241	**18-999-2720**	210.00

LOOKING FOR MORE ACCESSORIES?

Chargers, pumps, and sampling accessories for use with Passport* Gas Detectors can be found online.

Visit www.fishersci.com and search for Passport Replacement

MSA* Model RP Calibration Check Kits

Quick and convenient method for checking the response of gas detection instruments

ORDERING INFORMATION:

Kits available with 0.25L/min. or 1.5L/min. regulators. Cylinders are sold separately. (Measure approximately 14¼L × 3½" diameter.)

INCLUDES:

- Female/male connection
- Regulating valve with gauge to measure cylinder pressure
- Sampling line
- Calibration test tubing
- Sensor adapter (where applicable)
- Hard carrying case with foam inserts for accommodating two calibratio gas cylinders

Representative kit shown with various regulators. Each kit comes with one regulator as described.

CERTIFICATIONS:

All calibration accessories are certified and tested for accuracy.

Regulator	Mfr. No.	Cat. No.	Ea
RP Calibration Kits			
0.25 L/min.	477149	**18-999-3236**	219.
1.5 L/min.	477150	**18-999-3238**	230.
Replacement Regulators			
0.25 L/min.	467895	**18-999-3342**	160.
1.5 L/min.	467896	**18-999-3344**	160.

MSA* Orion* Multigas Detector Kits

Simultaneous multigas measurement and display

Economical, portable gas monitor detects and measures the presence of O_2, H_2S, CO, and combustibles.

- Runs up to 20 hours in nonpump mode and 16 hours in pump mode
- Rechargeable NiMH battery pack recharges in under four hours using MSA's Fast Charger; unit will also run for at least eight hours on standard alkaline batteries

All Models Feature:

- Large easy-to-read display
- Simple two-button operation with one-button calibration
- Gases displayed simultaneously along with measured reading
- Rugged case designed to resist dust and water and survive a 6' (1.8m) drop
- Alarm lights visible from all angles
- Protective boot

INCLUDES:

Deluxe Kit Includes:

- NiMH battery and charger
- Internal pump
- 10' (3m) sample line with 1' (30cm) probe
- Orange cordura case
- Calibration kit in a black economy case
- Available with optional datalogging capability; ask your Fisher Scientific Customer Service Representative for pricing and ordering information (Mfr. Part No. 10030399)

Industrial Kit Includes:

- NiMH battery and charger
- Internal pump
- 10' (3m) sample line with 1' (30cm) probe
- Orange cordura case

Economy Kit Includes:

- Alkaline battery
- Calibration cap

Orion Multigas Detector from 19-042 Series Kits

CERTIFICATIONS:

Orion is approved by UL and CUL as intrinsically safe for Class I, Division 1, Groups A, B, C, and D hazardous locations. Environmental protection rating: IP54.

Type	Mfr. No.	Cat. No.	Each
Deluxe Kits			
LEL, O_2, CO, H_2S	10025932	**19-042-571**	2258.00
LEL, O_2, H_2S	10025935	**19-042-572**	2088.00
LEL, O_2, CO	10025938	**19-042-573**	2088.00
Industrial Kits			
LEL, O_2, CO, H_2S	10025931	**19-042-577**	1718.00
LEL, O_2, CO	10025937	**19-042-579**	1548.00
Economy Kits			
LEL, O_2, CO, H_2S	10025930	**19-042-580**	1293.75

ACCESSORIES

MSA* Orion* Replacement Parts and Accessories

Description	Mfr. No.	Cat. No.	Each
Combustible Sensor	10024247	**19-042-559**	199.00
Oxygen Sensor	10025940	**19-042-560**	182.79
Carbon Monoxide Sensor	711306	**19-042-561**	200.00
Hydrogen Sulfide Sensor	711307	**19-042-562**	200.75
NiMH Charger	10020551	**19-042-564**	149.00
Vehicle Charger	10026502	**19-042-554**	219.00

*Trademark. See Trademark Reference.

Prices subject to change.

ermo Scientific* EPD* Mk2 ctronic Personal Dosimeter

NEW

l for detecting and monitoring radiation exposure

19-166-365

held detector produces a linear nse over a wide energy range s suitable for use as a stand-alone neter or as part of a comprehensive netry management system.

vanced radiological performance a small, lightweight, handheld unit

gonomic rugged design with an gator clip for convenience

cellent response to gamma, beta, d X-radiation with immunity to ctromagnetic interference

splay and function control via a gle button on the front of the unit

dible and visual alarms for dose, dose rate, count-down ne, read time and failure mode

pid infrared communications to reader/PC or stand-alone operation

sy-to-read display with optional backlighting

it retains data up to 10 years without a battery

ngle 3.6V lithium battery provides up to 30 weeks of continuous eration; also operates on "AA" alkaline battery

ailable with coin battery cap that opens with twist of a coin, or curity battery cap that requires a special tool to open (sold separately)

MPLIANCE:
plies with U.S. FCC rules (Part 15).

TIFICATIONS:
ertified.

cription	Mfr. No.	Cat. No.	Each
coin battery cap	EPD/1/41945/120CC	**19-166-365**	660.00
security battery cap	EPD/1/41945/120SC	**19-166-366**	660.00

CIFICATIONS

e	0 mrem to > 1600 rem
e Rate	0 mrem/h to > 400 rem/h
rating Temperature	-10° to 40°C (15° to 105°F)
ensions	3¼ × 2½ × ¾" (85 × 63 × 19mm)
ght	3.2 oz. (95g) including battery and clip

LOOKING FOR MORE DETECTION DEVICES?

To find a variety of additional Thermo Scientific* radiation detection devices, including isotope identifiers, dose rate meters, personal radiation detectors and survey meters...

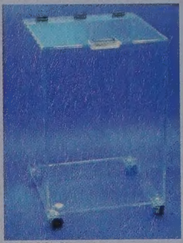
Visit www.fishersci.com and search for Thermo Radiation

RADIATION PROTECTION

*Fisherbrand** Mobile Beta Storage Container

Suitable for beta protection and industrial mobile storage

- Made of ⅜" thick (0.95cm) acrylic
- Hinged lid stays open in two positions for safe, easy access
- Four easy-glide casters



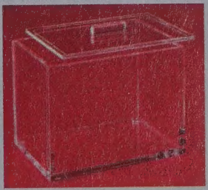
12-009-45

L × W × H	Cat. No.	Each
20 × 20 × 28" (50.8 × 50.8 × 71.1cm)	**12-009-45**	677.75

*Fisherbrand** Beta Storage Box

Holds two tube holders side-by-side

- Safely stores reagent bottles containing beta-emitting isotopes
- Made of ⅜" thick (0.95cm) clear acrylic with nonskid feet
- Cover has handle and removes easily



12-009-13

L × W × H	Cat. No.	Each
9 × 6 × 7" (23 × 15 × 18cm)	**12-009-13**	113.72

*Fisherbrand** Beta Waste Boxes

Extra-large capacity storage bin holds carboys, linens, bench liners and more

- Made of ⅜" thick (0.95cm) acrylic for beta protection
- Removable lid allows for use with liner bags
- **Mobile Big Beta Box** has four heavy-duty casters for easy movement

ORDERING INFORMATION:
Both boxes measure 12L × 12W × 24"H (30.5 × 30.5 × 61cm).

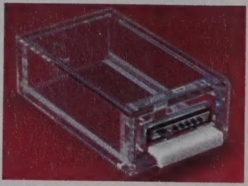
12-009-44C (Bag not included)

Description	Cat. No.	Each
Big Beta Box	**12-009-44B**	388.87
Mobile Big Beta Box	**12-009-44C**	460.96

Nalgene* Stackable Beta Acrylic Lock Box with Drawer

Stackable lock box with front pull-out drawer for easy access

- Made from ½" thick (12mm) acrylic
- No metal parts to produce secondary X-rays
- Maximum protection against beta emitters such as ^{32}P, ^{35}S, and ^{14}C
- Holds standard-size lead pigs and radioactive vials
- With hinged lid
- L × W × H: 14¾ × 8¾ × 5" (37.5 × 22.2 × 12.7cm)



14-293-65

INCLUDES:

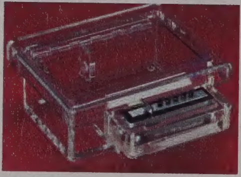
Built-in antitheft security connector, push-button combination lock, and two radiation symbol stickers

Mfr. No.	Cat. No.	Each
6851-0001	**14-293-65**	469.59

Nalgene* Benchtop Beta Acrylic Lock Box

Small unit useful for secured storage in refrigerator or freezer

- Made from ½" thick (12mm) acrylic
- No metal parts to produce secondary X-rays
- Maximum protection against beta emitters such as ^{32}P, ^{35}S, and ^{14}C
- Holds lead pigs or radioisotope vials up to 3½" (8.9cm) tall
- With hinged lid
- L × W × H: 6 × 9 × 3¾" (15.2 × 22.9 × 9.5cm)



14-293-64

INCLUDES:

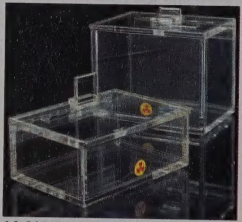
Built-in antitheft security connector, push-button combination lock, and two radiation symbol stickers

Mfr. No.	Cat. No.	Each
6850-0001	**14-293-64**	337.42

Nalgene* Hinged-Lid Beta Disposal and Storage Containers

For temporary storage and disposal of microcentrifuge tubes and pipet tips exposed to beta emitting isotopes

- Built-in Quick-Tip* mini lid minimizes exposure to radioisotopes
- Transparent, ⅜" thick (0.95cm) acrylic
- Large hinged lid has a built-in stop to prevent lid from folding back on container
- Mini lid flips up for easy disposal of pipet tips



14-293-62A, 14-293-62B

L × W × H	Mfr. No.	Cat. No.	Each
6 × 9 × 3" (15 × 23 × 8cm)	6812-0001	**14-293-62A**	146.30
6 × 9 × 7" (15 × 23 × 18cm)	6812-0002	**14-293-62B**	205.27

Nalgene* Beta Storage Box

Save space in your refrigerator and freezer

- Transparent ⅜" (0.95cm) thick acrylic container provides shielded storage for stock isotope solutions and radiolabeled samples
- Rectangular design saves space in refrigerator or freezer and withstands prolonged use at temperatures to -70°C (-94°F)
- Hinged, transparent top allows easy identification of samples without opening the lid
- Accommodates Nalgene Beta Centrifuge Tube Racks

03-484-1

INCLUDES:

Two disposable foam inserts for secure positioning of lead pigs or isotope bottles

L × W × H	Mfr. No.	Cat. No.	Each
11 × 8 × 4" (27.9 × 20.3 × 10.1cm)	6740-1108	**03-484-1**	259.26

Nalgene* Benchtop Beta Waste Container

Protection against beta-emitting isotopes

Cylindrical shield protects personnel from waste material containing beta-emitting isotopes.

- Constructed of ⅜" thick (0.95cm) acrylic
- Shield cap fits securely over waste bottle–machined lip on cap prevents slipping and provides extra impact protection
- Shield encases either 1 or 2L (32 or 64 oz.) waste bottles while providing safe access to, or easy manipulation of, bottle closure

02-963-11A, 02-963-11C

INCLUDES:

1L or 2L polyethylene bottle

Size	Diameter	Mfr. No.	Cat. No.	Each
32 oz. (1L)	4½" (11cm)	6710-1000	**02-963-11A**	136.01
64 oz. (2L)	5½" (14cm)	6710-2000	**02-963-11C**	185.19

*Trademark. See Trademark Reference.

lgene* Benchtop Beta Radiation Shields

ice of two freestanding styles

14-293-46

nsparent, ⅜" thick (0.95cm) acrylic elds stop beta-emitting radioactive topes such as ^{32}P and ^{35}S

are freestanding and stable, even en bumped

gled-top shield allows good view of rk surface while protecting worker; its deep base provides a flat work surface l protects lab bench from hot spots

shaped shield provides an excellent ckdrop for angled-shield top shields, and be used as stand-alone beta shield or ste container

LUDES:

ation labels

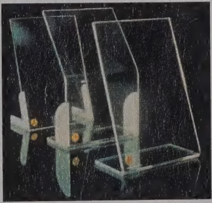
IPLIANCE:

shields meet OSHA Standard 29CFR Part 1910.1030 for use as ction against bloodborne pathogens.

/×H	Mfr. No.	Cat. No.	Each
d-top Shield			
12 × 18" (30 × 30 × 46cm)	6700-1812	**14-293-45**	150.56
18 × 24" (30 × 46 × 61cm)	6700-2418	**14-293-46**	234.88
ped Shield			
13¼ × 18" (19 × 34 × 46cm)	6701-1813	**14-293-51**	154.33
19¼ × 24" (25 × 49 × 61cm)	6701-2419	**14-293-52**	240.65

lgene* Maximum-Protection Benchtop ta Radiation Shields

gled design provides good view of work surface ile protecting worker



From left to right: 14-293-54C, 14-293-54B, 14-293-54A

nsparent, ½" thick (1.3cm) acrylic ovides maximum protection against ta emitters

are freestanding and stable, even nen bumped

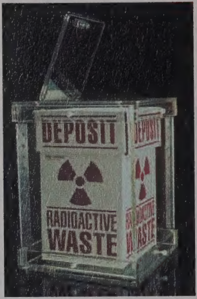
MPLIANCE:

hields meet OSHA Standard 29CFR 1910.1030 for use as protection nst bloodborne pathogens.

cription	L × W × H	Mfr. No.	Cat. No.	Each
ed	6⅜ × 12 × 18" (16.2 × 30.4 × 45.7cm)	6802-0001	**14-293-54A**	112.17
led des	6 × 12 × 18" (15.2 × 30.4 × 45.7cm)	6802-0002	**14-293-54B**	163.36
led gs	6⅝ × 12 × 18" (16.8 × 30.4 × 45.7cm)	6802-0003	**14-293-54C**	118.19
sonal	18 × 10 × 12" (45.7 × 25.4 × 30.4cm)	6802-0004	**14-293-54D**	112.17

Nalgene* Acrylic Beta Waste Shield

Collapses for convenient storage



03-484-3 (box not included)

- Transparent, ⅜" thick (0.95cm) acrylic shield completely encloses a large container holding solid or liquid beta-radioactive waste
- Large hinged door on cover for easy access to waste container
- Leakproof tray contains spills
- Hinged corners for removing container
- Smaller shield accommodates 10L container; large shield holds 20L carboy, cardboard radioactive waste boxes (sold separately, shown in photo), or standard office-size trash can

L × W × H	Mfr. No.	Cat. No.	Each
13 × 13 × 17" (33 × 33 × 43cm)	6745-0010	**03-484-3**	417.52
18 × 18 × 29⅜" (46 × 46 × 75cm)	6745-9024	**03-484-4**	601.25

Radiation Warning Labels

Can be used on any surface where visual warning is required

11-873-11

- Ideal for labeling tubes, flasks, pipetters and tips
- ¼" wide (0.6cm) label printed with vivid magenta ink on bright yellow background
- Roll fits standard label dispensers

Cat. No.	Roll of 1000
11-873-11	30.33

WARNING

Radioactive waste should never be stored on the benchtop for long periods of time and should be disposed of properly. Proper handling and storage of isotopes will minimize exposure to radiation. For standards related to exposure, refer to United States Nuclear Regulatory Commission Rules and Regulations, Title 10, Chapter 1, Part 20.

RESPIRATORS

3M* Filtering Facepiece Respirators

3M Particulate Filtering Facepiece Respirators (FFRs) offer an effective way of meeting NIOSH 42 CFR 84 standards. Recommended for use up to 10X the PEL or the appropriate OSHA standard. All utilize the 3M Advanced Electret Media, an electrostatically charged microfiber that makes breathing easier and coole Respirators incorporate combinations of the following features: nose clips to reduce pressure points on face, one-way exhalation valves for easy exhalatio a faceseal that contours to the face to form a secure seal, and adjustable straps for a quick and easy fit.

N95 and P95 Filtering Facepiece Respirators

Provide excellent, lightweight worker protection

- For use in bagging, drilling, grinding, machining, sanding, sawing, processing of minerals, and grain handling
- Recommended for use up to 10X the OSHA PEL or applicable occupational exposure limits, whichever is lower
- Feature Advanced Electret Media for easier and cooler breathing and adjustable nose clip and straps for comfortable fit
- Available with optional exhalation valve and faceseal; 19-033-524 is a smaller size of 18-999-473
- The protective layers of respirator 19-038-989 are flame resistant as demonstrated per ASTM* D2859-96; not a substitute for a faceshield

18-999-473

19-002-713

19-033-524

19-002-709

Type	Exhalation Valve	Faceseal	NIOSH Approval Number	Mfr. No.	Cat. No.	Pack of	Case of 8 P
N95[1]	No	No	TC-84A-0007	8210	**18-999-473**	20/25.99	165.0
N95[1]	No	No	TC-84A-0007	8110S	**19-033-524**	20/20.59	140.7
N95[1]	Yes	No	TC-84A-1299	8511	**19-002-713**	10/22.67	155.0
P95[2]	Yes	Yes	TC-84A-1166	8271	**19-002-709**	10/32.69	223.5

[1] *NIOSH N95 approved: At least 95% filtration efficiency against solid and liquid aerosols that do not contain oil.*

[2] *NIOSH P95 approved: At least 95% filtration efficiency against solid and liquid aerosols including oil. If used in environments containing only oil aerosols, dispose of respirator after 40 hours use or 30 days, whichever is less.*

Odor-Removing Respirators

Allow user to work in odorous environments

- AG Nuisance Odor Relief Respirators are used in primary aluminum reductions, chemical processing, glass etching, paper mills and petrochemical industries when particles are present with concentrations of chlorine, hydrogen fluoride or sulfur dioxide below the OSHA PEL
- OV Nuisance Odor Relief Respirators are used for applications such as foundries, undercoating, petroleum operations and agricultural situations when particles are present with concentrations of organic vapors below the OSHA PEL

19-002-707

19-002-718

19-002-705

19-002-719

Filter Class	Exhalation Valve	Faceseal	Nuisance Odor Relief	NIOSH Approval No.	Mfr. No.	Cat. No.	Pack of	Case o
R95[1]	No	No	AG[2]	TC-84A-1350	8246	**19-002-707**	20/64.65	6 Pk./340.8
R95[1]	No	No	OV[3]	TC-84A-1350	8247	**19-002-705**	20/64.75	6 Pk./341.0
P95[4]	Yes	No	AG[2]	TC-84A-1166	8576	**19-002-718**	10/41.69	8 Pk./285.0
P95[4]	Yes	No	OV[3]	TC-84A-1166	8577	**19-002-719**	10/41.88	8 Pk./286.3

[1] *NIOSH R95 approved: At least 95% filtration efficiency against solid and liquid aerosols including oil. If oil aerosols are present, time of use may be limited to eight hours of continuous or intermittent use. Refer to NIOSH User's Guide, Pub. No. 96-101.*

[2] *3M recommended for relief against nuisance levels of acid gas. Nuisance level refers to concentrations below OSHA PEL or other applicable government occupational exposure limits, whichever is lower.*

[3] *3M recommended for relief against nuisance levels of organic vapors. Nuisance level refers to concentrations below OSHA PEL or other applicable government occupational exposure limits, whichever is lower.*

[4] *NIOSH P95 approved: At least 95% filtration efficiency against solid and liquid aerosols including oils. If used in environments containing only oil aerosols, dispose of respirator after 40 hours of use or 30 days, whichever is first.*

WARNING

If respirator becomes damaged, soiled, or breathing becomes difficult, leave the contaminated area and dispose of the respirator. Do not exceed maximum use concentration established by regulatory standards. These safety products must be used in accordance with OSHA regulations and the user instructions, warnings, and limitations accompanying each product.

ding Respirators

use when welding, torch cutting, soldering, brazing, working with molten metals

- justable buckle straps
- xe-resistant filter media for added comfort and durability
- ailable with or without a chemical absorbent for relief from nuisance el welding odors

19-002-710

19-034-803

19-037-811

19-037-059

Class	Exhalation Valve	Faceseal	Nuisance Odor Relief[1]	NIOSH Approval Number	Mfr. No.	Cat. No.	Pack of 10	Case of 8 Pk.
	Yes	Yes	No	TC-84A-0454	8212	**19-002-710**	61.00	414.18
	Yes	Yes	Yes[1]	TC-84A-0454	8214	**19-034-803**	71.50	495.98
	Yes	No	No	TC-84A-0454	8512	**19-037-811**	230.57	----
	Yes	No	Yes[1]	TC-84A-0454	8514	**19-037-059**	62.85	444.94

ding odor relief refers to concentrations of organic vapors not exceeding OSHA PEL. 3M recommended for ozone protection up to 10 times the OSHA PEL or applicable government pational exposure limits, whichever is lower. (Not NIOSH approved for ozone.)

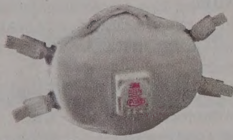
SH N95 approved: At least 95% filtration efficiency against solid and liquid aerosols that do not contain oil.

0 and P100 Filtering Facepiece Respirators

use when grinding, welding, working with lead or other situations where arsenic, lead, or cadmium are sent up to 10X the OSHA PEL

- kplace applications include OSHA substance-specific particle exposure in entrations up to 10X the OSHA PEL.
- justable buckle straps
- e N100 filter in non-oil environments to reduce exposure to lead, dmium, arsenic and 4,4-methylene dianiline
- 00 filter can be used to reduce exposure to a variety of contaminants both oil and non-oil environments

19-002-711


19-037-352

Class	Exhalation Valve	Faceseal	NIOSH Approval Number	Mfr. No.	Cat. No.	Each	Case of 20
0[1]	Yes	Yes	TC-84A-1298	8233	**19-002-711**	8.98	149.69
0[2]	Yes	Yes	TC-84A-2561	8293	**19-037-352**	9.97	166.24

SH N100 approved: At least 99.97% filtration efficiency against solid and liquid aerosols that do not contain oil.

SH P100 approved: At least 99.97% filtration efficiency against solid and liquid aerosols including oil. If used in environments containing only oil aerosols, dispose of respirator after 40 rs of use or 30 days, whichever is first.

llson* Saf-T-Fit* Flat-Fold Respirators

easily into a pocket

- fold disposable respirators, vidually wrapped for hygiene, ide 95% efficient protection against ain solids and non–oil-based sols.
- ring-open design with boomerang se seal and durable suspension aps assures a good fit and cure seal
- cepiece tabs prevent staples from enetrating filter area
- htweight, humidity-resistant, poallergenic filter media maximizes rvice life and wearer comfort
- ique fold-and-hold mechanism keeps ntamination out when not in use

19-039-253

ORDERING INFORMATION:

Self-dispensing box. N9510F available in packs of 50. N9520F available in packs of 30; features exhalation valve and low-breathing resistance media.

COMPLIANCE:

Approved to NIOSH 42CFR84 standards.

Approved for	Size	Mfr. No.	Cat. No.	Pack of	Case of 4 Pk.
N9510F					
Use with particulate aerosols free of oil	Small	14110320	**19-039-247**	50/65.99	233.58
	Medium	14110321	**19-039-248**	50/65.99	233.58
	Large	14110322	**19-039-250**	50/65.99	233.58
N9520F					
Use in hot oil-free environments (foundries, steel mills)	Small	14110323	**19-039-251**	30/66.44	235.19
	Medium	14110324	**19-039-252**	30/66.44	235.19
	Large	14110325	**19-039-253**	30/66.44	235.19

3M* 9200 Series N95 Filtering Facepiece Particulate Respirators

Offer a comfortable fit that conforms to a wide range of face sizes

Made with advanced electrostatically charged microfibers to make breathing easier and cooler.

- Available with Cool Flow* one-way exhalation valve for easy exhalation and cool, dry comfort in work settings that involve heat, humidity, or long periods of wear
- Three-panel construction resists collapse and provides better visibility
- Soft cover web on inner panel feels soft against skin
- Adjustable nose clip for custom fit and secure seal

19-041-427

19-041-429

ORDERING INFORMATION:
Individually packaged to prevent contamination and for easy dispensing.

COMPLIANCE:
Meet NIOSH 42CFR84 N95 requirements. NIOSH Approval No.: TC-84A-2669 (Cat. No. 19-041-427); TC-84A-2668 (Cat. No. 19-041-429).

NOTE:
These safety products must be used in accordance with OSHA regulations and the user instructions, warnings and limitations accompanying each product.

Description	Mfr. No.	Cat. No.	Pack of	Case of 12 Pk.
Without Cool Flow Valve	9210	**19-041-427**	20/23.30	238.96
With Cool Flow Valve	9211	**19-041-429**	10/20.34	208.66

Kimberly-Clark* N95 Particulate Filter Respirators

Pouch-style design provides large breathing area with limited facial contact

- Bendable aluminum nosepiece for comfortable, secure fit
- Bacterial filtration efficiency: 95% at 0.3µm
- **Fluid Protection** mask features patented construction that provides protection from bloodborne pathogens and body fluids

18-999-1445

COMPLIANCE:
Meet NIOSH 42CFR84 N95 requirements.

Size	Mfr. No.	Cat. No.	Pack of
N95 Respirator with Fluid Protection			
Small	46827	**18-999-1444**	35/55.79
Regular	46727	**18-999-1445**	35/55.79
Standard N95 Respirator (No fluid protection)			
Regular	62126	**18-999-4812**	50/57.24

3M* 6000 Series Reusable Half Facepiece

Combines features of both reusable and disposable respirators to provide effective protection

- Lightweight half facepiece features adjustable headstraps and cradle suspension
- Low-profile facepiece offers excellent visibility and allows comfortable wearing of safety spectacles
- Backswept cartridges balance better on the face while their large surface area ensures low breathing resistance
- Probed models for fit test only—not for use as a respirator

17-986-9B

ORDERING INFORMATION:
Cartridge/filter combinations sold separately.

INCLUDES:
Reclosable storage bag

REQUIRED ACCESSORIES:
Facepiece requires compatible cartridges and/or filters. (See separate listings.)

COMPLIANCE:
NIOSH approved.

NOTE:
These safety products must be used in accordance with OSHA regulations and the user instructions, warnings and limitations accompanying each product.

Size	Mfr. No.	Cat. No.	Each	Case o
Facepiece, without filters				
Small	6100	**17-986-9A**	12.46	24/249.28
Medium	6200	**17-986-9B**	12.46	24/249.28
Large	6300	**17-986-9C**	12.46	24/249.28
Probed models, for fit test only				
Medium	6200Q	**17-987-3A**	24.28	4/83.00
Large	6300Q	**17-987-3B**	24.28	4/83.00

3M* 6000 Series Drop-Down Half Facepiece

Designed for workers who need to communicate frequently

- Head cradle adjusts to head size
- Head harness system allows facepiece to drop to the chest without having to remove hard hat
- Durable straps hold their elasticity for long wear
- Upper strap adjustment is on head cradle so strap ends do not interfere with vision
- Exhalation valve cover directs air downward to help prevent fogging of the faceshield

19-041-418

ORDERING INFORMATION:
Can be used with Series 2000 or 7093 filters or Series 6000 cartridges. Contact your Fisher Scientific Sales Representative for compatibility information related to various applications.

REQUIRED ACCESSORIES:
Facepiece requires compatible cartridges and/or filters. (See separate listings.

NOTE:
These safety products must be used in accordance with OSHA regulations and the user instructions, warnings and limitations accompanying each product.

Size	Mfr. No.	Cat. No.	Each	Case of 24
Small	6100DD	**19-041-417**	13.48	269.56
Medium	6200DD	**19-041-418**	13.48	269.56
Large	6300DD	**19-041-420**	13.48	269.56

* 6000 Series Reusable Full Facepiece

uires limited maintenance time—reducing need for ensive repair programs

retainers or extra parts needed to
ch filters, cartridges, or dual airline
t, lightweight facepiece material and
y-to-use headstraps
ge lens with scratch-resistant hardcoat

IRED ACCESSORIES:
atible cartridges and/or filters
s 2000 and 7093 filters and Series
cartridges, sold separately)

PLIANCE:
H approved for 3M Negative Pressure
rifying Respirators, Positive-Pressure
Airline Respirators, and some 3M
s (with DIN adapter).

18-999-4556

E:
e safety products must be used in accordance with OSHA
ations and the user instructions, warnings, and limitations
npanying each product.

	Mfr. No.	Cat. No.	Each
	6700	**18-999-4555**	129.70
um	6800	**18-999-4556**	129.70
	6900	**18-999-4557**	129.70

H approved for use in dual-airline, supplied-air systems.
H approved for use in high-pressure, continuous flow systems.

3M* 7800S Reusable Full Facepiece

Can be used with 3M Series 2000 or 7093 filters or Series 6000 cartridges

When combined with appropriate attachments, these facepieces are NIOSH approved for use as air-purifying respirators, continuous-flow (Type C) airline respirators, or combination air-purifying and Type C respirators.

- Soft, pliable facepiece made of easy-to-clean silicone with a double-flap seal
- Extra-large inhalation and exhalation valves
- Six adjustable straps to distribute weight
- Standard nose cup to prevent fogging; large faceshield with scratch-resistant polycarbonate lens
- High-quality, rust-free speaking diaphragm

17-663B

ORDERING INFORMATION:
To convert to a Powered Air Purifying Respirator (PAPR) system, add 3M PAPR assembly and breathing tube. Order attachments separately on our Web site.

REQUIRED ACCESSORIES:
Compatible Series 2000 or 7093 filters or Series 6000 cartridges (Available separately).

NOTE:
These safety products must be used in accordance with OSHA regulations and the user instructions, warnings and limitations accompanying each product.

Size	Mfr. No.	Cat. No.	Each
Small	7800S S	**17-663C**	252.33
Medium	7800S M	**17-663B**	252.33
Large	7800S L	**17-663D**	252.33

* 6000DIN Series Full-Facepiece Respirator

n built-in DIN port adapter assembly

ions as a negative-pressure, air-purifying respirator suitable for
ction from a variety of tear or chemical warfare agents when used in
ination with front-mounted responder canisters and cartridges (sold
rately). Facepiece can be reconfigured for use with 2000 Series or
filters, 6000 Series cartridges, and powered or supplied air systems
nst a variety of gases, vapors, and particulate hazards according to
H approvals.

ft, lightweight, and well-balanced design
justable head straps for long-wearing comfort
ge polycarbonate lens with scratch-resistant coating
components made from natural rubber latex

ERING INFORMATION:
pieces and responder filter media sold separately. Consult your
r Scientific Sales Representative for more information about
opriate uses and configurations.

UIRED ACCESSORIES:
media (sold separately).

E:
e safety products must be used in accordance with OSHA regulations
the user instructions, warnings and limitations accompanying each
uct.

19-055-521 shown with 19-045-575 canister (sold separately)

19-055-521 with built-in DIN port assembly

Size	Mfr. No.	Cat. No.	Each
Small	6700DIN	**19-055-521**	183.79
Medium	6800DIN	**19-055-520**	183.79
Large	6900DIN	**19-055-522**	183.79

3M* 6000 Series Cartridge/P100 Particulate Filter Combinations

Preassembled with P100 filters

- Can be used for contaminant concentrations up to 10 times the Permissible Exposure Limit (PEL) with half-facepiece respirators, or 50 times the PEL with full-facepiece respirators (when quantitatively fit-tested) or according to specific OSHA standards or applicable government regulations, whichever is lower
- Not for use in atmospheres that are unknown or immediately dangerous to life or health (IDLH)
- Cartridge/filter assemblies using P100 filters are 99.97% efficient against solid and liquid aerosols, including oils

NOTE:

Do not exceed maximum use concentrations established by regulatory standards. These safety products must be used in accordance with OSHA regulations and the user instructions, warnings, and limitations accompanying each product.

3M
60923
NIOSH

18-999-4550

3M
60924
NIOSH

18-999-4551

18-999-4552

18-999-4567

Description	Approved for	Mfr. No.	Cat. No.	Pair	Case of 30 Pair
Acid Gas/P100	Chlorine, hydrogen chloride, chlorine dioxide, sulfur dioxide, hydrogen sulfide (escape only); P100 (99.97% efficient against solid and liquid aerosols, including oils)	60922	**18-999-4549**	22.25	541.77
Ammonia/ Methylamine/P100	Ammonia; methylamine; P100 (99.97% efficient against solid and liquid aerosols, including oils)	60924	**18-999-4551**	24.00	587.17
Formaldehyde†/ Organic Vapor/P100	Formaldehyde; organic vapors, P100 (99.97% efficient against solid and liquid aerosols, including oils)†	60925	**18-999-4552**	24.00	587.17
Mercury Vapor/Chlorine/P100	Mercury vapor; chlorine; P100 (99.97% efficient against solid and liquid aerosols, including oils)	60929	**18-999-4553**	31.76	793.88
Multi-Gas/Organic Vapor/P100	Organic vapors; chlorine, chlorine dioxide, hydrogen chloride, sulfur dioxide, hydrogen fluoride, hydrogen sulfide (escape only); ammonia; methylamine; formaldehyde; P100 (99.97% efficient against solid and liquid aerosols, including oils)†	60926	**18-999-4567**	23.01	575.33
Organic Vapor/P100	Certain organic vapors; P100 (99.97% efficient against solid and liquid aerosols, including oils)	60921	**18-999-4548**	21.50	523.30
Organic Vapor/Acid Gas/P100	Certain organic vapors; chlorine, hydrogen chloride, sulfur dioxide, hydrogen fluoride, hydrogen sulfide (escape only); P100 (99.97% efficient against solid and liquid aerosols, including oils)	60923	**18-999-4550**	21.50	523.30

† *OSHA regulations require that gas-proof goggles be worn with half-facepiece respirators when used against formaldehyde.*

LOOKING FOR RESPIRATOR CLEANERS?

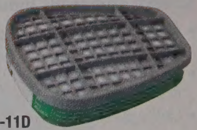
Fisher Scientific offers a complete portfolio of cleaning and storage solutions to go with the respirators shown on these pages. Our Fisherbrand* Premoistened PPE Cleaning Towelettes (Cat. No. 19-161-915, pictured here) are moistened with a special formula that effectively kills bacteria while removing perspiration and body oils. To find these and other related products...

Visit www.fishersci.com and search for Respirator Cleaning

tridges for 3M* 6000 and 7000 Series Respirators

out P100 Filters

17-986-11B


17-986-11D

17-986-11E

18-306

e with 3M Facepieces 6000 Series or 3M Facepieces 7000 Series with bayonet
ge holders against a variety of gases, vapors, and particulate
s according to NIOSH approvals.

contaminants up to 10 times the Permissible Exposure Limit (PEL) with
facepiece respirators or 50 times the PEL (when quantitatively fit tested)
full-facepiece respirators or according to specific OSHA standards or
icable government regulations, whichever is lower

for use in atmospheres that are unknown or immediately dangerous to life
eath (IDLH)

:

exceed maximum use concentrations established by regulatory
rds. These safety products must be used in accordance with OSHA
tions and the user instructions, warnings and limitations accompanying each product.

ge Type	Approved for	Mfr. No.	Cat. No.	Pair	Case of 30 Pair
as	Chlorine, hydrogen chloride, sulfur dioxide, chlorine dioxide, and hydrogen sulfide (escape only)	6002	**17-986-11B**	11.64	279.25
nia/Methylamine	Ammonia and methylamine	6004	**17-986-11D**	12.09	302.13
ldehyde/Organic Vapors	Formaldehyde and organic vapors†	6005	**17-986-11E**	12.09	302.13
ry Vapor/Chlorine Gas	Mercury vapor and chlorine gas	6009	**18-306**	22.02	550.48
Gas/Organic Vapors	Certain organic vapors; chlorine, chlorine dioxide, hydrogen chloride, sulfur dioxide, hydrogen fluoride, hydrogen sulfide (escape only); ammonia; methylamine; formaldehyde†	6006	**18-999-4566**	11.80	283.19
ic Vapor	Certain organic vapors	6001	**17-986-11A**	10.74	257.84
ic Vapor/Acid Gas	Certain organic vapors, chlorine, hydrogen chloride, and sulfur dioxide; hydrogen sulfide (escape only); or hydrogen fluoride	6003	**17-986-11C**	11.65	279.60

regulations require that gas-proof goggles be worn with half-facepiece respirators when used against formaldehyde.

th* 7600 Series Silicone Full Facepiece Respirator

paround polycarbonate lens design protects wearer's face and eyes

l-flange silicone seal conforms to facial features

d-coated polycarbonate lens provides over 200° field of vision; protects
s and face against irritating gases, vapors and flying particles

l nasal cup reduces fogging and lessens dead air space-improving
ker comfort

aking diaphragm ensures easy communication

-strap harness provides an effective and comfortable facepiece-to-
e seal

n cup helps proper positioning of the facepiece

k strap allows wearer to park respirator when not in use

IRED ACCESSORIES:
atible North cartridges, filters and accessories.

17-621-1

COMPLIANCE:
Lens meets ANSI Z87.1-1989 high impact and penetration requirements.

Size	Mfr. No.	Cat. No.	Each
Small	760008AS	**17-621-1A**	246.00
Medium/Large	760008A	**17-621-1**	246.00

-Off Windows for 7600 Series Full-Facepiece
pirators

tect the facepiece lens from scratches and splatters
ilable in packages of five 3-window packs, for a total of 15 windows

iption	Mfr. No.	Cat. No.	Pack of 5
ff windows	80836A	**17-623-6**	22.27

acement Parts for Series 7600 Respirators

iption	Mfr. No.	Cat. No.	Pack of	Case of 12 Pk.
dge connector	770016A	**17-985-97A**	2/8.08	80.78
ation valve	770017	**17-985-97B**	6/9.00	89.96
ation valve	770018	**17-985-97D**	4/16.27	166.87

LOOKING FOR MORE RESPIRATORS?

Fisher Scientific also provides a half-facepiece respirator from North*—the North 7700 Series. For specifications and ordering information,

Visit www.fishersci.com and search for North 7700

North* Low-Profile Cartridges and Cartridge/P100 Filter Combinations

Satisfy numerous industrial applications

- All North air-purifying cartridges are approved for use with all North air-purifying half masks and full facepiece respirators
- Air-purifying respirators with cartridges provide respiratory protection against gases and vapors by using sorbents to purify the inhaled air
- Cartridges without filters do not remove dust, fibers and other particles

CERTIFICATIONS:

All North cartridges, filters, and cartridge/filter combinations are NIOSH certified to 42CFR84 standards when used with North respirator facepieces.

Various North cartridges, filters, and cartridge/filter combinations

Cartridge/Filter	Approved for	Mfr. No.	Cat. No.	Pack of 2	Case of
Acid Gas Cartridge	Chlorine, hydrogen chloride, sulfur dioxide, hydrogen fluoride, chlorine dioxide, and formaldehyde	N750002	**19-003-299B**	12.94	18 Pk./199.14
Ammonia/Methylamine Cartridge	Ammonia and methylamine	N750004	**19-003-301B**	11.11	72 Pk./743.99
Defender Multi-Purpose Cartridge	Organic vapors, chlorine, hydrogen chloride, sulfur dioxide, hydrogen sulfide (escape), hydrogen fluoride, chlorine dioxide, ammonia, methylamine, and formaldehyde	75SC	**19-003-312B**	12.47	18 Pk./191.84
Mercury Vapor/ Chlorine Cartridge†	Mercury vapors and chlorine	N750052	**19-003-309B**	29.63	18 Pk./455.87
Organic Vapor Cartridge	Organic vapors	N750001	**19-003-298B**	12.47	18 Pk./191.84
Organic Vapor/Acid Gas Cartridge	Organic vapors, chlorine, hydrogen chloride, sulfur dioxide, hydrogen fluoride, and chlorine dioxide	N750003	**19-003-300B**	12.47	18 Pk./191.84
Acid Gas/P100 Combo	Acid gases, including chlorine, hydrogen chloride, sulfur dioxide, hydrogen fluoride, chlorine dioxide, and formaldehyde; 99.97% efficient protection against dusts, mists, and fumes, including oil-based aerosols	7582P100	**19-003-263F**	24.63	12 Pk./252.66
Ammonia/Methylamine/ P100 Combo	Ammonia and methylamine; 99.97% efficient protection against dusts, mists, and fumes, including oil-based aerosols	7584P100	**19-003-263J**	25.57	12 Pk./262.31
Defender Multi-Purpose/ P100 Combo	Organic vapors, chlorine, hydrogen chloride, sulfur dioxide, hydrogen sulfide (escape), hydrogen fluoride, chlorine dioxide, ammonia, methylamine, and formaldehyde; 99.97% efficient protection against dusts, mists, and fumes, including oil-based aerosols	75SCP100	**19-003-313B**	23.93	12 Pk./245.43
Mercury Vapor/ Chlorine/P100 Combo†	Mercury vapor and chlorine; 99.97% efficient protection against dusts, mists, and fumes, including oil-based aerosols	75852P100	**19-003-310B**	37.63	12 Pk./385.92
Organic Vapor/P100 Combo	Organic vapors; 99.97% efficient protection against dusts, mists, and fumes, including oil-based aerosols	7581P100	**17-622-14**	25.12	12 Pk./257.62
Organic Vapor/Acid Gas/P100 Combo	Organic vapors and acid gases, including chlorine, hydrogen chloride, sulfur dioxide, hydrogen fluoride, and chlorine dioxide; 99.97% efficient protection against dusts, mists, and fumes, including oil-based aerosols	7583P100	**19-003-263H**	23.93	12 Pk./245.43

† *Mercury vapor cartridge includes an end-of-service life indicator for mercury vapor.*

ACCESSORIES

P100 Pancake Filters

- Thin, high-performance filters

19-003-263

Description	Mfr. No.	Cat. No.	Pack of 2	Case of 50 Pk.
P100 Respirator Filter	75FFP100	**19-003-263**	7.90	304.01
P100 Respirator Filter Plus Odor Relief From Nuisance Levels of Organic Vapors, Acid Gases, and Ozone	75FFP100NL	**19-161-841**	----	463.74

Respirator Storage Bags

Sized to fit full facepiece respirators

- Offer low-cost respirator storage
- Clear, reusable polybags
- Close lock zipper

Mfr. No.	Cat. No.	Pack of 50
80799A	**19-038-398**	52.92

BREATHE EASY* BELT-MOUNTED TURBO PAPR

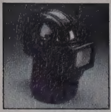
3M

eadgear, facepiece, head cover or hood

General Purpose

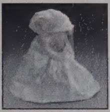
19-039-696

Welding



19-039-716

Tychem* Hood



19-039-711

Tychem Head Cover

18-778B

Facepiece

19-055-520

Compatible breathing tube

Breathing Tube

19-526-013

Breathing Tube

19-520-010

Breathing Tube

19-520-032

Breathing Tube

19-520-017

reathe Easy belt-mounted Turbo PAPR assembly

For Nonstacked Cartridges

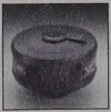
19-039-715

For All Cartridges

19-037-980

Appropriate filter packs for your application

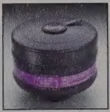
Nonstacked Cartridges



17-987-272A

Media Type	Cat. No.
A	17-987-272A
AE	17-987-272B
E	17-987-272C
K	17-987-272D
P3	17-987-272E

Stacked Cartridges



17-987-272F

Media Type	Cat. No.
AP3	17-987-272F
AEP3	17-987-272G
ALP3	17-987-398
EP3	17-987-272H
KP3	17-987-272J

For complete descriptions and ordering information for the products pictured, see pp. 1634-1636.

Battery charger

Single NiCd Battery

18-783A

Five NiCd Battery

18-783B

Ten NiCd Battery

17-987-270

Single NiMH Battery

19-130-4872

3M* Breathe Easy* Belt-Mounted Turbo PAPR Systems

Lightweight, adaptable systems use interchangeable filters, cartridges, and canisters to comfortably protect against gases, vapors and/or particulates. Turbo PAPR Assembly draws ambient air through filter media, supplying filtered air through the breathing tube to the headpiece. Minimum airflow is 4 or 6cfm depending on headgear.

Systems are sold on a component-by-component basis, allowing you to mix and match pieces to fit your application. To assemble a complete PAPR system, you will need to purchase the following separately sold components:

- Headgear, facepiece, head cover or hood
- Compatible breathing tube
- Breathe Easy belt-mounted Turbo PAPR assembly
- Appropriate cartridge/filter pack for your application
- Battery pack and charger

To view a decision tree showing how all of these pieces can be selected, see previous page.

Headgear and Facepieces

Choice of headgear, facepiece, head cover, or hood should be made by considering the following: concentration of the contaminant, work application/environment, and OSHA requirements. Facepiece requires fit testing; headgear does not.

General-Purpose Headgear Assembly

- Includes an ABS helmet; a clear, fog-free pivoting polycarbonate faceshield; and a disposable Tyvek* full faceseal
- Adjusts to fit most head sizes and accommodates spectacles
- Weighs 34 oz. (0.8kg)
- Optional visor overlay that protects faceshield is available separately

19-039-696 (BE 1)

Welding Headgear Assembly

- Includes impact-resistant black ABS welding helmet with a welding shield and fog-free inner faceshield
- Shields pivot independently and lock in raised or lowered positions; inner shield accommodates facial hair and spectacles
- Weighs 2.5 lb. (1.1kg)

19-039-716 (BE 17)

Full Facepiece 6000DIN

- Soft, lightweight, and well-balanced design
- Adjustable head straps for long-wearing comfort
- Large polycarbonate lens with scratch-resistant coating

19-055-521 with built-in DIN port assembly

COMPLIANCE:

BE 1 and BE 17 meet ANSI Z87.1-2003 Eye and Face Protection requirements and ANSI Z89.1-2003 Head Protection requirements for Type I, Class G helmets

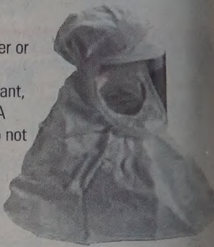
NOTE:

These safety products must be used in accordance with OSHA regulations and the user instructions, warnings and limitations accompanying each product.

Description	Mfr. No.	Cat. No.	Each
Headgear			
General-Purpose Headgear (BE 1)	520-01-83R01	**19-039-696**	325.99
Welding Headgear (BE 17)	520-01-84R01	**19-039-716**	448.21
Respirators			
Full Facepiece (Small)	6700DIN	**19-055-521**	183.79
Full Facepiece (Medium)	6800DIN	**19-055-520**	183.79
Full Facepiece (Large)	6900DIN	**19-055-522**	183.79

Head Cover or Hood

Choice of headgear, facepiece, head cover or hood should be made by considering the following: concentration of the contaminant, work application/environment, and OSHA requirements. Hoods and head covers do not require fit testing.



19-039-711 (BE 10)

Tychem* QC Hood (BE 10)

- Includes disposable polycoated Tychem hood that covers the shoulders and chest, with a clear, wide-view acetate visor
- Air enters from the breathing tube (sold separately), passes over the user's head and out at the base of the cape
- Accommodates most facial hair and spectacles
- Weighs 3.2 oz. (0.1kg)
- Supplied in packs of three hoods

18-778A (BE 12)

Tychem QC Head Cover (BE 12)

- Includes a liquid-repellent, polycoated Tychem head cover with a clear, wide-view acetate visor
- Comes with three regular or large-sized head covers in choice of white or blue

NOTE:

These safety products must be used in accordance with OSHA regulations and the user instructions, warnings and limitations accompanying each product.

Description	Mfr. No.	Cat. No.	Pack of 3
Hoods (BE 10)			
Regular	BE-10-3	**17-987-255B**	101.15
Large	BE-10L-3	**19-039-711**	124.11
Head Covers (BE 12)			
Regular, White	BE-12-3	**18-778A**	90.64
Regular, Blue	BE-12B-3	**19-039-699**	31.98
Large, White	BE-12L-3	**18-778B**	90.64
Large, Blue	BE-12LB-3	**19-039-714**	31.98

ACCESSORIES

Headpiece Accessories

Description	For Breathe Easy* Model	Mfr. No.	Cat. No.	Pack of 10
Protective Overlay	BE-10, BE-12	529-02-37R10	**17-987-250C**	12.77
Protective Overlay	Full-Facepiece	529-02-39R10	**17-987-253B**	11.23

*Trademark. See Trademark Reference.

Prices subject to change.

reathe Easy* Belt-Mounted Turbo PAPR Systems, Contd.

thing Tubes

le, accordion-style hoses connect PAPR assembly to headgear.

E:
safety products must be used in dance with OSHA regulations and ser instructions, warnings and tions accompanying each product.

19-526-013

0-032

19-520-010

19-520-017

e with	Mfr. No.	Cat. No.	Each
al Purpose and Welding Headgear	526-01-13R01	**19-526-013**	107.13
m* QC Hood	520-01-00R01	**19-520-010**	45.21
m QC Head Cover	520-03-32R01	**19-520-032**	37.63
acepiece	520-01-77	**19-520-017**	104.96

Breathe Easy* Turbo PAPR Assemblies

Each assembly includes motor blower, belt, airflow indicator, and battery pack. For use with appropriate 3M filter, filter/cartridge or canister, and respirator headpiece.

NOTE:
These safety products must be used in accordance with OSHA regulations and the user instructions, warnings and limitations accompanying each product.

19-039-715

19-037-980

Description	Mfr. No.	Cat. No.	Each
For Use with All Cartridges	520-15-00	**19-037-980**	539.23
For Use with Nonstacked Cartridges - Intrinsically Safe	520-17-00	**19-039-715**	539.23

r Media for 3M* Breathe Easy* Turbo PAPR

t exceed maximum use concentrations established by regulatory standards.
nstacked media consists of chemical cartridge or high-efficiency filter only
cked cartridges combine both cartridge and filter
cked cartridges are not for use with intrinsically safe motor blower

E:
safety products must be used in accordance with OSHA regulations and ser instructions, warnings and limitations accompanying each product.

Stacked Cartridge

Nonstacked Cartridge

Type	NIOSH MSHA	Use with PAPR Assembly Cat. No.	Mfr. No.	Cat. No.	Pack of
tridge	Certain organic vapors	19-039-715 or 19-037-980	456-00-01R06	**17-987-272A**	6/159.02
rtridge	Certain organic vapors, sulfur dioxide, chlorine, hydrogen chloride	19-039-715 or 19-037-980	456-03-01R06	**17-987-272B**	6/182.47
Cartridge/Filter	Certain organic vapors, sulfur dioxide, chlorine, hydrogen chloride, high-efficiency particulate filtration	19-037-980 only	453-03-01R06	**17-987-272G**	6/232.84
Cartridge/Filter	Certain organic vapors, sulfur dioxide, hydrogen fluoride, high-efficiency particulate filtration	19-037-980 only	453-07-01R06	**17-988-398**	6/226.69
artridge/Filter	Certain organic vapors, high-efficiency particulate filtration	19-037-980 only	453-00-01R06	**17-987-272F**	6/223.55
tridge	Sulfur dioxide, chlorine, formaldehyde, hydrogen chloride	19-039-715 or 19-037-980	456-02-01R06	**17-987-272C**	6/159.02
artridge/Filter	Sulfur dioxide, chlorine, formaldehyde, hydrogen chloride, high-efficiency particulate filtration	19-037-980 only	453-01-01R06	**17-987-272H**	6/224.39
tridge	Ammonia, methylamine	19-039-715 or 19-037-980	456-01-01R06	**17-987-272D**	6/159.02
artridge/Filter	Ammonia, methylamine, high-efficiency particulate filtration	19-037-980 only	453-02-01R06	**17-987-272J**	6/223.55
gh Efficiency Filter	High-efficiency particulate filtration	19-039-715 or 19-037-980	450-00-01R12	**17-987-272E**	12/210.99

Contd. on next page.

3M* Breathe Easy* Belt-Mounted Turbo PAPR Systems, Contd.

3M* Battery Packs and Chargers for Breath Easy* Turbo PAPR

Batteries replace those from Breathe Easy Turbo PAPR assemblies. NiCd chargers also suit NiCd batteries from Air-Mate* PAPRs. NiMH and NiCd chargers and batteries not compatible.

NOTE:
These safety products must be used in accordance with OSHA regulations and the user instructions, warnings and limitations accompanying each product.

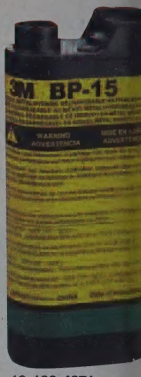
Description	For Use with	Mfr. No.	Cat. No.	Each
Batteries				
Battery Pack, NiMH	All Cartridges	BP-15	**19-130-4871**	267.29
Battery Pack, NiCd, Intrinsically Safe	A, E, K, AE, P3 (only)	BP-17IS	**NC9365653**	250.72
Smart Charger, 120V				
Battery, Single Unit	NiCd Battery	520-03-73	**18-783A**	182.98
Battery, 5-Unit	NiCd Battery	520-03-72	**18-783B**	975.49
Battery, 10-Unit	NiCd Battery	520-01-61	**17-987-270**	1535.84
Battery, Single-Unit	NiMH Battery	BC-210	**19-130-4872**	175.36

18-783A

19-130-4872

18-783B

17-987-270



19-130-4871

Lightweight, comfortable, and efficient PAPR systems incorporate blower, filter, and battery in a single belt-mounted unit. Protect against airborne particulates that have a concentration of up to 25 × PEL using the Tychem* QC Head Cover, or 1000 × PEL using the Tychem QC Hood. Rechargeable NiCd battery provides up to eight hours of continuous use.

NOTE:
These safety products must be used in accordance with OSHA regulations and the user instructions, warnings, and limitations accompanying each produc

To assemble a complete PAPR system, select from the following pieces sold separately:

- Head cover or hood
- Breathing tube
- Air-Mate Belt-Mounted PAPR Assembly
- Battery charger

R-Series Head Covers and Hoods

Tychem QC Head Covers (BE 12)

- Include a liquid-repellent Tychem headcover with a clear, wide-view acetate visor
- Protect against particulates that have a concentration up to 25 × PEL
- Choice of regular or large sizes in white or blue

Tychem QC Hood (BE 10)

- Includes a disposable, white Tychem hood that covers the shoulders and chest, with a clear wide-view acetate visor
- Air enters from the breathing tube (sold separately), passes over the user's head and out the base of the cape
- Accommodates facial hair and spectacles
- Protects against particulates that have a concentration up to 1000 × PEL
- Supplied in packs of three hoods with choice of regular or large sizes

18-778A (BE 12)

19-039-699 (BE 12)

19-039-711 (BE 10)

Description	Mfr. No.	Cat. No.	Price
Tychem QC Head Covers (BE 12)			
Regular, White	BE-12-3	**18-778A**	Pk. of 3/90.64
Large, White	BE-12L-3	**18-778B**	Pk. of 3/90.64
Regular, Blue	BE-12B-3	**19-039-699**	Ea./31.98
Large, Blue	BE-12LB-3	**19-039-714**	Ea./31.98
Tychem QC Hoods (BE 10)			
Regular, White	BE-10-3	**17-987-255B**	Pk. of 3/101.15
Large, White	BE-10L-3	**19-039-711**	Pk. of 3/124.11

* Air-Mate* High-Efficiency Belt-Mounted PAPR Systems, Contd.

eathing Tube

xible, easy breathing

ible hose connects Air-Mate* -Mounted PAPR Assembly to d cover or hood.

18-039

No.	Cat. No.	Each
224	**18-039**	30.89

-Mate* High-Efficiency lt-Mounted PAPR tem Assembly

tweight, high-efficiency PAPR embly includes High Efficiency (HE) ilter, airflow indicator, battery pack, belt.

19-039-701

No.	Cat. No.	Each
-01-30	**19-039-701**	419.49

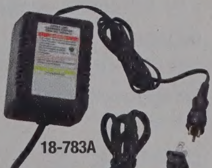
placement Parts for Air-Mate* PAPR Assembly

cription	Mfr. No.	Cat. No.	Each
Use with Air-Mate HEPA 10, 12, 16			
h Efficiency (HE) Air Filter Unit†	520-03-63R01	**18-033**	272.05
low Indicator	021-14-00R01	**18-035**	11.56
Use with Air-Mate HEPA 10 and 12 only			
h Efficiency (HE) Filter with Gasket	451-02-01R01	**18-043**	30.51
tery Pack	007-00-15R01	**18-037**	119.73

cludes battery pack, belt, and filter.

ttery Chargers

- hoose from single-, five- or en-battery units
- ully charge NiCd batteries in 6 to 8 hours
- ED indicates battery status
- utomatically switch to trickle-rate mode o prevent overcharging
- 20V/60Hz



18-783A

18-783B

17-987-270

scription	Mfr. No.	Cat. No.	Each
gle-Battery Unit	520-03-73	**18-783A**	182.98
-Battery Unit	520-03-72	**18-783B**	975.49
-Battery Unit	520-01-61	**17-987-270**	1535.84

North* Emergency Escape Breathing Apparatus (EEBA)

Helps workers escape safely in an emergency

- Low-maintenance design ensures EEBAs are ready when needed
- Durable polyurethane hood with elastic neckband simply slips over wearer's head
- High-visibility carrying bags are easy to locate, even in smoky conditions; illustrated instructions are clearly printed on each case
- 360° transparent air hood has a deflector to blow incoming air onto the lens to minimize fogging
- ON/OFF valve is easy to locate and operate
- Pressure gauge is easy to read

EMERGENCY
EXIT ONLY
NORTH
Model 845
5
NORTH
10
Model 850

Left to right: 17-623-8, 17-623-9

ORDERING INFORMATION:

Optional molded plastic storage cases are also available for easy carrying and storage. Call your Fisher Scientific Customer Service Representative for description of cases.

INCLUDES:

Lightweight, low-maintenance canisters

WARRANTY:

Pressure-reducing valve is specially designed to reduce maintenance requirements and carries a two-year warranty.

COMPLIANCE:

NIOSH/MSHA approved for respiratory protection during escape from oxygen-deficient atmospheres, gases, and vapors at temperatures above -17°C (0°F).

CERTIFICATIONS:

Lightweight, refillable aluminum air cylinders are approved by the Department of Transportation with a five-year hydrostatic test cycle.

Description	Weight	Mfr. No.	Cat. No.	Each
EEBA Type: 5-minute standard flow	6½ lb. (2.9kg)	845	**17-623-8**	507.45
EEBA Type: 10-minute standard flow	10 lb. (4.5kg)	850	**17-623-9**	577.00
Optional Storage Cases				
For 17-623-8	----	89992	**17-985-68B**	97.42
For 17-632-9, 17-623-12	----	89987	**17-985-68A**	75.12

Scott* ELSA* Emergency Escape Breathing Devices

Constant-flow, positive-pressure respirators provide a limited supply of Grade D breathing air

For situations where air quality has been compromised and rapid evacuation is critical. Hood is easy to don, requires no fit testing, and can be worn by persons of all sizes with glasses and/or facial hair. Its clear polyurethane construction permits an unobstructed field of vision.

19-120-2480

- Clear, polyurethane hood
- Supplied air hose
- Secure elastomeric neck seal
- Rechargeable aluminum air cylinder with pressure gauge and reducer assembly
- Sturdy nylon strap allows cylinder to be carried or worn on the neck or shoulder
- Safety orange, PVC-coated polyester carrying bags for rapid deployment

ORDERING INFORMATION:
Standard 5- or 10-minute apparatus deliver emergency air at a rate of 1.4 cfm (40L/min.). A "high flow" version of the 5-minute respirator is also available. Used in escapes requiring great exertion (climbing stairs, ladders, etc.), this unit provides air at a rate of approximately 2.6 cfm (75L/min.) for easier breathing at higher rates.

COMPLIANCE:
Ten-minute breathing apparatus meets maritime Safety of Life at Sea (SOLAS) requirements under Regulation 13, Chapter 11-2.

CERTIFICATIONS:
All devices are NIOSH certified: 5-minute standard flow (2216 psi), TC-13F-486; 10-minute standard flow (3000 psi), TC-13F-487; 5-minute high-flow (3000 psi), TC-13F-488.

EEBA Type	Weight (Filled)	Mfr. No.	Cat. No.	Each
5-min. Standard Flow	6.6 lb. (3.0kg)	2009164	**19-120-2480**	408.90
10-min. Standard Flow	9.9 lb. (4.5kg)	2009165	**19-121-025**	497.10
5-min. High Flow	9.9 lb. (4.5kg)	2009166	**19-121-026**	502.20

LOOKING FOR REPLACEMENT PARTS?
Replacement hood, bag, and reducer assembly can be found online.

Visit www.fishersci.com and search for ELSA Replacement

SHOWERS & EYEWASHES

*Fisherbrand** Combination Eye/Facewash and Shower Safety Stations

Space-saving unit

Include overhead drench shower and independently operated eye/facewash. Can also be ordered with drench hose or without eye/facewash bowl.

19-120-2316

Stay-open Ball Valve
- Shower has 1" (2.5cm) IPS chrome-plated brass ball valve with stainless-steel actuating arm and easy-grab triangular handle
- Eye/facewash has ½" (1.3cm) chrome-plated brass ball valve activated by highly visible yellow PVC push handle
- Valves stay open until manually closed

Shower Head
- 10" dia. (25.4cm) shower head is yellow impact-resistant plastic
- Flowrate exceeds 20 gpm at 30psi

Eye/facewash Heads
- Twin perforated ABS disc heads with protective pop-off sprayhead covers
- Gentle spray bathes eyes and face
- Exceeds flowrate of 3gpm at 30psi
- Integral flow control in sprayhead assembly assures safe, steady water flow between 30 to 90psi

Eye/facewash Bowl
- 10" dia. (25.4cm)
- Available in yellow ABS plastic or stainless steel

Pipe and Fittings
- 1¼" (3.2cm) galvanized steel protected by Bradtect* safety yellow coating
- Main pipe is 1¼" (3.2cm); shower pipe is 1" (2.5cm); eyewash piping is ½" (1.3cm)
- Includes 9" dia. (22.9cm) floor flange
- Aluminum base
- 1¼" (3.2cm) IPS female supply

INCLUDES:
Universal identification sign and inspection tag

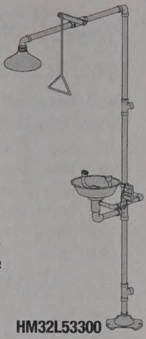
WARRANTY:
One year

COMPLIANCE:
All models comply with ANSI* Z358.1-2004.

Description	Cat. No.	Each
Without Eye/Facewash Bowl	**19-120-2314**	719.84
With Plastic Eye/Facewash Bowl	**19-120-2316**	710.09
With Stainless-steel Eye/Facewash Bowl	**19-120-2315**	730.52
With Stainless-steel Eye/Facewash Bowl and Drench Hose	**19-120-2317**	939.36

*Trademark. See Trademark Reference.

ermo Scientific* Hamilton* oor-Mounted Safety Station



HM32L53300

tures stay-open valves and two t-stream eyewash outlet heads

- ower has orange Cycolac* plastic head with y-open valve operated by pull rod and handle
- ewash has two soft-stream outlet heads with y-open valves and stainless-steel bowl
- mbination emergency shower and eyewash nds 66" (168cm) above floor
- th aluminum floor flange, galvanized intermediate e and fittings

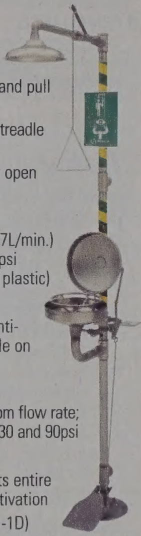
IPLIANCE:

ts ANSI* requirements for eyewash

t	Cat. No.	Each
(3.2cm) IPS Female	**HM32L53300**	1568.67

ws* Emergency Shower/Eyewash and e/Facewash Stations

igned for easy maintenance, ability, and corrosion resistance



17-161-1A

-Open Valve

- ench shower features a sturdy, stainless-steel arm and pull l with large, easy-to-find triangular handle
- ewash (except 17-161-1D) can be activated with foot treadle hands-free operation, or with large push flag
- nen shower or eyewash is activated, all valves stay open til manually closed

wer Head

- ower heads are equipped with integral 20 gpm (75.7L/min.) v control, ensuring steady flows between 30 to 90psi ad on 17-161-1A is stainless steel; others are ABS plastic)

Facewash

- cewash features twin spray heads with Soft-Flo* anti- ge design; spray ring washes entire face—available on 161-1A and 17-161-1B
- ewash heads have 1.2 gpm flow rate per head
- ay ring, available on 17-161-1A and -1B, has a 1.2 gpm flow rate; shes entire face when flowing pressure is between 30 and 90psi

t Covers

- inless-steel dust cover (17-161-1A and -1B) protects entire e/facewash unit from contaminants; raises upon activation
- een polyethylene plastic dust cover (17-161-1C and -1D)

LUDES:

adhesive 21" (53.3cm) stripe in safety green and bright yellow; rsal language emergency sign that clearly identifies station; powder-coated 9" (22.9cm) dia. cast-iron floor flange

IPLIANCE:

ts ANSI* Z358.1-2004 Standard for emergency eyewash and ver equipment

wash Ring rial	Ball Valve Material	Receptacle Bowl Material	Mfr. No.	Cat. No.	Each
less steel	Stainless steel	Stainless steel	8330	**17-161-1A**	3339.00
me-plated	Chrome-plated brass	Stainless steel	8346	**17-161-1B**	1203.48
ncluded	Chrome-plated brass	Stainless steel	8300	**17-161-1C**	948.00
ncluded	Chrome-plated brass	ABS plastic	8320	**17-161-1D**	813.00

First Safety* Modesty Curtains

Provide privacy during emergencies

18-999-466A

- For use with installed safety shower system
- Two styles available, both designed to work with any commercially available safety shower
- **Pipe-mount** for freestanding, plumbed-in safety showers; measure 52" dia. (132cm)
- **Wall-mount** for freestanding systems near a wall or wall-mounted plumbed system
- Made of 20 oz. polyester fabric with nickel-cadmium plated rings
- Epoxy-sealed steel supports exhibit exceptional resistance to harsh environments

Model	Mfr. No.	Cat. No.	Each
Pipe-mount	H 200	**18-999-466A**	296.66
Wall-mount	H 250	**18-999-466B**	263.45

First Safety* Shower Tester

Includes everything needed to flow test overhead emergency showers

18-563

- Three-piece PVC plastic handle quickly assembles to support 11" (27.9cm) PVC support ring
- Polylaminated Tyvek* sleeve directs shower discharge into polyethylene bucket

INCLUDES:

Dust cover lid and log to record test results

Mfr. No.	Cat. No.	Each
H 140	**18-563**	68.22

Fisherbrand* Swing-Down Eye/Facewash

Low-profile, swing-down unit stores out of the way when not in use

19-120-2321

- Twin perforated disc ABS plastic spray heads mounted on chrome-plated brass supply arms
- Pop-off dust covers protect spray heads
- Integral flow control assures uniform flow, even with varying water supply conditions from 30 to 90psi
- Chrome-plated brass ½" (1.2cm) stay-open valve maintains water flow until arm is returned to upright position
- Easy to use—simply pull chrome-plated brass arm 90° from vertical to horizontal position over sink to activate spray
- Deck-mounted with locking mechanism

INCLUDES:
Universal identification sign and inspection tag

WARRANTY:
One year

COMPLIANCE:
ANSI* Z358.1-2004 and SEI certified

Cat. No.	Each
19-120-2321	463.13

Fisherbrand* Deck-Mounted 90° Swivel Eyewashes

Space-saving design in left or right mounts

19-120-2308

Unit design saves space and fits easily into any work environment.

- Two outlet heads mounted on chrome-plated brass supply arms
- Pop-off dust covers protect spray heads
- Integral flow control assures safe, steady flow under water conditions from 30 to 90psi
- Chrome-plated brass ½" (1.3cm) IPS stay-open ball valve
- Hand operated by large, highly visible stainless-steel push handle

WARRANTY:
Factory tested and assembled with full one-year warranty

COMPLIANCE:
Complies with ANSI* Z358.1-2004

Mounting Side	Cat. No.	Each
Right	**19-120-2308**	331.48
Left	**19-120-2309**	350.48

Fisherbrand* Wall-Mounted Eye/Facewashes

Available with yellow impact-resistant plastic or corrosion-resistant stainless-steel bowl

19-120-2304

- ABS plastic perforated disc spray heads gently cleanse eyes and face
- Spray head assemblies include flow control and pop-off protective spray head dust covers
- Mounted on ½" (1.3cm) galvanized steel supply arm protected with Bradtect* yellow polyurethane coating
- Both models have 10" (25.4cm) bowls and exceed minimum water flow of 3 gpm (11.4L/min.) at 30psi
- Stay-open valves are ½" (1.3cm) IPS chrome-plated brass
- Activated by highly visible yellow PVC or stainless-steel push handle

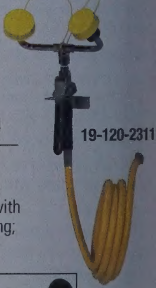
INCLUDES:
Heavy-gauge aluminum wall bracket and tailpiece, dome-type strainer, and 1¼" (3.2cm) IPS female fitting with tailpiece

COMPLIANCE:
ANSI* Z358.1-2004 and SEI certified

Bowl Material	Cat. No.	Each
With stainless-steel bowl	**19-120-2304**	300.09
With plastic bowl	**19-120-2305**	267.19

Fisherbrand* Eyewash/Drench Hoses

Ideal for areas where versatile space-saving designs are required


19-120-2311

- Two perforated ABS plastic spray heads gently flood eyes, face, and body
- Heads are angled at 45° for improved control and protected by pop-off dust covers
- Integral flow control assures safe, steady flow under varying water conditions
- Chrome-plated valve with extended reinforced handle remains open once handle is squeezed—stays open until manually released
- 8' long (2.4m) drench hose made of reinforced thermoplastic has ⅜" (1cm) IPS male thread with removable ½" (1.3cm) female reducing coupling; burst strength is 250psi

19-120-2310

ORDERING INFORMATION:
Installer to supply backflow prevention as required by UPC, IPC, and/or local plumbing codes.

INCLUDES:
Mounting bracket (with wall-mount unit)

WARRANTY:
One year

Description	Cat. No.	Each
Deck mount	**19-120-2310**	307.20
Wall mount	**19-120-2311**	286.74

*Trademark. See Trademark Reference.

Fisherbrand* Handheld Drench Hoses

oft spray for cleansing eyes and face

19-120-2313

19-120-2312

- Single vertical perforated ABS plastic spray head with protective pop-off cover
- Integral flow control assures safe, balanced flow exceeding 3 gpm at 30psi
- Chrome-plated valve with extended reinforced handle remains open once handle is squeezed
- 8' long (2.4m) yellow reinforced thermoplastic hose with ⅜" (1cm) IPS male thread with removable ½" (1.3cm) IPS reducing coupling; 250psi burst strength; ½" (1.3cm) IPS supply inlet

NCLUDES:
ounting hardware

OMPLIANCE:
omply with ANSI* Z358.1-2004

escription	Cat. No.	Each
eck mount	**19-120-2312**	230.52
all mount	**19-120-2313**	198.46

Fisherbrand* Personal Eyewash Stations

ighly visible stations provide instant first id in remote locations

rovide immediate first aid relief when lumbed or self-contained emergency yewash stations are not readily available.

19-120-2323

- Safety green, high-impact polystyrene for exceptional visibility and durability
- Each bottle contains 32 oz. of sterile, buffered, preservative-free eyewash solution
- Bottle opening allows full flow of solution to completely irrigate affected eye(s)
- Bottles marked with expiration date; instructions in English, Spanish, and French

RDERING INFORMATION:
hoose from single- and ouble-bottle units, consisting f filled wash bottle(s) housed wall-mounted holder.

INCLUDES:
Mirror and label outlining proper use of eyewash bottle; mounting hardware not included.

COMPLIANCE:
Comply with ANSI* Z358.1-2004 as personal eyewash only. (These stations do not meet the criteria of plumbed or self-contained eyewash equipment.)

escription	Cat. No.	Each
ingle Station	**19-120-2323**	32.96
ouble Station	**19-120-2324**	50.60

WARNING
Since the first few seconds of an eye injury are critical, a portable eyewash station will provide immediate relief until the worker has access to either a plumbed station or a shower. Portable stations support a plumbed or self-contained drenching facility. They do not take the place of a 15-minute flushing facility.

Haws* Wall-Mount Eyewashes

ABS plastic or stainless-steel bowl eyewash

17-160-1C

- Instant-action chrome-plated brass ball valve with stainless-steel ball and stem keeps water flowing until turned off manually
- Stainless-steel push flag activates eyewash
- Green polyethylene dust covers protect head and automatically release with water pressure (17-160-1C)
- Stainless-steel dust cover protects entire eye/face wash unit from contaminants; raises upon activation (17-160-1A)
- ABS plastic anti-surge Soft-Flo* eyewash heads with built-in 1.2 gpm flow control assembly controls water flowrate when flow pressure is between 30 and 90psi
- Fully serviceable inline mesh strainer keeps debris from reaching eyewash

ORDERING INFORMATION:
For replacement dust covers, see Cat. No. 18-999-2865.

INCLUDES:
Anodized aluminum mounting wall bracket, universal language emergency sign, and waterproof test tags

COMPLIANCE:
Meet ANSI* Z358.1-2004 Standard for emergency eyewash and shower equipment

Bowl Material	Mfr. No.	Cat. No.	Each
Stainless steel	7460B	**17-160-1A**	341.68
ABS plastic	7260B	**17-160-1C**	269.00

Haws* Wall-Mount Eye/Facewash

Circular spray ring with 16 openings bathes entire face

17-160-1B

Angled twin heads deliver a generous, soothing stream of water to the ocular area. Patented Soft-Flo* heads constructed of safety green ABS plastic.

- Unit has an instant-action chrome-plated brass ball valve with stainless-steel ball and stem that keeps water flowing until turned off manually, for hands-free safety and convenience
- Activates with a push flag
- Dust covers protect heads and automatically release with water pressure
- Dual automatic pressure compensation devices for 30 to 90psi ensure steady, even flow under varying water pressures
- Fully serviceable inline mesh strainer keeps debris from reaching eyewash
- Stainless-steel bowl measures 11" (27.9cm); with ABS plastic dust cover

ORDERING INFORMATION:
For replacement dust covers, see Cat. No. 18-999-2865.

INCLUDES:
Anodized aluminum bracket for wall mounting, universal language emergency sign, and waterproof test tags

COMPLIANCE:
Meets current ANSI* standard and OSHA requirements

Mfr. No.	Cat. No.	Each
7760B	**17-160-1B**	610.61

ACCESSORIES

Replacement Dust Covers for Haws* Eyewashes

Fit ball-type Soft-Flo* spray heads

Polyethylene Safety Green plastic covers with integral retainer strap protect eyewash spray heads from dust and debris.

- Fit ball-type Soft-Flo spray heads used on nonportable units 17-161-1A through -1D; 17-988-403; 17-988-386, 17-160, 17-160-1A through -1C; 19-033-727; 17-160-2
- Dust covers automatically release when the water is turned on

ORDERING INFORMATION:

Sold one pair per pack.

Mfr. No.	Cat. No.	Pack
9095	**18-999-2865**	12.24

Fend•all* Wall Stations

Easily mounted in hazardous areas to provide immediate relief in case of eye injury

- Highly visible, with full emergency-use instructions on front
- Made from sturdy, high-impact plastic
- Bottles are single-use only with snap-off tops for quick and easy access
- Both 16 and 32 oz. bottles have extended flow nozzles; 32 oz. bottles have integral grip for ease of use in an emergency

ORDERING INFORMATION:

Refill bottles sold separately.

Eyesaline
EMERGENCY EYE/FACE WASH
Eyesaline
EYEWASH
Sterile • Isotonic Solution

19-003-031

Bottle Size	Mfr. No.	Cat. No.	Case of
Single Station			
16 oz. (473mL)	32-000460-0000	**19-003-029**	8/191.70
32 oz. (946mL)	32-000461-0000	**19-003-031**	1/47.08
Double Station			
32 oz. (946mL)	32-000462-0000	**19-003-035**	4/179.81

ACCESSORIES

Eyesaline* Refill Bottles

Bottle Size	Mfr. No.	Cat. No.	Each	Case of 12
16 oz. (473mL)	32-000454-0000	**19-003-030**	11.80	120.99
32 oz. (946mL)	32-000455-0000	**19-003-033**	16.51	169.29

WARNING

Since the first few seconds of an eye injury are critical, a portable eyewash station will provide immediate relief until the worker has access to either a plumbed station or a shower. Portable stations support a plumbed or self-contained drenching facility. They do not take the place of a 15-minute flushing facility.

Fend•all* Pure Flow 1000* Emergency Eyewash Station

Self-contained, gravity-fed emergency eyewash

Delivers Eyesaline* Solution—purified, contaminant-free and physiologically correct from a sealed, integrated delivery module. With provision for locking device. Twenty-four month cartridge life.

EMERGENCY EYEWASH STATION

18-999-265A

- Self-contained, no plumbing required
- Highly visible green color provides easy identification in an emergency situation
- Sure-grip handle provides instant, simple activation
- Activation straps display expiration date
- Integral drain valve allows easy draining of reservoir after use
- Integral fluid reservoir captures waste fluid, eliminating potential safet hazards and simplifying fluid disposal
- Cover keeps dirt and trash from collecting in the basin and nozzle
- Unit can be serviced in five minutes or less

INCLUDES:

8 × 10" (20.3 × 25.4cm) vinyl eyewash sign

REQUIRED ACCESSORIES:

Requires two solution cartridges (sold separately). Case of two cartridges comes complete with solution, delivery tube and nozzle assemblies.

CERTIFICATIONS:

SEI certified to meet ANSI* Z358.1.

Mfr. No.	Cat. No.	Eac
32-001000-0000	**18-999-265A**	461.0

ACCESSORIES

Pure Flow 1000* Cartridges

- Solution modules for Pure Flow 1000 Emergency Eyewash
- Each cartridge contains 3½ gal. (14.4L) of Eyesaline* solution

INCLUDES:

Nozzle assembly, delivery hose, and solution cartridges

18-999-265B

Mfr. No.	Cat. No.	Case of 2
32-001050-0000	**18-999-265B**	170.75

nd•all* Porta Stream* Portable Eyewash Stations

ally self-contained stations for areas without access to plumbed water

ity-fed systems provide employees with
hing relief in emergency situations.
a Stream models come with Eyesaline*
entrate that, when mixed with tap water,
uces an isotonic solution physiologically
lar to human tears.

17-292-1A

a Stream I Station (6 minutes)

ight green color is highly visible, even to
ose with impaired vision

nstructed of high-impact polyethylene
th a 6 gal. (22.8L) tank

o full-flow nozzles cover a wide facial
ea for immediate relief

mple to use—just remove the patented nozzle strap and hands-free
shing is activated

n be mounted on a table

mes with 70 oz. (2.0L) of Eyesaline concentrate

easures 16L × 13½W × 24"H (41 × 34 × 61cm)

e: This device is classed as a secondary (personal) device and is
nded to supplement and not replace a 15-minute flush capability
ary device.

Porta Stream II Station (15 minutes)

- Same standard features as the Porta Stream I eyewash, but with 16 gal. (61L) tank and lockable fill cap to reduce the risk of tampering
- Comes with 180 oz. (5.3L) of Eyesaline concentrate, a green and white vinyl eyewash sign, and cast-iron hanging bracket for installation on any flat or vertical surface
- Measures 19½L × 19½W × 26"H (50 × 50 × 66cm)

17-292-1B

CERTIFICATIONS:

Porta Stream II station is SEI-certified to meet ANSI* Z358.1-2004 requirements as 15-min. flush capability primary device.

Description	Volume Dispensed/Time	Mfr. No.	Cat. No.	Each
Porta-Stream I	6 gal./6 min.	32-000100-0000	**17-292-1A**	252.27
Porta-Stream II	16 gal./15 min.	32-000200-0000	**17-292-1B**	364.46

WARNING

Since the first few seconds of an eye injury are critical, a portable eyewash station will provide immediate relief until the worker has access to either a plumbed station or a shower. Portable stations support a plumbed or self-contained drenching facility. They do not take the place of a 15-minute flushing facility.

ACCESSORIES

yesaline* Solution

vailable in concentrate or ready-to-use form to refill bottles in Porta Stream* wall-mounted
tations or to replace untreated water in other portable eyewash equipment.

- Concentrate 70 oz. (2L) bottle makes about 6 gal. (22.8L)
- Concentrate 180 oz. (5.3L) bottle makes about 16 gal. (60.6L)
- Premix bottles contain 8 oz. (0.24L) or 1 gal. (3.8L) ready-to-use Eyesaline solution

Eyesaline
Concentrate
Eyesaline
Concentrate
Eyesaline
Eye Flushing Solution

17-292-3J, 17-292-3N and 17-292-3C

lution Type	Capacity	Mfr. No.	Cat. No.	Each	Case of
oncentrate	70 oz. (2L)	32-000509-0000	**17-292-3J**	48.04	6/246.38
oncentrate	180 oz. (5.3L)	32-000513-0000	**17-292-3N**	91.62	4/324.32
emix	1 gal. (3.8L)	32-000502-0000	**17-292-3C**	29.11	4/99.53

North* Emergency Eye and Skin Flush Stations

Provide immediate access to eyewash solutions for accidents involving acids, caustics, or other water-soluble irritants

Ideal for use in areas where accidents often occur—plating areas, laboratories, battery storage facilities, and chemical processing operations.

- Highly visible yellow color facilitates easy identification in an emergency
- Buffered Eye-Lert* eyewash is soothing, normal saline solution with pH close to that of human tears; free of bacteria and contaminants
- Quickly neutralizes varying quantities of acids and caustics
- Low-profile stations are equipped with positive shock-cord retention system for quick release
- Bottles are date-coded and have nonreplaceable snap-off caps to ensure sterility
- Universal station backplate with screw holes permits easy mounting

ORDERING INFORMATION:
Available in single or double stations with 16 or 32 oz. bottles of eyewash.

NORTH
EMERGENCY EYE & SKIN FLUSH STATION

19-348-423

Description	Mfr. No.	Cat. No.	Cas
Single Stations			
16 oz. (473mL)	127033	**19-348-421**	1/28
32 oz. (946mL)	127032	**19-348-422**	1/36
Double Stations			
16 oz. (473mL)	127035	**19-348-420**	1/38
32 oz. (946mL)	127042	**19-348-423**	1/53
Replacement Eye and Skin Flush Fits Both			
Single Replacement Eye and Skin Flush	902026	**19-160-354**	12/202
Double Replacement Eye and Skin Flush	902027	**19-160-355**	12/226

North* Eye-Lert* Eyewash Refill Bottles

Sterile, date coded, and equipped with tamper-evident seals to ensure sterility.

NORTH
Buffered Eye-Lert* Emergency Eyewash

19-027-414

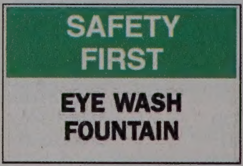
Bottle Size	Mfr. No.	Cat. No.	Each	Case o
4 oz.	126040X	**19-120-725**	4.90	48
32 oz.	126037C	**19-027-414**	18.75	192

Brady* Emergency Signs

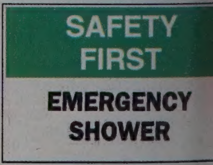
ANSI*-compliant emergency signs show workers locations of emergency shower and eyewash stations.

- Ideal for light-duty use
- Made of rigid plastic for easy wall mounting
- Overlaminated graphics enhance durability
- Available in two sizes

Size	Cat. No.	Each
Emergency Shower		
7 × 10"	**19-102-347**	12.32
10 × 14"	**19-102-348**	17.47
Eyewash Fountain		
7 × 10"	**19-102-343**	12.32
10 × 14"	**19-102-344**	17.47



19-102-343



19-102-347

*Trademark. See Trademark Reference.

Prices subject to change.

SPILL CONTROL

isherbrand* Universal Sorbents

iversal, nonselective sorbents can fully saturate in little as 20 seconds

ds and Rolls

19-034 and 17-206 Series

- uited for leaks, spills, or lrips and for routine mainenance–can be used on nild acids and caustics
- \bsorb up to 20 times their veight
- /lade of polypropylene hat has been shredded, ulped, and air-blown hrough two strong layers of spunbonded film, then heat-sealed and limpled for extra strength
- ough, lint-free, soft, pliable, and highly absorbent
- old easily upon themselves to form multi-layer barrier
- aturated pads resist tearing and sticking to surfaces, and can e wrung out and then reused or incinerated with less than .1% ash residue

lows and Socks

- deal for spill containment and control
- \bsorb up to 14 times their weight
- asings made of chemical-resistant, nonwoven polyester blend vith polyester thread) that enhances absorbency

rticulate

- deal for use on oils, acids, caustics, toxic liquids, and other chemicals
- olypropylene sorbent soaks up to 140% times its weight in liquids
- ertified free of respirable silica
- ffectively cleans up liquids with no film residue; provides traction on vet, oily, or icy surfaces
- nvironmentally safe particulate sorbent exceeds EPA landfill isposal requirements

MPLIANCE:

nbiodegradable; eliminate "free" liquids, meeting U.S. EPA uirements for landfill disposal of nonregulated wastes and sludges. ticulate passes Paint Filter and TCLP tests. Handle disposal ording to federal, state, and local laws.

WARNING

not use particulate, socks, or pillows on hydrofluoric acid. Do not e pads, rolls, rugs, or mats on concentrated sulfuric acid and strong ustics, as fabric casings may degrade if contact is lengthy. Refer Material Safety Data Sheet for details.

scription	Size	Sorbing Capacity	Cat. No.	Price
d	16L × 18" W (40.6 × 45.7cm)	27 gal. (102.2L)	**19-034-155**	Cs. of 100/58.42
l	150'L × 32" W (45.7m × 81.3cm)	54 gal. (204.4L)	**19-034-156**	Cs. of 1/109.16
versal ow	17L × 8" W (43.2 × 20.3cm)	8 gal. (30.2L)	**19-034-157**	Cs. of 10/62.37
ck	4'L × 3" W (1.2m × 7.6cm)	23 gal. (87L)	**17-206-2B**	Cs. of 15/44.51
ticulate	24 lb. (10.8kg)	46 gal. (174.2L)	**17-206-1B**	Ea./55.35

17-215 Series

Fisherbrand* Oil-Selective Sorbents

Selectively remove hydrocarbons from water

- ▸ For sorbing oil and a wide variety of acids and other hazardous chemicals
- ▸ Water-repellent, nonwoven polypropylene sorbents sorb up to 25 times their weight in petrochemical-based liquids
- ▸ Unaffected by temperature, humidity, and pest infestation; easy to store
- ▸ Can be cleaned and reused repeatedly

Oil Spill Control Sorbents

- ▸ Polypropylene sorbents absorb oil and solvent spills on water
- ▸ Booms float on the surface to selectively remove hydrocarbons and contain the spill
- ▸ Hardware is included to link booms
- ▸ Compact pillow, socks, and pads can be placed directly on spills
- ▸ Particulate can be scattered on petroleum spills

Oil Pads and Rolls

- ▸ For cleaning spills of flammable material
- ▸ Sorbent pads and rolls come in a range of sizes and can be trimmed to fit

Description	Sorbing Capacity	Cat. No.	Pack of
Booms			
10' × 5" (3m × 12.7cm)	35 gal. (132.5L)	**17-215-2C**	4/82.37
10' × 8" (3m × 20.3cm)	70 gal. (265L)	**17-215-2A**	4/124.62
Pillows			
18 × 18" (45.7 × 45.7cm)	22 gal. (83.3L)	**17-215-3**	10/53.30
Socks			
4' × 3" (122 × 7.6cm)	23 gal. (87L)	**17-215-6A**	15/59.02
Pads			
16 × 18" (40.6 × 45.7cm)	6 gal. (22.7L)	**17-215D**	25/16.51
16 × 18" (40.6 × 45.7cm)	27 gal. (102.2L)	**17-215B**	100/55.40
16 × 18" (40.6 × 45.7cm)	25 gal. (94.6L)	**17-215C**	200/56.76
Rolls			
150' × 32" (45.7m × 81.3cm)	55 gal. (208.2L)	**19-034-972**	1/117.81
200' × 32" (61m × 81.3cm)	78 gal. (295.3L)	**17-215-1A**	1/114.71
Particulate			
Bag, 24 lb. (10.9kg)	46 gal. (174L)	**17-215-4**	1/60.49

*Fisherbrand** Spill Response Drum Kits

All the supplies necessary to safely clean up oils, acids, caustics, solvents, and toxic spills

17-206A

High-density polyethylene drums hold a supply of Fisherbrand sorbent socks, pillows, and sorbent powder—and provide safe containment for used sorbents after spill cleanup. Pull-tab opening makes access quick and easy. Drums are highly resistant to impact and environmental stress cracks, and have safety locks and PVC O-rings to assure tight seal.

- **6 gal. (22.7L) drum** contains five socks, two absorbent wipes, two disposal bags with ties, and two shaker cartons of sorbent, for a total sorbing capacity of approximately 7 gal. (26.5L).
- **20 gal. (75.7L) drum** contains six socks, six pillows, four absorbent wipes, three disposal bags with ties, and two shaker cartons, for a total sorbing capacity of approximately 18 gal. (68.1L).
- **55 gal. (208L) drum** contains 25 socks, 12 pillows, 10 absorbent wipes, four disposal bags with ties, and a 25 lb. (11.3kg) bag of sorbent, for a total sorbing capacity of approximately 53 gal. (200.6L).
- **95 gal. (359.5L) drum** contains 11 socks, 20 pillows, 50 absorbent wipes, 10 disposal bags with ties, and a 25 lb. (11.3kg) bag of sorbent, for a total sorbing capacity of approximately 73 gal. (276.3L).

CERTIFICATIONS:

6- and 20-gal. drums carry DOT approval for transportation of hazardous materials.

Description	Sorbing Capacity Range†	Cat. No.	Each
6 gal. (22.7L)	4 to 7 gal. (15.1 to 26.5L)	**17-985-128**	67.00
20 gal. (75.7L)	10 to 18 gal. (37.8 to 68.1L)	**17-206A**	142.24
55 gal. (208L)	32 to 53 gal. (121.1 to 200.6L)	**17-206B**	376.47
95 gal. (359.5L)	43 to 73 gal. (162.7 to 276.3L)	**19-034-969**	648.15

† Range of sorbency based on minimum and maximum values.

WARNING

Do not use particulate, socks, or pillows on hydrofluoric acid. Do not use pads or rolls on concentrated sulfuric acid and strong caustics, as fabric casings may degrade if contact is lengthy. Refer to Material Safety Data Sheet for details.

*Fisherbrand** Chemical Spill Cabinet

Packed as a portable kit or can be mounted to a wall

19-034-968

ORDERING INFORMATION:

Cabinet measures 5½L × 13¾W × 16¼"H (14 × 34.9 × 41.3cm).

INCLUDES:

Five universal pillows, six lab pillows, two disposable bags with twist ties, one pair of chemical-resistant gloves, one Whisk-on-pan*, one poly apron, one pair of splash goggles, one carton of sorbent powder

Sorbing Capacity (per cabinet)	Cat. No.	Each
2.5 to 3 gal. (9.5 to 11.3L)	**19-034-968**	173.04

*Fisherbrand** Neutral-Sol* Chemical Burn First Aid Station

Instant acid and caustic neutralization

10-030-10

Provides emergency treatment for acid and alkaline chemical burns. Neutralizes chemicals accidentally splashed on skin, eyes, or clothing in seconds. Also provides flushing action for dust.

- For labs, chemical storage areas, plants, and any areas where chemicals are used
- Easy-grab, wide-mouth bottle contains Neutral-Sol solution, a sterile pH 6.9 phosphate buffer similar to that present in human tissue
- Bottle securely housed in brilliant green ABS plastic station for fast recognition

ORDERING INFORMATION:

Station measures 17 × 15" (43 × 38cm). Replacement Neutral-Sol solution available separately.

INCLUDES:

One 32oz. (946mL) bottle of Neutral-Sol and wall mounting screws

COMPLIANCE:

Complies with OSHA regulations for quick drenching and flushing action.

Description	Cat. No.	Price
Chemical Burn Station	**10-030-10**	Ea./57.00
Replacement Neutral-Sol	**10-030-15**	Pk. of 2/52.13

*Trademark. See Trademark Reference.

Prices subject to change.

l* Standard Chemical Sorbents

orb virtually any liquid with these chemical sorbents

t row (left to right): 17-210-3, 17-210-4, 17-210-2. Back row (left to): 17-210-1B, 17-210-1A, 17-210.

-blown polypropylene microfibers absorb liquids such as hydrofluoric and other aqueous-based chemicals, and soak up an average of 10 s their weight of most EPA-designated hazardous liquids.

rbents are dirt- and dust-free; contain no abrasive granules that can mage expensive equipment

lypropylene base is chemically inert and incinerable; allows separation d recycling in many applications

sy-to-spot yellow cartons protect sorbents from temperature and midity for secure, long-term storage

nvenient dispenser boxes—suitable for tabletops or wall mounting— ep pads and pillows within easy reach

ds or rolls are ideal for use on work surfaces and can be trimmed to size

ni booms surround and contain spills; pillows and chopped sorbent ak them up

E:

e safety products must be used in accordance with OSHA regulations he user instructions, warnings and limitations accompanying each ıct.

ription	Sorbing Capacity	Mfr. No.	Cat. No.	Price
13" × 33cm)	4¼ gal. (16L)	P-110	**17-210**	Pk. of 50/39.49
100' n × 30m)	9½ gal. (36L)	P-130	**17-210-1A**	Ea./76.28
100' cm × 30m)	14 gal. (53L)	P-190	**17-210-1B**	Ea./110.18
ooms				
4' m × 1.2m)	12 gal. (45.4L)	P-200	**17-210-2**	Pk. of 12/207.79
3' m × 2.4m)	12 gal. (45.4L)	P-208	**19-039-448**	Pk. of 6/208.57
s				
5" × 38.1cm)	8 gal. (30.3L)	P-300	**17-210-3**	Pk. of 16/166.93
hopped Sorbent				
. (5.4kg)	14 gal. (53L)	P-500	**17-210-4**	Ea./115.33

3M* Chemical Spill Sorbent Response Pack

Designed for use in areas where hazardous chemicals are shipped, stored, or transferred

- Each 3" × 4' (7.6cm × 1.2m) mini boom absorbs up to 1 gal. (3.8L)
- Pads absorb up to ¾ gal. (2.8L); measure 11 × 13" (28 × 33cm) each

3M
SRP-Chem
Spill Response Pack

19-073-207

INCLUDES:

Three mini booms and 10 pads

NOTE:

These safety products must be used in accordance with OSHA regulations and the user instructions, warnings and limitations accompanying each product.

Sorbing Capacity per Pack	Mfr. No.	Cat. No.	Pack	Case of 3 Pack
3¾ gal. (14.2L)	SRP-CHEM	**19-073-207**	106.41	276.71

Spilfyter* Kollect-A-Kem* Low-Lint Pillows and Extra-Low–Lint Pads

Ideal for hazardous liquid spill reponse in the lab or cleanroom

Constructed with 100% surfactant-treated polypropylene, these pillows and pads are porous and chemical resistant, providing maximum sorbency and cleanliness.

19-021-8 Series

- Suitable for sorbing hydrofluoric acid
- Incineration results in low ash and a high BTU value
- Low-lint pillows are individually polybagged
- Extra-low–lint pads provide for 100% lint-free cleanroom; packaged five pads per bag

W × L	Sorbing Capacity	Cat. No.	Case of
Low-Lint, Medium-Duty Pillow			
8½ × 17" (21.6 × 43.2cm)	4 gal. (15L)	**19-021-855**	12/98.17
Low-Lint, Heavy-Duty Pillow			
18 × 18" (45.7 × 45.7cm)	19 gal. (72L)	**19-021-856**	12/192.34
Extra-Low–Lint, Light-Duty Pad			
12 × 12" (30.5 × 30.5cm)	2 gal. (7.5L)	**19-021-862**	25/169.45
Extra-Low–Lint, Heavy-Duty Pad			
12 × 12" (30.5 × 30.5cm)	2 gal. (7.5L)	**19-021-861**	50/236.54

ilfyter* Kollect-A-Kem* Chemical Spill Control Center

ce saving, plastic wall-mount spill center

LUDES:

½ × 17" (21.6 × 43.2cm) rsal sorbent pillows, each sorbing capacity of 2 qt.(1.9L); 2 × 12" (31 × 31cm) pads, each sorbing capacity of 1 qt.(1L); pairs of nitrile gloves, two poly ns, two pairs of splash goggles; sposable bags and ties

18-999-567

Cabinet L x W x H	Sorbing Capacity	Cat. No.	Each
9¼ × 15 ⅝ × 18 ½" (23.2 × 39.6 × 47.0cm)	8 gal. (30.3L)	**18-999-567**	429.73

ANSUL* SPILL-X* Agents

17-200 Series

Spill-X Agents in Shaker Bottles

Free-flowing, dry agent to treat acid, caustic, solvent, and formaldehyde spills

- Solidify and reduce vapor release from solvent or formaldehyde spills
- Neutralize and solidify acid or caustic spills
- Properly neutralized corrosive spills (pH over 2 and less than 12.5) are no longer characterized as "hazardous materials" by the U.S. EPA
- Properly treated solvent spills have greatly reduced vaporization loss
- Four agents available: SPILL-X-A* for acids; SPILL-X-C* for caustics; SPILL-X-S* for solvents; and SPILL-X-FP* for formaldehyde
- Color-coded label for easy identification

ORDERING INFORMATION:

Six shaker bottles per pack. Multi-agent kit includes two bottles each of SPILL-X-A, SPILL-X-C, and SPILL-X-S agents. A single-agent pack for formaldehyde is also available.

Description	Mfr. No.	Cat. No.	Pack of 6 Bottles
Multi-agent	77358	**17-200-3**	182.25
Single Agent Packs			
SPILL-X-A* (acids)	77255	**17-200-2A**	126.35
SPILL-X-C* (caustics)	77261	**17-200-2C**	211.00
SPILL-X-S* (solvents)	77265	**17-200-2B**	171.35
SPILL-X-FP* (formaldehyde)	78435	**17-200-6**	206.95

Bulk SPILL-X Agents

For response to larger spills

- Use a scoop or shovel to apply the agent directly onto the spill
- Bulk-packed agents can also be used to refill a Spill-Gun* applicator (not included)
- Include detailed instructions for responding to a spill

SpillX-A
SpillX-C
SpillX-S
SpillX-FP

Clockwise from top: 17-200-1A, 17-200-1B, 17-978, 17-2001C

Description	Weight	Mfr. No.	Cat. No.	Each
5 Gal. (19L) Pails				
Spill-X-A	50 lb. (22.7kg)	76255	**17-200-1A**	320.00
Spill-X-C	42 lb. (19.0kg)	76396	**17-200-1C**	503.25
Spill-X-S	16 lb. (7.3kg)	76258	**17-200-1B**	237.85
Spill-X-FP	37 lb. (16.8kg)	78443	**17-978**	493.10
28 Gal. (106L) Drums				
Spill-X-A	200 lb. (90.7kg)	76256	**17-200-5**	1046.00
Spill-X-C	168 lb. (76.2kg)	76397	**17-200-4**	1841.00
Spill-X-S	68 lb. (30.8kg)	76369	**17-200-7**	970.15

Spill-X Spill Treatment Kits

Mount easily on a wall yet remove quickly

17-987-144A

- Durable, bright green "suitcase" designed to be mounted easily on a wall and removed quickly
- Contains six agents in shaker bottles plus additional spill response accessories
- **Single-agent Kits** contain six shaker bottles of one of the SPILL-X agents for acids, caustics, or solvents
- **Multi-agent Kit** contains two shaker bottles each of SPILL-X-A*, SPILL-X-C*, and SPILL-X-S* agents
- **Formaldehyde Kit** contains three shaker bottles of SPILL-X*-FP* and three bottles of SPILL-X-S agents

INCLUDES:

Spill response instructions, spill treatment guide, safety goggles, rubber gloves, disposal bags, scraper and pickup pans; pH paper included with a kits except for formaldehyde (17-987-144E).

Description	Mfr. No.	Cat. No.	Ea
Spill-X-A Kit	78776	**17-987-144B**	590.
Spill-X-C Kit	78777	**17-987-144C**	590.
Spill-X-S Kit	78778	**17-987-144D**	590.
Multi-Agent Kit	78774	**17-987-144A**	590.
Formaldehyde Treatment Kit	73834	**17-987-144E**	590.

ACCESSORIES

Treatment Supplies Refill Kit

General supplies for spill response kits. Replacement SPILL-X* agents sold separately.

INCLUDES:

Safety goggles, rubber gloves, disposal bags, scraper, pick-up pans, pH test papers, and spill treatment guide

Mfr. No.	Cat. No.	Each
78919	**17-987-144F**	175.95

NOTE:

Amount neutralized or solidified depends on type of acid, caustic, solvent, or formaldehyde and its percentage concentration. Treated spills containing heavy metals or other listed wastes may still be characterized as hazardous. Disposal of spill waste materials should follow local, state, and federal regulations.

*Trademark. See Trademark Reference.

Prices subject to change.

ilfyter* Mercury Spill Kit

igned to handle all stages of mercury spill cleanup

ontains everything needed to quickly and safely clean up mercury spills ¾ oz. (25mL) and prevent toxic vapor contamination.

ercury indicator powder identifies mercury in area of suspected ntamination

ter an undisturbed period, powder changes color to indicate contact th mercury metal or vapor

ercsorb* powder converts mercury into an amalgam for safe, convenient eanup of mercury on work surfaces, floors and hard-to-reach areas

LUDES:

oz. (270g) Mercsorb amalgamation powder, 8¾ oz. (250g) mercury ator powder, vapor suppressor shaker bottle, aspirator bottle, waste ction bottle, mixing tub with spatula, chemical sponge, one pair nitrile es, one pair splash goggles, Whisk-on-pan* with brush, red plastic ing case

19-021-910

Description	Mfr. No.	Cat. No.	Each
Complete Kit	520250	**19-021-910**	163.70
9½ oz. Mercsorb Powder	520270	**18-999-948**	27.03
8¾ oz. Mercury Indicator Powder	523250	**18-999-949**	50.88

WARNING
Kit does not contain any chemicals designed to alter the mercury's toxicity or its danger. Recommended for use by trained personnel only.

nuteman* Mercury Recovery Vacuum Systems

ely recover mercury, mercury vapors, and mercury-contaminated particulates

ially adapted critical filter vacuum system recovers liquid mercury and s mercury-contaminated dry and liquid soil and air. Feature AC/DC air-d motor which is also usable as a high-performance, standard vacuum er when special filter modules are removed.

lel MRS-3

use with larger-sized spills

gal. (57L) stainless-steel tank

uipped with exclusive ULPA filter; impact filter; charcoal filter; mercury p; mercury separator; Dacron* bag; and 12 impact filters, 12 filter protors, 10 disposable bags and 10 plastic bags

nensions: 46H × 21"W (117 × 53cm)

lel MRS

signed to quickly clean up small volumes of mercury

htweight, 6 gal. (23L) stainless-steel tank

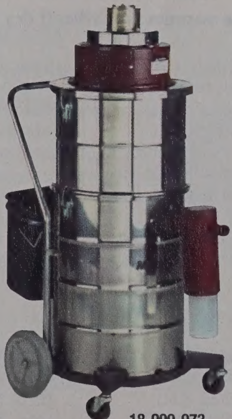
uipped with charcoal filter, quick-change filter cartridge, paper lection bag, and 10 disposable paper bags and 10 plastic bags

nensions: 25H × 14"W (64 × 36cm)

LUDES:

el MRS-3 includes a tool kit with smooth bore hose, plastic wand, tatic spray, plastic plug set, 10 paper-bag seals, hose swivel, plastic adapter, tool basket and upholstery and crevice tools.

el MRS-6 includes a tool kit with smooth bore hose, plastic wand, dusting brush and upholstery and crevice tools.


18-999-973

Tank Size	Mfr. No.	Cat. No.	Each
6 gal. (23L)	C86006-11	**18-999-974**	2854.80
15 gal. (57L)	C83015-01	**18-999-973**	6149.23

Minuteman* CRV* Cleanroom Vacuums

Ideal for use in ISO Class 3 (Class 1) cleanrooms, gowning areas, and air showers

- Three-stage filtration system includes a dual-layer disposable paper bag, a nonwoven cloth filter, and an ultralow particulate air (ULPA) filter
- ULPA filter is 99.999% efficient at 0.12μm, exceeding the efficiency of normal high-efficiency particulate air (HEPA) filters
- Powerful 1.2hp motor supplies ample suction of debris such as dust, filings, and paper, yet operates quietly with a sound rating of 65dB(A)
- Wheel carriage has two large 6" (15cm) rigid rear wheels and 3" (8cm) front swivel casters to allow easy tracking behind operator
- 4 gal. (15L) tank is available in heavy-duty stainless steel or painted, with a dry capacity of 0.21 cu. ft. (0.006m³)
- **RFI/EMI Digital Switching Station Vacuum** with added electromagnetic/radio frequency interference filtration system prevents potential damage from feedback; designed for use in the telephone industry's digital switching stations

18-999-281A

ORDERING INFORMATION:

Tool kit, optional filter protectors, replacement cloth filters, paper bags, and ULPA filters available separately on our Web site.

INCLUDES:

Lid assembly, tank assembly, cloth filter, ULPA filter, and 10 paper bags

Tank Type	Mfr. No.	Cat. No.	E
CRV Cleanroom Vacuums			
Stainless Steel	C80704 01	**18-999-281A**	158
Painted	C80704 03	**18-999-281B**	140
RFI/EMI Digital Switching Station Vacuum			
Stainless Steel	C80704 05	**18-999-282A**	168

Minuteman* X829 Series HEPA Vacuum

Safe, easy-to-use vacuum for difficult dry and wet cleaning jobs

- Removes hazardous dusts such as lead, arsenic, and asbestos, and nonhazardous wastes such as flour, wood, and foundry dusts
- Durable tank has a quick-release, self-sealing intake that ensures a positive vacuum seal
- ULPA filter is 99.999% efficient at 0.12μm; resists punctures, tears, leaks, abrasions, and moisture damage
- Patented safety interlock system prevents operation if ULPA filter is not properly in place
- One-piece, polyethylene Uni-Adapter* attaches easily to form a leakproof seal with the vacuum tank, enabling safe wet direct load recovery

18-999-985

19-063-030

Tank Size	Capacity (Wet)	Capacity (Dry)	Noise Level	Mfr. No.	Cat. No.	Ea
Painted Steel Tank						
4 gal. (15L)	2.5 gal. (9.5L)	0.21 cu. ft. (0.006m³)	70db	C82904-01	19-063-030	815
15 gal. (57L)	13 gal. (49L)	0.82 cu. ft. (0.023m³)	72dB	C82915-03	19-063-032	1090
Polyethylene Tank						
15 gal. (57L)	13 gal. (49L)	0.82 cu. ft. (0.023m³)	72dB	C82915-06	18-999-985	1513
20 gal. (20L)	19 gal. (72L)	0.82 cu. ft. (0.023m³)	72dB	C82920-06	19-063-033	1419

LOOKING FOR ACCESSORIES?

For accessories and replacement parts for Minuteman* vacuums,

Visit www.fishersci.com and search for Minuteman replacement

*Trademark. See Trademark Reference.

Prices subject to change.

SAMPLE CUPS

isherbrand* Multipurpose ample Cups

eavy-duty polystyrene to prevent cracking tipping

Graduated in 0.5mL increments

Side-gated molding process eliminates pinholes in bottoms of cups

02-544-4

pacity	Cat. No.	Pack of	Case of 10 Pk.
mL	**02-544-19**[‡]	10,000/340.26	----
mL	**02-544-131**[†]	1000/47.81	478.09
mL	**02-544-4**[‡]	1000/45.25	452.45

ps supplied in pack of 10,000 come unseparated in large drum.

en separate packages of 1000 each are bundled to produce case of 10 pack.

ACCESSORIES

Caps for Fisherbrand* Multi-Purpose Sample Cups

Fit 0.25, 0.5 and 2.0mL capacity cups

r Analyzer Cup	Cat. No.	Pack of 1000	Case of 10 Pk.
2-544-2, -18, -19, -65	**02-544-10**	45.17	386.03

te: 02-544-10 also fits 13 × 100mm Fisherbrand Nonsterile Plastic Tubes -956-7A and -8E, and 13 × 100mm Fisherbrand Sterile Plastic tubes 14-956-4A.

EX CertiPrep* Disposable XRF Spec-Cap* mple Cups

minum cups aid in the production of pressed-powder ple discs for XRF

allow and thin-walled

p forms the bottom and partial sides of completed sample disc, making it re resistant to chipping and breaking

mple is easier to handle, mark d store

04-675-24

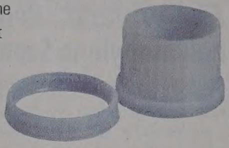
		Bag of 100 Cups		Bag of 1000 Cups	
Dia. × H	Finished Disc Dia. × H	Cat. No.	Each	Cat. No.	Each
8mm	31 × 5mm	**04-675-24**	27.46	----	----
8mm[1]	31 × 5mm	**04-675-22**	17.56	**04-675-23**	138.67
8mm	35 × 5mm	**04-675-17**	27.68	----	----
9mm	40 × 5mm	**04-675-19**	32.58	**04-675-20**	262.16

ared.

SPEX CertiPrep* Disposable XRF X-Cell* Sample Cups

Permit fast XRF analysis of liquid samples

- Made of contaminant-free polyethylene
- Closed cups have one opening for fast liquid sample delivery
- Open cups are open at both ends to provide easier access for viscous or powder samples
- Collars are available with some styles to help hold film to cup for additional security


04-675-13

ORDERING INFORMATION:

Special application versions including the 31mm micro X-Cell—with a 6.3mm centered window for small, hazardous, or air-sensitive samples—and the 43mm cell for Horiba* sulfur analyzers also available.

REQUIRED ACCESSORIES:

Window film

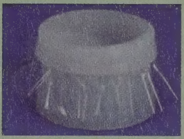
Diameter	Style	Cat. No.	Pack of 100
31mm	Closed	**04-675-12**	55.34
31mm	Closed; Collar	**04-675-13**	55.34
31mm	Open; Collar	**04-675-15**	67.25
31mm (micro)	Open; Collar	**04-675-16**	72.36
40mm	Closed	**04-675-11**	97.25
43mm (for Horiba sulfur analyzers)	Closed	**04-675-14**	50.21

ACCESSORIES

SPEX CertiPrep* Disposable XRF X-Cell* Sample Cups Window Film

Strong and durable

- Film covers the cell and serves as the sample window, allowing uniform transmission of X-rays
- Minimizes leaks that could damage the spectrophotometer


04-675 Series Film

ORDERING INFORMATION:

Available in a variety of materials, each resistant to a range of chemicals. All sizes are compatible with X-Cell sample cups.

Material	Thickness	Format	Quantity per Unit	Cat. No.	Each
Kapton*	0.33mil (8µm)	2⅞"W × 50'L	1 roll	**04-675-1**	80.00
Mylar	0.25mil (6µm)	3¼" dia. circles	500/box	**04-675-3**	110.98
Mylar	0.12mil (3µm)	2⅞"W × 300'L	1 roll	**04-675-4**	54.92
Mylar	0.25mil (6µm)	2⅞"W × 300'L	1 roll	**04-675-5**	42.42
Mylar	0.25mil (6µm)	2½" dia. circles	500/box	**04-675-6**	77.06
Polypropylene	0.2mil (5µm)	2⅞"W × 300'L	1 roll	**04-675-7**	77.05
Polypropylene	0.2mil (5µm)	2½" dia. circles	500/box	**04-675-8**	150.74
Microporous PTFE (0.2µm)[1]	0.2 micron pores	2"W × 17'L	1 roll	**04-675-10**	105.98
Ultralene*	0.16mil (4µm)	2⅞"W × 300'L	1 roll	**3525**	92.25
Ultralene*	0.16mil (4µm)	2½" circles	500/box	**3526**	132.44

[1] *For use with open-ended X-Cells.*

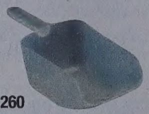
SAMPLERS

GENERAL PURPOSE

*Fisherbrand** Reusable Polypropylene Scoops

Ideal for powdered or granular materials

- Sturdy polypropylene construction provides better weight distribution than metal scoops
- Nonsterile
- Steam autoclavable at 121°C (250°F)



14-375-260

ORDERING INFORMATION:
Bulk packaged

Capacity	Overall Length	Cat. No.	Case of 12
75cc	7½" (19cm)	**14-375-258**	17.25
100cc	7½" (19cm)	**14-375-259**	17.25
200cc	8" (20cm)	**14-375-260**	17.59

*Fisherbrand** Disposable Sterile Scoops

Curved handle for easier pickup

- Contaminant-free
- Flat-top design ensures accuracy to ±2% of capacity
- Flat bottom keeps scoop upright
- Polystyrene construction

Left to right: 14-375-252, -251, -250

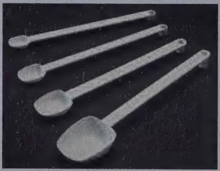
ORDERING INFORMATION:
Individually packaged

Capacity	Overall Length	Cat. No.	Case of 100
2 oz. (59mL)	7½" (19cm)	**14-375-250**	75.07
4 oz. (118mL)	7½" (19cm)	**14-375-251**	98.80
8 oz. (237mL)	8" (20cm)	**14-375-252**	131.26

*Fisherbrand** Disposable Sterile Spoons

For small quantities of dry or slurry samples

- Flat-top design ensures measuring accuracy
- Extra-long handle minimizes contamination
- Flat bottom prevents rollover
- Pegged end on handle for easier pickup
- Polystyrene construction



Top to bottom: 14-375-254, -255, -256, -257

ORDERING INFORMATION:
Individually packaged.

Capacity	Overall Length	Cat. No.	Case of 200
¼ tsp. (1.2mL)	7" (17.8cm)	**14-375-254**	131.26
½ tsp. (2.5mL)	7" (17.8cm)	**14-375-255**	133.75
1 tsp. (4.9mL)	7" (17.8cm)	**14-375-256**	121.65
1 Tbs. (14.8mL)	7" (17.8cm)	**14-375-257**	123.78

*Fisherbrand** Disposable Sterile Spatula

For transferring powdered or caked materials

- Heavy-duty edge and "V" design easily break up packed materials
- One-piece polystyrene construction with extra-large handle

14-375-253

ORDERING INFORMATION:
Individually packaged.

Overall Length	Cat. No.	Case of 1
9" (22.9cm)	**14-375-253**	76.9

*Fisherbrand** Sterile Knife

Disposable sampling accessory

- Serrated edge for cutting fibrous materials
- Polystyrene construction

ORDERING INFORMATION:
Individually packaged.

14-375-262

Overall Length	Cat. No.	Case of 20
7⅛" (18.1cm)	**14-375-262**	205.5

*Fisherbrand** Reusable Polyethylene Ladles

Extra-heavy-duty for sampling and dispensing corrosive liquids

- Linear polyethylene beaker with securely welded solid handle

14-375-25

Capacity	Handle Length	Cat. No.	Each	Case
1.7 oz. (50mL)	9" (23cm)	**14-242-20**	15.71	12/159.7
3.4 oz. (100mL)	9" (23cm)	**14-242-25**	16.78	12/170.6
8.5 oz. (250mL)	9" (23cm)	**14-242-30**	17.30	12/175.9
20.3 oz. (600mL)	10" (25cm)	**14-242-40**	19.07	12/193.8
33.8 oz. (1000mL)	12" (30cm)	**14-242-45**	46.37	6/235.7

*Fisherbrand** PTFE Dippers

Totally inert, reusable

- Extendable screw-in shafts have a steel core for rigidity and are fully encapsulated in PTFE

14-243-3A

Capacity	Shaft Length	Cat. No.	Eac
3.4 oz. (100mL)	24 in. (61cm)	**14-243-3A**	110.6
8.5 oz. (250mL)	24 in. (61cm)	**14-243-3B**	120.7
16.9 oz. (500mL)	24 in. (61cm)	**14-243-3C**	145.3
33.8 oz. (1000mL)	24 in. (61cm)	**14-243-3D**	184.6

*Trademark. See Trademark Reference.

isherbrand* Reusable olyethylene Dippers

0mL beakers with long handles for moving samples from large tanks

ightweight, durable polyethylene

raduated beaker features dual pouring spouts for easy eft- or right-handed operation

andle has an "easy-grip" end for secure handling under dverse conditions

14-242-5

pacity	Handle Length	Cat. No.	Each
.9 oz. (500mL)	3' (0.9m)	14-242-1	38.71
.9 oz. (500mL)	6' (1.8m)	14-242-5	57.82
.9 oz. (500mL)	12' (3.7m)	14-242-10†	97.14

upplied as two-piece handle.

bbermaid* Bouncer* Scoops

de of USDA-accepted, NSF-certified, clear ycarbonate materials that comply with regulations

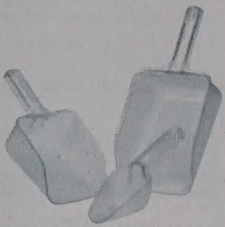
ugh polycarbonate resists breaking

proved weight distribution and hanng compared to metal

bble-textured outer surface

sy-to-clean, smooth inner surface

mmercial dishwasher safe



14-236 Series

city	Overall Length	Mfr. No.	Cat. No.	Each
(170g)	11⅝" (29cm)	2882	14-236	12.94
. (908g)	11⅝" (29cm)	2884	14-236-5	12.95
. (1.8kg)	14" (36cm)	2886	14-236-10	13.99

bbermaid* Reusable Utility Scoop

ged, lightweight, white polyethylene

ble for handling foodstuffs.

ERING INFORMATION:
p dimensions: 8¼L × 6⅛"W
16cm)

IPLIANCE:
e of USDA-accepted materials
comply with FDA regulations;
isted

14-236-1

city	Handle Length	Mfr. No.	Cat. No.	Each
. (1.9L)	7" (18cm)	2885	14-236-1	9.40

Scienceware* Sterileware* Samplers

For convenient, sterile sampling of dry, powdered, caked, or slurried materials

Specifically designed to save time in quality-assurance and microbiology labs that require repetitive contamination-free samples of food, cosmetics, pharmaceuticals, and environmental materials.

- Tough, high-impact styrene
- Samplers have extra-long handles to keep hands at a safe distance from bowl
- Guaranteed sterile
- Disposable
- Each sampler is sealed inside its own plastic bag
- Back lip of is slightly raised above handle to prevent thumbs from accidentally slipping into sample

Sampling System

- For one-step sterile sampling of dry or slurried material
- Extra-long handles keep hands safe
- Scoop with a lid, inside a plastic bag
- Lock-tab seals sample inside
- Sample data can be written on lid for easy identification

14-241-15B

Capacity	Overall Length	Mfr. No.	Cat. No.	Case of 100
4 oz. (118mL)	7½" (19.1cm)	36924-0000	14-241-15B	173.40

Sampler Scoops

- Extra-long handles keep hands safe

14-241-10 Series

Capacity	Overall Length	Mfr. No.	Cat. No.	Case of 100
2 oz. (59mL)	7" (17.8cm)	36902-0000	14-241-10A	80.85
4 oz. (118mL)	7½" (19cm)	36904-0000	14-241-10B	103.95
8 oz. (236mL)	8½" (21cm)	36906-0000	14-241-10C	138.99

Sampler Spoons

- For small amounts of dry or slurry samples
- Extra-long handles keep hands safe

14-429 Series

Capacity	Overall Length	Mfr. No.	Cat. No.	Case of 200
¼ tsp. (1.2mL)	7" (17.8cm)	36940-0000	14-429A	138.99
½ tsp. (2.5mL)	7" (17.8cm)	36942-0000	14-429B	144.00
1 tsp. (4.9mL)	7" (17.8cm)	36944-0000	14-429C	129.00
1 Tbs. (14.8mL)	7" (17.8cm)	36946-0000	14-429D	127.50

Scienceware* Sterileware* Samplers, Contd.

Sampler Spatula

- For sterile sampling of soil or any powdered or caked materials
- In individual plastic bags
- Sturdy edge breaks up even hard-packed dirt with ease
- Extra-long 6" (15cm) spatula holds twice the material as conventional reusable spatulas
- Convenient, permanently attached handle means spatula never has to be touched

14-358-20

Capacity	Overall Length	Mfr. No.	Cat. No.	Case of 100
36cc	9" (23cm)	36930-0000	**14-358-20**	84.60

Scienceware* Reusable Polypropylene Scoops

Handle large quantities of powdered or granular materials

- Rigid, strong, smooth surface
- Steam autoclavable at 121°C (250°F)
- Natural color

14-237 Series

Capacity	Handle Length	Scoop (L × W)	Mfr. No.	Cat. No.	Pack of 6	Case of
22cc	1¼" (32mm)	2⅜ × 1⅛ × 1" (60 × 29 × 25mm)	36747-0000	**14-237-1**	----	72/49.50
75cc	1⅞" (48mm)	3½ × 1½ × 1¼" (89 × 38 × 32mm)	36749-0000	**14-237-2**	----	72/124.50
100cc	4" (102mm)	3⅝ × 1⅞ × 1⅜" (92 × 48 × 35mm)	36750-0000	**14-237-6**	----	48/83.00
200cc	2½" (64mm)	5 × 2 × 2" (127 × 51 × 51mm)	36753-0000	**14-237-3**	----	36/63.75
1100cc	4" (102mm)	8 × 4¾ × 3" (203 × 121 × 76mm)	36756-0000	**14-237-5**	28.67	4 Pk./ 98.00

Scienceware* Long-Handled Dippers

For easy sampling from tanks, vats, and lakes

- High-density polyethylene dippers will not rust or corrode
- Provide excellent chemical resistance
- Handle is welded to the rigid bowl at a 45° angle
- End of the handle has a hook for hanging
- Handle diameter: 1⅛" (29mm)

22-261-570

Capacity	Handle Length	Mfr. No.	Cat. No.	Each	Case of 12
One-Piece Handle					
16.9 oz. (500cc)	36" (91.4cm)	F367800016	**22-111-153**	41.83	429.00
16.9 oz. (500cc)	72" (183cm)	F367810016	**22-111-526**	59.23	618.00
16.9 oz. (500cc)	144" (366cm)	F367820116	**22-261-572**	104.13	1068.00
33.8 oz. (1000cc)	72" (183cm)	F367810032	**22-261-570**	69.86	729.00
Two-Piece Handle					
16.9 oz. (500cc)	144" (366cm)	F367820016	**22-163-790**	114.43	1194.00
33.8 oz. (1000cc)	144" (366cm)	F367820032	**22-261-571**	----	1230.00

SPECIALIZED

*Fisherbrand** Drum Sampler

For sampling of 55-gallon drums or vessels

- Samples vessels with openings as small as 2" I.D. (5cm)
- Handle design prevents sampler from being dropped into drum opening
- Included 100mL bottle easily passes through opening for quick filling
- Handle diameter: 1¼" (3.2cm)

03-338-2A

Capacity	Handle Length	Cat. No.	Each
3.4 oz. (100mL)	3' (0.9m)	**03-338-2A**	105.91

*Fisherbrand** HDPE Liquid Samplers

For industrial and environmental applications

Chemical-resistant, high-density polyethylene samplers ideal for use in corrosive environments and hard-to-reach places.

- 500mL bottle screws into the end of handle and is filled via four ports
- Handle is supplied in two pieces
- Reusable
- Handle O.D: 1¼" (3.2cm)

14-243-1

Capacity	Handle Length	Cat. No.	Each
16.9 oz. (500mL)	6' (1.8m)	**03-338-2B**	134.48
16.9 oz. (500mL)	8' (2.4m)	**14-243-1**	181.02

Scienceware* Liquid Sampler

Nickel-plated brass and steel sampler

- 50mL liquid sampler
- Tubular handle with syringe-type grip
- Center rod with finger ring operates valve at bottom of cup for rapid filling and emptying of retrieved sample

ORDERING INFORMATION:

Provides 17½" (45cm) depth for insertion into cans, bottles, tanks, vats, etc. Cup dia: 1¼" (3.2cm)

14-209-52

Capacity	Length	Mfr. No.	Cat. No.	Ea
1.7 oz. (50mL)	19½" (50cm)	37827-0000	**14-209-52**	140.

*Trademark. See Trademark Reference.

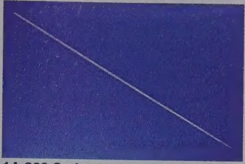
heaton Disposable Drum Thieves

nomical and convenient to use

mply insert empty tube into drum, ld thumb over the top, and thdraw sample

da-lime glass units break easily quick disposal

ngth: 43" (109cm)


14-209 Series

city	Diameter	Mfr. No.	Cat. No.	Case of
oz. (25mL)	¼" (7.5mm)	885300	**14-209-72**	100/128.15
z. (75mL)	½" (12mm)	885302	**14-209-73**	24/60.35
z. (150mL)	¾" (18mm)	885303	**14-209-74**	24/86.56

eaton Stainless-Steel Bomb Sampler

ect liquid or light viscous samples from tanks, ds, lagoons and wells

nsists of cylindrical reservoir mber, weighted plunger that ls the chamber at the bottom, l cable attachment

14-209-59

ERING INFORMATION:

nsions, 2½" dia. × 10"L (6.3 × 25cm). Weight, 4 lb. (1.8kg).

UIRED ACCESSORIES:

le cable assembly

city	Overall Length	Mfr. No.	Cat. No.	Each
oz. (500mL)	10" (25cm)	885200	**14-209-59**	730.93

roleum Bacon Bomb Sampler

composite sampling by ASTM* D 4057-95

ighted sampler obtains samples ny liquid

omatically opens when plunger ches bottom

nually opens at desired depth n a pull cord or extension rod

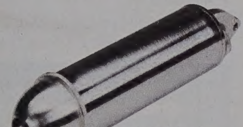
npler closes when lifted and can ocked for transport

O-rings to wear out or lose

magnetic

ss and bronze construction with heavy nickel plating

ger threaded 1/4-20 to accept threaded extension rods


14-209 Series

ity	O.D. × H	Mfr. No.	Cat. No.	Each
125mL)	1⅞ × 9" (4.8 × 22.8cm)	4852	**14-209D**	196.30
125mL)	1⅛ × 15½" (2.8 × 39.4cm)	4852-S	**14-209E**	182.50
250mL)	2¼ × 10" (5.7 × 25.4cm)	4849	**14-209A**	189.00
(500mL)	2¾ × 12" (7 × 30cm)	4850	**14-209**	246.00
(500mL)	2¼ × 17" (5.7 × 43.1cm)	4850-S	**14-209B**	214.80
(1000mL)	3¼ × 16" (8.25 × 40.6cm)	4851	**14-209C**	269.30

Wheaton Borosilicate Glass Coliwasa Samplers

Offer excellent chemical resistance and can be cleaned repeatedly

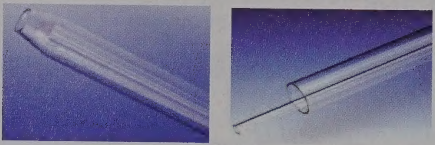
- PTFE seal permits sampling to within ½" (1.3cm) of drum bottom
- Positive seal allows transfer of sample to bottle without any loss
- A 200mL sample may be obtained from a full 55 gal. (208L) drum
- Available prescored for disposal after a single use or unscored for repeated use

ORDERING INFORMATION:

Capacity: 6.8 oz. (200mL).

Dimensions: ⅞" dia. × 42"L (2.2 × 107cm)

13-683-15


13-683-14

Description	Mfr. No.	Cat. No.	Case of 12
Unscored Reusable Coliwasa	885230	**13-683-14**	266.61
Prescored Disposable Coliwasa	885231	**13-683-15**	267.76

Wheaton Disposable Glass Coliwasa Sampler

Constructed of soda-lime glass with liquid-tight PTFE-lined seal

14-209-60

- Prescored components allow for easy disposal
- PTFE seal locks the sampled column in place
- Transfer sample to appropriate container without any loss

ORDERING INFORMATION:

Dimensions: ⅞" dia. × 42"L (2.2 × 107cm). Tapered bottom has ½" dia. (1.3cm) opening.

Capacity	Mfr. No.	Cat. No.	Case of 12
200mL	885220	**14-209-60**	109.72

Kimble* Disposable Glass Coliwasa Tube

Prescored; snaps apart for disposal

- Ball in lower end of two-part borosilicate glass tube acts as a check valve to prevent sample loss during transfer

ORDERING INFORMATION:

Tube length, 42" (107cm). Diameter: ⅞" (2.2cm).

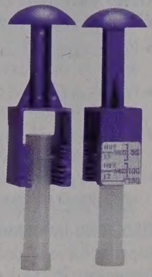
Capacity	Mfr. No.	Cat. No.	Case of 12
200mL	76100 200	**03-338-2F**	190.70

03-338-2F

EasyDraw Syringe* and Powerstop Handle*

Remove an intact 5, 10 or 13g soil core for delivery directly into a pre-tared 40mL vial, which can be used by the analytical laboratory for volatiles extraction.

- Tapered-cut syringe penetrates soil easily
- Use plunger to rapidly eject sample into vial
- Syringe can be refilled and capped for use as a dry weight container
- Powerstop Handle has three 5g and three 10g positions to allow for different soil densities


14-850-11

INCLUDES:
10 EasyDraw Syringes and onePowerstop Handle with plunger

REQUIRED ACCESSORIES:
40mL vials

COMPLIANCE:
Meets U.S. EPA SW-846 Method 5035

Description	Cat. No.	Price	Case of
Kit	**14-850-12**	Ea./21.00	10/210.00
Syringe	**14-850-10**	Pk. of 100/179.82	5 Pk./768.45
Handle	**14-850-11**	Ea./20.43	5/87.29

Fisher Scientific* Grain Sampler

14-208Q

Recommended by Association of Official Agricultural Chemists

- Consists of a brass tube within a brass tube; each with slit opening
- Rotation of inner tube opens or closes sampler
- Open-close indicator on handle shows status
- Large ½" (1.3cm) slot admits coarse grain

ORDERING INFORMATION:
Capacity, 9 cu. in. (147cm³)

Overall Length	Cat. No.	Each
36" (91cm)	**14-208Q**	341.73

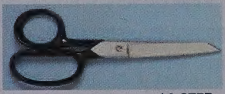
SCISSORS

GENERAL PURPOSE

*Fisherbrand** Heavyweight Short-Blade Scissors

Reinforced clip point for cutting heavy fabric and paper

- Hot-hammer forged, hardened and tempered of special cutlery steel
- Double-plated chrome over nickel with black enameled handles

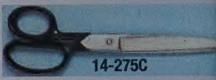

14-275B

Overall Length	Cut Length	Cat. No.	Each	Case of
6" (150mm)	2¾" (70mm)	**14-275A**	41.43	6/212.46
8" (200mm)	4" (100mm)	**14-275B**	52.18	4/178.39

*Fisherbrand** Heavyweight Long-Blade Scissors

Cut corrugated cardboard, thick twine, and heavy fabrics with minimum effort

- Special cutlery steel
- Double-plated chrome over nickel with black enameled handles

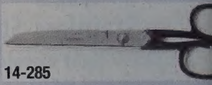

14-275C

Overall Length	Cut Length	Cat. No.	Each	Case o
10" (250mm)	5⅜" (137mm)	**14-275C**	62.74	222

*Fisherbrand** Heavyweight Long-Handle Scissors

For cutting cardboard and light metals

- Short, strong blades of forged tough molybdenum-alloy steel fitted with screw and nut
- Chromium over nickel-plated blades with black enameled handles

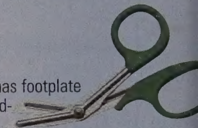

14-285

Overall Length	Cut Length	Cat. No.	Each	Case
7½" (190.5mm)	2¾" (70mm)	**14-285**	38.10	130

*Fisherbrand** Universal Scissors with Footplate

Cut almost anything from bandages to 24-gauge ste

- FDA-certified material
- Type 4, Grade 420, stainless steel
- Rockwell hardness: HRC 46 to 50
- One blade is serrated; other blade has footplate for cutting in between skin and bandages
- Comfortable plastic handles
- Autoclavable
- Manufactured using ISO 9001: 2001-certified processes and to G cGMP guidelines

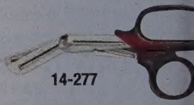

08-951-30

Overall Length	Cut Length	Cat. No.	Each	Case
7" (178mm)	2" (51mm)	**08-951-30**	15.12	7

*Fisherbrand** Utility Cutter Short Angled-Blade Scissors

Cut paper, bandages, vacuum tubing, leather and wire up to 24-gauge steel

- FDA-certified material
- Extremely hard stainless-steel blades
- Rockwell Hardness: HRC 52 to 55
- One blade finely serrated for better cutting
- Pivot point for cutting mobility
- Heavy-duty polycarbonate handles
- Autoclavable
- Manufactured using ISO 90 2001-certified processes an GMP, cGMP guidelines


14-277

Length	Cut Length	Cat. No.	Each	Pack
7" (178mm)	2" (51mm)	**14-277**	16.52	8

Fisherbrand* Utility Scissors

or general use

- FDA-certified material
- Straight, ASTM* F899-84 stainless-steel blades
- Rockwell hardness: HRC 46 to 50
- Passivated to avoid rust contamination
- Fully autoclavable
- Sterilizable by EtO and gamma radiation
- Manufactured using ISO 9001: 2001-certified processes and to GMP, cGMP guidelines

verall Length	Cut Length	Cat. No.	Each	Case of 10
½" (114mm)	1⁹⁄₁₆" (40mm)	**08-945**	16.01	136.85

isherbrand* Bandage Scissors

hort, angled blades

08-951

- ASTM* F899-84 standard stainless steel
- Rockwell hardness: HRC 46 to 50
- Upper blade has rounded tip; lower blade is blunt with flattened probe tip
- Passivated and autoclavable
- Sterilizable by EtO/gamma radiation
- Manufactured using ISO 9001: 2001-certified processes and to GMP, cGMP guidelines

eel	Length	Cut Length	Cat. No.	Each	Case of 12
hrome-plated	4½" (114mm)	1½" (38mm)	**08-951**	23.06	236.56
ainless	5½" (140mm)	2" (51mm)	**08-952**	13.27	136.10

DISSECTING

isherbrand* Straight-Blade perating Scissors

rged from surgical-grade stainless steel

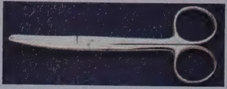
13-806 (top); 13-806-2 (bottom)

- FDA-certified material
- Rockwell Hardness: HRC 46 to 50
- Passivated
- Autoclavable
- Can be sterilized by EtO/ gamma radiation
- nspected per U.S. Government specifications
- Manufactured using ISO 9001: 2001-certified processes and to GMP, cGMP guidelines

de Tips	Length	Cat. No.	Each	Case of 10
nt/Blunt	4½" (114mm)	**13-806**	46.96	401.39
nt/Sharp	4½" (114mm)	**13-806-2**	20.96	179.11
	5½" (140mm)	**13-808-2**	23.48	200.70
	6½" (165mm)	**13-810-2**	25.88	221.19
arp/Sharp	4½" (114mm)	**13-806-4**	38.49	328.97
	5½" (140mm)	**13-808-4**	36.29	310.19
	6½" (165mm)	**13-810-4**	25.00	----

Fisherbrand* Curved-Blade Operating Scissors

Forged from surgical-grade stainless steel



13-804-20

- FDA-certified material
- Rockwell Hardness: HRC 46 to 50
- Passivated
- Autoclavable to 135°C; sterilizable by EtO/gamma radiation
- Manufactured using ISO 9001: 2001-certified processes and to GMP, cGMP guidelines

Blade Tips	Length	Cat. No.	Each	Case of 10
Sharp/Blunt	5½" (140mm)	**13-804-20**	19.35	165.35
Sharp/Blunt	6½" (165mm)	**13-804-21**	34.96	298.84
Sharp/Sharp	5½" (140mm)	**13-804-22**	19.09	163.12

Fisherbrand* Doyen Abdominal Scissors

Forged from surgical-grade stainless steel

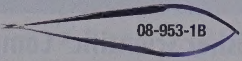
13-804-2

- FDA-certified material
- Rockwell Hardness: HRC 46 to 50
- Passivated
- Autoclavable
- Can be sterilized by EtO/gamma radiation
- Inspected per U.S. Government specifications
- Manufactured using ISO 9001: 2001-certified processes and to GMP, cGMP guidelines

Style	Length	Cat. No.	Each	Case of 10
Straight	7" (178mm)	**13-804-2**	61.67	545.78
Curved	7" (178mm)	**13-804-4**	69.31	613.40

Fisherbrand* Straight Microscissors

Automatic function



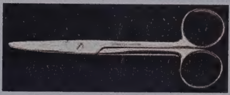
08-953-1B

- FDA-certified material
- Rockwell Hardness: HRC 46 to 50
- Passivated
- Autoclavable
- Can be sterilized by EtO/gamma radiation
- Quality control per U.S. Government specifications
- Manufactured using ISO 9001: 2001-certified processes and to GMP, cGMP guidelines

Length	Cat. No.	Each
4¾" (120mm)	**08-953-1B**	49.94

Fisherbrand* Mayo Dissecting Scissors

Quality control per U.S. Government specifications



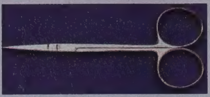
13-804-6

- FDA-certified material
- Rockwell Hardness: HRC 46 to 50
- Passivated
- Autoclavable
- Can be sterilized by EtO/gamma radiation
- Manufactured using ISO 9001: 2001-certified processes and to GMP, cGMP guidelines

Style	Length	Cat. No.	Each	Case of 6
Straight	5½" (140mm)	**13-804-6**	31.13	159.66
Straight	6¾" (171mm)	**13-804-8**	51.52	202.14
Curved	5½" (140mm)	**13-804-5**	28.16	144.42
Curved	6¾" (171mm)	**13-804-12**	29.84	153.04

***Fisher**brand** Sharp-Pointed Dissecting Scissors

Finely finished, highly polished surgical-grade stainless steel



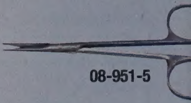
08-940

- FDA-certified material
- Rockwell Hardness: HRC 46 to 50
- Narrow blades with 1" long (25mm) cutting edge
- Both tips sharp
- Passivated
- Autoclavable
- Can be sterilized by EtO/gamma radiation
- Quality control per U.S. Government specifications
- Manufactured using ISO 9001: 2001-certified processes and to GMP, cGMP guidelines.

Style	Length	Cat. No.	Each	Case of
Straight	4½" (114mm)	**08-940**	16.99	12/153.10
Curved	4⅛" (105mm)	**08-935**	17.48	10/149.37

***Fisher**brand** Delicate Dissecting Sciss

Forged from surgical-grade stainless steel



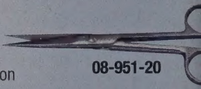
08-951-5

- FDA-certified material
- Rockwell Hardness: HRC 46 to 50
- Passivated
- Autoclavable
- Can be sterilized by EtO/gamma radiation
- Inspected per U.S. Government specifications
- Manufactured using ISO 9001: 2001-certified processes and to GMP, cGMP guidelines.

Style	Length	Cat. No.	Each	Case of 10
Straight	4½" (114mm)	**08-951-5**	32.29	275.95
Curved	4½" (114mm)	**08-951-10**	31.61	270.13

***Fisher**brand** Standard Dissecting Scisso

Two styles available



08-951-20

- FDA-certified material
- Rockwell Hardness: HRC 46 to 50
- Can be sterilized by EtO/gamma radiation
- Passivated
- Autoclavable
- Inspected per U.S. Government specifications
- Manufactured using ISO 9001: 2001-certified processes and to GMP, cGMP guidelines.

Style	Length	Cat. No.	Each	Case of 10
Straight	6" (150mm)	**08-951-20**	30.09	257.15
Curved	5⅛" (130mm)	**08-951-25**	39.90	341.04

SEATING

Fisher Scientific* Computer Task Chairs

For CRT operators and other workers who must be seated for long periods of time

Construction

- Feature 18L × 19"W (45.7 × 48.2cm) ergonomically designed, molded polyurethane foam seats upholstered with 100% Marquesa Lana fabric
- Frame, backrest shell, and 24" diameter (60.9cm) five-leg base are constructed of sturdy, easy-to-clean, nylon-reinforced fiberglass
- Backrest support bar enclosed in attractive plastic bellows
- Internal bumper guard protects against tearing
- Base rolls smoothly on self-braking, dual-wheel casters suitable for hard floors and carpet; 14-359-513 and -514 have bell-shaped glides instead

Adjustment

- Control seat height, tilt, and backrest angle from a seated position
- Fingertip control of a pneumatic cylinder apparatus automatically adjusts sitting height to any position within range of individual chair
- Comfortable 17W × 12"H (43.1 × 30.5cm) backrest with adjustable tension locks at any angle in a 30° range
- Backrest pivots automatically, enabling operator to lean forward or relax back with ease; can even be adjusted 4" (10.2cm) forward or 4" (10.2cm) back from seat center
- Seat pitch is further adjustable 8° forward or 3° backward if required

ORDERING INFORMATION:

Available with or without injection-molded, steel-reinforced, polyurethane loop armrests recessed to allow complete lateral leg movement. Also available in black, navy, or burgundy and/or with flame-retardant, antimicrobial/antibacterial vinyl upholstery. (Alternate colors and fabrics are all in-stock options; call for details.) Six-way adjustable armrests are available separately (Cat. No. 14-359-837, next page).

14-359-513

Ordering Information on next

*Trademark. See Trademark Reference.

r Scientific* Computer Task Chairs, Contd.

leight	Color	Leg Type	With Armrests	L x W x H	Cat. No.	Each
24" (48.2 to 60.9cm)	Gray	Casters	No	23½ × 23½ × 42" (59.7 × 59.7 × 106.7cm)	**14-359-490**	468.76
24" (48.2 to 60.9cm)	Blue	Casters	No	23½ × 23½ × 42" (59.7 × 59.7 × 106.7cm)	**14-359-489**	468.76
24" (48.2 to 60.9cm)	Gray	Casters	Yes	23½ × 23½ × 42" (59.7 × 59.7 × 106.7cm)	**14-359-508**	540.35
24" (48.2 to 60.9cm)	Blue	Casters	Yes	23½ × 23½ × 42" (59.7 × 59.7 × 106.7cm)	**14-359-507**	540.35
28" (53.3 to 71.1cm)	Gray	Casters	Yes	23½ × 23½ × 46" (59.7 × 59.7 × 116.8cm)	**14-359-510**	708.06
28" (53.3 to 71.1cm)	Blue	Casters	Yes	23½ × 23½ × 46" (59.7 × 59.7 × 116.8cm)	**14-359-509**	708.06
35" (63.5 to 88.9cm)	Gray	Glides[†]	No	23½ × 23½ × 53" (59.7 × 59.7 × 134.6cm)	**14-359-514**	529.40
35" (63.5 to 88.9cm)	Blue	Glides[†]	No	23½ × 23½ × 53" (59.7 × 59.7 × 134.6cm)	**14-359-513**	529.40

re adjustable chrome footrest.

ACCESSORIES

ljustable Arms for Fisher Scientific* Computer Task d Laboratory

-way adjustment. Must be factory installed.

- Vidth adjusts from 17 to 19½" from inside of arm
- leight adjusts from 7 to 10½" from top of seat
- wiveling arm pad is made of self-skinning polyurethane

. No.	Pair
-359-837	106.22

LOOKING FOR MORE CHAIRS AND STOOLS?

Fisher Scientific offers many chairs and stools suitable for the laboratory or office which are not shown here. For example, you may order chairs and stools with cast-aluminum or tubular bases. Call your Fisher Scientific Customer Service Representative for details and other options available in our selection of chairs and stools.

Visit www.fishersci.com and search for Chairs and Stools

er Scientific* Pneumatic Stools with Wooden Seats

echanically engineered; ergonomic

14-359-300

14-359-304

- ure 13½ dia. × ⅜" thick (34.3 × 1cm) round 12-ply plywood seat with e facing
- ls 14-359-312 and 14-359-304 also have a 14¾W × 10H × ⅜" thick × 25.4 × 0.9cm) 7-ply plywood backrest with maple facing
- height controlled by pneumatic cylinder
- e and 24" diameter (60.9cm) five-leg base[†] are constructed of sturdy, -to-clean, nylon-reinforced fiberglass
- nits have glides standard[‡]; high-form stools have adjustable liameter chrome footrest

ORDERING INFORMATION:

Available to ship within three days.

COMPLIANCE:

Stools meet many stringent state and federal requirements to make compliance easy.

Description	Seat Height	L × W × H	Cat. No.	Each
Low Form				
With backrest	16¾ to 21¾" (42.5 to 55.2cm)	23½ × 23½ × 30" (59.7 × 59.7 × 76.2cm)	**14-359-312**	221.74
Without backrest	16½ to 21½" (41.9 to 54.6cm)	23½ × 23½ × 16" (59.7 × 59.7 × 40.6cm)	**14-359-308**	173.28
High Form				
With backrest	22 to 32" (55.8 to 81.2cm)	23½ × 23½ × 30" (59.7 × 59.7 × 76.2cm)	**14-359-304**	267.08
Without backrest	22 to 32" (55.8 to 81.2cm)	23½ × 23½ × 20" (59.7 × 59.7 × 50.8cm)	**14-359-300**	220.21

[†] *Cat. No. 14-359-308 has a slightly smaller 19" (48.3cm) base.*

[‡] *Optional dual wheel casters suitable for hard floors and carpet are also available.*

Fisher Scientific* Upholstered Pneumatic Laboratory Stools

High- and low-form models, with or without backrest

- Biomechanically engineered; ergonomic
- Feature upholstered, 17½" dia. (44.4cm), 3" thick (7.6cm) urethane foam seats covered in flame-retardant, antimicrobial/antibacterial vinyl
- Seat height controlled by a pneumatic lift certified to give in excess of 500,000 revolutions without a failure
- Frame, backrest shell, and 24" dia. (61cm) five-leg base sturdily constructed of easy-to-clean, nylon-reinforced fiberglass
- Backrest support bar enclosed in attractive plastic bellows
- Dual wheel casters suitable for hard floors and carpet
- High-form stools have adjustable 20" chrome footrest
- Lumbar support built into back of chair

14-359-409

14-359-393

ORDERING INFORMATION:

Choose from models with blue, black, burgundy, navy or gray upholstery available immediately from stock. Available with or without 17W × 12"H (43.2 × 30.5cm) backrest cushions that are adjustable in distance from seat center 4" (10.2cm) forward or 4" (10.2cm) backward.

COMPLIANCE:

Both high- and low-form stools meet many stringent state and federal requirements to make compliance easy.

Description	Seat Height	Color	L x W x H	Cat. No.
Low Form				
With backrest	19 to 24½" (48.2 to 62.2cm)	Blue	23½ × 23½ × 30" (59.7 × 59.7 × 76.2cm)	**14-359-417†**
	19 to 24½" (48.2 to 62.2cm)	Gray	23½ × 23½ × 30" (59.7 × 59.7 × 76.2cm)	**14-359-418†**
	19 to 24½" (48.2 to 62.2cm)	Black	23½ × 23½ × 30" (59.7 × 59.7 × 76.2cm)	**14-359-810†**
	19 to 24½" (48.2 to 62.2cm)	Burgundy	23½ × 23½ × 30" (59.7 × 59.7 × 76.2cm)	**14-359-811†**
	19 to 24½" (48.2 to 62.2cm)	Navy	23½ × 23½ × 30" (59.7 × 59.7 × 76.2cm)	**14-359-812†**
Without backrest	18½ to 26" (47 to 66cm)	Blue	23½ × 23½ × 16" (59.7 × 59.7 × 40.6cm)	**14-359-409**
	18½ to 26" (47 to 66cm)	Gray	23½ × 23½ × 16" (59.7 × 59.7 × 40.6cm)	**14-359-410**
	18½ to 26" (47 to 66cm)	Black	23½ × 23½ × 16" (59.7 × 59.7 × 40.6cm)	**14-359-807**
	18½ to 26" (47 to 66cm)	Burgundy	23½ × 23½ × 16" (59.7 × 59.7 × 40.6cm)	**14-359-808**
	18½ to 26" (47 to 66cm)	Navy	23½ × 23½ × 16" (59.7 × 59.7 × 40.6cm)	**14-359-809**
High Form				
With backrest	22 to 29" (55.8 to 73.6cm)	Blue	23½ × 23½ × 34" (59.7 × 59.7 × 86.4cm)	**14-359-393**
	22 to 29" (55.8 to 73.6cm)	Gray	23½ × 23½ × 34" (59.7 × 59.7 × 86.4cm)	**14-359-394**
	22 to 29" (55.8 to 73.6cm)	Black	23½ × 23½ × 34" (59.7 × 59.7 × 86.4cm)	**14-359-801**
	22 to 29" (55.8 to 73.6cm)	Burgundy	23½ × 23½ × 34" (59.7 × 59.7 × 86.4cm)	**14-359-802**
	22 to 29" (55.8 to 73.6cm)	Navy	23½ × 23½ × 34" (59.7 × 59.7 × 86.4cm)	**14-359-803**
Without backrest	21½ to 28" (54.6 to 71.1cm)	Blue	23½ × 23½ × 30" (59.7 × 59.7 × 76.2cm)	**14-359-401**
	21½ to 28" (54.6 to 71.1cm)	Gray	23½ × 23½ × 30" (59.7 × 59.7 × 76.2cm)	**14-359-402**
	21½ to 28" (54.6 to 71.1cm)	Black	23½ × 23½ × 30" (59.7 × 59.7 × 76.2cm)	**14-359-804**
	21½ to 28" (54.6 to 71.1cm)	Burgundy	23½ × 23½ × 30" (59.7 × 59.7 × 76.2cm)	**14-359-805**
	21½ to 28" (54.6 to 71.1cm)	Navy	23½ × 23½ × 30" (59.7 × 59.7 × 76.2cm)	**14-359-806**

† Loop arms or adjustable arms are available on special order. Contact your Fisher Scientific Customer Service Representative for details.

*Trademark. See Trademark Reference.

her Scientific* Upholstered Pneumatic boratory Chairs

mechanically engineered to be ergonomic, with bar support built into back of chair

14-359-481

- ature 18L × 19"W (45.7 × 48.2cm), gonomically designed, molded polyurethane am waterfall seats upholstered with flame-ardant antimicrobial/antibacterial vinyl
- mfortable 17W × 12"H (43.2 × 30.5cm) ckrest is adjustable in distance from seat nter 4" (10cm) forward or 4" (10cm) backward
- at height controlled by a pneumatic lift tified to give more than 500,000 revolutions thout a failure
- me, backrest shell, and 24" dia. (61cm) e-leg base are constructed of sturdy, sy-to-clean, nylon-reinforced fiberglass
- ckrest support bar enclosed in plastic bellows
- ernal bumper guard protects against tearing

ERING INFORMATION:

within three days. Available with dual wheel casters (suitable for hard s or carpet) or glides with adjustable chrome footrest; 100% Marquesa fabric upholstery is also available as an in-stock option—call for ls. Six-way adjustable armrests are available separately No. 14-359-837)

IPLIANCE:

many stringent state and federal requirements.

t,	Leg Type	With Armrests	L x W x H	Cat. No.	Each
24" (48.2 to 60.9cm)					
	Casters	No	23½ × 23½ × 42" (59.7 × 59.7 × 106.7cm)	**14-359-482**	490.56
	Casters	No	23½ × 23½ × 42" (59.7 × 59.7 × 106.7cm)	**14-359-481**	490.56
	Casters	No	23½ × 23½ × 42" (59.7 × 59.7 × 106.7cm)	**14-359-816**	490.56
ndy	Casters	No	23½ × 23½ × 42" (59.7 × 59.7 × 106.7cm)	**14-359-817**	490.56
	Casters	No	23½ × 23½ × 42" (59.7 × 59.7 × 106.7cm)	**14-359-818**	490.56
28" (53.3 to 71.1cm)					
	Glides	No	23½ × 23½ × 46" (59.7 × 59.7 × 116.8cm)	**14-359-474**	589.15
	Glides	No	23½ × 23½ × 46" (59.7 × 59.7 × 116.8cm)	**14-359-473**	589.15
	Glides	No	23½ × 23½ × 46" (59.7 × 59.7 × 116.8cm)	**14-359-819**	589.15
ndy	Glides	No	23½ × 23½ × 46" (59.7 × 59.7 × 116.8cm)	**14-359-820**	589.15
	Glides	No	23½ × 23½ × 46" (59.7 × 59.7 × 116.8cm)	**14-359-821**	589.15

Fisher Scientific* Soil-Resistant Chairs

Ideal for work environments demanding materials impervious to oil and dirt

14-359-324

Biomechanically engineered, ergonomic chairs meet many stringent state and federal requirements, making compliance easy.

- High-profile, puncture-resistant polyurethane seat and back are perfect for areas where steam cleaning is a must
- Pneumatic mechanism controls seat height
- Flame-resistant and produced CFC-free
- Feature roomy 17⅜L × 17½W × 1½" thick (44.1 × 44.5 × 3.8cm) seat
- Backrest adjusts horizontally 3" (7.6cm) forward and 3" (7.6cm) backward; vertically, 3" (7.6cm) up and 3" (7.6cm) down
- Backrest dimensions: 15W × 10H × 1⅜" thick (38.1 × 25.4 × 3.5cm)
- Base diameter: 24" (61cm)

ORDERING INFORMATION:

Low-form chair has dual-wheel casters suitable for hard floors or carpet; high-form chair features choice of glides or casters and an adjustable 20" (50.8cm) chrome footrest. Available immediately from stock.

Description	Seat Height	L × W × H	Cat. No.	Each
Low form	17 to 22½" (43.2 to 57.1cm)	23½ × 23½ × 30" (59.7 × 59.7 × 76.2cm)	**14-359-324**	394.32
High form with glides	23½ to 33½" (59.7 to 85.1cm)	23½ × 23½ × 44" (59.7 × 59.7 × 111.8cm)	**14-359-320**	415.36
High form with casters	23½ to 33½" (59.7 to 85.1cm)	23½ × 23½ × 44" (59.7 × 59.7 × 111.8cm)	**14-359-800**	366.00

LOOKING FOR MORE CHAIRS AND STOOLS?

Fisher Scientific offers chairs and stools suitable for the laboratory or office which are not shown here. For example, you may order chairs and stools with cast-aluminum or tubular bases.

Visit www.fishersci.com and search for Chairs and Stools

LOOKING FOR MORE FURNITURE?

Looking for more furniture, including tables, cabinets, work surfaces, sinks and fixtures? See our Furniture section for other available items.

Fisher Scientific* Managed Services Portfolio

Freeing You to Achieve Success

The Managed Services Group brings together a century of experience providing unparalleled support to our customers, and ultimately "Freeing Them to Achieve Success". Our customer-driven portfolio of service solutions is designed to increase productivity by eliminating unnecessary downtime waiting for supplies, save money through product standardization and inventory reduction, and simplify processes through optimized lab supply chain management. Our team of over 275 specialists and 20 implementation project managers currently provide managed services to over 150 customers.

The portfolio includes:

- **Professional Services** - The Services staff analyzes the current situation, determines the customer's objectives, evaluates their requirements and recommends solutions. Once a business plan has been approved, an implementation plan is developed, executed and monitored to assure success.
- **Lab Supply Management Services** - Comprehensive management of lab research supplies across the entire supply cycle from researcher need, procurement, receiving, stock areas, points of use and ultimately reorder. The goals of these services are to provide a coordinated solution to optimiz the supply chain to reduce costs associated with inventory and improve researcher productivity.
- **Chemical Management Services** - A unique team of industry-leading chemical management service providers capable of developing a customizab modular approach to supporting your chemical management needs across the entire lifecycle.
- **Support Services** - A suite of services managed and executed by Site Specialists using the customer's standards and practices. These include Glassware Washing, Mail Management, Safety Services, and many other support services.

Professional Services

Results driven, step-by-step process

OPERATE
IMPLEMENT
PLAN
PROFESSIONAL
SERVICES

Professional Services set the bar for understanding a customer's needs, developing a recommendation and implementing a solution. These services fall into two categories:

- **Needs Assessment** - A comprehensive, financially driven, end-to-end review of a process for the purpose of solving a customer problem where a solution is not readily apparent. Fisher Scientific Professional Services Consultants conduct the assessment that includes data gathering and analysis, interviews, process mapping and surveys. They are recommended for procurement, inventory management, chemical management and custom services to assure that the scope and requirements of the project are fully understood.
- **Implementation Services** - Ensuring that each service is implemented quickly and effectively by trained project managers.

Lab Supply Management Services

Continuous improvement loop — analyze, define, implement, maintain and review

OPERATE
IMPLEMENT
REVIEW
PLAN
IMPROVE
LAB
SUPPLY
MANAGEMENT
SERVICES

NEW

Lab Supply Management Services provides comprehensive management of lab research supplies across the entire supply cycle from researcher need, procurement, receiving, stock areas, points of use and ultimately reorder. These services include:

Order Management – Proven processes for order management efficiency

- Purchasing Support – Order entry, expediting, return goods management and invoicing
- Requisition Review – Order analysis and consolidation
- Integrated Procurement – Locating and delivering the right product
- Specialized Reporting – Summary invoicing, MSDS and Certificate of Analysis

Material Handling – The right specialists, technologies and processes for your business

- Dock Management – Management of receiving dock(s), site wide delivery and shipping
- Desktop Delivery – Safely handle and move supplies to point of use
- De-trashed delivery – Remove packaging and other delivey materials for a cleaner work area
- Material Movement – Deliver items across facility

Inventory Management – Reducing your business costs

- Inventory Planning – Reduce inventory carrying costs, loss reduction and improved space utilization
- Stockroom Management – Inventory and supply management services, continuous on-site coverage, efficient inventory management practices
- Remote Inventory – Extends stockroom management techniques across the facility to further coordinate inventory levels
- Point-of-Use Program – Critical items are actively managed for the e user drastically reducing their time managing supplies
- Requisition and Inventory Management System (RIMS) – Real-time inventory information exchange between customer system and Fishe Scientific mainframe

emical Management Services

imizing the costs, risks and environmental impact of chemical operations

nical Management Services (CMS) provide a modular solution to age, track, minimize and dispose of chemicals, solvents and reagents. also provides services for Environmental Health and Safety (EH&S) os to improve regulatory compliance and reporting.

her Scientific has assembled a unique team of industry-leading emical management service providers to develop a customizable, dular approach to supporting your chemical management needs across entire life cycle. The services allow for cost effective control of:

- emical life cycle process from beginning to end
- emical supplies from identification through disposal
- emical management data collection from initial request to waste removal, luding chemical tracking activities

OPERATE
REVIEW
IMPROVE
PLAN
IMPLEMENT
CHEMICAL
MANAGEMENT
SERVICES

Chemical Management Services portfolio includes:

- rcing/Purchasing Support
- emical Receiving Management
- emical Information Management
- entory Management
- On-site Waste Management
- Waste Disposal Management
- EH&S Services

port Services

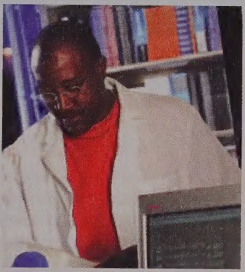
tions for increased productivity

rt Services comprise a suite of services managed and executed by d specialists following scopes of work and standard operating dures designed by Fisher Scientific specifically for each customer. ervices are performed in a timely, uninterrupted process assuring rchers have what they need when it is needed.

nples of these services are:

- ssware Washing
- il Management
- dia Preparation
- Cylinder Management
- ety Services

OPERATE
REVIEW
IMPROVE
PLAN
IMPLEMENT
SUPPORT
SERVICES



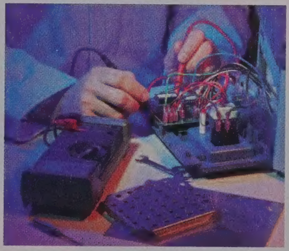
vices Division

er Scientific is the only distributor of laboratory supplies with an entire division cated to the service and repair of lab equipment and instrumentation.

capabilities include:

- vice for all Fisher-manufactured equipment and instrumentation
- airs and warranty services for man major manufacturers
- rument calibration/certification
- grated Service designed to provide comprehensive instrument erage, documentation and facility service management
- ory-trained service specialists
- er Service Division can service instruments and equipment for de variety of suppliers and manufacturers on a warranty and varranty basis

you see the following: —-PURPLE BOX—-you'll know **r Service Division** is available to help keep your tory functioning.



SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

IMPORTANT TERMS TO KNOW

New Brunswick Scientific's biological shakers are used in more laboratories than a brand. With more than 20 models listed in this catalog, there is sure to be one to application and budget requirements.

Capacity—No application is too small or too large. Select from shakers with a platform ar one square foot, to a multi-tier shaker with a 36 sq. ft. platform area, and many sizes in betw

Type—Benchtop, floor console and stackable shakers are available. Stackable shakers can shaking capacity in the floor space taken up by a single nonstackable model.

Platforms—Interchangeable platforms accommodate various-sized flasks, test tu microplates. Dedicated platforms with clamps included provide maximum capac and Sticky Tape are alternatives to flask clamps for use at lower speeds.

Temperature Range—For applications requiring temperature control ne lower, we recommend selecting a shaker with optional refrigeration to sm variations caused by seasonal room temperature fluctuation or change adjacent heat-generating equipment, such as freezers or centrifuges

Easy to Use—Large, easy-to-see digital displays and smooth, qui drive mechanisms are easy on both the eyes and ears. Setup is eas microprocessor control of all operating parameters.

sponsored by:

NEW BRUNSWICK SCIENTIFIC

BEFORE YOU BUY ORBITAL SHAKERS

Innova and I Series* shakers are designed for continuous operation under the heaviest loads and speeds up to 500rpm. These models feature tighter temperature control specs and our top-of-the-line Triple-Eccentric Drive for superb reliability, often over decades of continuous use.*

The Excella* Shak features a new U Drive and provid New Brunswick S quality at budget prices. With adju speeds up to 400 applicable, temp to 60°C, these m for most everyda

Reliability—New Brunswick Scientific is honored to have been producing reliable and te advanced shakers for the scientific community for over 60 years. Our most recent search for operating NBS shaker found several labs still using our shakers built more than 50 years ag

Brand—Perhaps the most important consideration when selecting an orbital shaker is th front. With the widest selection of models and many technology firsts, it's no wonder that have been grown with New Brunswick Scientific shakers than any other brand.

For a full selection of New Brunwick Scientific Orbital Shakers, see pp. 1669-1678.

SHAKERS

ORBITAL

ew Brunswick Scientific Innova* Shakers

vanced shakers from the company that set the lab shaker standard

Innova Family of Shakers

Innova shakers share these advanced features:

- ctile-sensitive membrane keypad and digital display
- oportional/Integral microprocessor locks onto setpoints
- ned operation from 0.1 to 99.9 hours
- panded speed range allows gentle shaking or vigorous agitation
- celeration circuit prevents sudden starts and minimizes splashing
- liable Gyrotory* drive—platform rotates on a housing that's aligned th three eccentric, counterbalanced shafts
- mote monitoring of speed/temperature on a chart recorder or ta-logging computer via a 0 to 5V output (optional on some models)
- de selection of accessory platforms and racks for flasks, test tubes and ner sample vessels
- Shaking capacities up to 188 Erlenmeyer flasks (10mL size), 432 test tubes (13mm) or flasks up to 6000mL (based on model)
- Two-year or 10,000-hour use warranty—whichever comes later, including parts and labor

ECTION GUIDE

er Type	**Platform**			**Water Bath**
els	2000 and 2050	2100 and 2150	2300 and 2350	3100* *Available by special order
Page	1670	1670	1671	
Flask Size	500mL	2000mL	6000mL	2000mL
ng				
e	25–500rpm	25–500rpm	25–500rpm	25-500rpm
ol	±1rpm	±1rpm	±1rpm	±1rpm
on	Circular orbit, ¾" dia. (19mm)	Circular orbit, ¾" dia. (19mm)	Circular orbit, 1" or 2" dia. (25.4 or 50mm)	Circular orbit, ½" dia. (12.7mm)
ation	LED, 1rpm steps	LED, 1rpm steps	LED, 1rpm steps	LED, 1rpm steps
erature				
e	N/A	N/A	N/A	Ambient +5°C to 100°C†
racy	N/A	N/A	N/A	±0.5°C (±0.1°C, 30° to 40°C)
t Voltage	0–5V‡	0–5V‡	0–5V‡	0-5V
ns	Speed (±5rpm), Timer (expiration)	Speed (±5rpm), Timer (expiration)	Speed (±5rpm), Timer (expiration)	Speed (±5rpm), Timer (expiration)
[Shaker]	0.1 to 99.9 hours	0.1 to 99.9 hours	0.1 to 99.9 hours	0.1 to 99.9 hours
	1/20hp, Gyrotory, 3-phase, DC solid-state, brushless, ball bearing	1/15hp, Gyrotory, 3-phase, DC solid-state, brushless, ball bearing	⅛hp, Gyrotory, 3-phase, DC solid-state, brushless, ball bearing	1/20hp, Gyrotory, 3-phase, DC solid-state, brushless, ball bearing
Restart	Setpoints held in nonvolatile memory	Setpoints held in nonvolatile memory	Setpoints held in nonvolatile memory	Setpoints held in nonvolatile memory
sions				
rm L × W	**2000** 13 × 11" (33 × 28cm) **2050** 12 × 16" (30.5 × 41cm)	**2100** 18 × 18" (46 × 46cm) **2150** 18 × 24" (46 × 61cm)	**2300** 18 × 30" (46 × 76cm) **2350** 24 × 36" (61 × 91cm)	16½ × 12" (42 × 30.5cm)
ll L × W × H platform)	**2000** 14 × 14½ × 5⅜" (36 × 37 × 13.7cm) **2050** 14 × 17 × 5⅜" (37 × 43 × 13.7cm)	**2100** 21⅞ × 19 × 6⅜" (54 × 48 × 17cm) **2150** 21⅞ × 24 × 6⅜" (54 × 61 × 17cm)	**2300** 22¼ × 29 × 6⅜" (56.5 × 74 × 17cm) **2350** 24 × 36 × 6⅜" (61 × 91 × 17cm)	27½ × 17 × 14½" (69 × 43 × 37cm)

emperatures from 5°C above coolant temperature, use optional Cooling Coil M1192-9902 (New Brunswick Scientific). Contact your Fisher Scientific Customer Service Representative ler.

optional Temperature Monitoring Kit.

NEW BRUNSWICK I-SERIES* SHAKERS

ncubating, refrigerated and programmable model Series Shakers feature large capacities (up to 6L) nd advanced features for high throughput and eproducible results. Stackable units also available. ee pp. 1672-1673.

NEW BRUNSWICK EXCELLA* SHAKERS

Dependable, affordable Excella Shakers are ideal for cell culturing appliications. Open-air and temperature-controlled models available. See pp. 1674-1675.

New Brunswick Scientific Innova* Models 2000 and 2050 Portable Platform Shakers

Top-of-the-line benchtop platform shakers for flasks up to 500mL

14-278-104

Choice of two models in different platform sizes. Both offer advanced operating and safety features for reliable, continuous-duty shaking of tubes and flasks. Proven Gyrotory* drive mechanism delivers years of dependable service.

Operating Features

- Maximum flask size: 500mL
- Shaking speed: 25 to 500rpm
- Shaking orbit: Circular, ¾" dia. (19mm)
- Tactile keypad with digital LED display for speed, time remaining, and elapsed time
- 0.1 to 99.9-hour timer
- Speed and timer alarms

Design Features

- Triple-action Gyrotory drive delivers smooth, uniform shaking
- Microprocessor stabilizes rate to 1rpm of setpoint
- Feedback loop compensates for fluctuations in voltage, load imbalance or workload
- Low-profile design; can be stacked inside environmental chamber
- Retains setpoints in memory; automatic restart if power is interrupted
- Acceleration circuit prevents sudden starts and minimizes splashing

Model 2000

- Platform dimensions: 13L × 11"W (33 × 28cm)
- Overall dimensions: 14L × 14½W × 5⅜"H (36 × 37 × 13.7cm)
- Net weight: 33 lb. (15kg)

Model 2050

- Handles larger numbers of flasks
- Platform dimensions: 12L × 16"W (30.5 × 41cm)
- Overall dimensions: 14½L × 17"W × 5⅜"H (37 × 43cm 13.7cm)
- Net weight: 35 lb. (16kg)

ORDERING INFORMATION:

For 120V 50/60Hz, 0.25A

Special order options: Temperature/Speed Monitoring Kit (14-278-117) with RTD sensor displays and records process values (can be used with both models). Capacity Upgrade Kit (14-278-143) retrofits Model 2000 to accept larger platforms designed for Model 2050. To purchase these items, contact your Fisher Scientific Customer Service Representative, or order online.

REQUIRED ACCESSORIES:

Platform or tray (sold separately)

WARRANTY:

Three years on parts, two years on labor

Model No.	Platform L × W	Mfr. No.	Cat. No.	Each
2000	13 × 11" (33 × 28cm)	M1190 0000	**14-278-104**	2210.00
2050	12 × 16" (30.5 × 41cm)	M1190 0010	**14-278-105**	2360.00

LOOKING FOR PLATFORMS?

We offer a complete selection of platforms, carriers, trays and clamps designed specifically for your New Brunswick Scientific shaker. You'll find them on pp. 1676-1677.

New Brunswick Scientific Innova* Model 2100 and 2150 Benchtop Platform Shake

Benchtop platform shakers with advanced features, for flasks up to 6L

14-278-108

Choice of two models (square or larger rectangular platform). Both offer advanced operating and safety features for reliable, continuous-duty shaking of lab glassware. Proven Gyrotory* drive mechanism delivers years of dependable service.

Operating Features

- Maximum flask size: 2000mL
- Shaking speed: 25 to 500rpm
- Shaking orbit: Circular, ¾" dia. (19mm)
- Tactile keypad with digital LED display for speed, time remaining, and elapsed time
- 0.1 to 99.9-hour timer
- Speed and timer alarms

Design Features

- Triple-action Gyrotory drive delivers smooth, uniform shaking
- Microprocessor stabilizes rate to 1rpm of setpoint
- Feedback loop compensates for fluctuations in voltage, load imbalanc or workload
- Low-profile design; can be stacked inside environmental chamber
- Retains setpoints in memory; automatic restart if power is interrupted
- Acceleration circuit prevents sudden starts and minimizes splashing

Model 2100

- Platform dimensions: 18L × 18"W (46 × 46cm)
- Overall dimensions: 21⅞L × 19W × 6⅜"H (54 × 48 × 17cm)
- Net weight: 76 lb. (35kg)

Model 2150

- Handles larger numbers of flasks
- Plaform dimensions: 18L × 24"W (46 × 61cm)
- Overall dimensions: 21⅞L × 24"W × 6⅜"H (54 × 61 × 17cm)
- Net weight: 80 lb. (36kg)

ORDERING INFORMATION:

For 120V 50/60Hz, 0.15A. Accessory platforms and trays sold separately, see pp. 1676-1677.

Special order options: Temperature/Speed Monitoring Kit (14-278-117 with RTD sensor displays and records process values (can be used with models). Capacity Upgrade Kit (14-278-143) retrofits Model 2100 to acce larger platforms designed for Model 2150. To purchase these items, cont your Fisher Scientific Customer Service Representative, or order online.

REQUIRED ACCESSORIES:

Platform or tray (sold separately)

WARRANTY:

Three years on parts, two years on labor

Model	Platform L × W	Mfr. No.	Cat. No.	Ea
2100	18 × 18" (46 × 46cm)	M1194-0000	**14-278-108**	3265.
2150	18 × 24" (46 × 61cm)	M1194-0010	**14-278-109**	3565.

*Trademark. See Trademark Reference.

Prices subject to change.

w Brunswick Scientific Innova* dels 2300 and 2350 Large-Capacity tform Shakers

anced benchtop platform shakers for heavy kloads and flasks up to 6L

14-278-106

e of four models (1" or 2" circular n two platform sizes). All offer ced operating and safety features iable, continuous-duty shaking of and flasks. Proven Gyrotory* mechanism delivers years of dependable service.

ating Features

- imum flask size: 6L
- king speed: 25 to 500rpm
- king orbit: Circular, 1" or 2" (25.4 or 50mm)
- ile keypad with digital LED lay for speed, time remaining, elapsed time
- to 99.9-hour timer
- ed and timer alarms

n Features

- e-action Gyrotory drive vers smooth, uniform shaking
- oprocessor stabilizes rate to n of setpoint
- back loop compensates for uations in voltage, load alance or workload
- -profile design; can be stacked le environmental chamber
- Retains setpoints in memory; automatic restart if power is interrupted
- Acceleration circuit prevents sudden starts and minimizes splashing

Model 2300

- Platform dimensions: 18L × 30"W (46 × 76cm)
- Overall dimensions: 22¼L × 29W × 6⅜"H (56.5 × 74 × 17cm)
- Net weight: 108 lb. (49kg)

Model 2350

- Handles larger numbers of flasks
- Plaform dimensions: 24L × 36"W (61 × 91cm)
- Overall dimensions: 24L × 36"W × 6⅜"H (61 × 91 × 17cm)
- Net weight: 112 lb. (51kg)

RING INFORMATION:
0V 50/60Hz, 1.25A. Accessory platforms and trays sold separately, . 1676-1678.

al order accessories: Temperature/Speed Monitoring Kit 8-117, for both models) with RTD sensor displays and records s values; Easy-Load Platform Kit (14-278-119, for Model 2300 only) atform changeover time; to purchase these items, contact your Scientific Customer Service Representative, or order online

LIANCE:
sted. CE marked.

RED ACCESSORIES:
m or tray (sold separately)

ANTY:
years on parts, two years on labor

Platform Size	Orbit	Mfr. No.	Cat. No.	Each
18 × 30"	1"	M1191-0000	**14-278-106**	5425.00
	2"	M1191-0020	**14-278-164**	5720.00
24 × 36"	1"	M1191-0010	**14-278-107**	5910.00
	2"	M1191-0030	**14-278-165**	6195.00

LOOKING FOR PLATFORMS?
e offer a complete selection of platforms, carriers, trays and clamps esigned specifically for your New Brunswick Scientific shaker. You'll d them on pp. 1676-1678.

New Brunswick Scientific Shakers

Frequently Asked Questions

How do shaker agitation rate and orbit affect culture growth? Generally, agitation speed and orbit affect both the aeration and the mixing of the culture. Greater aeration increases oxygen transfer rate (OTR), boosting cell growth. The size of the orbit affects OTR linearly and the speed has a square-law relationship. Therefore, if the size of the orbit doubles, say from 1/2" to 1" the amount of OTR should double. If the speed doubles, the OTR should quadruple. Of course, these are general rules and caution should be taken with shear sensitive cells. However, this information can be used to estimate the conditions needed to obtain the same results on different model shakers. For example, to get the same oxygen transfer in a shaker with a 1" orbit running at 300rpm, a shaker with 3/4" orbit must be run at 350rpm.

I want to grow my cultures at 27°C. Do I need an incubated shaker with refrigeration? Our non-refrigerated Innova Shakers are designed to maintain temperatures of ambient plus 5° to its maximum operating temperature. Excella shakers will operate from ambient plus 7° to maximum temperature. It is critical to understand that "ambient" temperature is not the temperature on the wall thermometer (room temperature), but the temperature measured one meter from the front of the machine. Many labs are packed with heat generating equipment such as freezers, lyophilizers, other shakers or ovens, and these generate heat that is localized near adjacent equipment. This heat will significantly affect the performance of non-refrigerated units. Some labs may turn off or reduce air conditioning during summer evenings, causing a rise in room temperature when you aren't there. In other labs, the shaker may be in direct sunlight during certain times of the day. It's for these reasons that we recommend a refrigerated incubator shaker when you want to maintain the chamber at 30°C or below. Not having refrigeration while trying to maintain temperatures at or below 30°C is analogous to trying to drive a car on a hilly road at a constant speed without using brakes.

Do New Brunswick Scientific shakers come with platforms? No. Platforms are sold separately. Each NBS shaker is available with eight or more platform options, which are ordered separately to give you the flexibility to specify the one that best suits your needs. Most platforms include installed clamps of a single size (ie. 250mL clamps), except for our Universal Platforms which are designed for use with a combination of various-sized clamps and test tube racks. When ordering a Universal Platform, clamps and test tube racks must also be ordered separately. For applications running below 250rpm Sticky Mat tape is also available in lieu of clamps.

How does NBS define Temperature Control? This is the difference between the Setpoint value and average Actual (Display) value. Please note that all terms above assume that temperatures both inside and outside the chamber are in a steady state of equilibrium.

LOOKING FOR FLASKS?
You'll find glass and plastic Erlenmeyer Flasks, as well as a wide selection of other vessels for boiling, culturing and other processes, in the Flasks Section.

New Brunswick I-Series* Incubating Shakers

Choice of benchtop or floor models, all with advanced features for consistent, reproducible results

Refrigeration available on select models.

Operating Features

- Tactile keypad for setting speed, temperature, or time
- High-visibility ⅜" digital LED display with panel lights indicating active mode and function
- Microprocessor with self-correcting Proportional/Integral feedback precisely regulates speed, temperature and run time
- Feedback control maintains desired operating settings if conditions deviate from setpoints
- Timer: 0.1 to 99.9 hours or continuous operation
- Auto Restart retains current setting in memory

Design Features

- Triple-eccentric Gyrotory* drive delivers years of dependable service
- Heavy-duty DC solid-state brushless motor with nine precision-fitted ball bearings
- Counterbalanced mechanism delivers smooth, uniform motion
- Soft start-up prevents spillage from flasks and tubes
- Cast-iron base

Safety Features

- Acceleration/deceleration circuit prevents sudden starts and stops
- Speed-limiting sensor slows agitation to safe speed when overload or imbalance is detected
- Cutout switch stops agitation when lid is opened
- Thermostat fail-safe shuts off heater if high temperature limit is exceeded
- Audible/visual alarms alert operator to expired time and to deviations from temperature (±0.1°C) and speed (±5rpm) setpoints

Benchtop Model I-24

- Accommodates flasks up to 2800mL
- Shaking speed range: 25 to 500rpm with ±1rpm control
- Circular shaking motion of ¾" dia. (19mm) or 1¾" (2.54cm)
- Incubating or Incubating/Refrigerated models
- Programmable timer: 0.1 to 99.9 hours
- Large-capacity blower ensures uniform temperature throughout the chamber
- Requires 18 × 18" platform (order separately)

Model I-2500

- Accepts flasks up to 6L
- Circular shaking orbit of 1" (25.4mm) powered by ⅛hp motor
- Lid with 11 × 17" (28 × 43cm) window
- Foot pedal opens lid

14-728-1

14-7

Model I-2500KC

- Identical to Model I2500, but with refrigeration
- Temperature range: 15° below ambient (with a minimum setpoint of 4°C) to 60°C

Model I-2500KC with programmable timer

- Identical to Model I2500KC, but adds deluxe timer
- Timer controls agitation (ON/OFF) and has 7-day, 24-hour clock that can be set to switch between two different temperatures at user-defined intervals
- Stores up to 24 programming steps

ORDERING INFORMATION: All accessories (platforms, rac trays, and clamps) sold separa see pp. 1676-1678.

REQUIRED ACCESSORIES: Platform or tray (sold separate

WARRANTY: Two years on parts and labor

CERTIFICATIONS: UL, cETLus, listed. CSA Appro CE marked.

Description	Electrical Requirements	Mfr. No.	Cat. No.	
Benchtop Models				
I-24 Incubating Shaker, ¾" orbit	120V 50/60Hz, 5.0A	M1344-0000	**14-285-852**	66
I-24R Refrigerating/ Incubating Shaker, ¾" orbit	120V 50/60Hz, 6.0A	M1344-0004	**14-285-850**	77
I-24 Incubating Shaker, 1" orbit	120V 50/60Hz, 6.0A	M1344-0010	**14-285-853**	66
I-24R Refrigerating/ Incubating Shaker, 1" orbit	120V 50/60Hz, 6.0A	M1344-0014	**14-285-851**	77
Floor Models				
I-2500 Incubating Shaker	120V 50/60Hz, 6.0A	M1284-0000	**14-728-3**	11,0
I-2500KC Refrigerating/ Incubating Shaker	120V 50/60Hz, 6.0A	M1284-1010	**14-728-1**	12,5
I-2500KC Refrigerating/ Incubating Shaker with programmable timer	120V 50/60Hz, 6.0A	M1284-1014	**14-728-4**	13,4

Model	I-24 Incubating	I-2500 Incubating	I-24R Refrigerated	I-2500KC Refrigerated	I-2500KC Refrigerated Programmable
Style	Benchtop	Floor	Benchtop	Floor	Floor
Capacity	2.8L	6L	2.8L	6L	6L
Speed	25-500rpm	25-500rpm	25-500rpm	25-500rpm	25-500rpm
Orbit	¾ in. or 1 in.	1 in.	¾ in. or 1 in.	1 in.	1 in.
Temperature Range	5°C above ambient to 60°C	5°C above ambient to 60°C	15°C below ambient to 60°C	15°C below ambient to 60°C	15°C below ambient to
Programmable	No	No	No	No	Yes, switches between temperatures via 7-day, 24-hour timer to progra up to 24 events
Control	Microprocessor	Microprocessor	Microprocessor	Microprocessor	Microprocessor
Display	LED for speed, run time, alarm conditions and temperature; 9⁄16 in.H				
Communications	RS-232	0-5V output to recorder	RS-232	0-5V output to recorder	0-5V output to recorder
Platform	18 × 18"	30 × 18"	18 × 18"	30 × 18"	30 × 18"
L × W × H	30 × 22 × 24" (76.2 × 55.9 × 61cm)	28 × 43 × 37" (71.1 × 109.2 × 94cm)	30 × 22 × 24" (76.2 × 55.9 × 61cm)	28 × 45 × 37" (71.1 × 114.3 × 94cm)	28 × 45 × 37" (71.1 × 114.3 × 94cm)
Net Wt.	135 lb. (61kg)	400 lb. (181kg)	180 lb. (82kg)	430 lb. (195kg)	430 lb. (195kg)

*Trademark. See Trademark Reference.

Prices subject to change.

›w Brunswick I-Series* Stackable Shakers

ximize shaker capacity for space-limited labs

idually controlled workhorses can be stacked up to three units high in the e typically occupied by a single incubating shaker. With advanced features onsistent, reproducible cell culturing.

erating Features

- icroprocessor control with self-correcting Proportional/Integral feedback ecisely regulates speed, temperature and run time
- er-friendly keypad with large display for setting speed, temperature, time
- nooth, quiet running
- tually maintenance-free
- × 30" (46 × 76cm) accessory platforms slide out for easy access cultures
- commodates flasks up to 2.8L
- aking speed range: 25 to 400rpm
- gh-visibility ⅜" digital LED display with panel lights indicating active mode d function
- edback control maintains desired operating settings if conditions deviate m setpoints
- ner: 0.1 to 99.9 hours or continuous operation
- to Restart retains current setting in memory

ign Features

- ble-eccentric Gyrotory* drive delivers years of dependable service
- avy-duty DC solid-state brushless motor with nine precision-fitted l bearings
- unterbalanced mechanism delivers smooth, uniform motion
- ft start-up prevents spillage from flasks and tubes
- -232 data port
- st-iron base

ty Features

- celeration/deceleration circuit prevents sudden starts and stops
- eed-limiting sensor slows agitation to safe speed when overload or palance is detected
- cout switch stops agitation when lid is opened
- ermostat fail-safe shuts off heater if high temperature limit is exceeded
- dible/visual alarms alert operator to expired time and to deviations from nperature (±0.1°C) and speed (±5rpm) setpoints

14-285-737

Model I-26

- Incubator model
- Temperature range: 5°C above ambient to 60°C (140°F)

Model I-26R

- Refrigerated model
- Temperature range: 15°C below ambient to 60°C (140°F)

ORDERING INFORMATION:

Overall dimensions: 30L × 50W × 25"H (76 × 127 × 64cm); Net weight: Model I-26, 440 lb. (200kg); Model I-26R, 490 lb. (222kg); for 100/120V, 50/60Hz. All I-26 Series accessories (platforms, stacking kits and bases) are designed specifically for these shakers; order separately, below.

REQUIRED ACCESSORIES:

Platforms (not included); if multiple units will be stacked, stacking kit is required (2 kits needed to stack 3 shakers); all accessories sold separately (below)

WARRANTY:

Three years on parts and two years on labor

Model	Mfr. No.	Cat. No.	Each
I-26	M1324-0000	**14-285-737**	11,195.00
I-26R	M1324-0004	**14-285-738**	12,795.00

SPECIFICATIONS

Shaking Speed	25-400rpm
Orbit	1" (2.5cm)
Timer	Up to 99.9 hours or continuous run
Temperature Range	5°C above ambient to 60°C
I-26	5°C above ambient to 60°C
I-26R	15°C below ambient to 60°C; CFC-free
Certifications	CSA, UL, CE
Warranty	Two years parts and labor

ACCESSORIES

or use only with New Brunswick I-Series* Stackable hakers, Models I-26 and I-26R

- Platforms accommodate flasks from 125mL to 2.8L
- Universal and Sticky Pad platforms also available
- Stacking kit enables two I-26 Series Stackable Shakers to be stacked vertically
- Bases allow shaker(s) to be raised to suitable height

EQUIRED ACCESSORIES:

ticky Pad Platform (14-285-746) requires Sticky Pad (14-285-753, old separately)

Description	Mfr. No.	Cat. No.	Each
Platforms			
Universal; accommodates flasks from 125mL to 2.7L	M1324-9904	**14-285-739**	882.00
For 250mL flasks, 40 places	M1324-9906	**14-285-741**	1065.00
For 1L flasks, 15 places	M1324-9908	**14-285-743**	945.00
For 2L flasks, 12 places	M1324-9909	**14-285-744**	893.00
For Sticky Pad (pad not included)	M1324-9913	**14-285-746**	616.97
Sticky Pad	M1324-9700	**14-285-753**	66.34
Stacking Kits			
For stacking multiple I-26 Series shakers	M1324-0500	**14-285-747**	278.35
Short, for stacking 3 shakers	M1324-0600	**14-285-750**	504.63
Medium, for stacking 2 I-Series Stackable shakers	M1324-0800	**14-285-752**	924.00
Tall, for one shaker	M1324-0700	**14-285-751**	1003.00

New Brunswick Scientific Excella* Shakers

Dependable and affordable shakers for reproducible cell growth

Available in open-air and incubating/refrigerated models—all featuring a heavy-duty drive and cool-running motor for long life and quiet operation under heavier loads and higher speeds.

- Intuitive, spill-proof keypad allows easy input of parameters
- 9/16" (1.4cm) LED display shows running conditions and diagnostics (all models except E1)
- UniCentric* drive and brushless DC motor ensure quiet, vibration-free operation
- Versatile—use same accessories as other New Brunswick shakers
- Two-year warranty on parts and labor

New Brunswick Scientific Excella* E1/E2 Benchtop Open-Air Shakers

Compact analog or digital shakers for flasks up to 500mL

14-285-730

- Flask Capacity: 10 to 500mL
- Shaking speed range: 50 to 400rpm
- Circular orbit ¾" dia. (19mm)
- Also shake vials, tubes and other labware on accessory platforms (sold separately)
- Powerful UniCentric* drive delivers consistent performance for reproducible results

Model E1

- Analog-controlled; without digital display
- Graduated markings on control knob for manual speed setting

Model E2

- Microprocessor-controlled digital shaker
- Keypad control and LED alphanumeric display
- Self-correcting controller stabilizes rate to ±2rpm of setpoint, compensates instantly for normal voltage fluctuations, unbalanced loading and changes in workload
- Retains setpoints in nonvolatile memory, so shaker will automatically restart when power is restored after interruption
- Acceleration control prevents sudden starts with minimal splashing

ORDERING INFORMATION:

Dimensions (both models), Overall: 15¾L × 18W × 8½"H (40 × 45.5 × 21.6cm); Platform: 13 × 11" (33 × 28cm); Net weight: 35 lb. (16kg); For 100/120V 50/60Hz. Accessory platforms (sold separately) are interchangeable with those for other similar-sized New Brunswick Scientific shakers.

REQUIRED ACCESSORIES:

Platform or tray (sold separately), see pp. 1676-1678.

WARRANTY:

Two years on parts and labor

CERTIFICATIONS:

UL, cETLus listed. CSA approved. CE marked.

Model No.	Mfr. No.	Cat. No.	Each
E1, analog	M1354-0000	**14-285-729**	1515.00
E2, digital	M1350-0000	**14-285-730**	1740.00

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

New Brunswick Scientific Excella* E5 an E10 Large-Capacity Open-Air Shakers

Handle flasks up to 6L on bench, in hood, or in coldro

14-285-731

Operating Features

- Flask capacity: 50mL to 6L
- Shaking Range/Control: 50 to 400rpm, ±2rpm
- Rugged UniCentric* drive delivers consistent motion for reproducible results
- Digital LED display for speed, run time, alarms and temperature
- Timer: 0.1 to 99.9 hours
- Setpoint retention in nonvolatile memory with auto restart
- Audible speed and timer alarms alert at end of cycle, or if speed deviate more than 5pm from setpoint
- Acceleration circuit prevents sudden starts/stops to minimize splashin protecting sample and internal components
- Ambient operating conditions: 5° to 45°C (90% RH)

Model E5

- Shaking Motion: Circular orbit, ¾" dia. (1.9cm)
- Platform dimensions: 18 × 18" (46 × 46cm)
- Overall dimensions: 20½L × 17⅞W × 8½"H (52 × 45.5 × 21.6cm)
- Net weight: 70 lb. (31.8kg)

Model E10

- Shaking Motion: Circular orbit, 1" dia. (2.54cm)
- Platform dimensions: 30W × 18"L (76 × 46cm)
- Overall dimensions: 27L × 30W × 7"H (68 × 76 × 17cm)
- Net weight: 100 lb. (45.3kg)

ORDERING INFORMATION:

For 100/120V 50/60Hz. Accessory platforms and trays (sold separately) a interchangeable with those of other similar-sized New Brunswick Scient shakers.

REQUIRED ACCESSORIES:

Platform or tray (sold separately), see pp. 1676-1678.

WARRANTY:

Two years on parts and labor

CERTIFICATIONS:

UL, cETLus listed. CSA approved. CE marked.

Model	Mfr. No.	Cat. No.	E
E5	M1355 0000	**14-285-736**	2530
E10	M1351 0000	**14-285-731**	4175

LOOKING FOR PLATFORMS?

We offer a complete selection of platforms, carriers, trays and clamps designed specifically for your New Brunswick shaker. You'll find them c pp. 1676-1678.

*Trademark. See Trademark Reference.

ew Brunswick Scientific Excella* 4/E24R Temperature-Controlled nchtop Shakers

ubating or refrigerated units accept vessels up to 2.8L

erating Features

14-285-732

ask capacity: 10mL to 2.8L

naking speed range: 50 to 400rpm

naking orbit: ¾" dia. (19mm)

gital keypad control and LED display r speed, run time, alarms and mperature

mer: 0.1 to 99.9 hours

D indicates temperature settings 0.1°C increments

werful UniCentric* drive is counterbalanced for continuous-duty aking over a wide range of speed

icroprocessor feedback-control maintains precise shaking speed

rge-capacity circulating fan distributes air evenly throughout chamber ensure accurate temperature control and rapid thermal recovery

ety Features

tomatic shutoff when lid is opened

tomatic restart with settings stored in memory

aintains speed even with unbalanced loads

sual and audible warning signals when speed deviates more than om, or temperature more than 1°C, from setpoint

bated Model E24

mperature Range: 7°C above ambient to 60°C

et weight: 135 lb. (61.2kg).

ubated and Refrigerated Model E24R

mperature Range: 15°C below ambient to 60°C

et weight: 180 lb. (81.6kg)

ERING INFORMATION:

ensions, Platform: 18L × 18"W (46 × 46cm); Chamber: 20¼L × 21½W × (51.4 × 54.6 × 35.8cm); Overall: 22L × 30W × 24"H (56 × 76.2 × 61cm). 20V 60Hz; accessory platforms, trays and racks sold separately.

UIRED ACCESSORIES:

orm or tray (sold separately, see pp. 1676-1678)

RRANTY:

years on parts and labor

TIFICATIONS:

sted. CSA approved. CE marked.

el	Orbit	Mfr. No.	Cat. No.	Each
Incubating	¾"	M1352-0000	**14-285-732**	5325.00
, Refrigerated	¾"	M1252-0004	**14-285-733**	7260.00

SERVICE AGREEMENTS

isher Scientific offers several types of service agreements for the quipment featured here. For details on these agreements, equipment epairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

New Brunswick Scientific Excella* E25/E25R Temperature-Controlled Console Shakers

Incubating or refrigerated shakers handle flasks up to 6L

Features

14-285-734

- For flasks from 50mL to 6L
- Shaking Range/Control: 50 to 400rpm, ±2rpm
- Shaking Motion: Circular orbit, 1" dia. (2.54cm)
- UniCentric* drive delivers consistent performance for reproducible results
- Display: LED for temperature, speed, alarm conditions and running time
- Timer: 0.1 to 99.9 hours
- Speed, timer and temperature alarms
- High-velocity air circulation system accurately maintains temperature within ±0.25°C
- Adjustable feet absorb vibrations to stabilize workload and prevent creeping
- Shake test tubes from 8 to 30mm diameter in adjustable-angle platform (14-285-698, sold separately)
- Accommodate flasks on dedicated flask or universal platforms (sold separately)

Incubator Shaker Model E25

- Temperature Range: 7° above ambient to 60°C (140°F)
- Net weight: 420 lb. (190kg)

Refrigerated Shaker Model E25R

- Temperature Range: 15°C below ambient to 60°C (140°F)
- CFC-free refrigeration
- Net weight: 450 lb. (204kg)

ORDERING INFORMATION:

Dimensions, platform: 30W × 18"H (76 × 46cm); Chamber: 33½D × 23W × 19"H (85 × 58 × 48cm); Overall: 50 × 30½ × 41¾"H (127 × 77 × 85cm); For 120V 60Hz; Accessory platforms, trays and racks sold separately.

REQUIRED ACCESSORIES:

Platform or tray (sold separately, see pp. 1676-1678)

WARRANTY:

Two years on parts and labor

CERTIFICATIONS:

UL, cETLus listed. CSA approved. CE marked.

Model	Mfr. No.	Cat. No.	Each
E25, Incubating	M1353 0000	**14-285-734**	9125.00
E25R, Refrigerated	M1353 0004	**14-285-735**	10,935.00

LOOKING FOR PLATFORMS?

We offer a complete selection of platforms, carriers, trays and clamps designed specifically for your New Brunswick shaker. You'll find them on pp. 1676-1678.

ACCESSORIES

Designed specifically for use with New Brunswick Scientific Innova*, I-Series* and Excella* Shakers

Wide selection of interchangeable platforms accommodates varying flask sizes. Model compatability and capacities are listedin the ordering charts. Note: Capacities listed are the most vessels of each size that will fit in a balanced pattern.

AVAILABLE ACCESSORIES INCLUDE:

- Universal Platforms—Versatile, hold combinations of racks and test tubes
- Flask Platforms—Dedicated for specific-sized Erlenmeyer or Fernbach flasks
- Utility Carriers and Trays—For shaking vessels without fasteners
- Test Tube Platforms and Racks—Mount on universal platforms
- Flask Clamps—Secure specific-sized flasks to platforms

Universal Platforms

For use with New Brunswick Innova*, I-Series* and Excella* Shakers

- Accept a variety of accessory clamps, test tube racks and gel trays for greater flexibility
- Hold combinations of flasks or test tube racks
- With pre-drilled holes

REQUIRED ACCESSORIES:

Clamps (sold separately)

NOTE:

Capacities listed are the most vessels of each size that will fit in a balanced pattern.

For Shaker Models	Innova 2000, Excella E1/E2	Innova 2050	Innova 2100, Excella E5, Excella E24/E24R, I-24/I-24R	Innova 2150	Innova 2300, Excella E10, Excella E25/E25R, I-2500/I-2500KC	I-26/I-26R	Innova 235
Platform L × W	11 × 13" (28 × 33cm)	12 × 16" (30.5 × 41cm)	18 × 18" (46 × 46cm)	18 × 24" (46 × 61cm)	18 × 30" (46 × 76cm)	18 × 30" (46 × 76cm)	24 × 36" (61 × 91cm
Mfr. No.	M1001 0240	M1190 9900	M1250 9902	M1194 9912	M1250 9920	M1324 9904	PTL 386
Cat. No.	**14-278-12**	**14-278-145**	**14-278-42**	**14-278-137**	**14-278-41**	**14-285-739**	**14-278-37**
Each	357.45	459.57	684.00	728.00	942.00	882.00	942.00
Platform Capacities by Flask or Rack Size							
10mL	60	86	109	----	----	----	----
25mL	20	32	64	----	----	----	----
50mL	15	32	45	63	92	92	----
125mL	11	16	21	35	39	39	75
250mL	6	10	18	24	30	30	50
500mL	4	8	14	16	18	18	30
1L	----	----	8	10	12	12	24
2L	----	----	5	6	8	8	15
2.8L	----	----	4	5	6	6	12
4L	----	----	4	5	6	----	10
6L	----	----	2	3	4	----	8
Rack, Small	3	4	5	8	9	9	18
Rack, Medium	----	----	5	7	9	9	13
Rack, Large	----	----	4	6	7	7	12
Rack, Microplate	----	----	2	3	4	4	8
Microplate stack	3	6	8	12	16	16	27

Contd. on next pag

*Trademark. See Trademark Reference.

ACCESSORIES

lask Platforms

or use with New Brunswick Scientific Innova*, I-Series* and Excella* Shakers

- Dedicated platforms for specific-sized Erlenmeyer or Fernbach flasks
- Supplied with clamps

Capacities listed are the most vessels of each size that will fit in a balanced pattern.

OTE:

escription	For Use with	No. of Clamps and Holders	Mfr. No.	Cat. No.	Each
L × 11"W Platform (33 × 28cm)					
mL	Innova 2000, Excella E1/E2, all I-Series	20	M1190 9915	**14-278-139**	371.46
25mL	Innova 2000, Excella E1/E2, all I-Series	12	M1190 9916	**14-278-140**	371.46
50mL	Innova 2000, Excella E1/E2, all I-Series	8	M1190 9917	**14-278-141**	393.49
00mL	Innova 2000, Excella E1/E2, all I-Series	6	M1190 9918	**14-278-142**	393.49
mL	Innova 2000, Excella E1/E2, all I-Series	69	AG2 10	**14-278-14**	433.54
L × 16W" Platform (30.5 × 41cm)					
25mL	Innova 2050	20	M1190 9904	**14-278-124**	602.00
0/300mL	Innova 2050	12	M1190 9905	**14-278-125**	539.00
00mL	Innova 2050	8	M1190 9906	**14-278-126**	473.59
L × 18"W Platform (46 × 46cm)					
mL	Innova 2100, Excella E5/E10, I-2500/I-2500KC	64	M1194 9903	**14-278-130**	855.00
5mL	Innova 2100, Excella E5/E10, I-2500/I-2500KC	34	M1194 9904	**14-278-131**	728.00
0mL	Innova 2100, Excella E5/E10, I-2500/I-2500KC	25	M1194 9905	**14-278-132**	755.00
0mL	Innova 2100, Excella E5/E10, I-2500/I-2500KC	16	M1194 9906	**14-278-133**	728.00
L × 24"W Platform (46 × 61cm)					
5mL	Innova 2150	48	M1194 9916	**14-278-111**	922.00
0/300mL	Innova 2150	35	M1194 9917	**14-278-112**	949.00
0mL	Innova 2150	20	M1194 9918	**14-278-113**	924.00
	Innova 2150	12	M1194 9919	**14-278-114**	840.00
	Innova 2150	8	M1194 9920	**14-278-115**	698.00
L × 30"W Platform (46 × 76cm)					
mL	Innova 2300, Excella E5/E10, I-2500/I-2500KC	108	M1191 9908	**14-278-120**	1250.00
5mL	Innova 2300, Excella E5/E10, I-2500/I-2500KC	65	M1191 9909	**14-278-121**	1215.00
0/300mL	Innova 2300, Excella E5/E10, I-2500/I-2500KC	40	M1191 9910	**14-278-122**	1125.00
	Innova 2300, Excella E5/E10, I-2500/I-2500KC	15	AG 1	**14-278-71**	998.00
	Innova 2300, Excella E5/E10, I-2500/I-2500KC	12	AG 2	**14-278-72**	942.00
3L	Innova 2300, Excella E5/E10, I-2500/I-2500KC	6	AG 28	**14-278-75**	998.00
L × 36W" Platform (61 × 91cm)					
5mL	Innova 2350	96	M1191 9912	**14-278-151**	1585.00
0mL	Innova 2350	70	M1191 9913	**14-278-152**	1555.00

tility Carriers and Trays

or use with New Brunswick Scientific Innova*, Series* and Excella* Shakers

- For shaking vessels without fasteners
- Carriers have rubber-cushioned retainer bars
- Trays have nonskid rubber mat

OTE:

apacities listed are the most vessels of each size that will fit in a alanced pattern.

L × W	For Shakers	Mfr. No.	Cat. No.	Each
Utility Carriers				
13 × 11" (33 × 28cm)	Innova 2000, Excella E1/E2	AG2 UT	**14-278-10**	527.00
12 × 16" (30.5 × 41cm)	Innova 2050	M1190 9907	**14-278-146**	557.00
18 × 18" (46 × 46cm)	Innova 2100, Excella E24/E24R, I-24/I-24R	M1194 9909	**14-278-128**	614.00
Trays				
13 × 11" (33 × 28cm)	Innova 2000, Excella E1/E2	AG2 00	**14-278-11**	393.49
12 × 16" (30.5 × 41cm)	Innova 2050	M1190 9908	**14-278-147**	495.62
18 × 18" (46 × 46cm)	Innova 2100, Excella E24/E24R, I-24/I-24R	M1194 9910	**14-278-129**	559.00
18 × 24" (46 × 61cm)	Excella 2150	M1194 9922	**14-278-116**	652.00
18 × 30" (46 × 76cm)	Excella E5/E10, I-2500, I-2500KC	AG 00	**14-278-66**	721.00

ACCESSORIES

Test Tube Platforms and Racks

For use with New Brunswick Innova*, I-Series* and Excella* Shakers

- Mount on universal platforms

NOTE:
Capacities listed are the most vessels of each size that will fit in a balanced pattern.

Description	For Shakers	Mfr. No.	Cat. No.	Eac
Adjustable-angle Tube Rack, 16-25mm tubes	Innova 2000; Excella E1/E2	AG2 TA25	**14-278-20**	436.5
Tube Rack, 8-11mm	Innova 2100, 2150, 2300, 2350; Excella E10, E24/E24R, E25/E25R; all I-Series	M1289-0100	**14-285-696**	270.0
Tube Rack, 12-15mm	Innova 2100, 2150, 2300, 2350; Excella E10, E24/E24R, E25/E25R; all I-Series	M1289-0200	**14-285-697**	270.0
Tube Rack, 15-18mm	Innova 2100, 2150, 2300, 2350; Excella E10, E24/E24R, E25/E25R; all I-Series	M1289-0300	**14-285-698**	267.3
Tube Rack, 18-21mm	Innova 2100, 2150, 2300, 2350; Excella E10, E24/E24R, E25/E25R; all I-Series	M1289-0400	**14-285-699**	270.0
Tube Rack, 22-26mm	Innova 2100, 2150, 2300, 2350; Excella E10, E24/E24R, E25/E25R; all I-Series	M1289-0500	**14-285-700**	270.0
Tube Rack, 26-30mm	Innova 2100, 2150, 2300, 2350; Excella E10, E24/E24R, E25/E25R; all I-Series	M1289-0600	**14-285-701**	270.0
Angled Test Tube Rack Holder for 15L × 4/5"W Racks	Innova 2100, 2150, 2300, 2350; Excella E10, E24/E24R, E235/E25R, all I-Series	TTR 210	**14-282-75**	270.0
Angled Test Tube Rack Holder for racks less than 5"W (12.7cm)	Innova 2100, 2150, 2300, 2350; Excella E10, E24/E24R, E235/E25R, all I-Series	TTR-215	**14-284-47**	85.0
Microplate Carrier, single-layer	Innova 2100, 2150, 2300, 2350; Excella E10, E24/E24R, E235/E25R, all I-Series	TTR 221	**14-278-32**	270.0

ACCESSORIES

Flask Clamps

For use with New Brunswick Innova*, I-Series* and Excella* Shakers

For Flask Size	For Shakers	Mfr. No.	Cat. No.	Each
Erlenmeyer Clamps				
10mL	All Excellas, I-24/I-24R	ACE 10S	**14-281-20**	15.00
25mL	All Excellas, I-24/I-24R	M1190 9004	**14-284-41**	16.00
50mL	All Innovas, all Excellas, I-24, I-24R, I-2500, I-2500KC	M1190 9000	**14-278-160**	17.00
125mL	All Innovas, all Excellas, I-24, I-24R, I-2500, I-2500KC	M1190 9001	**14-278-161**	18.25
250mL	All Innovas, all Excellas, I-24, I-24R, I-2500, I-2500KC	M1190 9002	**14-278-162**	26.00
500mL	All Innovas, all Excellas, I-24, I-24R, I-2500, I-2500KC	M1190 9003	**14-278-163**	30.00
1000mL	All Innovas, all Excellas, I-24, I-24R, I-2500, I-2500KC	ACE 1000S	**14-281-26**	38.00
2000mL	All Innovas, all Excellas, I-24, I-24R, I-2500, I-2500KC	ACE 2000S	**14-281-27**	57.00
4000mL	All Innovas, all Excellas, I-2500, I-2500KC	ACE 4000S	**14-281-28**	66.00
6000mL	All Innovas, all Excellas, I-2500, I-2500KC	ACE 6000S	**14-281-29**	82.00
Fernbach Clamps				
2800mL	All Excellas, I-24/I-24R	ACFE 2800S	**14-281-30**	76.00

LOOKING FOR MORE SHAKERS?

For Innova* Shakers, see pp. 1670-1671.
For I-Series* Shakers, see pp. 1672-1673.
For Excella* Shakers, see pp. 1674-1675.

RECIPROCATING

Thermo Scientific* Reciprocating Shakers

Analog units offer flexibility and economy

11-675-152

Ideal for extractions, mixing blood samples, and silver staining of polyacrylamide gels. Variable speed control provides gentle to vigorous agitation. Built-in timer allows repeatable results.

- Shaking speed range: 10 to 250rpm
- Shaking motion: back-and-forth, with adjustable stroke angle from ½ to 1½" (1.2 to 3.8cm)
- Load capacity: 15 lb. (6.8kg)
- Operating modes: timed or continuous run
- Timer: 1 to 60 min.
- Operate in temperature ranges from 4° to 40°C (39° to 104°F), allowin them to be used in incubators, warm rooms, environmental chambers and refrigerators
- Accept three different platforms: 11 × 13" (38 × 28cm), 18 × 18" (46 × 46cm), or 18 × 24" (46 × 61cm); all sold separately
- Metal locking tab on control knob prevents accidental change in settin

ORDERING INFORMATION:
Shipping weight: 27 lb. (12.3kg); accessory platforms available online

REQUIRED ACCESSORIES:
Platforms (order separately online)

WARRANTY:
24 months

Model	Mfr. No.	Cat. No.	Ea
120V	SHKA2506	**11-675-152**	1924.
240V	SHKA2506-1	**11-675-153**	1943

hermo Scientific* Dual Reciprocating :tion Shakers

fordable analog units with back-and-forth or circular otion for versatility to cover a wide range of aking applications

11-675-150

al for growing bacteria, dissolution
dies, and staining of electrophoresis
s and extractions. Variable speed
trol allows gentle to vigorous
ation. Built-in timer facilitates
eatable results.

haking speed range: 40 to 400rpm
haking motion: back-and-forth, with
xed stroke angle of ⅜"(1.2cm)
or shaking of separatory funnels, or
xed circular motion of ⅜"(1.2cm)
or growing bacteria and yeast
oad capacity: 15 lb. (6.8kg)
perating modes: timed or continuous run
mer: 1 to 60 min.
perate in temperature ranges from 4° to 40°C (39° to 104°F), allowing
em to be used in incubators, warm rooms, environmental chambers
nd refrigerators
ontrol lever changes shaking motion either while unit is stationary
in motion
ccept three different platforms: 11 × 13" (38 × 28cm), 18 × 18"
6 × 46cm), or 18 × 24" (46 × 61cm); all sold separately
letal locking tab on control knob prevents accidental change in setting

DERING INFORMATION:
pping weight: 38 lb. (17.2kg); accessory platforms available online

QUIRED ACCESSORIES:
forms (Universal: 14-272-2H, -2J; 14-215-313; order separately).
mps and racks also available.

RRANTY:
nonths

lel	Electrical Reqts.	Cat. No.	Each
V 50/60Hz	SHKA2508	**11-675-150**	1976.00
V 50/60Hz	SHKA25081CE	**11-675-151**	1995.00

LOOKING FOR ACCESSORIES?

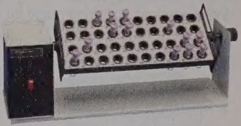
Platforms and clamps for the Thermo Scientific* Reciprocating and dual Reciprocating Shakers can be found online.

Visit www.fishersci.com and search for Thermo Scientific Shakers

ROCKING

Fisher Scientific* Hematology/ Chemistry Mixer

Fixed rotation mixer doubles as a transport tray



14-059-346Q

Perfect for most clinical laboratory procedures—blood specimen mixing, radioimmunoassay and general wet chemistry analyses for glucose, cholesterol, urea, enzymes, etc.

- Holds up to 40 tubes, gently and securely, in convenient coded slots
- Accommodates tubes or vials up to 7" long (178mm)—36 positions hold 12 to 13mm diameter blood sampling tubes, and four positions hold 15 to 17mm diameter vials for control blood preparations
- Fixed rotation speed of 12rpm, ±0.5rpm
- Flexible plastic bushings allow for simple insertion and removal of tubes
- Integral nylon handle-support brackets allow rack to double as transport tray
- Entire rack can be immersed in hot soapy water for thorough cleaning
- Low profile and beam base prevent tipping
- Made of heavy-gauge sheet metal finished in tough baked-on acrylic enamel

ORDERING INFORMATION:
Dimensions: 6L × 20W × 6¾"H (15.3 × 50.8 × 17.1cm)

WARRANTY:
12 months

COMPLIANCE:
CSA approved

Electrical Requirements	Cat. No.	Each
120V 60Hz, 0.024A	**14-059-346Q**	966.64

Thermo Scientific* Lab-line* Thermal Rocker

Excellent alternative to higher-priced hybridization incubators for agitation of blotting membranes under controlled temperatures

14-512-30Q

Provides smooth, gentle rocking to meet a variety of mixing needs. Excellent alternative to higher-priced hybridization incubators for agitation of blotting membranes under controlled temperatures.

- Front-mounted switch allows user to operate the unit with or without heat
- Temperature is monitored via the large LED display
- An electronic proportional temperature controller maintains temperatures from slightly above ambient ±5°C to 70°C (158°F) with ±0.5°C; self-resetting thermal cutoff shuts down power to the heaters in the event of an overtemperature condition
- Rocking speed can be adjusted from 0 to 100 cycles per minute
- Platform features a nonskid rubber pad to keep samples in place
- Angle of motion can be adjusted from 10° to 15° off the horizontal plane

ORDERING INFORMATION:
Dimensions, overall: 16L × 16½W × 8½"H (41 × 42 × 22cm. Platform: $14\frac{3}{16}$ × $14\frac{3}{16}$" (36 × 36cm).

INCLUDES:
3-wire line cord and plug

Electrical Requirements	Mfr. No.	Cat. No.	Each
120V 50/60Hz	4637Q	**14-512-30Q**	2223.00

Thermo Scientific* Thermolyne* Platform Vari-Mix* Mixer

Provides smooth wave motion for solutions in lab dishes, plates and cell culture flasks

Wide ambient operating range for use in many lab applications.

- Large white nonskid rubber mixing platform can be adjusted to any angle of motion through a range of 48°
- Variable speed control from 5 to 30rpm
- Mixing surface, 12⅝L × 10⅝"W (32 × 26.9cm)
- Capacity, 15 lb. (6.8kg)
- Two-hour timer with continuous-run mode
- Platform removes easily for autoclaving
- All finishes are chemical resistant and easy to clean

ORDERING INFORMATION:
Dimensions: 12L × 15⅝W × 7¼"H (30.4 × 39.6 × 18.4cm). Available in single-phase 120V and 240V models.

INCLUDES:
3-wire cord and plug; 240V model also includes European cord set

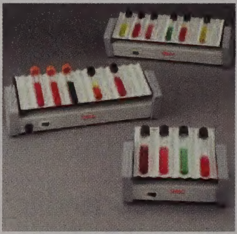
09-047-113Q

Electrical Requirements	Mfr. No.	Cat. No.	
120V 50/60Hz, 0.10A	M79735Q	**09-047-113Q**	106
240V 50/60Hz, 0.05A	M79730-26Q	**09-047-112Q**	106

Thermo Scientific* Thermolyne* Test Tube Rockers

Compact, precision-controlled platform mixers provide smooth rocking action for uniform specimen suspension

- Reversible pad provides one side (with lip to prevent sliding) for capped tubes 110mm long; other side for longer tubes
- Autoclavable white silicone rubber pad enhances viewing
- Can be used in a noncondensing incubator or coldroom
- Clean easily


Top, left to right: 12-814-2Q, 12-815-3Q. Bottom: 12-815-6Q.

Vari-Mix* Mixer
- Adjustable motor speed of 1 to 20rpm
- Adjustable rocking from 1° to 48° angle
- Capacity, 16 tubes (10 to 20mm) or 7 tubes (22 to 30mm)
- Overall dimensions: 5½L × 15W × 4¼"H (14 × 38.1 × 10.8cm)

Speci-Mix* Mixer
- Preset 18rpm motor speed
- Preset 48° tilt of the rocker platform
- Capacity: 16 tubes
- Overall dimensions: 5½L × 13¾W × 4¼"H (14 × 35 × 10.8cm)

Half-Size Speci-Mix*
- Preset 18rpm motor speed
- Preset 48° tilt of the rocker platform
- Capacity: 8 tubes (10 to 20mm) or 3 tubes (22 to 30mm)
- Overall dimensions: 5½L × 7½W × 4¼"H (13.9 × 19.1 × 10.7cm)

INCLUDES:
3-wire grounded cord

Description	Electrical Requirements	Mfr. No.	Cat. No.	Each
Vari-Mix Mixer	120V 50/60Hz	M48725	**12-815-3Q**	663.43
Speci-Mix Mixer	120V 50/60Hz	M26125	**12-814-2Q**	439.00
Half-Size Speci-Mix Mixer	120V 50/60Hz	M71015	**12-815-6Q**	367.00

Boekel* Rocker II Platform Rocker

Ideal for gel staining and destaining; Northern, Southern and Western blots; and rocking agglutination cards

- Adjustable speed: 3 to 25rpm
- Tilt angle: 0° to 20° (40° total displacement)
- Anodized aluminum platform comes with white rubber nonskid pad
- Dimensions, platform: 12 × 12" (30.5 × 30.5cm)
- Stacking tray with pad to double mixing area
- Tray clearance: 2½" (6.3cm)

05-450-34

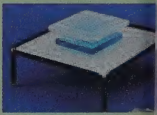
ORDERING INFORMATION:
For 115V 50/60Hz

L × W × H	Mfr. No.	Cat. No.	
12 × 12 × 7" (30.5 × 30.5 × 17.8cm)	260350	**05-450-34**	60

ACCESSORIES

Stacking Tray

For use with Boekel Rocker II Platform Rocker (05-450-34).


05-450-32

L × W × H	Mfr. No.	Cat. No.	E
12 × 12 × 3" (30.5 × 30.5 × 7.6cm)	260355	**05-450-32**	9

*Trademark. See Trademark Reference.

Prices subject to change.

vall Belly Button* Shaker

npact liquid agitation shaker can be used in ubators, refrigerators, and on a crowded benchtop

15-453-260

des a wide range of agitation itions from extremely gentle to ous. Uses an orbiting platform, flexibly ored at four corners to create a motion s an extremely effective combination cking platform mixer and orbital shaker.

: 7" (18 × 18cm) acrylic, en-sided platform
(2.5cm) orbital throw
justable speed controls from 0 to 100rpm
riable pitch control from flat to 8°
b. (2.25kg) load capacity
ishless, long-lived, 12V motor runs quietly
emical-resistant stainless-steel and anodized aluminum housing with wder-coated finish
movable, nonskid mat stabilizes loads while processing
erates in ambient temperatures of 0° to 60°C
n be used in CO_2, high humidity, or dry incubators

LICATIONS:

ing and destaining gels, Northern and Southern hybridizations, ern blotting, rinsing membranes, cell culture incubation, retroviral tion, phage elution, amplification of cDNA libraries, mixing of small and blood samples, and immunocytochemistry

ERING INFORMATION:

ll dimensions: 8L × 8W × 4¾"H (20 × 20 × 12cm); for 100/240V 50/60Hz

rical Requirements	Mfr. No.	Cat. No.	Each
240V 50/60Hz	BBUAAUV1S	**15-453-260**	959.18

Stovall Belly Dancer* Shakers

Versatile shakers provide optimal movement for multiple staining and washing involved in gel and blotting techniques

15-453-211

Effective agitation from smooth vertical and horizontal orbital motions allows for rapid exchange of solvents in applications like staining and destaining gels and assures lower background in blotting applications.

- Anchored at four corners, this system undulates the platform, providing an orbital throw of 1" (2.5cm)
- Variable shaking speed control from 0 to 100rpm
- Adjustable platform pitch from flat to 8°
- Acrylic 12 × 12" (31 × 31cm) open-sided platform (with removable, nonskid mat) accepts oversized containers
- Maximum load capacity to 20 lb. (9kg)
- Ambient operation range from 0° to 42°C (32° to 108°F)
- Lightweight construction (16 lb. [7.3kg]) provides easy mobility, optimal for benchtop, incubator, and coldroom usage
- Simple design has no belts or pulleys and delivers trouble-free performance
- Quiet, permanent magnet DC motor requires minimal maintenance
- Chemically resistant stainless-steel and anodized aluminum construction

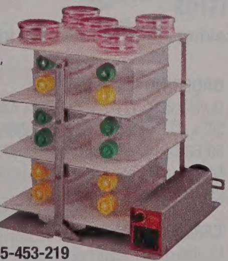
ORDERING INFORMATION:

Overall dimensions: 15L × 15W × 8¾"H (38 × 38 × 22cm)

Electrical Requirements	Mfr. No.	Cat. No.	Each
115V 50/60Hz	BDRAA115S	**15-453-211**	1365.00
220V 50/60Hz	BDRAA220S	**15-453-212**	1380.00

vall Hi/Lo Profile Rocker*

est profile rocker available, with a height of only ', is ideal for confined spaces and sterile environments


15-453-219

n staining and destaining gels, nern and Southern hybridizations, ern blotting and rinsing membranes, labelling cells in incubators, ambda Phage elution/amplification NA libraries.

que patented form design

th motor beside rather than under platform, rocker easily fits on ubator or refrigerator shelves
udes 12 × 12" (31 × 31cm) h-quality stainless-steel platform, h capacity to add up to three additional platforms (4½" between tforms) for increased capacity
nskid, removable mat stabilizes load while processing
d capacity: 20 lb. (9kg)

mum rocking performance

ustable platform pitch (from 2° to 11°) and speed (0 to 30rpm) in onds without tools
nerates a wide range of agitation conditions from extremely gentle to orous; same degree of agitation is maintained on all stacked platforms

Sturdy construction

- Stainless-steel unit resists rust, even in 95% humidity
- 24V permanent magnet DC motor
- Can be used in both incubators and refrigerators
- Easily disassembled, unit (all but motor and control) can be sterilized by autoclaving
- Ambient temperature operation from 0° to 60°C (32° to 140°F)

ORDERING INFORMATION:

Overall dimensions: 15¾L × 13¾W × 1¾"H (40 × 35 × 5cm). Additional platforms sold separately.

Electrical Requirements	Mfr. No.	Cat. No.	Each
115V 50/60Hz	ROCAA115S	**15-453-219**	945.00

ACCESSORIES

Additional Platforms

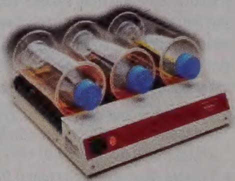
Add up to three additional platforms to the Stovall Hi/Lo Profile Rocker* for increased capacity. Distance between platforms: 4½"H (11cm). Constructed of high-quality stainless steel.

Description	Mfr. No.	Cat. No.	Each
One (1) additional platform	ACCRC00P1	**15-453-222**	226.99
Two (2) additional platforms	ACCRC00P2	**15-453-223**	343.38
Three (3) additional platforms	ACCRC00P3	**15-453-224**	467.90

ROLLERS

Stovall Low Profile Roller

Portable, compact, low-profile roller offers versatility in the biological research laboratory



15-453-225

Fits on benchtops, in high humidity and CO_2 incubators, high-temperature ovens (to 65°C) and in refrigerated units (to 0°C) without need to rearrange shelves or disturb other materials.

- Variable speed control from 1 to 30rpm
- Supplied with six rollers
- Each roller is electronically gear-driven, without belts or pulleys
- Rollers are removable for cleaning and to accommodate various-sized tubes or bottles
- Thin, flat power cord reaches external outlets without damaging incubator gaskets
- Cool-running 24V DC motor
- All finishes are chemically resistant, easy to clean and sterilize
- Aluminum case parts coated in durable, high-bake ester finish

APPLICATIONS:

Cell culture; Western, Northern and Southern Filter Blots

ORDERING INFORMATION:

Overall dimensions: 15L × 14¼W × 2⅜"H (38 × 36 × 6cm); Roller dimensions: 1⅛" dia. × 10"L (2.9 × 25.4cm). Net weight: 10.5 lb. (4.8kg). For 115V 50/60Hz, 2 A. Additional roller bottles can be purchased separately

INCLUDES:

Unit and six rollers

Electrical Reqts.	Mfr. No.	Cat. No.	Each
115V 50/60Hz	ROLAA115S	**15-453-225**	1540.00

Wheaton Compact Roller System for Small Bottles

Extremely compact unit with adjustable rollers need little benchtop space

22-288-525

- Well suited for research work; may be used in a CO_2 incubator.
- Handles two vessels 108-121mm in diameter and up to 290mm long
- Outside rollers can be moved inward to roll vessels as small as 75mm in diameter
- Bottle speed: 0.1 to 3.8rpm (based on a 110mm bottle)
- Maximum temperature for use: 40°C (104°F)

ORDERING INFORMATION:

Dimensions: L × W × H: 12¼ × 12¾ × 7⅛" (32 × 32.5 × 18cm). Electrical requirements: 120VAC 50/60Hz, 14w. Net Weight: 18 lb. (8kg

CERTIFICATIONS:

UL listed; CSA approved

NOTE:

Use in a CO_2 environment may necessitate more frequent replacement motor brushes.

Mfr. No.	Cat. No.	
W348923	**22-288-525**	90

Wheaton Compact Roller System for Mini Bottles

Designed for small-scale mixing and agitation, this space-saving roller is ideal for use in standard incubators and in coldrooms

Transistorized solid-state circuitry allows exact speed control of bottles and compensates against sudden or prolonged line-voltage changes. Roller shafts are mounted in self-lubricating nylon bearings for extended life.

Features

- Single-deck unit accommodates up to four 38 to 60mm dia. × 240mm long bottles
- Accommodates 38 × 200mm culture tubes for the growth and observation of single chicken or rat embryos
- Variable speed control from 3 to 45rpm (for 38mm dia. bottle), and 2 to 30rpm (for 60mm dia. bottle)
- Maximum temperature for use: 40°C (104°F)

ORDERING INFORMATION:

Dimensions: 12¼L × 12¾W × 7⅛"H (32 × 32.5 × 18cm). For 100/120V 50/60Hz, 14w. Accepts up to two Mini Bottle Deck Kits (06-440-27, sold separately).

22-288-524

CERTIFICATIONS:

UL listed; CSA approved

NOTE:

Use in a CO_2 environment may necessitate more frequent replaceme motor brushes.

Mfr. No.	Cat. No.	
W348923-A	**22-288-524**	1

*Trademark. See Trademark Reference.

Prices subject to change.

sher Scientific* Nutating Mixer

livers gentle, low-foam action for uniform mixing of ids in small collection tubes to larger centrifuge tubes

22-363-153

ee-dimensional rotating motion facilitates ough mixing. Accommodates a ety of tube sizes and types and can sed in coldrooms or incubators.

ompact; fits on any flat surface benchtop

xed-speed movement at 20° angle

perating range: 4° to 40°C

ad capacity: 1¾ lb. (0.8kg)

bes can be placed on dimpled rubber mat without additional strapping

at is removable and cleans with soap and water

aintenance-free

ry quiet

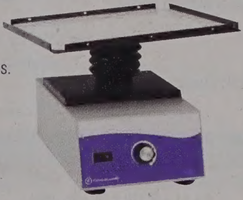
RRANTY:
year

NOTE:
Be sure platform load is balanced before activating unit. Allow adequate clearance to allow tray to move freely through motion.

trical Requirements	Fixed Speed	Cat. No.	Each
/ 60Hz, 0.2A	24rpm	**22-363-152**	455.09
/ 50Hz, 0.1A	20rpm	**22-363-153**	455.09

her Scientific* Ocelot* Rotator

ers exceptional flexibility for shaking and ating applications



05-450-21

epts many different sized containers ltaneously; no need for racks or clamps.

riable speed from 6 to 125rpm

riable tilt angle from 0 to 12°

ljustable timer—up to 12 hours

D gyrating motion

ad capacity: 20 lb. (9kg)

atform has notches for bungee cords secure loads

perating environment: 4° to 55°C (39 °F to 131°F)

" square (30.5cm^2) aluminum tray with removable flat nonskid mat

LICATIONS:
ning and destaining trophoresis gels; blotting ocols; membrane hybridizations washes; immunoassays; ng blood samples

ERING INFORMATION:
ensions: 13L × 12W × 9"H 30.5 × 22.9cm). Net weight: . (9.6kg). Accessories, including led Rubber Mat (05-450-18), lso available online.

INCLUDES:
Platform and removable flat nonskid mat

WARRANTY:
Three years on parts and labor

CERTIFICATIONS:
CSA approved; CE marked

trical Requirements	Cat. No.	Each
/ 50/60Hz, 60w 0.6A	**05-450-21**	1412.32

Thermo Scientific* 3-D Bidirectional Rotator

Gentle rocking motion meets the requirements of a rotator for serological tests and other applications

14-271-8Q

- Bidirectional 360° rotation at 30rpm with a 10° angle
- Timer acts as ON/OFF switch; can be set to run for continuous or timed operation from 1 to 60 minutes
- Platform has white nonslip rubber mat and can accommodate two microtitration plates, Vacutainer* containers, or small beakers and flasks
- Enameled steel casing with four nonskid rubber feet

ORDERING INFORMATION:
Dimensions, overall: 8⅛L × 6⅞W × 5½"H (21 × 17 × 14cm); platform: 5L × 6¾"W (13 × 17cm)

INCLUDES:
3-wire cord and plug

CERTIFICATIONS:
CE marked (240V model)

Electrical Requirements	Mfr. No.	Cat. No.	Each
120V 60Hz	4630Q	**14-271-8Q**	552.00
240V 50Hz	4630-1CE	**14-271-8AQ**	552.00

Thermo Scientific* Lab-Line* Maxi Rotators

Provide smooth, gentle bidirectional movement ideal for a wide range of applications including staining and destaining gels and hybridization blotting procedures

14-512-28Q

- Stainless-steel platform accommodates up to two Pyrex* dishes
- Variable rotation solid-state speed control from 0 to 25rpm
- Horizontal and vertical orbital rotation through a 6° angle
- Continuous-duty motor and direct-drive assembly
- Lightweight for easy mobility
- Durable cold-rolled steel body with baked enamel finish
- White, neoprene nonskid rubber mat

ORDERING INFORMATION:
Dimensions, overall: 14L × 16LW × 7½"H (36 × 41 × 19cm); platform: 16 × 14" (41 × 36cm)

INCLUDES:
3-wire line cord and plug

CERTIFICATIONS:
CE marked (240V model)

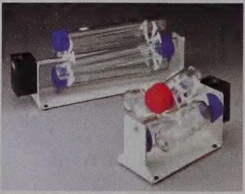
Mfr. No.	Electrical Requirements	Cat. No.	Each
4631Q	120V 60Hz	**14-512-28Q**	1151.00
4631-1CE	240V 50Hz	**14-512-29Q**	1151.00

Thermo Scientific* Thermolyne* Labquake* Rotisserie Hybridization Rotators

Compact, portable rotisserie with tridirectional action works at room temperature or in an incubator and ensures optimal distribution with minimal probe solution

Ideal for labs that do infrequent blots and do not require a hybridization oven or for labs that need an additional vehicle for washes.

- Small rotisserie rotators hold four sets of bottles or tubes; large holds four bottles or eight tubes (see table for sizes)
- Withstand temperatures from 4° to 65°C
- Rotating speed: 8rpm
- Bottles and tubes can be removed while unit is operating
- Compact, lightweight and portable



13-687-64Q, 13-687-69Q

APPLICATIONS:

Western, Southern and Northern blots and incubating cells adhered to bea

ORDERING INFORMATION:

Dimensions, small rotisserie rotators (13-687-69, -68): 4½L × 10½W × 6½"H (11.4 × 26.7 × 16.5cm); large rotisserie rotator (13-687-64): 4½L × 18½W × 6⅝"H (11.4 × 47 × 16.8cm)

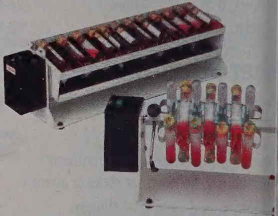
Capacity	Electrical Requirements	Cat. No.	E
Small Rotisserie Rotator			
4 (35-38mm × 150 bottles) or 4 (50mL conical tubes)	120V 50/60Hz, 3w, 0.1A	**13-687-69Q**	378
Large Rotisserie Rotator			
4 (35-38mm × 300 bottles), or 8 (50mL conical tubes)	120V 50/60Hz, 3w, 0.1A	**13-687-64Q**	410

Thermo Scientific* Thermolyne* Labquake* Tube Shaker/Rotators

For thorough mixing of blood samples, preparation of homogenous dispersions, dialysis under agitation, and liquid-liquid extractions

Available in clip bar, double deck or combination models. Choice of two sizes accommodate tubes from 10 to 30mm, also Vacutainer* tubes.

- Clip bar models feature continuous rotation at 8rpm, or oscillating action at 22 to 70 reversals/min. (depending on angle)
- Double deck models feature oscillating action at 22 to 70 reversals/min. (depending on angle)
- Combination models feature interchangeable removable double deck trays with clip bar



ORDERING INFORMATION:

For 120V 50/60Hz; also available in 220V. To order, contact your Fisher Scientific Customer Service Representative.

Model	Tube Capacity	Degree of Oscillation	Degree of Rotation	Overall L × W × H	Mfr. No.	Cat. No.	Each
Small Shakers							
With clip bar only	8 × 17-30mm	Up to 300°	360°	4 × 11 × 6" (10 × 28 × 15.2cm)	4002110Q	**13-687-16Q**	355.00
With clip bar only	14 × 10-19mm	Up to 300°	360°	4 × 11 × 6" (10 × 28 × 15.2cm)	400110Q	**13-687-10Q**	313.00
With dual trays only	22 × 10mL Vacutainer tubes	Up to 90°	----	6½ × 11 × 6" (16.5 × 28 × 15.2cm)	T400110Q	**13-687-11Q**	403.00
Combination (clip bar and dual trays)	14 × 10-19mm and 22 × 10mL Vacutainer tubes	Up to 300°	360°	6½ ×11× 6" (16.5 × 28 × 15.2cm)	C400110Q	**13-687-14Q**	457.00
Large Shakers							
With clip bar only	14 × 17-30mm	Up to 300°	360°	4 × 18½ × 6" (10.2 × 47 × 15.2cm)	4152110Q	**13-687-17Q**	413.0
With clip bar only	32 × 10-19mm	Up to 300°	360°	4 × 18½ × 6" (10.2 × 47 × 15.2cm)	415110Q	**13-687-12Q**	371.0
With dual trays only	46 × 10mL Vacutainer tubes	Up to 90°	----	4½ ×18½ × 6" (11.4 × 47 × 15.2cm)	T415110Q	**13-687-13Q**	506.0
Combination (clip bar and dual trays)	32 × 10-19mm and 46 × 10mL Vacutainer tubes	Up to 300°	360°	4½ ×18½ × 6" (11.4 × 47 × 15.2cm)	C415110Q	**13-687-15Q**	543.0

LOOKING FOR BOTTLES?

Nobody sells more bottles than Fisher Scientific. We have glass, plastic and specialty bottles for virtually every application. Find them in the Bottles Section.

ermo Scientific* Lab-Line* Rotators

satile variable-speed rotator ideal for rotation of flasks, beakers, vials, Petri dishes, titer plates, culture plates, slides in microbiological, immunological and general clinical applications

ooth, quiet rotation through
4" (2cm) orbit
iable speed control from 40
220rpm
d capacity: 10 lb. (4.5kg)
minute timer
oclavable white silicone non-
platform mat cleans easily
ice of platform sizes

UDES:
r cord; 240V models have
e cord

CERTIFICATIONS:
CE marked (240V models only)

Model No.	Overall L × W × H	Electrical Requirements	Cat. No.	Each
9 × 9" (23 × 23cm) Platform				
2309Q	12⅜ × 10⅝ × 4 7/16" (31.4 × 27 × 11.3cm)	120V 50/60Hz	**11-671-50Q**	853.00
2309-1CEQ	12⅜ × 10⅝ × 4 7/16" (31.4 × 27 × 11.3cm)	240V 50/60Hz	**11-671-51Q**	853.00
12¼ × 12¼" (31 × 31cm) Platform				
2314	13⅝ × 12½ × 4⅜" (35 × 32 × 11cm)	120V 50/60Hz	**11-671-52Q**	920.00
2314-1CEQ	13⅝ × 12½ × 4⅜" (35 × 32 × 11cm)	240V 50/60Hz	**11-671-53Q**	920.00

ermo Scientific* RotoMix* Orbital Mixers

pact orbital rotators accommodate various sizes of printed well slides, culture plates, flasks, vials, beakers, tube racks and tissue cultureware

ble with fixed or variable speeds; with or without timers.
ooth, uniform, 20mm diameter, orbital motion
cone rubber surface holds vessels on platform, easily removes for cleaning

els M48215 and M48210-33
d speed (100rpm, ±5rpm) rotation for latex agglutination, diagnostic
ing and research mixing procedures
npact 6L × 5"W (15.3 × 12.7cm) platform
ximum load capacity, 3 lb. (1.4kg)

el M50825
able mixing action is adjustable from 80 to 220rpm, ±12rpm
ck 8 13/16L × 8 13/16"W (22.2 × 22.2cm) platform
ing indicator of 0 to 15 minutes
, audible alarm indicates test completion
ximum load capacity, 5 lb. (2.3kg)
be used in noncondensing incubator or coldroom

el M51335
ooth, consistent mixing action is fixed at 200rpm, ±5rpm
ck 12L × 10"W (30.5 × 25.4cm) platform
er can be set to run up to two hours or continuous run
ximum load capacity: 10 lb. (4.5kg)

Model M71735

- Controlled, slow-speed mixing is adjustable from 10 to 60rpm, ±5rpm
- White 12⅝L × 10⅝"W (32 × 27cm) platform
- Timer can be set to run up to 2 hours or continuous run
- Maximum load: 5 lb. (2.3kg)
- Can be used in noncondensing incubator or coldroom

Left to right: 12-815-2DQ, 12-815-8Q, 12-815Q.

Model No.	Electrical Reqts.	Overall L × W × H	Cat. No.	Each
M48215	120V 60Hz	7½ × 6¼ × 5¼" (19 × 15.9 × 13.3cm)	**12-815Q**	348.14
M48210-33	240V 50Hz	7½ × 6¼ × 5¼" (19 × 15.9 × 13.3cm)	**12-815-4Q**	348.14
M50825	120V 60Hz	× 9⅝ × 4¼" (27.3 × 24.4 × 10.8cm)	**12-815-2DQ**	837.39
M51335	120V 60Hz	14 × 11¼ × 11¼" (35.6 × 28.6 × 28.6cm)	**12-815-2BQ**	611.82
M71735	120V 60Hz	13½ × 11¼ × 6¾" (34.3 × 28.6 × 17.1cm)	**12-815-8Q**	958.93

kel* Orbitron Rotators

use where gentle, low-foaming agitation and uniform mixing of lab samples are required

act, with 1 sq. ft. (0.09m²) platform and smaller footprint.

el I
roximately 20 orbits per minute fixed speed
angle fixed tilt

el II
able speed adjustable from approximately 6 to 23 orbits per minute
angle adjusts from 0° to 23°

ICATIONS:
noassays, hybridizations, mixing blood samples, coupling affinity
atography media and DNA extractions

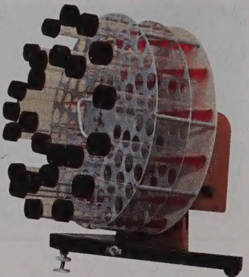
ORDERING INFORMATION:
Dimensions: 7L × 7½W × 5"H (17.8 × 19 × 12.7cm); with platform, 12L × 12W × 10"H (30.5 × 30.5 × 25.4cm)

11-715-12, 11-715-11

Description	Electrical Requirements	Cat. No.	Each
Model I	115VAC, 22w	**11-715-11**	535.60
Model II	115VAC, 22w	**11-715-12**	826.80

Cell Culture Roller Drums

For growing bacteria and tissue cultures in test tubes to achieve even distribution of media over cells



14-277-3

- Variable-speed drive with solid-state controller provides uniform rotary motion, maintains constant speed even with heavy loads.
- Two models, with speed ranges of 0.2 to 3.5rpm and 6 to 56rpm

ORDERING INFORMATION:

Overall dimensions:
14D × 14¾W × 16½"H
(35.6 × 37.5 × 41.9cm);
for 120V 50/60Hz

REQUIRED ACCESSORIES:

Drums (sold separately); 14-277-4 for 16mm tubes, 14-277-5 for 25mm tubes

Speed	Mfr. No.	Cat. No.	Each
0.2 to 3.5rpm	M1053 5004	**14-277-3**	1735.00
6 to 56rpm	M1053 4004	**14-277-2**	1735.00

ACCESSORIES

Cell Culture Roller Drums

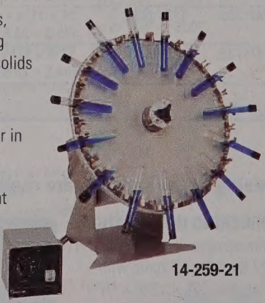
For 16 and 25mm tubes

- Lightweight, 14" diameter (35.6cm) aluminum drums, hold 164 tubes up to 16mm diameter, or 80 tubes up to 25mm diameter
- Drums are easily removable, can be used as carrying trays

Tube Size	Mfr. No.	Cat. No.	Each
16mm	ATC TT16	**14-277-4**	465.58
25mm	ATC TT25	**14-277-5**	465.58

Rugged Rotators

Heavy-duty, motor-drive base ideal for continuous mixing



14-259-21

Useful for tissue culture specimens, extracting, dissolving slow-reacting samples and homogenizing blood solids with plasma.

- Variable speed from 2 to 60rpm
- Adjustable clamp positions motor in angles from 0 to 110°
- Separate speed control module allows placement at a convenient location—use rotator inside constant temperature oven or hood while control is outside

ORDERING INFORMATION:

Dimensions, 8L × 10⅛W × 9¼"H (20.3 × 25.7 × 23.5cm); accessories and replacement parts available

INCLUDES:

Unit, 6' (1.8m), 3-wire electrical cord; Friction Drive Test Tube Head (14-259-22)

Electrical Requirements	Cat. No.	Each
120V 50/60Hz	**14-259-21**	910.00
240V 50/60Hz	**14-259-20**	878.81

SIEVE

Tyler Ro-Tap* Sieve Shaker

Recommended for testing applications requiring analysis of particles from 5" (12.7cm) to 20 microns wide (635 mesh)

04-909

Uniform mechanical action—both horizontal circular motion and vertical tapping motion—allows particles to stratify and "seek" critical openings, ensuring accurate, repeatable results.

- Maximum of six 2" high (5.1cm) or thirteen 1" high (2.5cm) sieves can be used for testing at one time
- Vertically mounted ¼hp motor
- Built-in 99-minute digital timer/clock accurate to 0.1 second
- Integral sieve cover

ORDERING INFORMATION:

Available in 8 or 12" (20 or 30cm) diameters. Unit dimensions: 21L × 28W 25"H (53 × 71 × 64cm); for 110V 60Hz, 5.4A; wired for single-phase current only.

REQUIRED ACCESSORIES:

Sieves and receiver (order separately)

For Sieve Dia.	Cat. No.	Ea
8" (20cm)	**04-909**	2076
12" (30.5cm)	**04-909-3**	2275

Tyler Ro-Tap* Sieving Kits

All-in-one sieving lab kits make particle analysis test easy and convenient

04-909-1

Ro-Tap Sieve Shaker

- Kit for 8" diameter sieves holds 6 sieves (full-height and pan) or 13 sieves (half-height and pan) for particle testing, 2" (5cm) down through 635 mesh
- Kit for 12" diameter sieves hold 4 sieves (full-heightand pan) or 10 sieves (half-height and pan) for testing down through 500 mesh

ORDERING INFORMATION:

Choose kit based on sieve diameter: 8 or 12" (20 or 30cm); for 110V; 220V shaker kits are also available through your Fisher Scientific Customer Service Representative.

INCLUDES:

One Ro-Tap Sieve Shaker, Sound Enclosure (04-909-5) and Test Stand (22-043-895), and two test sieve cleaning brushes

REQUIRED ACCESSORIES:

Sieves and receiver (order separately)

For Sieve Dia.	Cat. No.	
8" (20cm)	**04-909-1**	253
12" (30cm)	**04-909-1A**	351

*Trademark. See Trademark Reference.

ler Ro-Tap* E Test Sieve Shaker

signed for light to medium testing applications

mpact unit requires minimal countertop space and delivers precise ving results.

- ses 8" dia. (20cm) test sieves
- igital controls
- utomatic controlled constant amplitude
- ine and coarse analysis control settings
- uick-release hold-down
- ee-through cover
- Quiet operation
- Requires minimal maintenance

ORDERING INFORMATION:

Dimensions: 18L × 18W × 30"H (46 × 46 × 76cm). Net weight: 80 lb. (36kg). For 115V.

No.	Each
09-10	3712.65

LOOKING FOR SIEVES?

Fisherbrand* U.S. Standard Test Sieves meet ASTM EII specifications. Available in brass or stainless-steel in a wide range of sizes. You'll find them in the Sieves section.

tsch* AS 200 Series Analytical eve Shakers

al for research and development applications, lity control of raw materials and intermediate/end ducts, and production control

uce exact, reproducible results in accordance with DIN 66165 in dry wet operations. Maintenance-free electromagnetic drive with tilted-g arrangement provides uniform three-dimensional oscillation and tion of sieve column to move material evenly over entire surface. result is high-load endurance, extremely quiet operation, and short ng times with clean separation.

- act operation at 60Hz line frequency and control of vibration height ovide accurate, reproducible results
- justable vibration height from 0.2 to 3mm to measure particles from µm to 25mm
- ailable with three clamping systems that can hold 8 full-height or half-height sieves (plus pan) with diameters of 100–203mm
- aximum charge quantity of 6⅝ lb. (3kg) for all models

c Model

- onomical, designed for occasional sieving tasks of "easy" materials that not require digital technology
- t time and vibration height by potentiometer
- tical control of vibration height

tal Model

- itable for routine applications where digital time display, fixed erval operation, analog setting, and optical monitoring of vibration ight are needed

trol Model

- itable for monitoring inspection, measuring, and testing equipment
- anufactured using ISO 9000:2001-certified processes
- gitally displays and monitors vibration, height or "g" acceleration, ne, and interval

08-417-64, -65, -66

- Can be calibrated for ISO and GLP/GMP guidelines
- RS-232 interface with EasySieve software (sold separately) and a PC

ORDERING INFORMATION:

Dimensions: 13¾D × 15¾W × 33"H (35 × 40 × 84cm). Net Weight: 66 lb. (30kg). For 120V 60Hz; EasySieve software (for use with 08-417-66 only) must be ordered separately. Contact your Fisher Scientific Customer Service Representative for ordering information.

REQUIRED ACCESSORIES:

Sieves and clamping devices (order separately)

WARRANTY:

Two years

COMPLIANCE:

Built to CE standards (not certified)

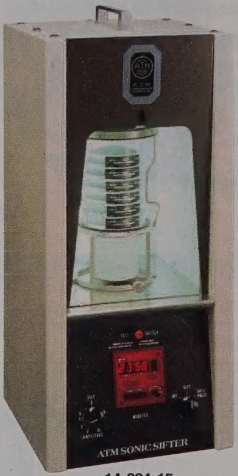
Model	Cat. No.	Each
Basic	**08-417-64**	2004.93
Digit	**08-417-65**	2206.43
Control	**08-417-66**	3000.00

SONIC

Advantech Model L3P Sonic Sifter Separators

Ideal for quality control and R&D laboratories due to low noise, easy operation, and small footprint

High-speed sifting method combines two motions for maximum separation effectiveness and minimum particle attrition. Vertical, oscillating column of air moves powdered, granular or pelletized material through sieves, while mechanical pulsing action breaks down particle clusters.



14-294-15

Features

- Convenient front-mounted controls
- Automatically replicates cycle time and sifting method
- Adjustable cycle time input power
- Easy to load and unload
- Uses 3" diameter (75mm) sieves with clear acrylic frames
- Accept six standard or three double-height sieves
- Surdy steel housing
- Transparent door for observing sifting process
- Three nonskid rubber feet

ORDERING INFORMATION:
Dimensions: 12L × 10W × 23"H (31 × 25 × 59cm)

INCLUDES:
Stack assembly (14-294-22), electrical connection cord and instruction manual

REQUIRED ACCESSORIES:
Sieves (order separately)

CERTIFICATIONS:
UL listed

Mfr. No.	Electrical Reqts.	Cat. No.	Each
L3P	120V 60Hz	**14-294-15**	6855.00
L3P15	120V 50Hz	**14-294-92**	6680.00
L3P26	240V 60Hz	**14-294-90**	6675.00

ACCESSORIES

Sieves

For use with Advantech Model L3P Sonic Sifters

Meet all applicable ASTM* standards. 3" I.D. (7.6cm) sieves with clea acrylic frames. Choice of stainless-steel or nickel-mesh sieves.

Standard Stainless-steel Mesh Sieves

- Fit up to six sieves
- Overall height: ⅝" (16mm)

Precision Nickel Mesh Sieves

- Fit up to three sieves

Sieve No.	Sieve Opening	Mfr. No.	Cat. No.	Eac
Standard Stainless-steel Mesh Sieves				
10	2.00mm	L3S10	**14-294-71**	177.3
12	1.70mm	L3S12	**14-294-72**	177.3
14	1.40mm	L3S14	**14-294-73**	177.3
16	1.18mm	L3S16	**14-294-74**	177.3
18	1.00mm	L3S18	**14-294-75**	177.3
20	850µm	L3S20	**14-294-76**	177.3
25	710µm	L3S25	**14-294-77**	177.3
30	600µm	L3S30	**14-294-78**	177.3
35	500µm	L3S35	**14-294-79**	177.3
40	425µm	L3S40	**14-294-80**	177.3
45	355µm	L3S45	**14-294-81**	177.3
50	300µm	L3S50	**14-294-82**	177.3
60	250µm	L3S60	**14-294-83**	148.5
70	212µm	L3S70	**14-294-84**	177.3
80	180µm	L3S80	**14-294-85**	177.3
100	150µm	L3S100	**14-294-86**	186.0
120	125µm	L3S120	**14-294-87**	186.0
140	106µm	L3S140	**14-294-88**	186.0
170	90µm	L3S170	**14-294-89**	186.0
200	75µm	L3S200	**14-294-50**	199.0
230	63µm	L3S230	**14-294-51**	222.5
270	53µm	L3S270	**14-294-52**	279.5
325	45µm	L3S325	**14-294-53**	329.0
400	38µm	L3S400	**14-294-54**	450.0
Precision Nickel Mesh Sieves				
5	5µm	L3M5	**14-294-64A**	1262.0
10	10µm	L3M10	**14-294-64**	1180.0
20	20µm	L3M20	**14-294-63**	1045.0
30	30µm	L3M30	**14-294-62**	829.8
45	45µm	L3M45	**14-294-61**	871.8

ACCESSORIES

Replacement Parts for Advantech Model L3P

Five components, sold separately or as complete assembly.

- **Column Lock** holds column taut
- **Dust Stop/Diaphragm** transmits oscillary motion to air column and keeps particles within column
- **Top Cone** sits atop spacers
- **Fines Collector** stops dust at bottom of air column in sifter and transmits oscillary motion to air column
- **Fines Collector Holder** supports column
- **Complete Stack Assembly** includes all components described above, plus six standard spacers (14-294-19).

Description	Mfr. No.	Cat. No.	Each	Pack of 1
Column Lock	L3N1	**14-294-16**	450.00	---
Dust Stop/Diaphragm	L3N2	**14-294-17**	55.00	405.0
Top Cone	L3N3	**14-294-18**	35.00	---
Fines Collector	L3N5	**14-294-20**	73.45	650.0
Fines Collector Holder	L3N6	**14-294-21**	435.00	---
Complete Stack Assembly (includes 6 spacers)	L3N7	**14-294-22**	999.00	---

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*Trademark. See Trademark Reference.

SPECIALTY

pendorf* Thermomixer* R

ats, shakes and cools samples all in one unit

eds reactions by combining multiple ple preparation steps.

05-400-205

tures

different exchangeable ermoblocks

tomatic identification and splay of maximum revolutions

ocesses up to 24 microtubes once

gital display shows both set and actual parameters

mple controls

ljustable temperature from 13°C below ambient to 99°C

riable mixing speed from 300 to 1400rpm (up to 1500rpm with 5mL tubes)

ogrammable for intermittent mixing with timed rest phases—ideal for zyme reactions and DNA hybridizations

ort-mix function supports quick vortex applications

ore parameters for common applications

-232-C printer interface

DERING INFORMATION:

ensions: 9¾L × 8¾W × 4¾"H (25 × 22 × 12cm). Net weight: (3.2kg).

UIRED ACCESSORIES:

moblock (sold separately see our web site), choice of four:

-400-202 for 24 × 0.5mL tubes

-400-203 for 24 × 1.5mL tubes

-400-204 for 24 × 2.0mL tubes

-400-207 for one microplate

rical Reqts.	Mfr. No.	Cat. No.	Each
/ 50/60Hz	22-67-010-7	**05-400-205**	2969.00
/ 50/60Hz	22-67-015-8	**05-400-206**	2969.00

pendorf* Thermomixer*

npact, affordable shaker offers independent mixing l incubating

tures

xing capacity: 24 × 1.5mL tubes

mperature range: 4°C above bient to 99°C

xing speed range: 300 to 1400rpm

gital display for set and tual readings

ort-mix function for quick tex applications

05-400-200

ERING INFORMATION:

nsions: 9½L × 6½W × 5¼"H (24 × 16.5 × 13.5cm)

LUDES:

clavable, numbered, freezer-safe rack and block for 1.5mL tubes

rical Reqts.	Mfr. No.	Cat. No.	Each
50/60Hz	22-67-000-0	**05-400-200**	2292.00
50/60Hz	22-67-005-1	**05-400-201**	2292.00

Eppendorf* MixMate

Efficiently mixs 384-well samples to down to 5µL

21-379-00 with supplied tube holders

Easy to use, with an integrated vortexing function that provides precise control for thorough mixing. Unique 3-in-1 mixing process optimizes speed, mixing movement and mixing radius for efficient, consistent results down to 5µL. Perfect for mixing low-volume samples in 384-well plates. MixMate accepts microtubes, PCR plates, deepwell plates and microtiter plates.

Key features

- Mixing frequency: 300 to 3000rpm (in 50rpm increments)
- Touch vortexing frequency: 3500rpm
- Mixing and vortexing radius: 1.5mm (3mm mixing stroke)
- Timed (15 sec. to 99.5 hrs.) or continuous-run modes
- Small footprint: 17 × 23cm
- Extremely quiet running (<50dBA) even at maximum load
- Digital display and softkey controls for setting/viewing mixing duration and speed
- Preprogrammed keys for each tube or microplate type automatically run ideal mixing parameters when selected
- Vortexing feature includes two-second stop time delay for efficient and continuous vortexing without having to continuously restart the vortexer

Other features

- Stable design ensures sturdiness, even at maximum mixing frequency
- Reliable universal holder ensures safety and stability of all tube/plate platforms
- Automatic load imbalance detection prevents sample loss
- IVD conformity

APPLICATIONS:

PCR prep, resuspending pellets, incubation, protein quantifications, reporter gene assays, restriction prep

ORDERING INFORMATION:

Dimensions: 9L × 6⅝W × 5"H (23 × 17 × 13cm). For 120V 60Hz, 40w.

INCLUDES:

Three tube holders: 96 × 0.2mL PCR, 24 × 0.5mL and 24 × 1.5/2.0mL

WARRANTY:

Two years

Mfr. No.	Cat. No.	Each
022674200	**21-379-00**	1800.00

TITER PLATE

Thermo Scientific* Lab-Line* Titer Plate Shakers

Provide shaking motion from gentle rotation to vigorous agitation for virological, immunological, serological, and hematological applications

Vortexing motion thoroughly mixes each well.

14-271-9

- Solid-state, variable speed control from 40 to 1100rpm with a ⅛" circular orbit
- Electronic timer can be set for continuous operation or timed shaking up to 5 minutes
- Independent start switch activates shaker for preset speed and time for repeatability in tests
- Automatic shutoff
- Platform has ⅜" sides and holds from one to four 96-well titer plates
- Two retaining springs and nonslip rubber mat hold plate securely
- Four platform finger slots for easy plate removal
- Rugged, enameled steel shaker body with four nonskid rubber feet

ORDERING INFORMATION:

Dimensions: 11L × 11W × 7"H (28 × 28 × 18cm)

Electrical Requirements	Mfr. No.	Cat. No.	Each
120V 60Hz	4625	14-271-9	921.00

IKA* MTS 2/4 Digital Microtiter Plate Shaker

For shaking up to four microtiter plates

- Shaking capacity: two or four microplates
- Shaking motion: Orbital, 3mm dia.
- Shaking speed range: 0 to 1100rpm
- Operating modes: timed or continuous run
- Digital LED timer from 0 to 99 min. (7 segments)
- Permissible ambient temperature: 5° to 40°C (41° to 104°F)
- 35w motor

14-259-262

Electrical Requirements	Cat. No.	Each
115V	**14-259-262**	995.30
230V	**14-259-263**	995.30

WRIST ACTION

Burrell Scientific Wrist-Action* Shakers

Provide gentle to violent agitation for eight or 12 vesse

Maximum Vessel Capacities

14-260

- Volumetric flasks: Any size
- Erlenmeyer short-neck, flat, or round-bottom flasks: 200mL
- Bottles: 118mL
- Test tubes: up to $2\frac{3}{16}$" diameter (55mm)

Features

- Adjustable shaking control with 1 to 10 setting range
- Shake at any set time up to 55 minutes or continuously
- Loads do not have to be equalized or balanced
- 93w (⅛hp) motor

INCLUDES:

Two interchangeable rods with four double finger-grip clamps, and case

Capacity	Electrical Requirements	Cat. No.	Ea
8	115V 60Hz	**14-260**	1840.
	230V 50Hz†	**14-260-1**	2365.
12	115V 60Hz	**14-260-10**	1950.

† *International Model.*

*Trademark. See Trademark Reference.

Prices subject to change.

Fisherbrand* U.S. Standard Brass and Stainless-Steel Test Sieves

With 8 or 12" diameters (20.3 or 30.5cm) and aperture sizes from 5.6mm opening to 400 mesh

All sieves are serialized and come with a Test Sieve Certificate. Contact your Fisher Scientific Customer Service Representative for information.

Fisherbrand U.S. Standard Test Sieves

COMPLIANCE:

Meet current ASTM* E 11 and ISO 3310-1 specifications

NOTE:

The list below does not represent the complete ASTM E-11 specifications; other sizes are available online.

Nominal Sieve Opening	Sieve Designation		Brass Frame and Cloth						Stainless-Steel Frame and Cloth			
			8" Dia. 2" Depth		8" Dia. 1" Depth		12" Dia. 3¼" Depth		8" Dia. 2" Depth		12" Dia. 3¼" Depth	
	U.S. Standard	Tyler Equivalent	Cat. No.	Each	Cat. No.	Each	Cat. No.	Each	Cat. No.	Each	Cat. No.	Each
5.6mm	No. 3½	3½	**04-881A**	64.05	**04-881-5A**	67.65	**04-884A**	102.55	**04-881-10A**	89.50	**04-884-1Y**	154.40
4.75mm	No. 4	4	**04-881B**	68.30	**04-881-5B**	67.70	**04-884B**	94.65	**04-881-10B**	87.10	**04-884-1Z**	140.25
4mm	No. 5	5	**04-881C**	66.75	**04-881-5C**	67.70	**04-884C**	102.55	**04-881-10C**	87.10	**04-884-1AA**	140.25
3.35mm	No. 6	6	**04-881D**	68.30	**04-881-5D**	67.70	**04-884D**	102.55	**04-881-10D**	87.10	**04-884-1AB**	147.20
2.8mm	No. 7	7	**04-881E**	68.60	**04-881-5E**	72.00	**04-884E**	98.80	**04-881-10E**	90.10	**04-884-1AC**	144.45
2.36mm	No. 8	8	**04-881F**	68.60	**04-881-5F**	68.60	**04-884F**	91.50	**04-881-10F**	90.10	**04-884-1AD**	140.25
2mm	No. 10	9	**04-881G**	68.60	**04-881-5G**	68.60	**04-884G**	91.50	**04-881-10G**	90.10	**04-884-1AE**	152.90
1.7mm	No. 12	10	**04-881H**	68.60	**04-881-5H**	68.60	**04-884H**	95.90	**04-881-10H**	87.70	**04-884-1AF**	140.25
1.4mm	No. 14	12	**04-881J**	68.60	**04-881-5J**	68.60	**04-884J**	95.90	**04-881-10J**	87.70	**04-884-1AG**	147.20
1.18mm	No. 16	14	**04-881K**	68.60	**04-881-5K**	68.60	**04-884K**	95.90	**04-881-10K**	87.70	**04-884-1AH**	140.25
1mm	No. 18	16	**04-881L**	68.60	**04-881-5L**	68.60	**04-884L**	95.90	**04-881-10L**	87.70	**04-884-1AJ**	145.65
850µm	No. 20	20	**04-881M**	68.60	**04-881-5M**	68.60	**04-884M**	95.90	**04-881-10M**	87.70	**04-884-1AK**	140.25
600µm	No. 30	28	**04-881P**	68.60	**04-881-5P**	68.60	**04-884P**	95.90	**04-881-10P**	87.70	**04-884-1AM**	145.65
425µm	No. 40	35	**04-881R**	68.60	**04-881-5R**	68.60	**04-884R**	95.90	**04-881-10R**	87.70	**04-884-1AP**	140.25
300µm	No. 50	48	**04-881T**	68.60	**04-881-5T**	68.60	**04-884T**	99.40	**04-881-10T**	87.70	**04-884-1AR**	152.90
150µm	No. 100	100	**04-881X**	67.20	**04-881-5X**	66.00	**04-884Y**	93.15	**04-881-10X**	92.45	**04-884-1AW**	140.70
125µm	No. 120	115	**04-881Y**	67.75	**04-881-5Y**	67.75	**04-884Z**	99.55	**04-881-10Y**	91.45	**04-884-1AX**	153.40
106µm	No. 140	150	**04-881Z**	71.95	**04-881-5Z**	71.95	**04-884AA**	107.10	**04-881-10Z**	111.55	**04-884-1AY**	157.25
90µm	No. 170	170	**04-881AA**	79.20	**04-881-5AA**	79.20	**04-884AB**	113.05	**04-881-10AA**	124.75	**04-884-1AZ**	177.95
75µm	No. 200	200	**04-881BB**	88.95	**04-881-5BB**	88.35	**04-884AC**	121.55	**04-881-10BB**	117.85	**04-884-1BA**	167.40
63µm	No. 230	250	**04-881CC**	98.50	**04-881-5CC**	97.95	**04-884AD**	156.55	**04-881-10CC**	135.20	**04-884-1BB**	194.05
53µm	No. 270	270	**04-881DD**	120.20	**04-881-5DD**	120.20	**04-884AE**	182.60	**04-881-10DD**	166.10	**04-884-1BC**	224.15
45µm	No. 325	325	**04-881EE**	146.75	**04-881-5EE**	152.90	**04-884AF**	195.25	**04-881-10EE**	172.35	**04-884-1BD**	253.45
38µm	No. 400	400	**04-881FF**	214.70	----	----	**04-884AG**	243.30	**04-881-10FF**	263.50	**04-884-1BE**	295.50

ACCESSORIES

For use with Fisherbrand* U.S. Standard Test Sieves

Receivers

- Fit all 8 and 12" diameter (20.3 and 30.5cm) sieves

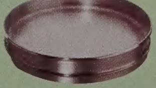
Type	Depth	Cat. No.	Each
For 8" dia. Sieves			
Brass	2" (5.1cm)	**04-886B**	29.40
Brass	1" (2.5cm)	**04-886C**	19.70
Brass with skirt	2" (5.1cm)	**04-881-52**	30.55
Stainless Steel	2" (5.1cm)	**04-887B**	44.90
Stainless Steel with skirt	2" (5.1cm)	**04-881-51**	54.30
For 12" dia. Sieves			
Brass	3" (7.6cm)	**04-886D**	26.65
Stainless Steel	3" (7.6cm)	**04-888A**	104.70

Sieve Covers

- Fit all 8 and 12" diameter (20.3 and 30.5cm) sieves

Type	Cat. No.	Each
For 8" dia. Sieves		
Brass	**04-886A**	19.35
Brass with Recessed Ring	**04-881-87**	14.75
Stainless Steel	**04-887A**	36.55
Stainless Steel with Recessed Ring	**04-881-46**	25.95
For 12" dia. Sieves		
Stainless Steel	**04-888B**	53.55

Separator Pan



For use with Fisherbrand* Sieves

- Brass
- Half-height receiver with extended rim
- Place between stacked 8" diameter (20.3cm) sieves to test two or more samples simultaneously

Dimensions	Cat. No.	Each
8 dia. × 1⅞" deep (20.3 × 4.8cm)	**04-887-10**	30.80

Sieve Certification Services

Certification services offered for new or used sieves

Certification Service

- Order when purchasing new sieves
- Uses a computerized video imaging system to verify that each sieve opening meets ASTM* and ISO specifications within a tolerance of ±0.1 microns
- Sieves are then serialized and supplied with documentation, tracable to NIST*, detailing the openings and the wire diameters of the mesh

Recertification Services

- Offer the same examination and documentation processes for in-use sieves as for new sieves
- Contact your Fisher Scientific Customer Service Representative for the recommended sieve aperture/recertification schedule

Description	Cat. No.	Each
Sieve Certification Service	**04-909-16**	80.45
Sieve Recertification Service	**04-909-17**	78.10

"Mesh" Series Sieves

5" diameter (12.7cm) sieves

- 10- to 80-mesh sieves made of brass; 100- to 200-mesh sieves of phosphor bronze
- Gauze is spun into brass frames for tight, nonsagging sieve surfaces
- Frames withstand rough use and fit together for stacking
- 5 I.D. × 1½"H (12.7 × 3.8cm)

14-295F

Mesh	Cat. No.	Each
10	**14-295A**	72.80
20	**14-295B**	72.87
40	**14-295C**	72.87
60	**14-295D**	72.87
80	**14-295E**	72.87
100	**14-295F**	81.91
120	**14-295G**	85.73
150	**14-295J**	108.95
200	**14-295M**	96.34

ACCESSORIES

For use with "Mesh" Series Sieves

Cover

- Polished brass

Cat. No.	Each
14-300A	21.15

Receiver

- Polished brass 1" deep (2.5cm)

Cat. No.	Each
14-300B	35.60

SOLVENT RECOVERY

Kontes* Solvent Recovery Systems

Protect environment, employees, and data quality

07-770-1

- Eliminate up to 98% of toxic organic solvent vapor emissions such as methylene chloride, hexane, acetone, ether, and more†
- Recover solvent for recycling
- Comply with emission laws and waste reduction requirements
- Three-position linear systems use condenser, chambers, and gravity drains to return solvent vapors back to liquid state for recycling
- Systems feature heavy-duty glassware with precision-ground ball-and-socket joints for easy assembly and disconnect
- All glassware is compatible with existing lab glassware and equipment
- Two systems available: Linear Solvent Recovery System, and Linear Gravimetric Solvent Recovery System for Oil and Grease (Method 413.1)
- **Linear Solvent Recovery System** with Kuderna-Danish glassware includes all standard components listed above, plus three column tops. K-D Evaporator Concentrator glassware includes a 10mL concentrator tube, a 500mL evaporator flask, and a size 121 distilling column.
- **Linear Gravimetric Solvent Recovery System** includes all standard components listed above, plus a lightweight flask, a flask top adapter, and an injection port tube. (These components are available in a gravimetric flask assembly package; contact your Fisher Scientific Customer Service Representative for details.)

ORDERING INFORMATION:

Components and accessories for these systems are available online

INCLUDES:

Standard components for all Kontes Solvent Recovery Systems include three-position main recovery manifold, three 150mm primary condensers, PTFE extender tubing (7/16" I.D. × 3/8" O.D. × 6½'L [1 × 1 × 198.1cm]), water transfer tubing (7/16" I.D. × 3/8" O.D. × 7'L [1 × 1 × 213.4cm]), three 500mL water bath flasks, and six size 18A pinch clamps. Also come with three-plac 115V heating mantle and support, 115V mantle power controller, and splash guard.

NOTE:

Proper ventilation under a hood is strongly recommended.

Description	Mfr. No.	Cat. No.	Eac
Linear Solvent Recovery System with Kuderna-Danish Glassware	545000 0120	**07-770-10**	3863.2
Linear Gravimetric Solvent Recovery System	545200 0120	**K545200-0120**	3529.6

† *When used with a refrigerant to cool system water to 4°C (39.2°F).*

ACCESSORIES

Components and accessories for Kontes* Solvent Recovery Systems are available.

Visit www.fishersci.com and search for Kontes Solvent Recovery

*Trademark. See Trademark Reference.

SPATULAS

WITH SPOONS

14-375-10

*Fisherbrand** Spoonula* Lab Spoons

or transferring crystalline materials, crushing umps, scraping, or chopping

Polished stainless steel
Snag-free
Spoon end: 1¼L × 9⁄16"W (32 × 14mm)
Spatula end: 2L × 5⁄16"W (51 × 7.9mm)

OMPLIANCE:
STM* (F899-84) standard stainless steel; FDA-certified material

ength	Cat. No.	Pack of 6	Case of 12 Pack
" (23cm)	**14-375-10**	46.37	475.54

14-375-20

*Fisherbrand** Spoonulet* Lab Spoons

horter version of versatile 14-375-10

Polished stainless steel
Spoon end: 1¼L × 9⁄16"W (32 × 14mm)
Spatula end: 2L × 5⁄16"W (51 × 7.9mm)

ength	Cat. No.	Each	Pack of 12
¼" (18.4cm)	**14-375-20**	10.38	103.75

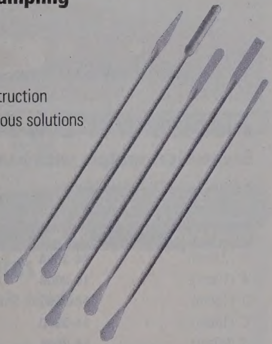
rning* Sterile Spatulas

molecular biology applications, lyophilized samples, d contamination-free sampling

ngle-use and disposable
Nase-/DNase-free format
ntistatic
gid, nontoxic polystyrene construction
ood chemical resistance to aqueous solutions

DERING INFORMATION:
vidual packages have been ation sterilized.

MPLIANCE:
pyrogenic certification.
et USP Class VI Requirements.



14-245-95, -98, -97, -99, -96

cription	Blade Length	Mfr. No.	Cat. No.	Case of 100
ered blade	9⅝" (24.6cm)	3003	**14-245-95**	187.14
all spoon	9¼" (23.4cm)	3004	**14-245-96**	187.14
nded end	9¾" (24.7cm)	3005	**14-245-97**	187.14
coop	9¾" (24.7cm)	3006	**14-245-98**	187.14
end	9¾" (24.7cm)	3007	**14-245-99**	187.14

14-345B

CoorsTek* Porcelain Spoons and Spatulas

Combination spatula and spoon

- Porcelain avoids scratching delicate surfaces

Length	Mfr. No.	Cat. No.	Each	Case of
3⅞" (9.9cm)	60477	**14-345B**	20.69	24/397.18
5" (12.3cm)	60478	**14-430A**	23.26	24/446.58
6½" (16.5cm)	60480	**14-430B**	32.74	12/357.19
7⅝" (19.5cm)	60481	**14-345C**	40.21	12/438.68
10" (25.4cm)	60483	**14-345D**	61.09	8/432.52

Scienceware* Ellipso-Spoon* Spatula

Contoured to fit hard-to-reach corners

- Extracts crystals, granulated and solid substances, thick liquids, and delicate materials
- Stainless steel
- Flameproof, autoclavable, and impervious to boiling water

14-375 Series

Length	Mfr. No.	Cat. No.	Each	Case of 12
5⅞" (15cm)	36806 0015	**14-375-55**	20.79	213.20
8¼" (21cm)	36807 0021	**14-375-56**	23.25	238.49
11 13⁄16" (30cm)	36808 0030	**14-375-57**	40.77	418.12
15¾" (40cm)	36809 0040	**14-375-58**	50.02	513.00

14-356-10

Stainless-Steel Spoon and Spatula

Nickel-stainless-steel wire with TFE coating

- Spoon end: 1¼L × 9⁄16"W (32 × 14mm)
- Spatula end: 2L × 5⁄16"W (51 × 7.9mm)

Length	Cat. No.	Each	Pack of 12
9" (23cm)	**14-356-10**	20.46	217.28

WITH SCRAPERS

14-373

*Fisherbrand** Chemi-Scraper* Spatulas

No rusting or sticking

- Type 18-8 nickel stainless steel with bright satin finish
- Stem dia.: 0.156" (4mm)
- One rounded and one square end, each approx. 2L × 5⁄16"W (51 × 7.9mm)

Length	Cat. No.	Each	Pack of 12
7" (18cm)	**14-373**	12.46	127.84

14-373-25A

*Fisherbrand** Spatula/Scraper

For heavier work

- Type 18-8 nickel stainless steel
- Stem dia.: 0.156" (4mm)
- Double flat ends: one rounded, one squared
- Each end approx.: 3L × ¾"W (76 × 20mm)

Length	Cat. No.	Each	Pack of 12
12" (31cm)	**14-373-25A**	25.35	260.00
18" (46cm)	**14-373-25B**	30.53	313.12

14-105A

Rubber Policemen with Angled Edge

Convenient scrapers with angle-shaped edge

- Scrape precipitate from container
- Hard rubber with angled edges
- Use section of glass rod as handle

For Rod Diameter	Cat. No.	Pack of 72
⅛" (3mm)	**14-105A**	32.94
3⁄16" (4.8mm)	**14-105B**	32.94

14-106C, 14-106B, 14-106A

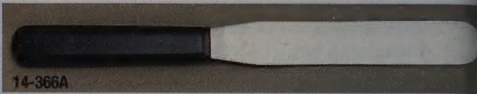
Saint-Gobain* Chemware* PTFE Fluoropolymer Resin Policemen

For delicate transfer or scraping of precipitates and residues

- Chisel tip and diagonal cut end
- Resist corrosion
- Inert and noncontaminating
- Heat resistant to 288°C (550°F)

Length	Mfr. No.	Cat. No.	Each
4" (10cm)	D1069092	**14-106A**	6.65
6" (15cm)	D1069093	**14-106B**	7.12
8" (20cm)	D1069094	**14-106C**	8.57

WITH HANDLES



14-366A

*Fisherbrand** Handi-Hold* Spatula

Resists deterioration by boiling water, acids, and most solvents

- Stainless-steel blade
- Polyvinylchloride plastic handle

Blade Length	Cat. No.	Each	Pack of 12
3" (7.6cm)	**14-366A**	12.46	127.84
4" (10cm)	**14-366B**	12.83	131.55
5" (13cm)	**14-366C**	15.42	158.12
6" (15cm)	**14-366D**	16.14	165.51
8" (20cm)	**14-366E**	18.43	188.98

14-365A

*Fisherbrand** Spatula with Stainless-Steel Blade

Bright finish—won't rust or corrode

- Materials won't stick to it
- Riveted hardwood handle

Blade Length	Cat. No.	Each	Pack of 12
3" (7.6cm)	**14-365A**	12.76	130.92
4" (10cm)	**14-365B**	12.76	130.92
5" (13cm)	**14-365C**	14.45	148.22
6" (15cm)	**14-365D**	16.86	172.94
8" (20cm)	**14-365E**	22.46	230.37
10" (25cm)	**14-365F**	32.10	329.18
12" (31cm)	**14-365G**	36.07	369.93

14-360A

*Fisherbrand** Low-Priced Spatula

Economical spatula with handle

- Flexible carbon-steel blade
- Riveted hardwood handle

Blade Length	Cat. No.	Each	Pack of 12
3" (7.6cm)	**14-360A**	11.55	115.48
4" (10cm)	**14-360B**	12.76	130.92
5" (13cm)	**14-360C**	12.76	130.92
6" (15cm)	**14-360D**	16.08	164.88
8" (20cm)	**14-360E**	18.55	190.2
10" (25cm)	**14-360F**	23.30	239.0
12" (31cm)	**14-360G**	27.10	277.9

14-371A

*Fisherbrand** Weighing Spatula

asily handles materials to be weighed

- Flexible, tapered blade
- Stainless-steel with bright satin finish
- Riveted hardwood handle

lade Length	Cat. No.	Each	Pack of 12
" (7.6cm)	**14-371A**	11.86	121.65
" (10cm)	**14-371B**	13.49	138.34
" (13cm)	**14-371C**	15.42	158.12

4-357Q

*Fisherbrand** Scoopula* Spatula

ig out materials, core, and stir easily

- Minimizes spilling in handling small amounts of material
- More versatile
- One pointed end, one blunt end
- Stainless steel
- Won't rust

verall Length	Cat. No.	Pack of 6
" (15cm)	**14-357Q**	16.43

14-358

coopula* Handles

Wooden handle fastens to either end of Scoopula patula

- Extends reach
- Gives added prying power

RDERING INFORMATION:

verall length (with blade): 10" (25cm)

verall Length	Cat. No.	Each
" (10cm)	**14-358**	6.01

355B

ard Rubber Spatulas

nsparking, wide, flexible blade

- ntegral handle
- an be used with materials that affect metals adversely
- Vashable
- terilizable

de L × W	Overall Length	Cat. No.	Each	Pack of 12
¾" (10.2 × 1.9cm)	7½" (19cm)	**14-355A**	23.89	244.99
1 1⁄16" (15.2 × 2.9cm)	10¼" (26cm)	**14-355B**	36.22	371.51
1⅜" (20.3 × 3.5cm)	13⅛" (33cm)	**14-355C**	34.72	356.08

MICROSPATULAS

21-401-15

*Fisherbrand** Handi-Hold* Microspatula

Cushion-grip vinyl handle for easy holding

- Spoon-like stainless-steel blade
- Blade: ¾L × 3⁄16"W (19 × 4.8mm)

Length	Cat. No.	Pack of 12	Case of 12 Pack
5½" (14cm)	**21-401-15**	61.41	652.19

21-401-10

*Fisherbrand** Microspatula

Double-ended microspatula

- Stainless-steel blade
- One end tapered to ⅛" (3.2mm); one end rounded
- Blades approx: 2L × 5⁄16"W (51 × 7.9mm)

Length	Cat. No.	Pack of 12	Case of 12 Pack
8" (20cm)	**21-401-10**	50.94	522.50

21-401-18

*Fisherbrand** Nickel-Stainless-Steel Microspatula with TFE Coating

- Nickel-stainless-steel wire: 0.11" dia. (2.7mm)
- Two flat ends: one rounded, one tapered to approximately ⅛" wide (3.2mm)
- Blades approx: 2L × 5⁄16"W (51 × 7.9mm)

Length	Cat. No.	Each	Pack of 12
8" (20cm)	**21-401-18**	13.28	141.08

21-401-5

*Fisherbrand** Microspatula with Rounded Ends

Thin, flexible, and rounded blades

- Stainless steel
- Double flat ends
- Blade approx: 2L × 5⁄16"W (51 × 7.9mm)

Length	Cat. No.	Pack of 12	Case of 12 Pack
8" (20cm)	**21-401-5**	48.95	502.09

21-401-20

*Fisherbrand** Microspatula with Flat-Ended Blade

Long, flat blade with comfortable handle

- Stainless-steel blade
- Cushion-grip vinyl handle
- Blade: 2L × 5⁄16"W (51 × 7.9mm)

Length	Cat. No.	Pack of 12	Case of 12 Pack
5½" (14cm)	**21-401-20**	48.95	502.09

*Fisherbrand** Microspatula Set

Set of four with plastic, color-coded handles

- Dispense and transfer samples during weighing
- Apply micro amounts of adhesive for tacking down specimens, spreading paste, and mixing granular samples
- Flat-ended stainless-steel blades
- Four sizes: 0.1, 0.3, 0.5, and 1.0mm
- Overall length: 2½" (6cm)

14-372-5

Cat. No.	Pack of 4
14-372-5	35.06

21-401-25B

*Fisherbrand** Hayman Style Microspatulas with V-Shaped Spoon

Double-ended microspatula with spoon

- Spatula end has slightly rounded bent tip and sharpened end
- Nickel-stainless-steel blade with glazed finish
- Stem dia.: 0.103" (2.6mm)
- Spatula: 1½L × ⅛"W (38 × 3.2mm)
- V-shaped formed spoon: ½L × 5⁄64"W (13 × 1.6mm)

Length	Cat. No.	Each	Pack of 12
6½" (17cm)	21-401-25B	11.06	110.58

21-401-25A

*Fisherbrand** Hayman Style Microspatula

Meets ASTM* E-124-94

- Nickel-stainless-steel blade with glazed finish
- For fine operations or no-spill carrying of small quantities
- Stem dia.: 0.103" (2.6mm)
- Spatula end: 1¼L × ⅛"W (32 × 3.2mm)
- Spoon end: ½L × ⅛"W (13 × 3.2mm)

Length	Cat. No.	Each	Pack of 12
6¼" (16cm)	21-401-25A	11.06	110.58

21-401-50A

Saint-Gobain* Chemware* Hayman Style Microspatulas with PTFE-Coated Ends

Extra heavy-duty PTFE-coated ends

- Nickel stainless steel

ORDERING INFORMATION:

- Stem dia.: ⅛" (3.2mm)
- Spatula: 1½L × 0.16"W (38 × 4mm)
- Spoon: ½L × 1⁄16"W (13 × 1.6mm)

Length	Mfr. No.	Cat. No.	Each
6" (15cm)	D1069292	21-401-50A	14.16

21-401-50B

Saint-Gobain* Chemware* Microspatula

Double flat ends won't scratch surfaces

- No buildup on coated surfaces
- Nickel stainless steel
- Two PTFE-coated flat ends: one rounded, one tapered to approx. 1⁄16" wide (1.6mm)
- Blades approx.: 1¾L × ¼" (44 × 6mm) at widest part

Length	Mfr. No.	Cat. No.	Each
8" (20cm)	D1069294	21-401-50B	13.07

SEMIMICRO

14-374

*Fisherbrand** Semimicro Spatula with One Tapered End, One Rounded End

Transfer small quantities from semimicro centrifuge and test tubes

- Stainless steel
- Tip thickness: 0.035" (0.89mm)
- One end tapered to 0.14" (3.5mm) rounded tip for use in conical-bottom tubes
- Rounded end has ¼" (6.6mm) rounded tip for regular tubes

Length	Cat. No.	Each	Pack of 12
7" (18cm)	14-374	10.31	103.13

14-356-8

*Fisherbrand** Nickel-Stainless-Steel Semimicro Spatula with TFE Coating

Two flat ends: one round, one square

- Coated nickel-stainless-steel wire: 0.16" dia. (4mm).

Length	Cat. No.	Each	Pack of 12
7" (18cm)	14-356-8	17.77	187.79

14-372-1A

Saint-Gobain* Chemware* Semimicro Spatulas

For ultrapurity, chemical inertness, or loss of critical quantities applications

- Nickel stainless steel
- One flat end, one spoon end
- Both ends have heavy-duty coatings of PTFE
- Dia.: 0.185" (4.7mm)

Length	Mfr. No.	Cat. No.	Eac
9" (23cm)	D1069296	14-372-1A	22.7

SPECIFIC GRAVITY

*isherbrand** Pycnometer

or specific gravity determinations of semifluids

hree-part aluminum alloy construction

03-247Q Construction

- Withstands pressure needed to expel air from viscous material and fill pycnometer completely
- Three-part construction allows close manufacturing tolerances, prevents material under test from being forced into threads
- Parts are cut from solid bar stock to avoid pits or cavities

03-247Q Filled with Sample

RDERING INFORMATION:

leasures 2 dia. × 1"H (5 × 2.5cm)

pprox. Capacity	Cat. No.	Each
1.5mL	**03-247Q**	111.18

max* Specific Gravity Bottle for ment, Sand

d to obtain specific gravity of cement, sand, other e materials

- Chatelier design body holds approximately 250mL; al bulb in neck holds 17mL
- aduated below bulb from 0 to 1.0mL; two extra 0.1mL es above 1.0 and below 0
- eck graduated from 18 to 24mL in 0.1mL divisions
- lerance ±0.05mL

03-270

ERING INFORMATION:

 $ 13 stopper.

MPLIANCE:

plies with ASTM* E 694 and C 188.

No.	Cat. No.	Each	Case of 2
5 24	**03-270**	144.30	209.10

max* Specific Gravity Bottle for ls, Tars

termines specific gravity of various oils, s, cements, varnishes

- ubbard style bottle with $ 24/12 ground-glass stopper
- as 1⁄16" (1.6mm) opening

01-710

ERING INFORMATION:

sures 27 O.D. × 82mmH

MPLIANCE:

M* D 70, AASHTO T43, ASTM D 1963, M D 115

acity	Mfr. No.	Cat. No.	Pack of 2	Case of 6 Pack
L	15110 24	**01-710**	208.21	911.88

Kimax* Specific Gravity Bottles, Pycnometer

Flask with side tube and cap plus thermometer

- Capacity within 10% nominal capacity etched on flask
- Side tube cap has small vent for air escape
- Thermometer to record temperature during determinations has range of 14° to 38°C in 0.2° graduations, accurate to ±0.2°C
- $ 10/18 thermometer joint
- $ 5/12 cap
- Bodies numbered for easy identification
- 50mL size is for specific gravity of pigments according to ASTM* D 153

03-230A

Capacity	Mfr. No.	Cat. No.	Each
10mL	15123R 10	**03-230A**	159.26
25mL	15123R 25	**03-230B**	159.26
50mL	15123R 50	**03-230C**	165.61

Pyrex* Specific Gravity Bottle for Viscous Fluids

For specific gravity testing with viscous fluids, semisolid bitumens and emulsions

- Modified Hubbard-Carmick design
- Erlenmeyer form

01-716

ORDERING INFORMATION:

$ 24/12 ground-glass stopper. Measures 40 dia. × 57mmH.

COMPLIANCE:

For use in accordance with ASTM* D 70, D 1429 and D 115.

Capacity	Mfr. No.	Cat. No.	Each	Case of 12
25mL	1620 25	**01-716**	102.91	868.11

WARNING

The products indicated contain mercury. Don't put products containing mercury in the trash. Products containing mercury are to be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

SPECTROMETERS

Thermo Scientific* Spectronic* IR100 FT-IR Spectrometer

Compact, reliable, easy to use

Ideal for sample testing, quality assurance and control, and teaching applications. Built-in software, with intuitive user interface, speeds analysis and minimizes training.

14-200-12

Optical Design

- Quadrascan* interferometer provides exceptional stability
- Cornercube* optics operate reliably without complicated electronics

Software and Display

- Built-in Encompass* software and integrated color LCD screen eliminate the need for a separate computer
- Small footprint saves valuable lab space
- Comes with software and slide-card mount for standard transmission accessories

Security and Diagnostics

- User log-in feature protects data and methods, and controls access to the system
- Self-test diagnostics and variable experimental set-up options ensure proper parameters and system conditions are available

Analysis and Reporting Functions

- Results are easily analyzed with processing functions such as peak picking, peak integration, and baseline correction
- Creation of user libraries allows matching of unknown spectra to reference spectra
- Standardized templates make report creation and generation fast and easy
- Standardized formats are available for saving and sharing data

Parts and Accessories

- Purge fittings are standard; use is optional
- Foundation Series* sample compartment accepts a variety of Swap-Top* modules for expanding sampling capabilities
- Laser, source, detector, desiccant, and power supply are user replaceable

ORDERING INFORMATION:

Additional accessories for IR100 FT-IR can be found on our Web site.

WARRANTY:

One year

SPECIFICATIONS

Model	IR100
Spectral Range	7800 to 350cm^{-1}
Spectral Resolution	124 to 4cm^{-1}
Detector	DTGS
Beamsplitter	Germanium-on-potassium-bromide substrate (Ge on KBr)
Focusing Optics	First-surface, diamond-turned aluminum mirrors
Noise	<4.3 × 10^{-5} Absorbance Units
Display	800 × 600 color VGA, 5W × 3⅞"H (13 × 9.8cm) LCD screen
Dimensions, L × W × H	14 × 19 × 17" (35.6 × 48.3 × 43.2cm)
Weight	35 lb. (16kg)
Electrical Requirements	110V 60Hz, 1.3A

Mfr. No.	Cat. No.	Each
960M0032FS	**14-200-12**	12,610.97

ACCESSORIES

Disposable IR Cards for IR100 FT-IR Spectrometer

- For quick analysis of many sample types
- Polyethylene or polytetrafluoroethylene
- Two sampling areas

Description	Mfr. No.	Cat. No.	Pack of 25
Polyethylene	869 0020 300	**14-200-18**	115.00
Polytetrafluoroethylene	869 0020 301	**14-200-19**	120.00

Starter Kits for IR100 FT-IR Spectrometer

Economy Starter Kit includes:

- Econo-Press* with wrench
- 100g potassium-bromide powder, 4 oz. (118mL) Nujol, and 1 oz. (29.5mL) Fluorolube*
- Mortar and pestle
- Magnetic film holder
- 8" (20.3cm) spatula
- Presslok* holder for 24mm windows, four 25mm potassium-bromide windows, and one each drilled and undrilled 32mm potassium-bromide windows
- Demountable liquid cell holder
- 10mm IR quartz cuvet and holder

Advanced Starter Kit includes:

- Quik Handi-Press* with die set
- Pellet holder
- 100g potassium-bromide powde 4 oz. (118mL) Nujol, and 1 oz. (29.5mL) Fluorolube
- Mortar and pestle
- Magnetic film holder
- Presslok holder for 24mm windows, four 25mm potassium-bromide windows, two 25mm barium-fluoride windows, and two each drilled and undrilled 32mm potassium-bromide windows
- Demountable liquid cell holder

Description	Mfr. No.	Cat. No.	Each
Economy Starter Kit	869 0022 501	**14-200-22**	1225.00
Advanced Starter Kit	869 0022 500	**14-200-23**	2134.66

Swap-Top Modules for IR100 FT-IR Spectrometer

Three styles available for expanded sampling capabilities.

Multi-Bounce HATR* Swap-Top Module

- For liquid or solid samples
- Zinc-selenide crystal plate, easily removable for cleaning
- Flat plate and trough

SpeculATR* Swap-Top Module

- Combines single-reflection ATR and specular reflection sampling techniques
- Zinc-selenide crystal for powder, liquid, solids, paste, and gel samples

Thunderdome* Swap-Top Module

- Tiltable pressure tower for single-reflection ATR
- Germanium crystal for enhanced chemical resistivity of liquids, solids, powders, pastes, and gels

Swap-Top Module	Mfr. No.	Cat. No.	Each
Multi-Bounce HATR	869 0072 200	**14-200-15**	2600.00
SpeculATR	869 0071 200	**14-200-16**	1395.00
Thunderdome	869 0074 100	**14-200-17**	3654.56

LOOKING FOR ACCESSORIES?

To find more accessories for the IR100 Spectrometer,

Visit www.fishersci.com and search for IR100 Accessories

*Trademark. See Trademark Reference.

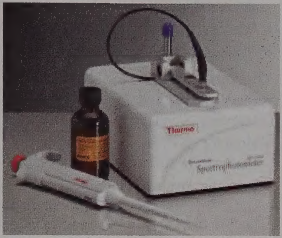
SPECTROPHOTOMETERS

BIOSPECTROPHOTOMETERS

ermo Scientific* NanoDrop* ND-00 UV-Vis Spectrophotometer

NEW

signed to analyze 1μL samples with high accuracy d reproducibility



ND-1000 (pipetter sold separately)

- rovides large dynamic range: to 3700ng/μL (dsDNA) on a ngle sample
- atented sample retention ystem eliminates the need r cuvets and capillaries
- btain measurements within seconds
- ample is recoverable—pipet rectly onto measurement urface
- igh absorbance capability eliminates the need for NA/RNA or protein dilutions
- mall footprint (20 ×14cm) with easy setup
- oftware designed for life science applications

PLICATIONS:
leic Acid Concentration; roarray; Protein Concentration; ctrophotometry; Cell Density

REQUIRED ACCESSORIES:
Computer Requirements: Windows* 2000, XP, Vista; 233MHz processor with free USB port, CD ROM Drive, 32MB RAM, 40MB of free hard drive

DERING INFORMATION:
110 or 230V.

WARRANTY:
One year

ECIFICATIONS

hlengths	1 and 0.2mm
velength Range	220-750nm
velength Accuracy	1nm
orbance Range	0.02-75 (10mm equivalent abs)
ht Source	Xenon flash
ector Type	2048-element linear silicon CCD
ight	3.5 lb. (1.6kg)

cription	Cat. No.	Each
oDrop ND-1000	**ND-1000**	call for pricing

Thermo Scientific* NanoDrop* ND-8000 UV-Vis Spectrophotometer

NEW

Measures eight 1μL samples simultaneously

ND-8000 (pipetter sold separately)

- Flexibility to measure a single sample or up to eight samples at a time
- Provides large dynamic range: 2 to 3700ng/μL (dsDNA) on a single sample
- Patented sample retention system eliminates the need for cuvets and capillaries
- Obtain measurements within 20 seconds
- Pipet directly onto measurement surface
- High absorbance capability eliminates the need for DNA/RNA or protein dilutions
- Small footprint (32 ×24cm) with easy setup
- Software designed for life science applications

APPLICATIONS:
Nucleic Acid Concentration; Microarray; Protein Concentration; Spectrophotometry; Cell Density

REQUIRED ACCESSORIES:
Computer Requirements: Windows* 2000, XP, Vista; 800MHz processor with free USB port, CD ROM Drive, 128MB RAM, 100MB of free hard drive

ORDERING INFORMATION:
For 110 or 230V.

WARRANTY:
One year

SPECIFICATIONS

Pathlengths	1mm and 0.2mm
Wavelength Range	220-750nm
Wavelength Accuracy	1nm
Absorbance Range	0.02-75 (10mm equivalent abs)
Light Source	Xenon flash
Detector Type	2048-element linear silicon CCD
Weight	7.5 lb. (3.4kg)

Description	Cat. No.	Each
NanoDrop 8000	**ND-8000**	call for pricing

LOOKING FOR FLUOROSPECTROMETERS?

Thermo Scientific* NanoDrop* ND-3300 Fluorospectrometer is a space-saving fluorometer requiring only a 1μL sample.

Visit www.fishersci.com and search for NanoDrop ND-3300

ACCESSORIES

alibration Fluid

otassium dichromate ($K_2Cr_2O_7$) calibration solution or use with NanoDrop* Spectrophotometers

- Aqueous solution confirms spectrophotometer calibration
- Ten times more concentrated compared to other $K_2Cr_2O_7$ calibration solutions

escription	Quantity	Cat. No.	Each
alibration Fluid	0.5mL ampule	**CF-1**	call for pricing

Conditioning Kit

For use with Thermo Scientific* NanoDrop* Spectrophotometers

The kit is useful for re-conditioning sample measurement pedestals to a hydrophopic state.

INCLUDES:
Polishing compound and applicators

Description	Cat. No.	Each
Conditioning Kit	**PR-1**	call for pricing

Thermo Scientific* BioMate* Spectrophotometers

Provide fast and accurate purity and concentration measurements

Dedicated tests set up for: DNA ratio and concentration with or without scanning; protein standard curves for Bradford, Lowry, BCA, and Biuret methods; direct UV concentrations of dsDNA, ssDNA, ssRNA, and oligonucleotides; protein concentrations using Warburg-Christian method;and cell growth.

14-298-2077, 14-298-2074 (Front, Back)

- Up to 40 test methods can be stored
- Customizable bootup screen shows preselected protocols
- Built-in performance validation program measures wavelength and photometric accuracy, noise, and stray radiant energy
- An oligo calculator performs absorptivity, factor, and theoretical Tm estimations from base sequences
- The included software also allows use of the units as conventional spectrophotometers

Thermo Scientific BioMate 3

- Ideal for DNA/RNA and protein analysis
- Optional built-in 3" (7.6cm) graphical printer shows test parameters, graph, and data
- Optional automatic six-position cell holder speeds up cell growth measurements or standard curve preparations
- Unique cell-correction software eliminates the need for matched cuvets

Thermo Scientific BioMate 3 with nanoCell

- Measure samples from submicroliters to milliliters using the same instrument
- NanoCell accessory requires no alignment; easy to insert and remove
- Measures DNA concentrations from 4.0 to 4000ng/μL

Thermo Scientific BioMate 5

- Gives added flexibility with double-beam optics and advanced scanning capability
- Ideal for handling applications such as calculation of enzyme-rate reactions or substrate concentrations
- Features advanced calibration curve generation, multiwavelength capability, and unlimited user method and data storage—either on built-in disk drive or by export to PC or Macintosh*
- Available with thermostatted seven-cell programmer which permits rate measurements in parallel
- Operates with 10mm cells down to 5μL volume

Model	**BioMate 3**	**BioMate 5**
Optical System	Split-beam, quartz-coated optics	Double-beam, quartz-coated optics
Lamp Type	Long-life xenon	Deuterium and tungsten
Wavelength Range	190–1100nm	190–1100nm
Wavelength Accuracy	±1.0nm	±1.0nm
Wavelength Repeatability	±0.5nm	±0.2nm
Spectral Bandwidth	5nm	2nm
Scanning	Survey scan (100nm increments)	Variable speed (200–1000nm/min.)
Stray Light	<0.1%T at 220 and 340nm	<0.05%T at 220 and 340nm
Absorbance Accuracy	0.5% or 0.005A, whichever is greater, up to 2A	±0.005A at 1A
Display	320 × 240 pixel LCD; 90 × 60mm	VGA-quality graphics LCD; 115 × 85mm
Computer Interface	Bidirectional RS-232-C	Bidirectional serial RS-232-C; parallel port
Printer Interface	Standard bidirectional RS-232-C or built-in 76mm wide graphical printer option	Standard Centronics parallel or built-in 110mm wide graphical printer option
L × W × H	16 × 13 × 9" (41.0 × 33.0 × 23.0cm)	15½ × 18 × 8½" (39.5 × 45.5 × 21.5cm)
Weight	19 lb. (8.6kg)	22 lb. (10kg)
Electrical Requirements	100–240V 50/60Hz	100–240V 50/60Hz
Description	Single-Cell Model	----
Cat. No.	**14-298-2081**	----
Each	4321.00	----
Description	Single-Cell Model w/nanoCell Accessory	----
Cat. No.	**14-380-505**	----
Each	7990.00	----
Description	Single-Cell Model w/Printer	----
Cat. No.	**14-298-2082**	----
Each	4754.00	----
Description	Six-Position Cell Holder Model	Seven-Position Cell Holder Model
Cat. No.	**14-298-2073**	**14-298-2075**
Each	4754.00	9448.00
Description	Six-Position Cell-Holder Model w/Printer	Seven-Position Cell Holder Model w/Printer
Cat. No.	**14-298-2074**	**14-298-2077**
Each	5186.00	10,241.00

*Trademark. See Trademark Reference.

ACCESSORIES

Thermo Scientific* BioMate* nanoCell Accessory

Makes sub-microliter solution measurements possible

Use the nanoCell accessory in your spectrophotometer for the ultimate sampling flexibility.

- No alignment required, just insert the nanoCell, load your sample and obtain accurate results
- Removable accessory makes switching between large and small volume measurements fast and easy
- Quartz sample loading area allows you to load samples quickly using a pipet
- Interchangeable 0.2 and 1.0mm pathlengths
- Requires as little as 0.700µL of sample and can measure DNA concentrations from 4.0 to 4000ng/µL
- Quick cleaning with a laboratory tissue allows high sample throughput and excellent sample carryover performance
- Measure sample volumes from sub-microliters to milliliters using the same spectrometer

143-80-500

Description	Pathlength	Cat. No.	Each
nanoCell Accessory	0.2mm	**143-80-500**	3100.00
nanoCell Accessory	1.0mm	**143-80-501**	3100.00
nanoCell Adapter	0.2mm	**143-80-502**	390.00
nanoCell Adapter	1.0mm	**143-80-503**	390.00
nanoCell Accessory with 0.2mm and 1.0mm Pathlength Adapters	0.2mm and 1.0mm	**143-80-504**	3500.00

imadzu* Bio-Mini Spectrophotometer

nplete, compact spectrophotometer suitable for ly use

nology-packed unit provides a broad range of fuctionality, yet is easy ugh for a novice to use. Supports four types of quantitative methods measure protein concentration using coloring reagents and UV rption at 280nm.

- ickly measures the spectrum and displays quantitative results with the uch of a button
- easures absorbance at 600nm to calculate cell count using an entered efficient and dilution ratio
- egral comprehensive nucleic acid and protein analysis modules and andard data acquisition modes
- ilt-in DNA companion program determines molecular weight, molar tinction coefficient, and theoretical melting temperature
- ing the base composition or the base sequence, automatically lculates molecular weight, molar absorption coefficient, and ncentration based on absorbance at 260nm
- eaures the spectrum from 190 to 330nm before calculations to check protein contamination
- ing nearest-neighbor base-pair model is fast and easy
- enu-driven system guides user through the inputs, including chain ngth, salt concentration, and other parameters
- ith optional Kinetics Program Pack (Cat. No. 206-89756-92), Bio-Mini easily customized for a variety of bioscience applications and mpling requirements

LICATIONS:

gned for life science applications. Performs double- and single-stranded and RNA quantification using a variety of editable, preset factors as as oligo-length and sequence-base quantification.

ERING INFORMATION:

sures 15L × 16½W × 10¾"H (38 × 42 × 27cm). For 120V 50/60Hz.

220-92926-00

SPECIFICATIONS

Optical System	Single-beam
Spectral Bandwidth	5nm
Wavelength	
Range	190 to 1100nm
Accuracy	±1.0nm
Repeatability	±0.3nm
Photometric	
Readout	Absorbance, %Transmittance
Range	-0.3 to +3.0A; 0.0 to +200%T
Accuracy (NIST930D filter)	±0.005A at 1.0A (NIST* 930D filter); ±0.003A at 0.5A
Repeatability	±0.002A at 1.0A
Recording Range	-3.99 to +3.99A; -399 to +399%T
Display	6" (15cm) LCD (CFD, adjustable contrast)
Scan Speeds	Wavelength change: 3800nm/min.; Scan: 24 to 1400nm/min.
Noise	<0.0002A (peak-to-peak); 0.0005A (RMS)
Drift (after warmup)	≤0.001A/hr.
Stray Light	<0.05%T at 220.0nm NaI, 340.0nm $NaNO_2$ with UV39 filter
Lamps	Halogen (20w, 2000 hr.); deuterium (socket-type)
Detector	Silicon photodiode
Monochromator	Concave diffraction

Model	Cat. No.	Each
Bio-Mini	**220-92926-00**	5485.79

ACCESSORIES

Multicell Holder

- Holds up to six 10mm square cells at ambient temperature
- Cells not included
- For use with Shimadzu* Bio-Mini and UV-Mini 1240

Cat. No.	Each
206-60605-01	1184.85

LOOKING FOR MORE ACCESSORIES?

Optional attachments and accessories, including an alternate sample compartment, temperature-controlled cell positioners, cell holders, and sippers available separately.

Visit www.fishersci.com and search for Shimadzu* Spectrophotometers

LOOKING FOR EPPENDORF* CUVETES?

See the Cuvets subsection, pg. 1726.

LOOKING FOR MORE ACCESSORIES?

Additional accessories for the Shimadzu* Bio-Mini can be found on pp. 1716-1717.

Eppendorf* BioPhotometer

Combines rapid and reliable analysis with simple opera

Key Features

E6131 000

- Compact unit analyzes DNA, RNA, oligonucleotides, proteins, and bacterial cell density
- Programmed methods include ssDNA,dsDNA, RNA, Oligo, Protein, OD 600,Lowry, Bradford, and BCA (also possible as micromethods)
- Each method has its own key on the easy-to-follow keypad—simply press the key and measurement begins
- Unit automatically stores last 100 results and corresponding data, as well as all calibrations

Additional Features:

- Optional background correction at 320nm for UV methods
- Automatic calculation of sample dilution
- Simple conversion using "conversion" key
- Up to 10 standards for colorimetric processes

ORDERING INFORMATION:

Thermal printer DPU-414, 115V and 230V power supplies for printer, and printer cable sold separately

SPECIFICATIONS

Light Source	Xenon flash lamp
Spectral Range	220–750nm
Wavelengths	230, 260, 280, 320, 562, 595nm
Spectral Bandwidth	5nm: 230 to 320nm; 7nm: 562 to 595nm
Photometric Measuring Range	0.000 to 3.000A
Photometric Accuracy	±1%
Photometric Precision	≤0.5%
Method-dependent Evaluation	Absorbance/concentration using factor; concentration using calibration with 1 to 10 standards; endpoint calibration (1 standard); linear regression (2 to 10 standards); nonlinear regression (3rd degree polynomi 4 or 5 standards), single, double or triple determination Ratio 260/280, ratio 260/230, molar concentration, tot yield; Warburg formula for protein direct A_{280}.
Calibration Memory	For protein methods
Results Memory	For 100 results; absorption and ratio values, sample number, dilution, date, and time.
Printer Interface	RS-232-C, serial
Electrical Requirements	100 to 240V, 50 to 60Hz, 20w (in operation)
L × W × H	12 × 7⅞ × 4" (32 × 20 × 10cm)
Net Weight	6½ lb. (3kg)

Description	Mfr. No.	Cat. No.	Ea
BioPhotometer	952 00 000-4	**E6131 000 012**	4400.
Accessories			
Thermal Printer DPU-414	952 01 015-8	**E0013 608 148**	345.
Power Supply for Printer, 115V	952 01 017-4	**E0013 608 164**	108.
Power Supply for Printer, 230V	952 01 016-6	**E0013 608 172**	108.
Printer Cable	952 01 018-2	**E0013 610 517**	33.

*Trademark. See Trademark Reference.

hermo Scientific* Evolution* 600 /-Vis Spectrophotometers

esigned for laboratories demanding nsitivity and high performance

otal analysis solution for applications naterials science, spectroscopy earch, optics, color analysis, and note measurements with fiber ics.

14-386-400 (PC not included)

ed-sensitive photomultiplier ube (PMT) detector

rue double-beam design

omprehensive calibration routine

uperior wavelength accuracy over entire spectral range

arge sample compartment

Vide beam separation

Vide selection of accessories for demanding samples

C (Local Control) configuration provides full-featured set of UV-Vis oftware on integral monitor

cription	Mfr. No.	Cat. No.	Each
lution 600 Local Control	10600301	**14-386-400**	14,950.00
lution 600 PC, No Software	10600501	**14-386-401**	14,000.00
lution 600 PC w/VISION*pro** software	10600201	**14-386-403**	14,450.00
lution 600 PC w/VISION*security** tware	10600101	**14-386-402**	15,250.00

SPECIFICATIONS

Optical System	Double Beam
Spectral Bandwidth	0.2, 0.5, 1.0, 1.5, 2.0, 4.0nm
Wavelength	
Range	190-900nm
Accuracy	±0.15nm (656.1nm), ±0.3nm for 190-900nm
Repeatability	Peak separation of repetitive scanning of a UV-Vis line source: <0.10nm; Standard deviation of 10 measurements: <0.05nm
Photometric	
Range	>5A
Display	±6.0A
Accuracy	±0.004A at 1A; ±0.006A at 2A; ±0.012A at 3A
Noise (RMS)	<0.00010A at 0A; <0.00015A 1A; <0.00030A at 2A
Scan Speed	1-3800nm/min. w/Data Intervals of 0.05-10nm
Resolution (Toluene/Hexane)	Peak/Trough >2.0, Maximum 0.20nm
Stray Light	198nm: <1.0% T (2A), KCl, EP, June 2005; 2 20nm: <0.010%T NaI; 340nm: <0.0035%T $NaNO_2$
Baseline Flatness	±0.001A (200-800nm), 4.0nm SBW
Data Intervals (Scanning)	10, 5, 2, 1, 0.5, 0.2, 0.1, 0.05nm
Lamp	Deuterium and Tungsten
Detector	Hamamatsu H7732 Photomultiplier tube
Grating	Holographic, 1200 lines/nm, 240nm blazed
Beam Separation	210mm (8.27")
Dimensions	610mm × 530mm × 380mm (24 × 21 × 15")
Electrical Requirements	100-240V, 50/60Hz

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hermo Scientific* Evolution* 300 UV-Vis pectrophotometers

rue double-beam design and long lifetime Xenon mp ensure the most reliable analysis of samples

14-386-404

ge sample compartment ily accommodates over accessories that can be tomized for your laboratory.

g lifetime, quiet Xenon p is guaranteed for three rs of maintenance- performance.

mart Accessories* can e installed and removed ithout restarting ne instrument

ccessories are instantly detected and local control or PC software is onfigured automatically

nique serial number of the accessory is recorded for comprehensive vent logs and audit trail capabilities

lercury lamp accessory provides primary standard for wavelength ccuracy recommended by the USP, EP, and the ASTM*

ll common applications such as scanning, fixed wavelength analysis, nd kinetics, controlled directly from local control software

vailable with VISION*pro** software for general research and QC boratories series or VISION*security** for laboratories requiring 21 FR Part 11 compliance

dditional software for specialized applications is also available

ORDERING INFORMATION:

Overall Dimensions: 21L × 24W × 15"H (530 × 610W × 380mmH)

SPECIFICATIONS

Optical System	Dual-beam, quartz-coated
Spectral Bandwidth	0.5, 1.0, 1.5, 2.0, 4.0nm
Wavelength	
Range	190-1100nm
Accuracy	±0.15nm (546.07 Hg line), ±0.3nm for 190-900nm
Repeatability	Peak separation of repetitive scanning of a Hg line source: <0.10nm, Standard deviation of 10 measurements: <0.05nm
Photometric	
Range	>4A
Accuracy	±0.001A at 1A, ±0.002A at 2A, ±0.005A at 3A
Noise	<0.00015A at 0A; <0.00020A at 1A; <0.00040A at 2A, 500nm, RMS
Scan Speed	1-3800nm/min.
Stray Light	<0.02%T at 220; <0.005%T at 340nm
Lamp	Xenon
Baseline Flatness	±0.001A (200-950nm) 2.0nm SBW
Detector	Silicon photodiode
Monochromator	Modified Ebert monochromator
Electrical Requirements	100-240V, 50/60Hz

Description	Mfr. No.	Cat. No.	Each
Evolution 300 Local Control	10300301	**14-386-404**	13,339.00
Evolution 300 Local Control w/Internal Graphic Printer	10300401	**14-386-405**	13,648.00
Evolution 300 PC, No Software	10300501	**14-386-408**	9995.00
Evolution 300 PC w/VISION*pro* Software	10300201	**14-386-407**	11,511.00
Evolution 300 PC w/VISION*security* Software	10300101	**14-386-406**	12,314.00

Thermo Scientific* Evolution* 60 UV-Vis Spectrophotometers

Flexible, cost-efficient system designed for a wide range of laboratory applications — from routine to research

Highly accurate instrument with fixed 1.0nm bandpass assures full compliance with regulatory requirements. Automatic cell changer interacts with built-in Local Control and PC Control software.

- Cell changer easily removed to accommodate optional accessories
- Compact design saves valuable space for additional laboratory equipment
- Maintenance-free operation including xenon lamp with three-year guarantee

Versatile system choices

- Easy-to-use Local Control embedded software or Thermo Scientific VISION*lite** PC software offers intuitive method setup, analysis, reporting, and calculation capabilities
- Biochemical tests for DNA, RNA and protein are included in the local control embedded software
- PC Control analyzer packages are available for enzymatic food analysis, color, and materials calculations
- Optional Software and Accessories sold separately

ORDERING INFORMATION:

Overall dimensions: 16L x 13W x 9"H (41 x 33 x 23.5cm)

INCLUDES:

Local (LC) or PC-only control; six-position cell changer; single cell holder; AC power cord; spare fuses; protective plastic cover; digital documentation; RS-232-C cable (PC-only configuration)

WARRANTY:

One year

Description	Mfr. No.	Cat. No.	Each
Local Control, 120V	840189600	**14-387-500**	6350.00
Local Control w/Printer, 120V	840189700	**14-387-501**	6750.00
PC Control 120V	840189800	**14-387-502**	5750.00

14-387-500, 14-387-502 (left to right)
(PC not included)

SPECIFICATIONS

Optical System	Dual Beam
Bandwidth	1.0nm
Wavelength	
Range	190–1100nm
Accuracy	±0.80nm
Repeatability	±0.25nm
Photometric	
Range	-0.1 to 3.0A; -0.3 to 125%T
Accuracy	±0.005 at 1A, NIST* filters ±0.010A $K_2Cr_2O_2$
Display	0.1 to 5A
Noise	<0.00025A, 0A; <0.0005A, 1A; <0.0008A, 2A, RMS, 260nm
Scan Speed	10-2800nm/min.
Stray Light	220/340nm: <0.08%T NaI, $NaNO_2$; 198nm: <1%T KCl
Lamp	Xenon with three-year warranty
Detector	Silicon Photodiode

ACCESSORIES

Single-Position Light Sealing Plate

Compatible with Thermo Scientific* Evolution* 60 spectrophotometers

Allows use of Thermo Scientific nanoCell, microcells, and funnel flow-cells without having to raise and lower the sample compartment cover for measurements.

Description	Mfr. No.	Cat. No.	Eac
Single-Position Plate	222-238900	**14-387-505**	150.0

ermo Scientific* Evolution* 100 /-Vis Spectrophotometers

mpact, low-cost system offering superb stability, ecision, and a large sample compartment in a all footprint

14-386-456 (PC not included)

xtensive range of accessories bled with the option of Local rol, or PC-driven configurations, e this instrument ideal for any ratory environment. Powerful ication specific software es the analysis of materials, r, food, and wine easy.

esigned and built to withstand the demanding conditions found in ultiple user laboratories

ses the same optical technology found in more advanced systems

asy-to-use Local Control software

uartz-coated and sealed optics, a holographic grating, and stepping onochromator drive ensure high quality data

ailable with or without internal graphic printer

DERING INFORMATION:

rall Dimensions: L × W × H: 15½L × 18W × 8½"H (395 × 455 × 215mm).

LUDES:

l Control software, thermostatted rotary seven-cell changer in sample tion, 10mm path single cell holder in reference beam

RRANTY:

year

ECIFICATIONS

ical System	Double-beam, quartz-coated
ctral Bandwidth	2nm
velength	
nge	190 to 1100nm
curacy	±1.0nm
peatability	±0.2nm (200-500nm)
tometric	
nge	-3 to 6A
curacy	±0.005 at 1A (Typical ± 0.0013A)
se (Peak-to-peak)	<0.0003A (Typical <0.0002A)
se (RMS)	<0.0001A
y Light	<0.05%T at 220nm and 340nm (Typical 0.03%T)
bility	<0.001A/hr. (Typical <0.0003A/hr.)
p	Deuterium/Tungsten
ector	Photodiode
ochromator	Seya Namioka monochromator; Grating-based (1200 lines/mm)
lay	LCD: 87 × 115mm, VGA graphics
uts	RS-232 (computer), Centronics Parallel (printer), 0-1V Analog (recorder)
trical Requirements	100-240V, 50/60Hz

cription	Mfr. No.	Cat. No.	Each
lution 100 Local Control	10100101	**14-386-456**	8853.00
lution 100 Local Control ternal Graphic Printer	10100201	**14-386-457**	9379.00

ACCESSORIES

Raised Sample Compartment Cover

Accessory Cover for Thermo Scientific* Evolution* 100 Spectrophotometer

- Required for use of test tubes >60mm in height

Description	Mfr. No.	Cat. No.	Each
Raised Sample Cover	9423UV99220E	**14-386-459**	198.00

Thermo Scientific* VISION*pro** Software

Designed for general research and QC laboratories

- For use with Thermo Scientific Evolution* 100, 300 and 600 UV-Vis Spectrophotometers
- Performs Scan, Fixed Wavelength Analysis, Quantification and Multi-Component Analysis
- Produces spreadsheet results table
- Arranges data easily with report composer

INCLUDES:

User Manual and RS-232-C cable (14-386-435)

REQUIRED ACCESSORIES:

Computer Requirements: Microsoft Windows* 2000 or XP Professional, plus PC with CD-ROM drive

Description	Mfr. No.	Cat. No.	Each
Single License	10040101	**14-386-430**	804.00
5 User License	10040121	**14-386-431**	3750.00

Thermo Scientific* VISION*life** Software

Designed for life science and general research laboratories that perform kinetics experiments and DNA melting assays

- For use with Thermo Scientific Evolution* 100, 300 and 600 UV-Vis Spectrophotometers
- Use with Thermo Scientific VISION*pro** or Thermo Scientific VISION*security** software to monitor and calculate reaction kinetics and perform DNA melting experiments

INCLUDES:

User Manual

REQUIRED ACCESSORIES:

Thermo Scientific VISION*pro* (14-386-430, 14-386-431) or Thermo Scientific VISION*security* (14-386-428, 14-386-429) PC software

Description	Mfr. No.	Cat. No.	Each
PC Software	10040201	**14-386-432**	643.00

ACCESSORIES

Thermo Scientific* VISION*security** Software

Designed for general research and QC laboratories requiring 21 CFR Part 11 compliance

- For use with Thermo Scientific Evolution* 100, 300 and 600 UV-Vis Spectrophotometers
- Multiple security features include: same log-in and password used to log into Windows*, customizing each user profile, electronic signatures with full audit trails and traceability
- Performs Scan, Fixed Wavelength Analysis, Quantification and Multi-Component Analysis
- Produces spreadsheet like results table
- Arranges data easily with report composer

INCLUDES:

Thermo Scientific VISION*security* and Thermo Security Software Administration software with Admin/Client User Manual and RS-232C cable (14-386-435)

REQUIRED ACCESSORIES:

Computer Requirements: Microsoft Windows* 2000 or XP Professional, plus PC with CD-ROM drive

Description	Mfr. No.	Cat. No.	Each
Single license	10040301	**14-386-428**	1607.00
5 user license	10040341	**14-386-429**	7499.00

Thermo Scientific* VISION*lite** Software

Basic PC Software for UV-Visible Spectrophotometers

- For use with Thermo Scientific Evolution* 60, 100, 300 and 600 series
- Provides wide range of data handling, recording and processing capabilities for wavelength scanning, fixed wavelength analysis, quantitative analysis and kinetics
- Offers extended security functions according to 21 CFR Part 11 including user authentication, audit trails, electronic records and signatures

REQUIRED ACCESSORIES:

Computer Requirements: Microsoft Windows* 95/98/2000/NT/XP, plus PC with CD-ROM drive; RS-232-C Cable

Description	Mfr. No.	Cat. No.	Each
PC Software	869127300	**14-386-455**	3300.00

Thermo Scientific* ENZLAB Enzymatic Food Analysis Software

Designed for enzymatic food analysis

- For use with Thermo Scientific Evolution* 60, 100, 300 and 600 series spectrophotometers
- Automates and simplifies enzymatic determinations
- Stand-alone software package

Thermo Scientific ENZLAB SE

- Offers extended security functions according to 21 CFR Part 11 including user authentication, audit trails, electronic records and signatures

INCLUDES:

Predefined all Boehringer kit methods; 2 and 3 component methods

REQUIRED ACCESSORIES:

Computer Requirements: Microsoft Windows* 95/98/2000/NT/XP, plus PC with CD-ROM drive; RS-232-C Cable; Food test kit from Boehringer

Description	Mfr. No.	Cat. No.	Each
Basic Software	10041001	**14-386-433**	1991.00
SE (21CFR Part 11) Software	869127100	**14-386-454**	3100.00

Wine Analysis Software

Designed for the wine-making industry

- For use with Thermo Scientific* Evolution* 100, 300 and 600 UV-V Spectrophotometers
- Analyze Anthocyanin Color, Chemical Age Color, Net Red (Glories Red) Color, Total Polyphenol Index and CIELAB Color
- Stand-alone software package

REQUIRED ACCESSORIES:

Computer Requirements: Microsoft Windows* 95/98/2000/NT/XP, plus PC with CD-ROM drive; RS-232-C Cable

Description	Mfr. No.	Cat. No.	E
Wine Analysis PC Software	9423UV85050E	**14-386-434**	608

Grams/AI 8.0 Software

Designed for processing, visualization and reporti UV-Vis data

- For use with Thermo Scientific* Evolution* 100, 300 and 600 UV-V Spectrophotometers
- Comprehensive analysis of data

REQUIRED ACCESSORIES:

Computer Requirements: Microsoft Windows* 95/98/2000/NT/XP, plus PC with CD-ROM drive; RS-232-C Interface Cable; Thermo Scientific VISION software

Description	Mfr. No.	Cat. No.	E
Grams/AI8.0 PC Software	869126900	**14-386-452**	2095

Origin 7.5 Graphing Software

Designed for processing, visualization and reporti UV-Vis data

- For use with Thermo Scientific* Evolution* 100, 300 and 600 UV-V Spectrophotometers
- Comprehensive analysis of data

REQUIRED ACCESSORIES:

Computer Requirements: Microsoft Windows* 95/98/2000/NT/XP, p PC with CD-ROM drive; RS-232-C Interface Cable; Thermo Scientific VISION software

Description	Mfr. No.	Cat. No.	
Origin 7.5 Graphing PC Software	869127000	**14-386-453**	85

Interface Cable

Connects Thermo Scientific* Evolution* Series spectrophotometers to laboratory PC

Description	Mfr. No.	Cat. No.	
Interface Cable (RS-232C)	401317263061	**14-386-435**	12

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

ingle-cell Sample Holders

or use with Thermo Scientific* Evolution* 300 and 00 spectrophotometers

djustable Microcell Holder

- Holds one ultra-microcell, microcell or standard rectangular cell with 10mm maximum pathlength

ectangular Cell Holder

- Holds one rectangular or test tube cuvet with 10mm maximum pathlength

ylindrical Cell Holder

- Holds one cylindrical cuvet with 100mm maximum pathlength

ong Pathlength Rectangular Cell Holder

- Holds one rectangular cuvet with 5 to 100mm pathlength

est Tube and Vial Holder

- Holds one test tube or vial cuvet with diameter from 10 to 16mm and height from 75 to 100mm

NCLUDES:

ne cuvet holder on base plate

escription	Mfr. No.	Cat. No.	Each
djustable Microcell Holder	10011501	**14-386-413**	257.00
ectangular Cell Holder	10011601	**14-386-409**	259.00
ylindrical Cell Holder	10011201	**14-386-410**	257.00
ong Pathlength Rectangular ell Holder	10011101	**14-386-411**	536.00
est Tube and Vial Holder; 10-16mm iameter and 75-100mm high	10011301	**14-386-412**	257.00

hermostatted 7-Cell Rotary Changer

easures up to seven sample cells and control emperature with circulating water bath

- Easy-to-use sample positioning accessory for use with Thermo Scientific* Evolution* 300 and 600 Spectrophotometers
- Recognized by built-in Local Control or VISION PC software, smart alignment and serial number reporting
- Accommodates seven rectangular cuvets with maximum pathlength of 10mm

NCLUDES:

-cell carousel on Smart base

EQUIRED ACCESSORIES:

emperature Probe Accessory (14-386-420)

escription	Mfr. No.	Cat. No.	Each
-Cell Rotary Changer	10010101	**14-386-416**	1049.00
pare 7-Cell Carousel	10010110	**14-386-440**	256.00

Thermostatted 8-Cell Linear Changer

Measures up to eight sample cells under constant temperature-controllled conditions

- For use with Thermo Scientific* Evolution* 300 and 600 Spectrophotometers
- Fast movement between eight samples
- Recognized by built-in Local Control or PC software, smart alignment and serial number reporting
- Accommodates eight rectangular cuvets with maximum pathlength of 50mm
- Use standard cells, black-walled microcells or dissolution flow cells

16-Cell Holder

- Compatible with linear 8-cell changer (14-386-417)
- Allows analysis of 4, 8, 12 or 16 samples
- Requires Smart Base

REQUIRED ACCESSORIES:

Temperature Probe Accessory (14-386-420)

Description	Mfr. No.	Cat. No.	Each
8-Cell Thermostatted Cell Changer	10010801	**14-386-417**	2842.00
16-Cell Holder	10010821	**14-386-418**	415.00

Smart 16-Cell Linear Changer

Measures 4, 8, 12 or 16 samples at ambient temperature

- Fast movement between 4, 8, 12 or 16 samples
- Accommodates standard cuvets, black walled microcuvets and dissolution flowcell cuvets
- Interacts with built-in Local Control or PC software applications
- For use with Thermo Scientific* Evolution* 300 and 600 Spectrophotometers

Description	Mfr. No.	Cat. No.	Each
16-Cell Changer	10012401	**14-386-419**	2842.00

8-Position Peltier Cell Holder

Temperature control from 0° to 100°C

- Holds up to eight cuvets of 10mm pathlength maximum
- No temperature ramping
- For use with Thermo Scientific* Evolution* 300 and 600 Spectrophotometers
- Stirring for all 8 cells

REQUIRED ACCESSORIES:

Water pump for eight-Cell Peltier accessory

Description	Mfr. No.	Cat. No.	Each
8-Cell Peltier	222-239100	**14-386-451**	4800.00

Water Thermostatted Single-cell Holder

Holds single rectangular or test tube cuvet

- For use with Thermo Scientific* Evolution* 300 and 600 Spectrophotometers
- Accommodates one rectangular cell with 10mm maximum pathlength
- Water thermostatted single cell block

Description	Mfr. No.	Cat. No.	Each
Single Cell Holder, Thermostatted	10011001	**14-386-415**	741.00

ACCESSORIES

Smart Peltier Thermostatted Single Cell Holder

Controls temperature from 5° to 110°C

- Recognized by built-in Local Control or Thermo Scientific* VISION PC software, smart alignment and serial number reporting
- Temperature ramping from 0.1 to 6°C/min.
- Air-cooled system with sample stirring
- Accommodates one rectangular cuvet with 10mm maximum pathlength

INCLUDES:
One 1-cuvet holder on Smart base, temperature controller, Packet of 10 stirring bars (14-386-439)

REQUIRED ACCESSORIES:
Temperature Probe (14-386-420) for temperature monitoring

For use with	Mfr. No.	Cat. No.	Each
Thermo Scientific Evolution* 300 and 600 Spectrophotometers	10010301	**14-386-414**	2357.00

Peltier Thermostatted Single-Cell Holders

Controls temperature from 20° to 60°C

- Air-cooled system, no external connections
- Sample stirring, requires stirring bars available separately (14-386-439)
- Stirring speed: 250-2000rpm
- Accommodates one rectangular cuvet with 10mm maximum pathlength
- Modified sample compartment lid comes with accessory and replaces standard lid

For Use with	Mfr. No.	Cat. No.	Each
Thermo Scientific* Evolution* 60, GENESYS* 10	222-238100	**14-386-461**	2100.00
Thermo Scientific Evolution 100, Helios	222-238200	**14-386-460**	2100.00

Micro Stirring Bars

For use with stirring accessories

- Use in combination with Single Cell Water Thermostatted Smart Peltier (14-386-414) or Thermo Scientific* Evolution* 60 Singe-Cell Peltier (14-386-461) Accessories

INCLUDES:
10 stirring bars

Description	Mfr. No.	Cat. No.	Pack of 10
Micro Stirring Bars	9423UV97030E	**14-386-439**	51.43

Temperature Probe

For cell temperature studies

- Monitors sample temperature in a cuvet
- For use with Thermo Scientific* Evolution* 300 and 600 Spectrophotometers

Description	Mfr. No.	Cat. No.	Each
Temperature Probe	10011401	**14-386-420**	569.00

Temperature Control Tubing Kit

For use with thermostatted spectrophotometer accessories

INCLUDES:
1m tubing

Description	Mfr. No.	Cat. No.	Each
Temperature Control Tubing Kit (1m)	10011801	**14-386-427**	229.00

Solid Sample Holders

Designed to hold solid samples for transmittance measurements

Solid Sample Holder

- For use with Thermo Scientific* Evolution* 300 and 600 Spectrophotometers
- Provides easy mounting of solid samples like filters, plastic, glass and optics
- Accommodates standard 2 x 3" sample holders

Universal Sample Holder

- Holds round or square optical samples; glass or plastic samples; lenses from sunglasses or goggles
- Requires one Solid Sample Holder (14-387-503)

Description	Mfr. No.	Cat. No.	Each
Solid Sample Holder	222-217200	**14-387-503**	700.00
Universal Sample Holder	222-217400	**14-387-504**	450.00

Smart Sipper Accessory

Easy-to-use sampling accessory featuring a reliable multi-roller peristaltic pump

- For use with Thermo Scientific* Evolution* 300 and 600 Spectrophotometers
- Complete and automated integration into Thermo Scientific VISION and Local Control software methods
- Automatic recognition by software, smart alignment and serial number reporting
- Handles sample volumes from 200µL to 9.999mL with customizable sip volume and air gap
- Methods can be automated for sample measurement after they are sipped

REQUIRED ACCESSORIES:
Silicone pump tubing (14-386-424) or Acid pump tubing (14-386-425) and flow cell

Description	Mfr. No.	Cat. No.	Each
Smart Sipper Accessory	10010401	**14-386-421**	1339.00
Silicone pump tubing (1m)	401322844561	**14-386-424**	26.00
Acid pump tubing (1m)	401322844571	**14-386-425**	119.00

ACCESSORIES

Smart Calibration Validation Carousel (CVC)

Designed for QC laboratories to save time, reduce errors and meet compliance regulations

- Traceable to either NIST* or NPL primary standards
- Testing is automated and includes electronic storage of results
- Eliminates human error during the testing process
- Calibration data is stored on one certificate, reducing the amount of paperwork

ORDERING INFORMATION:

Performance Verification Standards: Wavelength Accuracy (14-386-449), Stray Light (KCl) (14-386-447) or (NaI) (14-386-446) available separately

REQUIRED ACCESSORIES:

CVC can be used with Thermo Scientific*VISION*pro** or VISION*security** or Thermo Scientific Evolution* 300/600 Local Control software

Description	Mfr. No.	Cat. No.	Each
Calibration Validation Carousel (CVC), NPL	10010621	**14-386-442**	1656.00
Calibration Validation Carousel (CVC), NIST	10010721	**14-386-443**	1656.00

Instrument Performance Verification Standards

Performance verification standards for use with Thermo Scientific* Evolution* Series Spectrophotometers

UV Resolution Standard: Toluene in Hexane

- Contains one hexane only and one 0.02% v/v solution of toluene in hexane
- Usable range: 265 to 270nm
- Use for BP & EP Wavelength Resolution test
- Calibrated for use with instruments with a SBW of <3nm

UV-Vis Wavelength Standard: Holmium Oxide in Perchloric Acid

- Contains empty cell holder
- One sealed cell with 4% v/v solution of holmium oxide in 10% perchloric acid calibrated at nominal wavelengths of 640, 536, 485, 467, 452, 416, 385, 361, 345, 333, 287, 278, 249, 240nm and at SBW of 0.1, 0.25, 0.5, 1, 1.5, 2, 3nm
- Calibrated for use with instruments with a SBW of <3nm

Stray Light Standard: Potassium Chloride (KCl) — 198-201nm test

- Supplied in permanently sealed quartz cells
- Fits in any cell holder that accommodates 10mm pathlength rectangular cuvet
- Prepared in accordance with ASTM* E-387
- No recertification offered
- One water only and one 12g/L aqueous solution of KCl

Stray Light Standard: Sodium Iodide solution—220nm test

- Supplied in permanently sealed quartz cells
- Fits in any cell holder that accommodates 10mm pathlength rectangular cuvet
- Prepared in accordance with ASTM E-387
- No recertification offered
- One water only and one 10g/L aqueous solution of NaI

Stray Light Standard: Sodium Nitrite

- Designed to determine stray light performance at 330nm

REQUIRED ACCESSORIES:

Requires cell holder that can accommodate 12.5mm square cuvet

Description	Mfr. No.	Cat. No.	Each
Resolution Standard	222-226600	**14-386-450**	875.00
Wavelength Standard	222-226400	**14-386-449**	595.00
Stray Light Standard, KCl	9423UV95520E	**14-386-447**	808.00
Stray Light Standard, NaI	9423UV95500E	**14-386-446**	808.00
Stray Light Standard, $NaNO_2$	222-226500	**14-386-448**	760.00

UV Validator Log Book

Record all of your analytical procedures, maintenance and instrument validation

- For use with IQ/OQ/PQ procedures for Thermo Scientific* Evolution* 300 and 600 spectrophotometers and accessories
- Contains IQ/OQ/PQ analytical procedures, training log, maintenance log, CVC calibration results log, incident report sheets and reporting templates

INCLUDES:

Validation Alignment Block

REQUIRED ACCESSORIES:

CVC (14-386-442 or 14-386-443) or appropriate Performance Verification standards kit; Wavelength standard available separately (14-386-449)

Description	Mfr. No.	Cat. No.	Each
UV Log Validator Book	10030901	**14-386-441**	773.00

Thermo Scientific* GENESYS* 6 UV-Vis Scanning Spectrophotometer

Features unique 3-D optical design that maximizes throughput and minimizes stray light—producing an instrument with outstanding accuracy and precision

- Xenon lamp provides high UV energy and years of life; includes emission lines to check wavelength accuracy
- Tests are fully integrated with six-position cell changer or single-position cell holder
- Cell correction program automatically corrects up to six unmatched cuvets
- SmartStart* feature allows user to preselect test methods that appear on the bootup screen
- Accommodates a wide variety of accessories, including test tube holders, 50 and 100mm cylindrical and rectangular longpath cell holders, filter holders, sipper systems for UV-Visible and Visible applications and a funnel flowcell
- Large backlit LCD shows current sample position, date and time, all measured data, test setup and graphs
- Keypad includes cell-changer buttons, numerical keys, and "SoftKeys*" that give specific instructions for using the operating software
- Cleanable, chemical-resistant cover stands up to toughest laboratory conditions

Built-in Software

- Nine dedicated software programs let operator select setup parameters, save them with customized names, run tests automatically, display results with statistics and automatically print all results on a built-in or external printer
- Software includes: Advanced Absorbance/Transmittance/Concentration; Standard Curve; Absorbance Ratio; Absorbance Difference; Kinetics; Full-Spectrum Scanning; 3-Point Net; Multiwavelength; and Performance Validation

SPECIFICATIONS

Optical System	Split-beam, grating-based, dual detectors
Spectral Bandwidth	1.8nm
Wavelength	
Range	190 to 1100nm
Accuracy	±1.0nm
Repeatability	±0.5nm
Photometric	
Readout	Absorbance, %Transmittance, Concentration
Range	-0.1 to +3.0A; 0.3 to 125%T; 0 to ±9999C
Accuracy	±0.5% or 0.005A, whichever is greater, up to 2A
Scanning	
Speed	10 to 2000nm/min.
Slew rate	11,000nm/min.
Sampling Interval	0.1, 0.2, 0.5, 1.0, 2.0, 5.0nm
Drift	≤1mA/hr.
Noise	≤1mA; ≤2mA; peak-to-peak at 340nm
Stray light	≤0.1%T at 220, 340, and 400nm
Lamp	Xenon (5 yr. typical service)
Display	320 x 240 pixel LCD, 3⅞W x 2⅞"H (96.5 x 71mm)

Data Handling and Reporting

14-385-161

- Output data via a parallel port to a variety of printers using HP PCL format or choose model with built-in 3" 40-column graphics thermal printer
- Saves tests and data to built-in 3.5" diskette drive for archiving or data manipulation, or to computer via bidirectional RS-232C serial interface
- Complies with GLP requirements; saves extra paperwork with useful documentation features
- Printout shows date and time, all measurement parameters and data valu
- Up to 80 tests can be saved in nonvolatile memory, and password locke to prevent unauthorized alterations
- The software, printouts and operating manual include English, French, German, Spanish and Italian versions

ORDERING INFORMATION:

Small footprint conserves bench space: just 16⅛L × 13W × 9¼"H (41 × 33 × 23.5cm). Operates on 100 to 240V (selected automatically), 50/60Hz.

INCLUDES:

Six-position automatic cell holder (for standard 10mm cuvets) that is fully integrated with instrument software for fast and accurate data collection

WARRANTY:

One year

Description	Mfr. No.	Cat. No.	Eac
Instrument only	335908	**14-385-160**	6072.0
Instrument with printer	335908P	**14-385-161**	6479.0

ACCESSORIES

VERSA* Fiber Optic Probe

For use with Thermo Scientific* UV-Visible spectrophotometers with cuvet coupling optics

- Integrated coupling optics
- Uses disposable quartz tips

ORDERING INFORMATION:

Available quartz tips: 5mm (14-380-601), 10mm (two included; 14-380-602), and 20mm (14-380-603); sold separately

INCLUDES:

Two 10mm probe tips

Description	Cat. No.	Pric
VERSA Fiber Optic Probe	**14-380-600**	Ea./5835.9
5mm Quartz Tip	**14-380-601**	Pk. of 10/420.0
10mm Quartz Tip	**14-380-602**	Pk. of 10/420.0
20mm Quartz Tip	**14-380-603**	Pk. of 10/420.0

*Trademark. See Trademark Reference.

Prices subject to change.

ermo Scientific* AquaMate Water alysis Spectrophotometers

satile UV-Visible and Visible spectrophotometers, al for water analysis

est kits from ng manufacturers rieve information sharp peaks l in chlorophyll ra or from organic minants that b in the ultraviolet n of the spectrum. ogrammed with non methods and rations, plus more 300 additional water analysis methods/calibrations included on three ttes. Superb linearity, stability, and signal-to-noise ratio ensures stable urements from highly absorbent or light-scattering samples.

14-385-518

ration

y to operate: Select a preprogrammed method, then press RUN
n water analysis methods from diskette or load into memory
nerate calibration curves using up to 20 standards with choice of ve-fit options
mory stores up to 30 methods and calibrations
gram, run, and display in English, French, German, Spanish, or Italian
sword-controlled access to methods and calibrations

-in Software

k search, Absorbance/% Transmittance/Concentration, ltiwavelength (up to 20 wavelengths)
ial wavelength (up to nine wavelengths)
ndard curve (1–20 standards, 1–3 replicates, 4 curve fits)
character alphanumeric sample identification
r user-selectable procedural timers (permit event control, such as e required for sample color to develop)
osave results
culator with equation generator

ing and Data Export

t results using the built-in or remote printer, depending on model
dels with built-in, 110mm (4⅜") graphics printer are ideal where ce is limited or portability is required
ults can also be exported in ASCII format to PC applications via 232C interface

Handling and Reporting

nown analyte wavelengths are automatically retrieved and reported, h peak profile and peak wavelength, on the graphical display
dify procedures to suit individual requirements
ily and quickly update methods and calibrations as required
neasure or delete standards
er quality-control limits to generate on-screen and hard-copy s/Fail reports
ly calculations to raw data to change reported units or correct for erent sample weights, volumes or dilutions
d-copy reports include date and time of analysis, date and time of d copy, method, operator and sample identification, calibration curve, rument parameters, software version, serial number, and results

ssories (available separately)

iSipper Sample System—processes up to 300 samples per hour
litional sample cells

INCLUDES:

Combination test tube/cuvet holder that accommodates tubes up to 125H × 18mm dia. and 10mm pathlength glass or quartz cuvets; Variable pathlength cell holder (holds glass or quartz cuvets with 1–50mm pathlength); Cell holders for Hach 1" square cells and AccuVac* ampules; US, UK, and Europlug power line cords

WARRANTY:

One year

SPECIFICATIONS

Model	Visible	UV-Visible
Spectral Bandwidth	2nm	2nm
Optical System	Single-beam, quartz-coated	Single-beam, quartz-coated
Wavelength		
Range	325 to 1100nm	190 to 1100nm
Accuracy	±1nm	±1nm
Repeatability	±2nm	±2nm
Photometric		
Readout	Absorbance, %Transmittance,Concentration	Absorbance, %Transmittance,Concentration
Range	-0.3 to +3.0A	-0.3 to +3.0A
Accuracy	±0.005A@1A	±0.005A@1A
Display	LCD, 1/4 VGA Graphics	LCD, 1/4 VGA Graphics
Noise	<0.0001A	<0.0001A
Drift	<0.002A/hr.	<0.002A/hr.
Stray Light at 220/340nm	<0.05%T	<0.05%T
Lamps	Tungsten	Tungsten, Deuterium
Detector	Solid-state	Solid-state
Monochromator	Grating	Grating
Interface, Port	RS-232C, Centronics parallel	RS-232C, Centronics parallel
Electrical Reqts.	100– 240V 50/60Hz	100–240V 50/60Hz
Dimensions, L × W × H	15½ × 18 × 8½" (40 × 46 × 22cm)	15½ × 18 × 8½" (40 × 46 × 22cm)

Model	Mfr. No.	Cat. No.	Each
Visible	9423AQA2500E	**14-385-515**	5405.00
Visible with Built-In Printer	9423AQA2700E	**14-385-516**	5962.00
UV-Visible	9423AQA2000E	**14-385-517**	6406.00
UV-Visible with Built-In Printer	9423AQA2200E	**14-385-518**	6953.00

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

ACCESSORIES

MiniSipper Peristaltic Pump-based System

- Processes up to 300 samples an hour
- Use with flow and stoppered cells

Description	Mfr. No.	Cat. No.	Each
MiniSipper System, w/Tubing Kit	9423UV64270E	**14-385-519**	785.00
Spare Tubing Kit	9423UV64280E	**14-385-520**	205.00

- **Flow Cells.** For MiniSipper Sample System.

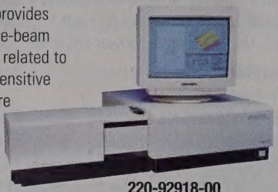
Description	Mfr. No.	Cat. No.	Each
10mm Compact UV Silica	942316814601	**14-298-2084**	642.53
10mm Compact Glass	942316814591	**14-298-2085**	456.78
10mm Standard UV Silica	942316814351	**14-298-2086**	513.62

- **Replacement Paper for Built-in Printer.** One roll.

Mfr. No.	Cat. No.	Each
440116100391	**14-385-526**	15.60

Shimadzu* UV-3101PC Spectrophotometer

Research-grade spectrophotometer helps simplify applications normally requiring an integrating sphere


220-92918-00

The sophisticated PC-based unit provides high-energy output, and the double-beam monochromator eliminates issues related to decreased light intensity. Highly sensitive measurement throughout the entire UV-Vis-NIR (near infrared) wavelength range allows photometric analysis for a wide variety of applications and samples.

- High-efficiency double monochromator with ultralow stray light
- Software provides versatile operation and data analyses
- Two sets of high-performance blazed holographic gratings deliver high energy throughout the ultraviolet to near-infrared wavelength range
- Concave diffraction premonochromator and Littrow monochromator with paraboic mirror each automatically switch to one of three gratings for optimum performance throughout wavelength measurement region
- Microsoft* Windows*-compatible software provides fast data processing, plus links to spreadsheet and word processing applications
- System allows for convenient, user-defined data output format and scale adjustment, automatic filing of data, and repeat scanning
- One-touch commands and concise menus help guide user through processes, eliminating potential human error
- Six-grating system offers a resolution to 0.1nm and low noise optics

UVProbe software adds control

- Flexible, easy-to-use software controls the unit using a PC
- All-in-one software package includes spectrum, photometric (quantification), kinetics (time course), and sophisticated report functions
- Photometrics module allows single-wavelength or multiwavelength quantification
- Create custom functions for automatic pass/fail of measurement results
- Customize appearance of graphs and data for easy-to-read reports, and store layouts as templates
- For increased security and monitoring, system administrator may assign user groups and permissions
- Features many calculation functions, including peak detection, area calculation, and Point Pick
- Performs arithmetic operations between data, and provides interpolation conversions
- Calculates area for spectral and time-course data, as well as differentiation, log and Kubelka-Munk conversions
- Software includes online help for quick reference
- For expanded operations, optional attachments are available, including a multicell positioner and a variety of sample compartments (see our Web site for details)

APPLICATIONS:

Ideal for use in chemistry, pharmacology, and clinical biochemistry environments. For analysis of semiconductors, thin films, powders, glass, solar-heat materials, solids and bulky objects.

ORDERING INFORMATION:

Unit (optical bench only, does not include PC or monitor) measures 27L × 40W × 10½"H (68.5 × 102 × 26.5cm). Optical bench for 100–120V 50/60Hz. Computer requirements may differ according to manufacturer's recommendations.

INCLUDES:

An RS-232-C cable to connect to a PC

SPECIFICATIONS

Optical System	Double-beam†
Spectral Bandwidth	UV: 0.1, 0.2, 0.5, 0.8, 1, 2, 3, 5, 7.5nm; NIR: 0.4, 0.6, 0.8, 1.2, 2, 3, 4, 6, 8, 12, 20, 30
Wavelength	
Range	190.0 to 3200.0nm
Accuracy	UV: ±0.3nm; NIR: ±1.6nm
Repeatability	UV: ±0.1nm; NIR: ±0.4nm
Photometric	
Readout	Absorbance; %Transmittance, %Reflectance
Range	-4.000 to +5.000A; 0 to 999.9%T and %R
Accuracy (NBS930D filter)	±0.002 from 0 to 0.5A; ±0.004 from 0.5 to 1.0A; ±0.3%T
Recording Range	-9.999 to +9.999A; -999.9 to +999.9%T and %
Scan Speed (at 0.5nm)	GOTO WL (~1600nm/min. at 2nm); FAST (~700nm/min.), MIDDLE (~200nm/min.), SLO (~100nm/min.), VERY SLOW (~50nm.min.)
Drift (after 2 hr. warmup)	<0.0004A/hr.
Stray Light (at 220/340nm)	<0.00008% (220nm); <0.00005% (340nm); <0.08% (1690nm); <0.08% (2740nm)
Lamps	Halogen (50W); deuterium
Detector	UV-Vis: Photomultiplier R-928; NIR: PbS cell
Monochromator	Littrow (parabolic mirror); concave diffraction

† *Direct ratio measuring system to accurately measure negative A, T or R >100% with summing feedback; Dynode feedback (UV); Slit program/gain control (NIR)*

Model	Cat. No.	E
UV-3101PC	**220-92918-00**	45,309

ACCESSORIES

ISR-3100 Integrating Sphere Attachment for Shimadzu*UV-3101PC

Use for measuring diffuse/specular reflectance and measuring transmission of liquid or solid samples.

- Wide wavelength of 220 to 2600nm
- 60mm inner diameter range with a photomultiplier and a PbS cell
- Maximum sample size (reflection) is approximately 100mm dia. and 15mm thickness

Description	Cat. No.	Ea
ISR-3100	**206-16450-00**	5370.

*Trademark. See Trademark Reference.

Prices subject to change.

madzu* UV-2450/2550 Spectrophotometers

pure and applied sciences, even in the classroom

nced technology, versatility, and reliability combine with sophisticated
are to meet a broad range of spectrophotometric applications.

able and easy to maintain
/ stray light, wide dynamic range, and small beam size (12 × 1mm)
ble, high-mass optical bench
rny-Turner mounting helps eliminate aberrations
tware controls the alignment of the deuterium and tungsten lamps
lacing the lamps can be done without manually adjusting the lights
led optical bench protects intricate components from dust
moisture
dular unit improves troubleshooting and system serviceability
essory ISR-2200 sample holder (Cat. No. 206-62600-00) permits
ection and transmission measurements of opaque, translucent,
turbid samples
nple compartment of both models accommodates a wide range
ccessories, including film holders, microvolume cuvet holders,
sippers
ional Peltier temperature-controlled automatic cell positioner
nitors reactions for up to six cells

es problems in a variety of disciplines

uded UVProbe software works with Microsoft* Windows*, providing
miliar user interface and reliable performance
e Course program allows measurements of reaction rates with a
es of samples
thematical support allows for enzyme kinetics, calculating the slope
vity and correlation coefficient
olution can be altered to produce broad peaks for investigating bands
ne iodine-vapor spectrum
nipulations like logarithms, reciprocals, Kubelka-Munk, and other
ors to portray data in the most meaningful format
complex calculations and presentations, data can be transferred to
eadsheet or word processing software

ICATIONS:

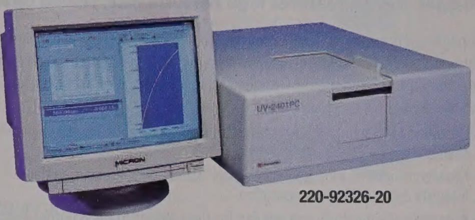
ure undiluted samples, nucleic acids, proteins, and fiber
cal content.

ERING INFORMATION:

models include single-cell holder. Dimensions (without PC):
22½ × 11" (66 × 57 × 27.5cm). For 100–120 50/60Hz.

JDES:

cell holder; RS-232-C cable to connect the computer with the
50 and UV-2550



220-92326-20

SPECIFICATIONS

Common Features		
Optical System	Double-beam	
Spectral Bandwidth	0.1, 0.2, 0.5, 1, 2 and 5nm	
Wavelength		
Range	190 to 900nm†	
Accuracy	±0.3nm	
Repeatability	±0.1nm	
Photometric		
Readout	Absorbance, %Transmittance, %Reflectance, Energy	
Range	-4.000 to +5.000A; 0 to 999.9%T and %R	
Accuracy (with NIST* 930 Filter)	±0.002A (0 to 0.5A); ±0.004A (0.5 to 1A); ±0.3%T (0 to 100%T)	
Scan Speed (approx. at 2.0nm)	FAST (1233nm/min.), MEDIUM (641nm/min.), SLOW (467nm/min.), SUPER SLOW (310nm/min.)	
Drift (after 2 hr. warmup)	<0.0004A/hr.	
Lamps	Halogen (50W), deuterium	
Detector	Photomultiplier R-928	
Model	**UV-2450**	**UV-2550**
Monochromator	Single	Double
Stray Light (at 220 and 340nm)	<0.015%	<0.0003%
Noise (300nm peak-to-peak)	0.0030A	0.005A

†Extendable to 1100nm with optional photomultiplier cell (062-70624-01).

Model	Cat. No.	Each
UV-2450	**220-92326-20**	12,041.61
UV-2550	**220-92329-20**	16,290.36

LOOKING FOR ACCESSORIES?

Sample compartment of both models accommodates a wide range of accessories, including microvolume cuvet holders and sippers.

Visit www.fishersci.com and search for Shimadzu Spectrophotometers

Shimadzu* UV-1650PC Spectrophotometer

Rugged design features high performance, sealed optics and impact-resistant case

Sophisticated, sturdy, flexible spectrophotometer with highly responsive software is ideal for all levels of user experience, and features online help and one-button functionality. Designed for a wide range of applications, industries, sample sizes, and types.

- Designed for a long life with sealed optics and durable, impact-resistance casing
- Monochromator is mounted on a stable optical bench, ensuring data integrity and trouble-free operation
- Automatically monitors and adjusts for fluctuations in lamp output and system electronics providing additional long-term stability
- Blazed holographic grating features self-aligning, energy-optimizing deuterium and tungsten-halogen light sources
- Ultranarrow beam of 1mm supports examination and analysis of the smallest samples

UVProbe Software

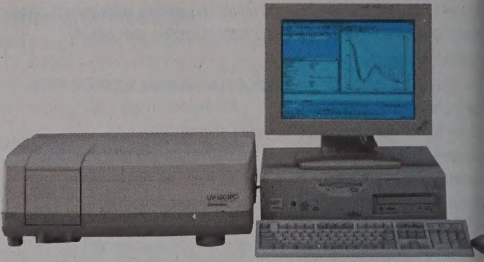
- Powerful, easy-to-use software controls the unit through a PC with Microsoft* Windows* platform
- All-in-one software package includes spectrum, photometric (quantification), kinetics (time course), and sophisticated report functions
- Photometrics module allows single-wavelength or multiwavelength quantification, plus quantification based on peaks and area values
- Create custom functions for automatic pass/fail of measurement results
- Customize appearance of graphs and data for easy-to-read reports, and store layouts as templates
- For increased security and monitoring, administrator can assign user groups and permissions
- System also creates an activity log for monitoring events
- Unit provides several automatic calculations, including peak detection, area calculation, and Point Pick
- Performs arithmetic operations between data, and provides interpolation conversions
- Complies with GLP/GMP requirements by storing both original and resultant data, and tracking instrument history

Variety of accessories provide increased functionality

- Expand the range of applications even further
- Multicell positioners and a wide variety of sample compartments
- Change easily from a standard cuvet to a capillary cell, or to a powder or film holder

ORDERING INFORMATION:

Unit (bench only) measures 18½L × 21¾W × 7¾"H (47 × 55 × 20cm). For 100–120V 50/60Hz. For additional software specifications, contact your Fisher Scientific Customer Service Representative.



220-92911-00 (PC not included)

INCLUDES:

RS-232-C cable is required to connect PC to UV-1650PC.

REQUIRED ACCESSORIES:

Computer requirements may differ according to manufacturer's recommendations. Requires Microsoft Windows 95, 98, 2000 or Windows NT* 4.0, plus PC with Pentium* (200MHz) or better processor, 64MB RAM, 128MB hard drive, SVGA monitor, graphic printer, mouse, and CD-ROM drive.

SPECIFICATIONS

Optical System	Double-beam
Spectral Bandwidth	2nm
Wavelength	
Range	190.0 to 1100.0nm
Accuracy	±0.3nm (auto-wavelength correction)
Repeatability	±0.1nm
Photometric	
Readout	Absorbance, %Transmittance
Range	-0.5 to +3.999A; 0.0 to 300%T
Accuracy	±0.004A at 1.0A; ±0.002A at 0.5A
Scan Speed	160 to 3200nm/min.
Drift	<0.001A/hr.
Stay Light at 220/340nm	<0.05%
Lamps	Halogen; deuterium
Detector	Silicon photodiode
Monochromator	Concave diffraction

Model	Cat. No.	Eac
UV-1650PC	**220-92911-00**	9729.3

*Trademark. See Trademark Reference.

Prices subject to change.

imadzu* UV-1700 PharmaSpec Spectrophotometer

l for pharmaceutical applications

206-24201-92

Features

ndalone optical bench spectrophotometer with high-performance
led optical system provides comprehensive functions for both
litative and quantitative analysis

-in-one tool offers photometric and multicomponent quantification
demanding applications

ltiwavelength photometric measure mode is standard, including
orbance and transmittance at up to eight wavelengths

ble monochromator mounting ensures integrity of results

gsten-halogen and energy-optimizing deuterium lamps enhance
cision across the UV-Vis spectrum and into the near-infrared (NIR)
ge, from 190 to 1100nm

tional Features

n resolution ideal for samples with benzene ring or sharp peaks

ingle-position cell holder comes standard; accessory items allow
rument to be easily changed from standard cuvet to capillary cell or
holder

ional UVProbe Software for PC-control (220-92900-00) supports
titasking for even greater control of the instrument

velength repeatability provides GLP and ISO-9000 compliance

ERING INFORMATION:

ssory printers, application software, optional multicell sample
artment and other cell holders, and temperature-controlled cell
oners are also available.

PLIANCE:

upports IQ/OQ in compliance with FDA guidelines; Specifications and
ons conform to European and U.S. Pharmacopoeias.

iption	Cat. No.	Each
naSpec UV-1700	**206-24201-92**	9270.00

SPECIFICATIONS

Optical System	Double beam, grating based
Spectral Slitwidth	1nm (190 to 900nm)
Wavelength	
Range	190 to 1100nm
Accuracy	±0.3nm
Repeatability	±0.1nm
Photometric	
Readout	Absorbance, transmittance
Range	-0.5 to +3.0A; 0.0 to 300%T
Accuracy	±0.004A at 1.0A using NIST930D filter; ±0.002A at 0.5A
Repeatability	±0.002A at 1.0A; ±0.001 at 0.5A
Recording Range	-3.99 to +3.99A; -399 to +399%T
Display	LCD (and PC-monitor if using optional UVProbe Software)
Noise	<0.002A, peak to peak; 0.0002A (RMS) at 700nm
Baseline Flatness After Warmup	<±0.001A/hour (1 hr. warmup recommended)
Baseline Correction	Automatic, in two stages of coarse and fine
Stray Radiant Energy	≤0.04%T at 220.0nm and 340.0nm
Light Source	Halogen, deuterium lamps
Detector	Silicone photodiode
Ambient Requirements	15° to 35°C (59° to 95°F), humidity 35 to 80%
Communication Ports	RS-232-C (serial)
Scan Speeds	3000nm/min. up to 10nm/min.
Electrical Requirements	100–120V, 50/60Hz
L × W × H (Bench Only)	18½ × 21¾ × 7¾" (47 × 55 × 20cm)

Shimadzu* UV-Mini 1240 Spectrophotometer

Features of a full–scale spectrophotometer in a benchtop unit

206-24000-92

Simple enough for the general lab user to use with only minimal training. Functions range from simple concentration measurements to complex calibration curves.

- Large LCD displays prompts, keypad–function descriptions, and graphics
- Multipoint calibration curve for applications that require various standards
- K-factor, as well as first-, second-, or third-order polynomial fits
- Two- or three-wavelength quantitative analysis for measuring turbid samples or the effects of a distinguishable component
- Peak-pick function detects even the most sensitive wavelengths
- Repeat scan automatically reveals spectral change over the entire range
- Photometric mode can be used to measure absorbance or transmittance at fixed wavelengths
- Quantification mode can be used to determine concentrations of unknown samples in single-component analyses
- Methods, results, and even raw data can be saved on the unit or to a PC with optional software
- Print results with ease, choosing optional color inkjet printer and software
- Optional multicell sample compartment and other cell holders available separately
- Optional attachments, including pop-in program packs, temperature-controlled cell positioners, and sippers available separately

ORDERING INFORMATION:
Dimensions: 15L × 16½W × 10¾"H (38 × 42 × 27cm). For 100–120V, 50/60Hz.

INCLUDE:
Single cell holder

NOTE: One-hour warmup of unit is recommended before use.

SPECIFICATIONS

Model	UV-Mini 1240
Optical System	Single-beam
Spectral Bandwidth	5nm
Wavelength	
Range	190 to 1100nm
Accuracy	±1.0nm
Repeatability	±0.3nm
Photometric	
Readout	Absorbance, %Transmittance
Range	-0.3 to +3.0A; 0.0 to +200%T
Accuracy	±0.005A at 1.0A (NIST930D filter); ±0.003A at 0.5A
Repeatability	±0.002 at 1.0A
Recording Range	-3.99 to +3.99A; -399 to +399%T
Display	6" (15cm) LCD (CFD, contrast adjust)
Scan Speed	Wavelength change: 3800nm/min. Scan: 24 to 1400nm/min.
Noise	<0.0002A (peak to peak); 0.0005A (RMS)
Drift (after 2 hr. warmup)	≤0.001A/hr.
Stray Light (at 220/340nm)	<0.05%T at 220.0nm NaI, 340.0nm NaNO^2 with UV39 filter
Lamps	Halogen (20w, 2000-hr.); Deuterium (socket-type)
Detector	Silicon photodiode
Monochromator	Concave Diffraction

Model	Cat. No.	Each
UV-Mini 1240	**206-24000-92**	5093.00

ACCESSORIES

UVProbe Software

Offers powerful quantification functions, customize reports, and standards compliance

Shimadzu* has taken spectroscopy to the next level with the powerfu flexible, and easy-to-use UVProbe software. Its standard data acquisition modes, vast data processing capabilities, and robust repor generator provide the ultimate tool for your UV-Vis solutions. For use with the UV-1650PC, UV-2450/2550, and PharmaSpec UV-1700 UV-Vi spectrophotometers.

- Specifically engineered for Windows* 2000/XP
- Includes enhanced security capabilities and instrument history log f GLP compliance
- Unlimited spectral overlay
- Unlimited peak and valley selection
- Supports automated accessories, transforms, Michaelis Menten, Hi and Inhibitor plots, multiple factors, custom equations, tolerances and standard error of prediction

INCLUDES:
RS-232-C cable

REQUIRED ACCESSORIES:
Computer Requirements: Microsoft* Windows 95, 98, NT 4.0, 2000, or XP, plus PC with Pentium* (200MHz) or better processor, 64MB RAM, 128MB hard drive, SVGA monitor, graphic printer, mouse, and CD-ROM drive

Description	Cat. No.	Eac
UVProbe Software	**220-92900-00**	2087.8

CPS-240A Thermoelectrically Temperature Controlle Cell Positioner

Measures up to six sample cells and one reference cell under constar thermoelectric-controlled temperature conditions.

- For use with the Shimadzu* BioSpec-1601, UV Mini-1240, Bio-Mini, UV-1650PC, PharmaSpec UV 1700 and UV-2450/2550 spectrophotometers
- Uses Peltier effect to control temperature from 16 to 60°C
- Display accuracy: ±0.5°C
- Sample stability: ±0.1°C
- Supports temperature-sensitive enzyme kinetic assay when used with spectrophotometers equipped with Time-Course/Kinetics Program Pack or software
- Cells and software not included

Description	Cat. No.	Ea
CPS-240A Thermoelectrically Temperature Controlled Cell Positioner	**204-05837-92**	4838.

Universal Multicell Sample Holder

- Holds up to six 10mm square cells (not included) on the sample side, and one reference cell
- For use with the Shimadzu* UV-1600, UV-2450/2550, and UV-3600 spectrophotometers

NOTE:
Multicell sample holder is not temperature controlled.

Description	Cat. No.	Ea
Multicell Sample Compartment	**206-69160-00**	1184.

ACCESSORIES

Semi-Micro Sipper

Lightweight and free-standing sipper features small footprint

- Typical sample volume is 1.5mL
- Minimum sample volume required is 0.8mL

INCLUDES:

Syringe sipper pump, tubing, semimicro L-type flow cell with 390µL cell capacity, and front plate

ell Capacity	Cat. No.	Each
90µL	**220-92488-01**	2902.10

LOOKING FOR MORE ACCESSORIES?

Optional attachments and accessories, including an alternate sample compartment, temperature-controlled cell positioners, cell holders, and sippers available separately.

Visit www.fishersci.com and search for Shimadzu Spectrphotometers

ermo Scientific* SP-890 UV-Visible Spectrophotometer

ers research quality features such as split beam optics for added stability and accuracy with a r-friendly interface

splay prompts to minimize learning time
tomatic filter selection allows user override
e modes for flexibility
otometric mode reads sample at one to five wavelengths with a ngle setting
sults are graphically displayed on LCD panel or output to printer or with optional software
cords time dependent changes in absorbance or concentration for zyme kinetics studies in Timescan and Kinetic modes
rces first-, second- and third-order curves on data in an expanded antitative mode
tional Windows* 98 compatible software (available separately) pands reporting capabilities consistent with GLP
nts out time/date stamps and documents setting parameters

ERING INFORMATION:

ensions: 17L × 20W × 8⅝"H (43 × 51 × 22cm). Electrical Requirements: / 50/60Hz.

ription	Mfr. No.	Cat. No.	Each
90 only	SM110245	**11-675-919**	6946.00
90 with software	SM110255	**11-675-920**	7526.00

SPECIFICATIONS

Model	**SP-890**
Optical System	Split-beam, Motorized monochromator, > 900 lines/mm
Spectral Bandwidth	1.7–1.8nm (typical)
Wavelength	
Range	200 to 1100nm
Accuracy	±1nm
Repeatability	±0.2nm
Display	Graphical LCD (backlit)
Photometric	
Range	0.000 to 3.000A 0 to 19,999 0 to 100%T
Accuracy	±0.005 A at 1.000A (ASTM* method)
Drift	<0.0003A/hr. (500nm, 1 hr. warmup)
Stray Light	<0.05%T (340/220nm, ASTM)
Interfaces, Ports	RS-232-C, Printer

Thermo Scientific* GENESYS* 10 UV Spectrophotometers

Distinct and uniform emission lines allow wavelength accuracy and resolution to be verified across the wavelength range with ±1.0nm accuracy and ±0.5nm repeatability

- Lamp flashes only when needed during measurements, resulting in extended lamp life and lower operating costs
- Cleanable, chemical-resistant surfaces and rugged design withstand harsh laboratory environments
- Models with six-position cell holder† hold a blank and up to five samples in 10mm square cuvets or 10mm and ½" test tubes
- The standard turret will measure all six positions automatically or can be rotated to specific positions
- Printer is built in on some models (available separately for other models)
- Bidirectional RS-232-C interface
- User-selectable choice of five languages (English, French, German, Spanish, Italian)

14-385-470, 14-385-472, 14-385-474 (left to right)

ORDERING INFORMATION:
Units measure 16L × 13W × 9"H (41 × 33 × 23cm); Electrical requirements: 100–240VAC (selected automatically), 50/60Hz.

WARRANTY:
One year

10 UV Spectrophotometers

Description	Mfr. No.	Cat. No.	Each
With single-cell cuvet holder	335902	**14-385-468**	3888.00
With single-cell cuvet holder and built-in printer	335902P	**14-385-470**	4320.60
With six-position cell holder†	335903	**14-385-472**	4321.00
With six-position cell holder and built-in printer†	335903P	**14-385-474**	4754.00

10 UV Scanning Spectrophotometers

Description	Mfr. No.	Cat. No.	Each
With single-cell cuvet holder	335906	**14-385-370**	4424.00
With single-cell cuvet holder and built-in printer	335906P	**14-385-371**	4856.00
With six-position cell holder†	335907	**14-385-372**	4856.00
With six-position cell holder and built-in printer†	335907P	**14-385-373**	5289.00

† Models with six-position cell holders can accommodate single-cell holders using accessory single cell holder platform, available separately. Contact Fisher Scientific Customer Service to order.

Specifications

Spectral Bandwidth	5nm
Optical System	Single-beam, grating-based, single detector
Lamp Source	Xenon
Wavelength	
Range	190 to 1100nm
Accuracy	±1.0nm
Repeatability	±0.5nm
Photometric	
Readout	Absorbance, % Transmittance, Concentration
Range	0.3 to 125%T; - 0.1 to + 3A; 0 to 9999C
Accuracy	0.5% or 0.005A, whichever is greater, up to 2A
Noise	±1mA at 0A; ±2mA at 2A, peak-to-peak at 340nm
Drift After Warmup	±1mA/hr.
Stray Light	±0.1%T at 220, 340, 400nm

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

ACCESSORIES

ingle Cell Holder

Accommodates single-cell cuvet or 10mm dia. test tubes

r. No.	Cat. No.	Each
6028	**14-385-406**	65.42

ingle Cell Platform and Holder

fr. No.	Cat. No.	Each
35916	**14-385-476**	68.34

ylindrical Longpath Cell Holder

or Thermo Scientific* GENESYS* 10 pectrophotometers with single-cell cuvet holder

Accommodates a cylindrical cell with a 10 to 100mm pathlength, 22 to 25mm dia. and Z dimension of 11mm

Models with six-position cell holders can accommodate single-cell holders using accessory Single-cell Platform and Holder (14-385-476), available separately

fr. No.	Cat. No.	Each
36012	**14-385-400**	110.14

nterface Cable

Connects Thermo Scientific* GENESYS* 10 spectrophotometer to laboratory computer

fr. No.	Cat. No.	Each
5942	**14-385-147**	48.20

nternal Printer

raphic printer provides hard-copy results and raphic plots/scans

Lists date, time, sample identifier, test type and name

Can be installed by user

Includes one roll of paper

r. No.	Cat. No.	Each
5988	**14-385-486**	559.00

arrow Rectangular Longpath Cell Holder

ccommodates narrow rectangular longpath cells up 100mm in pathlength

For Thermo Scientific*GENESYS* 10 spectrophotometers with single-cell cuvet holder (14-385-460 and 14-385-468)

Models with six-position cell holders can accommodate single-cell holders using accessory Single-cell Platform and Holder (14-385-476), available separately

r. No.	Cat. No.	Each
5112	**14-385-273**	122.77

est Tube Holder

Accommodates one 25 dia. × 102mmH test tube or COD reagent vial

For Thermo Scientific* GENESYS* 10 spectrophotometers with six-position cell holder (holds three) or single-cell holder platform (holds one)

r. No.	Cat. No.	Each
6014	**14-385-401**	129.93

VISIBLE

Thermo Scientific* GENESYS* 10 Visible Spectrophotometers

High-quality optics for high-performance results

14-385-466

- Cleanable, chemical-resistant surfaces and rugged design withstands harsh laboratory environments
- Models with six-position cell holder† hold a blank and up to five samples in 10mm square cuvets or 10mm and ½" test tubes
- The standard turret will measure all six positions automatically or can be rotated to specific positions by pressing the cell-changer button
- Built-in printer (14-385-462, -466) (available separately for other models)
- Bidirectional RS-232-C interface
- User-selectable choice of five languages (English, French, German, Spanish, Italian)

ORDERING INFORMATION:

Units measure 16L × 13W × 9"H (41 × 33 × 23cm). Electrical requirements: 100–240VAC (selected automatically), 50/60Hz.

WARRANTY:

One year

SPECIFICATIONS

Spectral Bandwidth	5nm
Optical System	Single-beam, grating-based, single detector
Lamp Source	Tungsten-halogen
Wavelength	
Range	325 to 1100nm
Accuracy	±1.0nm
Repeatability	±0.5nm
Photometric	
Readout	Absorbance, % Transmittance, Concentration
Range	0.3 to 125%T; - 0.1 to +2.5A; 0 to 9999C
Accuracy	0.5% or 0.005A, whichever is greater, up to 2A
Noise	±1mA at 0A; ±2mA at 2A, peak-to-peak at 500nm
Drift After Warmup	±2mA/hr.
Stray Light	±0.1%T at 340, 400nm

Description	Mfr. No.	Cat. No.	Each
With single-cell cuvet holder	335900	**14-385-460**	2585.00
With single-cell cuvet holder and printer	335900P000	**14-385-462**	3018.00
With six-position cell holder†	335901	**14-385-464**	3018.00
With six-position cell holder and printer†	335901P000	**14-385-466**	3450.00

† Models with six-position cell holders can accommodate single-cell holders using accessory single cell holder platform, available separately. Contact Fisher Scientific Customer Service to order.

Thermo Scientific* GENESYS* 20 Spectrophotometers

Ideal for teaching labs, industrial QC or environmental testing

14-385-445

- Two-line, 20-character LCD displays data in absorbance (-0.1 to +2.5), % transmittance (0 to 125%) or concentration (0 to 1999)
- Provides information concerning instrument status, prompts for setup or change of parameters, and instrument diagnostic information
- LCD can display information in English, French, German, Portuguese or Spanish
- Operates continuously over a wavelength range of 325 to 1100nm without filter or detector changes
- Accommodates standard 10mm square cuvets and 10mm or ½" diameter test tubes
- Wide variety of sample cells—such as cylindrical and rectangular long-path, 1" test tubes or COD tubes—can be accommodated with optional "snap-in" holders
- 10-key, spillproof, double-laminated keypad with audible response to confirm entries
- Document results by installing optional built-in printer (see Accessories) or by connecting a printer via the Centronics-compatible parallel port
- Model with built-in 20-column printer is also available
- Bidirectional RS-232-C interface allows remote operation

ORDERING INFORMATION:

Dimensions: 13L × 12W × 7"H (33 × 30 × 19cm). For 100/240V 50/60Hz.

INCLUDES:

Units include single-position cell holder, five disposable cuvets, RS-232-C interface, Centronics-compatible printer port, dust cover, operating manual, and U.S. power cord.

Description	Mfr. No.	Cat. No.	Each
Without Built-in Printer	4001	**14-385-445**	1790.00
With Built-in Printer	4004	**14-385-459**	2120.00

SPECIFICATIONS

Optical System	Grating based, 1200 lines/mm
Spectral Slitwidth	8nm
Wavelength	
Range	325 to 1100nm
Accuracy	±2.0nm
Readout	20-character, 2-line LCD
Photometric	
Readout	Absorbance, %Transmittance, Concentration
Range	-0.1 to +2.5A 0 to 125%T 0 to 1999
Accuracy†	±0.003A from 0 to 0.3A ±1% from 0.3 to 2.5A
Noise (at 500nm)	≤0.001A at 0A; ±0.004A at 2A
Drift	0.003A/hour
Stray Radiant Energy	≤0.1%T at 340 and 400nm
Communication Ports	RS-232-C (serial) Centronics-compatible (parallel)

† Measured using 930D filters supplied by NIST.*

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

LOOKING FOR ADDITIONAL VISIBLE SPECTROPHOTOMETERS?

See the Thermo Scientific* Aquamate Spectrophotometers, p. 1711.

*Trademark. See Trademark Reference.

Prices subject to change.

ermo Scientific* Spectronic* 20+/20D+ Spectrophotometers

ged enough for classroom use and reliable enough for industrial or research applications

e-beam units are suitable for general colorimetric and rophotometric applications.

mit testing of sample volumes as low as 0.75mL with optional cuvet der (14-385-125A) for semi-micro cuvets

ose from 20+ Model with analog meter or the 20D+ Model with ital display

id-state silicon detector eliminates traditional phototubes and covers entire 340 to 950nm wavelength range, extending measurements into near infrared and ultraviolet ranges

nple filter selection lever makes changing filters easy

gsten lamp

venient sample compartment holds variety of adapters, cuvets and t tubes used in a range of applications

NT button on front panel sends data to printer (14-385-168H, available arately)

- Model. Features 5½" (14cm) analog meter with linear percent nsmittance and non-linear absorbance scales.

)+ Model. Includes easy-to-read digital display with direct readout ercent transmittance, units of absorbance or concentration. centration measurements automatically calculated based on known ndard measurement or calculated factor input by user. Simplified -DOS* computer and printer RS-232-C interface.

ERING INFORMATION:
nsions: 13L × 16¼W × 8¼"H (33.0 × 41.3 × 21.0cm).

UDES:
models come with a box of twelve ½" (13mm) test tube cells, 3mm) sample compartment adapter, operator's manual, dust cover S power cord.

WARRANTY:
Three years

CERTIFICATIONS:
UL listed. CSA approved.

14-385-129

SPECIFICATIONS

Model	20+	20D+
Optical System	Single beam	Single beam
Spectral Slitwidth	20nm	20nm
Wavelength		
Readout	5½" (14cm) mirrored scale meter	LED
Range	340 to 950nm	340 to 950nm
Accuracy	±2.5nm near 525nm	±2.5nm near 525nm
Photometric		
Readout	Absorbance, %Transmittance	Absorbance, %Transmittance, Concentration
Range	0 to 2A 0 to 100%T	0 to 1.95A 0 to 100%T 0 to 1999C (0.1 to 1000 Factor)
Accuracy	±2%T	±2%T
Noise	±0.5%T	±0.5%T
Drift	1.0%T/Hr.	1.0%T/Hr.
Stray Radiant Energy	<0.5%T†	<0.5%T†
Communication Ports	None	1.0VDC nominal at 100%T RS-232-C bidirectional

Description	Mfr. No.	Cat. No.	Each
20+ Analog Model	333182	**14-385-129**	1802.50
20D+ Digital Model	333183	**14-385-130**	1790.00

† *Over entire wavelength range when measured with accessory filter, 14-385-132.*

ACCESSORIES

older, Adapters, and Light Shield

r use with Thermo Scientific* Spectronic* 20+ and D+ Spectrophotometers.

escription	For Use With	Mfr. No.	Cat. No.	Each
older	10mm square cuvets	333176	**14-385-125A**	51.74
dapter	¾" dia. test tube cells	332931	**07-144-20†**	70.98
dapter	1" dia. test tube cells	332930	**07-144-22†**	67.70
ght Shield	150mmH test tube cells	332932	**07-144-24**	62.24

Requires 07-144-24 light shield.

ound Test Tube Cells

Optical class

Cat. No. 07-144-15½" diameter test tube cell replacements for originals supplied with instrument

Cat. No. 07-144-40 ¾" diameter test tube cells require 07-144-20 adapter and 07-144-24 light shield (sold separately)

Cat. No. 07-144-38 test tube cell is 1" diameter and requires 07-144-22 adapter and 07-144-24 light shield (sold separately)

Packaged in box of 12

ameter	Height	Mfr. No.	Cat. No.	Pack of 12
"	100mm	331780	**07-144-15**	70.00
"	150mm	331781	**07-144-40†**	95.21
	150mm	331782	**07-144-38‡**	90.58

Requires 07-144-20 adapter and 07-144-24 light shield.
Requires 07-144-22 adapter and 07-144-24 light shield.

Square Cuvets

- Optical class
- Cat. No. 22-255-451 is a matched set of two with 10mm pathlength; requires 14-385-125A holder (sold separately); case included
- Cat. No. 07-144-18 has ½" (13mm) pathlength and comes in set of two with case

Pathlength	Height	Mfr. No.	Cat. No.	Pack of 2
10mm	45mm	331709	**22-255-451†**	250.00
½" (13mm)	100mm	331701	**07-144-18**	199.52

† *Requires 14-385-125A holder*

Thermo Scientific* SP-800 Series Spectrophotometers

Ideal for analyzing phosphorus, iron, and chlorophyll; testing color and clarity; and measuring turbidity

Large sample compartment holds a round (12 to 13mm dia. × 100mmH) or standard square cuvet (12.5 × 12.5 × 45mm).

- Feature easy operation and basic user-friendly software
- Error message alerts operator to operational problems and indicates probable cause
- Units come with analog output to interface with chart recorders or other external analog data systems, and a serial RS-232-C port
- SP-850 and -870 models also come with a parallel Centronics* printer port to interface with a computer or external printer
- Fan cooling ensures temperature stability

Model SP-830

- Simple interface is ideal for student use in a classroom setting
- Single touch autozero function makes setting of 100% transmittance and 0.000 absorbance easy
- Five switchable built-in, second-order stray-light filters eliminate filter changes
- Results are displayed on an easy-to-read 3.5-digit LED screen

Model SP-850

Has the same features as the SP-830 model plus:

- Mode for reading concentration directly from the unit to eliminate operator error
- Conforms to GLP for reliable use in a quality control laboratory
- Factor mode permits tracing of day-to-day variations in quantitative applications
- Expanded 4.5-digit LED shows high concentration and factor values
- Large keypad has a key for choosing decimal placement

Model SP-870

Has the same features as the SP-850 plus:

- 5nm spectral bandwidth for higher resolution and accuracy
- 20-digit, two-line LCD display shows wavelength readout, automatic stray-light filter selection, and digital wavelength selection

ORDERING INFORMATION:

Dimensions: 11¾L × 15¾W × 5¾"H (30 × 40 × 14.5cm). Electrical Requirements: 120V 50/60Hz.

Model	Mfr. No.	Cat. No.	
SP-830	SM110215	**14-377-301**	188
SP-850	SM110225	**14-377-303**	294
SP-870	SM110235	**14-377-302**	387

SPECIFICATIONS

Model	SP-830	SP-850	SP-870
Optical System	Single-beam, Plane diffraction grating monochromator with sine bar mechanism in f7 Ebert mounting with first surface reflective opti 600 lines/mm		
Spectral Bandwidth	8nm (nominal)	8nm (nominal)	5nm (nominal)
Wavelength			
Range	330 to 999nm	330 to 999nm	330 to 999nm
Accuracy	±2nm	±2nm	±2nm
Repeatability	±0.5nm	±0.5nm	±0.5nm
Display	3.5-digit LED	4.5-digit LED	20-digit/2-line LCD
Photometric			
Range	0.000 to 2.000A	0.000 to 2.000A	0.000 to 2.000A
		0 to 19,999	0 to 19,999
	0 to 100%T	0 to 100%T	0 to 100%T
Accuracy	1% at 1A	1% at 1A	1% at 1A
Drift	0.003A/hr.(0A, ½ hr. warmup)	0.003A/hr.(0A, ½ hr. warmup)	0.003A/hr.(0A, ½ hr. warmup)
Stray Light	0.1%T (340nm); <0.5%T (330–999nm)	0.1%T (340nm); <0.5%T (330–999nm)	0.1%T (340nm); <0.5%T (330–999nm)
Interfaces, Ports	RS-232-C	RS-232-C, Printer	RS-232-C, Printer

*Trademark. See Trademark Reference.

Prices subject to change.

STANDARDS

ermo Scientific* Spectronic* ectrophotometer Standards Set

tified accurate for checking spectrophotometer formance

14-385-335

ch set contains 10 standard
ers—individually tested and
rtified accurate, with values
ceable to NIST* wherever
rtinent

5 transmittance

avelength accuracy at 515nm

ay radiant energy

st wavelengths of 220, 340, and
0nm were chosen to correspond
the low energy points of both
gsten and deuterium lamps

curacy and linearity

nsmission spectrum of each
ndard is extremely flat in the
ion of 590nm

ST-traceable transmittance value
assigned to each standard at 590nm

tical alignment

ontrol standard that lets you make a permanent record of where the
am falls on the cuvet

UDES:

standard, 220nm stray radiant-energy standard, 340nm stray
nt-energy standard, 400nm stray radiant-energy standard, wavelength
ard; optical alignment test piece and control standard; four
metric accuracy standards (two each—10% and 50%T); brush,
l alignment test sheets, carrying case and manual.

o.	Cat. No.	Each
50	14-385-335	848.00

CELLS AND CUVETS

*Fisherbrand** by Hellma

Quartz, Silica and Glass Cells

1, 5, or 10mm pathlength rectangular cells fit standard spectrophotometer cell holders.

- All cells are 12.5mm wide
- 1mm pathlength cells are 3.5mm long; 5mm pathlength cells are 7.5mm long; 10mm pathlength cells are 12.5mm long
- Reduce reagent use with Semimicro (1mL capacity), Micro (0.5mL capacity) or Ultramicro (0.1 or 0.05mL capacity) cells
- All have thickened side walls to reduce sample volume and funnel-shaped tops to facilitate easy filling

Available with a variety of window materials for wide range of assays

- Choose cells with Suprasil* 300 quartz windows for uninterrupted transmission from the far ultraviolet through the infrared (entire 190 to 3600nm) wavelength range
- Choose cells with Suprasil quartz windows for use from 190 to 2600nm and 2850 to 3600nm
- For routine work in the ultraviolet region, select cells with windows of standard silica for 230 to 2500mm
- For visible work, choose near-UV glass for 320 to 2500nm, and optical glass for 360 to 2000nm
- Standard cells are available with all transmission window materials
- Fluorescence, Semimicro and Micro cells available with Suprasil quartz windows
- Micro and Ultramicro cells also come in black quartz with Suprasil quartz windows
- Micro cells also available with near-UV glass windows
- Fluorescence cells with optically polished sides and bottom are an ideal choice for fluorimetry and fit all fluorimeters

Manufactured to close tolerances and transmission matched

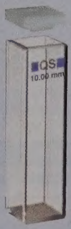
- Cells with windows of quartz, standard silica, or near-UV glass have pathlength tolerance of ±0.01mm
- Optical glass cells have tolerance of ±0.1mm
- Cells in each pack of Suprasil quartz, Suprasil 300 quartz and near-UV glass cells are transmission matched to enhance assay reproducibility
- Standard silica and optical glass cells are not transmission matched
- For all cells, cell bottom and windows are fused to form a seal to prevent acid or solvent leaks

INCLUDES

Fitted PTFE covers or tapered PTFE stoppers, except 14-385-906A and -902A, which come with glass cover plates

Quartz Fluorescence Cells

With optically polished sides and bottom.



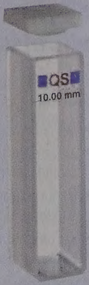
14-385-918A

Lightpath	Capacity	Height	With	Cat. No.	Pack of
With Suprasil quartz windows					
10mm	3.0mL	45mm	PTFE cover	**14-385-918A**	2/534.37
10mm	3.0mL	45mm	PTFE cover	**14-385-920A**	4/1036.05
10mm	3.0mL	46mm	PTFE stopper	**14-385-918B**	2/596.91

Contd. on next page.

Fisherbrand* by Hellma, Contd.

Quartz, Silica and Glass Standard Cells

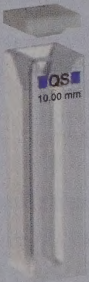


14-385-910C

Lightpath	Capacity	Height	With	Cat. No.	Pack of
With Suprasil* 300 quartz windows					
1mm	0.3mL	45mm	Glass cover	**14-385-906A**	2/390.32
10mm	3.0mL	45mm	PTFE cover	**14-385-906C**	2/395.65
10mm	3.0mL	45mm	PTFE cover	**14-385-908C**	4/786.70
10mm	3.0mL	46mm	PTFE stopper	**14-385-908D**	4/917.45
With Suprasil quartz windows					
1mm	0.3mL	45mm	Glass cover	**14-385-902A**	2/392.74
5mm	1.5mL	45mm	PTFE cover	**14-385-902B**	2/393.74
10mm	3.0mL	45mm	PTFE cover	**14-385-902C**	2/330.74
10mm	3.0mL	45mm	PTFE cover	**14-385-904C**	4/667.85
10mm	3.0mL	46mm	PTFE stopper	**14-385-904D**	4/881.18
With standard silica windows					
10mm	3.0mL	45mm	PTFE cover	**14-385-910C**	2/296.97
10mm	3.0mL	45mm	PTFE cover	**14-385-912C**	4/554.51
With near-UV glass windows					
10mm	3.0mL	45mm	PTFE cover	**14-385-910A**	2/190.98
10mm	3.0mL	45mm	PTFE cover	**14-385-912A**	4/347.53
With optical glass windows					
10mm	3.0mL	45mm	PTFE cover	**14-385-910B**	2/103.64
10mm	3.0mL	45mm	PTFE cover	**14-385-912B**	4/189.23

Quartz and Glass Micro Cells

- With 2mm inside width



14-385-927B

Lightpath	Capacity	Height	With	Cat. No.	Pack of 2
With Suprasil* quartz windows					
10mm	0.5mL	25mm	PTFE cover	**14-385-927B**	388.21
10mm	0.5mL	45mm	PTFE cover	**14-385-928A**	363.74
With Suprasil windows and black quartz sidewalls					
10mm	0.5mL	45mm	PTFE cover	**14-385-928B**	547.37
With near-UV glass windows					
10mm	0.5mL	25mm	PTFE cover	**14-385-927A**	222.00

Quartz Semimicro Cells

- With 4mm inside width

14-385-914A

Lightpath	Capacity	Height	With	Cat. No.	Pack of
With Suprasil* quartz windows					
10mm	1.0mL	45mm	PTFE cover	**14-385-914A**	2/375.42
10mm	1.0mL	45mm	PTFE cover	**14-385-916A**	4/902.91
10mm	1.0mL	46mm	PTFE stopper	**14-385-914B**	2/542.90

Quartz Ultramicro cells

- 8.5mm center height fit most Beckman* Instruments and Thermo Scientific* spectrophotometers
- 15.0mm cells fit most Hewlett-Packard*, Perkin-Elmer*, Shimadzu*, Unicam* and GBC spectrophotometers
- Choose correct center height such that optical aperture matches center position of light beam

14-385-928E

Lightpath	Center Height	Capacity	Outside Height	With	Cat. No.	Each
Self-masking black quartz with Suprasil* windows						
10mm	8.5mm	100µL	45mm	PTFE stopper	**14-385-928C**	363.14
10mm	15mm	100µL	45mm	PTFE stopper	**14-385-928D**	363.14
10mm	8.5mm	50µL	45mm	PTFE stopper	**14-385-928E**	363.14
10mm	15mm	50µL	45mm	PTFE stopper	**14-385-928F**	363.14

*Fisherbrand** by Hellma Cylindrical Cells

Cylindrical cells have a filler neck and tapered PTFE stopper (two necks and stoppers on 50 and 100mm lightpath cells).

- Uniform diameter of 22mm
- Fit standard cell holders
- Available with Suprasil* quartz or near-UV glass windows

14-385-932E

Lightpath	Capacity	No. of Stoppers	Cat. No.	Pack of
With Suprasil quartz windows				
10mm	3.1mL	1	**14-385-930C**	465.7
20mm	6.3mL	1	**14-385-930D**	442.9
50mm	16mL	2	**14-385-930E**	580.1
100mm	31mL	2	**14-385-930F**	605.7
With near-UV glass windows				
10mm	3.1mL	1	**14-385-932C**	280.9
20mm	6.3mL	1	**14-385-932D**	306.6
50mm	16mL	2	**14-385-932E**	356.6
100mm	31mL	2	**14-385-932F**	366.9

*Trademark. See Trademark Reference.

Prices subject to change.

isherbrand* by Hellma Black Self-asking Quartz Micro Flow Cells

oose from two styles

ll cells are 12.5mm square

ell chamber is completely surrounded by paque black quartz, eliminating the need to ask the instrument light beam

avelength range for all cells is 190 to 2600nm nd 2850 to 3600nm

mpact Cells

5mm high

wo screw connectors (M 6 × 1)

langed FEP tubing (O.D. 1.9mm, D. 1.1mm × 500mm long)

ndard Cells

ed-on inlet and outlet tubes

14-385-926A

DERING INFORMATION:

ect cells with center height appropriate to tch the cell aperture center with the center ition of the light beam in your spectrophotome- Example: center height is 8.5mm for Beckman* hermo Scientific* instruments; center height is m for Hewlett-Packard*, Perkin-Elmer*, and Shimadzu* instruments.

tpath	Capac.	Outside Height	Center Height	Aperture	Cat. No.	Each
pact Cells						
mm	6.2µL	35mm	----	17.5 × 3.5mm	**14-385-933B**	1331.22
mm	12.4µL	35mm	----	17.5 × 3.5mm	**14-385-933C**	1311.55
mm	31µL	35mm	----	17.5 × 3.5mm	**14-385-933D**	1331.22
mm	62µL	35mm	----	17.5 × 3.5mm	**14-385-933E**	722.66
mm	124µL	35mm	----	17.5 × 3.5mm	**14-385-933F**	722.66
n	195µL	35mm	8.5mm	11 × 3.5mm	**14-385-933G**	827.19
n	195µL	35mm	15mm	11 × 3.5mm	**14-385-933H**	827.19
m	390µL	35mm	8.5mm	11 × 3.5mm	**14-385-933J**	516.78
m	390µL	35mm	15mm	11 × 3.5mm	**14-385-933K**	529.70
m	80µL	35mm	8.5mm	3mm dia.	**14-385-933L**	545.68
m	80µL	35mm	15mm	3mm dia.	**14-385-933M**	545.68
dard Cells						
m	750µL	45mm	15mm	11 × 6.5mm	**14-385-926A**	431.23
m	450µL	45mm	15mm	11 × 4mm	**14-385-926B**	460.93

sherbrand* Round Cuvets

erence mark near top assists repositioning

r use with commercial colorimeters and ectrophotometers

anufactured from borosilicate glass

14-385-900B

se With	Dia. × H	Cat. No.	Case of 36
man* Jr. II	12 × 75mm	**14-385-900A**	172.96
tronic* 20	13 × 100mm	**14-385-900B**	172.96
man Jr. II	19 × 105mm	**14-385-900D**	190.07
man Jr. II	19 × 150mm	**14-385-900E**	190.07

Fisherbrand* Disposable Cuvets

Choice of polystyrene or methacrylate

Select polystyrene cuvets for assays in visible spectral range (340 to 750nm). For accuracy throughout UV/Vis range (285 to 750nm), choose cuvets made from a superior grade of methacrylate.

- Disposable 10mm pathlength cuvets designed for visible and UV/Vis assays
- Choice of 4.5 and 1.5mL sample capacity
- Clear four-sided cuvets are ideal for fluorimetry and nephelometry, as well as spectrophotometry
- Scale down assay volumes and save on reagents by using semimicro cuvets with capacity to 1.5mL
- Molded-in arrow indicates direction of transmission on standard and semimicro cuvets—helping assure uniformity
- Each case contains cuvets with same mold impression number—assuring precision between samples—standard deviation is <±0.005 extinction units between cuvets

14-955-125

14-955-127

14-955-129

ORDERING INFORMATION:

Packaged 100 cuvets per stackable tray; five trays to a case. Outside dimensions: 12L × 12W × 45mmH

TRANSMITTANCE VALUES

Wavelength (nm)	% Transmission	
	Polystyrene	Methacrylate
800	88	90
700	88	90
600	85	90
500	85	90
400	85	90
380	85	90
360	80	89
350	80	88
340	75	86
320	65	85
300	35	82
280	----	55

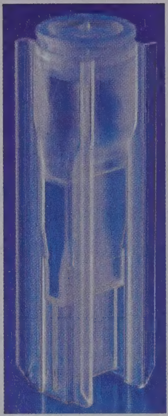
Cuvet Style	Material	Lightpath	Capacity	Cat. No.	Case of 500
Standard	Polystyrene	10mm	4.5mL	**14-955-125**	127.46
	Methacrylate	10mm	4.5mL	**14-955-126**	125.80
Semimicro	Polystyrene	10mm	1.5mL	**14-955-127**	99.99
	Methacrylate	10mm	1.5mL	**14-955-128**	135.01
Four-Clear-Sided	Polystyrene	10mm	4.5mL	**14-955-129**	110.58
	Methacrylate	10mm	4.5mL	**14-955-130**	118.61

BRAND* UV-Cuvette Disposable Cuvets from BrandTech*

An excellent alternative to quartz cells for molecular biology applications, these UV-transparent plastic cuvets provide transparency from 220 to 900nm

Advanced cuvet design includes recessed windows to protect against scratching in the optical pathway.

- Disposable; cleaning and cross-contamination risk are eliminated
- Ideal for DNA, RNA, and protein analysis
- Chemical resistant; can be used with most polar organic solvents, acids, and bases
- Also compatible with acetone, butanone, DMF, and concentrated hydrochloric acid
- Grouped by manufacturing mold cavity to ensure lowest variation in extinction coefficient
- Fits most spectrophotometers without adapters


13-878-121

Ultramicro size

- Available with 8.5 and 15mm window heights (Z-dimension)
- May be used with sample volumes as small as 70µL
- Can be fitted with plug seal caps (sold separately) for sample storage
- Available individually wrapped, DNA-, RNase-free

Semimicro size

- For sample volumes between 1.5 and 3.0mL
- Available individually wrapped, DNA-, RNase-free

Macro size

- Holds 2.5 to 4.5mL

SPECIFICATIONS

Style	Macro	Semimicro	Ultramicro
Window Dimensions (W × H)	10 × 35mm	4.5 × 23mm	2 × 3.5mm (minimum)
Wavelength Range	220 to 900nm	220 to 900nm	220 to 900nm
Standard Deviation (Extinction Units)	220 to 260nm <±0.007	220 to 260nm <±0.007	220 to 260nm <±0.007
	260 to 900nm <±0.002	260 to 900nm <±0.002	260 to 900nm <±0.002
Minimum Volume	2.5mL	1.5mL	70µL
Maximum Volume	4.5mL	3mL	8mm window: 850µL 15mm window: 550µL
Lightpath	10mm	10mm	10mm

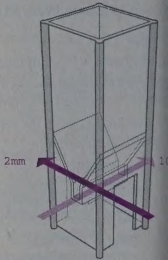
Cuvet Style	Mfr. No.	Cat. No.	Pack of
Macro	759170	**14-377-009**	100/64.58
Semimicro	759150	**13-688-74**	100/64.58
Semimicro	759165	**13-688-73**	500/286.78
Ultramicro (8.5mm window height)†	759200	**13-878-121**	100/64.58
Ultramicro (8.5mm window height)†	759210	**13-878-122**	500/286.78
Ultramicro (8.5mm window height)‡	759215	**03-840-300**	100/93.60
Ultramicro (15mm window height)†	759220	**13-878-123**	100/64.58
Ultramicro (15mm window height)†	759230	**13-878-124**	500/286.78
Ultramicro (15mm window height)‡	759235	**03-840-301**	100/93.60

† *Bulk packaged*
‡ *Individually wrapped*

Eppendorf* UVette* Cuvets

An alternative to the expensive, breakable quartz cells traditionally required for use at UV wavelengths

- UV- and VIS-transparent between 220 and 1600nm
- Suitable for measuring small volumes (≥ 50µL)
- DNA-, RNase-, and protein-free
- Volume markings for 500 and 1000µL
- Disposable
- Measure samples with a normal concentration using the 10mm optical pathlength; for samples with a higher concentration, rotate the UVette cuvets by 90° and use the shorter 2mm optical pathlength—no need to dilute sample



E0030 106

ORDERING INFORMATION:

Optimal for use with Eppendorf BioPhotometer* (E6131000012) or with commonly available spectrophotometers (adapter required). Individually wrapped.

INCLUDES:

80 UVette cuvets and universal adapter for GeneQuant* I and II and 8.5 15mm light height photometers and spectrophotometers.

SPECIFICATIONS

Material	UV-transparent plastic, free of fluoropolymers and other halogenated hydrocarbons
Wavelength Range	220–1600nm
Volume	50–2000µL
Optical Pathlengths	10mm and 2mm
L × W × H	12.5 × 12.5 × 36mm
Light Center Height	8.5mm
No. of Windows	4
Basic Absorbance	≤0.5A at 260nm

Description	Mfr. No.	Cat. No.	Pack o
UVette Cuvets	952 01 005-1	**E0030 106 300**	92
UVette Starter Kit	952 01 007-7	**E4099 100 007**	100

LOOKING FOR STIR BARS?

Fisher Scientific carries stir bars for spectrophotometer cells.

Visit www.fishersci.com and search for 14-511-72

CELL WASHERS

*isherbrand** Cell Washer

ngle- or double-cell capacity

e with filter flask (not included) to quickly and safely an either one or two 10mm cells simultaneously.

14-385-946B

pacity	Cat. No.	Each
gle-Cell	**14-385-946A**	124.68
uble-Cell	**14-385-946B**	162.47

enceware* Vakuwash* Cell Washer

es and dries glass or quartz cells

stic construction throughout
minates possibility of cell
nage during washing

dy for connection to vacuum
np or line

d cell, open end downward,
inst soft rubber cushion that
ses vacuum system

r washing fluid into 3½"
cm) funnel

rp spray action in unit washes
, fluid runs off into flask

tinued pressure against cell
ites airflow for drying

ng acetone as final wash before
ng will aid in removing all
er droplets

JDES:

_ polypropylene filtering flask
ikem* stopper and tube

14-385-937

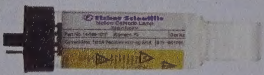
o.	Cat. No.	Each
0000	**14-385-937**	95.48

LAMPS

*Fisherbrand** Hollow Cathode Lamps

Single-Element 1½" dia. Lamps

- For all AA spectrophotometers except Perkin-Elmer*
- Argon or neon gas fill, except for Deuterium lamp which is filled with deuterium



14-368-101F

- Window materials are quartz, borosilicate and UV glass
- Lamps are single-element and 1½" (37mm) in diameter
- May be adapted to PE instruments using Adapter Kit (sold separately), see our Web site

Element	Window	Gas Fill	Cat. No.	Each
Aluminum	UVG	Neon	**14-386-100D**	279.15
Antimony	Quartz	Neon	**14-386-101J**	342.58
Arsenic	Quartz	Neon	**14-386-104N**	342.53
Barium	B. Sil.	Argon	**14-386-100Z**	344.03
Beryllium	Quartz	Neon	**14-386-104C**	724.60
Bismuth	Quartz	Neon	**14-386-101K**	330.16
Boron	UVG	Neon	**14-386-108J**	462.59
Cadmium	Quartz	Neon	**14-386-101M**	385.50
Calcium	UVG	Neon	**14-386-100B**	356.08
Chromium	UVG	Neon	**14-386-101N**	313.01
Cobalt	UVG	Neon	**14-386-101G**	356.08
Copper	UVG	Neon	**14-386-100A**	288.13
Deuterium	Quartz	Deuterium	**14-386-104M**	376.10
Gold	UVG	Neon	**14-386-101P**	479.75
Iron	UVG	Neon	**14-386-108C**	412.91
Lead	Quartz	Neon	**14-386-101F**	327.83
Lithium	B. Sil.	Argon	**14-386-102V**	380.02
Magnesium	Quartz	Neon	**14-386-101X**	351.78
Manganese	UVG	Neon	**14-386-101Q**	356.08
Mercury	UVG	Neon	**14-386-100Y**	373.00
Molybdenum	UVG	Neon	**14-386-101R**	356.08
Nickel	Quartz	Neon	**14-386-100H**	358.95
Palladium	UVG	Neon	**14-386-101Y**	477.39
Potassium	B. Sil.	Neon	**14-386-101D**	373.38
Selenium	Quartz	Neon	**14-386-101S**	532.87
Silicon	Quartz	Neon	**14-386-101T**	366.29
Silver	UVG	Argon	**14-386-100C**	324.60
Sodium	UVG	Neon	**14-386-102AA**	527.01
Thallium	UVG	Neon	**14-386-104D**	476.47
Tin	Quartz	Neon	**14-386-101V**	359.27
Titanium	UVG	Neon	**14-386-102H**	450.47
Vanadium	UVG	Neon	**14-386-101Z**	387.90
Zinc	Quartz	Neon	**14-386-100F**	367.21

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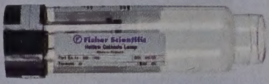
Fisherbrand* Hollow Cathode Lamps, Contd.

Single-Element 2" dia. Lamps



14-386-106C

- Lamps are single-element and have 2" (51mm) diameter
- Direct replacement lamps for Perkin-Elmer* nondata-coded instruments
- Argon or neon gas fills
- Window materials are quartz, borosilicate glass or UV glass

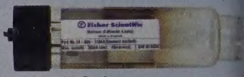
Element	Window	Gas Fill	Cat. No.	Each
Aluminum	UVG	Neon	**14-386-104P**	388.05
Antimony	Quartz	Neon	**14-386-104Q**	417.64
Arsenic	Quartz	Neon	**14-386-104R**	512.06
Barium	B. Sil.	Argon	**14-386-104S**	445.80
Beryllium	Quartz	Neon	**14-386-104T**	777.01
Bismuth	Quartz	Neon	**14-386-104AA**	425.51
Cadmium	Quartz	Neon	**14-386-104W**	470.26
Calcium	UVG	Neon	**14-386-104X**	454.65
Chromium	UVG	Neon	**14-386-105A**	437.39
Copper	UVG	Neon	**14-386-105D**	395.04
Gold	UVG	Neon	**14-386-105M**	530.31
Iron	UVG	Neon	**14-386-105S**	398.29
Lead	Quartz	Neon	**14-386-105AA**	433.37
Lithium	B. Sil.	Argon	**14-386-105V**	323.83
Magnesium	Quartz	Neon	**14-386-105X**	474.42
Manganese	UVG	Neon	**14-386-105Y**	474.43
Mercury	UVG	Neon	**14-386-105Z**	459.24
Molybdenum	UVG	Neon	**14-386-106A**	467.27
Nickel	Quartz	Neon	**14-386-106C**	472.72
Palladium	UVG	Neon	**14-386-106E**	630.31
Platinum	UVG	Neon	**14-386-106G**	530.31
Potassium	B. Sil.	Neon	**14-386-106H**	503.77
Selenium	Quartz	Neon	**14-386-106S**	589.18
Silicon	Quartz	Neon	**14-386-106T**	508.93
Silver	UVG	Argon	**14-386-106AA**	391.80
Sodium	UVG	Neon	**14-386-106V**	467.26
Tin	Quartz	Neon	**14-386-107D**	432.28
Titanium	UVG	Neon	**14-386-107E**	451.47
Tungsten	UVG	Neon	**14-386-107F**	508.93
Vanadium	UVG	Neon	**14-386-107H**	480.50
Zinc	Quartz	Neon	**14-386-107M**	455.35

Multi-Element 1½" Lamps

- Quartz windows with neon gas fill (sodium/potassium has UV glass)
- Lamps are multi-element and have 1½" diameter (37mm) bodies
- For use in all AA spectrophotometers except Perkin-Elmer* instruments
- May be adapted to fit PE* instruments using the 14-386-102Z Adapter Kit (sold separately)

Elements	Cat. No.	Each
Arsenic/Selenium/Tellurium	**14-386-103R**	489.64
Barium/Calcium/Strontium/Magnesium	**14-386-103F**	468.91
Calcium/Aluminum/Magnesium	**14-386-101H**	520.80
Calcium/Iron/Aluminum/Magnesium	**14-386-104F**	506.39
Calcium/Magnesium/Zinc	**14-386-104G**	535.51
Cobalt/Chromium/Copper/Iron/Nickel/Manganese	**14-386-103T**	635.77
Copper/Zinc/Iron/Manganese	**14-386-103G**	553.97
Copper/Zinc/Molybdenum/Cobalt	**14-386-103K**	542.09
Sodium/Potassium	**14-386-103S**	492.82

Multi-Element 2" Lamps



14-386-110 Series

- With quartz windows and neon gas fill (sodium/potassium lamp has UV glass)
- Lamps have 2" dia. (51mm) bodies to fit Perkin-Elmer* spectrophotometers

Elements	Cat. No.	Each
Aluminum/Calcium/Copper/Iron/Magnesium/Silicon/Zinc	**14-386-110Q**	1116.21
Calcium/Magnesium	**14-386-110A**	566.42
Calcium/Magnesium/Zinc	**14-386-110F**	624.96
Chromium/Cobalt/Copper/Iron/Manganese/Nickel	**14-386-110K**	848.86
Chromium/Copper/Iron/Nickel/Silver	**14-386-110P**	883.66
Copper/Iron/Manganese/Zinc	**14-386-110M**	744.33
Copper/Iron/Nickel	**14-386-110H**	723.21
Sodium/Potassium	**14-386-110D**	595.01

Data-Coded 1½" dia. Lamps

For Varian instruments

Element	Window	Gas Fill	Cat. No.	Each
Arsenic	Quartz	Neon	**14-386-115B**	432.86
Cadmium	Quartz	Neon	**14-386-115C**	390.45
Calcium	UVG	Neon	**14-386-116B**	385.90
Cobalt/Chromium/Copper/Iron/Manganese/Nickel	Quartz	Neon	**14-386-115P**	705.87
Copper	UVG	Neon	**14-386-116D**	332.72
Iron	UVG	Neon	**14-386-115F**	327.78
Lead	Quartz	Neon	**14-386-115G**	392.76
Magnesium	Quartz	Neon	**14-386-115H**	385.90
Mercury	UVG	Neon	**14-386-116F**	423.55
Molybdenum	UVG	Neon	**14-386-116G**	385.90
Nickel	Quartz	Neon	**14-386-115J**	385.90
Potassium	B. Sil.	Neon	**14-386-114C**	432.86
Selenium	Quartz	Neon	**14-386-115K**	522.64
Silicon	Quartz	Neon	**14-386-115L**	400.53
Sodium	UVG	Neon	**14-386-116J**	405.60
Sodium/Potassium	UVG	Neon	**14-386-116K**	522.64
Zinc	Quartz	Neon	**14-386-115N**	385.90

Contd. on next pag

sherbrand* Hollow Cathode Lamps, Contd.

ata-Coded 2" dia. Lamps
or Perkin-Elmer* instruments

ement	Window	Gas Fill	Cat. No.	Each
uminum	UVG	Neon	**14-386-119A**	440.36
senic	Quartz	Neon	**14-386-118B**	540.49
dmium	Quartz	Neon	**14-386-118C**	572.33
lcium	UVG	Neon	**14-386-119B**	503.78
lcium/Magnesium	Quartz	Neon	**14-386-118Q**	688.87
romium	UVG	Neon	**14-386-119C**	503.78
balt	UVG	Neon	**14-386-118D**	503.78
pper	UVG	Neon	**14-386-119D**	443.25
n	UVG	Neon	**14-386-118F**	441.00
ad	Quartz	Neon	**14-386-118G**	503.78
agnesium	Quartz	Neon	**14-386-118H**	503.78
ckel	Quartz	Neon	**14-386-118J**	503.78
ver	UVG	Argon	**14-386-119G**	443.25
dium	UVG	Neon	**14-386-119H**	488.26
c	Quartz	Neon	**14-386-118P**	503.78

LOOKING FOR DEUTERIUM LAMPS?

isit www.fishersci.com and search for Deuterium Lamps

SPONGES

PONGES

sy cleanup!

nthetic cellulose, with or thout abrasive scrubber. For re, visit our Web site and arch on keyword Sponges.

14-417

06-668-30

scription	Cat. No.	Pack of	Case of
herbrand* Sponge	**14-417**	12/26.05	4 Pk./89.40
onge-Scrubber Pad	**06-668-30**	5/16.22	8 Pk./110.92

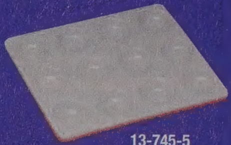
SPOT PLATES

SPOT PLATES

For microchemical applications or observing color reactions. For more choices, go to our Web site and search on keyword Spot Plates.

21-379

13-748B


13-745-5

No. of Cavities	L × W	Cat. No.	Price	Case of
Pyrex* Spot Plates (for observing color reactions)				
9	4 × 3⅜" (100 × 85mm)	**13-748B**	Pk. of 6/231.85	3 Pk./507.43
Pyrex Micro Spot Plates (for microchemical applications)				
3	1⅜ × 3⅜" (34 × 85mm)	**21-379**	----	36/681.94
CoorsTek* Spot Plates (for observing color reactions)				
3	3⅝ × 1¼" (92 × 31mm)	**13-745-12A**	Ea./17.32	24/332.47
12	4⅜ × 3⅝" (112 × 92mm)	**13-745-5**	Ea./19.76	12/202.72
12	4⅝ × 3⅝" (118 × 92mm)	**13-745-12B**	Ea./19.86	12/216.60
12	6⅛ × 4⅝" (155 × 118mm)	**13-745-8**	Ea./33.84	8/246.14
30	7 × 5½" (180 × 140mm)	**13-745-9**	Ea./70.90	6/376.46

STATIONERY

Nalgene* Laboratory Notebook

Bound and sewn pages for secure recordkeeping

Designed for process recordkeeping. Ideal for securing patent protection in research laboratories.

01-814-19

- Features polyethylene cover and 184 high-quality, acid-free, paper pages with ¼" (6.4mm) grid lines
- Letter-sized 8½ × 11" (22 × 28cm) pages are permanently bound and sewn
- Pages include place for preparer and witness signatures to aid in securing patent protection
- Burgundy cover
- Overall dimensions: 8⅞L × 11¼W × ⅝"H (22.5 × 28.6 × 1.6cm)

Mfr. No.	Cat. No.	Case of 6
6501 1000	**01-814-19**	168.00

Nalgene* Deluxe Lab Notebooks

With 100 Uncoated PolyPaper Pages

Excellent for documentation of valuable laboratory research

11-900

- Features case-bound hardcover with permanently bound pages that are waterproof and chemical resistant
- Pages are numbered and printed with spaces for dates, signature of worker and witness for patent protection
- Choose black cover with fine green ¼" (6mm) grid or blue cover with horizontal lines
- Accept ballpoint pen and permanent marking pen
- Page size: 9¼ × 11¼" (23 × 29cm)

INCLUDES:

Instructions for keeping records, page for issuing book and table of contents.

Cover Color	Mfr. No.	Cat. No.	Each	Case of 6
Black	6300 1000	**11-900**	76.82	307.25
Blue	6300 2000	**11-900-1**	79.82	319.25

With 96 Regular Paper Pages

Polyethylene covered laboratory notebook with sewn-in paper pages

- Spaces for dates, signature of worker and witness for patent protection
- Choose forest green cover with ¼" (6mm) green grid or burgundy cover with horizontal lines
- Page size: 8½ × 11" (22 × 28cm)

INCLUDES:

Instructions for keeping records, page for issuing book and table of contents

NOTE:

Pages are not waterproof.

Cover Color	Mfr. No.	Cat. No.	Each	Case of 6
Forest Green	6301 1000	**11-903**	31.13	124.50
Burgundy	6301 2000	**11-903-1**	33.31	133.25

With Duplicate Page Capability

Laboratory notebooks with sewn-in paper pages and a brown polyethylene cover

- Contain 50 numbered sets (total of 100 sheets)
- Pages are printed on one side only
- Each page is followed by an identically numbered, perforated page for easy removal
- Page size: 8½ × 11" (22 × 28cm)

NOTE:

Carbon paper is not supplied with notebooks

Mfr. No.	Cat. No.	Each	Case of 6
6302 1000	**11-904**	53.26	213.00

Nalgene* PolyPaper* Spiral Field Notebo

Will withstand the requirements of field work

11-9

Accepts almost all writing devices including ballpoint pen, felt-tip marker, indelible and grease pencils.

- Blue polyethylene cover with treated PolyPaper 9 × 11¼" (23 × 29cm) pages and plastic spiral binding
- Pages numbered 1 through 96 and printed with fine green ¼" (6mm) grid
- Pages are washable and they dry flat
- Endure salt water, mud, chemicals, all kinds of dirt
- Can be written on wet and even under water with ordinary No. 2 penc
- Spiral notebook lies flat for easy use in the field

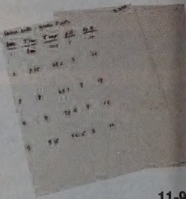
INCLUDES:

Instructions for accepted notebook procedures, table of contents, page f issuing notebook

Mfr. No.	Cat. No.	Each	Case o
6303 1000	**11-902**	84.67	338.

Nalgene* PolyPaper* Plastic Sheets

Endure salt water, mud, and chemicals



11-9

Specially coated, blank sheets accept No. 2 pencil anywhere—even under water. You can also type, print by offset or letter press (see package label), or use a variety of hand markers on these durable, spunbonded polyethylene sheets.

- Resist UV light, tearing, fraying, curling, aging, discoloration, rot and mildew
- Roll or fold without cracking
- Remain flexible at cold temperatures
- May be punched for use in three-ring binders
- Cut into labels for enclosing with wet or dry chemicals and biological samples stored in formalin
- Size: 8½ × 11" (22 × 28cm)

NOTE:

Not intended for use in photocopiers.

Mfr. No.	Cat. No.	Pack of 100 sheets	Case of 5 Pk.
6304-0811	**11-905**	100.95	336.50

W Texwipe* TexWrite* Cleanroom Bond Paper

gh strength, excellent heat resistance

er impregnated with synthetic latex to reduce particle generation associated with standard papers. Features high ngth and excellent heat resistance—an ideal choice for laser printers and photocopiers.

:Write 22 Bond

ffers greatly reduced particle and sodium counts

o inorganic fillers used in the formulation of this paper, making it ideal for semiconductor manufacturing

vailable in a variety of colors

/eight, 22 lb. (81g/m²); in case of 10 reams (2500 sheets)

Write 30 Heavyweight Opaque Bond

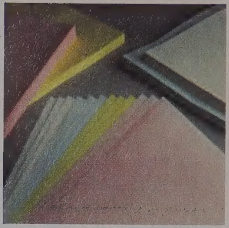
pecially formulated heavyweight sheet can be printed on both sides

ffers the same excellent particle control characteristics and heat resistance ; TexWrite 22 paper

/eight: 30 lb. (110g/m²)

DERING INFORMATION:

sheets per ream. Sheets measure 8½ × 11" (22 × 28cm) and are nk-wrapped and packed in a protective polypropylene bag.

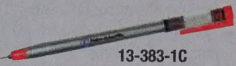


18-344B, 18-344C, and 18-344D

Color	Mfr. No.	Cat. No.	Case of 10
TexWrite 22, 81g/m²			
Blue	TX 5812	**18-344B**	158.45
Pink	TX 5813	**18-344C**	169.25
Yellow	TX 5814	**18-344D**	169.25
White	TX 5815	**18-344E**	158.45
Green	TX 5831	**19-003-482**	195.92
TexWrite 30, 110g/m²			
White	TX 5832	**18-348A**	132.63

*isherbrand** Scientific Technical Pens

ist-drying ink in three colors



13-383-1C

disposable pen that produces tra-fine lines with accuracy—and thout smearing. Special ng-legged" point is perfect for writing on notebooks, ms, graphs, charts, tables and recording paper. Make precise lines with quares, rulers and flexible curves. Choose from two line sizes: extra e, 0.016" (0.4mm), or super fine, 0.008" (0.2mm).

nk is smooth flowing, fadeproof, and quick drying

Assortment includes red, blue, and special ultrablack for excellent eproduction on office copiers

.arge ink reservoir lets you write for over ½ mile (800m)

Cap design and color indicate point size and color of pen

Built-in super-tight cap seal keeps ink from drying out when pen is iot in use

Color	Cat. No.	Pack of
ra-Fine Tip		
ck	**13-383-1B**	6/22.53
ie	**13-383-1F**	6/23.72
er-Fine Tip		
ck	**13-383-1A**	6/22.53
ie	**13-383-1E**	6/23.72
d	**13-383-1C**	6/23.72
ed Tip		
sorted	**13-383-1**	12/24.02

*Fisherbrand** Permanent Markers

Write on all surfaces

Marking pens write on glass, film, wood, plastic, metal, rubber, and porcelain. Perfect for marking sample bags, microscope or photographic slides, laboratory glassware and more.

13-383

- Produce precise, ultrathin lines 0.3mm wide
- Waterproof and fadeproof, permanent ink dries almost instantly
- An airtight ring seal cap prevents dry-out and ensures instant writing even after lengthy storage
- Unique stainless-steel long leg allows precise writing in a confined space

ORDERING INFORMATION:

Assorted includes six opaque black, two vivid red, two blue, and two green pens

Color	Cat. No.	Pack of
Black	**13-383C**	6/22.12
Red	**13-383D**	6/23.28
Blue	**13-383E**	6/23.28
Green	**13-383F**	6/23.01
Assorted	**13-383**	12/22.99

LOOKING FOR MORE OFFICE SUPPLIES?

or general-purpose scissors and transparent tape, see the Scissors and ape sections.

*Fisherbrand** Marking Pens

Quick-drying ink has no unpleasant odor

Designed to write on cold and damp surfaces as easily as they write on dry surfaces. Proven permanent on most surfaces, including plastic, metal, and ceramic.

13-379 Series

- Will not smear when subjected to water or alcohol during normal use
- Highly resistant to abrasion and water
- Fine tip is excellent for general marking
- Extra-fine tip simplifies marking small items such as slides, culture tubes, RIA tubes and scintillation vials

Ink Color	Cat. No.	Pack of 10
Fine Tip		
Black	**13-379-4**	41.64
Red	**13-379-5**	41.64
Blue	**13-379-6**	41.64
Green	**13-379-7**	41.64
Extra-Fine Tip		
Black	**13-379-1**	38.31
Red	**13-379-2**	38.31
Blue	**13-379**	38.31
Green	**13-379-3**	38.31

Nalgene* Black Ink Pens

Ink dries quickly and is permanent

Ideal for writing on glass, plastic, and 11-902 Nalgene PolyPaper* Field Notebooks with plastic pages.

13-382-51 and 13-382-50

- Felt-tip marking pens with pocket clips and black ink
- Choose fine-line pen or broad-line marker

Type	Mfr. No.	Cat. No.	Pack of 4	Case of 3 Pk.
Lab Pen (fine line)	6310 0010	**13-382-50**	22.38	44.77
Lab Marker (broad line)	6311 0010	**13-382-51**	22.38	44.77

Scienceware* Autoradiography Pens

Nontoxic, nonradioactive; ideal for marking X-ray film

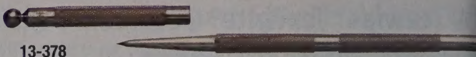
HIGH ENERGY

13-380-1A

- Phosphorescent material will not leak or dry out
- No bladders, vials or liquids to spill
- Spectral peak, 5600Å
- Bright green markings do not glow in the dark, but are visible under normal conditions and on X-ray film
- Mark emits no Beta or other isotope emission, so using an intensifier screen will not affect intensity
- Pen is 4½" long (11.4cm)
- Pens available with normal- or high-energy-level emissions
- High-energy-level pen features longer, more intense signal

INCLUDES:
Pocket clip and screw-knob advance to adjust writing tip

Description	Mfr. No.	Cat. No.	Each	Case of 6
Normal-Energy-Level Pen	13350 0000	**13-380-1A**	74.84	390.49
High-Energy-Level Pen	13351 0000	**13-380-1B**	77.73	405.51



13-378

Tungsten Carbide Pencil

Marks glass and metal

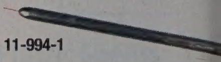
- Stainless-steel pencil with tungsten carbide point and protective cap

Mfr. No.	Cat. No.	Each	Pack o
TNG CARBTIP	**13-378**	50.00	219.

LOOKING FOR LABELS?
See Tape and Labels, Fisher Scientific offers a variety of self-adhesive and tamper-evident labels. See our Labels section.

Fisher Scientific* Laser Pointers

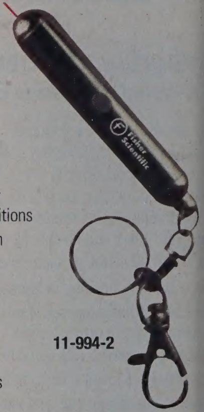
For slide presentations, microscope projections, field studies, wall charts and lectures



11-994-1

Pocket Laser Pointer

- Provides brilliant red light at 630 to 680nm wavelength with a beam diameter of 3.5mm
- Features output power of 5mW and range of 300' (91m)
- Measures 5½L × ½" dia. (14 × 1.3cm)



11-994-2

Key Chain Laser Pointer

- Half the size of pocket laser
- Features output power of 4mW and range of 300' (91m)
- Brilliant red beam with 3.5mm diameter can be seen under normal lighting conditions
- 2⅜L × 9/16" dia. (6.0 × 1.4cm) body can be carried securely on keychain
- Switch is momentary ON/OFF

INCLUDES:
Pocket Laser Pointer: Supplied with pocket clip, safety instructions and two "AAAA" batteries that provide two hours of continuous use.

Key Chain Laser Pointer: Supplied with keychain, instructions, and thr silver oxide batteries that provide two hours of continuous use.

Description	Cat. No.	Ea
Pocket Laser Pointer	**11-994-1**	115.
Key Chain Laser Pointer	**11-994-2**	68.

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Visit www.fishersci.com and search for Stationery

STERILIZERS

ermo Scientific* Napco* Model 9000D bletop Autoclave/Dryer

sterilizing instruments and solids

14-486

special drying elements for fast drying after sterilization cycle.

ures

ervoir capacity, 1 qt. (0.9L)

erating range: 250°F/15psi (121°C/103kPa) to 270°F/27psi
2°C/186kPa) range with temperature uniformity to ±0.5°C (±1°F)

tinuous pressure purge system (CPP) that assures uniform sterilization

o 60-minute timer for sterilization and drying cycles

rpressure release and low-water cutoff

uires no special power or plumbing; uses tap water

omatic shutoff and pressure release at end of cycle

stainless steel except for brass fittings and copper tubing

ERING INFORMATION:

nsions, Overall: 21L × 18W × 14"H (53 × 46 × 36cm);
ber: 9 dia. × 18"D (23 × 46cm); Net weight, 90 lb. (40kg);
ing weight, 131 lb. (59kg)

JDES:

nd one tray

IFICATIONS:

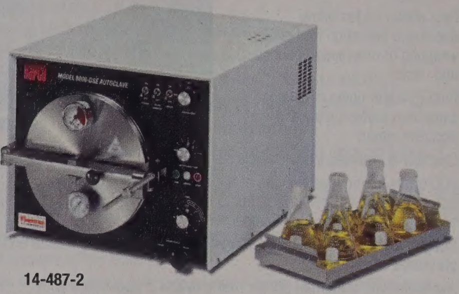
ted

cal Requirements	Mfr. No.	Cat. No.	Each
60Hz, 12A	6605	**14-486**	4378.00
50/60Hz, 6A[1]	6606	**14-486A**	4816.35

ational Model.

Thermo Scientific* Napco* Model 8000DSE Tabletop Sterilizer

Compact, portable unit for sterilizing liquids, solids and instruments



14-487-2

Features a slow cool-down cycle for use with liquids and a rapid cool-down cycle for solids and instrument sterilization. Equipped with built-in drying element for rapid moisture removal after sterilization.

Features

- Operating range: 121° to 132°C (250° to 270°F), ±0.5°C (±1°F) temperature uniformity
- Pressure range: 15 to 27psi (103 to 186kPa)
- Reservoir capacity: 1 qt. (0.9L)
- 0- to 70-minute timer activates when sterilization temperatures are reached
- Audible alarm at end of timed cycle
- Continuous pressure purge system (CPP) that ensures uniform sterilization
- Overpressure release, overtemperature thermostats and front-mounted controls
- All stainless steel except for brass fittings and copper tubing
- No special plumbing required
- Uses tap water

ORDERING INFORMATION:

Dimensions, overall: 21L × 18W × 14½"H (53 × 46 × 37cm); chamber: 9 dia. × 18"D (23 × 46cm); Net weight: 90 lb. (41kg); Shipping weight, 131 lb. (59kg).

INCLUDES:

Unit and one tray.

NOTE:

Requires a standard 20A small appliance outlet (5-20R receptacle).

Electrical Requirements	Mfr. No.	Cat. No.	Each
120V 60Hz, 14.6A	6600	**14-487-2**	4698.00
220V 50Hz, 8A[1]	6601	**14-487-1**	5118.00

---

[1] *International Model.*

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Thermo Scientific* SterileMax* Tabletop Sterilizers

17% more chamber space than traditional benchtop unit

14-488-24

- Hold up to three 2L flasks simultaneously, or smaller items, using included removable racks and trays
- Four preset cycles allow one-touch operation for liquids, wrapped or unwrapped goods, and packs
- Built-in water pump maintains consistent water supply and accurate steam
- Chamber is insulated for quick cycle start-up and low heat loss between cycles
- LCD offers continuous viewing of the sterilization and diagnostic programs—plus, it displays faults to indicate that sterilization parameters have not been reached in chamber
- Integral access port allows additional verification of temperature and pressures when needed
- Available with a thermal printer that provides a paper tape with validation of sterilizer performance, load-control identification, and quality assurance checks for each cycle
- Optional B/T Sure* Biological Indicators for monitoring sterilizer performance
- Included three chamber locks will not open unless chamber has depressurized, as well as a low-water indicator display
- Preset cycles: liquids, 15 min. at 121°C (250°F); unwrapped goods, 3 min. at 135°C (278°F); wrapped goods, 10 min. at 135°C (278°F); packs, 30 min. at 121°C (250°F). Or, set up custom programs for liquid or hard goods with cycle parameters ranging from 1 to 99 minutes at 100° to 135°C (212° to 278°F)

ORDERING INFORMATION:

Overall L × W × H: 24½ × 23 × 17" (62 × 58 × 43cm). Chamber dia. × D: 12 × 18" (30 × 46cm). Chamber capacity, 1.2 cu. ft. (0.33m^3). Operational weight, 85 lb. (38.5kg). Shipping weight, 134 lb. (60.7kg). With line cord and plug.

INCLUDES:

Come with one rack, and one large and one small tray.

COMPLIANCE:

ASME approved and stamped

CERTIFICATIONS:

UL and cUL listed. 220V models carry CE mark.

Electrical Requirements	Mfr. No.	Cat. No.	Each
With Printer			
120V 50/60Hz, 12.5A, 1500w	ST75935	**14-488-24**	7902.00
220V 50/60Hz, 6.5A, 1500w	ST75930 33	**14-490-2**	7902.00
Without Printer			
120V 50/60Hz, 12.5A, 1500w	ST75925	**14-490-1**	7112.00
220V 50/60Hz, 6.5A, 1500w	ST75920 33	**14-490-3**	7112.00

Thermo Scientific* Indicators, Incubator and Pouches

Easy and inexpensive methods to monitor steam sterilizer effectiveness

B/T Sure* and Sterilamp II Biological Indicators

- Verify sterility of instruments, media, and other steam-sterilized items just two days, using a simple three-step process
- Easy sterilization identification: Purple color ensures sterilization; yellow, cloudy results indicate an ineffective sterilization
- Indicators can save up to 60% of the cost of outsourcing complete sterility tests
- B/T Sure indicators are for instruments, glassware, and other apparatu have spore population of 10^5
- Sterlilamp II indicators are for media and additives; have spore pollati of 10^6

The B/T Sure Biological Incubator

- Incubate up to 10 indicators at once under ideal conditions—operatin temperature of 57°C with uniformity of ±0.25°C and stability of ±0.15
- Total indication accuracy is ±1.4°C
- Incubator L × W × H: 3⅜ × 4⅜ × 2⁵⁄₁₆" (8.6 × 11.1 × 5.9cm)
- Electrical requirements: 120V 60Hz, 0.2A, 19w
- With line cord and plug

Chemitest Temperature Indicators

- Verify that sterilizer reached adequate sterilization temperature during a c
- Can also be used to verify that an item has been run through a sterilization cycle
- Available in pouches, tabs, strips and tape

Description	Mfr. No.	Cat. No.	Pr
Biological Indicators			
BT/Sure Biological Indicator for instruments, glassware and other apparatus	AY759X3	**14-490-24**	Pk. of 100/347.
BT/Sure Biological Indicator for instruments, glassware and other apparatus	AY759X1	**14-490-25**	Pk. of 5/23.
Sterilamp II Biological Indicator for media and additives	AY759X4	**11-715-140A**	Pk. of 100/361.
Sterilamp II Biological Indicator for media and additives	AY759X7	**11-715-140**	Pk. of 25/113.
Incubator			
B/T Sure Incubator for 10 indicators	DB104115	**14-490-26**	Ea./321
Chemitest Temperature Indicators			
Strips. For Steam Sterilizers only	AY759X2	**14-490-27**	Pk. of 250/33
Strips. For Chemiclave Sterilizers only	230305001	**14-490-31**	Pk. of 250/31
Tabs; self-adhering; 1¼ × 1¼" (3.2 × 3.2cm)	230306001	**14-490-32**	Pk. of 250/30
Tape-Closure system for packs, bags or other containers; 1½W × 360"L (3.8 × 914cm) roll	260577	**14-490-30**	Ea./35
Chemitest Self-Sealing Pouches with Temperature Indicator			
2¼ × 5" (5.7 × 12.7cm)	ZSX152	**14-490-33**	Pk. of 200/1
2¾ × 10" (7 × 25.4cm)	ZSX153	**14-490-34**	Pk. of 200/1
3½ × 10" (9 × 25.4cm)	ZSX155	**14-490-36**	Pk. of 200/2
5¼ × 11" (13.3 × 27.9cm)	ZSX156	**14-490-37**	Pk. of 200/3
7½ × 13" (19.1 × 33cm)	ZSX157	**14-490-38**	Pk. of 200/5

*Trademark. See Trademark Reference.

inkmann*/Tuttnauer* Tabletop Autoclaves

npact sterilizers featuring electronic or analog con-ls that provide a fast, safe and convenient way to rilize both solids and liquids

Analog Control models and Electronic rol models come in a choice of sizes.

02-964-7

erating Features

- on bench or table
- ME-stamped, Type 316L stainless-steel amber designed for safety and durability
- tomatically controlled sterilizing and dry- cycles
- ntinuous pressure purge eliminates air pockets and ensures rough, even sterilization
- t exhaust control allows quick release of chamber pressure to reduce drying e of solids, slower release for media and liquids to eliminate boilover
- ying cycle prevents rusting of delicate instruments and thoroughly dries sorbent materials
- inless-steel chamber and stainless-steel removable trays
- ge-capacity reservoir provides for less frequent fill-ups
- external plumbing required; uses self-contained water supply
- ne filters guard against debris
- ter drain allows quick and easy reservoir cleaning

ty Features

- at-insulated, double-locking door protects against accidental burns
- ors cannot be opened while chamber is under pressure
- ertemperature cutoff, overpressure valve, and low-level water alarm

og M Series models provide:

- nomical analog controls and gauges for simple operation
- minute cycle timer
- nperature selection from 100° to 134°C (212° to 273°F)
- Combination pressure and temperature gauge with peak indicator

Electronic Control E Series models add

- Microprocessor controls and digital display
- Completely automatic control through water-fill, heating, sterilization, exhaust, and drying: set cycle parameters in any of four one-button programs that provide easy, reproducible cycles for sterilizing solids, liquids, and absorbent materials
- Temperature selection from 105° to 137°C (221° to 279°F)
- Temperature, pressure and running time are constantly displayed on the digital readout
- Battery backup retains all parameter settings
- Sensor prevents start-up until door is closed
- Electronic pressure and temperature sensors, low water signal
- Standby heating keeps chamber warm for quicker cycles

Electronic Control EP Series models offer

- All features of Electronic E models plus a printer for documentation of each sterilization cycle for GLP procedures
- Printed summary at end of each cycle documents temperature, pressure, drying time, sterilization time, cycle number, time and date, and errors or interruptions

Environmental Lab Model 2540EPK offers

- All features of Electronic EP models
- Plus an accelerated cycle time for sterilization cycle validation; helps meet EPA guidelines for sterilization cycle times and autoclave operation

APPLICATIONS:

Sterilization of liquids, media, instruments, glassware, clothing, and waste

WARRANTY:

Two-year warranty on parts

COMPLIANCE:

Model 2540EPK (02-964-25) meets U.S. EPA guidelines for both solids and liquids

CERTIFICATIONS:

UL listed. CSA approved. ASME (chamber).

l	Chamber Dia. × Depth	No. of Trays	Printer	Stand	Overall L × W × H	Net Weight	Electrical Requirements	Mfr. No.	Cat. No.	Each
g Control: M Series										
M[1]	7 × 12" (18 × 30cm)	3	No	No	16 × 17 × 12½" (41 × 43 × 32cm)	46 lb. (21kg)	120V 50/60Hz, 1050w	023 21 000 2	**02-964-1**	3690.00
M	9 × 18" (23 × 46cm)	3	No	No	20 × 20 × 15" (51 × 51 × 38cm)	70 lb. (31.7kg)	120V 50/60Hz, 1400w	023 21 010 0	**02-964-3**	4220.00
M	9 × 18" (23 × 46cm)	3	No	No	20 × 20 × 15" (51 × 51 × 38cm)	70 lb. (31.7kg)	220V 50/60Hz, 1400w	023 21 015 1	**02-964-4**	4220.00
M	10 × 18" (25 × 46cm)	4	No	No	20 × 20 × 15" (51 × 51 × 38cm)	75 lb. (34kg)	120V 50/60Hz, 1400w	023 21 030 4	**02-964-19**	4890.00
M	12¼ × 18½" (31 × 47cm)	2	No	No	21½ × 23½ × 18" (55 × 60 × 46cm)	112 lb. (51kg)	220V 50/60Hz, 2200w	023-21-063-1	**02-964-40**	6530.00
M	15 × 20" (38 × 51cm)	2	No	Yes	27 × 26 × 21" (69 × 66 × 53cm)	144 lb. (65.3kg)	220V 50/60Hz, 2400w	023 21 047 9	**02-964-26**	10,400.00
M	15 × 27" (38 × 69cm)	2	No	Yes	34 × 26 × 21" (86 × 66 × 53cm)	161 lb. (73kg)	220V 50/60Hz, 2700w	023 21 055 0	**02-964-13**	14,000.00
onic Control: E Series										
E	9 × 18" (23 × 46cm)	3	No	No	20 × 20 × 15" (51 × 51 × 38cm)	70 lb. (31.7kg)	120V 50/60Hz, 1400w	023 21 020 7	**02-964-5**	5230.00
E	10 × 18" (25 × 46cm)	4	No	No	20 × 20 × 15" (51 × 51 × 38cm)	75 lb. (34kg)	120V 50/60Hz, 1400w	023 21 040 1	**02-964-9**	5810.00
E	10 × 18" (25 × 46cm)	4	No	No	20 × 20 × 15" (51 × 51 × 38cm)	75 lb. (34kg)	220V 50/60Hz, 1400w	023 21 045 2	**02-964-11**	5820.00
E	12¼ × 18½" (31 × 47cm)	2	No	No	23½ × 23½ × 18" (55 × 60 × 46×cm)	112 lb. (51kg)	220V 50/60Hz, 2200w	023-21-066-5	**02-964-41**	7000.00
E	15 × 20" (38 × 51cm)	2	No	Yes	27 × 26 × 21" (69 × 66 × 53cm)	144 lb. (65.3kg)	220V 50/60Hz, 2400w	023 21 048 7	**02-964-27**	12,400.00
E	15 × 27" (38 × 69cm)	2	No	Yes	34 × 26 × 21" (84 × 66 × 53cm)	162 lb. (73.5kg)	220V 50/60Hz, 2700w	023 21 060 6	**02-964-10B**	16,100.00
onic Control with Printer: EP Series										
EP[1]	9 × 18" (23 × 46cm)	3	Yes	No	20 × 20 × 15" (51 × 51 × 38cm)	71 lb. (32.2kg)	120V 50/60Hz, 1400w	023 21 021 5	**02-964-7**	5640.00
EP	9 × 18" (23 × 46cm)	3	Yes	No	20 × 20 × 15" (51 × 51 × 38cm)	71 lb. (32.2kg)	220V 50/60Hz, 1400w	023 21 026 6	**02-964-20**	5650.00
EP[1]	10 × 18" (25 × 46cm)	4	Yes	No	20 × 20 × 15" (51 × 51 × 38cm)	76 lb. (34.5kg)	120V 50/60Hz, 1400w	023 21 041 0	**02-964-10**	6240.00
EPK[2]	10 × 18" (25 × 46cm)	4	Yes	No	20 × 20 × 15" (51 × 51 × 38cm)	71 lb. (32.2kg)	220V 50/60Hz, 2100w	023 21 044 4	**02-964-25**	6920.00
EP	12¼ × 18½" (31 × 47cm)	2	Yes	No	21½ × 23½ × 18" (55 × 60 × 46cm)	113 lb. (51kg)	220V 50/60Hz, 2200w	023-21-069-0	**02-964-42**	7470.00
EP	15 × 20" (38 × 51cm)	2	Yes	Yes	27 × 26 × 21" (69 × 66 × 53cm)	145 lb. (65.8kg)	220V 50/60Hz, 2400w	023 21 049 5	**02-964-28**	12,500.00
EP	15 × 27" (38 × 69cm)	2	Yes	Yes	34 × 26 × 21" (86 × 66 × 53cm)	162 lb. (73.5kg)	220V 50/60Hz, 2700w	023 21 056 8	**02-964-14**	16,200.00

50/60Hz model also available. Contact your Fisher Scientific Customer Service Representative. Features an accelerated cycle time to meet U.S. EPA guidelines for autoclave operation.
etes entire cycle within 45 minutes when a 12- to 15-minute sterilization period is used.

Brinkmann*/Tuttnauer* Vertical Toploading Autoclaves

NEW

Provide automatic, microprocessor-controlled sterilization—safely and economically

13-880-100

Intelligent Control Technology sterilizes higher load capacities in shorter batch times, saving time and energy. Dual temperature and pressure control systematically increases chamber pressure and temperature throughout heating phase, helping to achieve chamber and sample temperature in half the time of other autoclaves. Cooling system available on select models.

Operating Features

- Digital LCD for pressure, temperature, time and process alerts
- Six preset programs
- PT-100 temperature sensor ensures that vessels achieve desired sterilization temperature before sterilization cycle begins
- Demineralized water level for steam generation is automatically regulated
- Exhaust steam is cooled before venting
- Heat-resistant plastic cover on lid prevents contact with hot parts and protects against burns
- Validation ports allow connection to external temperature sensors (not included) used in validation/qualification methods
- RS-232 interface

Rapid Cooling System (Optional)

- Cools chamber after sterilization cycle
- Lowers cool-down time by up to 90%
- Offered on models ending in letter "C"

APPLICATIONS:

Sterilization of liquids, media, instruments, glassware, clothing, and waste

Model	Version	Electrical Reqts.	Mfr. No.	Cat. No.	Each
2540 ELV	----	220V 50/60Hz	23210900	**13-880-100**	7295.00
2540 ELVC	With Rapid Cooling System	220V 50/60Hz	23210910	**13-880-101**	8450.00
3850 ELV	----	220V 50/60Hz	23210920	**13-880-102**	13,495.00
3850 ELVC	With Rapid Cooling System	220V 50/60Hz	23210930	**13-880-103**	15,295.00
3870 ELV	----	220V 50/60Hz	23210940	**13-880-104**	16,995.00
3870 ELVC	With Rapid Cooling System	220V 50/60Hz	23210950	**13-880-105**	18,295.00

Sterilmatic* Steam Pressure Sterilizers

Sterilize laboratory glassware as well as liquids

Two models, each with roomy 16 dia. × 26"D chamber.

14-460

Features

- Capacity, 3 cu. ft.
- Operating pressure: 15psi (1 atm/100kPa)
- Front-mounted controls with 60-minute timer
- Exhaust speed dial with fast (1 minute for instruments and glassware) and slow (10 minutes for liquids) settings
- Fast preheating—reach sterilizing temperature in 8 to 10 minutes from cold start, 3 to 7 minutes in continued use
- Doors lock automatically and cannot be opened until pressure is exhausted
- Incorporate low-water cutoffs, safety valves
- Release pressure and shut off power supply at end of cycle
- Polished stainless-steel exterior with adjustable feet
- Clad aluminum interior chamber
- Fixed-temperature model heats to 121°C (250°F). Variable-temperature model heats from 110°C to 121°C (230° to 250°F).

ORDERING INFORMATION:

Dimensions, Overall: 31L × 18¾W × 29"H (79 × 48 × 74cm); Chamber: 16 dia. × 26"D (41 × 66cm); Net weight, 150 lb. (68kg); For 208/240V 60Hz, 1 or 3 phase. Amperage: 26 for 208V, 3 phase; 30 for 240V, 4-wire; 45 for 208V, single phase; 51 for 240V, 3-wire. Accesories available seperately (see below).

CERTIFICATIONS:

UL listed, CSA, ASME

NOTE:

Must be hardwired in the location of use

Model	Temperature	Mfr. No.	Cat. No.	Eac
Fixed Temperature	121°C (250°F)	95 2678	**14-460**	10,135.0
Variable Temperature	110° to 121°C (230° to 250°F)	95 3441	**14-460-10**	10,450.0

ACCESSORIES

For Sterilmatic* sterilizers

Sterilizer Stand

For 14-460 and 14-460-10 Models. Stainless steel with adjustable fee and shelf.

L × W × H	Mfr. No.	Cat. No.	Eac
31 × 18¾ × 29" (79 × 48 × 74cm)	95 6060	**14-460-12**	805.0

Sterilizer Tray

One-piece perforated stainless-steel tray with rounded corners. 14-46 and 14-460-10 Sterilizers each hold three trays.

L × W × H	Mfr. No.	Cat. No.	Eac
20 × 12 × 2½" (51 × 30 × 6.4cm)	10 1203	**14-460-14**	205.0

*Trademark. See Trademark Reference.

Prices subject to change.

ortable Tabletop Sterilizer

an be used anywhere in the lab

Aluminum construction

Operating range: 240°F/10psi (116°C/68.7kPa) to 259°F/20psi (126°C/137kPa)

Capacity: 14½ qt. (13.7L)

With lid, pressure gauge, mmersion heater, safety valve and 11¼ dia. × 8½"H (29 × 22cm) container

RDERING INFORMATION:
mensions, chamber: 12⅝ dia. × 11⅞"D
? × 30cm) chamber; Net Weight: 25½ lb.
kg); for 110/120V 50/60Hz

cessory stand (14-461-5A)
ailable separately online

14-461-5 Sterilizer shown on 14-461-5A Accessory Stand

scription	Cat. No.	Each
th Heater	**14-461-5**	900.00

ienceware* OdoClave* Deodorant Pads

cial chemical in pad binds and tralizes odor-causing agents to viate unpleasant odors every e you sterilize.

ove-scented

eat-release deodorant orks automatically at utoclave temperatures

DERING INFORMATION:
ose 1½" (3.8cm) square
ılar-strength or 2¼" (5.7cm) square
er-strength pad

14-488-30

W	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pack
× 1½" (3.8 × 3.8cm)	131980000	**14-488-30**	66.76	580.50
× 2¼" (5.7 × 5.7cm)	131990000	**14-488-31**	106.09	922.50

WARNING

Cannot be used for ethylene oxide or dry heat sterilization. Do not use on linen or muslin wraps.

OdorGone* Autoclave Deodorizer

High concentration liquid deodorant in capsule form

One capsule placed in each load absorbs offensive odors, leaving your autoclaves smelling fresh and clean.

ORDERING INFORMATION:
Available in Apple, Heather and Lemon fragrances

OdorGone
OdorGone

22-032-087, 22-032-079

Scent	Pack Size	Cat. No.	Each	Case of
Apple	25 Caps	**22-032-079**	28.83	8/197.16
	100 Caps	**22-032-080**	91.22	6/472.95
Heather	25 Caps	**22-032-083**	27.46	8/187.77
	100 Caps	**22-032-084**	91.22	6/472.95
Lemon	25 Caps	**22-032-085**	27.46	8/187.77
	100 Caps	**22-032-087**	91.22	6/472.95

Blue Autoclavable Tape

- Specially designed with an aggressive adhesive backing to stick securely to all disposable wraps
- High-contrast, white, steam-sensitive stripes turn dark when subjected to steam autoclaving temperatures

ORDERING INFORMATION: **11-889-4**
In 60 yd. (54.5m) lengths

Width	Cat. No.	Each
¾" (19mm)	**11-889-4**	5.72
1" (25mm)	**11-889-5**	7.58

White Autoclave Indicator Tape

Color change eliminates the guesswork

- For use in steam sterilization applications
- No need for interpretation—sensitive ink on white stripes turns dark to indicate that pack has been processed
- Specially formulated universal adhesive provides secure bonding with fabric and nonwoven wraps, paper, metal, and glass
- Tape removes easily without any traces of residue
- 14 yd. (13m) roll on 1" (2.5cm) core

11-889-14

ORDERING INFORMATION:
14 yd. (13m) roll on 1" (2.5cm) core.

Width	Cat. No.	Each	Case of 16
¾" (19mm)	**11-889-14**	5.36	64.64

*Fisherbrand** Biohazard Autoclave Bags

Strong, pliable, leak- and puncture-resistant

- Polypropylene bags and clear polyethylene bags come printed or unprinted
- Printed bags feature English and Spanish text
- Clearly visible biohazard symbol and sterilization indicator
- Pass the Dart Impact Resistance Test of 165g, using ASTM D1709-85

COMPLIANCE:

Graphics on printed styles conform to OSHA standard 29CFR1910.1030

Polypropylene Bags

Supplied with autoclavable elastic steam-venting closures

- Maximum temperature, 140°C (285°F); for use at 134°C (274°F)
- 2mil thick

W x L	Cat. No.	Pack of
Printed Red Polypropylene Bags		
8 × 12" (20 × 30cm)	**01-828A**	200/87.95
14 × 19" (36 × 48cm)	**01-828B**	200/145.18
19 × 23" (48 × 58cm)	**01-828C**	200/194.29
25 × 35" (64 × 89cm)	**01-828D**	200/304.92
37 × 48" (94 × 122cm)	**01-828E**	100/295.25
Plain Red Polypropylene Bags		
8 × 12" (20 × 30cm)	**01-830A**	200/72.80
14 × 19" (36 × 48cm)	**01-830B**	200/134.62
19 × 23" (48 × 58cm)	**01-830C**	200/175.92
25 × 35" (64 × 89cm)	**01-830D**	200/267.72
37 × 48" (94 × 122cm)	**01-830E**	100/229.23
Printed Clear Polypropylene Bags		
12 × 24" (30 × 61cm)	**01-826A**	200/141.59
24 × 30" (61 × 76cm)	**01-826B**	200/273.59
24 × 36" (61 × 91cm)	**01-826C**	200/318.83
31 × 38" (79 × 97cm)	**01-826D**	200/424.73
37 × 48" (94 × 122cm)	**01-826E**	100/308.99
Plain Clear Polypropylene Bags		
8 × 12" (20 × 30cm)	**01-826-1**	200/67.98
10 × 10" (25 × 25cm)	**01-826-2**	200/66.98
10 × 12" (25 × 30cm)	**01-826-3**	200/67.61
10 × 15" (25 × 38cm)	**01-826-4**	200/80.39
12 × 24" (30 × 61cm)	**01-826-5**	200/116.77
24 × 30" (61 × 76cm)	**01-826-6**	200/256.99
24 × 36" (61 × 91cm)	**01-826-7**	200/274.64

LOOKING FOR BIOHAZARD CONTAINERS?

Fisher Scientific also offers containers for the proper disposal of sharps and biohazard materials. See the Fisherbrand* Sharps-A-Gator Containers in the Waste Disposal section.

01-826, -827, -828, and -829 Series printed bags

Polyethylene Bags

Printed red and clear high-density bags

- Maximum temperature, 127°C (260°F); for use at 121°C (250°F)
- All bags supplied with autoclavable elastic steam-venting closures except 1.5mil-thick plain clear bags

W x L	Thickness (mil)	Cat. No.	Pack of
Printed Red Polyethylene Bags			
8 × 12" (20 × 30cm)	1.5	**01-829A**	200/82.51
14 × 19" (36 × 48cm)	1.5	**01-829B**	200/203.36
19 × 23" (48 × 58cm)	1.5	**01-829C**	200/280.61
24 × 36" (61 × 91cm)	4.0	**01-831A**	100/189.48
25 × 35" (64 × 89cm)	1.5	**01-829D**	200/402.88
33 × 30" (84 × 76cm)	1.5	**01-829F**	200/315.61
38 × 48" (97 × 122cm)	1.5	**01-829E**	100/227.71
38 × 48" (97 × 122cm)	4.0	**01-831B**	50/218.16
Printed Clear Polyethylene Bags			
8 × 12" (20 × 30cm)	1.5	**01-827A**	200/80.73
12 × 24" (30 × 61cm)	1.5	**01-827B**	200/90.15
24 × 30" (61 × 76cm)	1.5	**01-827C**	200/251.48
24 × 36" (61 × 91cm)	1.5	**01-827D**	200/275.79
Plain Clear Polyethylene Bags			
12 × 24" (30 × 61cm)	1.5	**01-814-1†**	200/72.66
24 × 30" (61 × 76cm)	1.5	**01-814-2†**	200/188.32
24 × 36" (61 × 91cm)	1.5	**01-814-3†**	200/224.39
24 × 36" (61 × 91cm)	4.0	**01-832A**	100/174.10

† Without closures.

LOOKING FOR WASTE CONTAINERS?

For hands-free sanitary waste management, our bright red seamless and puncture-resistant Step-On Waste Containers hold Fisherbrand* Autoclave Bags. Ideal for biohazard waste disposal when properly labeled. See the Waste Disposal section for ordering information.

*Trademark. See Trademark Reference.

Prices subject to change.

eri-Wrap* III Autoclavable Wrapping

eal for a variety of uses including OR and R wrapping

- xcellent microbial barrier—rtually lint-free and completely quid repellent
- articularly recommended for pplications where strength is quired for heavy items such as strument trays and basin sets
- lade from single-use, nonwoven nd tightly anchored fabric
- an be used on either side without sk of delaminating

11-890 Series

DERING INFORMATION:

er autoclavable tape separately

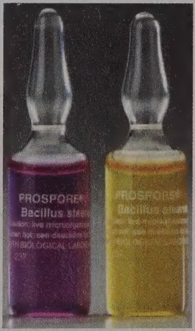
	Cat. No.	Case of
18" (46 × 46cm)	**11-890-1**	400/157.09
24" (61 × 61cm)	**11-890-2**	200/133.53
36" (91 × 91cm)	**11-890-3**	150/233.84
45" (114 × 114cm)	**11-890-4**	50/123.11
48" (122 × 122cm)	**11-890-5**	50/134.83
54" (137 × 137cm)	**11-890-6**	50/169.56
72" (137 × 183cm)	**11-890-7**	50/237.09

rospore* Self-Contained Biological ndicator

eal for validating steam sterilization of liquids

e, easy-to-use, self-contained biological icator used to validate or monitor steam rilization in hospitals and pharmaceutical ilities.

- ealed Prospore ampules contain *eobacillus stearothermophilus* spores uspended in growth media
- romocresol purple pH indicator added to ssist in detecting spore growth
- utgrowth of spores decreases pH, causing color change from purple to yellow
- tandard population is 10^5 per unit
- esults available in 48 hours



12-001 Series

TE:

ontrol test should be used erify spore viability.

scription	Cat. No.	Each
ck of 10 ampules	12-001-1	27.02
ck of 50 ampules	12-001-2	79.98

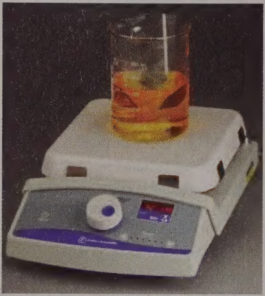
STIRRERS

MAGNETIC

Fisher Scientific* Isotemp* Digital Magnetic Stirrers

Compact, precise, and perfect for timed applications

Operating Features



11-300-49S

- Digital speed control from 60 to 1200rpm
- Stirring speed is easily adjustable in 1rpm increments—even when wearing lab gloves
- Microprocessor-controlled stirring maintains consistent action with changing viscosities
- Large digital display shows set and actual speed
- RESET key restores last settings
- Programmable timer shuts off stirrer after user-defined interval
- "Favorites" feature allows users to store three commonly used settings
- Base includes support rod mount with thumbscrew for rods up to 13mm dia.
- Load capacity: 25 lb. (11kg)

Safety Features

- INSTANT ON begins stirring a slow 50rpm to prevent splashing
- White ceramic top plate (52 sq. in.) resists alkalis and acids, cleans easily
- Cast-aluminum housing diverts spills away from internal components

ORDERING INFORMATION:

Dimensions, Top Plate: 7¼ × 7¼" (18.4 × 18.4cm); Overall: 12¾L × 8½W × 3⅞"H (27.9 × 18.7 × 8.4cm).

INCLUDES:

Detachable 3-wire cord with plug, and PTFE-coated stir bar

WARRANTY:

One year

COMPLIANCE:

IEC 1010

CERTIFICATIONS:

CUS, CSA approved. CE marked (230V model).

Electrical Requirements	Cat. No.	Each
120V 50/60Hz	**11-300-49S**	635.00
230V 50/60Hz	**11-302-49S**	708.00

LOOKING FOR STIR BARS?

We have them in all shapes, sizes, and colors. See Magnetic Stir Bars on p.1743.

Fisherbrand

Fisher Scientific* Isotemp* Basic Magnetic Stirrers

Compact, low-profile stirrers with analog control

Choose reflective ceramic or chip-resistant aluminum top plate models.

11-100-49S

Operating Features

- Variable speed control from 60 to 1200rpm
- Speed is set easily, even when wearing heavy gloves
- Microprocessor controller maintains consistent stirring under changing viscosities
- Large LED speed display
- RESET key restores last settings
- Base includes support rod mount with thumbscrew for rods up to 13mm dia.
- Load capacity: 25 lb. (11kg)

Safety Features

- INSTANT ON begins stirring a slow 50rpm to prevent splashing
- White ceramic top plate models resist alkalis and acids, cleans easily
- Aluminum-top models are scratch- and chip-proof
- Contoured housing diverts spills away from internal components

INCLUDES:

Detachable 3-wire line cord and plug, PTFE stir bar

WARRANTY:

One year

COMPLIANCE:

IEC 1010

CERTIFICATIONS:

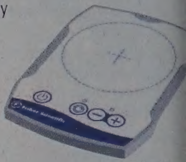
120V CUL, CSA approved; 230V CE marked

Top Plate Size	Top Plate Material	Electrical Requirements	Cat. No.	Each
4 × 4"	Ceramic	120V 50/60Hz	**11-100-16S**	232.00
4 × 4"	Ceramic	230V 50/60Hz	**11-102-16S**	279.60
7 × 7"	Ceramic	120V 50/60Hz	**11-100-49S**	245.00
7 × 7"	Ceramic	230V 50/60Hz	**11-102-49S**	280.60
7 × 7"	Aluminum	120V 50/60Hz	**11-200-49S**	280.00
7 × 7"	Aluminum	230V 50/60Hz	**11-202-49S**	337.20
10 × 10"	Ceramic	120V 50/60Hz	**11-100-100S**	375.00
10 × 10"	Ceramic	230V 50/60Hz	**11-102-100S**	404.80

Fisher Scientific* Lab Disc Magnetic Stirre

Ultra-flat and compact personal stirrer speeds to 1500rpm

Can reverse direction of rotation automatically every 30 seconds to ensure better mixing.



14-505-1

- Wear-free drive with no moving parts
- Chemically-resistant polyester set-up plate and casing
- Slip-proof stand
- Accepts magnetic stir bars up to ⅛" (30mm) long

APPLICATIONS:

General-purpose mixing up to 800mL.

ORDERING INFORMATION:

Operates on 12V via plug-in transformer

REQUIRED ACCESSORIES:

Stir bars and stirring vessel (sold separately)

COMPLIANCE:

IP 65 protection; Explosion Hazard Zone 2

SPECIFICATIONS AND ORDERING INFORMATION

No. of Stirring Positions	One
Capacity	800mL
Speed Range	15 to 1500rpm
Stirring Surface Area	3½" dia. (9cm)
Overall L × W × H	6¼ × 4⅜ × ½" (16 × 11 × 1.2cm)
Electrical Reqts.	115V 60Hz
Cat. No.	**14-505-122**
Each	172.85

LOOKING FOR LABORATORY GLASSWARE?

You can find a wide selection of glass vessels for heating and stirring in the Beakers and Flasks sections.

Fisher Scientific* Twistir* Mini Stirrers

Economical personal stirrers with a unique triangular design

Choice of six whimsical top plate designs.

11-510-54

- Stirring range: 350 to 2000rpm
- Stirring capacity: 1L
- Maximum vessel diameter: 8.5cm
- Power-on LED
- Clear, chemically resistant Nylon top surface
- Tough, stable plastic base

APPLICATIONS:

Light-duty stirring up to 1L

ORDERING INFORMATION:

Overall dimensions: 5⅝L × 5⅝ W × 2⅜"H (14.3 × 14.3 × 6.6cm); for 115V

INCLUDES:

Line adapter, stir bar and instructions

11-510-53

11-510-50

Stirrer Graphics	Cat. No.	Ea
Bacteria	**11-510-50**	173.
Caffeine	**11-510-51**	173.
Alchemist	**11-510-52**	173.
DNA	**11-510-53**	173.
Periodic Table	**11-510-54**	173.
Crystals	**11-510-55**	173.

her Scientific* Auto Mixer

vides instant stirring

14-505-21Q

led-pole stirrer motor switches on automatically n vessel is placed on top plate; when vessel is ved, motor stops.

just speed from approximately 150 to 2500rpm

uminum top plate has center mark to position ssel above drive magnet

ver/white top improves visibility of vessel contents

ameled aluminum housing

nt panel power indicator

ERING INFORMATION:
ensions: 6½L × 4¼W × 4"H (16.5 × 10cm). For 120V 60Hz, 0.5A,

INCLUDES:
Stir bar, and three-wire cord and plug

CERTIFICATIONS:
CSA approved

No.	Each
05-21Q	216.61

her Scientific* Economy Stirrers

ic stirring with retro styling

11-510-49SHQ, 11-510-16SHQ

riable analog speed control from 0 to 1200rpm

r up to 2L water

rable die-cast aluminum base

rcelain-coated stainless-steel plate resists acids and alkalis d cleans easily; drip edge ards against spills

tant-on at 100rpm ensures smooth, safe low-speed operation

ERING INFORMATION:
20V 60Hz

LUDES:
e-wire grounded cord and plug
PTFE-coated stir bar

RRANTY:
onths

CERTIFICATIONS:
CSA approved

NOTE:
For Hotplate models, see "Fisher Scientific Economy Hotplates and Stirring Hotplates" in the Hotplates section.

Stirring Range	Load Capacity	Overall Dimensions (L × W × H)	Cat. No.	Each
' (10.2 × 10.2cm) Models				
100 to 1200rpm	10 lb. (4.5kg)	8¼ × 5¼ × 4⅜" (21 × 13.3 × 11.1cm)	**11-510-16SQ**	241.07
' (17.8 × 17.8cm) Models				
100 to 1200rpm	25 lb. (11.3kg)	11½ × 8½ × 4½" (29.2 × 21.6 × 11.4cm)	**11-510-49SQ**	261.23

Thermo Scientific* Cimarec* Digital Stirrers

General-purpose stirrers in three sizes offer flexibility from microscale to large-sample procedures

11-675-910Q

Operating Features

- Microprocessor feedback control provides constant speed regardless of changes in viscosity and prevents runaway and magnetic decoupling
- Direct-drive motor and magnet system permit quiet stirring
- Variable speed range from 60 to 1200rpm
- Strong magnetic coupling ensures that the stir bar stays locked with the magnet drive, even in viscous solutions

Design and Safety Features

- Seamless ceramic tops are strong, easy to clean, and resistant to both alkali and acids
- Reflective white top plate color enhances visibility
- Rugged, stable cast-aluminum body
- Tight seal and safety trough ensure that accidental spills do not penetrate casing
- Power-on light
- With integrated ring-stand holder to accommodate ½" dia. (1.3cm) support rod

ORDERING INFORMATION:
For 120V 60Hz

INCLUDES:
Stirrer unit, ⅜ dia. × 2"L (1 × 5.1cm) TFE-coated stir bar, and three-wire detachable cord and plug

CERTIFICATIONS:
CSA approved.

Mfr. No.	Stirring Surface Area	Load Capacity	Overall Dimensions L × W × H	Cat. No.	Each
S130815Q	18 sq. in. (116cm^2)	15 lb. (6.8kg)	10 × 5¼ × 3⅝" (25 × 13 × 9.2cm)	**11-675-907Q**	271.72
S131125Q	56 sq. in. (361cm^2)	25 lb. (11.3kg)	13 × 8¼ × 3⅝" (33 × 21 × 9.2cm)	**11-675-910Q**	286.64
SP131435Q	110 sq. in. (710cm^2)	35 lb. (15.9kg)	16 × 11 × 3⅝" (41 × 28 × 9.2cm)	**11-675-913Q**	432.62

her Scientific* Small Vessel Stirrers

npact stirrers ideal for stirring in distillation or organic synthesis setups, and for student use

olutions—from water to viscous 50% rine—in small open or closed vessels.

iameter × 3" high (15.2 × 7.6cm)

eed continuously adjustable from 200 to 2500rpm

ect-drive motor/magnet assembly

plate surface area: 25 sq. in. (161cm^2)

plate and base are both molded rmoplastic polyester

14-493-120SQ

ORDERING INFORMATION:
For 120V 60Hz, 0.4A, 48w

INCLUDES:
Stir bar, and three-wire cord and plug

WARRANTY:
12 months

CERTIFICATIONS:
CSA approved

Cat. No.	Each
14-493-120SQ	196.88

Thermo Scientific* Super-Nuova* Digital Stirrers

Provide superior flexibility, precision and safety

Ceramic-top general-purpose stirrers with four-function memory are excellent for labs with multiple users. Choice of single- or four-position models.

Operating Features

- Microprocessor control ensures accurate and stable setpoints for stirring speed
- Single control knob controls speed; lock feature prevents accidental changes
- Digital rpm display
- Stirring range from 50 to 1200rpm; adjustable in 1rpm increments
- StirTrac* technology offers improved low-speed stirring, consistent speed control and superior magnetic coupling
- Powerful motor and magnetic system prevents magnetic decoupling
- Four user-defined speed settings
- Top plate cleans easily, resists chemicals and provides fast boiling time
- Unit can be used in 0 to 27°C, 80% relative humidity, non-condensing environment
- RS-232 port allows output of time count, stirring setpoint and actual speed

Safety Features

- Rugged low-profile cast-aluminum body provides stability and durability
- Unit design protects internal components from accidental spills
- Walk-away timer shuts off stirring after 1, 2, 4, 8, or 12 hrs.

11-675-924Q

Models

- Single-position ceramic-top model (11-675-924Q) for basic stirring applications
- Four-position models (11-475-32Q and 09-050-288Q) function as four stirrers in one—each position is independently controlled

ORDERING INFORMATION:
For 120V 60Hz.

INCLUDES:
6" PTFE-coated Type K probe

CERTIFICATIONS:
CSA approved.

No. of Stirring Positions	Stirring Surface Area	Overall Dimensions L × W × H	Mfr. No.	Cat. No.	Ea
1	7¼ × 7¼" (18.4 × 18.4cm)	13 × 8¼ × 3⅞" (33 × 21 × 9cm)	S133325Q	**11-675-924Q**	750.
4	10¼ × 10¼" (26 × 26cm)	16¼ × 11⅜ × 4" (41 × 29 × 10cm)	S133935Q	**09-050-288Q**	935.
4	10¼ × 10¼" (26 × 26cm)	16¼ × 11⅜ × 4" (41 × 29 × 10cm)	S136035Q	**11-475-32Q**	1497.

Thermo Scientific* Stir Light and Aluminum Top Magnetic Stirrers

Ideal for general lab applications including mixing standard reagents; stirring bacteriological cultures; and any other procedure involving stirring up to 4L of aqueous solutions

11-496-620

- 49 sq. in. (316cm²) stirring surface
- Stirring speeds from 100 to 1200rpm
- Load capacity: 15 lb. (6.8kg)
- Alnico drive magnet for positive magnetic coupling—even with very viscous solutions

Models

- Standard Aluminum Top Stirrer
- Stir Light Stirrer: with a 5¼" square (13.3cm) light-diffusing Plexiglas* window—suitable for faint endpoint titration determinations; cool fluorescent light source minimizes heat buildup; independent light and stirring controls

INCLUDES:
PTFE coated ⅜ diameter × 2" long (9.5 × 50mm) stir bar; three-wire cord and plug

Mfr. No.	Stirring Surface L × W	Overall L × W × H	Electrical Reqts.	Cat. No.	Each
Standard Aluminum Top Stirrer					
S7225	7 × 7" (18 × 18cm)	8.5 × 7.68 × 4.5" (21.5 × 19.5 × 11.4cm)	120V 60Hz, 0.4A, 25w	**11-496-62Q**	360.00
Stir Light Magnetic Stirrer					
SL7225	7 × 7" (18 × 18cm)	8.5 × 7.68 × 4.5" (21.5 × 19.5 × 11.4cm)	120V 60Hz, 0.6A, 40w	**14-511-100Q**	571.00

IKA* Big Squid Magnetic Stirrers

Colorful single-position stirrers, for volumes up to 1.5L

- Variable electronic speed control from 0 to 1500rpm
- Chemical-resistant glass top surface measures 6¼" dia. (16cm)
- Available in assorted colorful designs

ORDERING INFORMATION:
For 100/240V 50/60Hz

14-259-679

14-259-680

Style	Mfr. No.	Cat. No.	Ea
Chameleon	3050005	**14-259-267**	215.
Fish	3050004	**14-259-266**	215.
Froggy	3050002	**14-259-265**	215.
Kiwi	3573400	**14-259-682**	217.
Orange	3573600	**14-259-681**	217.
Pineapple	3573000	**14-259-679**	217.
Star	3050001	**14-259-264**	215.
Strawberry	3573200	**14-259-680**	217.

*Trademark. See Trademark Reference.

Prices subject to change.

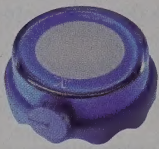
* Color Squid Magnetic Stirrers

pact stirrers are ideal for stirring quantities up 00mL

iable electronic speed control from 0 to 1500rpm
plate: 4⅜" dia. (11cm)
emical-resistant glass top and Hytrel* base
ilable in assorted decorative styles

ERING INFORMATION:
ll dimensions: 5⅜L × 5⅛W × 2"H (13.5 × 13 × 5cm); For 100/240V Hz.

14-259-678


14-259-675

iption	Mfr. No.	Cat. No.	Each
on	3576900	**14-259-676**	182.02
'ave	2669915	**14-260-46**	180.40
ad	3576600	**14-259-675**	182.02
	3576000	**14-259-677**	182.02
sh	2669923	**14-260-43**	180.40
hief	2669925	**14-260-42**	180.40
f	2669924	**14-260-40**	179.40
y	2669926	**14-260-41**	180.40
/	3576300	**14-259-678**	182.02
t	2669911	**14-259-57**	179.40
at	2669922	**14-260-39**	180.40
	2669913	**14-260-44**	180.40

ning* Scholar* 171 Stirrer

pact and suited for working in limited space

neral lab mixing. Perfect for academic earch laboratories.
ring range: 100–1600rpm, allows slow igorous mixing
tic top-plate: 5L × 5"W (12.7 × 12.7cm)
ged construction can withstand years eavy use

ERING INFORMATION:
sions: 5L × 5W × 3 3⁄16"H × 12.7 × 8.1cm)

400 mL
PYREX
11-497-22

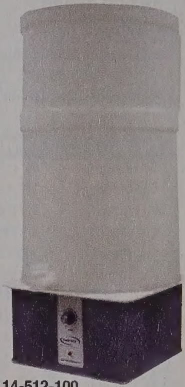
No.	Electrical Requirements	Mfr. No.	Cat. No.	Each
1	120V 60Hz, 0.24A, 29W	6795 171	**11-497-22**	171.69

Scienceware* Cool Stir* Large-Volume Magnetic Stirrer

Simplifies large-volume stirring

Safely and effectively mixes using inert PTFE magnetic stir bars.

- Stirring capacity: 10 to 208L
- Load capacity: 485 lb. (220kg); allows stirring in standard plastic drum
- Variable speed control to 600rpm (for gentle stirring); full depth vortex for aggressive agitation
- Direct-drive, air-cooled 100w (1/8hp) motor
- Optimal results with stir bars from 76 to 160mm in length
- Internal aluminum frame and polypropylene platform
- Insulated housing prevents heat transfer to sample solution
- Sturdy polypropylene side panels protect components and are easy to clean


14-512-100

APPLICATIONS:
Large-volume mixing from 10 to 208L

ORDERING INFORMATION:
Dimensions: 15½L × 15½W × 9½"H (39 × 39 × 23cm); Net weight: 33 lb. (15kg); 120V 50/60Hz

Mfr. No.	Cat. No.	Each
37028 0001	**14-512-100**	1599.00

MAGNETIC STIR BARS

*Fisherbrand** Magnetic Stir Bar Six Packs

Our most popular sizes in convenient, economical, ready-to-use multipacks

- FDA-grade PTFE coating
- Smooth, seamless, polished finish
- High-strength magnetization
- Micro bars or octagonal bars
- Octagonal bars have pivot rings

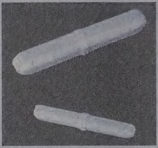
NEW
Fisherbrand

Diameter	Length	Cat. No.	Pack of 6
Micro Bars			
1⁄16" (1.5mm)	5⁄16" (8mm)	**14-513-64SIX**	30.18
3⁄32" (2mm)	¼" (7mm)	**14-513-63SIX**	30.18
⅛" (3mm)	⅜" (10mm)	**14-513-65SIX**	33.18
Octagonal Bars			
⅛" (3mm)	½" (13mm)	**14-513-57SIX**	24.60
5⁄16" (8mm)	½" (13mm)	**14-513-58SIX**	27.60
5⁄16" (8mm)	1" (25mm)	**14-513-59SIX**	30.18
5⁄16" (8mm)	1½" (38mm)	**14-513-60SIX**	34.08
5⁄16" (8mm)	2" (51mm)	**14-513-61SIX**	41.82
⅜" (9.5mm)	1" (25mm)	**14-513-51SIX**	37.08
⅜" (9.5mm)	2" (51mm)	**14-513-66SIX**	59.10

*Fisherbrand** Octagonal Magnetic Stir Bars

Flat surfaces provide greater mixing action

- With pivot rings
- Alnico-V magnets encased in PTFE fluoropolymer
- Individually packed on blister cards



14-513-56 (top), 14-513-59

Diameter	Length	Cat. No.	Each	Case of 50
⅛" (3.2mm)	½" (13mm)	**14-513-57**	5.13	170.15
5⁄16" (1.3mm)	½" (13mm)	**14-513-58**	5.75	190.90
5⁄16" (8mm)	⅝" (16mm)	**14-511-62**	4.60	184.00
5⁄16" (8mm)	1" (25mm)	**14-513-59**	6.29	208.75
5⁄16" (8mm)	1½" (38mm)	**14-513-60**	7.10	235.72
5⁄16" (8mm)	2" (51mm)	**14-513-61**	8.71	289.26
⅜" (9.5mm)	1" (25mm)	**14-513-51**	7.73	256.47
⅜" (9.5mm)	1½" (38mm)	**14-513-52**	7.33	293.25
⅜" (9.5mm)	2" (51mm)	**14-513-66**	12.31	428.48
⅜" (9.5mm)	2½" (64mm)	**14-513-67**	11.50	460.00
½" (13mm)	1½" (38mm)	**14-513-56**	17.87	744.62
½" (13mm)	3" (72mm)	**14-513-68**	19.60	816.50

*Fisherbrand** Magnetic Micro Stirring Bars

For stirring in test tubes, micro beakers

- Covered with PTFE fluoropolymer
- Each bar packaged on blister cards

14-513-64

Diameter	Length	Cat. No.	Each	Case of 50
1⁄16" (1.5mm)	5⁄16" (8mm)	**14-513-64**	6.29	208.75
3⁄32" (2mm)	¼" (7mm)	**14-513-63**	6.29	208.75
⅛" (3mm)	⅜" (10mm)	**14-513-65**	6.91	229.50
⅛" (3mm)	½" (12.7mm)	**14-513-98**	6.58	----

*Fisherbrand** Octagonal Magnetic Stir Bar Kit

Convenient kit of 16 assorted octagonal stir bars packed in compartmented storage box

- Permanent Alnico-V magnets, encased in PTFE fluoropolymer
- With pivot ring (except micro bars)

14-513-82

INCLUDES:

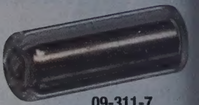
- Two 5⁄16 diameter × ½" long (8 × 13mm)
- Two 5⁄16 diameter × ⅝" long (8 × 16mm)
- Two ⅜ diameter × 1" long (9.5 × 25mm)
- Two ⅜ diameter × 1½" long (9.5 × 38mm)
- Two ⅜ diameter × 2" long (9.5 × 51mm)
- Two ⅜ diameter × 2½" long (9.5 × 64mm)
- Four micro bars, two of which are 2 diameter × 7mm long and the other two 3 diameter × 10mm long; micro bars are in 1¼" (32mm) tubes with caps

No. of Stir Bars	Cat. No.	Each
16	**14-513-82**	95.35

*Fisherbrand** Glass Stir Bar

Magnet sealed in glass

- 7⁄16 diameter × 1 13⁄16" long (11 × 30mm)



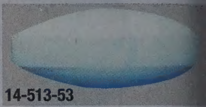
09-311-7

Cat. No.	Each
09-311-7	33.59

*Fisherbrand** Egg-Shaped Stir Bars

No ring or change in contour at pivot point

- Covered with PTFE
- Designed for use in round-bottom vessels
- Spin unrestricted by vessel's contour



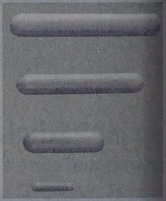
14-513-53

Diameter	Length	Cat. No.	Each	Case of 50
¼" (6mm)	⅝" (16mm)	**14-512-122**	11.19	447.72
⅜" (9.5mm)	¾" (19mm)	**14-512-121**	13.70	570.75
½" (12.7mm)	1" (25.4mm)	**14-512-120**	12.56	502.39
⅝" (16mm)	1¼" (32mm)	**14-513-53**	12.94	517.50
⅝" (16mm)	1½" (38mm)	**14-512-123**	14.46	602.65
¾" (19mm)	1⅝" (41mm)	**14-513-54**	16.90	704.37
¾" (19mm)	2½" (64mm)	**14-513-55**	25.60	1066.63

*Fisherbrand** PTFE Disposable Stir Bars

Low-cost, high-quality

- Disposable for contamination-free stirring
- Strong magnets permanently coated with white PTFE



Top to bottom: 14-513-83, -95, -94, -93

Diameter	Length	Cat. No.	Case of 100
⅛" (3.2mm)	½" (12.7mm)	**14-513-93**	86.19
5⁄16" (8mm)	1" (25.4mm)	**14-513-94**	122.45
5⁄16" (8mm)	1⅝" (41.3mm)	**14-513-95**	147.54
5⁄16" (8mm)	2" (50.8mm)	**14-513-83**	207.85

*Fisherbrand** Polygon Stir Bars

Available in five sizes

- Smooth polygon bars, coated with PTFE

14-512-127

Diameter	Length	Cat. No.	Each	Case of 50
5⁄16" (8mm)	½" (12.7mm)	**14-512-124**	5.95	238.10
¼" (8mm)	¾" (20mm)	**14-512-125**	5.95	238.10
⅜" (9.5mm)	1" (25.4mm)	**14-512-126**	6.66	266.57
¼" (8mm)	2" (50mm)	**14-512-127**	8.46	338.36
⅜" (10mm)	2¾" (70mm)	**14-512-128**	17.84	743.34

*Trademark. See Trademark Reference.

Prices subject to change.

isherbrand* Round Stir Bars with emovable Pivot Ring

FE round bars offer excellent centering and smooth nning characteristics

- Small removable pivot ring in the center adds to their versatility
- Pivot ring minimizes contact area of bar to vessel
- Ring also reduces friction and the marring of plastic containers

14-512-140

TE:
pivot ring is included on the two smallest sizes, Cat. Nos. -512-140 and -141

Diameter	Length	Cat. No.	Each	Case of
5⁄16" (8mm)	½" (12.7mm)	**14-512-140**	11.19	50/447.72
5⁄16" (8mm)	¾" (19mm)	**14-512-141**	6.10	50/243.80
5⁄16" (8mm)	1" (25.4mm)	**14-512-135**	6.66	50/266.57
5⁄16" (8mm)	1¼" (31.8mm)	**14-512-143**	7.86	50/314.53
5⁄16" (8mm)	1½" (38mm)	**14-512-142**	7.82	50/312.71
⅜" (9.5mm)	2" (50.8mm)	**14-512-144**	12.22	50/488.75
½" (12.7mm)	3" (76mm)	**14-512-136**	24.80	50/1033.27
⅝" (16mm)	4" (101.6mm)	**14-512-137**	54.66	10/467.19
⅝" (16mm)	5" (127mm)	**14-512-138**	62.58	10/534.86
¾" (19mm)	6" (152.4mm)	**14-512-139**	152.18	10/1323.31

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isherbrand* Magnetic Stirring Bars

x convenient, multiple-bar assortments

stir bars are fully encapsulated PTFE.

14-512-132, -131, -134

tagon Shaped

- 2 assorted standard bars with pivot ring
- ncludes two each of the following izes: ½ × 5⁄16, ⅝ × 5⁄16, × ⅜, 1½ × ⅜, 2 × ⅜, and ½ × ⅜"

und Shaped

- 2 assorted bars
- emovable pivot ring on bars onger than 1"
- ncludes two each of the following sizes: ½ × ⅜, ½ × 5⁄16, ¾ × 5⁄16, × 5⁄16, 1 × ⅜, 1½ × 5⁄16, 1¾ × 5⁄16, 2 × ⅜, and 2 × 5⁄16".
- ne each of the following: 1¼ × 5⁄16, 1¼ × ⅜, 1½ × ⅜, and 1¾ × ⅜"

tric Polygon Shaped

- 8 assorted bars
- ncludes two each of the following sizes: 10 × 6mm, 15 × 6mm, 0 × 7mm, 25 × 8mm, 30 × 8mm, 40 × 8mm, 50 × 8mm, 60 × 8mm, nd 80 × 10mm

lor-Coded Octagon Shaped

- 4 assorted bars with pivot ring
- ncludes one each in yellow, red, and blue, in the following sizes: 2 × ⅛, ⅝ × 5⁄16, ⅞ × 5⁄16, ½ × 5⁄16, 1 × 5⁄16, 1½ × 5⁄16, 2 × 5⁄16, and × ½"

lor-Coded Micro Bars

- 2 assorted bars
- ne each in yellow, red, and blue, in the following sizes: × 1.5mm × 2mm, and 10 × 3mm

g-Shaped Bars

- 3 assorted bars
- ne each of the following: 3 × ¾". Two each of the following sizes: 4 × ⅜, 1 × ½, 1¼ × ⅝, 1½ × ⅝, 1⅝ × ¾, and 2 × ¾"

scription	No. of Bars	Cat. No.	Each	Case of
agon-Shaped Bars	12	**14-512-129**	78.47	6/409.43
und-Shaped Bars	22	**14-512-130**	170.34	6/888.71
tric Polygon-Shaped Bars	18	**14-512-131**	106.92	6/557.82
or-Coded, Octagon-Shaped Bars	24	**14-512-132**	189.48	6/988.58
or-Coded Micro Bars	12	**14-512-133**	63.55	20/1105.26
-Shaped Bars	13	**14-512-134**	155.29	6/810.18

Fisherbrand* MAGNETIC STIR BARS SIX-PACKS

Our most popular sizes in convenient packages. For more information, see p. 1743.

Fisherbrand* 8-Agon Stir Bars

Octagon-shaped, PTFE stir bars with molded-on pivot ring

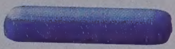
14-512-146 Series

- Interrupted surface provides greater surface area and added turbulence
- Molded pivot ring aids in reducing friction and chattering

Diameter	Length	Blue Cat. No.	Yellow Cat. No.	Red Cat. No.	Each	Case of 50
5⁄16" (8mm)	½" (12.7mm)	**14-512-145**	**14-512-145-2**	----	6.10	243.80
5⁄16" (8mm)	⅝" (16mm)	**14-512-146**	**14-512-146-2**	**14-512-146-1**	6.10	243.80
5⁄16" (8mm)	⅞" (22mm)	**14-512-147**	**14-512-147-2**	**14-512-147-1**	6.10	243.80
5⁄16" (8mm)	1" (25.4mm)	**14-512-148**	**14-512-148-2**	**14-512-148-1**	6.82	272.86
5⁄16" (8mm)	1½" (38mm)	**14-512-149**	**14-512-149-2**	**14-512-149-1**	7.89	315.56

Fisherbrand* Blue Micro Stir Bars

Blue PTFE stirring bars are perfect for even the smallest stirring requirements



14-512-150

Diameter	Length	Cat. No.	Each	Case of 50
.059" (1.5mm)	.315" (8mm)	**14-512-150**	7.18	287.09
.059" (1.5mm)	.591" (15mm)	**14-512-151**	7.32	292.79
.059" (1.5mm)	.079" (2mm)	**14-512-152**	8.62	344.61
.079" (2mm)	.197" (5mm)	**14-512-153**	7.89	315.56
.079" (2mm)	.276" (7mm)	**14-512-154**	7.89	315.56
.118" (3mm)	.118" (3mm)	**14-512-155**	6.96	278.53
.118" (3mm)	.394" (10mm)	**14-512-156**	7.89	315.56

*Fisher*brand* Cross-Type Stir Bars

PTFE bars maintain position, will not wobble

Agitate liquids in round-bottom test tubes and flasks, where other stir bars cannot be used.

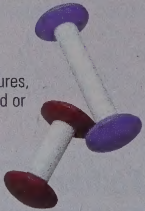
14-512-162

Diameter	Height	Cat. No.	Each	Case of 50
½" (12.7mm)	½" (12.7mm)	**14-512-162**	12.05	481.88
⅝" (16mm)	½" (12.7mm)	**14-512-164**	10.77	430.63
¾" (19mm)	½" (12.7mm)	**14-512-163**	16.19	674.41
⅞" (22mm)	½" (12.7mm)	**14-512-165**	16.12	671.57

*Fisher*brand* Color-Coded Dumbbell-Style Stir Bars

Provide fast mixing action, strong turbulence, greater stability, and less drifting at higher speeds

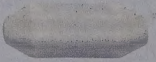
- Ideal for all "problem" liquids, highly viscous mixtures, metal particles in fluids, and containers with round or convex bottoms
- Offer reduced surface contact and have excellent centering characteristics
- All sizes have solid PTFE end disks measuring 20mm in diameter
- Bar diameter: 8mm


14-512-158, 14-512-161

Length	Cat. No.	Each	Case of 50
Red			
1¼" (32mm)	**14-512-158**	16.12	671.57
2" (52mm)	**14-512-160**	17.50	729.10
Blue			
1¼" (32mm)	**14-512-159**	16.12	671.57
2" (52mm)	**14-512-161**	17.50	729.10

*Fisher*brand* High-Energy Octagon Stir Bar

Composition and octagonal shape produce exceptional power


14-512-157

- Samarium-Cobalt magnet is encapsulated in PTFE
- Eight edges generate strong turbulence so liquids are thoroughly mixed
- Stability is not impaired in vessels with curved bottoms
- The risk of demagnetization caused by external magnetic fields is completely eliminated
- Transmits torque loads two to three times larger than those of conventional stirring bars of this length

Diameter	Length	Cat. No.	Each	Case of 10
⅞" (21mm)	2" (50mm)	**14-512-157**	79.92	694.93

LOOKING FOR CUVETS?

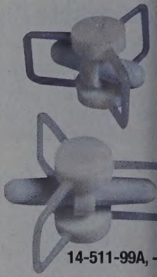
Disposable, clear, four-sided cuvets are ideal for fluorimetry, nephelometry and spectrophotometry. You will find them in the Spectrophotometers section.

Nalgene* Floating Magnetic Stir Bars

Designed for constant low-speed stirring action

- Stir bar slightly raised off bottom of container to minimize grinding effect on cells
- Great for tissue culture applications
- Legs compress to fit 1½" (38mm) opening
- TFE construction with encapsulated Alnico-V magnet and Tefzel* fluoropolymer resin bracket

ORDERING INFORMATION:
Disassemble for cleaning. Autoclavable

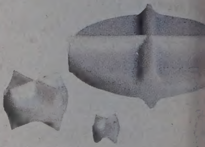

14-511-99A,

Diameter × Height	For Beaker	Mfr. No.	Cat. No.	Each	Case
2⅛ × 1⅛" (54 × 28mm)	250mL	DS6630 0250	**14-511-99A**	57.29	
2 13/32 × 1⅛" (61 × 28mm)	400mL	DS6630 0400	**14-511-99B**	71.36	
3⅝ × 1 3/16" (92 × 30mm)	1000mL	DS6630 1000	**14-511-99C**	----	219.
4¼ × 1¼" (108 × 31mm)	2000mL	DS6630 2000	**14-511-99D**	----	225.
6⅛ × 1¼" (155 × 31mm)	4000mL	DS6630 4000	**14-511-99E**	----	250.

Nalgene* StarHead* Magnetic Stir Bars

Greater mixing action at bottom, side, and top of container, even at low stirring speeds

- For test tubes, round-bottom or flat-bottom labware
- PTFE construction with star-shaped fins and encapsulated Alnico-V magnets
- Chemical and high-temperature (to 260°C [500°F]) resistant
- Autoclavable


14-511-98 Series

Diameter × Height	Mfr. No.	Cat. No.	Ea
⅜ × 5/16" (10 × 8mm)	DS6600 0010	**14-511-98A**	15.
9/16 × ½" (14 × 12mm)	DS6600 0014	**14-511-98H**	15.
1 1/16 × 9/16" (17 × 14mm)	DS6600 0017	**14-511-98B**	15.
⅞ × ⅝" (22 × 15mm)	DS6600 0022	**14-511-98C**	17.
1 3/16 × ½" (30 × 13mm)	DS6600 0030	**14-511-98J**	19.
1 9/16 × 9/16" (35 × 13mm)	DS6600 0035	**14-511-98D**	22.
2¼ × 9/16" (58 × 14mm)	DS6600 0058	**14-511-98E**	52.

Scienceware* Cell Spinbar

For 10mm lightpath spectrophotometer cells

- Provides rapid vertical and horizontal mixing with minimum vortex
- Generates centrifugal pumping action without aeration
- Can also be used in test tubes
- Alnico-V magnet encased in PTFE

14-511-72

ORDERING INFORMATION:
⅜ diameter × 5/16" high (9.5 × 8mm).

Mfr. No.	Cat. No.	Each	Case
37150 0000	**14-511-72**	17.46	727

*Trademark. See Trademark Reference.

Prices subject to change.

BEFORE YOU BUY OVERHEAD STIRRERS

Overhead stirrers can be used for a vide range of applications. These nclude mixing, dissolving, mixing olids into liquids, mixing of highly iscous fluids, and quality inspection y torque monitoring.

IMPORTANT TERMS TO KNOW

Torque—A measure of how much force acting on an object causes that object to rotate

Maximum RPM—The maximum number of full rotations in one minute

Viscosity of Solution (Maximum)—A measure of the resistance of a fluid to deform under shear stress, commonly known as thickness or resistance to flow

Stirring elements—There are multiple types of stirring elements that can be used with overhead stirrers:

- Propeller stirrers—3- and 4-bladed stirrers are used to draw the material to be mixed from the top to the bottom. Used at medium to high speeds.
- Turbine stirrer—Used for drawing the material to be mixed from above. Used at medium to high speeds.
- Dissolver stirrer—Has a radial flow and is used for drawing the material to be used from the top and the bottom. This stirrer has high turbulence and high shearing forces and works at medium to high speeds.
- Centrifugal stirrer—Two-bladed. Blades open with increasing speed; for stirring in round vessels with narrow necks. The effect is similar to that of the 4-bladed propeller stirrer and medium to high speeds are required.
- Paddle stirrer – Has tangential flow, minimum turbulence, good heat exchange, and is gentle with your product. Used at low to medium speeds.
- Anchor stirrer - Has tangential flow, high shearing edges, and leaves minimum deposits on the vessel wall. Used at low speeds to allow even distribution of high mineral contents in liquids. Ideal for medium to highly viscous fluids.
- Kneading stirrer - Has a tangential flow with oscillating compacting between kneading the surfaces. Used at low speeds, the kneading stirrer allows little deposits on the vessel.

Some stirring elements are PTFE-coated to resist certain chemicals.

Stirring motors—There is a difference between electronic-controlled motors and mechanically controlled motors. The electronic-controlled motors have a constant torque through the entire speed range; the mechanically controlled motors have a high torque in the low speed range but the torque decreases with higher speed.

KA STIRRERS	STIRRING QUANTITY (H_2O)	MAX. VISCOSITY	SPEED RANGE	MAX. TORQUE AT CHUCK
RW 20 Digital †	20L	10,000mPas	1: 60 - 500rpm 2: 240 - 2000rpm	150 Ncm
Eurostar Power Basic	40L	50,000mPas	50 - 2000rpm	60 Ncm
Eurostar Power Control-visc †, ‡	40L	50,000mPas	50 - 2000rpm	60 Ncm
Eurostar Power Control-visc P1 †, ‡	60L	70,000mPas	50 - 1200rpm	100 Ncm
Eurostar Power Control-visc P4 †, ‡	40L	100,000mPas	14 - 530rpm	200 Ncm
Eurostar Power Control-visc P7 †, ‡	40L	150,000mPas	8 - 290rpm	380 Ncm
Eurostar Power Control-visc 6000 †, ‡	20L	10,000mPas	150 - 6000rpm	15 Ncm

† Disposable generators available *‡ Labworldsoft - compatible*

ponsored by:

IKA®

THINGS TO ASK YOURSELF BEFORE BUYING:

- What volume range will I be working with?
- What speed do I need?
- What is the viscosity of my solution?
- What stirring elements do I need?
- What sample size am I working with?

IKA RW 20

OVERHEAD

Fisher Scientific* SteadyStir Stirrers

NEW

For laboratory stirring up to the medium viscosity range (10,000mPas)

Through-shaft design offers limitless adjustment potential and control over propeller depth. Microprocessor feedback loop maintains constant speed under changing viscosity conditions. Available with digital or analog control.

Operating Features

- Stirring volume: 20L
- Speed range: 50 to 2000rpm
- Maximum viscosity: 10,000mPas
- Push-through agitator shafts
- Infinitely adjustable without gear shifting
- Slim, space-saving design
- Quiet running

Safety Features

- Safety circuit
- Overload protection with automatic motor shutoff
- Smooth-start feature prevents splashing

Digital Model

- Crystal-clear digital display for set and actual speed
- Can be switched to torque display mode to monitor viscosity changes

Analog Model

- Offers dependable performance and value for schools, universities and inspection labs

ORDERING INFORMATION:
SteadyStirs can be used with Labworldsoft* software (not included) to give user control over speed and torque via PC. For stirring shafts, see p. 1749.

REQUIRED ACCESSORIES:
Stirring shaft, mounting stand and hardware (sold separately)

WARRANTY:
Two years

CERTIFICATIONS:
UL, cUL listed. CE marked.

Model	Digital	Analog
Capacity	20L	20L
Max. Viscosity	10,000mPas	10,000mPas
Speed Range	50 to 2000rpm	50 to 2000rpm
Max. Torque at Chuck	30Ncm	30Ncm
Chuck Range	0.5 to 10mm	0.5 to 10mm
Hollow Shaft, I.D.	11mm	11mm
Motor Input/Output	75w/55w	75w/55w
Output at Stirring Shaft	53w	53w
L × W × H (Overall)	7½ × 3⅛ × 8¾" (19 × 8 × 22.2cm)	7½ × 3⅛ × 6⅞" (19 × 8 × 17.5cm)
Net Weight	6.2 lb. (2.8kg)	6.2 lb. (2.8kg)
Electrical Requirements	115V 50/60Hz	115V 50/60Hz
Cat. No.	**14-259-703**	**14-259-701**
Each	1070.00	832.00
Electrical Requirements	230V 50/60Hz	230V 50/60Hz
Cat. No.	**14-259-702**	**14-259-700**
Each	1070.00	832.00

LOOKING FOR STEADYSTIR ACCESSORIES?

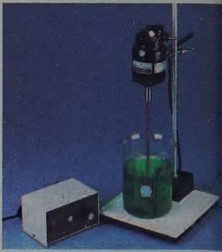
For stirring shafts, see p. 1749. Support stand, clamp and Labworldsoft* software are available online.

Visit www.fishersci.com and search for SteadyStir, Labworldsoft

Fisher Scientific* DynaMix* Stirrer

Reversible-speed stirrer for routine operations

- Solid-state direct-drive motor with two adjustable-output speed ranges: 0 to 6000rpm (0.6 lb./in. at 3000rpm) and 0 to 300rpm (2.5 lb./in. at 250rpm)
- Controls: Forward/reverse selector; speed-control knob graduated 1-10 scale



14-498-45AQ Stirrer shown with accessory clamp and 14-679Q St

ORDERING INFORMATION:
Dimensions, Control Unit:
4⅜L × 6⅝W × 4"H (11 × 17 × 10cm);
Motor: 6¾L × 3¾"W (17 × 9.5cm)
Replacement impellers available online.

INCLUDES:
Speed-control unit, motor assembly, 12" long (31cm) impeller (Cat. No. 14-503-15Q), and adapter sleeve

REQUIRED ACCESSORIES:
Stand (14-679Q) and clamp (sold separately; contact your Fisher Scientifi Customer Service Representative to order)

WARRANTY:
12 months

CERTIFICATIONS:
115V model is CSA approved.

Electrical Requirements	Cat. No.	Eac
115V 50/60Hz, 1.0A	**14-498-45AQ**	1123.2
230V 50/60Hz, 0.5A†	**14-498-46AQ**	1193.9

† International Model.

IKA* RW 20 Digital Stirrers

For stirring liquid volumes up to 20L and 10,000mPas

Sturdy, slimline, ergonomic design. Sold as kit with stirrer and stand.

- Stepless knob speed control and LED digital readout
- With constant power drive for continuous operation
- Two speed ranges for universal use (see table)
- Power Input/Output: 72w/35w
- Chuck dia. range: 0.5-10mm
- Hollow shaft inner dia.: 10.5mm
- Push-through agitator shafts

NEW

14-505-600

ORDERING INFORMATION:
Dimensions: 8⅜D × 34⅝W × 11⅝"H (21.2 × 88 × 29.4cm)

INCLUDES:
R 1342 propeller stirrer, R 182 Bos Head Clamp, and R 1826 Plate Sta

COMPLIANCE:
DIN EN 60529

CERTIFICATIONS:
UL listed. CE marked.

Electrical Requirements	Speed Range 1	Speed Range 2	Cat. No.	Ea
115V 60Hz	72-600rpm	288-2400rpm	**14-505-600**	614.
230V 50Hz	60-500rpm	240-2000rpm	**14-505-601**	614.

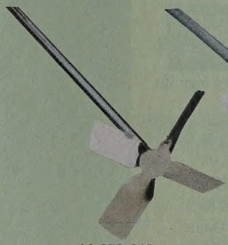
*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

Stirring Shafts for Fisher Scientific* SteadyStir and IKA* Overhead Stirrers

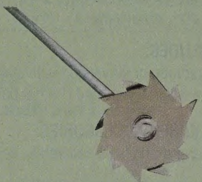
- **Four-Bladed Propeller Stirrers.** Standard stirring element. For drawing material to be mixed from top to bottom of vessel. Local shearing forces. Generates axial flow. Used at medium to high speeds.
- **Three-Bladed Propeller Stirrers.** Flow efficient design. For drawing material to be mixed from top to bottom of vessel. Minimum shearing. Medium to high speeds.
- **Turbine Stirrers.** For drawing material to be mixed from above. Axial flow. Medium to high speeds.
- **Dissolver Stirrer.** Radial flow for drawing material to be stirred from top and bottom of vessel. High turbulance, high shearing forces. For particle reduction. Minimum and high speeds.
- **Centrifugal Stirrers** Two-bladed. Blades open with increasing speed. For stirring in round vessels with narrow necks. Medium to high speeds.
- **Paddle Stirrers.** Tangential flow, minimal turbulance, good heat exchange, gentle treatment of product. Low to medium speeds.
- **Anchor Stirrers.** Ideal stirrers for medium-to-high-viscosity fluids. Tangential flow, high shearing rate at edges, minimal deposits. Low speeds.
- **Kneading Stirrers.** Tangential flow with oscillation and compaction between kneading surfaces. Minimum deposits. Low speeds.
- Key to IKA models in ordering table below: RW16 Basic Stirrer (RW16), Eurostar Power Basic (Basic), Eurostar Power Control-Visc (Control-Visc), Eurostar Power Control-Visc P4 (P4), Eurostar Power Control-Visc P7 (P7)



14-259-012

14-259-038

14-259-069



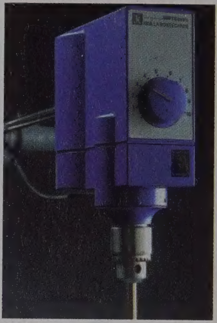
14-259-002

tirrer Dia.	Shaft L × Dia.	Max. Speed	For Fisher Scientific SteadyStir Models	For IKA Models	Mfr. No.	Cat. No.	Each
opeller Stirrers, 4-Bladed							
" (50mm)	13¾ × 5⁄16" (350 × 8mm)	2000rpm	Analog, Digital	All	07410.00	**14-259-012**	99.50
⅞" (100mm)	21⅝ × 5⁄16" (550 × 8mm)	800rpm	High-Torque	Basic, Control-Visc, P4, P7	07413.00	**14-259-014**	116.90
opeller Stirrers, 3-Bladed							
¾" (45mm)	13¾ × 5⁄16" (350 × 8mm)	2000rpm	Analog, Digital	All	12960.00	**14-259-038**	265.50
¼" (55mm)	13¾ × 5⁄16" (350 × 8mm)	2000rpm	Analog, Digital	All	12959.00	**14-259-037**	285.00
½" (140mm)	21⅝ × ⅜" (550 × 10mm)	800rpm	----	P4, P7	04777.00	**14-259-000**	262.40
½" (140mm)	31½ × ⅜" (800 × 10mm)	400rpm	----	P4, P7	04778.00	**14-259-001**	325.00
" (75mm)	13¾ × 5⁄16" (350 × 8mm)	800rpm	All	All	23436.00	**14-259-077**	490.00
rbine Stirrers							
3⁄16" (30mm)	13¾ × 5⁄16" (350 × 8mm)	2000rpm	Analog, Digital	All	23329.00	**14-259-069**	169.20
" (50mm)	13¾ × ⅜" (350 × 8mm)	2000rpm	Analog, Digital	All	23330.00	**14-259-070**	213.20
¾" (70mm)	15¾ × 5⁄16" (400 × 10mm)	800rpm	High-Torque	Basic, Control-Visc, P4, P7	23331.00	**14-259-071**	277.80
ssolver Stirrers							
⅛" (80mm)	13¾ × 5⁄16" (350 × 8mm)	2000rpm	Analog, Digital	Basic, Control-Visc	05135.00	**14-259-002**	234.80
⅞" (100mm)	13¾ × 5⁄16" (350 × 10mm)	1000rpm	----	Basic, Control-Visc	23879.00	**14-259-079**	512.50
⅝" (42mm)	13¾ × ⅜" (350 × 8mm)	2000rpm	Analog, Digital	RW 16, Basic, Control-Visc	27467.00	**14-259-130**	355.70
ntrifugal Stirrers							
⅜/⅝" (60/15mm)	13¾ × 5⁄16" (350 × 8mm)	2000rpm	Analog, Digital	RW 16, Basic, Control-Visc	07569.00	**14-259-015**	143.50
⅞/15⁄16" (100/24mm)	21⅝ × 5⁄16" (550 × 8mm)	800rpm	----	Basic, Control-Visc	11327.00	**14-259-024**	189.70
ddle Stirrers							
¾" (70mm)	13¾ × 5⁄16" (350 × 8mm)	1000rpm	All	Basic, Control-Visc, P4, P7	07576.00	**14-259-016**	145.60
¾" (70mm)	21⅝ × 5⁄16" (550 × 8mm)	800rpm	High-Torque	Basic, Control-Visc, P4, P7	07577.00	**14-259-017**	153.80
⅞" (150mm)	21⅝ × ⅜" (550 × 10mm)	800rpm	----	P4, P7	07578.00	**14-259-018**	320.90
chor Stirrers							
¾" (45mm)	13¾ × 5⁄16" (350 × 8mm)	1000rpm	All	All	20223.00	**14-259-060**	340.30
½" (90mm)	13¾ × 5⁄16" (350 × 8mm)	1000rpm	High-Torque	Basic, Control-Visc, P4, P7	20224.00	**14-259-061**	373.10
⅜" (60mm)	13¾ × 5⁄16" (350 × 8mm)	800rpm	All	All	23437.00	**14-259-078**	436.70
⅞" (150mm)	21⅝ × ⅜" (550 × 10mm)	800rpm	----	P4, P7	27474.00	**14-259-131**	681.70
eading Stirrers							
¾" (45mm)	13¾ × 5⁄16" (350 × 8mm)	2000rpm	All	All	20225.00	**14-259-062**	571.20

TFE-coated.

IKA* RW 16 Basic Stirrer

Ideal for educational applications and other light-duty stirring tasks of up to 2⅝ gal. (10L)



14-260-31

- Variable speed control from 40 to 1200rpm
- Analog control knob has graduated markings for accurate speed setting
- Precision chuck accepts stainless-steel shafts with diameters from 1⁄64 to ⅜" (0.5 to 10mm)
- Slim design
- Built-in safety circuit

ORDERING INFORMATION:

Available separately or in kit form with support rod hardware. Overall dimensions: 7½D × 3⅛W × 6⅞"H (19 × 7.9 × 17.5cm)

INCLUDES:

Stirrer unit, or kit version with stirrer, Plate Stand Boss Head (14-259-83), and Strap Clamp (14-259-166)

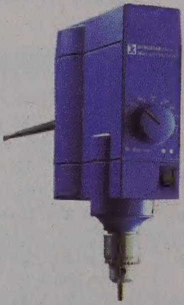
REQUIRED ACCESSORIES:

Stirring shafts (sold separately, see p. 1749)

Electrical Requirements	Mfr. No.	Cat. No.	Each
RW 16 Basic Stirrers			
115V 50/60Hz	2572101	**14-260-31**	794.40
230V 50/60Hz	2572100	**14-259-110**	794.40
RW 16 Basic Stirrer Kit			
115V 50/60Hz	L004350	**14-259-208**	1353.00

IKA* Eurostar Power Basic Stirrer

For medium- to high-viscosity stirring up to 50,000mPas



14-260-65

- Stirring capacity: 10⅝ gal. (40L)
- Variable speed control from 50 to 2000rpm
- Maximum torque at chuck: 60Ncm
- Graduated markings on control knob for quick settings
- Adjustable stirring height

ORDERING INFORMATION:

Available separately or in kit form with support hardware. Overall dimensions: 7½D × 3⅛W × 6⅞"H (19 × 7.9 × 17.5cm).

INCLUDES:

Stainless-steel chuck and key, cord with three-wire plug, instruction manual and tool kit; kits add Plate Stand, Boss Head (14-259-83), and Strap Clamp (14-259-166)

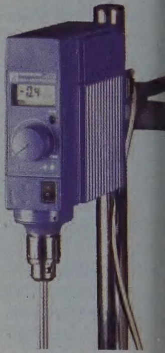
REQUIRED ACCESSORIES:

Stirring shaft and mounting hardware (sold separately, see p. 1749)

Electrical Requirements	Mfr. No.	Cat. No.	Each
Basic Stirrers			
115V 50/60Hz	2572201	**14-260-65**	1306.90
230V 50/60Hz	2572200	**14-259-111**	1306.90
Basic Stirrer Kits			
115V 50/60Hz	L004370	**14-259-210**	1773.45
230V 50/60Hz	L004380	**14-259-211**	1773.45

IKA* Eurostar Power Control-Visc Stirrer

Medium- to high-viscosity stirrer with enhanced features



14-260-64

- Digital torque display
- Variable speed control from 50 to 2000rpm/ viscosity to 50,000mPas
- Stirring capacity: 10⅝ gal. (40L)
- Maximum torque at chuck: 60Ncm
- With PC-based control/recording software
- Quiet 130w motor with push-through agitator shafts and electronic safety circuit
- Smooth-start design prevents splashing
- Analog interface for recording speed and torque, plus RS-232-C interface
- Labworldsoft* software to control and document speed and torque parameters via PC

ORDERING INFORMATION:

Available separately or in kit form with support hardware. Overall dimensions: 7½D × 3⅛W × 6⅞"H. (19 × 7.9 × 17.5cm). For 115V, 50/60Hz

INCLUDES:

Stainless-steel chuck and key, cord and plug; instruction manual, tool kit. **Kits** add Plate Stand, Boss Head (14-259-83), and Strap Clamp (14-259-166).

REQUIRED ACCESSORIES:

Stirring shafts and support hardware (order separately, see p. 1749)

Description	Mfr. No.	Cat. No.	Each
Stirrer	2600001	**14-260-64**	1659.50
Stirrer Kit	L004410	**14-259-212**	2289.90

LOOKING FOR LABORATORY GLASSWARE?

You can find a wide selection of glass vessels for heating and stirring in the Beakers and Flasks sections.

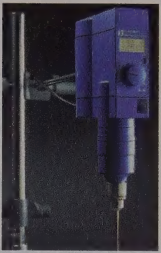
LOOKING FOR SUPPORT?

Fisher Scientific* Labjacks are the perfect stand for your overhead stirrer. They're safe, stable, and available in different sizes. See the Clamps and Supports section.

*Trademark. See Trademark Reference.

* Eurostar Power Control-Visc P4 and Stirrers

-torque versions of Eurostar Power Control-Visc rer for higher-viscosity stirring applications


14-260-30

rring capacity: 10⅝ gal. (40L)
viscosities up to 150,000mPas
ital torque trend display for viscosity control
et, powerful 130w motor with electronic ety circuit
ooth-start feature prevents splashing
lude analog interface for recording speed and que, plus RS-232-C interface

el P4

r-fold transmission reduction
ed range/maximum viscosity/maximum que: 14 to 530rpm/100,000mPas/200Ncm

el P7

en-fold transmission reduction
ed range/maximum viscosity/maximum torque: 8 to 290rpm/ ,000mPas/380Ncm

ERING INFORMATION:

ll dimensions: 7½D × 3⅛W × (19 × 7.9 × 17.5cm). For 115V Hz.

ows* compatible
orldsoft* software is available trol and document speed and e parameters via PC (contact isher Scientific Customer e Representative to order)

INCLUDES:

Stainless-steel chuck and key, cord with three-wire plug, instruction manual and tool kit

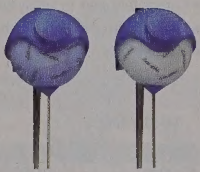
REQUIRED ACCESSORIES:

Stirring shafts (p. 1749) and support hardware (stands and clamps) not included, order separately

iption	Mfr. No.	Cat. No.	Each
irrer	2850001	**14-260-30**	3407.10
irrer	2850701	**14-259-142**	3468.60

* RW 11 "Lab Egg" Stirrers

ll but powerful stirrers


14-259-62, 14-259-59

iable speed control up to 2000rpm
acity/viscosity: ½ gal. /100mPa
ss-bottom motor housing resists micals
tor input/output: 8/1w

ERING INFORMATION:

t: 14 oz. (0.4kg).
nsions: 3⅜ dia. × 3½"H (8.6 × 8.9cm).
0-240V 50/60Hz. Replacement stirring shaft (14-259-003) and paddle (14-259-004) available online.

UDES:

ess-steel paddle stirrer (Cat. No. 14-259-003), plate stand and 6$\frac{5}{16}$"L) extension arm

	Mfr No.	Cat. No.	Each
hite	2830001	**14-259-59**	305.50
y Blue	2830004	**14-259-62**	305.50

STIRRING ACCESSORIES

Kontes* PTFE Stirrer Blade

Stirrer blade for K786500 Series 10mm shafts

- Blades are ⅛" thick (3mm)
- Use K789030-0022 Blades with K612000 and K612200 Series reaction flasks

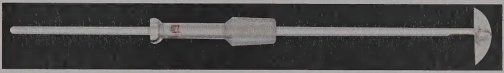
K789030-0020

For Flask Capacity	Approx. H × L	Min. Center Neck	Flask Size	Cat. No.	Each
50, 100mL	1.9 × 4.8cm	24/40	35/20	**K789030-0020**	15.17
200, 250, 300mL	1.9 × 6cm	24/40	35/20	**K789030-0021**	15.96
500, 1000mL	1.9 × 7.5cm	24/40	35/20	**K789030-0022**	16.84
2000, 3000mL	2.4 × 11cm	29/42	35/25	**K789030-0023**	18.77
5000mL	2.4 × 13cm	29/42	35/25	**K789030-0024**	29.97
12,000mL	3.5 × 18.5cm	45/50	65/40	**K789030-0025**	29.97

Kontes* Stirrer Assembly

Complete assembly with glass shaft and bearing

- PTFE blade
- Stirrer shaft is 10mm O.D.



For Flask Capacity	Joint	Approx. L × W	Cat. No.	Each
500 to 5000mL	24/40	44.5 × 7.5cm	**K781030-0124**	130.86
500 to 5000mL	29/42	44.5 × 7.5cm	**K781030-0129**	134.69
500 to 5000mL	34/45	44.5 × 7.5cm	**K781030-0134**	139.83
2000 to 12,000mL	45/50	51.5 × 11cm	**K781030-0245**	160.35
2000 to 12,000mL	55/50	51.5 × 11cm	**K781030-0255**	186.00

Kontes* Stirrer Bearing

Stirrer bearing honed for 10mm O.D. shaft

- Unit has integral joint for a variety of flasks

K781001-2942

Joint	Approx. Length	Cat. No.	Each
24/40	12cm	**K781001-2440**	75.78
29/42	11.5cm	**K781001-2942**	79.32
34/45	12.5cm	**K781001-3445**	84.12
45/50	12cm	**K781001-4550**	97.61
55/50	12cm	**K781001-5550**	121.56

Kontes* Stirrer Shaft

Glass stirrer shaft with precision ground surface. 10mm O.D.

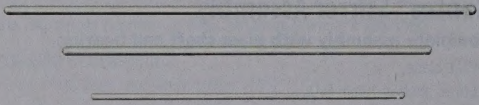
K786500-0261

For Flask Capacity	Approx. Gr. Length	Approx. Overall Length	Cat. No.	Each
100 to 2000mL	40cm	44cm	**K304151-0000**	53.30
100 to 5000mL	40cm	44.5cm	**K786500-0261**	46.70
12,000mL	47cm	51.5cm	**K786500-0262**	56.25
22,000mL	47cm	59cm	**K786500-0263**	51.65

STIRRING RODS

*Fisherbrand** Soft Glass Stirring Rods

With rounded and fire-polished ends



Top to bottom: 11-380C, 11-380B, 11-380A

Length	Diameter	Cat. No.	Pack of 72
5" (125mm)	⅛" (3mm)	**11-380A**	28.68
6" (150mm)	3⁄16" (5mm)	**11-380B**	30.69
8" (200mm)	3⁄16" (5mm)	**11-380C**	41.64
10" (250mm)	¼" (6mm)	**11-380D**	50.32

*Fisherbrand** Cuvet Stirrer

- Disposable polystyrene
- Measures 4¾ long × ⅛" diameter (12 × 0.3cm)

14-386-22

ORDERING INFORMATION:
Packed 50 stirrers in polyethylene bag; 20 bags per case.

Cat. No.	Case of 1000
14-386-22	37.26

Nalgene* Polypropylene Stirring Rod with Paddle

Flat paddle at one end, triangular at the other

- Can be used as a stirring rod and rubber policeman
- Autoclavable

ORDERING INFORMATION:
Length: 9¾" (25cm).

14-518

Mfr. No.	Cat. No.	Pack of 12	Case of 6 Pk.
6169 0010	**14-518**	43.53	174.15

Nalgene* Polyethylene Stirrer Shaft with Blades

High-density polyethylene stirrer with steel insert

Rod may be cut to any length.

ORDERING INFORMATION:
Blade diameter: 1¾" (44mm). Rod: ¼ O.D. × 18" long (6.4 × 457mm).

14-518-75

Mfr. No.	Cat. No.	Each	Case of 12
6160 0010	**14-518-75**	26.97	215.81

Nalgene* Tefzel* Fluoropolymer Resin Stirring Rod

Superior chemical resistance

- Withstands temperatures from -100° to +150°C (-148° to +302°F)
- Flat paddle, ⅝L × ⅝"W (1.6 × 1.6cm) at one end, triangular paddle at the other
- Autoclavable

ORDERING INFORMATION:
Overall length: 9¾" (25cm).

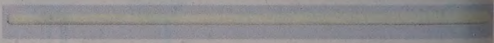
14-518-1

Mfr. No.	Cat. No.	Each	Case of 12
6168 0010	**14-518-1**	26.97	215.81

Chemware* Bendable PTFE Stirring Rods

Contain fully enclosed steel insert for stiffness, yet can be bent to various shapes for use as powered stirrers

- Heat resistant to 288°C (550°F)
- Completely inert to highly corrosive reagents
- Antistick properties facilitate cleaning
- Unbreakable



14-518-10C

Length	Mfr. No.	Cat. No.	Each
8" (20cm)	D1069087	**14-518-10C**	25.17
10" (25cm)	D1069088	**14-518-10D**	25.17
12" (30cm)	D1069089	**14-518-10E**	26.26
16" (40cm)	D1069091	**14-518-10F**	26.67

LOOKING FOR CUVETS?

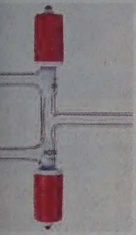
Disposable, clear, four-sided cuvets are ideal for fluorimetry, nephelometry and spectrophotometry. You will find them in the Spectrophotometers section.

*Trademark. See Trademark Reference.

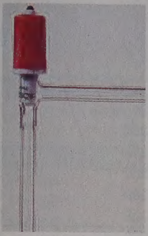
Prices subject to change.

STOPCOCKS

rning* Rotaflo* High-Vacuum Stopcocks



30-30 Series



14-630-26 Series

14-630-25 Series

nbine PTFE and borosilicate glass to form a leak- and eze-resistant seal

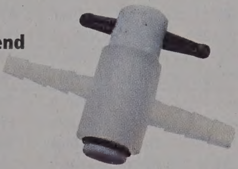
sy to clean
 parts to lose
quire no contaminating lubricant
gs are interchangeable with any shell of the same size
rve equally well for liquid or gas at temperatures from -20° to +200°C ° to +392°F)
ailable in high-vacuum models that maintain vacuum to 1×10^{-8} torr

Bore	Side Arm O.D.	Mfr. No.	Cat. No.	Each
Plug, Three Way				
m	8mm	7475 3	**14-630-30A**	122.01
m	10mm	7475 6	**14-630-30B**	125.76
Angle, Two Way				
m	8mm	7473 3	**14-630-26A**	71.14
m	10mm	7473 6	**14-630-26B**	104.33
nm	13mm	7473 10	**14-630-26C**	118.90
, Two Way				
m	8mm	7470 3	**14-630-25A**	75.71
m	10mm	7470 6	**14-630-25B**	100.17
nm	13mm	7470 10	**14-630-25C**	115.32

lgene* Polypropylene Stopcocks with FE Plug

rated tubulation on each end

e ¼ to 5⁄16" (6.4 to 8mm) tubing
nseizing



14-630-1 Series

Bore	Mfr. No.	Cat. No.	Each	Case of 6
	6460-0002	**14-630-1A**	49.30	197.20
	6460-0004	**14-630-1C**	48.12	192.50

lgene assigns the term "leakproof": a) To bottle/closure systems with sures smaller than 100mm, after they are filled with water, inverted, nstand air pressure of 2psig for 2 minutes, and no water escapes;. b) bottle/closure systems of 100 or 120mm after they are filled with water, erted for 15 minutes, and no water escapes. **Note:** these tests, using er liquids, may not yield the same results. To ensure safe usage, Nalgene ises customers to test Nalgene bottles and closures under conditions of r planned applications. Nalgene bottles and carboys are leakproof at bient temperature and pressure when used with their Nalgene closures.

Nalgene* Polypropylene Three-Way Stopcocks with PTFE Plug

Connect any two or all three arms

- Take ¼ to 5⁄16" (6.4 to 8mm) tubing
- Nonseizing
- Leakproof plug (see definition at left)

14-630-2 Series

Plug Bore	Mfr. No.	Cat. No.	Each	Case of 4
2mm	6470-0002	**14-630-2A**	56.77	151.37
4mm	6470-0004	**14-630-2C**	56.77	151.37

STOPPERS

*Fisherbrand** Turnover Septa Rubber Stoppers

For narrow-aperture containers

- External serrations on plug
- Turnover sleeve folds down over the container's outer neck and creates a secure seal
- Easily perforated with hypodermic needles
- Available in red or cream rubber in packs of 10

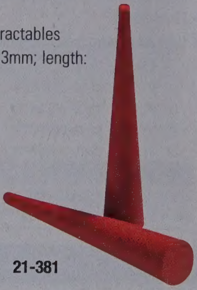
FB578 and FB686 Series

Size No.	For I.D. Openings	Cat. No.	Pack of 10
Red Stoppers			
----	7.75 to 8.25mm	**FB57872**	8.07
----	9.25 to 9.75mm	**FB57873**	8.52
00	11.00 to 11.50mm	**FB57874**	8.15
00	12.00 to 13.00mm	**FB57875**	9.15
0	13.00 to 13.50mm	**FB57876**	6.46
1	15.00 to 16.00mm	**FB57877**	9.08
2	17.00 to 17.50mm	**FB57878**	11.28
3	17.75 to 18.75mm	**FB57879**	8.32
4	20.00 to 21.00mm	**FB57880**	17.36
4	22.00 to 23.00mm	**FB57881**	10.30
5	23.50 to 24.50mm	**FB57882**	21.20
5½	25.50 to 26.50mm	**FB57883**	27.73
6	26.50 to 27.50mm	**FB57884**	18.59
Cream Stoppers			
----	7.75 to 8.25mm	**FB68680**	8.07
----	9.25 to 9.75mm	**FB68681**	8.52
00	11.00 to 11.50mm	**FB68682**	8.15
00	12.00 to 13.00mm	**FB68683**	9.24
0	13.00 to 13.50mm	**FB68684**	6.46
1	15.00 to 16.00mm	**FB68685**	9.12
2	17.00 to 17.50mm	**FB68686**	11.28
3	17.75 to 18.75mm	**FB68687**	8.32
4	20.00 to 21.00mm	**FB68688**	17.36
4	22.00 to 23.00mm	**FB68689**	11.67
5	23.50 to 24.50mm	**FB68690**	21.20
5½	25.50 to 26.50mm	**FB68691**	27.73
6	26.50 to 27.50mm	**FB68692**	18.57

*Fisher*brand* Solid Rubber Stopper for Microchemical Apparatus

Trim to fit any opening from 4 to 12mm

- Feature extremely high tensile modulus
- Low durometer 40 ±5, low sulfur, low extractables
- Top diameter: 12.7mm; bottom diameter: 3mm; length: 50mm (M21 stopper size)



21-381

Cat. No.	Pack of 12	Case of 12 Pk.
21-381	35.93	368.46

*Fisher*brand* Twistit* Rubber Stoppers

Four stoppers in one

- Simple twist-off seals provide convenient one-, two-, or three-hole use
- Solid stoppers are vacuum-tested at 30" of mercury
- High resistance to deformation—even after repeated autoclaving
- Each stopper has its size number in raised figures on top
- Available in black or white rubber

14-132 (white) and 14-131 Series (black). Beaker not included.

Size No.	Black Stoppers			White Stoppers		
	Cat. No.	Pack of	Case of 10 Packs	Cat. No.	Pack of	Case of 10 Packs
3†	**14-131A**	50/34.93	298.59	**14-132A**	50/44.54	380.71
4†	**14-131B**	400/316.47	----	**14-132B**	40/44.54	380.71
5	**14-131C**	35/34.93	298.59	**14-132C**	35/42.40	362.42
6	**14-131D**	25/33.93	289.97	**14-132D**	25/42.40	362.42
7	**14-131E**	20/32.31	276.16	**14-132E**	20/42.40	362.42
8	**14-131F**	16/33.93	289.97	**14-132F**	16/42.40	362.42
9	**14-131G**	12/34.23	292.55	**14-132G**	12/43.85	374.81
10	**14-131H**	10/34.23	292.55	**14-132H**	10/43.85	374.81
Assortment	**14-131J**	33/32.92	281.39	**14-132J**	33/43.02	367.69

† *Sizes 3 and 4 have only two holes.*

*Fisher*brand* Solid Rubber Stoppers

14-130 Series

Size No.	Cat. No.	Pack of (Approx.)†	Case
000	**14-135-1A**	181/25.00	5 Pk./106.8
00	**14-130A**	105/31.23	5 Pk./133.4
0	**14-130B**	77/30.67	5 Pk./131.0
1	**14-130C**	57/31.23	5 Pk./133.4
2	**14-130D**	52/30.67	5 Pk./131.0
3	**14-130E**	39/32.20	5 Pk./137.5
4	**14-130F**	33/31.38	5 Pk./134.0
5	**14-130G**	28/32.85	5 Pk./140.3
5½	**14-130H**	26/32.85	5 Pk./140.3
6	**14-130J**	20/31.38	5 Pk./134.0
6½	**14-130K**	18/32.85	5 Pk./140.3
7	**14-130L**	15/31.80	5 Pk./135.9
8	**14-130M**	12/31.34	5 Pk./133.9
9	**14-130N**	10/32.85	5 Pk./140.3
10	**14-130P**	8/32.71	5 Pk./139.7
10½	**14-130Q**	7/34.15	5 Pk./145.9
11	**14-130R**	6/32.88	5 Pk./140.5
11½	**14-130S**	5/35.21	5 Pk./150.4
12	**14-130T**	5/34.22	5 Pk./146.2
13	**14-130U**	4/32.28	5 Pk./137.9
13½	**14-130UU**	1/13.31	13/147.9
14	**14-130V**	1/28.80	8/196.9
15	**14-130W**	1/27.55	7/164.8
16	**14-130-1**	----	4/102.3

† *The approximate per-pack quantity shown is based on the average number of stopper in 1 lb. (454g).*

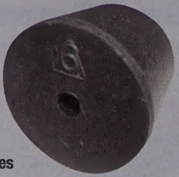
Guide to Selecting the Correct Rubber Stopper

Stopper Size No.	Top Diameter	Bottom Diameter	Length	For O.D. or Tubes	For I.D. Openings
000	12.7mm	8.2mm	21mm	3mm	----
00	15mm	10mm	25mm	12 to 15mm	10 to 13mm
0	17mm	13mm	25mm	16 to 18mm	13 to 15mm
1	19mm	14mm	25mm	19 to 20mm	15 to 17mm
2	20mm	16mm	25mm	20 to 21mm	16 to 18.5m
3	24mm	18mm	25mm	22 to 24mm	18 to 21mm
4	26mm	20mm	25mm	25 to 26mm	20 to 23mm
5	27mm	23mm	25mm	25 to 26mm	23 to 25mm
5½	28mm	24mm	25mm	28 to 29mm	25 to 26mm
6	32mm	26mm	25mm	29 to 30mm	26 to 27mm
6½	34mm	27mm	25mm	30 to 34mm	27 to 31.5m
7	37mm	30mm	25mm	35 to 38mm	30 to 34mm
8	41mm	33mm	25mm	38 to 41mm	33 to 37mm
9	45mm	37mm	25mm	41 to 45mm	37 to 41mm
10	50mm	42mm	25mm	45 to 50mm	42 to 46mm
10½	53mm	45mm	25mm	48 to 51mm	45 to 47mm
11	56mm	48mm	25mm	52 to 56mm	48 to 51.5m
11½	63mm	50mm	25mm	57 to 61mm	51 to 56mm
12	64mm	54mm	25mm	62 to 64mm	54 to 59mm
13	68mm	58mm	25mm	64 to 68mm	58 to 63mm
14	90mm	75mm	39mm	80 to 90mm	75 to 85mm
15	103mm	83mm	39mm	92 to 100mm	83 to 95mm

*Trademark. See Trademark Reference.

Prices subject to change.

*isherbrand** One-Hole ubber Stoppers



14-135 Series

e No.	Hole Size	Cat. No.	Pack of (Approx.)†	Case of
	3mm	**14-135A**	109/40.51	5 Pk./173.13
	3mm	**14-135B**	80/37.30	5 Pk./159.42
	4mm	**14-135C**	59/37.30	5 Pk./159.42
	5mm	**14-135D**	54/36.23	5 Pk./154.82
	5mm	**14-135E**	41/38.41	5 Pk./164.13
	5mm	**14-135F**	35/36.75	5 Pk./157.05
	5mm	**14-135G**	29/37.45	5 Pk./160.06
	5mm	**14-135H**	27/37.45	5 Pk./160.06
	5mm	**14-135J**	21/37.45	5 Pk./160.06
	5mm	**14-135K**	19/37.45	5 Pk./160.06
	5mm	**14-135L**	15/37.45	5 Pk./160.06
	5mm	**14-135M**	12/39.37	5 Pk./168.23
	5mm	**14-135N**	10/37.90	5 Pk./161.98
	5mm	**14-135P**	8/39.03	5 Pk./166.79
	5mm	**14-135Q**	6/40.46	5 Pk./172.89
	5mm	**14-135R**	5/40.46	5 Pk./172.89
	5mm	**14-135S**	4/39.85	5 Pk./170.30
	5mm	**14-135T**	1/30.13	8/206.04
	5mm	**14-135U**	1/34.47	7/206.26

e approximate per-pack quantity shown is based on the average number of stoppers 1 lb. (454g).

*isherbrand** Two-Hole ubber Stoppers

e No.	Hole Size	Cat. No.	Pack of (Approx.)†	Case of
	3mm	**14-140A**	113/39.37	5 Pk./168.27
	3mm	**14-140B**	82/38.92	5 Pk./166.33
	4mm	**14-140C**	63/39.24	5 Pk./167.69
	5mm	**14-140D**	57/38.96	5 Pk./166.48
	5mm	**14-140E**	43/39.46	5 Pk./168.63
	5mm	**14-140F**	37/36.89	5 Pk./157.63
	5mm	**14-140G**	30/39.83	5 Pk./170.22
	5mm	**14-140H**	22/36.89	5 Pk./157.63
	5mm	**14-140J**	16/36.89	5 Pk./157.63
	5mm	**14-140K**	13/38.25	5 Pk./163.44
	5mm	**14-140L**	11/38.93	5 Pk./166.38
	5mm	**14-140M**	8/40.69	5 Pk./173.87
	5mm	**14-140N**	6/40.60	5 Pk./173.52
	5mm	**14-140P**	5/39.57	5 Pk./169.10
	5mm	**14-140Q**	4/40.00	5 Pk./170.92
	5mm	**14-140R**	1/33.43	8/228.60
	5mm	**14-140S**	1/33.35	7/199.54

e approximate per-pack quantity shown is based on the average number of stoppers 1 lb. (454g).

*Fisherbrand** Solid Neoprene Rubber Stoppers

Recommended where rubber would be attacked or deteriorated

- Resists petroleum products, fats, oils, and organic chemicals

14-141 Series

Size No.	Cat. No.	Pack of (Approx.)†	Case of
0	**14-141A**	68/35.85	5 Pk./153.19
1	**14-141B**	48/35.85	5 Pk./153.19
2	**14-141C**	44/35.22	5 Pk./150.49
3	**14-141D**	32/39.47	5 Pk./168.67
4	**14-141E**	27/38.72	5 Pk./165.47
5	**14-141F**	23/40.22	5 Pk./171.87
6	**14-141G**	17/38.72	5 Pk./165.47
6½	**14-141H**	15/40.22	5 Pk./171.87
7	**14-141J**	12/39.80	5 Pk./170.09
8	**14-141K**	10/38.92	5 Pk./166.30
9	**14-141L**	8/40.35	5 Pk./172.45
10	**14-141M**	8/39.76	5 Pk./169.90
10½	**14-141N**	7/41.71	5 Pk./178.23
11	**14-141P**	6/38.33	5 Pk./163.79
11½	**14-141Q**	4/18.80	5 Pk./80.35
12	**14-141R**	5/39.72	5 Pk./169.73
13	**14-141S**	4/40.53	5 Pk./173.20
13½	**14-141T**	1/11.57	13/125.30
14	**14-141V**	1/24.02	8/164.25
15	**14-141W**	----	7/232.45
16	**14-141X**	----	4/181.12

† The approximate per-pack quantity shown is based on the average number of stoppers in 1 lb. (454g).

*Fisherbrand** Solid Silicone Stoppers

Create a tight, reliable seal in virtually all sealing applications

- Pure, high-grade, translucent silicone withstands repeated sterilization, as well as temperatures from -60° to +220°C (-76° to +428°F); peaks at 250°C (482°F)
- Resist particle buildup
- Chemically inert and food-grade quality

09-704 Series

APPLICATIONS:
Especially suited for procedures demanding high purity—ideal for biological applications (after normal cleaning and autoclaving)

U.S. Size No.	European Size No.	Cat. No.	Pack of
----	6D	**09-704-1**	10/3.87
----	8D	**09-704-1A**	10/3.53
----	10D	**09-704-1B**	10/4.59
000	13D	**09-704-1C**	10/5.85
00	15D	**09-704-1D**	10/7.27
0	16D	**09-704-1E**	10/8.35
1	18D	**09-704-1F**	10/9.46
2	21D	**09-704-1G**	10/10.48
3	24D	**09-704-1H**	10/14.59
4	27D	**09-704-1I**	10/17.30
5	29D	**09-704-1J**	10/19.79
6	31D	**09-704-1K**	10/20.98
6½	34D	**09-704-1L**	10/38.25
7	38D	**09-704-1M**	10/43.06
8	41D	**09-704-1N**	10/57.00
9	45D	**09-704-1P**	10/89.77
10	49D	**09-704-1Q**	5/51.50
10½	54D	**09-704-1R**	5/54.70
11	60D	**09-704-1S**	5/74.93
11½	65D	**09-704-1T**	1/20.58
13	70D	**09-704-3**	1/21.27
----	75D	**09-704-1V**	1/33.43
----	83D	**09-704-1W**	1/49.45
14	92D	**09-704-1X**	1/67.06
15	100D	**09-704-1Y**	1/95.70

*Fisherbrand** Disposable Polyethylene Stoppers

With flexible fins for a snug fit

- Square-shaped stopper is for use in standard square cuvets, including Fisherbrand Disposable Plastic Cuvets
- Round stopper can be used with culture and general-purpose tubes

14-385-999; cuvets not included

Type	Cat. No.	Case of 1000
Round, 16mm diameter	**14-385-995**	41.48
Square, 10.75 × 10.75mm	**14-385-999**	82.13

Kimble* Kontes* Hollow White Rubber Sleeve Stoppers

- Plug-type stopper with sleeve extension fits over the neck of the apparatus for a secure seal
- Diaphragm can be punctured with a syringe needle

K774261 Series

APPLICATIONS:
Use for outgassing NMR sample tubes, as a pressure vent, or for adding reactant via a syringe

European Size No.	Description	Cat. No.	Pack of
14mm	Fits $ 14/20	**K774261-0014**	20.3
24mm	Fits $ 24/40	**K774261-0024**	58.8
9-10mm	Fits Stopper 9-10mm O.D.	**K774261-0008**	17.8

Red Rubber Stoppers for Serum and Vaccine Bottles

Flanged Stoppers

Permit insertion of hypodermic needles

- Comprised of dry natural rubber
- Length: 19mm; plug diameter: 14.28 to 16.27mm
- Fits 5 through 125mL size bottles

03-225-5

Cat. No.	Pack of 100
03-225-5	128.53

Sleeve Stoppers

- Comprised of dry natural rubber
- Folds down over neck of bottle
- With hollow plugs, rounded corners, and needle guide
- Easily perforated with hypodermic needles
- Self-sealing

14-126AA

Size No.	Sleeve Length	Plug Diameter	Cat. No.	Pack of 100
11½	10.70mm	5.16–6.73mm	**03-215-5**	59.62
13	14.60mm	10.50mm	**14-126AA**	49.39
14½	15.87mm	13.88mm	**14-126BB**	90.20
15	19.05mm	15.85mm	**14-126DD**	105.29

*Trademark. See Trademark Reference.

Prices subject to change.

enceware* Safe-Lab* Stoppers with tracting Nuts for Easy Stopper Removal

E-resin stoppers with red polypropylene extractor nuts

quire no lubricants; simply twist nut for
moval—stopper lifts out easily without
aking glassware
affected by boiling acids, hydrocarbons,
ones, esters, alcohols, or alkalis, regardless
concentration
nfreezing, noncontaminating, chemically inert,
sy to clean
e at temperatures up to 210°C (410°F)

14-645-1 Series

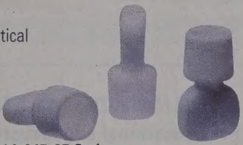
pper No.	Mfr. No.	Cat. No.	Each	Pack of
eparatory funnels and volumetric flasks				
	20191-1465	**14-645-1A**	----	3/38.73
	20191-1470	**14-645-1B**	----	3/41.25
	20191-1480	**14-645-1C**	----	3/46.78
	20191-1490	**14-645-1D**	----	3/68.34
	20191-1495	**14-645-1E**	----	3/72.11
	20191-1505	**14-645-1F**	----	3/72.61
	20191-1520	**14-645-1G**	----	2/73.87
	20191-1545	**14-645-1J**	60.30	----
assware with ground joints				
0	20196-1485	**14-645-2B**	----	3/66.83
2	20196-1500	**14-645-2C**	----	3/72.11
0	20197-1515	**14-645-2D**	----	2/74.87
2	20197-1530	**14-645-2E**†	----	2/84.42
5	20197-1540	**14-645-2F**†	57.54	----
0	20197-1550	**14-645-2G**†	107.40	----

pers are hollow.

e-Piece TFE Stoppers

E-resin stoppers will not freeze or bind, chemically nechanically

llow cup allows use for microanalytical
rk when inverted
affected by corrosive chemicals;
oreakable
ed no lubricants
ug fit, easy removal
eight of top keeps hollow tip up
stoppers are hollow except 14-645-35B, 14-645-20C and 14-645-20D),
events contamination of wetted surface when placed on lab bench



14-645-35 Series

Jse in Flask Length Outer Joints

pper No.	Cat. No.	Each
	14-645-35B	11.29
	14-645-35C	10.56
	14-645-35D	10.18
	14-645-35E	10.00
	14-645-35F	15.08
	14-645-35G	18.46

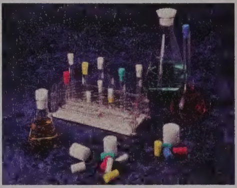
For Ground Joints

\$ Stopper No.	Cat. No.	Each
10/30	**14-645-20C**	16.81
12/30	**14-645-20D**	10.00
14/35	**14-645-20E**	16.30
19/22	**14-645-20F**	19.38
24/25	**14-645-20G**	22.38
29/42	**14-645-20H**	28.00

Identi-Plug* Plastic Foam Stoppers

For test tubes and flasks

- Easily compressed to form a snug-fitting stopper
- When removed from container, they spring back to original shape
- Permit air exchange and can be used over a wide range of temperatures; ideal for use with Drosophilia vials
- Withstand constant use and sterilization
- Autoclavable and chemically resistant



14-127-40 Series

For Openings	Plug Length	Cat. No.	Pack of
6 to 13mm	1⅜" (3.5cm)	**14-127-40A**	1000/48.35
14 to 20mm	1⅜" (3.5cm)	**14-127-40B**	1000/66.55
14 to 20mm	1⅜" (3.5cm)	**14-127-40H**†	900/69.25
21 to 26mm	1¾" (4.4cm)	**14-127-40C**	400/54.15
27 to 34mm	1¾" (4.4cm)	**14-127-40D**	200/42.70
35 to 45mm	1¾" (4.4cm)	**14-127-40E**	100/29.10
46 to 50mm	2⁷⁄₃₂" (5.6cm)	**14-127-40F**	80/43.90
46 to 65mm	1¾" (4.4cm)	**14-127-40G**	50/27.40
46 to 65mm	3½" (8.9cm)	**14-127-42**	30/28.30
66 to 75mm	1¾" (4.4cm)	**14-127-41**	40/32.60

† Pack of assorted colors includes 150 each of red, blue, green, yellow, white, and charcoal.

Pyrex* Short-Length, Solid \$ Pennyhead Stoppers

- For use with flasks and separatory funnels

\$ Stopper No.	Mfr. No.	Cat. No.	Case of 6
9	7660 9	**14-641A**	37.26
13	7660 13	**14-641B**	46.81
16	7660 16	**14-641C**	52.18
19	7660 19	**14-641D**	62.11
22	7660 22	**14-641E**	67.55
27	7660 27	**14-641F**	83.58

14-641 Series

Pyrex* \$ Glass Barrelhead Stoppers

Hollow stoppers, closed at bottom, conform to ASTM* E 675-94

- Cylindrical heads are grooved for gripping
- Flat tops allow standing inverted on table to reduce plug contamination

14-640 Series

Full Length for \$ Apparatus

\$ Stopper No.	Mfr. No.	Cat. No.	Case of 6
10/30	7570N 10	**14-640G**	108.13
19/38	7570N 19	**14-640H**	165.41
24/40	7570N 24	**14-640J**	135.60

Contd. on next page.

Pyrex ₮ Glass Barrelhead Stoppers, Contd.

Medium Length for Reagent Bottles and ₮ Apparatus

₮ Stopper No.	Mfr. No.	Cat. No.	Case of 6
14/20	7575 14	**14-640-2B**	54.53
19/22	7575 19	**14-640-2D**	62.78
24/30	7575 24	**14-640-2F**	78.41
29/35	7575 29	**14-640-2J**	114.97

14-640-2 Series

Short Length for Flasks and Separatory Funnels

₮ Stopper No.	Mfr. No.	Cat. No.	Case of 6
8	7650 8	**14-640-1AA**	36.99
9	7650 9	**14-640-1A**	41.37
13	7650 13	**14-640-1B**	48.81
16	7650 16	**14-640-1C**	55.61
19	7650 19	**14-640-1D**	66.00
22	7650 22	**14-640-1E**	71.10
27	7650 27	**14-640-1F**	88.07
32	7650 32	**14-640-1G**	128.96
38	7650 38	**14-640-1H**	154.76

14-640-1 Series

Pyrex* Solid ₮ Combination Head Stoppers

For use with reagent bottles

- With combination flat and penny-type heads
- Fully protect top surface of bottle neck

14-643 Series

₮ Stopper No.	Mfr. No.	Cat. No.	Pack of	Case of 6 Pk.
19	7620 19	**14-643A**	1/14.05	----
24	7620 24	**14-643B**	6/114.53	528.62

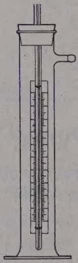
SURFACE TENSION

Fisher Scientific* Surface Tension Apparatus

Determines surface tension from height of liquid in capillary tube

- 250mm borosilicate glass capillary tube
- Engraved graduations from 0 to 10cm, in 1mm divisions
- Cork holds capillary tube inside outer tube
- Outer tube accommodates rubber tubing

Cat. No.	Each
14-818	178.68


14-818

Replacement Capillary Tubes

For Fisher Scientific* Surface Tension Apparatus (14-818). With scale.

Cat. No.	Each
14-818A	132.24

Fisher Scientific* Surface Tensiometers

Choose from semiautomatic or manually operated tensiometers

Employ du Noüy ring method: force needed to separate platinum-iridium ri from liquid is measured and read directly to ±0.25 dynes/cm; no calculatio

- Accuracy duplicates data from capillary height or drop weight measurements to ±0.25%
- Platinum-iridium test ring and two stainless-steel torsion wires; integra bubble level
- Tension on stainless-steel wire, support arm length, and zero setting on dial are quickly and easily adjustable
- Two adjustable feet and heavy base minimize vibrations
- Metal case with corrosion-resistant epoxy-enamel finish and carrying hand

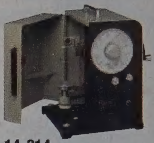
INCLUDES:
Instructions and graph to convert data to absolute values for comparative studies.

COMPLIANCE:
Perform in accordance with ASTM* D 971-99a (oil-water interfacial tensi procedures) and D 1331-89 (methods for measuring surface and interfacia tension of detergents)

Semiautomatic Model 21 Tensiomat* Tensiometer

More accurate than a manual tensiometer

- Reversible, synchronous motor raises and lowers test ring and sample table
- Two-way switch for choosing direction of travel for ring and pilot light
- Reversible, synchronous motor provides movement at a uniform rate, thus eliminating premature ring breakaway from liquid and resulting false tension readings
- Error from manual adjustment of sample level can be avoided by first runni test with motor off to determine sample position when ring breaks free, then allowing table to remain fixed at that position for the actual tests


14-814

ORDERING INFORMATION:
115V 50/60Hz, 0.2A

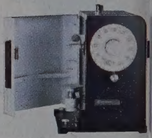
CERTIFICATIONS:
CSA approved

Cat. No.	Eac
14-814	5030.2

Manual Model 20 Surface Tensiometer

For educational and industrial control applications

- Allows upward and downward measurement of tension
- Dual scale, graduated from 0 to 90 dynes/cm in clockwise and counterclockwise direction
- Torsion to raise ring and simultaneously lower table is applied manually
- Parallax errors are eliminated by aligning index needle on lever arm with line on mirror


14-812

Cat. No.	Ea
14-812	3752.

Replacement Platinum-Iridium Test Ring

In protective, hard maple cylinder. 12-month warranty.

Cat. No.	Ea
14-812-5	464.

*Trademark. See Trademark Reference.

SWABS AND APPLICATORS

GENERAL PURPOSE

*Fisherbrand** Applicators

mooth white birch for tick test in blood banks nd routine laboratory hores (e.g., stirring, ample transfer)

pplicator is 5¾L × 1⁄12" dia. 46 × 2.3mm).

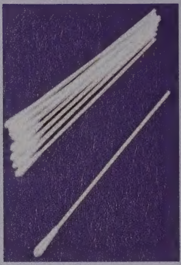
23-400-102

at. No.	Pack of 864	Case of 12 Pk.
3-400-102	14.50	148.68

*Fisherbrand** Sterile Polyester Swab

Polyester-tipped

- Plastic shaft
- Dimensions: 6L × 1⁄10" dia. (152 × 25mm)
- Individually wrapped in easy-to-open, tear-apart package


14-959-90

Cat. No.	Pack of 100	Case of 10 Pk.
14-959-90	25.74	234.03

*Fisherbrand** Tongue Depressors

lade of taste-free, splinter-free straight-grained mooth white birch

Depressor is 6L × ¾"W (15 × 1.9cm)

Nonsterile

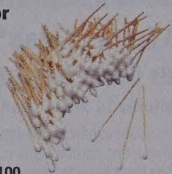
11-700-556

at. No.	Pack of 500	Case of
1-700-555	11.56	10 Pk./96.30
1-700-556	----	1200/67.52

*Fisherbrand** Cotton-Tipped Applicators

Nonsterile applicators are ideal for cleaning hard-to-reach areas such as test tubes

- Autoclavable
- 3 or 6" (7.6 or 15cm) length
- Wood shaft


23-400-100

Length	Cat. No.	Pack of 1000	Case of 10 Pk.
3" (7.6cm)	**23-400-100**	20.48	175.00
6" (15.2cm)	**23-400-101**	16.95	169.50

*Fisherbrand** Cotton-Tipped and Foam-Tipped Swabs

hoose from open-cell polyurethane foam or purified cotton

oam-Tipped Swabs

Nonlinting and nonscratching

Available with polypropylene or wooden handles

otton-Tipped Swabs

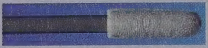
Autoclavable

With wooden handles

APPLICATIONS:

Foam-tipped swabs may be used with alcohol, acetone, oils, greases, and solvents. Cotton-tipped swabs are useful in bacteriology labs for inoculating broths or plated media or for obtaining culture specimens. Useful for cleaning delicate instruments.

andle Type	Tip Diameter	Length	Cat. No.	Pack of	Case of 10 Pk.
oam-Tipped					
olypropylene	0.141cm	3" (7.6cm)	**14-960-3E**	50/29.00	261.33
olypropylene	0.276cm	5" (12.7cm)	**14-960-3L**	50/16.70	142.76
olypropylene	0.188cm	6" (15.2cm)	**14-960-3J**	50/14.88	135.28
Vooden	0.188cm	6" (15.2cm)	**14-960-3G**	50/30.00	274.27
Vooden	0.375cm	6" (15.2cm)	**14-960-3H**	50/17.88	162.56
otton-Tipped					
Vooden	0.276cm	3" (7.6cm)	**14-960-3M**	1000/7.99	66.59
Vooden	0.276cm (tapered)	3" (7.6cm)	**14-960-3N**	1000/14.44	131.29
Vooden	0.276cm (tapered)	6" (15.2cm)	**14-960-3P**	1000/10.01	83.39


14-960-3E

14-960-3J

14-960-3L

14-960-3G

14-960-3H

14-960-3M

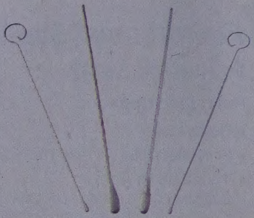
14-960-3P

14-960-3N

*Fisherbrand** Calcium Alginate Swabs

Soft calcium alginate swabs contain no fatty acids that can inhibit the growth of many fastidious microorganisms

- Exhibit no detectable bacteriostatic activity
- Do not react with or inhibit the activity of antibodies or antimicrobial agents
- Non-irritating and non-sensitizing
- Once a sample is obtained, the swab fibers can be dissolved in 1% sodium citrate solution or 1% sodium hexametaphosphate in ¼-strength Ringer solution, releasing bacteria for greater recovery



Left to right: 14-959-77, 14-959-81, 14-959-79, 14-959-78

ORDERING INFORMATION:
Packaged in sterile envelopes.

For	Shaft†	No. in Envelope	Cat. No.	Pack of	Case of 10 Pk.
Aural, nasal or urethral canals	Aluminum 0.9mm	1	**14-959-77**	100/43.55	372.19
Aural, nasal or urethral canals (pediatric use)	Ultrafine aluminum 0.6mm	1	**14-959-78**	100/44.94	384.13
Throat cultures, industrial surfaces	Wood 2.1mm	1	**14-959-81**	100/25.69	215.53
		2	**14-959-82**	200/29.90	252.68
Throat cultures, gynecological screening, industrial surfaces	Plastic 2.5mm	1	**14-959-79**	100/24.76	209.76
		2	**14-959-80**	200/30.37	259.34

† Also available with Dacron, rayon or cotton tips. Contact your Fisher Scientific Customer Service Representative for details.*

SPECIALTY

BD CultureSwab* and BD CultureSwab Plus Collection and Transport Systems

Available in more than 20 swab and shaft configurations

- Create a microenvironment ideal for transporting aerobic, anaerobic and other fastidious pathogens
- Narrow configuration in lower portion of the tube, patented "Venturi-constriction," forces media to circulate around the swab, minimizing specimen exposure to the toxic effects of oxygen
- BD CultureSwab is offered in liquid Amies and Stuart's formulations as well as Cairy-Blair agar formulation
- BD CultureSwab Plus is offered in Amies agar gel formulations, with and without charcoal

CultureSwab and CultureSwab Plus Collection and Transport Systems

ORDERING INFORMATION:
Available addition of charcoal neutralizes bacterial metabolic products.

INCLUDES:
Round-bottomed tube; a nontoxic, rayon-tipped swab; a 5¼" (13.3cm) swab shaft; a security cap that creates a water-tight seal; an extra-large, preattached label; a tamper-evident seal; and the lot number, expiration date and product description printed on the tube and peel pack

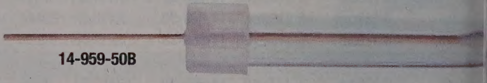
Medium	Swab	Shaft	Mfr. No.	Cat. No.	Pack of 5
CultureSwab–Without Charcoal					
Amies Liquid	Single	Plastic	220093	**B4320093**	48.3
	Dual	Plastic	220105	**B4320105**	59.4
	Single	Wire	220129	**B4320129**	70.6
	Single	Soft Wire	220130	**B4320130**	84.8
	Single	Flex Wire	220131	**B4320131**	82.2
Cary-Blair	Single	Plastic	220097	**B4320097**	46.0
Stuart's Liquid	Single	Plastic	220099	**B4320099**	46.9
	Dual	Plastic	220109	**B4320109**	59.4
	Single	Wire	220132	**B4320132**	73.7
	Single	Soft Wire	220133	**B4320133**	83.8
	Single	Flex Wire	220134	**B4320134**	82.1
CultureSwab Plus–Without Charcoal					
Amies Gel	Single	Plastic	220116	**L4320116**	50.4
	Dual	Plastic	220117	**L4320117**	72.8
	Single	Wire	220118	**L4320118**	88.5
	Single	Soft Wire	220119	**L4320119**	111.8
	Single	Flex Wire	220126	**L4320126**	94.1
CultureSwab Plus–With Charcoal					
Amies Gel	Single	Plastic	220121	**L4320121**	73.5
	Dual	Plastic	220122	**L4320122**	98.7
	Single	Wire	220123	**L4320123**	91.9
	Single	Soft Wire	220124	**L4320124**	116.8
	Single	Flex Wire	220125	**L4320125**	100.4

BD* Falcon* Swube* Applicators

Sterile, disposable swab in a tube

- Compact applicators
- Collect specimens and protect them from contamination
- Tested for microbial compatibility and sterility

ORDERING INFORMATION:
Individually wrapped



14-959-50B

Type	Tube Size	Tip	Cap Type	Mfr. No.	Cat. No.	Pack
Single	17 × 100	Cotton	Friction	220090	**14-959-50B**	200/178.0
	16 × 150		Screw	220210	**14-959-70B**	200/224.8
Double	16 × 150	Cotton	Screw	281130	**14-959-86**	200/312.1
Single	16 × 150	Polyester	Screw	220710	**14-959-75**	200/234.9
Single	----	Polyester	----	220690	**14-959-85**	1000/201.8

V Texwipe* CleanTips* Swabs

raclean head materials are precision molded so that every swab, certified to be silicone free, is constructed to cting tolerances

nstructed from the cleanest materials available and manufactured in a eanroom using state-of-the-art processes and equipment

gh-precision automated process guarantees consistent performance, zing and cleanliness

ha* Polyester Series

layers of cleanroom-laundered AlphaLife* polyester tips thermally sealed polypropylene handles.

o contaminating adhesives

perior resistance to wide range of chemicals and solvents

tra-low releasable particulates, ions, and NRV

ecommended for cleaning validation

cellent sorbency and release properties

orbond* Series

ect for abrasion-sensitive applications requiring very low residue, such viping sensitive coated-optics surfaces.

uble-layered, hydroentangled, continuous-filament polyester heads ermally molded onto polypropylene handles without adhesives

ng filaments reduce risk of fiber release; hydroentanglement lowers nvolatile residue to a very low level

eads are heat molded onto polypropylene handles and perimeter edges at sealed to prevent fiber release

cellent chemical resistance; can be used with a wide range of solvents

Foam Series

High performance for applications requiring sorbency, low particle generation and solvent resistance.

- High-grade, closed-cell polyurethane foam heads
- Softness and low abrasion protect delicate components
- Chemical resistant polypropylene handles

CleanFoam* Series

Laundered CleanFoam heads constructed of 100 pores per inch open-cell polyurethane foam for excellent capacity and cushioning.

- Cleanest foam swabs available with superior solvent capacity and contamination capture
- Solvent-processed for very low levels of nonvolatile residue and particle generation
- Good chemical resistance—can be used with solvents such as isopropyl alcohol and applying lubricants and other liquids
- Heads thermally welded onto polypropylene handles, without any contaminating adhesives

ORDERING INFORMATION:

- Silicone-free Bag-Within-A-Bag* packaging consists of a solvent-resistant, thermally sealed exterior bag that protects the inner bags containing the swabs
- Each outer bag is individually lot-coded for easy traceability and quality control
- Other sizes and configurations are available; visit our Web site for details

e	Description	Tip Diameter	Handle Length	Mfr. No.	Cat. No.	Pack of	Case of
a Polyester Series							
	Small Alpha, rigid tip	0.157" (4.0mm)	2.295" (5.8cm)	TX 743B	**18-375**	500/64.50	5 Pk./285.38
	Mini Alpha, rigid tip	0.138" (3.5mm)	2.362" (6.0cm)	TX 754B	**18-380**	500/64.50	5 Pk./285.38
	Alpha with flexible tip on long handle	0.268" (6.8mm)	5.728" (14.6cm)	TX 761	**18-385**	100/23.44	10 Pk./213.10
rbond Series							
	Absorbond with long handle	0.268" (6.8mm)	5.728" (14.6cm)	TX 762	**18-386**	100/26.68	10 Pk./242.57
	Micro Absorbond	0.126" (3.2mm)	2.362" (6.0cm)	TX 759B	**18-384**	500/62.40	5 Pk./276.10
n Series							
	Medium, flexible head	0.188" (4.8mm)	3.661" (9.3cm)	TX 709A	**18-361**	100/28.89	10 Pk./262.62
	Large, flexible head	0.276" (6.7mm)	3.661" (9.3cm)	TX 710A	**18-362**	100/28.89	10 Pk./262.62
	Keyboard, flexible paddle	0.429" (10.9mm)	2.126" (5.4cm)	TX 706A	**18-358**	100/31.34	10 Pk./284.90
	Large rectangular, rigid paddle	0.591" (15.0mm)	4.173" (10.6cm)	TX 707A	**18-359**	100/26.04	10 Pk./236.75
	Rectangular head, rigid paddle	0.500" (12.7mm)	4.000" (10.2cm)	TX 712A	**18-363**	100/28.22	10 Pk./256.57
nFoam Series							
	Medium, with flexible paddle on long handle	0.252" (6.4mm)	5.709" (14.5cm)	TX 740B	**18-372**	500/81.35	5 Pk./359.95
	Medium compressed, with rigid tip	0.134" (3.4mm)	1.969" (5.0cm)	TX 752B	**18-378**	500/81.18	5 Pk./359.19

BEFORE YOU BUY GLASS SYRINGES

NEEDLE CHARACTERISTICS

Single gauge—Single gauge needles have a constant outer diameter from the hub connection to the
general purpose syringes use single gauge needles.

Dual taper—The diameter of dual taper needles changes from the center to the tip compared to the
the hub. Dual taper needles are frequently used for injection into gas chromatographs where the thin p
penetration of the septum as well as allowing on-column injection while the heavier gauge base provi
and durability.

Bevel tip—Bevel cut needles allow for easy penetration with minimal damage to resealab
septa and other materials with reduced risk of needle bending.

Blunt tip—Blunt tip needles are cut perpendicular to the length of the shaft with
ish finish at the tip. Blunt tip needles perform well for liquid dosing and injection
sampling valves.

Side Hole—Side hole needles are designed to resist clogging by septum
other debris. The side hole configuration is usually found on larger gauge
syringes used for gas sampling

Conical tip—Conical tips are usually found in conjunction with a d
needles for injection into gas chromatographs. The conical shape fit
capillary columns and evenly distributes the sample during ejectio

PLUNGER CHARACTERISTICS:

Button Termination—Button plunger termination is con
operation of the syringe. Some autosamplers are configure
button termination.

Autosampler Terminations—Some autosamplers are d
only specific modifications to the plunger terminations.
tions are referenced by instrument manufacturer a

PTFE tipped—Plungers with a PTFE tip use
resistant seal with the barrel are often refer
PTFE tips are chemically inert and aid plun
samples with high dissolved solids.

Extended Handle—Extended handle
ferred for precise manual injection of s
metal handle prevents heat transfer fr
hands to the sample held in the sy

Zero-dead volu
(Needle in plu
These syringes p
sion for injection
between 0.2μL an
is entirely conta
syringe needl

APPLICATION	MODEL
Injection of liquid samples into GCs	Target GC Series Syringes
Injection of vapor phase samples	Target GT Series Syringes
Precision liquid dosing and sampling	Target GT Series Syringes
Headspace analysis	Target HS Series Syringes
Precision sampling of micro-volume liquids	Target MV Series Syringes
Manual injection into sample valves	Target EH Series Syringes
HPLC autosampler injection	Target LC Series Syringes
Macrovolume sampling (>1mL)	Target LV Series Syringes

sponsored by:

Fisher Scientific

TARGET BRAND
HPLC & GC
Glass Syringes for Chromatography
6 Pack
TARGET BRAND
NATIONAL SCIENTIFIC

Dual-Tapered Design

FEATURES TO LOOK FOR:

Duran* 33 Exp. Borosilicate Glass Barrel—High quality barrels formed from glass exhibiting lo
sion and high chemical purity provides structural integrity and minimal chemical interactions. Dura
can be bored to tighter tolerances providing syringes that exhibit consistently high precision.

Chrome plated, Stainless-steel Plungers—Stainless-steel plungers are precision fit to the syri
plating virtually eliminates ionic leaching of metals from the plunger body reducing the possibility
interactions with sample components. The chrome plating provides a microscopically smooth surfa
glass barrel of the syringe.

Precision bore barrels with tight tolerance plungers—A close fit between the sealing surfa
plunger improves sample uptake and dispensing especially with low viscosity or volatile samples. C
due to retention of sample behind the plunger is reduced.

SYRINGES

AUTOSAMPLER

ıtional Scientific Target* Syringes for HP* 7673 Autosampler

ɔose from tapered or straight shank fixed-needle syringes with stainless-steel or PTFE-tipped plungers

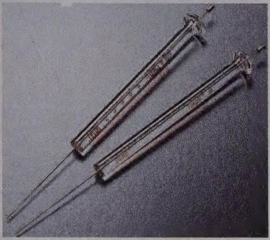
ɔne-shaped needle minimizes
ɛpta coring

arrels are made of Duran* 33
ɛxpansion borosilicate glass for
gh chemical resistance and
nger service life

hemical-resistant diffusion ink
arkings

ainless-steel plungers are
ıromium electroplated to pre-
ent leaching of Ni and Fe

ach needle is precision fit to its
ringe barrel, eliminating
ontact between needle cement
nd internal syringe body



03-391-1 series

3s/26s Tapered Fixed-Needle Syringes—Top portion of the syringe eedle offers 23s gauge for strength and durability; bottom half is 26s auge for split/splitless and on-column injections

3s Single-Gauge Fixed-Needle Syringes —Made for use with ɛptum-equipped gas chromatographs

ɔs Single-Gauge Fixed-Needle Syringes —Use with on-column and plit/splitless injector ports

Capacity	Plunger	Mfr. No.	Cat. No.	Pack of
23s/26s Syringes				
5μL	Stainless Steel	NS104304	**03-391-15B**	1/59.40
5μL	Stainless Steel	NS104314	**03-391-15E**	6/274.23
5μL	PTFE	NS604304	**03-391-17B**	1/44.08
5μL	PTFE	NS604314	**03-391-17E**	6/257.45
10μL	Stainless Steel	NS104404	**03-391-16B**	1/31.66
10μL	PTFE	NS604404	**03-391-18B**	1/44.11
23s Syringes				
5μL	Stainless Steel	NS104305	**03-391-15C**	1/36.17
5μL	Stainless Steel	NS104315	**03-391-15F**	6/259.54
5μL	PTFE	NS604305	**03-391-17C**	1/43.68
10μL	Stainless Steel	NS104405	**03-391-16C**	1/32.47
10μL	Stainless Steel	NS104415	**03-391-16F**	6/182.68
10μL	PTFE	NS604405	**03-391-18C**	1/44.11
10μL	PTFE	NS604415	**03-391-18F**	6/253.73
26s Syringes				
5μL	Stainless Steel	NS104303	**03-391-15A**	1/49.59
5μL	Stainless Steel	NS104313	**03-391-15D**	6/288.36
10μL	Stainless Steel	NS104403	**03-391-16A**	1/32.47
10μL	Stainless Steel	NS104413	**03-391-16D**	6/184.03
10μL	PTFE	NS604413	**03-391-18D**	6/257.39

ıtional Scientific Precision Target* GC Syringes for Agilent Technologies* Autosamplers

ɛ with 7673 Series, 7683 Series, and 6850 ALS

03-378 and 03-391 Series

ixed needle syringes feature a proprietary process that eliminates cement or epoxy for error-free injections

emovable needle syringes permit easy removal of bent needles for replacement; same syringe can be used with ifferent gauge needles to meet specific application needs

apered design combines strength of larger diameter 23s gauge with narrow 26s gauge piercing for minimized vaporation and easy on-column injection

one-shaped blunt tip minimizes septa coring

TFE-tipped plungers prevent plunger freeze-up for longer syringe life; gas tight, use for liquid or gas samples

uper Elastic plungers are constructed from titanium nickel—plungers are flexible to return to memory position

2mm needle length

ıacity	Plunger Description	Gauge	Point Style	Mfr. No.	Cat. No.	Pack of
ıovable Needle Syringes						
.	N/A	23-26s	Cone-shaped Blunt	NS104308	**03-378-150**	1/62.80
ıL	N/A	23-26s	Cone-shaped Blunt	NS104408	**03-378-151**	1/47.55
ıL	Gas-tight PTFE-tipped	23-26s	Cone-shaped Blunt	NS604408	**03-378-152**	1/50.71
d Needle Syringes						
.	Super Elastic	23-26s	Cone-shaped 90° Blunt	NS164304	**03-378-155**	1/46.48
ıL	Super Elastic	23-26s	Cone-shaped 90° Blunt	NS164404	**03-378-156**	1/43.74
.	Gas-tight PTFE-tipped	26s	Cone-shaped 90° Blunt	NS604303	**03-378-157**	1/48.34
ıL	Gas-tight PTFE-tipped	26s	Cone-shaped 90° Blunt	NS604403	**03-378-158**	1/47.49
lacement Needles						
ıL	N/A	23-26s	Cone-shaped Blunt	NS834408	**03-378-154**	3/29.16

Thermo Scientific* GC Syringes for Agilent* Autosamplers

For Agilent 7673, 7683, and 6850 autosamplers

- Accurate, precise, and reproducible over a range of volumes
- Field-proven syringe designs are optimized for septum piercing
- Manufactured of borosilicate glass with metal flanges; stainless-steel needles and plungers
- Fixed needle syringes have a maximum temperature range of 5° to 70°C
- 5 to 100µL capacity needles have a maximum safe working pressure of 1000 psi; 100 psi maximum functional pressure
- Cone point needle tip to prevent plunger binding with dirty samples
- 42mm length

03-251-15 Series

Capacity	Gauge	Compare to Agilent No.	Cat. No.	Ea
Straight				
5µL	23	9301-0892	**03-251-150**	48.
10µL	23	9301-0713	**03-251-151**	31.
10µL	23	9301-0725	**03-251-152**	185.
Tapered				
10µL	23-26	5181-1267	**03-251-153**	31.
10µL	23-26	5181-3360	**03-251-154**	520.

National Scientific Precision Target* GC Fixed Needle Syringes for Shimadzu* Autosamplers

Use with AOC-14*, AOC-17*, and AOC-20* Models

03-378 Series

- Fixed needle syringes feature a proprietary process that eliminates cement or epoxy for error-free injections
- Cone-shaped blunt 90° tip minimizes septa coring
- 42mm needle length

Capacity	Gauge	Mfr. No.	Cat. No.	Each
5µL	26s	NS105303	**03-378-159**	57.78
5µL	23s	NS105304	**03-378-160**	57.76
10µL	26s	NS105403	**03-378-161**	52.02
10µL	23s	NS105404	**03-376-233**	50.38

National Scientific Precision Target* LC Syringes for CTC/Leap* Technologies Autosamplers

Use with A200LC, HTS, and HTC PAL models

- For use with CTC/Leap needle assemblies
- Fixed needle syringes feature a proprietary process that eliminates cement or epoxy for error-free injections
- PTFE-tip on stainless-steel plungers prevent plunger freeze-up for longe syringe life or gas samples
- 22 gauge needle, 51mm length with 90° blunt end point style

Capacity	Mfr. No.	Cat. No.	Ea
25µL	NS620502	**03-378-235**	71.
50µL	NS620605	**03-378-236**	60.
100µL	NS620702	**03-378-237**	59.
250µL	NS620805	**03-378-238**	60.

SGE* Syringes for Autosamplers

Replace syringes for Agilent* Technologies, Varian*, Perkin Elmer, Shimadzu*, Carlo Erba*, Fisons*, CTC/Leap*, Hitachi* and more

- Large selection of SGE syringes for many autosampler models
- See tables for some of the most popular autosampler syringes
- Syringe needles are cone point unless otherwise noted with footnotes

SG-0004 Series

ORDERING INFORMATION:

Additional syringes are available for other autosamplers made by the manufacturers represented here, as well as syringes for Unicam, Waters* and Siemens instruments. For information, contact your Fisher Scientific Customer Service Representative.

Ordering chart on next page.

* Syringes for Autosamplers, Contd.

			Needle		Replacement					
acity	Syringe Type	Gauge	O.D.	I.D.	Needle	Plunger	Cat. No.	Each	Cat. No.	Pack of 6
ent Technologies HP 7673 and HP 7683, 42mm Length										
µL	Plunger-in-Needle	26	0.47mm	0.16mm	SG-033708	----	**SG-000400**	78.86	----	----
µL	Plunger-in-Needle	23	0.63mm	0.16mm	SG-033715	----	**SG-000410**	80.12	----	----
µL	Plunger-in-Needle	23/26	0.63/0.47mm	0.16mm	SG-033730	----	**SG-000415**	101.90	----	----
	Fixed Needle/Fitted Plunger	26	0.47mm	0.11mm	----	----	**SG-001800**	61.98	**SG-001804**	374.70
	Fixed Needle/Fitted Plunger	23	0.63mm	0.11mm	----	----	**SG-001810**	61.98	**SG-001814**	319.11
	Fixed Needle/Fitted Plunger	23/26	0.63/0.47mm	0.11mm	----	----	**SG-001821**	55.00	**SG-001822**	317.58
	Removable Needle/Fitted Plunger	23	0.63mm	0.11mm	SG-036720	----	**SG-001815**	73.35	----	----
	Removable Needle/Fitted Plunger	23/26	0.63/0.47mm	0.11mm	SG-036730	----	**SG-001825**	73.89	----	----
L	Fixed Needle/Fitted Plunger	26	0.47mm	0.11mm	----	----	**SG-002800**	39.99	----	----
L	Fixed Needle/Fitted Plunger	23	0.63mm	0.11mm	----	----	**SG-002810**	40.22	----	----
L	Fixed Needle/Fitted Plunger	23/26	0.63/0.47mm	0.11mm	----	----	**SG-002821**	40.22	----	----
L, Gas Tight	Removable Needle/Replaceable Plunger[†]	26	0.47mm	0.11mm	SG-037715	SG-031809	**SG-002817**	62.05	----	----
L, Gas Tight	Fixed Needle/Replaceable Plunger[†]	23	0.63mm	0.11mm	----	SG-031808	**SG-002812**	55.16	----	----
L, Gas Tight	Fixed Needle/Replaceable Plunger[†]	23/26	0.63/0.47mm	0.11mm	----	SG-031808	**SG-002826**	55.16	**SG-002827**	336.00
L	Fixed Needle/Replaceable Plunger[†]	23/26	0.63/0.47mm	0.24mm	----	----	**SG-004668**	97.30	----	----
µL	Removable Needle/Fitted Plunger	23	0.63mm	0.24mm	SG-038717	----	**SG-006665**	87.02	----	----
o Erba/Fisons/Leap/CTC AS200 and AS800, 50mm Length										
µL	Plunger-in-Needle	26	0.47mm	0.10mm	SG-033770	----	**SG-000490**	88.57	----	----
	Fixed Needle/Fitted Plunger	26	0.47mm	0.11mm	----	----	**SG-001982**	55.67	----	----
	Fixed Needle/Fitted Plunger	23	0.63mm	0.11mm	----	----	**SG-001981**	55.67	----	----
L	Fixed Needle/Fitted Plunger	23	0.63mm	0.11mm	----	----	**SG-002981**	30.48	----	----
L	Fixed Needle/Fitted Plunger	26	0.47mm	0.15mm	----	----	**SG-002980**	30.48	**SG-002986**	158.69
L	Fixed Needle/Fitted Plunger	26	0.47mm	0.15mm	----	----	**SG-002992**	51.74	----	----
L	Removable Needle/Fitted Plunger	26	0.47mm	0.11mm	SG-037785	----	**SG-002982**	43.52	----	----
L	Removable Needle/Fitted Plunger	26	0.47mm	0.15mm	SG-031535	----	**SG-002993**	62.05	----	----
L	Fixed Needle/Replaceable Plunger[†]	23	0.63mm	0.11mm	----	SG-031803	**SG-002987**	55.67	----	----
L	Fixed Needle/Fitted Plunger	26	0.47mm	0.15mm	----	----	**SG-003980**	80.77	----	----
L	Fixed Needle/Replaceable Plunger[†]	23	0.63mm	0.24mm	----	SG-031817	**SG-003987**	80.77	----	----
L	Removable Needle/Replaceable Plunger[‡]	26	0.47mm	0.24mm	SG-038749	SG-031816	**SG-003988**	104.88	----	----
µL	Removable Needle/Replaceable Plunger[†]	26	0.47mm	0.20mm	SG-038732	SG-031826	**SG-005333**	81.99	----	----
in Elmer Autosystem, 70mm Length										
µL	Plunger-in Needle	23	0.63mm	0.1mm	SG-033765	----	**SG-000478**	101.90	----	----
	Fixed Needle/Fitted Plunger	26	0.47mm	0.15mm	----	----	**SG-001953**	76.39	----	----
	Fixed Needle/Fitted Plunger	23	0.63mm	0.15mm	----	----	**SG-001954**	76.39	----	----
	Fixed Needle/Replaceable Plunger[†]	26	0.47mm	0.15mm	----	SG-031807	**SG-001955**	80.77	----	----
	Fixed Needle/Replaceable Plunger[†]	23	0.63mm	0.15mm	----	SG-031807	**SG-001957**	80.77	----	----

s-tight model. *[‡] Point has side hole, dome tip.*

			Needle		Replacement			
acity	Syringe Type	Gauge	O.D.	I.D.	Needle	Plunger	Cat. No.	Each
adzu Models AOC14, AOC17, AOC20, AOC20i, 42mm Length								
µL	Plunger-in Needle	26	0.47mm	0.15mm	SG-033738	----	**SG-000440**	88.57
	Fixed Needle/Fitted Plunger	26	0.47mm	0.11mm	----	----	**SG-001987**	63.58
	Fixed Needle/Fitted Plunger	23	0.63mm	0.11mm	----	----	**SG-001988**	63.58
µL	Removable Needle/Fitted Plunger	26	0.47mm	0.11mm	SG-037745	----	**SG-002897**	62.54
µL	Removable Needle/Fitted Plunger	23	0.63mm	0.11mm	SG-037747	----	**SG-002898**	62.54
an 8035, 8100 and 8200, 53mm Length								
L	Removable Needle/Replaceable Plunger[†]	25	0.5mm	0.15mm	SG-037777	SG-031218	**SG-002924**	197.01
L	Fixed Needle/Replaceable Plunger[†]	25	0.5mm	0.15mm	----	SG-031218	**SG-002923**	186.18
µL	Removable Needle/Replaceable Plunger[†]	25	0.5mm	0.2mm	SG-038745	SG-031824	**SG-005921**	191.34

e hole point. SG-005921has side hole cone point.

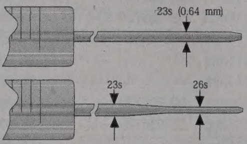
ACCESSORIES

SGE* Autosamplers Syringes Replacement Plungers for Hitachi* and Thermoseparations/Spectraphysics

Capacity	Syringe Type (or termination)	Plunger	Cat. No.	Each
Hitachi Model E7200				
500µL	M10 Screw thread	SG-031837	**SG-007660**	144.89
Thermoseparations/Spectraphysics Models AS1000, AS3000				
250µL	1/4-28 UNF screw thread	SG-031833	**SG-006660**	76.44

Hamilton* Syringes for Agilent* Technologies GC Autosamplers

For use with Agilent Technologies HP7673, HP7683, HP7670, HP7671, and HP7672 autosamplers



- Available with three needle gauges: 23s/26s, 23s, and 26s and two needle point styles: Style 2 and Style HP
- Style 2 is a beveled, noncoring needle point for septum penetration
- Style HP is a special conical style used exclusively on syringes for the Agilent Technologies autosamplers
- Needles are 1.71" long

For HP7673 and HP7683 Autosamplers

Model	Capacity	Gauge	Point Style	Mfr. No.	Cat. No.	Pack of
Microliter Syringes, Fixed Needle (ASN)						
75ASN	5μL	23s	HP	87987	**14-815-45**	1/63.45
75ASN	5μL	23s	HP	87990	**14-815-49**	6/338.47
75SN	5μL	23s	HP	87995	**14-813-150**	1/96.26
75ASN	5μL	23s	2	87991	**14-816-226**	1/69.80
75ASN	5μL	26s	HP	87988	**14-815-46**	1/63.45
75ASN	5μL	26s	HP	87989	**14-815-48**	6/370.20
75ASN	5μL	23s/26s	HP	87993	**14-813-256**	1/63.45
75ASN	5μL	23s/26s	HP	87994	**14-813-257**	6/355.39
701ASN	10μL	23s	HP	80387	**14-815-25**	1/41.25
701ASN	10μL	23s	HP	80390	**14-815-28**	6/235.86
701ASN	10μL	23s	2	80398	**14-816-209**	1/46.54
701ASN	10μL	26s	HP	80388	**14-815-26**	1/41.25
701ASN	10μL	26s	HP	80389	**14-815-27**	6/235.86
701ASN	10μL	23s/26s	HP	80393	**14-813-263**	1/41.25
701ASN	10μL	23s/26s	HP	80391	**14-813-264**	6/235.86
Modified Microliter Syringes, Removable Needle (ASRN)						
7000.5ASRN	0.5μL	23s	HP	86276	**14-813-149**	1/94.36
7000.5ASRN	0.5μL	26s	HP	86274	**14-813-148**	1/87.02
7001ASRN	1μL	23s	HP	80176	**14-813-132**	1/82.82
7001ASRN	1μL	26s	HP	80175	**14-813-131**	1/85.98
Microliter Syringes, Removable Needle (ASRN)						
75ASRN	5μL	23s	HP	87957	**14-815-43**	1/72.97
75ASRN	5μL	26s	HP	87958	**14-815-44**	1/83.55
75ASRN	5μL	23s/26s	HP	87959	**14-813-259**	1/76.16
701ASRN	10μL	23s	HP	80357	**14-815-22**	1/58.17
701ASRN	10μL	26s	HP	80358	**14-815-24**	1/57.12
701ASRN	10μL	23s/26s	HP	80359	**14-813-266**	1/59.23
Gastight Syringes, Fixed Needle (ASN)						
175ASN	5μL	23s	HP	80074	**14-813-124**	1/57.12
175ASN	5μL	23s	HP	80090	**14-813-129**	6/327.88
175ASN	5μL	23s/26s	HP	80076	**14-813-260**	1/58.17
175ASN	5μL	23s/26s	HP	80092	**14-813-261**	6/327.88
1701ASN	10μL	23s	HP	80080	**14-813-126**	1/57.12
1701ASN	10μL	23s	HP	80094	**14-813-130**	6/327.88
1701ASN	10μL	23s/26s	HP	80079	**14-813-267**	1/57.12
1701ASN	10μL	23s/26s	HP	80096	**14-813-268**	6/327.88
Gastight Syringes, Removable Needle (ASRN)						
175ASRN	5μL	23s/26s	HP	80086	**14-813-262**	1/90.97
1701ASRN	10μL	23s	HP	80087	**14-815-20**	1/63.45
1701ASRN	10μL	26s	HP	80088	**14-815-21**	1/63.45
1701ASRN	10μL	23s/26s	HP	80089	**14-813-269**	1/63.45

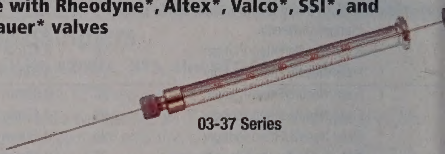
For HP7670, HP7671, and HP7672 Autosamplers

Model	Capacity	Gauge	Point Style	Mfr. No.	Cat. No.	Pac
Microliter Syringes, Fixed Needle (ASN)						
701ASN	5μL	26s	2	87900	**14-824-53A**	1/3
701N	10μL	26s	2	80300	**14-824**	1/2
701N	10μL	26s	HP	80366	**14-824-16**	6/13
701ASN	10μL	26s	HP	80338	**14-813-8**	1/6
Gastight Syringes, Fixed Needle						
1701RN	10μL	26s	HP	80000	**14-815-1**	1/4
Replacement Needles (RN)						
----	5–10μL	23s	HP	80457	**14-815-41**	3/5
----	5–10μL	26s	HP	80458	**14-815-42**	3/5
----	5–10μL	23s/26s	HP	80460	**14-815-543**	3/5

CHROMATOGRAPHY

National Scientific Precision Target* LC Syringes Manual Injection Valves

Use with Rheodyne*, Altex*, Valco*, SSI*, and Knauer* valves



03-37 Series

- LC manual injection valve syringes
- Fixed needle syringes feature a proprietary process that eliminates ceme or epoxy for error-free injections
- Removable needle syringes permit easy removal of bent needles for replacement; same syringe can be used with different gauge needles meet specific application needs
- Cone-shaped 90° blunt tip minimizes septa coring
- PTFE-tipped plungers prevent plunger freeze-up for longer syringe life
- Super Elastic plungers are constructed from titanium nickel to preven bent plungers—flexible to return to memory position
- Needle length 51mm
- Gauge 22s

Capacity	Plunger Description	Mfr. No.	Cat. No.	Pac
Fixed Needle Syringes				
5μL	Stainless steel	NS101302	**03-378-246**	1/3
10μL	Stainless steel	NS101402	**03-377-217**	1/2
25μL	Stainless steel	NS101502	**03-377-218**	1/2
50μL	Stainless steel	NS101602	**03-377-219**	1/2
100μL	Stainless steel	NS101702	**03-377-220**	1/3
250μL	Stainless steel	NS101802	**03-377-221**	1/3
500μL	Stainless steel	NS101902	**03-377-222**	1/4
10μL	Super Elastic	NS161402	**03-378-248**	1/3
Removable Needle Syringes				
5μL	PTFE-tipped Stainless steel	NS601306	**03-378-249**	1/9
10μL	PTFE-tipped Stainless steel	NS601406	**03-378-250**	1/4
25μL	PTFE-tipped Stainless steel	NS601506	**03-378-251**	1/4
50μL	PTFE-tipped Stainless steel	NS601606	**03-378-252**	1/4
100μL	PTFE-tipped Stainless steel	NS601706	**03-378-253**	1/4
250μL	PTFE-tipped Stainless steel	NS601806	**03-378-254**	1/4
500μL	PTFE-tipped Stainless steel	NS601906	**03-378-255**	1/4
Replacement Needles				
5μL	N/A	NS831305	**03-378-256**	3/1
10μL	N/A	NS831405	**03-378-257**	3/1
25-100μL	N/A	NS831505	**03-378-258**	3/1
250-500μL	N/A	NS832602	**03-377-289**	3/1

*Trademark. See Trademark Reference.

Prices subject to change.

ıtional Scientific Precision Target* ries N Fixed Needle Syringes

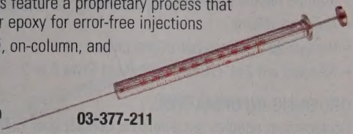
e with JADE* and Merlin* septumless injectors, split d splitless mode

xed needle syringes feature a proprietary process that iminates cement or epoxy for error-free injections

esigned for manual, on-column, and ptum injection

evel point

eedle length 51mm



03-377-211

acity	Gauge	Mfr. No.	Cat. No.	Pack of
	26s	NS100301	**03-377-201**	1/28.69
	26s	NS100311	**03-377-203**	6/183.15
L	26s	NS100401	**03-377-204**	1/21.99
L	26s	NS100411	**03-277-205**	6/118.07
L	22s	NS100501	**03-377-207**	1/26.99
µL	22s	NS100701	**03-377-211**	1/31.17

E* Series II Standard Syringes

ndard syringes with anti-roll flange and needles that aligned with zero mark on barrel to reduce dead ume, improve accuracy and precision to <±1%

ainless-steel plungers are hand fitted, noninterchangeable, nreplaceable

ringes with 5 and 10µL capacities have barrel O.D. of 6.5mm, scale ngth of 54.1mm and include a 50mm long 26s gauge needle

to 500µL capacity syringes have 8mm O.D. barrel, 60mm scale length d 50mm long, 25 gauge needle

xed-needle models have needle glued into barrel with solvent-resistant oxy glue

emovable-needle models feature a PTFE seal, a spring and nut for ak-resistant operation

Series II

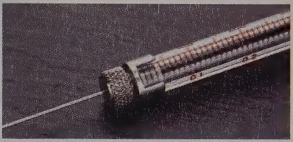
acity	Replacement Needle	Graduations		Cat. No.	Pack of
		Major	Minor		
d-Needle Syringes					
	----	0.5µL	0.1µL	**SG-001000**	1/35.53
L	----	1.0µL	0.2µL	**SG-002000**	1/22.22
L	----	1.0µL	0.2µL	**SG-002030**	6/127.69
L	----	1.0µL	0.2µL	**SG-002033**	10/233.92
L	----	2.5µL	0.5µL	**SG-003000**	1/33.34
L	----	5.0µL	1.0µL	**SG-004000**	1/40.27
µL	----	10.0µL	2.0µL	**SG-005000**	1/37.73
µL	----	25.0µL	5.0µL	**SG-006000**	1/49.44
µL	----	50.0µL	10.0µL	**SG-007000**	1/49.44
ovable-Needle Syringes					
	SG-036110	0.5µL	0.1µL	**SG-001050**	1/45.89
L	SG-037110	1.0µL	0.2µL	**SG-002050**	1/44.43
L	SG-037110	1.0µL	0.2µL	**SG-002080**	6/229.95
L	SG-038110	2.5µL	0.5µL	**SG-003050**	1/49.43
L	SG-038110	5.0µL	1.0µL	**SG-004050**	1/51.26
µL	SG-038110	10.0µL	2.0µL	**SG-005050**	1/58.20
µL	SG-038110	25.0µL	5.0µL	**SG-006050**	1/71.92
µL	SG-038110	50.0µL	10.0µL	**SG-007050**	1/76.39

Hamilton* Series 600/700 Standard Microliter* Syringes

2.5 to 500µL capacity

Incorporate a stainless-steel plunger individually fitted to matching syringe barrel (plungers and barrels are not interchangeable or replaceable).

14-824 Series



14-824 and 14-813 Series

Three Syringe Styles

- Fixed-needle syringes have the needle cemented into the glass syringe barrel at a point corresponding to the zero graduation mark; not autoclavable
- Removable-needle syringes allow the use of different needles on the same syringe barrel; autoclavable when disassembled
- Needles seat precisely to the zero graduation mark of the syringe
- Luer-Tip syringes feature ground-glass syringe barrel with male Luer taper; accepts most hypodermic needles and autoclavable when disassembled

Two Needle Point Styles

- Point Style 2 is a beveled noncoring needle point recommended for septum penetration
- Point Style 3 is a blunt needle point for use with HPLC injection valves and for sample pipetting

Model	Volume	Gauge	Point Style	Mfr. No.	Cat. No.	Each
Fixed-Needle Syringes, 2" Needle Length						
701	10µL	22s	3	80365	**14-815-287**	31.72
701N	5µL	26s	3	80383	**14-816-208B**	45.47
701N	10µL	26s	2	80300	**14-824**	24.33
702N	25µL	22s	2	80400	**14-824-7**	33.84
702SN	25µL	22s	3	80465	**14-815-288**	33.85
705N	50µL	22s	2	80500	**14-824-5**	38.08
705N	50µL	22s	3	80565	**14-824-32**	38.08
710N	100µL	22s	2	80600	**14-824-6**	41.25
710SN	100µL	22s	3	80665	**14-815-290**	39.13
725N	250µL	22s	2	80700	**14-824-2**	49.72
725SN	250µL	22s	3	80765	**14-815-291**	49.70
750N	500µL	22	2	80800	**14-824-9**	53.94
750SN	500µL	22	3	80865	**14-815-292**	61.35
Removable-Needle Syringes, 2" Needle Length						
62RN	2.5µL	22s	3	87942	**14-824-55A**	79.68
65RN	5µL	22s	3	87943	**14-824-55B**	76.54
75RN	5µL	26s	2	87930	**14-824-53B**	52.42
701RN	10µL	26s	2	80330	**14-824-3**	45.47
702RN	25µL	22s	2	80430	**14-813-21**	51.83
705RN	50µL	22s	2	80530	**14-813-38**	53.95
710RN	100µL	22s	2	80630	**14-813-53**	59.24
725	250µL	22s	2	80730	**14-813-69**	74.04
750	500µL	22	2	80830	**14-813-84**	77.22
Luer-Tip Syringes, Needle Not Included						
701LT	10µL	----	----	80301	**14-813-1**	33.85
702LT	25µL	----	----	80401	**14-813-18**	35.96
705LT	50µL	----	----	80501	**14-824-10**	38.09
710LT	100µL	----	----	80601	**14-824-11**	45.48
725LT	250µL	----	----	80701	**14-813-65**	57.12
750LT	500µL	----	----	80801	**14-813-81**	59.24

Hamilton* Model 701 Microliter* Syringe Six Packs

In fixed (701N) or removable (701RN) needles

- Available in 10µL capacity with either fixed (701N) or removable (701RN) needles (Point Style 2)
- Packed in durable storage container with a set of self-adhesive dots for easy syringe identification

14-824-1

Model No.	Capacity	Gauge	Needle Length	Mfr. No.	Cat. No.	Pack of 6
701RN	10µL	26s	51mm	80336	**14-824-1**	259.14

Hamilton* Series 800 Microliter* Syringes with Metal Handles

Extended metal handle makes syringes easier to hold and prevents heat transfer from hand to sample

- Metal plunger stem acts as a support and guide to protect the small plunger against bending
- Glass barrel/plunger assemblies are easily replaceable
- Plunger stop prevents plunger blow-out
- Volumes from 5 to 250µL
- All models have Point Style 2

Model	Capacity	Gauge	Mfr. No.	Cat. No.	Each
Fixed-Needle Syringes, 2" Needle Length					
85	5µL	26s	84850	**14-815-202**	114.28
801	10µL	26s	84852	**14-824-80B**	75.48
802	25µL	22s	84854	**14-815-204**	78.63
805	50µL	22s	84856	**14-815-215**	92.26
810	100µL	22s	84858	**14-815-226**	88.06
Removable-Needle Syringes, 2" Needle Length					
85	5µL	26s	84851	**14-815-203**	128.96
801	10µL	26s	84853	**14-824-80C**	89.11
802	25µL	22s	84855	**14-815-205**	89.11
805	50µL	22s	84857	**14-815-216**	95.41
810	100µL	22s	84859	**14-815-227**	97.51
825	250µL	22s	84861	**14-815-238**	110.08

Hamilton* Model 7000 Modified Microliter* Syringes

Positive displacement syringe for use with liquids

- Sample is contained in the needle; tungsten plunger wire travels into the needle to deliver the sample
- No dead volume
- Replaceable syringe barrel and parts
- Needles are 2¾" (70mm) with Point Style 2 or 3

ORDERING INFORMATION:

Replacement needles are available; contact your Fisher Scientific Custom Service Representative.

Model	Capacity	Gauge	Point Style	Mfr. No.	Cat. No.	Eac
7000.5	0.5µL	25	2	86259	**14-813-103**	83.8
7001	1.0µL	25s	2	80135	**14-824-27C**	66.0
7101	1.0µL	22s	2	86211	**14-813-115**	66.0
7101	1.0µL	22s	3	86200	**14-813-112**	66.0
7102	2.0µL	23	2	88511	**14-813-215**	83.8
7102	2.0µL	23	3	88500	**14-813-212**	83.8
7105	5.0µL	24	2	88011	**14-813-223**	76.5
7105KH	5.0µL	24	3	88000	**14-824-21**	76.5
7002	2.0µL	25	2	88411	**14-813-203**	83.

Hamilton* Series 900 Microliter* Syringe

All-glass extended-barrel syringes with metal sleeves for protection against breakage

14-824-54A

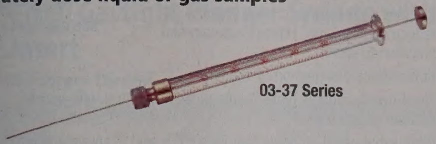
- Choose 5 or 10µL capacity
- Extra length makes syringes easier to handle
- Metal sheath prevents transfer of heat from hand to sample
- All models have needle Point Style 2
- Plungers and barrels are not interchangeable or replaceable

Model	Volume	Gauge	Needle Length	Mfr. No.	Cat. No.	E
Fixed-Needle Syringes						
95	5µL	26s	51mm	87920	**14-824-52A**	65
901	10µL	26s	51mm	80360	**14-824-54A**	73
Removable-Needle Syringes						
95	5µL	26s	51mm	87925	**14-824-52C**	79
901	10µL	26s	51mm	80370	**14-824-54C**	88

GASTIGHT

ational Scientific Precision Target* astight Syringes

ccurately dose liquid or gas samples



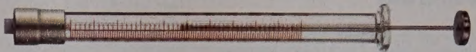
03-37 Series

- Fixed needle syringes feature a proprietary process that eliminates cement or epoxy for error-free injections
- Removable needle syringes permit easy removal of bent needles for replacement; same syringe can be used with different gauge needles to meet specific application needs
- PTFE-tipped stainless-steel plungers prevent plunger freeze-up for longer syringe life
- Needle length 51mm

apacity	Gauge	Point Style	Mfr. No.	Cat. No.	Each
ixed Needle Syringes					
5µL	26s	Bevel	NS600301	**03-377-246**	38.53
5µL	26s	90°	NS600302	**03-378-167**	38.22
10µL	26s	Bevel	NS600401	**03-377-248**	31.17
10µL	26s	90°	NS600402	**03-378-168**	40.81
25µL	22s	Bevel	NS600501	**03-377-251**	32.99
25µL	22s	90°	NS600502	**03-378-169**	32.75
50µL	22s	Bevel	NS600601	**03-377-254**	35.21
50µL	22s	90°	NS600602	**03-378-170**	37.11
100µL	22s	Bevel	NS600701	**03-377-258**	37.95
100µL	22s	90°	NS600702	**03-378-171**	37.85
500µL	22s	Bevel	NS600901	**03-377-266**	37.95
500µL	22s	90°	NS600902	**03-378-172**	37.12
500µL	22s	Side Hole	NS600904	**03-378-173**	44.66
1mL	22s	90° Blunt End	NS600001	**03-378-174**	44.95
5mL	22s	90°	NS600041	**03-378-176**	51.31
10mL	22s	90°	NS600061	**03-378-178**	48.31
emovable Needle Syringes					
5µL	26s	Bevel	NS600305	**03-377-247**	39.35
10µL	26s	Bevel	NS600405	**03-377-249**	39.77
10µL	26s	90°	NS600406	**03-378-181**	44.66
25µL	22s	Bevel	NS600505	**03-377-252**	39.77
25µL	22s	90°	NS600506	**03-378-182**	41.71
50µL	22s	Bevel	NS600605	**03-377-255**	41.04
50µL	22s	90°	NS600606	**03-378-183**	50.64
100µL	22s	Bevel	NS600705	**03-377-259**	46.55
100µL	22s	90°	NS600706	**03-378-184**	51.10
500µL	22s	Bevel	NS600905	**03-377-267**	46.55
500µL	22s	90°	NS600906	**03-378-185**	50.64
1mL	22s	90°	NS600006	**03-378-187**	56.50
1mL	22s	Side Hole	NS600007	**03-378-188**	80.01
5mL	22s	90°	NS600046	**03-378-189**	68.96
10mL	22s	90°	NS600066	**03-378-191**	69.92

National Scientific Precision Target* Gastight PTFE Luer-Lok* Syringes

Feature a precision-machined PTFE-tipped plunger



03-377 and 03-378 Series

- Accurately dose liquid or gas samples
- PTFE-tipped plungers prevent plunger freeze-up for longer syringe life for liquid or gas samples
- Needles have a metal luer screw
- Needle Length 51mm

Replacement Needles

Capacity	Gauge	Point Style	Mfr. No.	Cat. No.	Pack of
PTFE Luer-Lok Plungers					
5µL	N/A	N/A	NS600309	**03-378-200**	1/55.72
10µL	N/A	N/A	NS600409	**03-378-201**	1/56.27
25µL	N/A	N/A	NS600509	**03-378-202**	1/50.61
50µL	N/A	N/A	NS600609	**03-377-256**	1/39.35
100µL	N/A	N/A	NS600709	**03-377-260**	1/39.77
250µL	N/A	N/A	NS600809	**03-377-264**	1/39.77
500µL	N/A	N/A	NS600909	**03-377-268**	1/39.35
1mL	N/A	N/A	NS607011	**03-378-203**	1/48.27
2.5mL	N/A	N/A	NS607031	**03-378-264**	1/54.30
5mL	N/A	N/A	NS607051	**03-378-205**	1/47.80
10mL	N/A	N/A	NS607071	**03-378-266**	1/59.29
25mL	N/A	N/A	NS607091	**03-378-207**	1/133.50
Needles					
N/A	26s	90°	NS842047	**03-378-268**	3/29.39
N/A	26s	Bevel	NS840047	**03-378-209**	3/17.60
N/A	22s	90°	NS842070	**03-378-210**	3/17.91
N/A	22s	Bevel	NS840070	**03-378-271**	3/32.73

National Scientific Precision Target* Headspace Analysis Syringes

For headspace/soil gas sampling

- Precision syringes for headspace/soil gas sampling
- Fixed needle syringes feature a proprietary process that eliminates cement or epoxy for error-free injections
- PTFE-tipped gas-tight stainless-steel plungers prevent plunger freeze-up for longer syringe life
- 22 gauge needle with side hole tip, 51mm length

Capacity	Mfr. No.	Cat. No.	Each
1.0mL	NS600002	**03-378-175**	56.61
2.5mL	NS600022	**03-378-213**	63.47
5.0mL	NS600042	**03-378-177**	56.61

National Scientific Precision Target* Large Volume Syringes

Use for macro volume sampling

03-377-23 Series

- Gas- and liquidtight syringes; all with PTFE-tipped plungers to prevent plunger freeze-up for longer syringe life
- Fixed needle syringes feature a proprietary process that eliminates cement or epoxy for error-free injections
- Removable needle syringes permit easy removal of bent needles for replacement; same syringe can be used with different gauge needles to meet specific application needs
- 22s gauge needle with bevel tip, length 51mm

Capacity	Mfr. No.	Cat. No.	Each
Fixed Needle Syringes			
1mL	NS600000	**03-377-230**	37.66
2.5mL	NS600020	**03-377-234**	39.77
5mL	NS600040	**03-377-238**	44.07
10mL	NS600060	**03-377-242**	47.79
Removable Needle Syringes			
1mL	NS600005	**03-377-231**	54.41
2.5mL	NS600025	**03-377-235**	55.04
5mL	NS600045	**03-377-239**	72.49
10mL	NS600065	**03-377-243**	70.60

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SGE* Gastight Syringes

Suitable for liquid and gas samples

SGE Gas-Tight Syringes

- 10µL to 100mL capacities
- Constructed from borosilicate glass, with PTFE plunger tips and Kel-F* Luer cones (where applicable)
- Needles align with zero mark on barrel to reduce dead volume, improve accuracy and precision to <±1%
- Replaceable plungers on all models
- Fixed-needle models have needle glued into barrel with epoxy solvent-resistant glue
- Removable-needle models feature a PTFE seal, a spring and nut for leak-resistant operation; come with needle
- Luer-tip and Luer-Lok* syringes come without needles; order separately

Capacity	Replacement Needle	Graduations Major	Graduations Minor	Cat. No.	Pack of
Fixed-Needle Models					
10µL	----	1.0µL	0.2µL	**SG-002200**[1]	1/37.73
10µL	----	1.0µL	0.2µL	**SG-002202**	6/199.27
10µL	----	1.0µL	0.2µL	**SG-002208**[2]	1/43.18
25µL	----	2.5µL	0.5µL	**SG-003200**	1/42.56
50µL	----	5.0µL	1.0µL	**SG-004200**	1/45.06
100µL	----	10.0µL	2.0µL	**SG-005200**	1/46.29
250µL	----	25.0µL	5.0µL	**SG-006200**	1/49.91
500µL	----	50.0µL	10.0µL	**SG-007200**	1/46.50
1mL	----	0.1mL	0.02mL	**SG-008102**	1/54.38
2.5mL	----	0.5mL	0.1mL	**SG-008502**	1/51.52
Removable-Needle Models					
10µL	SG-037110	1.0µL	0.2µL	**SG-002250**	1/53.39
10µL	SG-037110	1.0µL	0.2µL	**SG-002252**	6/262.42
25µL	SG-038110	2.5µL	0.5µL	**SG-003250**	1/49.01
50µL	SG-038110	5.0µL	1.0µL	**SG-004250**	1/50.17
100µL	SG-038110	10.0µL	2.0µL	**SG-005250**	1/57.93
250µL	SG-038110	25.0µL	5.0µL	**SG-006250**	1/58.20
500µL	SG-038110	50.0µL	10.0µL	**SG-007250**	1/59.14
1mL	SG-039110	0.1mL	0.02mL	**SG-008100**	1/72.44
2.5mL	SG-039110	0.5mL	0.1mL	**SG-008500**	1/71.29
5.0mL	SG-031516	0.5mL	0.1mL	**SG-008700**	1/76.39
10.0mL	SG-031516	0.5mL	0.1mL	**SG-008900**	1/81.99
Fixed Luer-Tip Models					
50µL	----	5.0µL	1.0µL	**SG-004229**	1/39.06
250µL	----	25.0µL	5.0µL	**SG-006229**	1/51.52
500µL	----	50.0µL	10.0µL	**SG-007229**	1/46.50
1mL	----	0.1mL	0.02mL	**SG-008020**	1/51.52
2.5mL	----	0.5mL	0.1mL	**SG-008420**	1/46.38
Fixed Luer-Lok Models					
50µL	----	5.0µL	1.0µL	**SG-004230**	1/49.01
100µL	----	10.0µL	2.0µL	**SG-005230**	1/49.01
250µL	----	25.0µL	5.0µL	**SG-006230**	1/49.01
500µL	----	50.0µL	10.0µL	**SG-007230**	1/49.91
1mL	----	0.1mL	0.02mL	**SG-008025**	1/55.78
2.5mL	----	0.5mL	0.05mL	**SG-008425**	1/55.78
5.0mL	----	1.0mL	0.2mL	**SG-008962**	1/62.54
25.0mL	----	1.0mL	0.5mL	**SG-009463**	1/162.60
Removable Luer-Lok Models					
5.0mL	----	0.5mL	0.1mL	**SG-008760**	1/62.54
10.0mL	----	1.0mL	0.2mL	**SG-008960**	1/64.44
25.0mL	----	1.0mL	0.5mL	**SG-009462**	1/158.69
50.0mL	----	10.0mL	1.0mL	**SG-009660**	1/183.25
100.0mL	----	10.0mL	2.0mL	**SG-009760**	1/263.64

[1] *With 50mm length needle.*

[2] *With 70mm length needle.*

*Trademark. See Trademark Reference.

E* Syringes with Gastight Plunger

"-28 screw thread termination

acity	For Use with	Cat. No.	Each
µL	Perkin Elmer* LC Autosampler	SG-006995	76.44

E* Fixed Gastight Plunger Syringe with FE Insert

28 UNF screw thread

el	Capacity	Mfr. No.	Cat. No.	Each
-ThermoSep	1mL	008180	SG-008180	70.40

tact your Fisher Scientific Customer Service Representative for the replacement plunger this syringe.

E* Gastight Syringes for Rheodyne* and lco* Valves

uare cut needle with no electrotaper

emovable needle

eedles are 2 in., 22 gauge, 0.028 in. O.D.

cription	Volume	Mfr. No.	Cat. No.	Pack of
nge	100µL	005312	SG-005312	1/57.93
	500µL	007312	SG-007312	1/58.20
	2.5mL	008505	SG-008505	1/76.39
lacement Needle	50µL	031820	SG-031820	1/22.96
	1mL	039250	SG-039250	5/17.38

NEED GAS CHROMATOGRAPHY COLUMNS?

Check out the large selection of Thermo Scientific* Trace columns on our Web site.

isit www.fishersci.com and search for Trace GC

Hamilton* Series 1700 Gastight* Syringes

Gas-tight and liquid-tight syringes specially designed for gas and liquid chromatography, handling corrosive gases and liquids, radioactive materials or sterile solutions

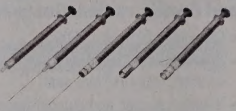
- Capacities from 10 to 500µL
- Stainless-steel plungers have PTFE precision-machined tips that provide an inert, leak-resistant seal
- Barrels, plunger, and plunger tips are easily replaceable (for more information on replacement parts, contact your Fisher Scientific Customer Service Representative)
- Available with fixed or removable needles with Point Style 2 or 3
- Syringes are also available with Luer tip suitable for hypodermic or chromatographic needles (**Note:** Do not use Luer-tip syringes with metal-hub needles.)

Model	Capacity	Gauge	Point Style	Mfr. No.	Cat. No.	Each
Fixed-Needle Syringes (N), 2" Needle Length						
1701	10µL	26s	2	80000	**14-815-1**	40.18
1701	10µL	26s	3	80075	**14-813-125**	40.18
1702	25µL	22s	2	80200	**14-815-29**	42.32
1702	25µL	22s	3	80275	**14-813-133**	42.32
1705	50µL	22s	2	80900	**14-824-30**	45.47
1705	50µL	22s	3	80975	**14-813-136**	45.47
1710	100µL	22s	2	81000	**13-684-100**	48.66
1710	100µL	22s	3	81075	**14-813-138**	48.66
1725	250µL	22s	2	81100	**13-684-102**	50.77
1725	250µL	22s	3	81175	**14-813-140**	50.78
1750	500µL	22	2	81217	**13-684-106**	48.66
1750	500µL	22s	3	81216	**14-813-142**	48.66
Removable-Needle Syringes (RN), 2" Needle Length						
1701	10µL	26s	2	80030	**14-815-11**	50.77
1701	10µL	22s	3	80065	**14-815-279**	50.77
1702	25µL	22s	2	80230	**14-815-37**	50.77
1702	25µL	22s	3	80265	**14-815-280**	50.77
1705	50µL	22s	2	80930	**14-815-61**	52.88
1705	50µL	22s	3	80965	**14-815-281**	52.88
1710	100µL	22s	2	81030	**14-815-80**	59.24
1710	100µL	22s	3	81065	**14-815-282**	59.24
1725	250µL	22s	2	81130	**14-815-97**	59.24
1725	250µL	22	3	81165	**14-815-283**	59.24
1750	500µL	22	2	81230	**14-815-113**	59.24
1750	500µL	22	3	81265	**14-815-284**	59.24
Luer-Tip Syringes (LT and TLL)						
1701	10µL, LT	----	----	80001	**14-815-2**	42.30
1702	25µL, LT	----	----	80201	**14-815-30**	42.32
1705	50µL, LT	----	----	80901	**14-815-50**	45.47
1710	100µL, LT	----	----	81001	**14-815-75**	48.66
1725	250µL, LT	----	----	81101	**14-815-92**	50.77
1750	500µL	----	----	81220	**14-815-111**	49.70

Hamilton* Series 1000 Gastight* Syringes

Identical in construction to Series 1700 Gastight syringes

- Capacities from 1 to 100mL
- Needle gauge 22



14-815 and 13-684 Series

Model	Capacity	Point Style	Mfr. No.	Cat. No.	Each
Fixed-Needle Syringes (N), 2" Needle Length					
1001N	1mL	2, Noncoring	81317	**14-824-25**	54.99
1001N	1mL	3, Blunt	81316	**14-813-143**	57.11
1001.25N	1.25mL	2, Noncoring	82017	**14-815-138**	69.80
1001.25N	1.25mL	3, Blunt	82016	**14-813-147**	83.55
1002N	2.5mL	2, Noncoring	81417	**13-684-110**	52.88
1002N	2.5mL	3, Blunt	81416	**14-813-144**	52.88
1005N	5mL	2, Noncoring	81517	**14-824-26**	64.51
1005N	5mL	3, Blunt	81516	**14-813-145**	63.45
1010N	10mL	2, Noncoring	81617	**14-815-180**	78.26
1010N	10mL	3, Blunt	81616	**14-813-146**	84.61
Removable-Needle Syringes (RN), 2" Needle Length (Replacement Needles, see 14-815-546 [Hamilton No. 7779-01])					
1001	1mL	2, Noncoring	81330	**14-815-127**	71.92
1002	2.5mL	2, Noncoring	81430	**14-815-152**	70.87
1005	5mL	2, Noncoring	81530	**14-815-167**	80.39
1010	10mL	2, Noncoring	81630	**14-815-183**	95.20
Luer-Tip Syringes (LT) (Needle Not Included)					
1001	1mL	----	81301	**14-824-24**	52.88
1001.25	1.25mL	----	82001	**14-815-139**	80.39
1002	2.5mL	----	81401	**13-684-108**	49.71
1005	5mL	----	81501	**14-824-23**	61.34
1010	10mL	----	81601	**14-824-34**	75.10
TLL Syringes (Needle Not Included)					
1001	1mL	----	81320	**13-684-94**	59.22
1002	2.5mL	----	81420	**13-684-95**	57.11
1025	25mL	----	82520	**14-815-194**	167.75
1050	50mL	----	85020	**14-815-195**	214.92
1100	100mL	----	86020	**13-684-116A**	328.15

Hamilton* Series 1000 Gastight* Syringes with Slots

Precision-machined PTFE plunger tip for a leak-free seal

- For gas or liquid samples
- PTFE luer lock termination

Volume	Mfr. No.	Cat. No.	Each
1mL	81327	**14-815-129**	85.68
10mL	M81627	**14-815-184**	74.03

Hamilton* Series 1800 Gastight* Syringes

High-performance syringes with metal handle and volumes from 10 to 250µL

14-815 Series

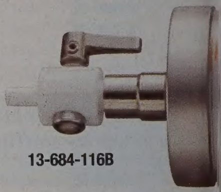
- Ideal for liquid or gas chromatography or for handling radioactive materials, sterile solutions or corrosive gases and liquids
- Extended metal handles give the syringe a more comfortable balance in the hand and prevent heat transfer from hand to sample
- Heavy plunger stem inside the handle acts as a guide to help prevent th small part of the plunger from bending
- Precision-machined "tips" of PTFE-resin provide a gas-tight seal
- Sample loss in high-pressure applications is negligible, even in extreme conditions
- Field repairable in seconds; barrels and needles may be changed quickly for different procedures

Model	Capacity	Gauge	Mfr. No.	Cat. No.	Eac
Fixed-Needle Syringes, 2" Long, Point Style 2					
1801	10µL	26s	84875	**14-815-250**	89.1
1802	25µL	22s	84878	**14-815-252**	92.2
1805	50µL	22s	84881	**14-815-254**	95.4
1810	100µL	22s	84884	**14-815-256**	97.5
1825	250µL	22s	84887	**14-815-258**	104.8
Removable-Needle Syringes, 2" Long, Point Style 2					
1801	10µL	26s	84877	**14-815-251**	105.8
1802	25µL	22s	84880	**14-815-253**	105.8
1805	50µL	22s	84883	**14-815-255**	109.0
1810	100µL	22s	84886	**14-815-257**	111.1
1825	250µL	22s	84889	**14-815-259**	118.4

Hamilton* Miniature PTFE Body Valve (MTB)

Small-profile valve is designed for storing and transporting samples in any Gastight TLL syringe

- Pressure tested to 100psig
- Valve's fluid path is made of PTFE, which is autoclavable when separated from syringe
- Kel-F* hub needles attach to valve
- ON/OFF lever is easy to manipulate
- Bore I.D: 0.039" (0.99mm)



13-684-116B

Mfr. No.	Cat. No.	Ea
86580	**13-684-116B**	79.

*Trademark. See Trademark Reference.

Prices subject to change.

erfektum* Jumbo Syringes

or biomedical, laboratory, clinical, research and dustrial applications

14-825-12F

- Capable of dispensing large volumes of corrosive, toxic and noxious liquids
- Durable, borosilicate glass syringes are corrosion and heat resistant
- deal for use in leak-resistant, high-flowrate medical and ndustrial applications

CLUDES:

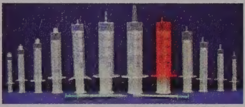
er-Lok* tip

ze	Graduations	Cat. No.	Each
0mL	4mL	**14-825-12C**	236.36
0mL	10mL	**14-825-12E**	397.14
0mL	10mL	**14-825-12F**	497.60

GENERAL PURPOSE

irTite Norm-Ject* Syringes without Needles

ert, hypoallergenic syringes for use in gas or liquid romatography, in vitro fertilization (IVF), embryo-ansfer, and various laboratory procedures



14-817 Series

- Luer-Lok*, Luer-Slip, or catheter tips
- Polypropylene barrel and polyethyl-ene plunger are chemically inert and noncytotoxic; needles contain no latex, synthetic rubber, silicone oil, or styrene
- Positive safety stop prevents accidental spills
- FDA registered

DERING INFORMATION:

ividually wrapped in convenient sterile strip packaging.

EQUIRED ACCESSORIES:

rchase needles separately.

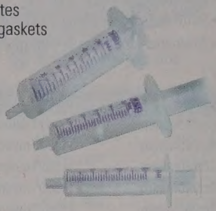
pacity	Type	Graduations	Cat. No.	Pack of	Case of
c	Tuberculin[1]	0.05cc	**14-817-25**	100/17.05	18 Pk./281.90
c	Centric Luer Slip	0.1cc	**14-817-26**	100/13.25	25 Pk./253.14
c	Luer Lok	0.1cc	**14-817-27**	100/23.73	25 Pk./494.37
c	Centric Luer Slip	0.2cc	**14-817-28**	100/18.38	20 Pk./314.25
c	Luer Lok	0.2cc	**14-817-29**	100/27.83	20 Pk./475.66
cc	Eccentric Luer Slip	0.5cc	**14-817-30**	100/22.65	12 Pk./232.27
cc	Luer Lok	0.5cc	**14-817-31**	100/32.52	12 Pk./333.49
cc	Catheter[2]	1cc	**14-817-42**	50/40.53	10 Pk./346.43
cc	Luer Lok	1cc	**14-817-41**	50/40.53	10 Pk./346.43
cc/ ¾ oz.	Eccentric Luer Slip	1cc	**14-817-32**	100/38.25	8 Pk./261.55
cc/ ¾ oz.	Luer Lok	1cc	**14-817-33**	100/48.77	8 Pk./333.49
cc/1 oz.	Eccentric Luer Slip	1cc	**14-817-34**	50/38.89	10 Pk./332.37
cc	Eccentric Luer Slip	2cc	**14-817-35**	30/30.36	10 Pk./259.51
cc	Catheter[2]	2cc	**14-817-36**	30/35.71	10 Pk./305.24
cc	Luer Lok	2cc	**14-817-40**	30/34.48	10 Pk./294.73

ose saver design with low dead space plug on the piston minimizes waste.
atheter syringe has a large opening similar to a nozzle and is usable with catheters.

National Scientific Target* All-Plastic Disposable Syringes

Disposable syringes with polyethylene barrels and polypropylene plungers; use for all syringe filter applications

- Two-part, all-plastic construction eliminates the need for rubber or synthetic plunger gaskets
- No silicone or oil lubricant is required in the barrel
- Choose Luer-Slip or Luer-Lok* syringes, in capacities ranging from 1 to 50mL



ORDERING INFORMATION:

Nonsterile; packed in bulk.

03-377-20 Series

Capacity	Mfr. No.	Cat. No.	Pack of	Case of
Luer-Slip Syringes				
1mL	S7510-1	**03-377-20**	100/26.45	10 Pk./258.91
3mL	S7510-3	**03-377-21**	100/16.94	10 Pk./164.71
5mL	S7510-5	**03-377-22**	100/27.97	10 Pk./266.31
10mL	S7510-10	**03-377-23**	100/32.45	10 Pk./309.10
20mL	S7510-20	**03-377-24**	100/54.96	5 Pk./261.58
30mL	S7510-30	**03-377-25**	50/61.70	10 Pk./584.45
50mL	S7510-50	**03-377-26**	30/60.00	10 Pk./570.81
Luer-Lok Syringes				
3mL	S7515-3	**03-377-27**	1000/455.27	----
5mL	S7515-5	**03-377-28**	1000/525.23	----
10mL	S7515-10	**03-377-29**	100/58.13	10 Pk./549.94
20mL	S7515-20	**03-377-30**	100/81.19	5 Pk./386.08

BD* Multifit Reusable Luer-Lok* Syringes

Made of special shockproof glass

14-823-10 Series

- Precisely engineered so that every plunger fits every barrel of the same catalog number
- Calibrated scale fixed into barrel for permanence
- Molded barrel for friction-free operation
- Use with PrecisionGlide*, Yale*, and Perfektum* needles
- Luer-Lok tips made of chrome-plated brass attached to reinforced heavy glass base

Capacity	Mfr. No.	Cat. No.	Each	Case of
2cc	512440	**14-823-10A**	39.32	36/1150.88
5cc	512441	**14-823-10B**	47.27	36/1383.50
10cc	512442	**14-823-10C**	61.40	36/1797.18
20cc	512443	**14-823-10D**	66.31	12/685.14
30cc	512444	**14-823-10E**	116.07	6/476.07
50cc	512445	**14-823-10F**	168.03	6/867.88

BD* Disposable Syringes

Sterile

- For easy identification of needle gauge, needle package and hub are color coded
- All syringes are sealed in an Easy Peel* package
- Autoclavable out of package
- With detachable PrecisionGlide* needle
- Stainless-steel needle with polypropylene hub and Luer-Lok* tip

14-82 Series

- Cat. Nos. 14-826-11 and 14-826-7 are intramuscular needles with a thin-wall design

NOTE:
Syringes with two capacities listed are dual scale.

Capacity	Graduations	Gauge	Needle Length	Mfr. No.	Cat. No.	Pack of 100	Case of
3cc/40minim	⅒cc/1minim	25	16mm (⅝")	309570	**14-826-82**	16.25	8 Pk./108.38
3cc/40minim	⅒cc/1minim	25	25mm (1")	309581	**14-829-13B**	16.25	8 Pk./108.38
3cc/40minim	⅒cc/1minim	25	38mm (1½")	309582	**14-829-13C**	16.25	8 Pk./108.38
3cc/40minim	⅒cc/1minim	23	25mm (1")	309571	**14-823-37**	16.25	8 Pk./108.38
3cc/40minim	⅒cc/1minim	22	25mm (1")	309572	**14-826-83**	16.25	8 Pk./108.38
3cc/40minim	⅒cc/1minim	22	38mm (1½")	309574	**14-826-85**	16.25	8 Pk./108.38
3cc/40minim	⅒cc/1minim	21	25mm (1")	309575	**14-826-5F**	16.25	8 Pk./108.38
3cc/40minim	⅒cc/1minim	21	38mm (1½")	309577	**14-826-84**	16.25	8 Pk./108.38
3cc/40minim	⅒cc/1minim	20	25mm (1")	309578	**14-826-86**	16.25	8 Pk./108.38
3cc/40minim	⅒cc/1minim	18	38mm (1½")	309580	**14-826-5E**	16.25	8 Pk./108.38
3cc/40minim	⅒cc/1minim	20	38mm (1$^1/_2$")	309579	**14-829-13Q**	16.25	8 Pk./108.38
3cc	⅒cc	23†	25mm (1")	309588	**14-826-7†**	16.25	8 Pk./108.38
3cc	⅒cc	23†	38mm (1½")	309589	**14-826-11†**	16.25	8 Pk./108.38
3cc	⅕cc	22	25mm (1")	309630	**14-829-16C**	31.62	4 Pk./105.45
5cc	⅕cc	21	25mm (1")	309632	**14-823-69**	31.62	4 Pk./105.45
5cc	⅕cc	21	38mm (1½")	309633	**14-827-48**	31.62	4 Pk./105.45
5cc	⅕cc	20	25mm (1")	309634	**14-829-16G**	31.62	4 Pk./105.45
5cc	⅕cc	20	38mm (1½")	309635	**14-827-49**	31.62	4 Pk./105.45
10cc	⅕cc	22	25mm (1")	309640	**14-829-18B**	33.69	4 Pk./112.38
10cc	⅕cc	21	25mm (1")	309642	**14-823-36**	33.69	4 Pk./112.38
10cc	⅕cc	21	38mm (1½")	309643	**14-823-12**	33.69	4 Pk./112.38
10cc	⅕cc	20	38mm (1½")	309645	**14-829-18G**	33.69	4 Pk./112.38

† Intramuscular; has same flowrate as larger 22-gauge needle.

BD* Disposable Syringes without Needles

- All syringes are for general purposes, except for 14-827-52 control syringe
- Luer-Lok* tip/cap available separately (14-823-31)

NOTE:
Syringes with two capacities listed are dual scale.

ORDERING INFORMATION:
PrecisionGlide* and Yale* disposable and reusable needles are available or our Web site

Capacity	Point Style	Graduations	Mfr. No.	Cat. No.	Pack of	Case of
3mL	Luer-Lok	⅒mL	309585	**14-823-40**	100/10.92	8 Pk./72.78
3mL	Slip Tip	⅒mL	309586	**14-829-14B**	100/11.83	8 Pk./80.87
5mL	Slip Tip	⅕mL	301603	**14-826-12**	100/20.06	4 Pk./68.59
5mL	Luer-Lok	⅕mL	309603	**14-823-35**	100/20.06	4 Pk./68.59
10mL	Slip Tip	⅕mL	301604	**14-826-13**	100/21.67	4 Pk./74.10
10mL	Luer-Lok	⅕mL	309604	**14-823-2A**	100/21.67	4 Pk./74.10
10mL (Control Syringe)	Luer-Lok	⅕mL	309695	**14-827-52**	100/129.68	—
20mL/¾ oz.	Luer-Lok	1mL/⅛ oz.	309661	**14-823-2B**	40/24.59	4 Pk./84.06
20mL/¾ oz.	Slip Tip	1mL/⅛ oz.	301625	**14-829-21B**	40/24.50	4 Pk./83.75
30mL/1 oz.	Luer-Lok	1mL/⅛ oz.	309650	**14-829-48**	40/32.88	4 Pk./112.41
30mL/1 oz.	Slip Tip	1mL/⅛ oz.	309651	**14-829-47**	40/36.18	4 Pk./123.70

*Trademark. See Trademark Reference.

Prices subject to change.

SPECIAL APPLICATIONS

amilton* SampleLock* Syringes

llect, store, transport, and analyze fluids without aporative loss or environmental contamination

Top: 14-815-566; Bottom: 14-815-562

o, prevent loss of headspace samples when collecting them m Tedlar* bags or gas sampling tubes.

asy-to-use twist valve locks sample nside syringe

ositive rear stop that prevents lunger blowout and loss of sample

ressurize gaseous samples prior o GC injection

alve port lets you inject internal standards directly into the sample ontained in the syringe

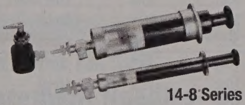
vailable in 11 capacities from 50µL to 50mL

" (5cm) long with Point Style 2

del	Capacity	Mfr. No.	Cat. No.	Each
05SL	50µL	80956	**14-815-562**	100.65
10SL	100µL	81056	**14-815-563**	104.84
25SL	250µL	81156	**14-815-564**	125.81
50SL	500µL	81256	**14-815-565**	123.71
01SL	1mL	81356	**14-815-566**	156.21
02SL	2.5mL	81456	**14-815-567**	183.47
05SL	5mL	81556	**14-815-568**	180.32
10SL	10mL	81656	**14-815-569**	198.15
25SL	25mL	86326	**14-815-570**	327.09
50SL	50mL	86336	**14-815-571**	382.65
00SL	100mL	86346	**14-815-572**	507.42

amilton* SampleLock* Purge & ap Syringes

egral male Luer adapter connects directly to a rge-and-trap valve



14-8 Series

and 25mL syringes are designed or drinking water analysis according o U.S. EPA Purge-and-Trap oncentration Techniques (U.S. EPA Methods 502.1, 502.2, 503.1, 524.1 nd 524.2)

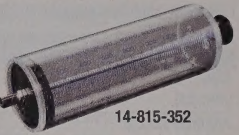
0µL syringe is used to add an internal standard or surrogate sample to rimary sample through integral twist valve

del	Capacity	Mfr. No.	Cat. No.	Each
05SLPT	5mL	81570	**14-815-573**	161.46
25SLPT	25mL	82570	**14-813-311**	332.35

Hamilton* Super Syringes

Use for air sampling, preparing gas standards, calibrating reservoirs, pneumographs and spirometers

- Capacities from 0.5 to 2L
- Available in two syringe terminations: PTFE Luer-Lok* (TLL) and Tracheal adapter (accepts ⅝" [15.9mm] I.D. flexible tubing)



14-815-352

Model	Capacity	Mfr. No.	Cat. No.	Each
PTFE Luer-Lok (TLL)				
S0500	0.5L	86311	**14-815-350**	502.18
S1000	1L	86312	**14-815-351**	543.07
S1500	1.5L	86313	**14-815-352**	658.39
S2000	2L	86314	**14-815-353**	856.53
Tracheal Adapter				
S0500	0.5L	86301	**14-815-345**	502.18
S1000	1L	86302	**14-815-346**	543.07

Hamilton* Syringes for Life Science Applications

Suitable for mounting in mechanical micropositioners, microinjection systems, and stereotaxic instruments

- Removable needles can be interchanged for gauge, length, point style optimization and for field replacement of bent or plugged needles
- Needle Point Style 3

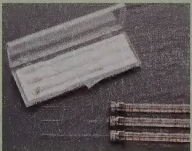
Model	Capacity	Gauge	Needle Length	Mfr. No.	Cat. No.	Each
700.5KHOC	0.5µL	32	4"	86257	**14-815-333**	164.60
7000.5KH	0.5µL	25	2¾"	86250	**14-813-100**	83.86
7001KH	1.0µL	25s	2¾"	80100	**14-824-20**	66.04
7002KH	2.0µL	25	2¾"	88400	**14-813-200**	83.86
7105KH	5.0µL	24	2¾"	88000	**14-824-21**	76.54

ACCESSORIES

Hamilton* Life Science Replaceable Needles

Removable needles for life science applications

- For use with Hamilton Syringes for Life Science Applications
- Needles are 2" in length with Point Style 3
- Additional needle lengths and point styles are available; contact your Fisher Scientific Customer Service Representative for details



14-824-9B

Gauge	Mfr. No.	Cat. No.	Pack of 3
26	7768-02	**14-824-9B**	34.73
26s	7768-01	**14-816-212A**	41.05
22	7770-02	**14-816-212B**	34.73
22s	7770-01	**14-815-545**	34.73
18	90432	**14-816-230**	45.08

Hamilton* VDRL Antigen Dispenser Luer-Tip Syringes

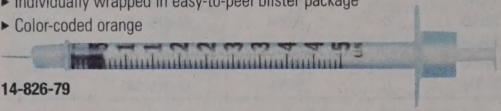
Luer-tip syringes for use with 14-822-25.

Model	mL per Dispense	µL per Dispense	Mfr. No.	Cat. No.	Each
1750	1/100	10	81201	**13-684-104**	48.66
VDRL(LT)	1/60	16.6	87800	**13-684-103**[1]	82.83

[1] *Needle not included.*

BD* Lo-Dose* U-100 Insulin Syringe

- Lo-Dose sterile syringe with permanent BD Micro-Fine* IV needle
- Barrel has large, bold scale markings
- Individually wrapped in easy-to-peel blister package
- Color-coded orange



14-826-79

Capacity	Mfr. No.	Cat. No.	Pack of 100	Case of 5 Pk.
0.5cc	329461	**14-826-79**	31.57	131.62

BD* Micro-Fine* IV Insulin Syringes

Double lubricated needles to reduce drag and make injections easier

- Plunger tip lines up exactly with scale marking for accurate dosage
- Minimal dead space between plunger and needle
- All syringes are sealed in an Easy Peel* package except 14-826-77 and 14-829-1D, which are in a self-contained package
- All have 28-gauge needle (13mm [½"] length), except 14-829-1D, which has 27-gauge needle (16mm [⅝"] length)
- Capacity 1mL

14-826 and 14-829 Series

Gauge Number	Mfr. No.	Cat. No.	Pack of	Case of
28	329424	**14-829-1B**	200/59.03	8 Pk./393.76
28	309309	**14-826-77**	100/31.57	5 Pk./131.62
27	329420	**14-829-1A**†	100/31.57	5 Pk./131.62
28	329412	**14-829-1D**	100/30.13	5 Pk./125.60

† *Single-unit graduation.*

BD* Tuberculin Syringes

Sterile, disposable syringe with Luer slip tip

- Color-coded needle package and hub
- In Easy Peel* package; autoclavable out of package
- Available with or without detachable PrecisionGlide* needle
- Syringe 14-823-2F accepts PrecisionGlide*, Yale*, and Perfektum* disposable and reusable needles

Capacity	Gauge	Needle Length	Mfr. No.	Cat. No.	Each	Case of 8 Pk.
1mL	27	13mm	309623	**14-826-87**	21.11	144.32
1mL (Intradermal)	26	9.5mm	309625	**14-823-2E**	21.11	144.32
1mL	25	16mm	309626	**14-826-88**	21.11	144.32
1mL	21	25.4mm	309624	**14-829-10D**	21.11	144.32
1mL	----	----	309602	**14-823-2F**	14.59	99.74

BD* Yale* Tuberculin Syringes

Reusable syringes with ground barrels and plungers, matched for precision

- Annealed glass permits sterilization by autoclaving
- 2mL syringe (Cat. No. 14-826-36) has dual scale

Capacity	Graduations	Mfr. No.	Cat. No.	Pack of
With Glass Luer Tip				
¼mL	1/100mL	512001	**14-820-15A**	1/98.91
½mL	1/100mL	512002	**14-820-15B**	1/76.26
1mL	1/100mL	512004	**14-820-15C**	6/341.56
2mL	1/20mL	512019	**14-826-36**	1/64.35
With Luer-Lok* Tip				
1mL	1/100mL	512027	**14-820-16**	1/72.88

Perfektum* Micro-Mate* Interchangeable Syringes

Syringe barrels and plungers fit perfectly—eliminating the task of matching up syringe parts.

- Luer-lock, metal or glass tips
- Constructed of borosilicate glass for heat and corrosion resistance
- Permanently fused graduations
- Reinforced flanges with two flat sides prevent syringes from rolling

Perfektum
MICRO-MATE
INTERCHANGEABLE
MICRO-MATE
MICRO-MATE

Top to bottom: 14-825-9A, 14-825-3B, 14-825-2C

Size	Grad.	Tip	Cat. No.	Each	Pack of 12
2cc	1/10cc	Luer lock	**14-825-1A**	----	104.43
2cc	1/10cc	Metal	**14-825-1B**	----	109.6
2cc	1/10cc	Glass	**14-825-1C**	----	109.6
5cc	1/5cc	Luer lock	**14-825-2A**	----	87.7
5cc	1/5cc	Metal	**14-825-2B**	----	126.1
5cc	1/5cc	Glass	**14-825-2C**	----	126.1
10cc	1/5cc	Luer lock	**14-825-3A**	----	157.9
10cc	1/5cc	Metal	**14-825-3B**	----	165.8
10cc	1/5cc	Glass	**14-825-3C**	----	165.8
20cc	1cc	Luer lock	**14-825-9A**	27.05	277.4
20cc	1cc	Metal	**14-825-9B**	27.05	277.4
20cc	1cc	Glass	**14-825-9C**	18.28	187.4
30cc	1cc	Luer lock	**14-825-10A**	43.91	450.3
30cc	1cc	Metal	**14-825-10B**	43.91	450.3
30cc	1cc	Glass	**14-825-10C**	43.91	450.3
50cc	2cc	Luer lock	**14-825-11A**	68.03	722.4
50cc	2cc	Metal	**14-825-11B**	68.03	722.4
50cc	2cc	Glass	**14-825-11C**	68.03	722.4

*Trademark. See Trademark Reference.

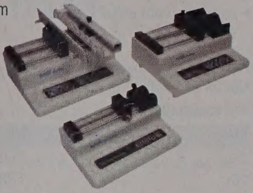
Prices subject to change.

PUMPS

ngle, Dual and Multiple Syringe nfusion/Withdrawal Pumps

sy-to-use programmable syringe pumps

- imple menu-driven setup to program yringe diameter, flowrate and ispense volume
- acklit display
- utomatic shutoff
- ettings can be reviewed and hanged during operation
- ast settings are stored in memory or repeatability



14-831 Series Pumps

ngle Syringe Pump

apacity: 10µL to 60mL

ltiple Syringe Pumps

- apacity: 10µL to 140mL up to 10 syringes (depending on syringe size)
- uilt-in RS-232-C and TTL interfaces for easy external control
- old glass or plastic syringes
- vailable as infusion and infusion/withdrawal models
- nfusion/withdrawal pumps have independent rate settings for infusion nd withdrawal, with five modes of operation

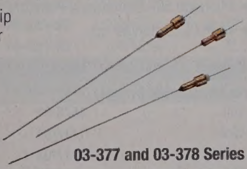
del	Type	No. of Syringes	Flowrate Range (dispensing)	Cat. No.	Each
gle Syringe Pump					
S100	Infusion	1	0.1µL/hr. to 426mL/hr.	**14-831-1**	1325.00
tiple Syringe Pumps					
S200	Infusion	2	0.001µL/hr. to 147mL/min.	**14-831-3**	2325.00
S210	Infusion/Withdrawal	2	0.001µL/hr. to 147mL/min.	**14-831-5**	2675.00
S220	Infusion	1-10	0.001µL/hr. to 147mL/min.	**14-831-7**	2675.00
S230	Infusion/Withdrawal	1-10	0.001µL/hr. to 147mL/min.	**14-831-9**	2920.00

NEEDLES AND ACCESSORIES

ational Scientific Precision Target* astight Syringe Replacement Needles

itable for liquid or gas samples

- TFE-tipped stainless-steel plunger tip revents plunger freeze-up for longer yringe life



03-377 and 03-378 Series

pacity	Needle Gauge	Length	Point	Mfr. No.	Cat. No.	Pack of 3
L	26s	42mm	90° Blunt End	NS834307	**03-378-192**	17.61
ıL	26s	42mm	90° Blunt End	NS834407	**03-378-193**	17.61
ıL	26s	51mm	Bevel-shaped	NS832401	**03-377-280**	14.60
-100µL	22s	51mm	90° Blunt End	NS831014	**03-378-194**	17.87
-100µL	22s	51mm	Bevel-shaped	NS831013	**03-378-196**	18.69
0µL-10mL	22s	51mm	90° Blunt End	NS841014	**03-378-260**	17.61
0µL-10mL	22s	51mm	Side Hole	NS841015	**03-378-198**	47.08
0µL-10mL	22s	51mm	Bevel-shaped	NS841013	**03-378-199**	22.53

SGE* Replacement Needles

For removable-needle syringes or additional replacements, contact your Fisher Scientific Customer Service Representative.

Capacity	For use with Syringe Models	Cat. No.	Pack of
0.5µL	SG-000400	**SG-033708**	1/31.15
0.5µL	SG-000410	**SG-033715**	1/31.15
5µL	SG-001050, SG-001150, SG-001450, SG-001490, SG-001090	**SG-036110**	5/17.38
5µL	SG-001805	**SG-036710**	2/12.40
10µL	SG-001495, SG-002050, SG-002080, SG-002090, SG-002150, SG-002250, SG-002252, SG-002450, SG-002455, SG-002490	**SG-037110**	5/17.38
10µL	SG-002815, SG-002818, SG-002845	**SG-037717**	2/12.40
10µL	SG-002897	**SG-037745**	2/12.40
10µL	SG-002898, SG-002902	**SG-037747**	2/12.40
10µL	SG-002924	**SG-037777**	1/31.15
10µL	SG-002982, SG-002985	**SG-037785**	2/12.40
10µL	SG-002993	**SG-031535**	3/26.03
25 to 500µL	SG-003050, SG-003090, SG-003250, SG-003610, SG-004050, SG-004090, SG-004250, SG-004610, SG-005050, SG-005090, SG-005250, SG-005610, SG-006050, SG-006250, SG-006610, SG-007050, SG-007090, SG-007250, SG-007610	**SG-038110**	5/17.38
100µL	SG-005333	**SG-038732**	2/12.40
100µL	SG-005921	**SG-038745**	1/32.09
1 to 2.5mL	SG-008100, SG-008500	**SG-039110**	5/17.38
5 to 10mL	SG-008700, SG-008900	**SG-031516**	1/13.72

SGE* Replacement Plungers

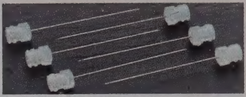
For SGE replaceable-plunger syringes listed. For additional replacements, contact your Fisher Scientific Customer Service Representative.

Capacity	For use with Syringe Models	Cat. No.	Pack of
5µL	SG-001955, SG-001957	**SG-031807**	1/33.70
10µL	SG-002200, SG-002202, SG-002208, SG-002335	**SG-031810**	2/33.70
10µL	SG-002250, SG-002252, SG-002313	**SG-031811**	2/33.70
10µL	SG-002897	**SG-031803**	1/24.40
10µL	SG-002812, SG-002826, SG-002827	**SG-031808**	1/38.16
10µL	SG-002817, SG-002829	**SG-031809**	2/38.16
10µL	SG-002924, SG-002926	**SG-031218**	1/33.84
25µL	SG-003200, SG-003250, SG-003312	**SG-031815**	1/22.96
25µL	SG-003987, SG-003988	**SG-031817**	1/32.28
100µL	SG-005200, SG-005229, SG-005230, SG-005236, SG-005250, SG-005279, SG-005312	**SG-031825**	1/22.96
100µL	SG-005333	**SG-031826**	1/24.40
250µL	SG-006232, SG-006233, SG-006660, SG-006995	**SG-031833**	1/44.62
500µL	SG-007200, SG-007229, SG-007230, SG-007250, SG-007279, SG-007312, SG-007630	**SG-031835**	1/22.96
1mL	SG-008020, SG-008025, SG-008100, SG-008102, SG-008105, SG-008110, SG-008160, SG-008195, SG-008199, SG-008500	**SG-031842**	1/35.96
5mL	SG-008700, SG-008760, SG-008770, SG-008780	**SG-031856**	1/35.96
10mL	SG-008900, SG-008960, SG-008970, SG-008975	**SG-031862**	1/35.96
25mL	SG-009462, SG-009670	**SG-031870**	1/50.16
50mL	SG-009660	**SG-0312170**	1/58.14

Hamilton* Standard Length Replacement Needles with Kel-F* Hub

For use with TLL (PTFE Luer lock) and LT (Luer tip) syringes and connectors

- Type 304 stainless steel
- Available with either Point Style 2 or Point Style 3
- Length: 2" (51mm)


14-815 Series

ORDERING INFORMATION:
Available with either Point Style 2 or Point Style 3. Length: 2" (51mm).

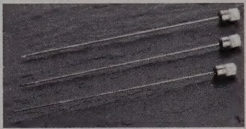
			Point Style 2			Point Style 3		
Gauge	O.D.	I.D.	Mfr. No.	Cat. No.	Pack of 6	Mfr. No.	Cat. No.	Pack of 6
31	0.010"	0.005"	90131	**14-815-459**	82.83	90531	**14-815-591**	76.52
30	0.012"	0.006"	90130	**14-815-458**	74.43	90530	**14-815-590**	76.52
29	0.013"	0.007"	90129	**14-815-457**	77.58	90529	**14-815-589**	69.19
28	0.014"	0.007"	90128	**14-815-456**	73.39	90528	**14-815-588**	66.05
27	0.016"	0.008"	90127	**14-815-455**	56.61	90532	**14-815-592**	56.61
26s	0.018"	0.004"	90139	**14-815-461**	62.90	90539	**14-815-597**	63.96
26	0.018"	0.010"	90126	**14-815-454**	57.66	90533	**14-815-593**	62.90
25	0.020"	0.010"	90125	**14-815-453**	62.90	90525	**14-815-587**	57.66
24	0.022"	0.012"	90124	**14-815-452**	62.90	90524	**14-815-586**	62.90
23	0.025"	0.013"	90123	**14-815-451**	57.66	90523	**14-815-584**	57.66
22s	0.028"	0.006"	90138	**14-824-12**	73.38	90534	**14-815-594**	50.33
22	0.028"	0.016"	90122	**14-824-13**	48.23	90134	**14-815-574**	48.23
21	0.032"	0.020"	90121	**14-815-449**	53.46	90521	**14-815-560**	48.23
20	0.036"	0.023"	90120	**14-815-448**	45.08	90520	**14-815-583**	57.66
19	0.042"	0.027"	90119	**14-815-447**	45.08	90519	**14-815-582**	48.23
18	0.050"	0.033"	90118	**14-815-446**	45.08	90535	**14-815-595**	48.23
17	0.058"	0.042"	90117	**14-815-445**	44.04	90517	**14-815-581**	56.61
16	0.065"	0.047"	90116	**14-815-444**	45.08	90516	**14-815-580**	48.23
12	0.109"	0.085"	90112	**14-815-440**	62.90	----	----	----
10	0.134"	0.106"	90110	**14-815-438**	67.09	----	----	----

Hamilton* Small-Hub Removable Needles

For use with Hamilton removable needle and SampleLock* syringes 100µL and smaller

- Stainless-steel, standard-length (2", 51mm) needles
- Available with either Point Style 2 or Point Style 3

NOTE:
Not for use with LT or TLL syringes and connectors.


14-815-550 and 14-816-212D

Gauge	Point Style	Mfr. No.	Cat. No.	Pack of 6
33	3	7762-06	**14-816-206**	114.73
26s	2	7758-02	**14-824-9A**	34.73
26	2	7758-04	**14-815-538**	36.84
22s	2	7758-03	**14-815-537**	34.73
22	2	7758-01	**14-815-534**	34.73

Hamilton* Large-Hub Removable Needles

Designed for use with Hamilton removable needle and SampleLock* syringes

- Stainless-steel, standard-length (2", 51mm) needles
- Available with either Point Style 2 or Point Style 3

NOTE:
Not for use with LT or TLL syringes and connectors.

14-815-550 and 14-816-212D

Gauge	Point Style	Mfr. No.	Cat. No.	Pack of 6
26s	2	7779-02	**14-815-548**	35.78
26s	3	7780-01	**14-816-212C**	42.10
26	2	7779-04	**14-815-550**	44.20
26	3	7780-02	**14-816-212D**	42.10
22s	2	7779-03	**14-815-549**	36.84
22s	3	7780-03	**14-815-558**	31.58
22	2	7779-01	**14-815-546**	34.73
22	3	7780-04	**14-815-557**	34.73

Hamilton* Life Science Replaceable (RN) Needles

Removable needles for life science applications

- For use with Hamilton Syringes for Life Science Applications
- Needles are 2" in length with Point Style 3
- Additional needle lengths and point styles are available; contact your Fisher Scientific Customer Service Representative for details

Gauge	Mfr. No.	Cat. No.	Pack of
26	7768-02	**14-824-9B**	34.7
26s	7768-01	**14-816-212A**	41.0
22	7770-02	**14-816-212B**	34.7
22s	7770-01	**14-815-545**	34.7
18	90432	**14-816-230**	45.0

Hamilton* Plunger Assemblies

For 1000 and 1700 Series Gastight and Microlab* 500 syringes

- Microlab 500-Compatible Plungers have stop; in glass or no flange
- With PTFE plunger tip

Volume	Mfr. No.	Cat. No.	Eac
For Microlab 500 Syringes			
1mL	1578-01	**14-819-300**	40.0
50uL	1117-01	**14-819-286**	34.7
250uL	1117-03	**14-819-288**	35.7
500uL	1120-01	**14-819-289**	35.7
For 1700 Series Syringes			
50uL	1162-01	**14-819-293**	23.1
100uL	1162-02	**14-819-294**	23.
250uL	1162-03	**14-819-295**	23.
500uL	1169-01	**14-819-296**	23.
For 1000 Series Syringes			
1mL	1359-01	**14-819-298**	23.

*Trademark. See Trademark Reference.

Prices subject to change.

)* PrecisionGlide* Needles

any Luer-Lok*, slip tip, or eccentric tip syringe

14-826 Series

rile disposable needles with
erior sharpness minimize patient
comfort.

tainless-steel
heath protects point and cannula

annulae are siliconized to reduce resistance and maintain speed and
moothness throughout injection

ll have regular bevel, except 14-826-10 which has intradermal bevel

4-826-52, -6A, -6B, and -6C needles have thin-wall design

4-826-6A is for subcutaneous use and has the same flowrate as larger
5-gauge needle

4-826-6B and -6C are for intramuscular use and have the same flowrate
s larger 22-gauge needle

4-826-52 has the same flowrate as larger 18-gauge needle

eedle hub fits any Luer-Lok or Luer slip syringe tip, reusable or disposable

dividual Easy Peel* blister pack packages boxed in strips of five
eedles; package carries lot control number

ubs color coded by gauge size: Gray (27-gauge), Tan (26), Blue (25),
urquoise (23), Black (22), Green (21), Yellow (20), Brown (19), Pink (18),
nd Purple (16)

DERING INFORMATION:

kage carries lot control number to indicate complete sterility.

ge	O.D.	Length	Mfr. No.	Cat. No.	Pack of	Case of 10 Pk.
	0.41mm	13mm (½")	305109	**14-826-48**	100/10.45	84.95
	0.46mm	9.5mm (⅜")	305110	**14-826-10**	100/10.45	84.95
	0.46mm	13mm (½")	305111	**14-826-15**	100/10.30	83.70
	0.46mm	16mm (⅝")	305115	**14-826-6A**	100/11.22	91.19
	0.51mm	16mm (⅝")	305122	**14-826AA**	100/10.30	83.70
	0.51mm	38mm (1½")	305127	**14-826-49**	100/10.30	83.70
	0.64mm	25mm (1")	305145	**14-826A**	100/10.30	83.70
	0.64mm	25mm (1")	305193	**14-826-6B**	100/11.22	91.19
	0.64mm	38mm (1½")	305194	**14-826-6C**	100/11.22	91.19
	0.71mm	25mm (1")	305155	**14-826B**	100/10.30	83.70
	0.71mm	38mm (1½")	305156	**14-826-5A**	100/10.30	83.70
	0.81mm	25mm (1")	305165	**14-826C**	100/10.30	83.70
	0.81mm	38mm (1½")	305167	**14-826-5B**	100/10.30	83.70
	0.89mm	25mm (1")	305175	**14-826D**	100/10.20	82.95
	0.89mm	38mm (1½")	305176	**14-826-5C**	100/10.20	82.95
	1.08mm	38mm (1½")	305187	**14-826-52**	1000/85.01	----
	1.24mm	25mm (1")	305195	**14-826-5G**	100/10.20	82.95
	1.24mm	38mm (1½")	305196	**14-826-5D**	100/10.20	82.95
	1.65mm	25mm (1")	305197	**14-826-18A**	100/25.68	214.13
	1.65mm	38mm (1½")	305198	**14-826-18B**	100/25.68	214.13

BD* Yale Reusable Hypodermic Needles

Fits either BD Luer-Lok* or standard Luer-tip syringes

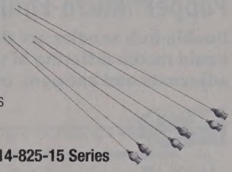
- Corrosion-resistant stainless-steel cannula is double swaged to hub, providing strong needle assembly with unrestricted bore
- Specially contoured hub interior eliminates hard-to-clean crevices and permits easy needle wire insertion
- Four-point locking flange

Gauge	Length	Mfr. No.	Cat. No.	Case of 12
27	25mm (1")	511005	**14-826-22**	62.82
26	38mm (1½")	511017	**14-826-23**	62.82
25	25mm (1")	511025	**14-826-25**	62.82
23	38mm (1½")	511047	**14-826-26**	62.82
22	25mm (1")	511055	**14-826-27**	80.34
22	38mm (1½")	511057	**14-826-28**	80.34
21	38mm (1½")	511067	**14-826-29**	81.94
18	38mm (1½")	511097	**14-826-31**	80.28
13	90mm (3½")	511110	**14-826-33**	201.41

Popper* Deflected Noncoring Septum Penetration Needles

Use in gas chromatography and nuclear magnetic resonance spectroscopy procedures

- Stainless-steel needles with deflected noncoring septum
- For noncoring penetration of septa and rubber closures involving air-sensitive and pyrophoric compounds

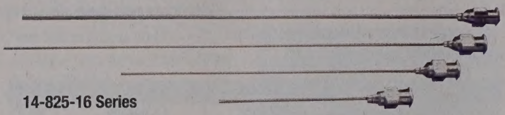


14-825-15 Series

Gauge	Length	Cat. No.	Pack of
26	½" (1.3cm)	**14-825-15B**	12/106.70
25	¾" (1.9cm)	**14-825-15F**	12/106.70
25	1" (2.5cm)	**14-825-15G**	12/106.70
22	1" (2.5cm)	**14-825-15J**	12/106.70
22	1½" (3.8cm)	**14-825-15K**	12/106.70
22	2" (5.1cm)	**14-825-15L**	12/96.88
22	4" (10.2cm)	**14-825-15M**	12/96.88
22	6" (15cm)	**14-825-15NEA**	1/8.81
22	6" (15.2cm)	**14-825-15N**	12/105.68
21	6" (15.2cm)	**14-825-15T**	12/105.68
20	1" (2.5cm)	**14-825-15V**	12/101.79
20	2" (5.1cm)	**14-825-15X**	12/96.88
20	4" (10.2cm)	**14-825-15Y**	12/96.88
20	6" (15.2cm)	**14-825-15Z**	12/105.68
20	8" (20cm)	**14-825-15AAEA**	1/8.81
20	8" (20.3cm)	**14-825-15AA**	12/105.68
20	12" (30cm)	**14-825-15ABEA**	1/9.69
20	12" (30.5cm)	**14-825-15AB**	12/116.24
19	4" (10cm)	**14-825-15ADEA**	1/8.07
19	4" (10.2cm)	**14-825-15AD**	12/96.88
19	6" (15.2cm)	**14-825-15AE**	12/105.68
18	1½" (3.8cm)	**14-825-15AF**	12/101.79
18	2" (5cm)	**14-825-15AGEA**	1/8.98
18	2" (5.1cm)	**14-825-15AG**	12/107.73
18	4" (10.2cm)	**14-825-15AH**	12/107.73
18	6" (15cm)	**14-825-15AJEA**	1/10.42
18	6" (15.2cm)	**14-825-15AJ**	12/124.99
18	12" (30cm)	**14-825-15AKEA**	1/11.62
18	12" (30.5cm)	**14-825-15AK**	12/139.38

Popper* Laboratory Pipetting Needles

Standard hub needles feature Type 304 stainless-steel cannulae for both manual and automatic volumetric dispensers, diluters, pipetters



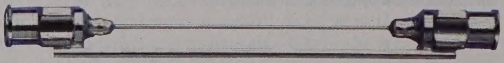
14-825-16 Series

- Needles 14-825-16A through -16N have chrome-plated Luer hubs
- Needles 14-818-106A through -106C and 14-825-16JEA have plated brass hubs
- All have 90° blunt ends

Gauge Number	Length	Cat. No.	Pack of 12
24	1"	**14-825-16A**	87.20
22	1½"	**14-825-16B**	87.20
20	1½"	**14-818-106A**	87.20
20	4"	**01-290-35**	318.51
20	4"	**14-818-106B**	87.20
20	6"	**14-825-16E**	97.02
18	2"	**14-825-16F**	99.66
18	2"	**01-290-32**	318.51
18	4"	**14-825-16G**	99.66
18	6"	**14-825-16H**	119.70
16	2"	**14-825-16J**	99.66
16	2"	**14-825-16JEA**	8.31
16	4"	**14-825-16K**	99.66
16	4"	**01-290-31**	318.51
16	6"	**01-290-33**	318.51
15	4"	**14-818-106C**	99.66
14	4"	**14-825-16M**	104.54
14	4"	**01-290-29**	305.05
14	6"	**14-825-16N**	127.15
14	6"	**01-290-30**	318.51

Popper* Micro-Emulsifying Needles

Double-hub needles are designed for use in mixing two liquid media differing in viscosity—especially for adjuvants and antigens, oil-based liquids, allergens



14-825-17F

- Available with or without a reinforcing bar
- Overall length: 2⅞" (7.3cm), except for 14-825-17K and -17L needles which have a length of 1⅞" (4.8cm)

	Without Reinforcing Bar		With Reinforcing Bar	
Gauge	Cat. No.	Pack of 4	Cat. No.	Pack of 4
25	----	----	**14-825-17F**	156.47
22	**14-825-17C**	116.22	**14-825-17G**	156.47
20	**14-825-17D**	116.22	**14-825-17H**	156.47
20	**14-825-17K**	116.22	----	----
18	**14-825-17E**	116.22	**14-825-17J**	156.47
18	**14-825-17L**	116.22	----	----
16	----	----	**14-825-17A**	156.47

Air-Tite Hypodermic Needles

Sterile, disposable needles for laboratory and veterinary use

- Stainless steel
- Regular-wall design needles; all have 12° regular bevel and tri-bevel points
- High-density polypropylene hub fits any Luer-lock or Luer-Slip syringe tip
- Come in strips of individual blister packs

Gauge	O.D.	Length	Cat. No.	Pack of	Case o 10 Pk
22	0.0285"	3" (7.6cm)	**14-817-101**	100/23.43	131.1
22	0.0285"	4" (10.2cm)	**14-817-102**	100/43.90	262.2
18	0.0505"	3" (7.6cm)	**14-817-100**	100/25.85	129.2
16	0.0655"	1½" (3.8cm)	**14-817-104**	100/11.04	68.7
16	0.0655"	3" (7.6cm)	**14-817-103**	100/37.17	203.2
16	0.0655"	5" (12.7cm)	**14-817-105**	25/17.17	130.8

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*Trademark. See Trademark Reference.

TACHOMETERS

sher Scientific* Traceable* igital Tachometers

e for ISO 9000 and other certifications

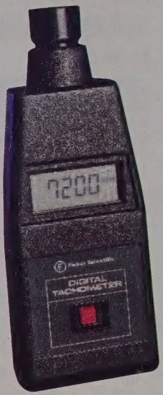
05-028-23

- Measures the speed of a centrifuge from a istance up to 12" (30cm)
- ive-digit LCD; memory feature lets you recall he highest, lowest, and last reading

uchless and Contact easurements Model

- Use the touchless sensor to get speed eadouts in rpm; use the contact sensor or direct readout of surface speeds in eet per minute or meters per minute
- Detects speeds from 0.1 to 99,999rpm; esolution is 0.1 below 1000, and 1 above 1000
- Contact sensor provides readouts from 0.1 o 19,999rpm, 0.05 to 1999.9m/min. or 0.2 o 6560 ft./min; accuracy, 0.05% + 0.1rpm from to 999.9rpm and 0.05% + 1rpm from 000 to 99,999rpm
- Dimensions: 8½L × 2½W × 1½"H 21.5 × 6 × 4cm). Weight: 10½ oz. (298g)

uchless Measurements Model



05-028-24

- Detects speeds from 10 to 99,999rpm; esolution is 0.1 below 1000, and 1 bove 1000
- Measures the speed of a centrifuge from distance of 2 to 78" (5.1 to 198cm)
- Unit is accurate to within 0.05% of full scale
- ndicator on the display panel automatically lerts you when the battery is low
- Dimensions: 7½L × 2¾W × 1½"H 19 × 7 × 4cm). Weight: 9 oz. (255g)

CLUDES:

- ouchless and Contact Measurements Model is supplied with four AA" alkaline 1.5V batteries, rugged ABS case, self-adhesive eflecting tabs, internal light, cone and two wheels (for measuring peeds), and a carrying case
- ouchless Measurements Model is supplied with four "AA" alkaline .5V batteries, rugged ABS case, self-adhesive reflecting tabs, internal ght, and carrying case

RTIFICATIONS:

ividually serial-numbered Traceable Certificate is provided from an ISO 025 calibration laboratory accredited by A2LA. It indicates traceability to ndards provided by NIST*.

scription	Cat. No.	Each
Touchless and Contact Measurements	05-028-23	345.22
Touchless Measurements Only	05-028-24	297.32

Fisher Scientific* Traceable* Tachometer Laser

Touchless handheld point-and-shoot

02-401-3

- Five-digit resolution is 0.001, 0.01, 0.1, or 1, depending on revolutions displayed
- HOLD button freezes results
- Precision quartz crystal ensures stable, repeatable results
- ½" (1.2cm) high LCD digits can be read from 10 feet
- Low-battery condition indicated on the display
- Impact-resistant ABS housing
- Five-digit resolution is 0.001, 0.01, 0.1, or 1, depending on revolutions displayed
- HOLD button freezes results
- Precision quartz crystal ensures stable, repeatable results
- ½" (1.2cm) high LCD digits can be read from 10 feet
- Low-battery condition indicated on the display
- Impact-resistant ABS housing
- Dimensions: 4¾ × 1¾ × 1¼" (12 × 4 × 3cm)
- Weight: 4 oz. (113g)

To Use:

- Optical no-contact measurements are made by placing a piece of self-adhesive reflective tape (30" [76cm] tape supplied) on the rotating object
- Red LED light locks on the tape and counts rotations
- In two seconds, it provides rock-solid answers from 10 to 99,999rpm
- Designed to measure centrifuges, pumps, rollers, shafts, gears, motors, and moving surfaces

ORDERING INFORMATION:

Dimensions: 4¾ × 1¾ × 1¼" (12 × 4 × 3cm). Weight: 4 oz. (113g)

INCLUDES:

9V battery

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate provided from an ISO 17025 calibration laboratory indicating traceability to standards provided by NIST*.

Description	Cat. No.	Each
Tachometer Laser	02-401-3	106.08

Fisher Scientific* Traceable* Touch Tachometer

Simple contact operation with accurate readings

Touch any rotating surface with the cone convex tip, funnel concave tip or speed wheel for results in two seconds.

- Designed to measure centrifuges, pumps, rollers, shafts, gears, motors, and moving surfaces
- Displays rpm from 10.000 to 99,999 with 0.001, 0.01, 0.1, or 1 resolution
- Reports results in 3.0000 to 30,000 feet/min., 1.000 to 10,000 yards/min., 1.000 to 9999.9 meters/min. with resolution of 0.0001, 0.001, 0.01, 0.1 (depending on the revolutions displayed)
- HOLD button freezes reading
- Precision quartz crystal ensures stable, repeatable results
- ½" (1.2cm) high LCD display can be read from 10 feet
- Low-battery condition indicated
- Impact-resistant ABS housing

TRACEABLE
50.458

02-401-2

ORDERING INFORMATION:

- Dimensions: 4¾ × 1¾ × 1¼" (12 × 4 × 3cm)
- Weight: 4 oz. (113g)

INCLUDES:

9V battery

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided indicating traceability to standards provided by NIST*.

Cat. No.	Each
02-401-2	95.47

TAPE

Two-Roll Tape Dispenser

For tapes with 3" cores

- Holds either one roll of tape up to 2" wide (51mm) or two rolls, each up to 1" wide (25mm)
- High-impact plastic

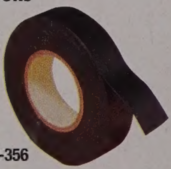
11-865-6

Mfr. No.	Cat. No.	Each
C2211206	11-865-6	90.17

Electrical Tape

Suitable for use in all weather conditions

- Insulates wire
- Resists oil, water, acids, and alkalis
- Stretchability permits molding to irregular surfaces
- 7mil thick with dielectric strength of 8500V



09-356

W × L	Cat. No.	Each	Case of 10
¾" × 66' (19mm × 20m)	09-356	5.81	48.38

TEMPERATURE

THERMOMETERS—NONMERCURY

Fisherbrand* Blue-Spirit* Ever-Safe* Laboratory Thermometers

Nontoxic and environmentally safe

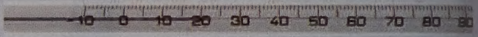
- Permanently fused markings for long-term use
- Contain a blue biodegradable liquid (isoamyl benzoate) and dye while providing accurate results

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided indicating traceability to standards provided by NIST*.

NOTE:

All thermometers are available with PTFE coating for increased safety and to prevent breakage. (Contact your Fisher Scientific Customer Service Representative.)



15-160-26

Range					
Low	High	Length	Subdiv.	Cat. No.	Each
Partial Immersion (76mm)					
-35°	+50°C	305mm	1.00°C	**15-160-30**	17.75
-20°	+110°C	305mm	1.00°C	**15-160-20**	15.85
-20°	+150°C	305mm	1.00°C	**15-160-22**	17.75
-10°	+260°C	405mm	1.00°C	**15-160-26**	30.25
0°	+230°F	305mm	2.00°F	**15-160-25**	15.85
0°	+300°F	305mm	2.00°F	**15-160-28**	17.75
+20°	+500°F	405mm	2.00°F	**15-160-32**	30.75
Total Immersion					
-35°	+50°C	305mm	1.00°C	**15-160-29**	17.95
-20°	+110°C	305mm	1.00°C	**15-160-19**	16.05
-20°	+150°C	305mm	1.00°C	**15-160-21**	17.95
-10°	+210°C	355mm	1.00°C	**15-160-23**	25.35
0°	+230°F	305mm	2.00°F	**15-160-24**	16.05
0°	+300°F	305mm	2.00°F	**15-160-27**	17.95
Fractional Degree/Partial Immersion (76mm)					
-10°	+50°C	305mm	0.50°C	**15-171-10**	43.60
-1°	+51°C	400mm	0.20°C	**15-160-14**	76.30
-1°	+101°C	450mm	0.20°C	**15-160-16**	96.25
-1°	+201°C	430mm	0.50°C	**15-160-18**	102.25
Fractional Degree/Total Immersion					
-10°	+50°C	305mm	0.50°C	**15-171-11**	39.90
-1°	+51°C	400mm	0.20°C	**15-160-13**	76.45
-1°	+101°C	450mm	0.20°C	**15-160-15**	97.20
-1°	+201°C	430mm	0.50°C	**15-160-17**	101.95

Ever-Safe 8" Laboratory Thermometers

- Division, 1.00°C. Length, 8" (20.3cm).

15-160-35

Range					
Low	High	Immersion	Subdiv.	Cat. No.	Each
-10°	+110°C	50mm	1.00°C	**15-160-34**	16.85
-10°	+150°C	50mm	1.00°C	**15-160-36**	16.85
-10 °	+110°C	Total	1.00°C	**15-160-33**	17.20
-10°	+150°C	Total	1.00°C	**15-160-35**	15.80

TEMPERATURE CONTROLLERS AND RECORDERS

For a wide selection of Temperature Controllers and Recorders including Fisherbrand* Exact-Temp* Dataloggers and Fisherbrand Traceable* Temperature Chart Recorders, see the Recorders section.

Fisherbrand* Red-Spirit* hermometers

ery accurate temperature readings without the nvironmental hazards of mercury

- All are filled with red liquid and pressurized with nitrogen except 15-041-4F, -4E, and -5E, which are filled with blue isoamyl benzoate liquid
- Thermometers with low ranges of -200°C to +30°C are filled with pentane; -100° to +50°C with xylene mixture
- Red liquid thermometers at other ranges are filled with kerosene

eneral-Purpose Laboratory Thermometers

leet or exceed NIST* and ANSI*/SAMA tolerances or accuracy

- Feature white backing
- Multiple calibration points are used to compensate for nonlinear expansion of liquid

OTE:
quid in the 15-038 thermometer will begin to freeze at about -193°C, ut only after 30 to 60 minutes of exposure. Indicated immersion levels ust be observed for accurate readings.

5-041-5A

Range					
ow	High	Length	Subdiv.	Cat. No.	Each
artial Immersion					
200°C	+50°C	305mm	1.0°C	**15-035**	55.40
50°C	+50°C	305mm	1.0°C	**15-041-4B**	30.05
20°C	+150°C	305mm	1.0°C	**15-041-4D**	22.50
10°C	+200°C	380mm	1.0°C	**15-041-4E†**	34.85
10°C	+260°C	380mm	1.0°C	**15-041-4F†**	43.50
tal Immersion					
200°C	+30°C	350mm	1.0°C	**15-038**	97.80
100°C	+50°C	305mm	1.0°C	**15-041-5A**	45.95
50°C	+50°C	305mm	1.0°C	**15-169-201**	33.70
20°C	+110°C	305mm	1.0°C	**15-041-5C**	23.95
20°C	+150°C	305mm	1.0°C	**15-041-5D**	22.50
10°C	+200°C	380mm	1.0°C	**15-041-5E†**	33.60

Filled with blue isoamyl benzoate.

o-Roll Thermometers

- With white back
- Permanently fused markings printed vertically for easy reading
- Nonroll fittings

14-997

Range						
ow	High	Length	Immersion	Subdiv.	Cat. No.	Each
20°C	+110°C	305mm	76mm	1°C	**14-997**	10.55
°F	+230°F	305mm	76mm	2°F	**14-998**	10.55

Variable-Immersion Thermometers

- Partial-immersion thermometers with extremely fine bore capillary in stem to permit varying immersion depths without loss of accuracy
- Graduated in 1°C divisions

15-041-10C

Range					
Low	High	Length	Immersion	Cat. No.	Each
-100°C	+50°C	482mm	76–178mm	**15-041-10A**	80.05
-100°C	+50°C	774mm	305–457mm	**15-041-10G**	134.80
-20°C	+150°C	482mm	76–178mm	**15-041-10B**	64.30
-20°C	+150°C	635mm	178–305mm	**15-041-10E**	70.35
-20°C	+150°C	762mm	305–457mm	**15-041-10H**	95.10
-10°C	+250°C	482mm	76–178mm	**15-041-10C**	67.80
-10°C	+250°C	635mm	178–305mm	**15-041-10F**	75.20
-10°C	+250°C	774mm	305–457mm	**15-041-10J**	101.40

Deep-Immersion Thermometers

- Partial-immersion thermometers with extended stem for deep flasks or kettles
- Graduated in 1°C divisions

15-041-6C

Range					
Low	High	Length	Immersion	Cat. No.	Each
-100°C	+50°C	380mm	152mm	**15-041-6A**	54.75
-100°C	+50°C	457mm	225mm	**15-041-7A**	55.90
-100°C	+50°C	533mm	305mm	**15-041-8A**	54.50
-50°C	+50°C	380mm	152mm	**15-041-6B**	42.35
-50°C	+50°C	457mm	225mm	**15-041-7B**	48.55
-50°C	+50°C	533mm	305mm	**15-041-8B**	52.65
-20°C	+150°C	380mm	152mm	**15-041-6C**	44.55
-20°C	+150°C	457mm	225mm	**15-041-7C**	44.80
-20°C	+150°C	533mm	305mm	**15-041-8C**	47.25
-20°C	+150°C	685mm	457mm	**15-041-9A**	85.55
-10°C	+250°C	457mm	152mm	**15-041-6D**	47.00
-10°C	+250°C	533mm	225mm	**15-041-7D**	48.50
-10°C	+250°C	610mm	305mm	**15-041-8D**	50.70
-10°C	+250°C	762mm	457mm	**15-041-9B**	87.55

Fluoropolymer-Coated Thermometers

- Precision grade with white back
- Transparent coating of PTFE resin prevents shattering

14-983-19A

Range						
Low	High	Length	Immersion	Subdiv.	Cat. No.	Each
-20°C	+110°C	305mm	76mm	1°C	**14-983-19A**	32.30
-20°C	+150°C	305mm	76mm	1°C	**14-983-19B**	32.40
0°F	+230°F	305mm	76mm	2°F	**14-983-25A**	32.30
0°F	+300°F	305mm	76mm	2°F	**14-983-25B**	32.40

*Fisherbrand** Red-Spirit* Fractional-Degree Thermometers

Partial-immersion thermometers

- Accurate to within NIST* and ANSI*/SAMA tolerances
- Graduated in 0.1°C divisions

15-041-13A

Range					
Low	High	Length	Immersion	Cat. No.	Each
-1°C	+51°C	457mm	76mm	**15-041-13A**	81.95
-1°C	+101°C	610mm	76mm	**15-041-13B**	112.55

Ertco* Special-Application Red-Spirit*-Filled Thermometers

Precision-grade thermometers in a variety of ranges and immersions

- Individually serialized
- Filled with custom organic red spirit instead of mercury
- Glass with or without a PTFE coating

CERTIFICATIONS:

Each thermometer is individually calibrated against equipment whose calibration is traceable to NIST*.

15-060-236

Glass

Range	Length	Immer.	Division	Mfr. No.	Cat. No.	Each
Incubator, Water Bath						
+25°/+37°/+56°C	240mm	76mm	0.5°C	2457S	**15-060-236†**	39.80
Tissue Floatation Bath						
-15° to +105°C	145mm	Total	1.°C	535S 1	**15-060-238**	23.10
Block Heater, Water Bath						
+25° to +57°C	175mm	35mm	0.5°C	715S	**15-060-240†**	54.45
0° to +100°C	225mm	35mm	0.5°C	647S	**15-060-242**	54.05
Blood Bank, Refrigerator						
-5° to +20°C	152mm	Total	0.5°C	717S	**15-060-244†**	32.45
Vacuum Ovens						
+20° to +130°C	135mm	Total	1.°C	24130S	**15-060-250**	45.70
+35° to +200°C	180mm	Total	1.°C	7200S	**15-060-252**	46.55

† Arrows on the scale indicate critical temperatures.

15-060-237

PTFE-coated Glass

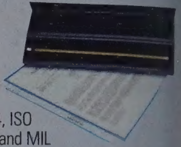
Range	Length	Immer.	Division	Mfr. No.	Cat. No.	Each
Incubator, Water Bath						
+25°/+37°/+56°C	240mm	76mm	0.5°C	2457 SSC	**15-060-237†**	49.00
Tissue Flotation Bath						
-15° to +105°C	145mm	Total	1.0°C	535S 1SC	**15-060-239**	32.95
Block Heater, Water Bath						
+25° to +57°C	175mm	35mm	0.5°C	715S SC	**15-060-241†**	61.40
0° to +100°C	225mm	35mm	0.5°C	647S SC	**15-060-243**	63.50
Blood Bank, Refrigerator						
-5° to +20°C	152mm	Total	0.5°C	717SSC	**15-060-245†**	42.20
Vacuum Ovens						
+20° to +130°C	135mm	Total	1.0°C	24130S SC	**15-060-251**	52.80
+35° to +200°C	180mm	Total	1.0°C	7200S SC	**15-060-253**	54.15

† Arrows on the scale indicate critical temperatures.

THERMOMETERS—MERCURY

*Fisherbrand** Factory-Calibrated Thermometers

Use to verify and calibrate routinely used thermometers including liquid-in-glass, RTD's, thermistors, thermocouples and bi-metal thermometers



15-041A

- Certified traceable
- Total immersion
- Each thermometer is certified at points listed below
- Calibrated to meet the requirements of ISO/EC Guide 25, ANSI*/NCSL 2540-1-1994, ISO 9000/QS 9000 Series of Quality Standards, and MIL STD 45662A
- Packed in felt-lined leatherette storage case

CERTIFICATIONS:

NIST* traceable. Supplied with documentation to prove traceability to NIST. For certified partial immersion thermometers, contact your Fisher Scientific Customer Service Representative.

NOTE:

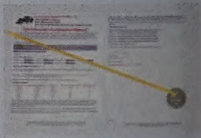
For accurate results, total immersion thermometers must be immersed in medium up to point of reading (for proper use).

Range					
Low	High	Length	Calibration Points†	Cat. No.	Each
0.1°C subdivisions					
-1°C	+51°C	460mm	Every 10°, and 37°C	**15-041A**	273.15
-1°C	+101°C	610mm	Every 10°, 37°, and 56°C	**15-041B**	440.80
0.2°C subdivisions					
-1°C	+101°C	460mm	Every 20°	**15-041C**	302.80
-1°C	+201°C	610mm	0°, 22°, 37°, 44.6°, 100°, 121°, 140°, 150°, 180°, and 200°C	**15-041D**	495.80

† Starting at 0°C.

*Fisherbrand** Certified U.S. EPA Water Analysis Thermometer

Certified traceable



15-041-14

- Partial-immersion thermometer for water-treatment testing and general lab applications
- Graduated in 0.2°C divisions
- Thermometer is certified at 0°, 4°, 25°, 37°, 44.6°, 56°, and 105°C
- Includes case

CERTIFICATIONS:

NIST* traceable. Individually calibrated against NIST-traceable standards; certificate is provided outlining the traceability, tests, and results.

Range						
Low	High	Length	Immersion	Subdiv.	Cat. No.	Each
-1°	+110°C	457mm	76mm	0.2°C	**15-041-14**	378.65

WARNING

These products contain mercury. Do not put products containing mercury in the trash. They should be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

low to Order a Certified Thermometer

isher Scientific offers thermometer certification n all Ertco* and most Fisherbrand* mercury and onmercury thermometers.

hermometer Calibration Report

Factory-calibrated thermometer comes with certificate proving traceability to NIST*

Report states results of physical examination and calibration tests at specified temperatures

Order your choice of thermometer and calibration service (15-060-224, -226, -227) for **each** calibration point in desired range

Specify calibration points and required immersion depth with each order

ertificate of Conformance and Accuracy

Thermometer comes with certificate proving temperature indications were calibrated against NIST standards and directly traceable to NIST

Order the thermometer and 15-060-228

ERTIFICATIONS:

IST traceable

ertification Service	Cat. No.	Each
alibration Report, -110° to -1°C†	**15-060-224**	105.75
alibration Report, +151° to +300°C†	**15-060-226**	105.80
alibration Report, 0° to +150°C†	**15-060-227**	70.65
ertificate of Conformance and Accuracy	**15-060-228**	56.55

Calibration for each specified point.

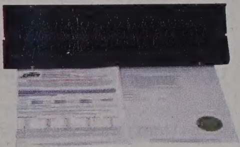
tco* Factory-Calibrated Thermometers

use where precise temperature measurements critical

ertified traceable

ecommended to verify and librate instruments routinely sed in the laboratory

hermometer Calibration Report provided, outlining traceability, sts, and results



15-059-4

LUDES:

-lined case for safe storage, instruction book

TIFICATIONS:

T* traceable. Conform to the requirements for precision thermometers IST Monograph 250-23. Individually calibrated against T-traceable standards

Range							
High	Length	Immer.	Subdiv.	Mfr. No.	Cat. No.	Each	
°C	+38°C	300mm	95mm	0.05°C	SRM934FC	**15-059-1**	253.15
)°C	+50°C	305mm	76mm	1°C	603 3FC	**15-059-11**	372.70
'C	+110°C	305mm	76mm	1°C	611 3FC	**15-059-2**	205.10
:	+51°C	460mm	76mm	0.1°C	1003 3FC	**15-059-4**	459.95
:	+101°C	610mm	76mm	0.1°C	1005 3FC	**15-059-5**	692.25
:	+201°C	610mm	76mm	0.2°C	1007 3FC	**15-059-7**	692.25
:	+51°C	460mm	Total	0.1°C	1003 FC	**15-059-3**	459.95
:	+101°C	610mm	Total	0.1°C	1005 FC	**15-059-6**	692.25
:	+201°C	610mm	Total	0.2°C	1007 FC	**15-059-8**	692.25

Ertco* ASTM* Precision-Certified Thermometer Sets

Certified traceable

Set of nine total immersion thermometers in felt-lined case.

- Certified at five temperatures with correction factors
- Each incorporates the ice point (0°C or 32°F) as a reference point, enabling user to validate and update calibration document and ensure accurate measurements for the life of the thermometer
- Length: 379mm

15-059-15

COMPLIANCE:

Meet all prescribed ASTM* requirements

CERTIFICATIONS:

NIST* traceable. Individually calibrated against NIST-traceable standards; certificate is provided, outlining the traceability, tests, and results

ASTM No.	Range	Mfr. No.	Cat. No.	Each
62C to 70C	-38° to +405°C	62 70C FC	**15-059-15**	2458.05
62F to 70F	-36° to +761°F	62 70F FC	**15-059-16**	2356.35

ACCESSORIES

Replacement Thermometers

- For 15-059-15 and -16 above.

ASTM* No.	Range	Immer.	Subdiv.	Mfr. No.	Cat. No.	Each
Celsius						
62C	-38° to +2°C	Total	0.1°C	62C FC	**15-059-17**	252.10
63C	-8° to +32°C	Total	0.1°C	63C FC	**15-059-18**	218.80
64C	+25° to +55°C	Total	0.1°C	64C FC	**15-059-19**	240.40
65C	+50° to +80°C	Total	0.1°C	65C FC	**15-059-20**	240.40
66C	+75° to +105°C	Total	0.1°C	66C FC	**15-059-21**	252.10
67C	+95° to +155°C	Total	0.2°C	67C FC	**15-059-22**	284.55
68C	+145° to +205°C	Total	0.2°C	68C FC	**15-059-23**	320.20
69C	+195° to +305°C	Total	0.5°C	69C FC	**15-059-24**	327.35
70C	+295° to +405°C	Total	0.5°C	70C FC	**15-059-25**	355.80
Fahrenheit						
62F	-36° to +35°F	Total	0.2°F	62F FC	**15-059-26**	252.10
63F	+18° to +89°F	Total	0.2°F	63F FC	**15-059-27**	218.80
64F	+77° to +131°F	Total	0.2°F	64F FC	**15-059-28**	240.40
65F	+122° to +176°F	Total	0.2°F	65F FC	**15-059-29**	240.40
66F	+167° to +221°F	Total	0.2°F	66F FC	**15-059-30**	252.10

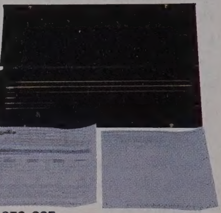
WARNING

These products contain mercury. Do not put products containing mercury in the trash. They should be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

Ertco* ASTM*-Like Precision-Calibrated Thermometer Sets

Certified traceable

Partial immersion; available individually or in °C set.



15-059-305

- Set of nine partial-immersion thermometers in felt-lined leatherette case
- Available in range of -38° to +405°C
- Certified at five temperatures with correction factors
- Incorporates the ice point (0°C) as a reference point enabling the user to validate and update the calibration document and ensure accurate measurements for the life of the thermometer
- Length: 379mm
- Immersion depth: 100mm

COMPLIANCE:
Meet all prescribed ASTM requirements.

CERTIFICATIONS:
NIST* traceable. Individually calibrated and traceable to standards provided by NIST; certificate is provided, outlining the traceability, tests, and results and showing corrections to the nearest tenth of a scale division

ASTM No.	Range	Mfr. No.	Cat. No.	Each
62C–70C	-38° to +405°C	62-70C-4FC	**15-059-305**	2427.05

ACCESSORIES

Replacement Thermometers

- For 15-059-305 (above).

ASTM* No.	Range	Immer.	Subdiv.	Mfr. No.	Cat. No.	Each
Celsius						
62C	-38° to +2°C	100mm	0.1°C	62C-4FC	**15-059-325**	260.60
63C	-8° to +32°C	100mm	0.1°C	63C-4FC	**15-059-324**	226.10
64C	+25° to +55°C	100mm	0.1°C	64C-4FC	**15-059-321**	248.65
65C	+50° to +80°C	100mm	0.1°C	65C-4FC	**15-059-319**	248.65
66C	+75° to +105°C	100mm	0.1°C	66C-4FC	**15-059-316**	260.60
67C	+95° to +155°C	100mm	0.2°C	67C-4FC	**15-059-314**	293.40
68C	+145° to +205°C	100mm	0.2°C	68C-4FC	**15-059-311**	329.90
69C	+195° to +305°C	100mm	0.5°C	69C-4FC	**15-059-309**	337.15
Fahrenheit						
62F	-36° to +35°F	100mm	0.5°F	62F-4FC	**15-059-328**	260.60
63F	+18° to +89°F	100mm	0.2°F	63F-4FC	**15-059-323**	226.10
64F	+77° to +131°F	100mm	0.2°F	64F-4FC	**15-059-322**	248.65
65F	+122° to +176°F	100mm	0.2°F	65F-4FC	**15-059-320**	248.65
66F	+167° to +221°F	100mm	0.2°F	66F-4FC	**15-059-315**	260.60
67F	+203° to +331°F	100mm	0.5°F	67F-4FC	**15-059-313**	293.40

*Fisherbrand** Thermometers with Fractional-Degree °C Scale

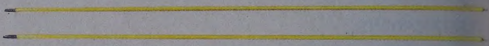
Choose total or partial immersion

Provide readings to 0.1°C; more precise than 14-985, 14-985-5 Series.

- Engraved stem
- Yellow-backed glass filled with nitrogen above mercury column
- Each thermometer packaged in clear, lockable tubing

COMPLIANCE:
Meet ANSI*/SAMA specifications. Calibrated against NIST*-traceable standards; do not come with traceable certificate

15-043A



15-000B (Top) 15-000C (Bottom)

Range						
Low	**High**	**Length**	**Immersion**	**Subdiv.**	**Cat. No.**	**Each**
Partial Immersion						
-1°C	+51°C	460mm	76mm	0.1°C	**15-000A**	31.50
-1°C	+101°C	610mm	76mm	0.1°C	**15-000B**	44.00
-1°C	+201°C	610mm	76mm	0.2°C	**15-000C**	100.75
Total Immersion						
-1°C	+51°C	460mm	Total	0.1°C	**15-043A**	53.70
-1°C	+101°C	610mm	Total	0.1°C	**15-043B**	68.80
-1°C	+101°C	460mm	Total	0.2°C	**15-043C**	83.45
-1°C	+201°C	610mm	Total	0.2°C	**15-043D**	130.70

CARE AND USE OF LIQUID-IN-GLASS THERMOMETERS

For user confidence and reliability in measuring temperatures, use liquid-in glass thermometers according to the design parameters listed below. Thermometers immersed at levels different than those indicated can lead to inaccuracies in temperature readings of as much as 5° to 10°. Thermometers may also be used according to methods defined by technical societies, such as ASTM*, to indicate required measurements other than "true" temperatures.To reduce the risk of fracture, avoid exposure to extreme changes in temperature and droppage. Store nonmercury thermometers in a vertical upright position to minimize column separation and maintain accuracy.

Total immersion. Bulb and entire column of liquid must be immersed into the medium measured. Most total immersion thermometers can also be completely immersed and exposed to temperature being measured.

Partial immersion. Thermometer bulb and stem are immersed to immersion line or defined depth inscribed on thermometer.

WARNING

These products contain mercury. Do not put products containing mercur in the trash. They should be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federa Laws. Some products containing mercury are not available for sale in some states.

*Trademark. See Trademark Reference.

Prices subject to change.

*Fisherbrand** Mercury Laboratory Thermometers

4-983-15B (top), 14-985-5B (bottom)

General-Purpose Thermometers

Available in a variety of types for a wide range of applications

- With permanently fused markings; nonroll fittings
- Each thermometer is packaged in clear, lockable tubing

COMPLIANCE:
Made in accordance with, and meet accuracy requirements of, ANSI*/SAMA Z236.1-1983

Partial Immersion

Range							
Low	High	Length	Immer.	Subdiv.	Back	Cat. No.	Each
Celsius Scales							
-20°C	+110°C	305mm	76mm	1°C	Yellow	**14-985-5B**	14.40
-20°C	+110°C	305mm	76mm	1°C	White	**14-985B**	8.75
-20°C	+150°C	305mm	76mm	1°C	Yellow	**14-985-5C**	14.35
-20°C	+150°C	305mm	76mm	1°C	White	**14-985C**	11.25
-10°C	+260°C	405mm	76mm	1°C	Yellow	**14-985-5E**	12.15
-10°C	+260°C	405mm	76mm	1°C	White	**14-985E**	12.15
-10°C	+400°C	405mm	76mm	2°C	Yellow	**14-985-5G**	15.90
-10°C	+400°C	405mm	76mm	2°C	White	**14-985G**	14.55
-10°C	+500°C	405mm	76mm	2°C	White	**14-985H**	66.90
Fahrenheit Scales							
-30°F	+120°F	305mm	76mm	1°F	White	**14-990A**	11.25
-30°F	+125°F	305mm	76mm	1°F	Yellow	**14-990-5A**	11.25
0°F	+230°F	305mm	76mm	2°F	White	**14-990B**	9.05
0°F	+300°F	305mm	76mm	2°F	White	**14-990C**	7.55
0°F	+300°F	305mm	76mm	2°F	Yellow	**14-990-5C**	11.25
+20°F	+500°F	405mm	76mm	2°F	White	**14-990E**	12.25
+20°F	+500°F	405mm	76mm	2°F	Yellow	**14-990-5E**	11.65
+20°F	+750°F	405mm	76mm	5°F	White	**14-990G**	13.40
+20°F	+750°F	405mm	76mm	5°F	Yellow	**14-990-5G**	13.40
Double Scales							
-20°C 0°F	+110°C +230°F	305mm	76mm	1°C 2°F	Yellow	**14-995-5B**	11.15
-10°C +20°F	+260°C +500°F	405mm	76mm	1°C 2°F	Yellow	**14-995-5E**	15.85
-10°C +20°F	+400°C +750°F	405mm	76mm	2°C 5°F	Yellow	**14-995-5G**	16.95

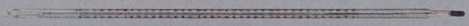
Total Immersion

Range							
Low	High	Length	Immer.	Subdiv.	Back	Cat. No.	Each
Celsius Scales							
-20°C	+110°C	305mm	Total	1°C	Yellow	**14-983-10B**	12.00
-20°C	+110°C	305mm	Total	1°C	White	**14-986B**	10.85
-20°C	+150°C	305mm	Total	1°C	White	**14-986C**	11.25
-20°C	+150°C	305mm	Total	1°C	Yellow	**14-983-10C**	12.45
-10°C	+260°C	405mm	Total	1°C	White	**14-986E**	13.10
-10°C	+260°C	405mm	Total	1°C	Yellow	**14-983-10E**	17.05
-10°C	+400°C	405mm	Total	2°C	White	**14-986G**	15.80
-10°C	+400°C	405mm	Total	2°C	Yellow	**14-983-10G**	20.60
Fahrenheit Scales							
-30°F	+120°F	305mm	Total	1°F	Yellow	**14-983-15A**	14.35
0°F	+230°F	305mm	Total	2°F	Yellow	**14-983-15B**	13.80
0°F	+300°F	305mm	Total	2°F	Yellow	**14-983-15C**	14.35
+20°F	+500°F	405mm	Total	2°F	Yellow	**14-983-15E**	17.20
+20°F	+750°F	405mm	Total	5°F	Yellow	**14-983-15G**	21.85

Enclosed-Scale Thermometers

Prevent carryover contamination

- More easily cleaned than engraved stems
- Milk-white backed glass; black markings
- Filled with nitrogen above mercury column



15-005C

Range						
Low	High	Length	Immersion	Subdiv.	Cat. No.	Each
-10°C	+110°C	300mm	76mm	1°C	**15-005B**	49.30
-10°C	+150°C	300mm	76mm	1°C	**15-005C**	74.35
0°F	+220°F	305mm	76mm	2°F	**15-010B**	81.70
0°F	+400°F	356mm	76mm	2°F	**15-010D**	80.80

Engraved-Stem Thermometers

For general testing and laboratory procedures where an ASTM* or similar thermometer is not required

- Supplied in easy-to-read yellow-backed glass with Permetch* brand permanent pigmentation of graduations

CERTIFICATIONS:
NIST* traceable. Conform to NIST Monograph No. 150.

15-041-1A

Range						
Low	High	Length	Immersion	Subdiv.	Cat. No.	Each
-20°	+110°C	305mm	76mm	1°C	**15-041-1A**	17.40
-20°	+150°C	305mm	76mm	1°C	**15-041-1B**	19.65
-10°	+250°C	385mm	76mm	1°C	**15-041-1C**	22.85
-10°	+360°C	406mm	76mm	2°C	**15-041-1D**	29.40

WARNING

These products contain mercury. Do not put products containing mercury in the trash. They should be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

Fisherbrand* Mercury Laboratory Thermometers, Contd.

Extended-Stem Thermometers

For use where greater immersion depth is required

- Used for temperature measurements in deep vessels, flasks, ovens, sterilizers, incubators and similar equipment where greater immersion depth is required for accurate reading

15-041-3A

Range						
Low	High	Length	Immersion	Subdiv.	Cat. No.	Each
-10°	+250°C	430mm	152mm	0.1°	**15-041-3A**	27.35
-10°	+360°C	460mm	152mm	0.1°	**15-041-3B**	33.65
-10°	+250°C	610mm	305mm	0.1°	**15-041-3C**	33.70
-10°	+360°C	610mm	305mm	0.1°	**15-041-3D**	38.40

Extra-Large Thermometers

Read at a distance

- Large 20mm diameter thermometer has enclosed paper scale with large numbers
- Glass ring at top

15-070B

Range						
Low	High	Length	Immersion	Subdiv.	Cat. No.	Each
-10°C	+100°C	300mm	Total	1°C	**15-070A**	49.80
-10°C	+200°C	350mm	Total	1°C	**15-070B**	49.35
0°F	+220°F	300mm	Total	2°F	**15-070C**	50.55
0°F	+420°F	350mm	Total	2°F	**15-070D**	49.35

Fluoropolymer-Coated Thermometers

Transparent coating of PTFE resin

- Precision grade; yellow back
- PTFE coating prevents shattering; retains glass and mercury in case of damage
- Overall diameters, 6 to 7mm

NOTE:
The PTFE resin coating on these thermometers will be damaged by temperatures higher than 220°C (428°F).

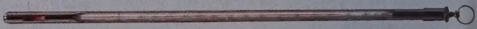
14-983-17D

Range							
Low	High	Length	Immer.	Subdiv.	Contains Mercury	Cat. No.	Each
-20°C	+110°C	300mm	76mm	1°C	Yes	**14-983-17A**	49.70
-20°C	+150°C	300mm	76mm	1°C	Yes	**14-983-17B**	49.70
-10°C	+200°C	300mm	76mm	1°C	Yes	**14-983-17C**	53.30
-10°C	+260°C	405mm	76mm	1°C	Yes	**14-983-17D**	44.10
0°C	+30°C	370mm	76mm	0.1°C	Yes	**14-983-17M**	61.40
0°F	+230°F	300mm	76mm	2°F	Yes	**14-983-16A**	48.70
0°F	+300°F	300mm	76mm	2°F	Yes	**14-983-16B**	48.50
+20°F	+400°F	300mm	76mm	2°F	Yes	**14-983-16C**	55.20
+20°F	+500°F	406mm	76mm	2°F	Yes	**14-983-17H**	30.20

*Fisherbrand** Thermometer Accessories

Armor Cases and Screw Caps

- Constructed of seamless brass tubing with heavy-nickel plating
- Cases slightly longer than stated to allow room for packing
- Case I.D., 0.335" (8.5mm)
- To hold thermometer firmly in place, pack small wad of glass wool in bottom of case and in screw cap



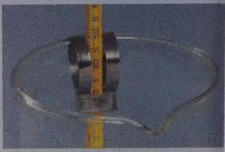
15-025AQ

For Thermometer Length	Cat. No.	Each
12" (300mm)	**15-025AQ**	110.00
14" (350mm)	**15-025BQ**	110.00
16" (400mm)	**15-025DQ**	110.00

Beaker Thermometer Clamp

Clamp holds thermometer upright on side of beaker

- Provides firm support without damaging
- Stainless steel; won't rust or corrode
- 1 dia. × ¾"W (25 × 19mm)



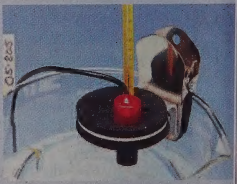
05-825

Cat. No.	Pack of 1
05-825	59.5

Thermometer Holder with Clip

A handy way to hold thermometers, test tubes and electrodes

- Clips firmly on the side of the beaker
- Steel clip has rubber clamping pads
- The holder is foam rubber with five holes of assorted diameters



05-805

Cat. No.	Eac
05-805	31.1

WARNING
These products contain mercury. Do not put products containing mercu in the trash. They should be recycled or disposed of as hazardous wast Products containing mercury may be regulated by Local, State, or Fede Laws. Some products containing mercury are not available for sale in some states.

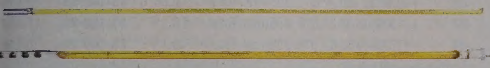
rtco* Armored Thermometers

artial immersion

recision thermometers mounted in nickel-plated brass armor to withstand ough handling during use.

- Made with flat tops—can easily be inserted or removed from the armor without tools
- With ring top for suspension and slotted front for ease of reading
- Yellow back

ERTIFICATIONS:
IST* traceable. Accurate to within NIST tolerances



5-059-121 (top), 15-059-105 (bottom)

Range		Length	Immer.	Subdiv.	Mfr. No.	Cat. No.	Each
ow	High						
hermometer with armor							
35°C	+50°C	305mm	76mm	1°C	517A	**15-059-104**	54.85
20°C	+105°C	305mm	76mm	1°C	519A	**15-059-105**	54.85
20°C	+150°C	305mm	76mm	1°C	521A	**15-059-106**	55.70
2°C	+150°C	355mm	76mm	0.5°C	523A	**15-059-107**	63.80
2°C	+205°C	355mm	76mm	1°C	525A	**15-059-108**	66.75
2°C	+260°C	355mm	76mm	1°C	527A	**15-059-109**	66.85
30°F	+120°F	305mm	76mm	1°F	516A	**15-059-112**	54.70
°F	+220°F	305mm	76mm	2°F	518A	**15-059-113**	54.70
30°F	+500°F	355mm	76mm	2°F	526A	**15-059-117**	66.85
hermometer only							
35°C	+50°C	300mm	76mm	1°C	517	**15-059-120**	27.95
20°C	+105°C	300mm	76mm	1°C	519	**15-059-121**	27.95
20°C	+150°C	300mm	76mm	1°C	521	**15-059-122**	29.30
2°C	+150°C	350mm	76mm	0.5°C	523	**15-059-123**	35.25
2°C	+260°C	350mm	76mm	1°C	527	**15-059-125**	43.20
30°F	+120°F	300mm	76mm	1°F	516	**15-059-128**	27.95
°F	+220°F	300mm	76mm	2°F	518	**15-059-129**	27.95
°F	+300°F	300mm	76mm	2°F	520	**15-059-130**	29.25
30°F	+500°F	350mm	76mm	2°F	526	**15-059-133**	38.75
rmor only							
---	----	305mm	----	----	ARM 12	**15-059-137**	28.40

WARNING

These products contain mercury. Do not put products containing mercury in the trash. They should be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

LOOKING FOR MORE THERMOMETERS?

Fisher Scientific carries a wide selection of thermometers for all of your application needs.

Visit www.fishersci.com and search for Thermometers

REUNITING SEPARATED COLUMNS OF MERCURY THERMOMETERS

Cooling Method. Works with most mercury thermometers except deep-immersion types. With the thermometer in an upright position, gradually immerse **only the bulb** in a solution of solid CO_2 (dry ice) and alcohol so the mercury column retreats slowly into the bulb. Do not subject the stem or mercury column to the CO_2 solution as it will freeze the mercury column in the capillary and may cause the bulb to fracture. Keep the bulb in the solution until the main column and the separated portion retreat into the bulb. Remove and swing the thermometer in a short arc to force all the mercury into the bulb. Do not touch the bulb until it has warmed sufficiently for the mercury to emerge from the bulb into the capillary.

Heating Method. Applies to thermometers with a maximum range of 260°C/500°F, with expansion chambers large enough to accommodate the separation plus a portion of the main column. (Never fill expansion chamber more than ⅔ full.) Immerse as much of the bulb and stem as possible in a large beaker containing a liquid whose flash point is well above the highest indication on the thermometer being reunited. Heat the beaker, stirring the liquid with the thermometer until the separation and a portion of the main column enter the chamber. (Never use an open flame on the bulb.) Tap the thermometer in the palm of gloved hand to reunite the column. Allow to cool slowly. Thermometers whose ranges exceed 260°C/500°F cannot be reunited using heat.

TEMPERATURE CONTROLLERS AND RECORDERS

For a wide selection of Temperature Controllers and Recorders including the Fisherbrand* Exact-Temp* Dataloggers and Fisherbrand Traceable* Temperature Chart Recorders (shown at right), see the Recorders section on pp. 1518-1526.

*Fisherbrand** ASTM* Thermometers

Made and guaranteed to meet ASTM E 1 specifications in every detail

The tubing used conforms to exacting specifications for composition and physical properties.

- Graduations, numbers, and letters are deeply etched into the glass and filled with improved black pigment that is unaffected by any ordinary solvent
- All ASTM thermometers are filled above the mercury column with an inert gas under pressure
- For certified ASTM Primary References standards that come with a traceable certificate, see p. 1791.

01-561A

ASTM No.	Range	Length	Immer.	Subdiv.	Cat. No.	Each
Partial Immersion						
1C	-20° to +150°C	322mm	76mm	1°C	**15-166A**	27.05
2C	-5° to +300°C	390mm	76mm	1°C	**15-166B**	33.75
3C	-5° to +400°C	415mm	76mm	1°C	**15-166C**	32.35
1F	0° to +302°F	322mm	76mm	2°F	**15-167A**	27.70
2F	+20° to +580°F	390mm	76mm	2°F	**15-167B**	33.75
3F	+20° to +760°F	415mm	76mm	2°F	**15-167C**	32.35
Acid Heat						
4C	-1° to +105°C	375mm	152mm	0.5°C	**15-169-2**	40.80
4F	+30° to +220°F	375mm	152mm	1°F	**15-169-1**	38.40
Cloud and Pour Point						
5C	-38° to +50°C	230mm	108mm	1°C	**13-411**	26.30
6C	-80° to +20°C	230mm	76mm	1°C	**13-413**	43.15
5F	-36° to +120°F	230mm	108mm	2°F	**13-410**	52.00
6F	-112° to +70°F	230mm	76mm	2°F	**13-412**	45.55
Distillation						
7C	-2° to +300°C	385mm	Total	1°C	**13-481**	39.75
8C	-2° to +400°C	385mm	Total	1°C	**13-482**	41.95
7F	+30° to +580°F	385mm	Total	2°F	**13-480**	39.10
8F	+30° to +760°F	385mm	Total	2°F	**13-485**	41.95
Loss on Heat						
13C	+155° to +170°C	155mm	Total	0.5°C	**15-169-7**	107.05
Paraffin Wax Melting Point						
14C	+38° to +82°C	375mm	79mm	0.1°C	**13-552**	43.15
14F	+100° to +180°F	375mm	79mm	0.2°F	**13-550**	43.15
Softening Point						
15C	-2° to +80°C	395mm	Total	0.2°C	**01-561A**	42.60
16C	+30° to +200°C	395mm	Total	0.5°C	**01-561B**	39.65
15F	+30° to +180°F	395mm	Total	0.5°F	**01-561C**	39.65
16F	+85° to +392°F	395mm	Total	1°F	**01-561D**	38.40
Saybolt Viscosity						
20C	+57° to +65°C	275mm	Total	0.1°C	**15-169-13**	37.96
21C	+79° to +87°C	275mm	Total	0.1°C	**15-169-14**	35.55
Engler Viscosity						
23C	+18° to +28°C	212mm	90mm	0.2°C	**15-169-17**	70.35
24C	+39° to +54°C	237mm	90mm	0.2°C	**15-169-18**	67.95
25C	+95° to +105°C	212mm	90mm	0.2°C	**15-169-19**	67.95
Kinematic Viscosity						
28C	+36.6° to +39.4°C	305mm	Total	0.05°C	**15-169-41**	148.45
29F	+127.5° to +132.5°F	305mm	Total	0.1°F	**15-169-26**	97.60
Reid Vapor Test						
31F	-30° to +120°F	305mm	Total	1°F	**15-169-3**	25.25
Titer Test						
36C	-2° to +68°C	405mm	45mm	0.2°C	**15-171**	53.00
Solvent Distillation						
38C	+24° to +78°C	395mm	100mm	0.2°C	**13-487-10B**	54.10
39C	+48° to +102°C	395mm	100mm	0.2°C	**13-487-10C**	54.10
40C	+72° to +126°C	395mm	100mm	0.2°C	**13-487-10D**	64.60
41C	+98° to +152°C	395mm	100mm	0.2°C	**13-487-10E**	67.00
42C	+95° to +255°C	395mm	100mm	0.5°C	**13-487-10F**	66.90
Kinematic Viscosity						
44C	+18.5° to +21.5°C	305mm	Total	0.05°C	**15-169-30**	124.80
45C	+23.6° to +26.4°C	305mm	Total	0.05°C	**15-169-31**	124.80
46C	+48.6° to +51.4°C	305mm	Total	0.05°C	**15-169-32**	124.80
47C	+58.6° to +61.4°C	305mm	Total	0.05°C	**15-169-33**	125.15
46F	+119.5° to +124.5°F	305mm	Total	0.1°F	**15-169-25**	124.60
48F	+177.5° to +182.5°F	305mm	Total	0.1°F	**15-169-27**	105.60
Gas Calorimeter Inlet						
50F	+54° to +101°F	468mm	Total	0.1°F	**15-169-58**	106.40
51F	+69° to +116°F	468mm	Total	0.1°F	**15-169-59**	55.10
Benzene Freezing Point						
53C	-0.6° to +10.4°C	189mm	Total	0.1°C	**15-169-62**	68.30
Congealing Point						
54C	+20° to +100°C	310mm	Total	0.2°C	**15-169-6**	55.45
54F	+68° to +213°F	310mm	Total	0.5°F	**15-169-4**	55.45
Bomb Calorimeter						
56F	+66° to +95°F	585mm	Total	0.05°F	**15-169-5**	196.05
Tank Gauging† (low temperature range)						
58C	-35° to +50°C	300mm	Total	0.5°C	**15-169-86**	67.25
58F	-30° to +120°F	300mm	Total	1°F	**15-173-14C**	58.85
Tank Gauging (medium temperature range)						
59C	-18° to +82°C	300mm	Total	0.5°C	**15-169-88**	65.9
59F	0° to +180°F	300mm	Total	1°F	**15-173-14D**	56.7
Tank Gauging (high temperature range)						
60C	+77° to +260°C	300mm	Total	1°C	**15-169-90**	61.1
Tank Gauging (Replacements, without case or cup)						
58C	-35° to +50°C	300mm	Total	0.5°C	**15-169-85**	29.1
58F	-30° to +120°F	300mm	Total	1°F	**15-173-14A**	27.9
59F	0° to +180°F	300mm	Total	1°F	**15-173-14B**	24.0
60C	+77° to +260°C	300mm	Total	1°C	**15-169-89**	35.0
60F	+170° to +500°F	300mm	Total	2°F	**15-169-92**	31.9
Petrolatum Melting Point						
61C	+32° to +127°C	381mm	79mm	0.2°C	**15-173-16A**	47.0
61F	+90° to +260°F	381mm	79mm	0.5°F	**15-173-16B**	47.0

† Thermometer in wood case with brass cup.

WARNING

These products contain mercury. Do not put products containing mercury in the trash. They should be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

*Trademark. See Trademark Reference.

*Fisherbrand** ASTM* Thermometers, Contd.

15-173-24B

ASTM No.	Range	Length	Immer.	Subdiv.	Cat. No.	Each
Primary Reference Standards						
Come with a Certificate of Conformance and Accuracy, 15-060-228 (see p. 1785). Certified and traceable to NIST standards.						
62C	-38° to +2°C	379mm	Total	0.1°C	**15-169-113**	171.70
62F	-36° to +35°F	379mm	Total	0.2°F	**15-169-127**	163.45
63C	-8° to +32°C	379mm	Total	0.1°C	**15-140B**	95.10
63F	+18° to +89°F	379mm	Total	0.2°F	**15-142B**	101.05
64C	+25° to +55°C	379mm	Total	0.1°C	**15-140C**	112.45
64F	+77° to +131°F	379mm	Total	0.2°F	**15-142C**	112.65
65C	+50° to +80°C	379mm	Total	0.1°C	**15-140D**	124.55
65F	+122° to +176°F	379mm	Total	0.2°F	**15-142D**	124.55
66C	+75° to +105°C	379mm	Total	0.1°C	**15-140E**	124.30
66F	+167° to +221°F	379mm	Total	0.2°F	**15-142E**	130.45
67F	+203° to +311°F	379mm	Total	0.5°F	**15-142F**†	124.35
68C	+145° to +205°C	379mm	Total	0.2°C	**15-169-121**	178.60
68F	+293° to +401°F	379mm	Total	0.5°F	**15-169-134**	172.70
69C	+195° to +305°C	379mm	Total	0.5°C	**15-169-123**	218.80
69F	+383° to +581°F	379mm	Total	1°F	**15-169-136**	185.65
Primary Reference Standards						
Come with Thermometer and Calibration Report providing traceability to NIST* standards and outlining the tests and results. Certified at five ASTM recommended temperatures with correction factors. See p. 1785 for sets.						
62C	-38° to +2°C	379mm	Total	0.1°C	**15-169-114**	319.30
62F	-36° to +35°F	379mm	Total	0.2°F	**15-169-128**	311.05
63C	-8° to +32°C	379mm	Total	0.1°C	**15-169-115**	263.85
63F	+18° to +89°F	379mm	Total	0.2°F	**15-169-129**	263.85
64C	+25° to +55°C	379mm	Total	0.1°C	**15-169-116**	323.40
64F	+77° to +131°F	379mm	Total	0.2°F	**15-169-130**	323.40
65C	+50° to +80°C	379mm	Total	0.1°C	**15-169-117**	315.75
65F	+122° to +176°F	379mm	Total	0.2°F	**15-169-131**	335.75
66C	+75° to +105°C	379mm	Total	0.1°C	**15-169-118**	328.75
66F	+167° to +221°F	379mm	Total	0.2°F	**15-169-132**	347.60
67C	+95° to +155°C	379mm	Total	0.2°C	**15-169-120**	355.00
67F	+203° to +311°F	379mm	Total	0.5°F	**15-169-133**	372.20
68C	+145° to +205°C	379mm	Total	0.2°C	**15-169-122**	345.20
69C	+195° to +305°C	379mm	Total	0.5°C	**15-169-124**	366.45
Oil in Wax						
71F	-35° to +70°F	355mm	76mm	1°F	**15-169-109**	49.00
Kinematic Viscosity						
73C	-41.4° to -38.6°C	305mm	Total	0.05°C	**15-169-34**	256.60
Antifreeze Freezing Point						
75F	-35° to +35°F	408mm	100mm	0.5°F	**15-169-63**	43.05
76F	-65° to +5°F	408mm	100mm	0.5°F	**15-169-64**	171.45
Saybolt Viscosity						
78F	+295° to +315°F	275mm	Total	0.5°F	**15-169-9**	20.95
79F	+345° to +365°F	275mm	Total	0.5°F	**15-169-10**	46.10
80F	+395° to +415°F	275mm	Total	0.5°F	**15-169-11**	49.35
Fuel Rating, Engine						
82C	-15° to +105°C	165mm	30mm	1°C	**15-169-65**	40.90
82F	0° to +220°F	165mm	30mm	2°F	**15-173-22**	36.00

† Also available in case of three. Contact your Fisher Scientific Customer Service Representative for details.

ASTM No.	Range	Length	Immer.	Subdiv.	Cat. No.	Each
Fuel Rating, Air						
83C	+15° to +70°C	174mm	40mm	1°C	**15-169-67**	43.60
83F	+60° to +160°F	174mm	40mm	1°F	**15-169-66**	40.90
Fuel Rating, Mix						
86C	+95° to +175°C	170mm	35mm	1°C	**15-169-73**	52.90
86F	+200° to +350°F	170mm	35mm	2°F	**15-169-72**	48.05
Vegetable Oil Flash Point						
88C	+10° to +200°C	287mm	57mm	1°C	**15-169-76**	76.65
88F	+50° to +392°F	287mm	57mm	2°F	**15-169-77**	74.25
Solidification Point						
89C	-20° to +10°C	370mm	76mm	0.1°C	**15-173-24A**	54.15
90C	0° to +30°C	370mm	76mm	0.1°C	**15-173-24B**	52.95
91C	+20° to +50°C	370mm	76mm	0.1°C	**15-173-24C**	52.80
92C	+40° to +70°C	370mm	76mm	0.1°C	**15-173-24D**	54.15
93C	+60° to +90°C	370mm	76mm	0.1°C	**15-173-24E**	43.35
94C	+80° to +110°C	370mm	76mm	0.1°C	**15-173-24F**	54.15
95C	+100° to +130°C	370mm	76mm	0.1°C	**15-169-78**	58.70
96C	+120° to +150°C	370mm	76mm	0.1°C	**15-173-24G**	50.55
Tank Gauging (Thermometer in wood case, with brass cup.)						
97F	0° to +120°F	300mm	Total	1°F	**15-169-96**	68.45
Replacements (Without case or cup.)						
97C	-18° to +49°C	300mm	Total	0.5°C	**15-169-81**	30.86
97F	0° to +120°F	300mm	Total	1°F	**15-169-95**	33.85
Weathering Test						
99F	-58° to +41°F	302mm	35mm	0.5°F	**15-173-28A**	112.90
Solidification Point						
100C	+145° to +205°C	370mm	76mm	0.2°C	**15-169-79**	37.35
101C	+195° to +305°C	370mm	76mm	0.5°C	**15-169-80**	67.75
Solvents Distillation						
102C	+123° to +177°C	395mm	100mm	0.2°C	**15-173-32A**	62.15
103C	+148° to +202°C	395mm	100mm	0.2°C	**15-169-99**	68.15
104C	+173° to +227°C	395mm	100mm	0.2°C	**15-173-32B**	62.15
105C	+198° to +252°C	395mm	100mm	0.2°C	**15-169-102**	69.40
106C	+223° to +277°C	395mm	100mm	0.2°C	**15-173-32C**	54.05
107C	+248° to +302°C	395mm	100mm	0.2°C	**15-169-103**	70.75
Kinematic Viscosity						
110C	+133.6° to +136.4°C	305mm	Total	0.05°C	**15-169-35**	174.45
110F	+272.5° to +277.5°F	305mm	Total	0.1°F	**15-169-28**	174.45
Benzene Solidification Point						
112C	+4° to +6°C	215mm	Total	0.02°C	**11-689-12**	107.95

WARNING

These products contain mercury. Do not put products containing mercury in the trash. They should be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

*Fisherbrand** ASTM* Thermometers, Contd.

11-689-9

ASTM No.	Range	Length	Immer.	Subdiv.	Cat. No.	Each
Bituminous Material Softening Point						
113C	-1° to +175°C	406mm	Total	0.5°C	**15-169-106**	48.25
113F	+30° to +350°F	406mm	Total	1°F	**15-169-105**	50.65
Aviation Fuel Freezing Point						
114C	-80° to +20°C	300mm	Total	0.5°C	**15-169-107**	52.90
114F	-112° to +70°F	300mm	Total	1°F	**15-169-108**	54.05
Bomb Calorimeter						
116C	+18.9° to +25.1°C	609mm	Total	0.01°C	**15-169-60**	264.70
Kinematic Viscosity						
118C	+28.6° to +31.4°C	305mm	Total	0.05°C	**15-169-36**	149.00
120C	0° & +38.6° to +41.4°C	305mm	Total	0.05°C	**11-689-8**	143.35
121C	0° & +98.6° to +101.4°C	305mm	Total	0.05°C	**11-689-9**	149.85
Brookfield Viscosity						
123C	-35° to -25°C	300mm	Total	0.1°C	**15-169-46**	138.20
124C	-25° to -15°C	300mm	Total	0.1°C	**15-169-47**	140.40
125C	-15° to -5°C	300mm	Total	0.1°C	**15-169-48**	138.20
Kinematic Viscosity						
127C	-21.4° to -18.6°C	305mm	Total	0.05°C	**15-169-51**	131.75
Tank Gauging (thermometer in wood case, w/ brass cup)						
130C	-7° to +110°C	305mm	Total	0.05°C	**15-169-101**	46.10
130F	+20° to +220°F	305mm	Total	1°F	**15-169-94**	69.65
Replacements (without case or cup)						
130F	+20° to +260°F	305mm	Total	1°F	**15-169-93**	36.15

LOOKING FOR MORE THERMOMETERS?

More choices of thermometers are available.

Visit www.fishersci.com and search for Thermometers

WARNING

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Ertco* ASTM* Thermometers

Designed and standardized for specific applications by ASTM

- Conform with all ASTM tolerances
- Other Ertco ASTM Thermometers available; contact your Fisher Scientific Customer Service Representative

15-059 -432 (top), -407 (bottom)

ASTM No.	Range	Length	Immer.	Subdiv.	Mfr. No.	Cat. No.	Each
Partial Immersion							
1C	-20° to +150°C	322mm	76mm	1°C	001C	**15-059-404**	29.50
2C	-5° to +300°C	390mm	76mm	1°C	002C	**15-059-406**	34.90
3C	-5° to +400°C	413mm	76mm	1°C	003C	**15-059-408**	40.70
1F	0° to +302°F	322mm	76mm	2°F	001F	**15-059-405**	29.50
2F	+20° to +580°F	390mm	76mm	2°F	002F	**15-059-407**	34.90
3F	+20° to +760°F	413mm	76mm	2°F	003F	**15-059-409**	40.70
Distillation							
7C	-2° to +300°C	386mm	Total	1°C	007C	**15-059-416**	40.05
8C	-2° to +400°C	386mm	Total	1°C	008C	**15-059-418**	42.70
7F	+30° to +580°F	386mm	Total	2°F	007F	**15-059-417**	40.05
8F	+30° to +760°F	386mm	Total	2°F	008F	**15-059-419**	42.70
Softening Point							
15C	-2° to +80°C	397mm	Total	0.2°C	015C	**15-059-431**	43.65
16C	+30° to +200°C	397mm	Total	0.5°C	016C	**15-059-433**	44.65
15F	+30° to +180°F	397mm	Total	0.5°F	015F	**15-059-432**	43.65
16F	+85° to +392°F	397mm	Total	1°F	016F	**15-059-434**	44.65
Precision							
63C	-8° to +32°C	379mm	Total	0.1°C	063C	**15-059-505**	158.35
66C	+75° to +105°C	379mm	Total	0.1°C	066C	**15-059-511**	175.50
67C	+95° to +155°C	379mm	Total	0.2°C	067C	**15-059-513**	182.70
Solidification Point							
90C	0° to +30°C	370mm	76mm	0.1°C	090C	**15-059-547**	55.40
91C	+20° to +50°C	370mm	76mm	0.1°C	091C	**15-059-548**	56.60
92C	+40° to +70°C	370mm	76mm	0.1°C	092C	**15-059-549**	58.05
93C	+60° to +90°C	370mm	76mm	0.1°C	093C	**15-059-550**	59.95
94C	+80° to +110°C	370mm	76mm	0.1°C	094C	**15-059-551**	59.95
95C	+100° to +130°C	370mm	76mm	0.1°C	095C	**15-059-552**	59.95
96C	+120° to +150°C	370mm	76mm	0.1°C	096C	**15-059-553**	62.75

THERMOMETERS—SPECIAL PURPOSE

*Fisherbrand** Red-Spirit* Pocket Thermometers

Filled with kerosene and nontoxic red dye

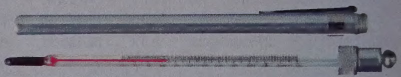
- With white back and permanently fused markings printed horizontally for easy reading
- Complete with protective metal case and pocket clip

ORDERING INFORMATION:

Case with ring top sold separately (contact your Fisher Scientific Customer Service Representative).

NOTE:

Store in upright position to avoid column separation.



15-021B

Range		Length	Immer.	Subdiv.	Cat. No.	Each
Low	High					
-10°C	+110°C	152mm	Total	1°C	**15-021B**	14.60
-30°C	+120°F	152mm	Total	2°F	**15-021C**	14.60
0°F	+220°F	152mm	Total	2°F	**15-021D**	14.40

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

Replacement Thermometers

For 15-021B, C and D.

Length	Cat. No.	Each
145mm	**15-021-5B**	10.95
145mm	**15-021-5C**	11.25
145mm	**15-021-5D**	10.95

Fisherbrand* Ever-Safe* Pocket Thermometers

illed with environmentally safe blue soamyl benzoate

hoose closed-faced model for added protection when storing or hoose an open-face model with exposed scales and read emperatures while mounted in case.

- Blue-Spirit*; with white back and permanent markings
- Both models have attached ring to hang in convenient location

RDERING INFORMATION:

efill tubes sold separately.

NOTE:

tore in upright position to avoid column separation.

15-160-9

Range		Length	Immer.	Subdiv.	Cat. No.	Each
ow	High					
losed Case						
-30°F	+120°F	160mm	Total	2°F	**15-160-6**	15.75
0°F	+220°F	160mm	Total	2°F	**15-160-10**	15.75
-5°F	+50°C	160mm	Total	1°C	**15-160-4**	15.75
-15°F	+105°C	160mm	Total	1°C	**15-160-8**	15.75
pen-Faced						
-30°F	+120°F	160mm	Total	2°F	**15-160-5**	15.75
0°F	+220°F	160mm	Total	2°F	**15-160-9**	15.75
-5°F	+50°C	160mm	Total	1°C	**15-160-3**	15.75
-15°F	+105°C	160mm	Total	1°C	**15-160-7**	15.75
efill Tube						
0°F	+220°F	145mm	Total	2°F	**15-171-8**	10.50
-5°F	+50°C	145mm	Total	1°C	**15-171-7**	11.10
-15°F	+105°C	145mm	Total	1°C	**15-171-6**	11.10

WARNING

The items indicated contain mercury. Do not put products containing mercury in the trash. They should be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

Fisherbrand* Exact-Temp* Bottle-Encased Thermometers

Certified chamber thermometers, graduated in 0.1°C or 0.5°C

High-precision, Ever-Safe* total-immersion thermometer is encased in PETG resin bottle filled with liquid glycol, which insulates the bulb against rapid temperature changes when the door of the appliance chamber is opened.

- Certified traceable
- Thermometers have dual magnets for attaching to wall or door
- Choose thermometers filled with mercury, Blue-Spirit* (isoamyl benzoate-filled), or Red-Spirit* (kerosene-filled)
- Available with PTFE resin coating to contain glass and liquid should breakage occur
- Blue-Spirit thermometers for freezers, refrigerators, and incubators also available without coating
- Blue-Spirit and mercury-filled come graduated in 0.1°C increments for most temperature ranges to enhance critical measurements demanded by regulatory agencies
- 0.1°C division thermometers are encased in 60mL bottles; 0.5°C division thermometers, in 30mL bottles

CERTIFICATIONS:

Individually calibrated and certified traceable to standards provided by NIST* (certificate included).

APPLICATIONS:

For use in chambers such as freezers, refrigerators, incubators, ovens and for ambient use.

NOTE:

Oven thermometers are encased in polycarbonate bottles with vermiculite as the insulating medium.

Freezer Thermometers

- Total immersion thermometers encased in PETG resin bottles filled with propylene glycol
- All thermometers coated with PTFE fluorocarbon resin except 15-171-13

15-059-338, 15-160-12, 15-171-3

Range	Length	Subdiv.	Bottle	Cat. No.	Each
Blue Spirit					
-25° to -5°C	210mm	0.1°C	60mL	**15-060-271**	76.05
-30° to 0°C	125mm	0.5°C	30mL	**15-171-12**	45.80
-30° to 0°C	125mm	0.5°C	30mL	**15-171-13†**	38.80
Red Spirit					
-30° to 0°C	125mm	0.5°C	30mL	**15-059-338**	45.95
Mercury-filled					
-25° to -5°C	210mm	0.1°C	60mL	**15-060-276**	76.05
-30° to 0°C	125mm	0.5°C	30mL	**15-171-3**	51.50

† No PTFE resin coating.

Contd. on next page.

Fisherbrand* Exact-Temp* Bottle–Encased Thermometers, Contd.

Refrigerator Thermometers

- Total immersion thermometers encased in 60mL PETG resin bottles filled with ethylene glycol
- All thermometers coated with PTFE except 15-160-12

Range	Length	Subdiv.	Bottle	Cat. No.	Each
Blue Spirit					
-2° to +10°C	180mm	0.1°C	60mL	**15-060-272**	76.05
-5° to +15°C	125mm	0.5°C	30mL	**15-160-11**	38.80
-5° to +15°C	125mm	0.5°C	30mL	**15-160-12†**	41.45
Red Spirit					
-5° to +15°C	125mm	0.5°C	30mL	**15-059-337**	45.95
Mercury-filled					
-2° to +10°C	180mm	0.1°C	60mL	**15-060-277**	76.05
-5° to +15°C	125mm	0.5°C	30mL	**15-171-2**	51.50

† No PTFE-resin coating.

Ambient Temperature Thermometers

- Total immersion thermometers encased in 60mL PETG resin bottles filled with ethylene glycol
- All thermometers coated with PTFE

Range	Length	Subdiv.	Bottle	Cat. No.	Each
Blue-Spirit					
+15° to +30°C	180mm	0.1°C	60mL	**15-060-274**	76.45
Red-Spirit					
+10° to +30°C	140mm	0.5°C	30mL	**13-990-270**	52.65
Mercury-filled					
+15° to +30°C	180mm	0.1°C	60mL	**15-060-279**	76.45
+10° to +30°C	140mm	0.5°C	30mL	**15-171-4**	51.40

Oven Thermometers

- Total immersion thermometer encased in 60mL polycarbonate bottle filled with vermiculite
- All thermometers coated with PTFE

Range	Length	Subdiv.	Bottle	Cat. No.	Each
Red Spirit					
+20° to +130°C	135mm	1.0°C	30mL	**13-990-271**	54.55
Mercury-filled					
+95° to +115°C	200mm	0.1°C	60mL	**15-060-262**	76.45
+20° to +130°C	135mm	0.5°C	30mL	**15-171-5**	53.20

Incubator Thermometers

- Total immersion thermometers encased in PETG resin bottles filled with ethylene glycol
- All thermometers coated with PTFE resin except 15-160-2

Range	Length	Subdiv.	Bottle	Cat. No.	Each
Blue-Spirit					
+25° to +45°C	190mm	0.1°C	60mL	**15-060-275**	76.05
+18° to +50°C	135mm	0.5°C	30mL	**15-160-1**	38.80
+18° to +50°C	135mm	0.5°C	30mL	**15-160-2†**	45.80
Red-Spirit					
+18° to +50°C	135mm	0.5°C	30mL	**15-059-329**	46.55
Mercury-filled					
+25° to +45°C	190mm	0.1°C	60mL	**15-060-261**	76.05
+18° to +50°C	135mm	0.5°C	30mL	**15-171-1**	51.50

† No PTFE-resin coating.

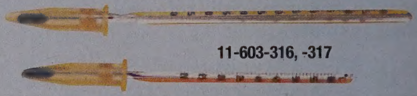
*Fisherbrand** Exact-Temp* Dry Bath/Block Heater Thermometers

Fit directly into dry bath incubator or block heater for critical temperature measurement

- Blue-Spirit* (isoamyl benzoate-filled), partial-immersion thermometers
- Encased in 1.5mL microtube filled with mineral oil
- Individually calibrated and serialized

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided indicating traceability to standards provided by NIST*.



11-603-316, -317

Range	Length	Immersion	Subdiv.	Cat. No.	Each
18° to 60°C	125mm	35mm	0.5°C	**11-603-316**	56.15
50° to 110°C	150mm	35mm	0.5°C	**11-603-317**	56.15

LOOKING FOR TEMPERATURE CONTROLLERS?

For a wide selection of Temperature Controllers and Recorders including Fisherbrand* Exact-Temp* Dataloggers and Fisherbrand* Traceable* Temperature Chart Recorders, see the Recorders section.

*Fisherbrand** Incubator and Oven Thermometers

Two models available

0° to 80°C range

- 0.5°C subdivisions
- Overall length, 250mm; 90mm immersion

20° to 100°C range

- Mercury-filled annealed glass thermometer with yellow enameled back
- Finely etched permanent graduation markings; divisions, 1°C
- Arrows indicate 37° and 56°C
- 6 to 7mm diameter
- Expansion chamber for overheat protection
- Enlargement in stem at 130mm

15-114

Range	Length	Immersion	Subdiv.	Cat. No.	Each
0° to 80°C	250mm	100mm	0.5°C	**15-114**	39.20
20° to 100°C	305mm	76mm	1°C	**13-244-132**	62.40

WARNING

These products contain mercury. Do not put products containing mercu
in the trash. They should be recycled or disposed of as hazardous wast
Products containing mercury may be regulated by Local, State, or Fede
Laws. Some products containing mercury are not available for sale in
some states.

*Trademark. See Trademark Reference.

Prices subject to change.

Fisherbrand* Autoclave Thermometer

For use in autoclaves without built-in temperature recording devices

Has constricted capillary to hold temperature after heat is reduced so you can monitor maximum temperature reached during sterilization.

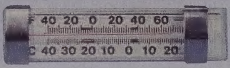
- Range: 85° to 135°C, with 1°C divisions
- Mercury-filled with large, easy-to-read numerals

15-114-10

Range	Length	Immersion	Subdiv.	Cat. No.	Each
85° to 135°C	200mm	Total	1°C	**15-114-10**	50.75

Fisherbrand* Refrigerator/ Freezer Thermometer

Rustproof case hangs or stands



15-105-5

- Dual-scale ranges: -40° to +25°C and -40° to +80°F
- Enclosed bulb assures average temperature readings; open scale permits accurate, easy readings
- Rustproof case hangs or stands
- With stainless-steel hangers and enameled aluminum scale
- Keyhole bracket slots for easy removal

Range	Subdiv.	Cat. No.	Each
-40° to +25°C/-40° to +80°F	1°C/2°F	**15-105-5**	8.60

Fisherbrand* Indoor/ Outdoor Thermometer

Wall Thermometer

- Dual scales
- White aluminum back; black markings
- 8½" long (215mm)

°C
°F
50
40
30
20
10
0
10
20
30
40
120
100
80
60
40
20
0
20
40

15-127

Range	Cat. No.	Each
-40° to +50°C/-40° to +120°F	**15-127**	11.35

WARNING

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Fisherbrand* Maximum/ Minimum Thermometer

Registers both maximum and minimum temperatures

Used for recording temperature differentials.

- U-shaped—high temperature at top of one side, low at top of other side
- Metal floats rise with mercury column; reset with magnet supplied
- Plastic case; 9¾" long (24.8cm) overall

15-116

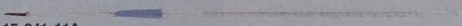
Ranges	Subdiv.	Cat. No.	Each
-40° to +50°C/-30° to +120°F	1°C/1°F	**15-116**	58.90

Fisherbrand* Partial-Immersion Thermometers with ₷ Joint

Filled with Red-Spirit* kerosene liquid

- Standard taper ground joint fits 10/18 to 10/30
- Immersion depth indicated by stem length below the tapered joint
- Graduated in 1°C divisions

NOTE:
Store in upright position to avoid column separation



15-041-11A

Range	-20°C to +150°C			-10°C to +250°C		
Immersion	Length	Cat. No.	Each	Length	Cat. No.	Each
25mm	275mm	**15-041-11A**	69.15	325mm	**15-041-11B**	64.05
51mm	300mm	**15-041-11C**	61.75	350mm	**15-041-11D**	64.05
76mm	325mm	**15-041-11E**	61.75	375mm	**15-041-11F**	62.95
100mm	350mm	**15-041-11G**	61.65	400mm	**15-041-11H**	63.25
125mm	375mm	**15-041-11J**	61.75	425mm	**15-041-11K**	64.50
152mm	400mm	**15-041-11L**	61.80	450mm	**15-041-11M**	64.45
178mm	425mm	**15-041-11N**	61.75	475mm	**15-041-11P**	64.20
190mm	440mm	**15-041-11R**	64.35	490mm	**15-041-11S**	65.30
203mm	----	----	----	500mm	**15-041-11V**	65.55
215mm	465mm	**15-041-11W**	60.85	----	----	----
225mm	----	----	----	525mm	**15-041-11Z**	69.20
305mm	550mm	**15-041-12E**	69.55	600mm	**15-041-12F**	71.45

LOOKING FOR MORE THERMOMETERS?

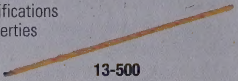
Our complete selection of thermometers and accessories is available online.

Visit www.fishersci.com and search for Thermometers

*Fisherbrand** ASTM* Thermometers for Flash Point Testing

Guaranteed to meet ASTM E 1 specifications in every detail

- Tubing conforms to exacting specifications for composition and physical properties
- Graduations and numbers are deeply etched into the glass and filled with improved black pigments which are unaffected by any ordinary solvent
- Filled above the mercury column with an inert gas under high pressure


13-500

ASTM Type	Range	Incre.	For Tests†	Immersion	Length	Cat. No.	Each
9F	20° to 230°F	1°F	1, 2, 3	2¼" (57mm)	11⅜" (290mm)	**13-500**	31.95
9C	-7° to + 110°C	0.5°C	1, 2, 3	2¼" (57mm)	11⅜" (290mm)	**13-501**	31.95
10F	200° to 700°F	5°F	1	2¼" (57mm)	11⅜" (290mm)	**13-505**	54.15
10C	90° to 370°C	2°C	1	2¼" (57mm)	11⅜" (290mm)	**13-506**	54.15
11F	20° to 760°F	5°F	4	1" (25mm)	12¼" (310mm)	**13-535**	53.00
11C	-6° to +400°C	2°C	4	1" (25mm)	12¼" (310mm)	**13-535-5**	53.00
57F	-4° to +122°F	1°F	2, 3	2¼" (57mm)	11⁵⁄₁₆" (287mm)	**13-510-105**	28.95
57C	-20° to +50°C	0.5°C	2, 3	2¼" (57mm)	11⁵⁄₁₆" (287mm)	**13-510-100**	28.95

† Tests: (1) Pensky-Martens; (2) Tag Open; (3) Tag Closed; (4) Cleveland Open.

WARNING

The products indicated contain mercury. Don't put products containing mercury in the trash. Products containing mercury are to be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

Ertco* Exact-Temp* Thermometers

Available either mercury-filled or red alcohol-filled

Mounted in shatterproof plastic bottle filled with liquid to ensure accurate readings despite opening and closing of instrument door.

- Certified traceable
- With engraved stems and thoroughly annealed for accuracy
- Thermometers are coated with PTFE resin to shock and to contain glass and liquid in case of damage
- With individual serial numbers
- With double magnet for wall or door mounting
- For total immersion

15-059-141, -142, -143

CERTIFICATIONS:

A certificate is provided to indicate traceability to standards provided by NIST*

Description	Range	Length	Subdiv.	Mfr. No.	Cat. No.	Each
Ultralow freezer						
Red alcohol-filled	-90° to +20°C	145mm	1°C	ULF 010	**15-059-145**	69.95
Freezer						
Red alcohol-filled	-30° to 0°C	125mm	0.5°C	F010 1S	**15-059-148**	55.85
Mercury-filled	-30° to 0°C	115mm	0.5°C	F 010	**15-059-141**	57.75
Blood bank refrigerator						
Red alcohol-filled	-5° to +20°C	145mm	0.5°C	BB 100S	**15-059-146**	86.15
Refrigerator						
Red alcohol-filled	-5° to +15°C	125mm	0.5°C	R020 1S	**15-059-147**	55.85
Mercury-filled	-5° to +15°C	125mm	0.5°C	R 020	**15-059-142**	57.75
Incubator						
Red alcohol-filled	+18° to +50°C	135mm	0.5°C	I030 1S	**15-059-149**	55.8
Mercury-filled	+18° to +50°C	135mm	0.5°C	I 030	**15-059-143**	57.7
Oven						
Red alcohol-filled	+20° to +130°C	135mm	1°C	OV070S	**15-059-150**	55.8
Mercury-filled	+20° to +130°C	135mm	1°C	OV070	**15-059-144**	55.8
Red alcohol-filled	+35° to +200°C	145mm	1°C	OV-080S	**15-060-223**	90.6

Ertco* $ Ground Joint Thermometers

10/30 Standard Taper

- Suitable for high-vacuum work
- Precisely ground to a standard taper
- Taper ensures true interchangeability with female taper of similar quality and suitable size
- Engraved stem; yellow back; 1°C divisions
- Graduations and numbers are etched on glass

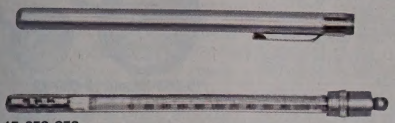
15-002B

	Range					
Immer.	Low	High	Length	Mfr. No.	Cat. No.	Each
76mm	-10°	+110°C	305mm	ST03 110 BF	**15-002B**	45.3
76mm	-10°	+150°C	357mm	ST03 150 BF	**15-002C**	45.3
76mm	-10°	+250°C	382mm	ST03 250 BF	**15-002E**	69.5
76mm	-10°	+360°C	435mm	ST03 360 BF	**15-002F**	73.7
100mm	-20°	+150°C	350mm	ST04 150 BF	**15-004AA**	45.6
100mm	-10°	+250°C	395mm	ST04 250 BF	**15-004B**	48.0
100mm	-10°	+360°C	445mm	ST04 360 BF	**15-004BB**	49.1
125mm	-20°	+150°C	375mm	ST05 150 BF	**15-004CC**	46.8
125mm	-10°	+250°C	425mm	ST05 250 BF	**15-004D**	49.2
125mm	-10°	+360°C	475mm	ST05 360 BF	**15-004DD**	50.8
152mm	-10°	+360°C	530mm	ST06 360 BF	**15-006BB**	47.8

*Trademark. See Trademark Reference.

Prices subject to change.

rtco* Precision Maximum egistering Thermometers


15-059-253

esigned to indicate highest temperature attained at e time of use

Mercury; pocket size

Reset thermometer by shaking down mercury to ambient temperature

Mounted in metal cases with pocket clip for easy carrying

Range							
Low	High	Length	Immer.	Subdiv.	Mfr. No.	Cat. No.	Each
Thermometer with case							
-30°F	+120°F	165mm	Total	2°F	540P	**15-059-252**	56.65
0°F	+220°F	165mm	Total	2°F	542P	**15-059-253**	56.65
+50°F	+300°F	165mm	Total	2°F	544P	**15-059-254**	56.65
+50°F	+400°F	165mm	Total	5°F	546P	**15-059-255**	56.65
-20°C	+150°C	165mm	Total	1°C	545P	**15-059-256**	56.65
Thermometer only							
0°F	+220°F	165mm	Total	2°F	542	**15-059-274**	47.80
+50°F	+300°F	165mm	Total	2°F	544	**15-059-275**	47.80
+50°F	+400°F	165mm	Total	5°F	546	**15-059-276**	47.80
-20°C	+150°C	165mm	Total	1°C	545	**15-059-277**	47.80

WARNING

The products indicated contain mercury. Don't put products containing mercury in the trash. Products containing mercury are to be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

THERMOMETERS—BIMETAL

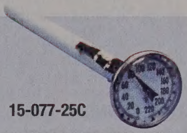
*Fisherbrand** Bimetal Pocket Thermometers

Special dampening process prevents calibration shifts from shock or vibration

- With 1" diameter (25mm) dial; 5" long (127mm) stem
- Slim 0.142" diameter (3.6mm) stem and sensitive bimetal coil provide fast temperature response
- Stainless-steel construction
- Rated accuracy is ±1% of dial range at any point on the dial
- Scales are adjustable to permit recalibration when necessary

INCLUDES:

Plastic case


15-077-25C

Range				
Low	High	Subdiv.	Cat. No.	Each
Fahrenheit Scales				
-40°F	+160°F	2°F	**15-077-25A**	36.30
0°F	+220°F	2°F	**15-077-25C**	36.30
+50°F	+550°F	5°F	**15-077-25F**	33.60
Celsius Scales				
0°C	+150°C	2°C	**15-077-30D**	33.80

*Fisherbrand** Bimetal Dial Thermometers

Advanced features make them ideal for a wide range of lab applications

High-visibility dial graphics are enhanced by an extended scale design that uses nearly the entire perimeter of the dial face.

- Special dampening process prevents calibration shifts from shock or vibration
- A slim, 0.142" diameter (3.6mm) stem and sensitive bimetal coil provide fast temperature response
- Stainless-steel construction
- Rated accuracy is ±1% of dial range at any point on the dial
- Scales are adjustable to permit recalibration when necessary

Single-Scale Thermometers

- With 1¾" diameter (44mm) dial and 8" long (203mm) stem

15-076B (clamp and beaker not included)

Range				
Low	High	Subdiv.	Cat. No.	Each
Fahrenheit Scales				
-40°F	+160°F	2°F	**15-076A**	52.75
0°F	+180°F	2°F	**15-076B**	47.00
0°F	+220°F	2°F	**15-076C**	47.15
+50°F	+300°F	2°F	**15-076D**	49.45
+50°F	+400°F	5°F	**15-076E**	49.35
+50°F	+500°F	5°F	**15-076F**	49.35
Celsius Scales				
-50°C	+100°C	1°C	**15-077A**	47.00
-10°C	+110°C	1°C	**15-077B**	47.00
0°C	+100°C	1°C	**15-077C**	49.45
0°C	+150°C	1°C	**15-077D**	47.00
0°C	+250°C	2°C	**15-077E**	49.45

Contd. on next page.

Fisherbrand* Bimetal Dial Thermometers, Contd.

Dual-Scale Thermometers

- Indicate Fahrenheit and Celsius temperatures
- With 2⅜" diameter (60mm) dial and 8" long (203mm) stem

15-077-2A

Fahrenheit Range	Celsius Range	Cat. No.	Each
-40° to +160°F	-40° to +70°C	**15-077-2A**	51.40
0° to +220°F	-10° to +100°C	**15-077-2B**	50.40
+25° to +125°F	0° to +50°C	**15-077-2C**	50.80
+50° to +300°F	+10° to +150°C	**15-077-2D**	51.40
+50° to +500°F	+10° to +260°C	**15-077-2E**	50.65

Ertco* Surface Temperature Thermometers

Choose fully enclosed or open surfaces

Fully Enclosed

- 2" diameter (50mm) dial
- 15-170 Series read in Fahrenheit only; 15-170-10 Series read in Celsius only
- Use silicone grease to hold thermometer in place on vertical surfaces; magnetic clip for ferrous surfaces

15-170-10A

APPLICATIONS:
Measure surface temperature of large pipes, ducts, dies, molds, freezers, and ovens

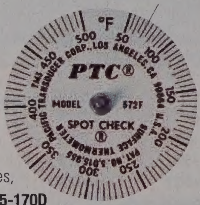
INCLUDES:
Magnetic clamp, silicone grease

Range					
Low	High	Subdiv.	Mfr. No.	Cat. No.	Each
Fahrenheit Scales					
-50°F	+250°F	2°F	309F COMP	**15-170A**	82.75
0°F	+300°F	2°F	310F COMP	**15-170B**	82.10
+70°F	+370°F	2°F	311F COMP	**15-170C**	85.25
Celsius Scales					
-50°C	+110°C	2°C	309C COMP	**15-170-10A**	82.75
-10°C	+150°C	2°C	310C COMP	**15-170-10B**	82.50
+20°C	+180°C	2°C	311C COMP	**15-170-10C**	85.00

Open Surfaces

- Low mass and design assure rapid readout
- 1¾" diameter (44mm) dial; weight, ½ oz. (14g)
- Supplied with magnetic assembly to hold thermometer in place on vertical or inclined ferrous surfaces

APPLICATIONS:
Ideal for quick temperature checks on hotplates, furnaces, engines, tanks, and ovens.


15-170D

Range					
Low	High	Subdiv.	Mfr. No.	Cat. No.	Each
Fahrenheit Scale					
50°F	500°F	5°F	572 FM	**15-170D**	37.95
Celsius Scale					
10°C	260°C	5°C	572CM	**15-170-10D**	40.60

Ertco* Back-Connected Thermometers

Dual Scale

- With extremely responsive bimetal temperature-sensing helix
- Stainless-steel construction and stainless-steel welds
- Rated accuracy: ±1% of total scale range
- Hermetically sealed against moisture
- With breakage-resistant glass windows and permanent metal scale plates
- Convenient external adjustment for recalibration (except on 15-060-17)
- Removable bezel
- Stem diameter, ¼" (6mm)
- ¼ NPT connection on 2" diameter thermometers; ½ NPT connection on 3 and 5" diameter thermometers

15-060-58 and 15-060-19

Fahrenheit Range	Celsius Range	Stem Length	Mfr. No.	Cat. No.	Each
2" diameter (51mm) dial					
+25° to +125°F	-5° to +50°C	4" (10cm)	BK2004003	**15-060-9**	58.10
+25° to +125°F	-5° to +50°C	6" (15cm)	BK2006003	**15-060-17**	58.10
+25° to +125°F	-5° to +50°C	9" (23cm)	BK2009003	**15-060-25**	58.10
+25° to +125°F	-5° to +50°C	12" (30.5cm)	BK2012004	**15-060-33**	65.10
0° to +200°F	-15° to +90°C	2½" (6cm)	BK2002505	**15-060-2**	58.10
0° to +200°F	-15° to +90°C	4" (10cm)	BK2004005	**15-060-10**	58.10
0° to +200°F	-15° to +90°C	6" (15cm)	BK2006005	**15-060-18**	58.10
0° to +200°F	-15° to +90°C	9" (23cm)	BK2009005	**15-060-26**	58.10
0° to +200°F	-15° to +90°C	12" (30.5cm)	BK2012005	**15-060-34**	65.10
0° to +250°F	-20° to +120°C	2½" (6cm)	BK2002506	**15-060-3**	58.10
0° to +250°F	-20° to +120°C	4" (10cm)	BK2004006	**15-060-11**	58.10
0° to +250°F	-20° to +120°C	6" (15cm)	BK2006006	**15-060-19**	58.10
0° to +250°F	-20° to +120°C	9" (23cm)	BK2009006	**15-060-27**	58.10
0° to +250°F	-20° to +120°C	12" (30.5cm)	BK2012006	**15-060-35**	65.10
+50° to +400°F	+10° to +200°C	2½" (6cm)	BK2002509	**15-060-5**	58.10
+50° to +400°F	+10° to +200°C	4" (10cm)	BK2004009	**15-060-13**	58.10
+50° to +400°F	+10° to +200°C	6" (15cm)	BK2006009	**15-060-21**	58.10
+50° to +400°F	+10° to +200°C	9" (23cm)	BK2009009	**15-060-29**	58.10
+50° to +400°F	+10° to +200°C	12" (30.5cm)	BK2012009	**15-060-37**	65.10
+200° to +1000°F	+100° to +540°C	2½" (6cm)	BK2002512	**15-060-7**	58.10
+200° to +1000°F	+100° to +540°C	4" (10cm)	BK2004012	**15-060-15**	58.10
+200° to +1000°F	+100° to +540°C	6" (15cm)	BK2006012	**15-060-23**	58.10
+200° to +1000°F	+100° to +540°C	9" (23cm)	BK2009012	**15-060-31**	58.10
+200° to +1000°F	+100° to +540°C	12" (30.5cm)	BK2012012	**15-060-39**	65.10
3" diameter (76mm) dial					
+25° to +125°F	-5° to +50°C	6" (15cm)	BK3006003	**15-060-56**	68.55
+25° to +125°F	-5° to +50°C	9" (23cm)	BK3009003	**15-060-64**	68.55
+25° to +125°F	-5° to +50°C	12" (30.5cm)	BK3012003	**15-060-72**	76.20
0° to +200°F	-15° to +90°C	4" (10cm)	BK3004005	**15-060-49**	68.55
0° to +200°F	-15° to +90°C	6" (15cm)	BK3006005	**15-060-57**	68.55
0° to +200°F	-15° to +90°C	12" (30.5cm)	BK3012005	**15-060-73**	76.20
0° to +250°F	-20° to +120°C	2½" (6cm)	BK3002506	**15-060-42**	68.55
0° to +250°F	-20° to +120°C	4" (10cm)	BK3004006	**15-060-50**	68.55
0° to +250°F	-20° to +120°C	6" (15cm)	BK3006006	**15-060-58**	68.55
0° to +250°F	-20° to +120°C	9" (23cm)	BK3009006	**15-060-66**	68.55
0° to +250°F	-20° to +120°C	12" (30.5cm)	BK3012006	**15-060-74**	76.20
+50° to +400°F	+10° to +200°C	2½" (6cm)	BK3002509	**15-060-44**	68.55
+50° to +400°F	+10° to +200°C	6" (15cm)	BK3006009	**15-060-60**	68.55
+50° to +400°F	+10° to +200°C	12" (30.5cm)	BK3012009	**15-060-76**	76.2
+200° to +1000°F	+100° to +540°C	4" (10cm)	BK3004012	**15-060-54**	68.5
+200° to +1000°F	+100° to +540°C	6" (15cm)	BK3006012	**15-060-62**	68.5
+200° to +1000°F	+100° to +540°C	12" (30.5cm)	BK3012012	**15-060-78**	76.2

Contd. on next pag

*Trademark. See Trademark Reference.

Prices subject to change.

co* Back-Connected Thermometers, Contd.

renheit Range	Celsius Range	Stem Length	Mfr. No.	Cat. No.	Each
diameter (127mm) dial					
5° to +125°F	-5° to +50°C	4" (10cm)	BK5004003	**15-060-87**	102.30
5° to +125°F	-5° to +50°C	12" (30.5cm)	BK5012003	**15-060-111**	113.35
to +200°F	-15° to +90°C	2½" (6cm)	BK5002505	**15-060-80**	102.30
to +200°F	-15° to +90°C	12" (30.5cm)	BK5012005	**15-060-112**	113.35
to +250°F	-20° to +120°C	9" (23cm)	BK5009006	**15-060-105**	102.30
0° to +400°F	+10° to +200°C	4" (10cm)	BK5004009	**15-060-91**	102.30
0° to +400°F	+10° to +200°C	6" (15cm)	BK5006009	**15-060-99**	102.30
0° to +400°F	+10° to +200°C	12" (30.5cm)	BK5012009	**15-060-115**	113.35
00° to +1000°F	+100° to +540°C	6" (15cm)	BK5006012	**15-060-101**	102.30

LOOKING FOR MORE THERMOMETERS?

Fisher Scientific carries a wide selection of thermometers for all of your application needs.

Visit www.fishersci.com and search for Thermometers

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rtco* Universal Angle Thermometers

al angle can be adjusted for easy reading

15-060-130

- ual scale
- lave all the features of the Ertco Back-Connected Thermometers, lus the dial angle can be adjusted for easy reading
- imple adjustment of the stainless-steel harness allows case rotation f 360° and stem variation of more than 180°
- Vith ½ NPT connections

Fahrenheit Range	Celsius Range	Stem Length	Mfr. No.	Cat. No.	Each
3" diameter (76mm) dial					
+25° to +125°F	-5° to +50°C	4" (10cm)	MA3004003	**15-060-126**	133.30
+25° to +125°F	-5° to +50°C	6" (15cm)	MA3006003	**15-060-134**	133.30
0° to +200°F	-15° to +90°C	2½" (6cm)	MA3002505	**15-060-119**	133.30
0° to +200°F	-15° to +90°C	6" (15cm)	MA3006005	**15-060-135**	133.30
0° to +200°F	-15° to +90°C	9" (23cm)	MA3009005	**15-060-143**	133.30
0° to +200°F	-15° to +90°C	12" (30.5cm)	MA3012005	**15-060-151**	145.60
0° to +250°F	-20° to +120°C	2½" (6cm)	MA3002506	**15-060-120**	133.30
0° to +250°F	-20° to +120°C	4" (10cm)	MA3004006	**15-060-128**	133.30
0° to +250°F	-20° to +120°C	9" (23cm)	MA3009006	**15-060-144**	133.30
0° to +250°F	-20° to +120°C	12" (30.5cm)	MA3012006	**15-060-152**	145.60
+50° to +400°F	+10° to +200°C	2½" (6cm)	MA3002509	**15-060-122**	133.30
+50° to +400°F	+10° to +200°C	4" (10cm)	MA3004009	**15-060-130**	133.30
+50° to +400°F	+10° to +200°C	6" (15cm)	MA3006009	**15-060-138**	133.30
+50° to +400°F	+10° to +200°C	9" (23cm)	MA3009009	**15-060-146**	133.30
+50° to +400°F	+10° to +200°C	12" (30.5cm)	MA3012009	**15-060-154**	145.60
+50° to +500°F	+10° to +260°C	4" (10cm)	MA3004010	**15-060-131**	133.30
+50° to +500°F	+10° to +260°C	6" (15cm)	MA3006010	**15-060-139**	133.30
+50° to +500°F	+10° to +260°C	9" (23cm)	MA3009010	**15-060-147**	133.30
+50° to +500°F	+10° to +260°C	12" (30.5cm)	MA3012010	**15-060-155**	145.60
+200° to +1000°F	+100° to +540°C	2½" (6cm)	MA3002512	**15-060-124**	133.30
+200° to +1000°F	+100° to +540°C	4" (10cm)	MA3004012	**15-060-132**	133.30
+200° to +1000°F	+100° to +540°C	6" (15cm)	MA3006012	**15-060-140**	133.30
+200° to +1000°F	+100° to +540°C	12" (30.5cm)	MA3012012	**15-060-156**	145.60
5" diameter (127mm) dial					
0° to +250°F	-20° to +120°C	9" (23cm)	MA5009006	**15-060-183**	151.75

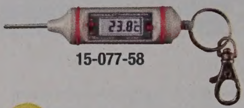
SPECIFICATIONS FOR ERTCO BACK-CONNECTED AND UNIVERSAL ANGLE THERMOMETERS

Range (F)	Subdiv.	Range (C)	Subdiv.
25 to 125°F	1°F	-5 to +50°C	0.5°C
0 to 200°F	2°F	-15 to +90°C	1°C
0 to 250°F	2°F	-20 to +120°C	1°C
50 to 400°F	5°F	10 to 200°C	2°C
200 to 1000°F	10°F	100 to 540°C	5°C

THERMOMETERS—DIGITAL

Fisher Scientific* Digital Thermometers with Stainless-Steel Stem

Easy-to-read handheld digital thermometers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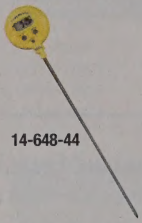
15-078L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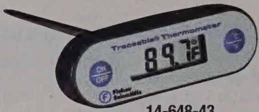
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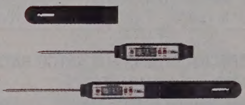
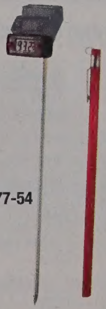
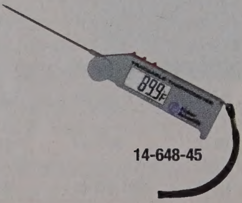
15-078D

14-648-12

15-077-61


15-078G


15-077-54


14-648-45

Stainless-steel stem is chemically resistant to acids, bases, solvents, and may be used to measure temperature of gases, food, and other semisolids.

- Short-stem piercing models are ideal for carrying in a pocket
- Longer probes are excellent for measuring sample temperatures while stirring in deep vessels or water baths
- Thermometers with longer sampling rates allow thermometer to be removed from sample before reading—ideal when display is difficult to read in measuring position

Range	Resolution/Accuracy	LCD Display
Stainless-Steel Stem		
-50° to +150°C -58° to +302°F	0.1°/±1°C	¼"H (6.4mm)
-50° to +150°C -58° to +302°F	0.1° from -20° to +200°/±1°C between -20° and +100°C	⅜"H (10mm)
-50° to +150°C -58° to +302°F	0.1° from -20° to +100°/±0.2°C (0.4°F) between -20° and +100°C (-4° and +212°F)	⅜"H (10mm)
-50° to +300°C -58° to +572°F	0.1° from -20 to +100°; 1° outside this range/±1°C between -20° and +100°C	¼"H (6.4mm)
-50° to +300°C -58° to +572°F	0.1° from -20 to +100°; 1° outside this range/±0.2°C between -20° and +100°C	¼"H (6.4mm)
-50° to +280°C -58° to +536°F	0.1° from -20 to +200°; 1° outside this range/±1°C between -20° and +100°C	¼"H (6.4mm)
-50° to +300°C -58° to +572°F	0.1° from -20 to +200°; 1° outside this range/±0.4°C between -20° and +100°C	¼"H (6.4mm)
Stainless-Steel Stem With Protective Guard		
-55° to +149°C	0.1°C/±1°C	⅜"H (10mm)
-55° to +149°C	0.1°C/±0.2°C	⅜"H (10mm)
-67° to +300°F	0.1°F/±1.8°F	⅜"H (10mm)
-67° to +300°F	0.1°F/±0.4°F	⅜"H (10mm)
-50° to +150°C -58° to +302°F	0.1° from -20° to +200°; 1° outside this range/±1°C	¼"H (6.4mm)
-50° to +150°C -58° to +302°F	0.1° from -20° to +200°; 1° outside this range/±0.2°C	¼"H (6.4mm)
-50° to +250°C -58° to +482°F	0.1° from -20° to +200°; 1° outside this range/±1°C	¼"H (6.4mm)
-50° to +250°C -58° to +482°F	0.1° from -20° to +200°; 1° outside this range/±0.5°C	¼"H (6.4mm)
-50° to +280°C -58° to +536°F	0.1° from -20° to +200°/±1°C between -20° and +100°C	¼"H (6.4mm)
-50° to +280°C -58° to +536°F	0.1° from -20° to +200°/±0.4°C between -20° and +100°C	¼"H (6.4mm)
-50° to +300°C -58° to +572°F	0.1° from -20° to +200°; 1° outside this range/±1.5°C	¼"H (6.4mm)
-50° to +300°C -58° to +572°F	0.1° from -20° to +200°; 1° outside this range/±0.4°C	¼"H (6.4mm)
Stainless-Steel Stem With Flip-Open Case		
-50° to +300°C -58° to +572°F	0.1° below +200°; 1° above +200°/±1°C between -20° and 100°C	¾"H (19mm)
-50° to +300°C -58° to +572°F	0.1° below +200°; 1° above +200°/±0.3°C between -20° and +100°C	¾"H (19mm)

*Trademark. See Trademark Reference.

APPLICATIONS:

- For use in cuvets, soil, incubators, petroleum products and foods
- Waterproof thermometers (see Models 14-648-43, -44 and -45) are ideal for wet labs, wash-down areas and field use

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Probe Dimensions	Features	Overall Dimensions	Cat. No.	Each
⅛ dia. × 1"L (3mm × 2.5cm)	**Traceable.** Dual range; split-ring key chain with snap hook; updates reading every second; ON/OFF; ABS case; comes with one-year silver-oxide battery.	¾ dia. × 3¾"L (1.9 × 9.5cm)	**15-077-58**	21.76
⅛ dia. × 5¼"L (3mm × 13.3cm)	**Traceable.** Dual range; updates reading every second; includes battery.	2⅛ dia. × 6½"L (5.4 × 16.5cm)	**15-078L**	35.11
⅛ dia. × 5¼"L (3mm × 13.3cm)	**Traceable.** Same as 15-078L.	2⅛ dia. × 6½"L (5.4 × 16.5cm)	**14-648-47**	39.07
⅛ dia. × 8"L (3mm × 20cm)	**Traceable.** Dual range; head mounted perpendicular to stem; Min./Max. memory; updates reading every second; waterproof; impact resistant from 5' (1.5m) drop; includes silver-oxide battery.	1½" dia. (head); 10.25"L (overall) (3.8cm; 26cm)	**14-648-44**	22.42
⅛ dia. × 8"L (3mm × 20cm)	**Traceable.** Same as 14-648-44.	1½" dia. (head); 10.25"L (overall) (3.8cm; 26cm)	**06-664-27**	44.92
3⁄16 dia. × 5"L (5mm × 20cm)	**Traceable.** Dual range; waterproof; stainless-steel piercing tip; includes battery.	9.5L × 3¼W × 1"H (2.5 × 8 × 24cm)	**14-648-43**	21.76
3⁄16 dia. × 8"L (5mm × 20cm)	**Traceable.** Same as 14-648-43.	9.5L × 3¼W × 1"H (2.5 × 8 × 24cm)	**06-664-35**	43.13
⅛ dia. × 4¾"L (3mm × 12cm)	**Traceable.** Updates reading every 10 seconds; Probe guard with pocket clip; comes with 18-month silver-oxide battery.	1½ dia. × 5½"L (4 × 14cm)	**15-078F**	26.66
⅛ dia. × 4¾"L (3mm × 12cm)	**Traceable.** Same as 15-078F.	1½ dia. × 5½"L (4 × 14cm)	**06-664-31**	43.13
⅛ dia. × 4¾"L (3mm × 12cm)	**Traceable.** Same as 15-078F.	1½ dia. × 5½"L (4 × 14cm)	**15-078D**	28.35
⅛ dia. × 4¾"L (3mm × 12cm)	**Traceable.** Same as 15-078F.	1½ dia. × 5½"L (4 × 14cm)	**06-664-30**	43.13
⅛ dia. × 8"L (3mm × 20cm)	**Traceable.** Dual range; always reading; updates reading every second; comes with one-year battery and protective case.	13⁄16 dia. × 11"L (2 × 28cm)	**15-078J**	30.70
⅛ dia. × 8"L (3mm × 20cm)	**Traceable.** Same as 15-078J.	13⁄16 dia. × 11"L (2 × 28cm)	**14-648-12**	40.56
⅛ dia. × 11⅜"L (3mm × 29cm)	**Traceable.** Same as 15-078J.	13⁄16 dia. × 14⅜"L (2 × 37cm)	**15-077-59**	29.94
⅛ dia. × 11⅜"L (3mm × 29cm)	**Traceable.** Same as 15-078J.	13⁄16 dia. × 14⅜"L (2 × 37cm)	**15-077-61**	42.86
⅛ dia. × 8"L (3mm × 20cm)	**Traceable.** Dual range; rotating head can be read in any position; folds flat; updates reading every 10 seconds; ON/OFF; probe guard; comes with 18-month silver-oxide battery.	9¼L × 1½W × ⅔"H (23.5 × 3.8 × 1.7cm)	**15-077-54**	26.34
⅛ dia. × 8"L (3mm × 20cm)	**Traceable.** Same as 15-077-54.	9¼L × 1½W × ⅔"H (23.5 × 3.8 × 1.7cm)	**06-664-32**	44.39
1⁄7 dia. × 3½"L (3.6mm × 89mm)	**Traceable.** Dual range; always reading; HOLD button freezes reading; updates every second; probe guard with pocket clip attaches to handle to extend length to 10¾" (27cm); comes with 1½-year battery.	⅝ dia. × 7"L (1.6 × 17.8cm)	**15-078G**	37.50
1⁄7 dia. × 3½"L (3.6mm × 89mm)	**Traceable.** Same as 15-078G.	⅝ dia. × 7"L (1.6 × 17.8cm)	**06-664-33**	44.39
3⁄16 dia. × 4½"L (5mm × 11.4cm)	**Traceable.** Dual range; probe folds into body; can be read with probe at any angle; updates reading every second; HOLD button freezes display; Min./Max. memory; waterproof; impact resistant from 5' (1.5m) drop; ABS case; includes one "AAA" battery.	⅝L × 1½W × 6"H (folded) (1.6 × 3.8 × 15.2cm)	**14-648-45**	24.36
3⁄16 dia. × 4½"L (5mm × 11.4cm)	**Traceable.** Same as 14-648-45.	⅝L × 1½W × 6"H (folded) (1.6 × 3.8 × 15.2cm)	**06-664-26**	43.75

Fisher Scientific* Traceable* Digital Thermometers with Short Sensors

Easy-to-read digital thermometers with epoxy-coated sensor

T° SENTRY
035
°C
Fisher Scientific

15-077-18

80°F
36°F 128°F

15-077-8D

TRACEABLE® THERMOMETER
91°F
MIN 72°F MAX 105°F
RESET

15-077-17A

Fisher Scientific
79.5°F IN
75.6°F OUT

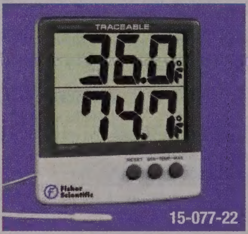
15-077-28

Fisher Scientific
TRACEABLE® THERMOMETER
90.3°F

15-077-20

TEMP ALARM
DUAL THERMO
TRACEABLE
82.2°F IN
82.2°F OUT

15-077-31


TRACEABLE
36.0°F
74.7°F

15-077-22

- Epoxy sensor with cable
- Select the correct temperature to use in water baths, refrigerators, incubators and tanks
- Choose from models with a variety of features including MAX/MIN function to record the maximum and minimum temperature in a certain time period; visual and audible alarms and multiple displays of recorded temperatures

Range	Resolution/ Accuracy	LCD Display	Probe Type
Celsius			
-50° to +50°C	1°/±1°C	½"H (13mm)	¼" dia. × 1¼"L (6 on 9' L (2.7m) cab
-50° to +70°C	1°/±1°C	Top: ½"H; Bottom: ⅓"H (Top: 13mm; Bottom: 8.5mm)	3⁄16" dia. (4.8mm) sensor on 10' L (3
-50° to +70°C	0.1°/±1°C	1⅛"H (29mm)	¼" dia. (5mm) D sensor on 3½'L (
-50° to +70°C	0.1°/±1°C	½"H (13mm)	¼" dia. (5mm) D sensor on 3'L (0.
Fahrenheit			
-58° to +158°F	1°/±1°C	Top: ½"H; Bottom: ⅓"H (Top: 13mm; Bottom: 8.5mm)	3⁄16" dia. (4.8mm) sensor on 10'L (3
-58° to +158°F	0.1°/±2°F	1⅛"H (29mm)	¼" dia. (5mm) D sensor on 3½'L (
-58° to +158°F	0.1°/±2°F	½"H (13mm)	¼" dia. (5mm) D sensor on 3'L (0.
Dual Scale			
-50° to +70°C -58° to +158°F	1°/±1°C	Top: ½"H; Bottom: ⅓"H (Top: 13mm; Bottom: 8.5mm)	3⁄16" dia. (4.8mm sensor on 10' lon
-50° to +70°C -58° to +158°F	0.1°/±1°C	½"H (13mm)	3⁄16" dia. (4.8mm sensor on 10'L (
-50° to +70°C -58° to +158°F	0.1°/±1°C	½"H (13mm)	3⁄16" dia. (4.8mm sensor on 10'L (
Combined			
-5° to +50°C† +23° to +122°F† -50° to +70°C -58° to +158°F	0.1°/±1°C	1⅛"H (29mm)	3⁄16" dia. (4.8mm sensor on 10'L (

† *Ambient sensor.*

APPLICATIONS:

Ideal for monitoring liquids, air/gas or semisolids

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

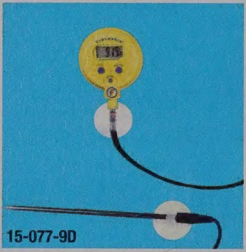
Features	Dimensions	Cat. No.	Each
Traceable. Ideal for cooling water systems, freezers and refrigerators; alarm set in 1° increments activates flashing red-LED light and sounds when temperature rises above setpoint; programmable DELAY button silences alarm for 15 to 120 minutes; alarm sounds soft reminder chirp every 30 seconds; supplied with Velcro* strip for mounting; battery powered.	5L × 4½W × 2"H (13 × 11 × 5cm)	**15-077-18**	279.61
Traceable. Simultaneously displays current, high and low temperature; HIGH/LOW memory reset button; low-battery signal; can shut refrigerator door on 1mm cable; supplied with probe-wire mounting bracket, plastic hanging hook, Velcro mounting tape, flip-open stand for lab bench and one "AAA" battery; ABS case.	2½L × 2⅝W × ¾"H (6.4 × 6.6 × 2cm)	**15-077-17B**	47.97
Traceable. Extra-large two-line display reads ambient and probe temperatures; four alarms—above or below a setting, between or outside two settings; alarm activates green/red lights and intermittent sounds until temperature returns to in-range conditions or until alarm is turned off; front-panel controls. Supplied with self-adhesive wall mount and flip-open lab bench stand; ABS case.	4L × 4W × ⅝"H (10.2 × 10.2 × 1.6cm)	**15-077-27**	39.08
Traceable. Two-line display reads ambient and probe temperatures; four alarms—above or below a setting, between or outside two settings; alarm activates green/red lights and intermittent sounds until temperature returns to non-alarm conditions or until alarm is turned off; front-panel controls. Supplied with self-adhesive wall mount and flip-open lab bench stand; ABS case.	3L × 3W × ½"H (7.6 × 7.6 × 1.3cm)	**15-077-30**	37.54
Traceable. Same as 15-077-17B.	2½L × 2⅝W × ¾"H (6.4 × 6.6 × 2cm)	**15-077-17A**	48.25
Traceable. Same as 15-077-27.	4L × 4W × ⅝"H (10.2 × 10.2 × 1.6cm)	**15-077-28**	39.08
Traceable. Same as 15-077-30.	3L × 3W × ½"H (7.6 × 7.6 × 1.3cm)	**15-077-31**	39.45
Traceable. Dual range; displays ambient or probe temperatures; three-line display of current, high and low readings permit unattended monitoring; set alarm in 1° increments; alarm sounds for 12 hours even if temperature returns to non-alarm conditions; Supplied with slot for wall mounting, Velcro mounting tape, lab bench stand and two "AA" batteries; ABS case.	4¼L × 2¾W × ¾"H (11 × 7 × 2cm)	**15-077-8D**	53.31
Traceable. Dual range; displays ambient or probe temperatures; MIN/MAX button; supplied with mounting bracket for probe; Velcro mounting tape, stand for lab bench and 1-year "AAA" battery; ABS case.	2L × 2½W × ½"H (5.1 × 6.4 × 1.3cm)	**15-077-8C**	45.11
Traceable. Dual range; updates every 10 seconds; solar powered with battery backup. Supplied with slot for wall mounting, Velcro mounting tape, or sits on lab bench; ABS case. External probe.	2¾L × 2¾W × ¾"H (7 × 7 × 2cm)	**15-077-20**	32.20
Traceable. Dual range; two-line display reads ambient and probe temperatures; MIN/MAX button; supplied with slot for wall mounting, Velcro mounting tape, and flip-open stand for lab bench; ABS case.	2¾L × 4¼W × ¾"H (7.0 × 10.8 × 0.6cm)	**15-077-22**	41.86

Fisher Scientific* Digital Thermometers with Stainless-Steel Probe on Cable

Stainless-steel probe is chemically resistant to most acids, bases and solvents

15-077-16

15-077-32


15-077-9D

15-077-8B

15-077-21

14-648-46

15-077-29

- Easy-to-read digital thermometers are compact to hold in your hand or mount on wall in restricted areas
- Stainless-steel probe may be used to measure temperature of gases, liquids, food, and other semisolids
- Models 15-077-16, -15, -21, -8B, -29 and 14-648-46 have alarm that can be set to alert user to temperatures that exceed setpoints
- Some models (such as 15-077-16 and -15) have special features that print temperature, high/low memory and time of day; 15-077-29 thermometer has additional timer alarms
- For a miniature-size thermometer, see model 15-077-32

Range	Resolution/Accuracy	LCD Display
Celsius		
-50° to +70°C	0.1°/±1°C	½"H (13mm)
-50° to +300°C -58° to +572°F	0.1°/±1°C	¼"H (6mm)
Fahrenheit		
-58° to +158°F	0.1°/2°F	½"H (13mm)
-50° to +300°C -58° to +572°F	0.1°/±1°C	¼"H (6mm)
Dual Scale		
-50° to +260°C -58° to +500°F	0.1°/±1°C or 1% of the reading	¾"H (19mm)
-50° to +150°C -58° to +302°F	0.1° between -20° and +200°/±1°C from 0° to +100°C	5⁄16"H (7.6mm)
-50° to +260°C -58° to +500.8°F	0.1°/±1°	½"H (13mm)
-50° to +300°C -58° to +572°F	0.1° between -20° to +200°; 1° outside this range/±1°C from -20° to +100°C	½"H (13mm)
0° to +200°C +32° to +392°F	1°/±2°C	Top: ⅝"H; Bottom: ½"H (Top: 17mm; Bottom: 13mm)

*Trademark. See Trademark Reference.

PLICATIONS:

use in cuvets, soil, incubators, petroleum products and piercing
d samples. Waterproof thermometers (Models 15-077-9E, -9D and
648-46) are ideal for wet labs, wash-down areas, and outdoor
lications in the agricultural, petrochemical, food, and pharmaceutical
stries.

CERTIFICATIONS:

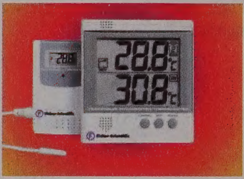
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Type	Features	Dimensions	Cat. No.	Each
. × 8"L (3mm × 20cm) stainless- robe on 4'L (1.2m) cable	**Traceable.** Updates every 10 seconds; prints temperature, high/low memory and time of day from 1 min. to <100 hours; meets CLIA 493.1205 requirements; comes with 10' paper roll, carrying case, and 4 "AA" batteries; ABS case; adapter available (order 11-661-17C).	8L × 3½W × 1¼"H (20 × 9 × 3cm)	**15-077-16**	425.01
. × 5"L (3.6mm × 11cm) stainless- robe on 10'L (3m) cable	**Traceable.** Waterproof; shockproof; comes with magnet, suction cups, and Velcro*; includes one-year silver-oxide battery.	2 dia. × ½"H (50 × 13mm)	**15-077-9E**	35.53
. × 8"L (3mm × 20cm) stainless- robe on 4'L (1.2m) cable	**Traceable.** Same as 15-077-16.	8L × 3½W × 1¼"H (20 × 9 × 3cm)	**15-077-15**	425.61
. × 5"L (3.6mm × 11cm) stainless- robe on 10'L (3m) cable	**Traceable.** Same as 15-077-9E.	2 dia. × ½"H (50 × 13mm)	**15-077-9D**	35.53
. × 4¼"L (3mm × 11cm) ess-steel probe on 4'L) cable	**Traceable.** Dual scales; HIGH/LOW alarm programmable in 1° increments; out-of-range condition activates audible and visual alarm; alarm shut-off switch; comes with soft pouch with shoulder strap and two alkaline "AAA" batteries; ABS case.	2½L × 6½W × 1"H (6.4 × 16.5 × 2.5cm)	**15-077-21**	134.79
. × 7"L (3mm × 17.8cm) stainless- robe on 18"L (45.7cm) cable	**Traceable.** Dual range; business-card size; three-switch operation—ON/OFF, °C/°F and HOLD fuctions; comes with silver-oxide battery.	3L × 2W × ½"H (7.6 × 5.1 × 1.3cm)	**15-077-32**	38.38
. × 7¼"L (3mm × 18cm) ess-steel probe on 3'L) cable	**Traceable.** Dual range; HIGH/LOW alarm programmable in 1° increments; temperatures exceeding set limits activate 1 min. audible alarm; automatic alarm reset when temperature returns to in-range condition. Runs without alarm mode; with "AAA" battery.	4L × 2W × ½"H (10 × 5.1 × 1.3cm)	**15-077-8B**	59.27
a. × 7½"L (5mm × 19cm) ess-steel probe on 22"L cm) cable	**Traceable.** Dual scales; stores up to 10 temperature readings; HIGH/LOW alarm programmable in 1° increments; out-of-range condition sounds 4 sec./min. until temperature is in-range or alarm is shut off; updates reading every second; waterproof; HOLD switch; comes with silver-oxide battery; ABS case.	6⅝L × 2⅞W × 1"H (16.8 × 7.3 × 2.5cm)	**14-648-46**	38.11
ia. × 8½L (4mm × 21.6cm) d stainless-steel probe on (1.1m) cable	**Traceable.** Dual scales; adjustable display for vertical and table mount; two-line display shows time remaining to zero, probe and alarm temperatures; distinct timer alarm (1 min. increments up to 24 hr.) activates 1 min. sound and TIMES UP display; HIGH temperature alarm programmable in 1° increments activates 5 min. of continuous sound followed by intermittent sound until shutoff or temperature falls below setpoint; Comes with one "AAA" battery; ABS base.	2¾L × 3W × ½"H (7 × 7.6 × 1.3cm)	**15-077-29**	39.23

Fisher Scientific* Traceable* Radio-Signal Remote Thermometer

Monitors temperature from a distance of 65 to 100' without wires or cables

Mount sensor module outdoors or inside a hood, incubator, refrigerator, or other storage facilities. Data transmits on a radio frequency of 433MHz to a main unit placed on a desk or lab bench. Receiver unit and module are housed in high-impact, chemical-resistant ABS plastic.



15-077-50

Receiver unit

- Battery operated
- Receives and displays data from up to three different remote sensor modules at one time
- Trend indicator shows rising or falling temperature changes, minimum and maximum display for short- or longer-term monitoring—alarm sounds when temperature rises above or below maximum or minimum setpoints
- Alarm setpoints adjustable in 1° increments
- Switch-selectable temperature ranges available: -50° to +70°C and -58 to +158°F
- Resolution, 0.1°; accuracy, ±1.5°C (±2.7°F)
- Dimensions: ⅝L × 4¼W × 4½"H (1.6 × 10.8 × 11.4cm); weight, 6 oz. (170g)
- Large 1⅛"H (3cm) digits can be read from up to 25'

Remote sensor module

- Splash-resistant
- Comes complete with internal sensor and submersible, plastic external sensor probe, 3⁄16 dia. × ⅞"L (0.5 × 2.2cm), with 10' (3m) cable
- Measures ambient temperature with internal sensor or displays external sensor probe plugged into side of module to monitor gas, liquid or semi-solid temperatures
- Select transmission channel with three-position switch on unit
- Data is transmitted to remote receiver unit every 30 seconds and displayed on ⅜"H sensor module LCD
- Dimensions: ¾L × 2⅓W × 3½"H (1.9 × 5.9 × 8.9cm); weight, 3 oz. (85g)

ORDERING INFORMATION:

May also be used with bottle-encased probe (15-077-53) or stainless-steel probe (15-077-52), available separately online. Additional sensor modules (15-077-51) available on our Web site.

INCLUDES:

Receiver unit; one sensor module with internal probe and plastic external probe with 10' (3m) cable; two each "AA" and "AAA" batteries; flip-open stand, wall bracket and Velcro* tape

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

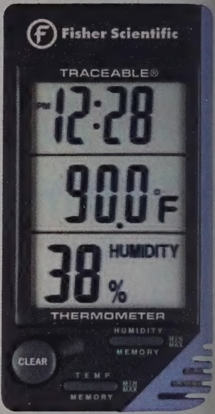
Range	Cat. No.	Each
-50° to +70°C/-58° to +158°F	**15-077-50**	69.29

Fisher Scientific* Traceable* Thermometer/Clock/Humidity Monitor

Measures ambient temperature, relative humidity and tells time

Easy-to-read LCD reports temperature with accuracy to ±1°C and resolution to 0.1°C/°F.

- Certificate
- Dual ranges: 0° to 50°C and 32° to 122°F
- Three-line LCD display with ½"H (13mm) digits
- Flip-down easel for desktop use
- Switch selectable Celsius or Fahrenheit readings
- Relative humidity range is 20 to 90%, resolution is 1% RH, and accuracy is ±4%
- Memory recalls highest and lowest temperature and humidity readings
- Clock shows time of day to the minute, with accuracy to 0.0190 seconds



06-662-4

APPLICATIONS:

Ideal for use in incubators, storerooms, drying chambers, hoods, cleanrooms, environmental cabinets, and general lab applications. Designed for easy operation, accuracy and reliability in industrial, educational, hospital and government labs.

ORDERING INFORMATION:

Overall dimensions: 4¼L × 2¼W × ½"H (10.8 × 5.7 × 1.3cm).

INCLUDES:

1.5V "AAA" battery

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-20° to +70°C/0° to +160°F	**06-662-4**	43.66

isher Scientific* Traceable* Refrigerator/Freezer larm Thermometer

Temperature-buffered" sensor—sealed in bottled lycol solution—provides accurate reading when reezer/refrigerator doors are open

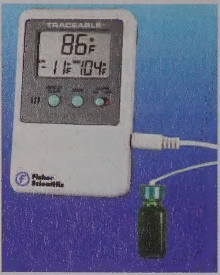
- Monitors temperature in freezers, refrigerators, incubators, water baths, and heating blocks
- Triple display simultaneously shows current, high, and low temperatures
- Alarm (on 06-664-11 only) set in 1° increments alerts user with visual and audible signals if temperature goes outside setpoints
- 10' long (3m) microcable
- Dimensions: 4¼L × 2¾W × ¾"H (11 × 7 × 2cm)

INCLUDES:

Velcro* and magnetic mounting strip; one "AA" battery; ABS plastic case

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.



06-664-11

Range	Resolution	Accuracy	Cat. No.	Each
Celsius				
-40° to +50°C	0.1°	±0.5°C	**06-664-23**	51.25
Dual Range				
-50° to +70°C/-58° to +158°F	1°	±1°C	**06-664-11**	47.14

isher Scientific* Traceable* Noncontact Infrared Thermometers

ortable thermometers measure infrared surface emperatures with view fields of 6:1 to 8:1

a unit has a view field of 7:1, and the thermometer is held 14" from bject, it reads infrared radiation emitting from a 2" dia. spot.

- Switch to view either Celsius or Fahrenheit scales
- Laser sighting beam permits aiming precisely at the target surface
- 15-077-57 and 06-664-39 assure accurate measurements using adjustable control to account for differences in surface infrared emissivity of objects
- One-second sampling, backlighting button, data hold, low-battery indicator and dual ranges

PPLICATIONS:

deal for petroleum, electronics, plant and field use

NCLUDES:

V battery; 06-664-38 comes with wrist strap

ERTIFICATIONS:

ndividually serial-numbered Traceable Certificate is provided from an SO 17025 calibration laboratory accredited by A2LA; indicates traceability o standards provided by NIST*.

15-077-57

06-664-39

06-664-38

ange	-10° to +300°C/+14° to +572°F	-20° to +420°C/0° to +788°F	-60° to +500°C/-76° to +932°F
esolution	0.1°	1°	1°
ccuracy	±3% of reading or 3°C	±2% of reading or 2°C	±2% of reading or 2°C
ield of View	7:1	6:1	11:1
eatures	L-shaped gun design, minimum/maximum temperature memory	Minimum/maximum temperature memory, high/low audible alarm, average and differential reading modes	L-shaped gun design, assumes a fixed emissivity of 0.95
imensions	4¾L × 2⅜W × 7¾"H (12.1 × 5.9 × 19.7cm)	1¼L × 2W × 6"H (3.2 × 5.1 × 15.2cm)	1½L × 3W × 7"H (3.8 × 7.6 × 17.8cm)
at. No.	**15-077-57**	**06-664-39**	**06-664-38**
ach	326.06	123.74	105.08

Fisher Scientific* Traceable* Infrared Thermometer Gun

Takes instant, less-than-a-second, temperature readings of any surface

- Unique design permits one-handed "point and shoot" readings
- Laser-sighting beam permits aiming precisely at target surface
- Ideal for food preparation, pharmaceuticals, field use, electronics, and safety inspection
- Field of view is 50:1 (example: reads a spot the size of 6 inches from 25 feet away)
- Includes backlighting, data hold (freezes display reading), laser, low-battery indicator, and °C/°F buttons
- 15-077-970 also features min/max memory, average readings, and high/low alarms
- Range is -50° to +1000°C/-58° to +1832°F
- Resolution is 0.1° to 200°, 1° over 200°; accuracy, ±1.5% + 2°C

15-077-969 15-077-970

ORDERING INFORMATION:
Dimensions: 9 × 4 × 2¼" (22.9 × 10.2 × 5.7cm). Weight: 10 oz.

INCLUDES:
9V battery

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Description	Cat. No.	Each
Emissivity fixed at 0.95	**15-077-969**	207.04
Emissivity adjustable from 0.10 to 1.00 in 0.01 steps	**15-077-970**	259.06

Fisher Scientific* Traceable* Infrared Thermometer with Pocket Clip

Pocket IR thermometer with simple point-and-shoot operation

Easy to use—just turn it on, point at sample, and take a reading in less than a second.

15-077-966

- Units read both Fahrenheit and Celsius of any surface—solids, semisolids, and liquids
- Noninvasive, no-touch, measurements are ideal for food preparation, life sciences, pharmaceuticals, petroleum products, cleanrooms, electronics, and field use
- "HOLD" command freezes the display at the current reading
- Field of view is 1:1
- Display indicates low battery
- Fixed emissivity of 0.95 covers 90% of all applications
- Resolution, 0.1°; accuracy, ±1°C + 2%

ORDERING INFORMATION:
Dimensions: 3¼ × ¾" (8.3 × 1.9cm). Weight: ¾ oz.

INCLUDES:
Handy pocket clip, key-chain strap, batteries

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-33° to +220°C/-27° to +428°F	**15-077-966**	36.68

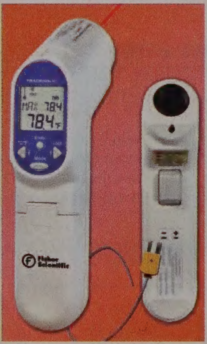
Fisher Scientific* Traceable* Infrared Thermometer with Trigger Grip

Instantly reads both Fahrenheit and Celsius for any surface, including solids, semisolids, and liquids

- Simple operation—point at sample and take a reading in less than a second
- Noninvasive, no-touch, measurements are ideal for food preparation, life sciences, pharmaceuticals, petroleum products, cleanrooms, electronics, and field use
- Thermocouple jack may be used for reading all Type K thermocouples
- Resolution, 0.1°; accuracy, ±1°C + 2%

Special Features

- Minimum/maximum feature permits viewing highest and lowest readings at any time
- Displays the average of all readings made and the difference between two readings
- Audible, user settable, high and low alarms signal out-of-range conditions



15-077-968

- "Hold" function freezes display at the current reading
- Backlighting permits viewing in low-light conditions; low-battery indicator
- Memory permits recalling individually captured temperatures

ORDERING INFORMATION:
Dimensions: 7 × 2¾ × 1½" (18 × 7 × 3.8cm). Weight: 6 oz. (0.2kg).

INCLUDES:
Batteries

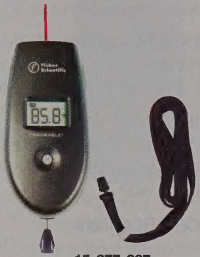
CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-60° to +500°C /-76° to +932°F	**15-077-968**	118.60

Fisher Scientific* Traceable* Infrared Thermometer with Wristband

Noninvasive, no-touch, measurements

Ideal for food preparation, life sciences, pharmaceuticals, petroleum products, cleanrooms, electronics, and field use.



15-077-967

- Simple to use: turn on, point at sample, and take reading in less than a second
- Reads Fahrenheit and Celsius of any surface—solids, semisolids, and liquids
- Hold command freezes the display at the current reading
- Emissivity of 0.05 to 1.00 in .01 steps covers 90% of all applications
- Minimum and maximum feature permits viewing highest and lowest readings at any time
- Laser beam pointer permits perfect sample target sighting
- Display indicates low battery
- Resolution: 0.1°
- Accuracy: ±1°C + 2%
- Field of view is 6:1

ORDERING INFORMATION:
Dimensions: 4 × 2 × ¾" (10.2 × 5 × 1.9cm).
Weight: 2¼ oz.

INCLUDES:
Handy wristband, batteries

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-55° to +250°C /-67° to +482°F	15-077-967	62.68

Fisher Scientific* Mini IR Traceable* Thermometers

Pocket-size infrared thermometer captures temperature readings of any surface—liquids, solids and semisolids—in less than a second

Operation is simple—turn it on, point at sample and take reading. Noninvasive, "no-touch" temperature measurements are ideal for food preparation, life sciences, field use, cleanrooms, and for fast inspections.

72.3°F
TRACEABLE
Mode

02-401-1

- Easy-to-read, ½"-high digital display
- Sophisticated, break-through NASA-type microelectronics
- Soft-touch keys, flip-open stand, key chain
- Switchable °C/°F, hold, minimum only/maximum only readings, continuously on mode
- Low-battery alert, and battery with 40 continuous hours life
- Resolution: 0.1°
- Accuracy: ±1°C between 15.0° to 40.0°C and ±1.5°C outside of this range
- Field of view is 1:1; emissivity is fixed at 0.95

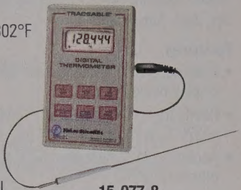
ORDERING INFORMATION:
Dimensions: 2½ × 1½ × ½" (6.4 × 3.8 × 1.3cm).
Weight: 1 oz.

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-22° to +110°C/-7° to +230°F	02-401-1	37.43

Fisher Scientific* Traceable* Digital Thermometers

Ideal for routine measurements with semisolid, liquid, or air/gas



15-077-8

- Switch-selectable temperature ranges: -50° to +150°C and -58° to +302°F
- Accuracy is ±0.05°C and ±0.09°F
- Resolution: 0.001°
- Easy-to-read ½"H (13mm) LCD, a MIN/MAX memory
- HOLD button, and datalogger with 50 readings and an RS-232 port
- Optional fast-response, stainless-steel, triple-purpose probe; readings are updated three times per second

ORDERING INFORMATION:
Also available without probe, so you can choose YSI Series 400 probes that meet your exact requirements. (Order additional YSI probes separately; contact your Fisher Scientific Customer Service Representative.) Accessory adapter also available.

INCLUDES:
Replaceable 9V alkaline battery; high-impact, chemical-resistant ABS plastic case

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Description	Cat. No.	Each
Accepts general-purpose probe (supplied with probe)	15-077-8	466.01
Accepts YSI* Series 400 probes (supplied without probe)	15-078-1	457.85
Accepts YSI Series 400 probes (supplied with probe)	15-078-2C	486.08

ACCESSORIES

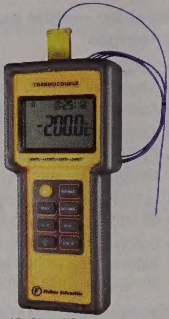
Additional Probes for 15-077-8

Probe	Cat. No.	Each
General purpose probe. Stainless-steel, triple-purpose replacement probe for 15-077-8. ⅛ dia. × 8½"L (3mm × 21.6cm). Cable is 5'L (1.5m).	15-077-7	73.72
Micro stainless-steel probe. For air/gas, liquids, and semisolids; 0.05 dia. × 5"L (1mm × 12.7cm). Cable is 54"L (137cm).	15-077-9A	116.25
Surface probe. With aluminum, flat disk-end probe on stainless-steel tube. 0.32 dia. × 6"L (8mm × 15.2cm). Cable is 70"L (178cm).	15-077-9B	115.56
Air probe. With stainless-steel, multi-vented cylinder probe. 0.13 dia. × 6½"L (0.33 × 16.5cm). Cable is 72"L (183cm).	15-077-9C	79.95

Fisher Scientific* Traceable* Total-Range Thermometer

Technologically advanced, pocket-size thermometer with water-resistant case

Constructed of shock-resistant ABS plastic, thermometer is designed for rough handling. Water-resistant case with O-ring gasket stops dirt, dust, fumes, and water.



15-077-14

Features

- Fast-response microprocessor updates display twice a second
- Reads from -328° to +2498°F and -200° to +1370°C, with resolution of 0.1° and 1°
- Accuracy: ±1°C between -50°C to +740°C; otherwise ±2°C
- Jumbo-size, ⅝" digits; back-lighting button
- HOLD button freezes display to capture current reading

Functions

- Switches from °F to °C at the touch of a button
- Recalls minimum and maximum temperature readings captured during any time
- Alarm sounds when temperature rises above or falls below high/low setpoints
- Countup timer alarm may be set from 23 hours, 59 minutes to 1 minute

ORDERING INFORMATION:
Dimensions: 7L × 3¼W × 1½"H (17.8 × 8.3 × 3.8cm). Weight: 8 oz. (227g). Uses all Type-K thermocouple probes.

INCLUDES:
PVC protective casing with flip-out stand; three "AAA" batteries; power unit for one year of routine use; Type-K beaded probe with 4' long (1.2m) cable

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

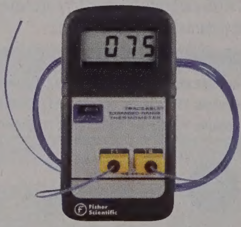
Range	Cat. No.	Each
-200° to +1370°C/-328° to +2498°F	**15-077-14**	114.98

Fisher Scientific* Traceable* Expanded-Range Thermometers

Shockproof, pocket-size thermometers are ideal for lab, plant, and field use

Expanded range, fast response and one-switch operation make them the perfect routine thermometers.

- Resolution: 1°
- Typical accuracy is ±(1°C + 1%)
- Two models are available in either °C or °F
- Range of Celsius model is -40° to +1200°C; range of Fahrenheit model is -40° to +2000°F



15-077-10

ORDERING INFORMATION:
Dimensions: 5L × 3W × 1"H (12.7 × 7.6 × 2.5cm). Probe cable length: 4' (1.2m).

INCLUDES:
9V battery; two fast-response Type-K beaded sensors for measurements up to 250°C (482°F) continuous and 300°C (572°F) short term (for replacement, order 15-077-45)

REQUIRED ACCESSORIES:
For measurements up to 700°C (1292°F), use the Type-K Triple-purpose Accessory Probe (15-078-2B).

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-40° to +1200°C	**15-077-11**	111.05
-40° to +2000°F	**15-077-10**	111.05

Fisher Scientific* Traceable* Wide-Range Thermometer

Certified traceable for ISO 9000 and other requirements

- With thermocouple sensor
- Low-battery indicator; high- and low-peak memory
- Extra-wide, switch-selectable temperature ranges: -212° to +1200°C and -350° to +2200°F
- Accuracy is ±1°C and ±1.8°F
- Resolution: 0.1°C or °F from -99.9 to +999.9°, 1° elsewhere

81.9
DIGITAL THERMOMETER
Fisher Scientific

15-078-2

ORDERING INFORMATION:
Chemical-resistant, high-impact ABS plastic case measures 3½L × 1¼W × 5½"H (8.9 × 3.2 × 14cm). Supplied probe is ⅛ dia. × 9"L (3.2mm × 23cm), with 40"L (102cm) cable; for replacement probe, order 15-078-2B. Also accepts low-cost Type-K Beaded Probe (15-077-45). Accessory probe for surface measurements also available. See 15-078-2A.

INCLUDES:
9V battery; 115VAC 60Hz adapter for continuous use; stainless-steel, triple-purpose Type-K thermocouple probe with handle for semisolid, liquid or air/gas systems

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-212° to +1200°C/-350° to +2200°F	**15-078-2**	670.88

*Trademark. See Trademark Reference.

Fisher Scientific* Traceable* Thermometer with Recorder Output

Recorder output provides hard copy for QC documentation

- Recorder output provides a 1mV signal per degree, which enables thermometer to be used with any chart recorder, strip recorder, or computer that accepts mV signals
- Range is -50° to +1300°C and -58° to +1999°F with an accuracy of ±0.3% of the reading plus 1°C
- Resolution is 0.1° from -50° to +199.9° and 1° for all other readings
- MAXIMUM button captures highest reading
- HOLD button freezes display to capture current reading
- Portable, measures 2¾L × 5¼W × 1¼"H (7 × 13 × 3cm)

Fisher Scientific
MAX
142.4
TRACEABLE
MAX
HOLD
°C/°F
Type K THERMOMETER

15-078-38

APPLICATIONS:

Ideal for monitoring chambers, cleanrooms, food processing, laboratories, and all temperature-sensitive manufacturing operations.

ORDERING INFORMATION:

Uses all Type-K thermocouple probes. For accessory stainless-steel Type-K probe with handle, see 15-078-2B.

INCLUDES:

9V battery; Type-K beaded probe with 4' long (1.2m) cable (for replacement, order 15-077-45)

CERTIFICATIONS:

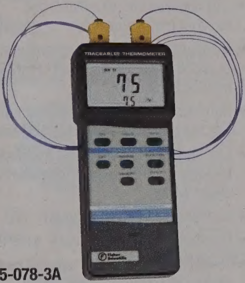
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-50° to +1300°C/-58° to +1999°F	**15-078-38**	134.78

Fisher Scientific* Traceable* Dual-Channel Thermometer

Displays simultaneous readings from two probes as well as the difference in the two readings

- Digital display shows temperatures in °C or °F
- Ranges are -50° to +1300°C and -58° to +1999°F
- Accuracy is 0.3% plus 1°C/1.5°F
- Resolution is 0.1° below 200°C or °F, 1° above 200°C or °F
- HOLD switch freezes the display to capture current reading
- ABS plastic case is chemical and shock resistant with flip-open bench stand



15-078-3A

APPLICATIONS:

Ideal for checking temperature variations in incubator or oven, temperature gradient in water bath, or inlet/outlet temperatures in any system.

ORDERING INFORMATION:

Dimensions: 7L × 3W × 1¼"H (19 × 7.6 × 3cm). May be used with any Type-K probe. For accessory stainless-steel Type-K probe with handle, see 15-078-2B.

INCLUDES:

Two Type-K beaded probes with 4'L (1.2m) cables; 9V alkaline battery.

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

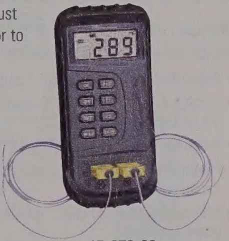
Range	Cat. No.	Each
-50° to +1300°C/-50° to +1999°F	**15-078-3A**	196.56

Fisher Scientific* Traceable* Dual-Channel Thermometer with Offsets

Features recessed front panel with adjustable offsets on two channels

Increases accuracy because you can adjust thermometer to a specific temperature or to a particular sensor.

- With ⅝" high (16mm) easy-to-read digital display
- Display can show temperatures of probe 1, probe 2, or the difference of the two probes in °C or °F
- Ranges are -50° to +1300°C and -58° to +1999°F
- Accuracy is ±0.3% plus 1°C/1.5°F; resolution is 1°C or °F
- MAXIMUM button displays highest reading achieved; HOLD button freezes the display to capture current reading
- Immediate-response probes show temperature changes in less than a second



15-078-39

ORDERING INFORMATION:

Measures 5¼L × 2¾W × 1¼"H (13.3 × 7 × 3.2cm). For replacement Type-K beaded probe, order 15-077-45. For accessory stainless-steel Type-K probe with handle, see 15-078-2B.

INCLUDES:

Two Type-K beaded probes with 4' (1.2m) cable lengths; 9V alkaline battery; Velcro* wrist strap, stand for use at lab bench, and rubberized case

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST.

Range	Cat. No.	Each
-50° to +1300°C/-58° to +1999°F	**15-078-39**	160.48

ACCESSORIES

Type-K Digital Thermometer Probes

For use with all Fisher Scientific* Type-K Digital Thermometers including 15-077-10, -11, -14, -26 and 15-078-2, -3A, -3B and -39.

Type-K Beaded Probe

- Fast-response Type-K thermocouple beaded 1/16" diameter (1.6mm) probe for use with all Type-K thermometers in liquids, semisolids, and air and other gases
- PTFE-resin coated 4' (1.2m) cable
- Probe's temperature range is -40° to +250°C continuous and up to 300°C short term

Type-K Triple-Purpose Probe

- For temperature measurements from -50° to +700°C (-45 to +1300°F)
- Ideal for lab, plant, and field use—wherever liquids, air/gas and semisolids are routinely monitored
- Heavy-duty, stainless-steel probe with handle has a diameter of ⅛" (3mm) and length of 9¾" (248mm)
- With 40"L (102cm) cable

15-077-45

Surface Probe

- Stainless-steel Type-K thermocouple (NiCr/NiAl)
- Spring loaded
- Fast response with time constant of one second
- Universal keyed connector and non-heat-conductive handle
- Probe length (including handle) × diameter: 9 × ⅛" (140mm × 3mm)
- Cable length: 36" (91cm); temperature range is -73° to +760°C

15-078-2B

Description	Cat. No.	Each
Type-K Beaded Probe	15-077-45	25.65
Type-K Triple-Purpose Probe	15-078-2B	56.58
Surface Probe	15-078-2A	170.00

Fisher Scientific* Traceable* RTD Platinum Thermometer

High-precision, durable thermometer with platinum RTD probe, and linear "fuzzy logic" chip for wide temperature-range operation

Platinum (100ohm) four-wire RTD probe can be used in liquids, air/gas, and semisolids.

- Resolution: 0.01° below 200° and 0.1° above 200°
- Accuracy: ±0.1% plus 0.2°C below 200°, ±0.15% plus 0.5°C above 200°
- Probe range: -58° to +752°F (-50° to +400°C)
- Features HOLD button to freeze display and capture reading
- Fail-safe display indicates low-battery and probe condition
- Easy-to-read, high-contrast LCD with ½"H (1.3cm) digits
- Readings are updated 2½ times every second

157.29
TRACEABLE THERMOMETER

15-077-55

APPLICATIONS:

- Ideal for experimental applications and in severe environments
- Reproducible one-button operation minimizes operator error in quality control environments
- Use to measure temperatures in soil, foods, ovens, cuvets, gas systems, reagents, water baths, wastewater, incubators, chemical solutions, petroleum products, and extreme cold

ORDERING INFORMATION:

Unit dimensions: 1¼L × 3W × 7"H (3.2 × 7.6 × 17.8cm). Weight: 9.5 oz. (269g). Probe measures 6"L; overall length, 12".

INCLUDES:

9V battery and probe with 40" (102cm) cable

CERTIFICATIONS:

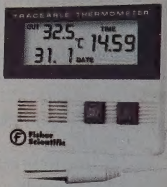
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-50° to +400°C/-58° to +752°F	15-077-55	274.95

Fisher Scientific* Traceable* Thermomete with Time/Date, Max/Min Memory

Shows exact time and date when minimum and maximum temperature occurred

- Displays current, minimum, and maximum temperatures
- Display shows min/max of ambient or probe temperature, time of day, and month/day
- Submersible probe; wire mounting bracket permits easy probe placement
- Stainless-steel sensor and 6' (1.8m) cable perform accurately even when both are under water
- Sensor diameter: 3/16"; length: 1½"
- Resolution is 0.5°; accuracy, ±1.5°C
- 15-077-976 comes with special bottle probe specifically for refrigerator/freezer applications



14-648-26

APPLICATIONS:

Perfect for long-term recording. Ideal for monitoring solutions, refrigerators, and room temperature.

ORDERING INFORMATION:

Replacement battery is Cat. No. 02-440-3A. Dimensions: 3½L × 3½W × 1"H (8.9 × 8.9 × 2.5cm).

INCLUDES:

Flip-open stand for benchtop use, slot for wall mounting, Velcro* to attach to any surface, and "AAA" battery for continuous one-year monitoring. High-impact ABS plastic case measures 3 9/16 × 3 9/16 × 15/16"; weight is 3½ oz.

CERTIFICATIONS:

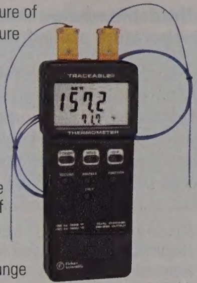
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST.

Range	Cat. No.	Each
Thermometer Only		
-40° to +80°C/-40° to +176°F	14-648-26	31.75
Thermometer with Bottle Probe		
-40° to +80°C/-40° to +176°F	15-077-976	34.06

*Trademark. See Trademark Reference.

Fisher Scientific* Traceable* Double Thermometer with Computer Output

Monitors two Type-K probes on separate channels



15-077-26

Jumbo 1⅜"H (3.5cm) LCD displays temperature of oth probes simultaneously, or the temperature f one probe and the difference between robes. Dual readings displayed with the emperature of probe 1 in ½" (1.3cm) digits tacked over that of probe 2 (or the T1-T2 ifferential) in ¼" (0.6cm) digits.

- Comes with two Type-K beaded thermocouple probes with a response time of less than one second and 48" (1.22m) of PTFE-coated cables
- Includes switch-selectable Celsius and Fahrenheit scales; operates over a wide range of -50 to +1230°C and -50 to +1999°F
- Resolution: 0.1° below 199.9°C/°F and 1° over 200°C/°F
- Accuracy: ±0.75% plus 1°C (±0.75% plus 2°F)
- Housed in durable, impact-resistant ABS plastic case
- Features maximum, minimum and average memory recalls
- HOLD button to freeze display and capture reading
- Serial RS-232 port connects thermometer to computer or datalogger for data collection

ORDERING INFORMATION:
Dimensions: 1¼L × 3W × 7"H (3.2 × 7.6 × 17.8cm). Weight: 9.5 oz. (269g). Can be used with Fisherbrand* Stainless-Steel Probe (15-070-2B) and Surface Probe (15-078-2A), available separately. Can also be used with Fisher Scientific Datalogger (06-662-72) and Data Acquisition System (11-661-22), available separately (contact your Fisher Scientific Customer Service Representative).

INCLUDES:
Two Type-K beaded probes and 9V battery

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-50° to +1230°C/-50° to +1999°F	**15-077-26**	197.83

Fisher Scientific* Traceable* Full-Scale Thermometers

Stainless-steel probe with piercing tip allows constant exposure to extreme temperatures at the end of the range

15-077-23

06-664-34

- Switchable °F/°C temperature ranges
- Readings are updated every second and displayed on a ⅜" LCD readout
- Magnetic back allows placement on metal surfaces (incubators, freezers, water baths)
- Flip-open easel allows use on lab bench; spring fastener clips onto any edge
- Resolution, 0.1° from -20 to +200 and 1° elsewhere
- Measure just 2⅛ dia. × 9⁄16" depth (5.3 × 1.3cm)
- Probe dia. × L: 0.14 × 5½" (0.4 × 14cm)
- Cable length: 10'

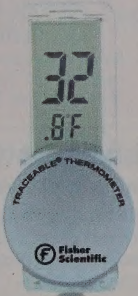
INCLUDES:
1.5V silver-oxide battery for 1½ years of continuous use. Plus model also includes high/low alarm, minimum/maximum memories, and hold.

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Description	Range	Accuracy	Cat. No.	Each
Full-Scale	-50° to +250°C/ -58° to +500°F	±1°C between -20° and +100°C	**15-077-23**	47.53
Full-Scale Ultra	-50° to +250°C/ -58° to +500°F	±0.5°C between -20° and +100°C	**15-077-940**	48.31
Full-Scale Plus	-50° to +300°C/ -58° to +572°F	±1°C between -20° and +100°C	**06-664-36**	43.61
Full-Scale Plus Ultra	-50° to +300°C/ -58° to +57C°F	±0.5°C between -20° and +100°C	**06-664-34**	54.56

Fisher Scientific* Econo Traceable* Refrigerator Thermometer

Inexpensive refrigerator thermometer with easy-view display



15-077-944

- Switchable °F/°C temperature range
- Always-hold* suction cup allows secure placement anywhere inside refrigerator; also supplied with Velcro*
- Display updates every 30 seconds; allows capture of reading without any effect from open refrigerator door
- Wide range of thermometer makes it ideal for monitoring temperatures in storerooms, labs, offices, hoods, and cabinets
- Easy-view, LCD digit height is ½"
- Accuracy is ±1°C in the range of 0 to 25°C and ±1.5°C outside range; resolution of 0.1°

ORDERING INFORMATION:
Dimensions: 1 × 2½ × ⅜" (2.5 × 6.4 × 1.1cm); weight: ½ oz.

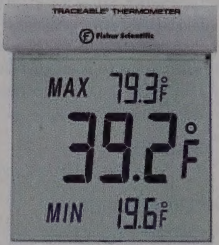
INCLUDES:
Long-life, 1.5V silver-oxide battery

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-9.9° to +55.0°C/14.2° to 131.0°F	**15-077-944**	13.59

Fisher Scientific* Traceable* Big-Digit See-Thru* Thermometer

May be attached to the outside of a window to view outdoor temperatures



15-077-959

- Use outdoors, in storerooms, fume hoods, labs, cleanrooms, refrigerators, and plant areas
- Window mount; wall mount
- Transparent display with 1¼" high digits shows current and minimum/maximum temperatures
- Automatically clears and updates the min/max readings daily
- Accuracy, ±1°C; resolution, 0.1°

ORDERING INFORMATION:

Dimensions: 3½ × 4¼ × ¾" (8.9 × 10.8 × 1.9cm); weight: 8 oz.

INCLUDES:

Mounting tape, Velcro*, "AAA" battery

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST.

Range	Cat. No.	Each
-13.0° to +158.0°F	**15-077-959**	24.09
-25.0° to +70.0°C	**15-077-960**	24.09

LOOKING FOR TEMPERATURE CONTROLLERS AND RECORDERS?

For a wide selection of Temperature Controllers and Recorders including the Fisherbrand* Exact-Temp* Dataloggers and Fisherbrand* Traceable* Temperature Chart Recorders, see the Recorders section.

Fisher Scientific* Traceable* Digital Thermometer with Stainless-Steel Probe

Affordable routine thermometer monitors temperature around the clock

139.4
digi-thermo
Fisher Scientific

15-077-8A

For nonstop monitoring. With convenient high and low alarms, thermometer automatically "watches" solutions. At the touch of a button, display temperatures, switch from °F to °C, or set high/low alarms. Use in foods, soils, cuvets, water baths, wastewater and incubators.

- Can be programmed in 1° increments, producing an audible signal when temperature rises above or falls below setpoints
- Resolution is 0.1°, accuracy is ±1°C
- Alarm mode may be switched off when not required
- Probe clips to unit for handy storage
- Single battery runs continuously for one year
- ½" display is readable from 10'

ORDERING INFORMATION:

Dimensions: 2 × 4 × ½" (5 × 10.2 × 1.3cm). Probe dia. × L: 0.14" × 7¼". Cable length: 3' (0.91m). Weight: 3 oz. (85g).

INCLUDES:

Probe, "AAA" battery, flip-open stand for bench use

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability for temperature only to standards provided by NIST*.

Range	Cat. No.	Each
-50° to +260°C/-58 to +500.8°F	**15-077-8A**	61.85

Fisher Scientific* Traceable* Kangaroo* Thermometer

Carries its 42" probe cable in a reel-compartment "pouch" located in back of unit

Perfect carry-around portable thermometer fits in shirt pocket, or use the built-in stand with a bench footprint of only 4½ square inches.

NEW
Fisher Scientific
21.4C

14-649-79

- Intuitive operation allows every user to record identical results
- Unit automatically captures and recalls minimum and maximum temperature readings over any time period
- High and low alarm may be programmed in 1° increments
- Alarm sounds every minute until temperature returns to non-alarm condition
- Hold button freezes display to record a current reading
- Stainless-steel probe for use in acids, bases, and solvents

Specifications

- Range: -50.0 to +300°C and -58.0 to +572°F
- Resolution: 0.1° (between -19.9 and +199.9), otherwise 1°
- Accuracy: ±1°C (between -30 and +250°C), otherwise ±2°C
- Probe diameter: 0.14"; length, 7½"
- Large ¾" digits are readable from 20'
- Compact size is 4¾L × 2½W × ½"H (12 × 6.4 × 1.3cm)
- Weight: 2¾ oz.

INCLUDES:

Silver-oxide battery—runs continuously for one year

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-50° to +300°C/-58 to +572°F	**14-649-79**	29.18

*Trademark. See Trademark Reference.

Fisher Scientific* Traceable* Pocket-Size K Thermometer NEW

Shockproof, pocket size thermometer is ideal for lab, plant, and field use

Wide-range, fast-response, and one-switch operation make it the perfect routine thermometer.

- Compatible with all Type-K probes
- New microchip design for ultralow cost
- Battery provides 150 to 200 hours continuous use
- Range is -50 to +750°C or -58 to +1382°F
- Resolution of 1°; accuracy of ±(1°C + .75%) between 0 to 500°C and ±(1°C + 1%) 500 to 750°C
- Below 0 accuracies are: -20°C ±2°C, -40°C ±4°C, and -50°C ±5°C

14-649-80

ORDERING INFORMATION:
Dimensions: 4¼L × 2¾W × ⅞"H (10.8 × 7 × 2.2cm). Weight: 4 oz. (113.4g).

INCLUDES:
Type-K probe with beaded sensor, 4-foot cable, leatherette case, and 9V battery

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

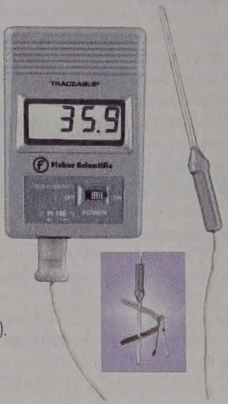
Range	Cat. No.	Each
-58° to +1382°F	**14-649-80**	25.55
-50° to +750°C	**14-649-81**	25.55

Fisher Scientific* Traceable* RTD Platinum Freezer Thermometer

-100°C, platinum thermometer designed for freezers

Accurately monitors temperatures in freezers, water baths, heating blocks, incubators, and refrigerators.

- Ten-foot, ultra-thin, ribbon micro-cable permits freezer doors to close on it without affecting the seal
- Fast-response, 100 ohm platinum probe is triple purpose for use with liquids, air/gas, and frozen material
- RTD platinum probe measures ⅛ dia. × 5"
- Resolution, 0.1°; accuracy, ±2°C



15-077-961

ORDERING INFORMATION:
High-impact, chemical-resistant ABS case is 2¾ × 4¼ × ¾" (7 × 10.8 × 1.9cm). Weight: 4¼ oz.

INCLUDES:
Adjustable probe holder, probe carrying case, 9V battery, Velcro*, and magnetic strips for mounting of thermometer and probe.

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-99.9° to +199.9°C	**15-077-961**	52.43

Fisher Scientific* Traceable* Sentry* Thermometer with Bottle

Triple display simultaneously shows high, low, and current temperatures

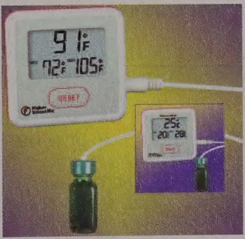
Allows you to instantly view if freezer, water bath, or incubator is within temperature spec. Monitor temperature of any experiment when you're not there—overnight, weekends, even during lunch.

Features

- Simple, one-button operation resets high/low memories
- Probe's wire mounting bracket permits easy sensor placement
- ABS plastic case has flip-open stand, wall hanging hook, magnet, and Velcro* mounting tape
- Low battery is signaled on display
- Resolution, 1°; accuracy, ±1°C

Micro cable for sealed spaces

- Sensor and 10' (3m) cable may be placed under water, in refrigerator, or freezer
- Small cable diameter (1⁄16") allows refrigerator doors to close on it with no effect
- Unplugging the cable activates sensor inside unit for monitoring ambient room temperature



15-077-942, -941

ORDERING INFORMATION:
Dimensions: 2⅝ × 2½ × ¾" (6.5 × 6.4 × 1.9cm). Weight: 1⅞ oz.

INCLUDES:
Battery (provides one year continuous operation)

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-58° to +158°F	**15-077-942**	38.57
-50° to +70°C	**15-077-941**	38.57

LOOKING FOR MORE THERMOMETERS?

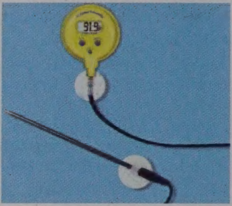
Our complete selection of thermometers and accessories is available online.

Visit www.fishersci.com and search for Thermometers

Fisher Scientific* Traceable* Waterproof Thermometer

Perfect for wet areas; with waterproof case, cable and probe

Use for round-the-clock monitoring of liquids, air/gas, or semisolids in freezers, water baths, outdoor tanks, incubators and refrigerators. Waterproof construction is ideal for wet labs, washdown areas and virtually all field applications.



02-402-0

- Stainless-steel probe is resistant to most acids, bases and solvents
- Wide temperature range covers 99% of routine temperature measurements
- Memory recalls highest and lowest temperature readings over any time period
- Solid-state construction eliminates dangers inherent in breakable glass and toxic mercury thermometers
- Resolution: 0.1° from -19.9° to +199.9°, otherwise 1°
- Accuracy: ±0.2°C or ±1°C between -20° and +100°C
- Easy-view, ¼"-high LCD digits may be read at a glance

All-Weather Compatible

- Operates in rugged and outdoor conditions
- Stainless-steel probe, 10' (3m) cable and digital display housing are all waterproof
- Case is waterproof and shockproof
- Shockproof in drop tests up to 5'

INCLUDES:

Probe, cable, 1.5V silver-oxide battery for one-year continuous monitoring, suction cups/magnet to attach to metal, and Velcro* to attach to any surface

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-50° to +300°C/-58 to +572°F	**02-402-0**	43.13

Fisher Scientific* Traceable* Workhorse* Thermometer

Provides sharp readout in dim and very bright light

NEW
109.3
POWER
HOLD
°C
°F
TYPE K
Fisher Scientific

14-649-82

Recessed front-panel-adjustable offset allows user to adjust thermometer to a specific temperature, in-house calibration, or particular sensor for increased accuracy.

- High-accuracy meter, wide temperature range
- Long battery life (150 to 200 continuous hours)
- HOLD button freezes display to capture current reading
- Probe diameter: ⅛", stem length: 3⅛", overall length: 5"
- Weight: 6 oz. (170g); cable length: 40"
- Dimensions: 5½L × 2¾W × 1¼"H (14 × 7 × 3cm)
- Type-K range is -50 to +1300°C and -58 to +2372°F
- Resolution is 0.1° between -50° and +200° and 1° elsewhere
- Accuracy is ±(1°C + .75%) between 0° and 500°C; ±(1°C + 1%) between 500° and 750°C; ±(1°C + 2%) between 750° and 1000°C; ±(3°C + 4%) between 1000° and 1200°C; ±2°C at -20°; ±3°C at -40°; and ±4°C at -50°

ORDERING INFORMATION:

Compatible with all Type-K probes.

INCLUDES:

Type-K probe, bench stand, 9V battery, and carrying case

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA; indicates traceability to standards provided by NIST*.

Range	Cat. No.	Each
-50° to +1300°C/-58° to +2372°F	**14-649-82**	35.79

Ertco* Digital Thermometer with Stainless-Steel Stem

Easy-to-read handheld digital thermometers

Stainless-steel stem is chemically resistant to acids, bases, solvents, and may be used to measure temperature of gases, food, and other semisolids.

- Probe is excellent for measuring sample temperatures while stirring in deep vessels or water baths
- Dual range, continuous reading, ON/OFF, auto power off, °C/°F button, probe guard
- LCD display: 5⁄16"H (7.9mm)

ORDERING INFORMATION:

Dimensions: 1⅜ dia. × 5.5"L (3.5 × 15cm). Probe dimensions: ⅛ dia. × 5"L (3.5mm × 13cm).

- Resolution: 0.1° from -19° to +199°; 1° outside this range
- Accuracy: ±1°C (±2°F) between -20° and +100°C (-4° and +284°F); ±2°C (±4°F) outside this range
- Includes 5000-hour battery (1.5V)

15-116-1

APPLICATIONS:

For use in cuvets, soil, incubators, petroleum products and foods

Fahrenheit Range	Censius Range	Mfr. No.	Cat. No.	Each
-58° to +302°F	-50° to +150°C	DPT30 1BF	**15-116-1**	38.85

*Trademark. See Trademark Reference.

Digi-Sense* ThermoLogR* RTD Thermometers

Use to log up to 1000 readings in real time

Perfect for onsite documentation; infrared output allows data transfer to your computer via the optional RS-232 adapter.

- Simultaneously monitor current, minimum, and maximum readings
- Housing is IP54-rated for splash- and dust-resistance; silicone membrane keypad
- CAL button enables you to field calibrate the meter
- °F/°C selectable range is -330 to +2210°F (-201 to +1210°C)
- Resolution is 0.01°F/°C from -99.99 to +99.99°F/°C; 0.1°F/°C from -100.0 to -330°F/°C and from 100.0 to 999.9°F/°C; and 1°F/°C above 1000°F/°C
- Accuracy is ±0.06°F (±0.03°C) from -99.99 to +99.99°F/°C; ±0.1°F/°C from -100.0 to -330°F/°C and 100.0 to 999.9°F/°C; ±1°F/°C above 1000°F/°C
- Display measures 0.4"H for top LCD; 0.2"H for bottom
- Use probes (not included) with round, 3-pin locking connector

13-621-830

ORDERING INFORMATION:
Dimensions: 3¼W × 6¼H × 1¼"D (84W × 158H × 30mmD)

INCLUDES:
Two "AA" batteries; battery life is more than 300 hours; rugged ABS plastic case; available with or without probe

WARRANTY:
Three years

CERTIFICATIONS:
CE marked. Available with NIST* certification.

Description	Cat. No.	Each
ThermoLogR RTD Thermometer	**13-621-830**	330.94
Thermometer with NIST Certification	**13-621-856**	429.01
Adapter, 115 VAC	**13-621-820**	46.69
Carrying Case	**15-078-21**	23.14
RS-232 Interface	**13-621-821**	117.63
Thermometer and General Purpose Probe with NIST Certification	**13-621-846**	604.62

Acorn* Temp 6 RTD Thermometer

Compact, rugged meters with splash-resistant membrane keypad

Compatible with 100W Pt RTDs for excellent accuracy, stability and repeatability over a wide temperature range.

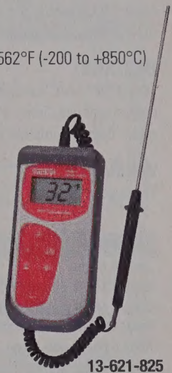
- Large, easy-to-read display
- All push-button operation for fast ease-of-use—no trimpots to adjust
- Minimum/maximum keys display highest/lowest temperature (°F/°C selectable) since meter was switched on
- Use MIN/MAX HOLD Mode to display the lowest or highest temperature measured since entering this mode
- Push-button temperature offset calibration adjustment enables fine-tuning of factory calibration
- Hold function freezes measurements for convenient reading and recording
- Auto-off function turns meter off after 17 minutes of non-use to save batteries
- Protective boot (included) protects meter and features a built-in stand
- Resolution is 0.1°C/0.1°F from -99.9 to +199.9°C/-147.8 to +391.8°F; 1.0°C/1.0°F outside this range
- Accuracy is ±0.2°C /0.4°F from -99.9 to +199.9°C/-147.8 to +391.8°F; ±2.0°C/4.0°F outside this range
- Input via three-pin locking connector
- Single-line LCD operating display, with -328 to +1562°F (-200 to +850°C) temperature range

ORDERING INFORMATION:
Meter weight: 1 lb. (450g). Meter dimensions: 5½ × 2¾ × 1¼" (14 × 7 × 3.5cm).

INCLUDES:
Four 1.5V "AAA" batteries, for more than 200 hours of continuous use. Available with or without probe.

WARRANTY:
Three years

CERTIFICATIONS:
CE marked. Available with NIST* certification.



13-621-825

Description	Cat. No.	Each
Acorn Temp 6 RTD Thermometer	**13-621-825**	182.14
Thermometer with NIST Certification	**13-621-853**	283.23
Thermometer and General Purpose Probe with NIST Certification	**13-621-842**	439.79

Acorn* Temp 4 and Temp 5 Thermistor Meters

Fast and easy push-button operation, with large, ⅞" high, easy-to-read display

13-621-823

- Min/Max keys display highest/lowest temperature (°F/°C selectable) since meter was switched on
- Min/Max Hold Mode displays the lowest or highest temperature measured since entering this mode
- Hold function freezes measurements for convenient reading and recording
- Temperature offset calibration adjustment for fine-tuning the factory calibration
- Protective rubber boot, built-in stand, splash-resistant membrane keypad
- Meter and probe offer high, ±0.2°C accuracy
- Compact in size and °C/°F selectable
- Resolution is 0.1°C/0.1°F; accuracy is ±0.2°C/0.4°F
- Temperature range is -40 to +257°F (-40 to +125°C)
- Temp 5 includes custom thermistor

ORDERING INFORMATION:
Meter dimensions: 5½ × 2¾ × 1¼" (14 × 7 × 3.5cm). Meter weight: 1 lb. (450g). Temp 4 accepts 13-621-839 or 13-621-840 thermistor probes.

INCLUDES:
Four 1.5V "AAA" batteries (included) power unit for more than 200 hours of continuous use; Temp 4 Meter available with or without probe; Temp 5 meter comes complete with probe and boot

WARRANTY:
Three years

CERTIFICATIONS:
CE marked. Available with NIST* certification.

Description	Cat. No.	Each
Temp 4 Meter	**13-621-823**	206.20
Temp 4 Meter with NIST Certification	**13-621-854**	307.75
Temp 4 Meter and General Purpose Probe with NIST Certification	**13-621-843**	439.46
Temp 5 Meter with Probe	**13-621-824**	175.80
Temp 5 Meter with NIST Certification	**13-621-844**	353.15

Digi-Sense* ThermoLogR* Thermistor Thermometer

Use to log up to 1000 readings in real time

Digi-Sense
STORE
°C/°F
HOLD
RECALL
LOG
MAX
CLEAR
PRINT
MIN
ON/OFF
SETUP
CAL
13-621-829

Enables simultaneous monitoring of current, minimum, and maximum readings.

- Rugged ABS plastic case and sealed silicone membrane keypad for an IP54 rating
- Display measures 0.4" for top LCD; 0.2" for bottom LCD
- CAL button enables you to field calibrate the meter
- Toggle between °F and °C at the touch of a button
- Infrared output allows data transfer to your computer via the optional RS-232 interface for permanent documentation
- Use with most popular RS-232 programs including Windows* Terminal or Windows 95/98 HyperTerminal
- Resolution is 0.01 or 0.1°F/°C; autoranging to 0.1° above +99.99°
- Temperature range is -40°F to +302°F (-40°C to +150°C)
- Accuracy is ±0.06°F from -40 to +99.99°F (±0.03°C from –40 to +99.99°C); ±0.1°F from 100 to 257°F (±0.1°C from 100 to 125°C); ±0.2°F from 257 to 302°F (±0.2°C from 125 to 150°C)

ORDERING INFORMATION:
Meter dimensions: 6¼ × 3¼ × 1¼" (15.7 × 8.4 × 3cm). Accepts thermistor probes with ¼" phone plug (sold separately below).

INCLUDES:
Available with or without probe

CERTIFICATIONS:
CE marked. Available with NIST* certification.

WARRANTY:
Three years

Description	Cat. No.	Each
Digi-Sense ThermoLogR	**13-621-829**	330.94
Thermometer and General Purpose Probe with NIST Certification	**13-621-847**	575.87
Adapter, 115 VAC	**13-621-820**	46.69
RS-232 Interface	**13-621-821**	117.63
Carrying Case	**15-078-21**	22.58
Thermistor Probe, General Purpose Immersion, 10" Tip	**13-621-839**	95.76
Thermistor Probe, Penetration 4" Tip	**13-621-840**	95.76

Acorn* Temp Thermocouple Meters

Rugged, multitype thermocouple thermometers are economical, compact, and dependable

- All push-button operation lets you display min/max temperature momentarily
- MIN/MAX HOLD mode displays the lowest or highest temperature measured since entering this mode
- Offers easy access connections for thermocouple probe
- Splash-resistant membrane keypad helps protect meter components from occasional spills
- Large, ⅞" LCD gives you a clear reading at a glance, and warns of low-battery or calibration errors
- Rubber boot protects meter from drops and dings
- Range: Type J: -200° to +1000°C/-328° to 1832°F; Type K: -250° to +1372°C/ -418° to +2501°F; Type T: -250° to +400°C/-418° to +752°F
- Resolution: 0.1° from -299.9°C to 299.9°C/°F; 1° outside this range
- Accuracy: ±0.25% of reading plus 0.5°C/0.9°F above -99.9°C/°F
- Factory calibrated, push-button offset adjustment

13-621-826

ORDERING INFORMATION:
Meter dimensions: 5½ × 2¾ × 1¼" (14 × 7 × 3.5cm). Weight: 1 lb. (0.5 kg). Probe: use any type J, K or T thermocouple probe with mini-connector (sold separately).

INCLUDES:
Four 1.5V "AAA" batteries (included), for more than 200 hours of continuous use; available with or without probe.

REQUIRED ACCESSORIES:
Use with Digi-Sense* thermocouple probes

WARRANTY:
Three years

CERTIFICATIONS:
CE marked; CE approved. NIST* traceable. Available with NIST certification.

Description	Cat. No.	Each
Temp TC Meter	**13-621-826**	182.14
Temp TC Meter with NIST Certification	**13-621-852**	283.23
Temp TC Meter and General Purpose Probe with NIST Certification	**13-621-841**	376.27

Digi-Sense* Dual-Input Thermocouple Thermometer

Accepts up to two thermocouple probes of J, K, T or E type

Multi-data display shows both temperatures and emperature differentials simultaneously. Calibration ockout protects factory settings.

15-176-100

- Intrinsically safe
- Large four-digit LCD, low-battery indicator
- Sealed silicone rubber keypad and built-in tilt stand
- Display either °C or °F
- Memory stores up to 25 readings, even when meter is off
- Use 12-button keypad to scan for max./min. temperature or to hold reading
- Accuracy: ±0.1% of reading; ±0.4°C (±0.7°F) above -150°C (-238°F); ±1°C (±2°F) below -150°C (-238°F)
- Selectable resolution (in °C): 0.1°: ≤999.9°; 1°: >999.9°
- T1/T2 differential
- Ranges: Type J, -200° to +1000°C (-328° to +1832°F); Type K, -250° to +1372°C (-418° to +2501°F); Type T, -250° to +400°C (-418° to +752°F); Type E, -250° to +1000°C (-418° to +1832°F)

INCLUDES:
wo "AA" batteries (≤500 hours ontinuous use); chemical-resistant ABS plastic case; available with or without probe.

CERTIFICATIONS:
UL listed and certified for Class I: Groups A, B, C, and D, Division. NIST* traceable. Available with NIST certification.

Description	Cat. No.	Each
Dual-Input Thermocouple Thermometer	15-176-100	217.34
Thermometer with NIST* Certification	13-621-855	337.92
Thermometer with General Purpose Probe nd NIST Certification	13-621-845	427.80

Digi-Sense* DuaLogR* Thermocouple Meters

Feature real-time datalogging with infrared output o transfer data to your computer via the optional RS-232 interface

- Logs up to 1000 readings in one second to 60-minute intervals
- Thermometer measures minimum, maximum and differential readings using one to two probes
- Temperature range and accuracy matches the Digi-Sense Dual-Input Thermocouple Thermometer (see 15-176-100)

15-176-96

CERTIFICATIONS:
UL listed intrinsically safe for use in Class I; Groups A, B, C, and D Division hazardous locations. Available with NIST* certification; contact your isher Scientific Customer Service Representative.

Description	Cat. No.	Each
DuaLogR Thermometer	15-176-96	289.23
Adapter, 115 VAC	13-621-820	46.69
RS-232 Interface	13-621-821	117.63
Carrying Case	15-078-21	22.58

ACCESSORIES

Digi-Sense Probes

Have 5½" long (13.9cm) glass-filled nylon handles and 5' long (1.5m) coiled PVC cable. Order by intended use and thermocouple type.

General-purpose

- For liquids, gases, or surfaces of small objects
- Grounded tip, Type 316 stainless-steel shaft
- Time constant: 1 second (liquids)
- Total shaft length: 4⁷⁄₁₆" (11.3cm); main shaft: ⁵⁄₃₂" dia. (0.4cm)
- Shaft tip tapered to ³⁄₃₂" dia. (0.2cm)

Penetration

- For interiors of soft or semisoft materials
- Grounded tip, Type 316 stainless-steel sheath
- Time constant: 5 seconds (liquids)
- Shaft: 4L × ⁵⁄₃₂" dia. (10.1 × 0.4cm)

Surface

- Length: 10"
- Use to monitor such surfaces as hotplates, furnaces, and molds
- Time constant: 6 seconds; response time: 30 seconds

Description	Type†	Temp. Range	Cat. No.	Each
General Purpose	J	-190° to +760°C (-310° to +1400°F)	15-078-5	42.83
General Purpose	K	-190° to +760°C (-310° to +1400°F)	15-078-6	42.83
General Purpose	T	-190° to +760°C (-310° to +1400°F)	15-078-7	47.77
Penetration Probe	J	-250° to +899°C (-418° to +1650°F)	15-078-13	46.58
Penetration Probe	K	-250° to +899°C (-418° to +1650°F)	15-078-14	46.58
Penetration Probe	T	-250° to +899°C (-418° to +1650°F)	15-078-15	46.58
Surface Probe	K	-250° to +649°C (-418° to +1200°F)	15-078-42	64.97
Surface Probe	T	-250° to +649°C (-418° to +1200°F)	15-078-11	64.97

† To order Type E probes, call your Fisher Scientific Customer Service Representative.

TIMERS

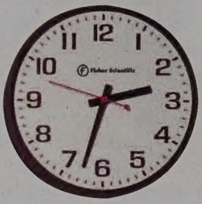
CLOCKS

Fisher Scientific* Wall Clocks with 12" dia. Face

Need no oiling, cleaning, or regulating

Accurate laboratory clocks with sweeping second hand.

- Synchronous motor movement
- Large white dial with black numerals for easy reading
- Enclosed in brown, impact-resistant plastic case with safety lens
- Concealed mounting bracket
- 12" diameter (30.5cm) dial



06-664-5A

ORDERING INFORMATION:
Electric model (06-664-5) power requirements: 110/120 VAC 50/60Hz. Quartz model (06-664-5A) uses "AA" battery (not included).

CERTIFICATIONS:
Electric model is UL listed.

Type	Cat. No.	Each	Case of 10
Electric	**06-664-5**	72.80	644.21
Quartz	**06-664-5A**	82.66	731.50

Fisher Scientific* Traceable* Wall Clock with 10" dia. Face

Sturdy laboratory wall clock with sweeping second hand

- Clock tells time to the second with 0.01% quartz-crystal accuracy
- 10" diameter (25cm) dial

06-664-20

INCLUDES:
Dust- and splash-resistant case, wall-mounting screw, and one "AA" battery.

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

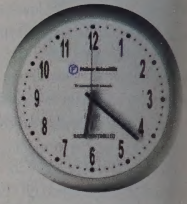
Cat. No.	Each
06-664-20	18.05

Fisher Scientific* Traceable* Analog Radio Atomic Wall Clock

Automatically sets itself

Receives radio signal directly from the NIST* atomic clock in Boulder, CO.

- Accurate to 1⁄10,000 of a second
- Highly visible sweeping second hand
- Automatically adjusts for Daylight Savings time and leap seconds (Earth rotation wobble corrections)



06-664-13

ORDERING INFORMATION:
Dimensions (D x O.D.): 1¼ × 12" (3.2 × 30.5cm). Weight: 1⅜ lb. (0.6kg).

INCLUDES:
Wall mount, screw, and "AA" battery

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST.

Cat. No.	Each
06-664-13	37.80

Fisher Scientific* Traceable* Futuristic Thermometer/Humidity Clock

State-of-the-art clock shows crisp readable dials and displays in a low profile case

Triple display shows precise quartz-crystal timing with 0.01% accuracy, temperatures from -37° to +47°C and -34° to +116°F with ±1.5°C accuracy, and relative humidity from 8 to 92% with ±5% accuracy.

- Displays time, temperature, and humidity
- Readable at 20' (6.1m)
- Bright orange, sweeping second hand

06-664-50

ORDERING INFORMATION:
Dimensions: 12½H × 11W × 1"D (31.8 × 28 × 2.5cm). Clock dial diameter: 9" (22.9cm). Temperature and humidity dial diameters: 3" (7.6cm). Weight: 1 lb., 7 oz.

INCLUDES:
ABS impact-resistant case, "AA" battery, wall mount, and screw

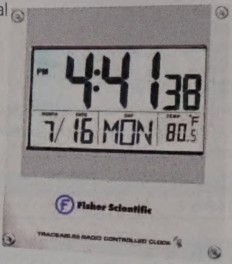
CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

Cat. No.	Each
06-664-50	63.62

*Trademark. See Trademark Reference.

isher Scientific* Traceable* Big-Digit adio Atomic Wall Clock

rovides visibility from 20' (6.1m)



06-664-12

ontrolling radio signal from the National nstitute of Standards and Technology NIST*) in Boulder, CO, automatically djusts clock to precise time, Daylight avings, leap year, and leap seconds earth rotation wobble corrections).

- Accuracy is to 1⁄10,000 of a second
- Digital wall clock features large, 2¼"-high digits (5.7cm).
- Displays time in AM/PM or 24-hour time, month, date, day-of-week, and ambient temperature in °C and °F (32° to 122°F and 0° to 50°C with 0.1 resolution)

RDERING INFORMATION:

imensions: 9¼L × 8¾W × ¾"H (23.5 × 22.2 × 1.9cm) Weight: 1⅛ lb. (0.5kg)

NCLUDES:

Vall mount, screw, and two "AA" batteries

ERTIFICATIONS:

ndividually serial-numbered Traceable Certificate is provided from an ISO 7025 calibration laboratory accredited by A2LA. It indicates traceability standards provided by NIST.

at. No.	Each
6-664-12	63.62

Fisher Scientific* Traceable* Radio Atomic Clock

Ideal for recording the receipt of samples, noting exact event times, supporting lab documentation, maintaining ISO 9000 certification, and providing a standard for other lab clocks

TRACEABLE
AM 9:01 59
10 22
Fisher Scientific

15-076-6

Clock sets time using a signal received directly from the National Institute of Standards and Technology (NIST*) atomic clock in Boulder, CO (which is accurate to one hundred billionth of a second).

- Accurate to 1⁄1000 of a second at all times
- Automatically adjusts for Daylight Savings time, leap year, and leap seconds
- Displays signal-reception strength indicator and U.S. map (showing user-selected time zone)
- Electroluminescence backlighting allows viewing in the dark
- Settable alarm is ideal for noisy areas
- Displays time of day to the second, AM/PM, month, date, and day of the week
- LCD digits (½" [1.3m] high) are readable from over 10' (3m)

ORDERING INFORMATION:

Dimensions: 1½L × 3⅜W × 4"H (3.8 × 8.6 × 10.2cm). Net weight: 6 oz. (168g).

INCLUDES:

Two "AAA" batteries that power the unit for one year

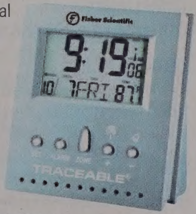
CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST.

Cat. No.	Each
15-076-6	77.30

isher Scientific* Traceable* Radio Atomic Clock for the Workstation

Vorld's most accurate clock—for your workstation



15-077-954

eceives a radio signal directly from the National nstitute of Standards and Technology (NIST*) tomic clock (accurate to one hundred billionth f a second) in Boulder, CO. Ideal for recording he receiving of samples, noting the exact time n event occurred, supporting documentation, roviding a standard for a location's other locks, maintaining ISO 9000 certification, nd other situations that require the xact time.

- Temperature range is from 32° to 158°F and 0° to 50°C
- Accurate to 1⁄10,000 of a second at all times
- Resolution, 0.1°; accuracy, ±1°C
- LCD digits, ½" high, are readable from over 10'
- Backlighting permits viewing in total darkness
- Battery operated, runs continuously for one year
- Radio signal automatically adjusts for AM/PM, 24-hour time, day/date, Daylight Savings time, leap year, and leap seconds

ORDERING INFORMATION:

Dimensions: 2½ × 3 × 1½" (6.4 × 7.6 × 3.8cm). Weight: 4 oz. (113g).

INCLUDES:

"AA" battery

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST.

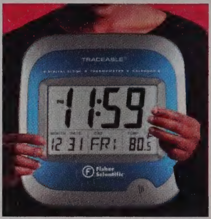
Cat. No.	Each
15-077-954	20.94

Fisher Scientific* Traceable* Clock/Thermometer/Calendar

Unique clock combination shows the time, month, day, date, and temperature

Wall-mounted, battery-operated perpetual clock.

- Timing accuracy: 0.01%
- Internal temperature sensor displays current reading in your choice of °C (-5° to +50°C range) or °F (23° to 122°F)
- Huge 2⅛"H (5.4cm) LCD is visible from 35' (10.7)



14-648-5

ORDERING INFORMATION:
Dimensions: 9¼L × 10W × 1"H (23.5 × 25.4 × 2.5cm).

INCLUDES:
Two "AA" batteries

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

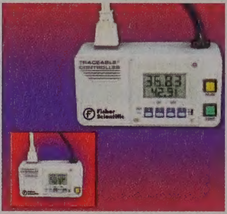
Cat. No.	Each
14-648-5	62.26

CONTROLLERS

Fisher Scientific* Traceable* Walkaway* Count-up Controllers

Use for timed shutdown or repeated ON/OFF timing

- Accuracy: 0.01%
- ½" high (1.3cm) red LCD display indicates ON/OFF status of equipment
- Internal NiCd battery protects programs against power outages
- Three-pronged grounded receptacle relay controls equipment to 120V, 15A, 1800w, ⅓ hp
- Perform reproducible stirring, heating, or pumping times
- Manual pause switch overrides program without disturbing it and permits equipment to be instantly turned off
- Intuitive operation permits setting a program in <5 seconds
- High-impact ABS case



15-077-964 (top); 15-077-965 (bottom)

Turn-off Controller

- Counts up and turns any piece of equipment off at the end of a set time period
- Programmable in three interval settings: 0.01 to 99.99 seconds, 1 to 99 minutes, 1 to 99 hours

Repeat Turn-on/Turn-off Controller

- Counts up and turns any piece of equipment on for a programmed time and off for a different programmed time until manually stopped
- Programmable for separate on and off timing periods in three interval settings: 1 to 99 seconds; 1 to 99 minutes; 1 to 99 hours

ORDERING INFORMATION:
Dimensions: 6L × 2¾W × 3¼"H (15.2 × 7 × 8.3cm). Weight: 12 oz. (340.2g).

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

Description	Cat. No.	Each
Turn-off Count-up Controller	**15-077-964**	93.05
Repeat Turn-on/Turn-off Count-up Controller	**15-077-965**	93.05

Fisher Scientific* Traceable* Countdown Controller

Allows programming up to 196 ON/OFF settings per week with easy-to-use, time-of-day mode

- Controller allows you to turn your electrical equipment on or off at any 1-minute interval between 23 hours, 59 minutes, 59 seconds and 1 minute
- Timing accuracy: 0.01%
- Green LED indicates whether attached equipment is on or off
- LCD display with ½" high (1.3cm) digits shows time remaining until next switchover
- Three-prong grounded receptacle has a switching capacity of 125VAC, 15A, 1800w
- Manual override permits switching on or off without disturbing the program
- High-impact ABS plastic case

TRACEABLE
23:59
Fisher Scientific

14-648-36

ORDERING INFORMATION:
Dimensions: 1¾L × 2⅛W × 4⅜"H (4.4 × 5.4 × 11cm). Weight: 5½ oz. (156g)

INCLUDES:
Rechargeable NiCd battery for maintaining operation during power failure

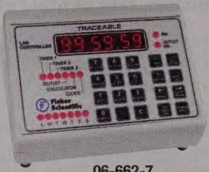
COMPLIANCE:
CSA approved and NTRL-C rated.

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

Cat. No.	Each
14-648-36	47.99

isher Scientific* Traceable* Lab Controller and Timer

ontroller turns appliances on and off at any programmed time of day



06-662-7

- Programmable for up to 224 ON/OFF switchings per day and 1568 per week
- Cycles equipment ON/OFF at any interval from 100 hours to one second
- With ½" high (1.3cm) LED display
- Operates apparatus to 15A, 1875w with a three-prong plug
- Three-channel alarm timer features clock; three timing alarms; audible and visual alarms; manual OFF; metric converter; calculator; repeat channel, memory channel, and stopwatch channel
- ABS plastic case

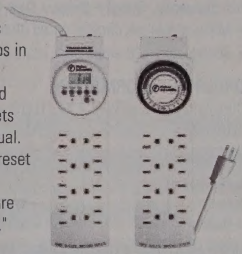
ORDERING INFORMATION:
Dimensions: 4¾L × 6½W × 3½"H (12 × 17 × 9cm). Electrical Requirements: 120VAC 60Hz.

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

Cat. No.	Each
06-662-7	208.56

isher Scientific* Outlet Controller Strips

wo unique controllers are available



06-662-42 (left), 06-662-43 (right)

ight-outlet strips are combined with 24-hour or 7-day controller—permits urn-on of chemical, water, or air pumps in he sampling process; warming up of nstruments at preset times; automated esting, heating, or mixing. Three outlets re time-controlled and three are manual. lighted ON/OFF switch and push-to-reset ircuit breaker are included. To avoid ossibility of field failure, controllers are ested and components are "burned in."

4-hour Electromechanical ontroller
- Index pin is raised or lowered to set trip times
- Pins constantly display all time settings—one glance verifies an entire program
- Set in 15-minute increments; program repeats daily

-day Traceable Electronic Digital Controller
- Digital unit can be programmed to turn on or off any minute of the week
- Eighty-four ON/OFF switchings per week; up to 12 switchings per day
- Accuracy of 0.01%
- LCD [¼" high (63mm)] shows time of day, AM/PM, day of the week, and ON/OFF program status
- Repeat mode allows cycle repetition by day or by week
- Can even be programmed to skip weekends or other selected days
- Equipment can be switched on or off with manual override without disturbing the program
- Memory chip and display are supported during power failure by a NiCd battery
- Rugged plastic case with 4' long (1.2m) cord with three-prong grounded plug

RDERING INFORMATION:
imensions: 1½L × 3W × 9½"H (3.8 × 7.6 × 21cm). Net weight: 1 lb. (454g). lectrical Requirements: 120VAC 60Hz, 15A, 1800w.

ERTIFICATIONS:
ndividually serial-numbered Traceable Certificate is provided from an ISO 7025 calibration laboratory accredited by A2LA. It indicates traceability o standards provided by NIST*.

ontroller Type	Cat. No.	Each
4-hour	06-662-42	56.80
-day	06-662-43	61.78

Fisher Scientific* Traceable* Digital Outlet Controller

Can be programmed to turn equipment on and off any time of the day in intervals as short as one minute or as long as 168 hours

- Timing accuracy: 0.01%
- Digital display shows time, day, and event number
- LED indicates the ON/OFF mode of attached equipment
- Backup battery maintains program and clock times in case of electrical outage
- Switching capacity: 15A, 1800w
- Permits programming 14 different switchings per day allocated over four separate weekly programs
- Allows 196 ON/OFF switchings per week
- With manual override so equipment can be switched on or off without disturbing the program

06-662-24

ORDERING INFORMATION:
Dimensions: 2L × 3½W × 4"H (5 × 9 × 10cm). Electrical Requirements: 125VAC 50/60Hz, three-prong plug.

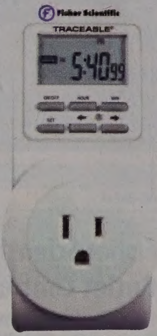
COMPLIANCE:
CSA approved and NTRL-C listed.

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

Cat. No.	Each
06-662-24	58.38

Fisher Scientific* Traceable* Electronic Programmable Controller

Program up to 14 unique switchings per day allocated over four separate weekly programs



06-662-12

Timing intervals from one minute to 168 hours. Day program allows repeating the same cycle every day of the week, weekdays only, weekends only, or any selected day.

- LCD (½" high [1.3cm]) shows the time of day, day of the week, and number of the program being used
- LED shows ON/OFF status of equipment
- Switching capacity: 125VAC, 15A, 1850w
- Simple to program—display walks you through the steps
- Six switches on the front panel control the unit
- Check an entire week's program easily in less than two minutes
- Change a setting with only one instruction
- Manual override allows you to switch equipment off or on without disconnecting from the timer and without losing program
- Impact- and chemical-resistant ABS plastic case

ORDERING INFORMATION:
Dimensions: 1¾L × 2¾W × 6"H (4.5 × 7 × 15cm). Net weight: 8½ oz. (241g). Electrical Requirements: 125VAC 60Hz.

COMPLIANCE:
CSA and NTRL-C listed.

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

Cat. No.	Each
06-662-12	101.33

ChronTrol* Controllers and Timers

Can be used to operate lights, valves, solenoids, pumps, motors, fans or other equipment

12:55
ChronTrol

Provide push-button control of up to four independent circuits.[1] Twenty independent ON/OFF programs assure control to the second, AM and PM, every day of the week.[2] Enter time settings at keyboard. 9V battery backup keeps time during power outages.

Each ON/OFF program includes:

- On-and-off time or duration
- Cycle repeat rate from two seconds through one year
- Weekly cycle with day omission

Outlet Models

- Equipment plugs into two or four independent 120VAC grounded outlets on rear panel
- Controls up to 15 amps per outlet

Single-pole, Single-throw Dry Contact Models

- Make and break circuits wired directly to terminal strip on rear panel
- Control up to 20 amps per circuit at 240VAC

ORDERING INFORMATION:
Dimensions: 5L × 8¼W × 4¾"H (13 × 21 × 12cm). Electrical Requirements: 120V 60Hz.

Description	Cat. No.	Each
Outlet Models		
2 Outlets	07-750-1	324.66
4 Outlets	07-750-5	363.40
Single-pole, Single-throw, Dry Contact Models		
2 Circuits	07-750-2	340.61
4 Circuits	07-750-6	374.80

[1] *Eight- or 16-input digital models also available. Contact your Fisher Scientific Customer Service Representative for details.*

[2] *Program up to 40 events with optional device that must be factory installed. Contact your Fisher Scientific Customer Service Representative for details.*

Model 451 Electronic Timer/Intervalometer

For use in lab, factory or photographer's studio

GraLab 451
START / RESET

With two separately programmable memories: one controls "on time," the other controls "off time." Use one memory for single-cycle switching timer or use both in tandem for a continuously recycling intervalometer.

- Choice of three time ranges: 1 to 99 in minutes, 1 to 99 in seconds, and 0.1 to 9.9 in tenths of a second
- Accuracy: ±0.01% at one second
- Repeatability: ±0.005% at one second
- Temperature range: 0° to 55°C (32 to 131°F)
- Two-digit LED display with floating decimal point
- Brightness easily adjusted or switched off completely using membrane control
- 120VAC outlet power rating: 600w maximum lamp load; 1200w maximum resistive load; ⅓hp maximum motor load
- Input voltage: 100 to 130VAC 50/60Hz
- Automatic reset allows same cycle or interval to be run without manual reset
- Resistant to dust
- Nonskid case can be used on table or hung on wall
- Manufactured using ISO 9001: 2000-certified processes

CERTIFICATIONS:
UL listed.

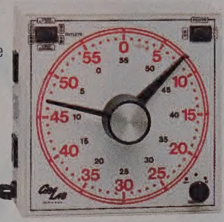
Dimensions	Cat. No.	Each
3½L × 4W × 8"H (9 × 10 × 20cm)	06-656-1B	316.62

*Trademark. See Trademark Reference.

Prices subject to change.

)imco Gray 60-Minute Controller

urns appliances on and off



lectric timer serves as elapsed time ndicator, interval timer, and turns lectric apparatus on or off. Two separate utlet receptacles allow automatic witching of external appliances. One urns apparatus on and the other turns pparatus off at end of timed interval.

- Maximum load: 600w
- Automatic buzzer alarm
- 6½" diameter (17cm) white dial
- Inner circle of small black numerals for use as stopclock
- Recessed carrying handle
- Polycarbonate case
- Manufactured using ISO 9001: 2000-certified processes

06-656

RDERING INFORMATION:

20VAC outlet power rating: 600w maximum lamp load; 1200w maximum esistive load; ⅓hp maximum motor load. Input voltage: 120VAC 50/60Hz.

ERTIFICATIONS:

L listed.

at. No.	Each	Case of 6
6-656	179.24	852.91

BENCH

isher Scientific* Dial Benchtop Timers

or general-purpose timing applications

tand-alone units with 1% accuracy; selecting time winds timer.

06-659

- Display: Oversized markings provide easy reading; pointer indicates time remaining
- Dial diameter: 2" (5cm)
- Dimensions: 2¾L × 2¾W × 2"H (7 × 7 × 5cm)
- White case lays flat or stands upright

06-662-10

- Display: Easy-to-read blue numerals
- Dial diameter: 2¾" dia. (7cm)
- Black case

iming Capacity	Alarm	Cat. No.	Each
20 min. in 2-min. increments	5-sec. ring	06-659	54.53
0 min. in 1-min. increments	Bell at end of cycle	06-662-10	38.62

Fisher Scientific* Eight-Channel Countdown/Countup Benchtop Timer

Timing capacity of 100 hours

06-662-6

Adjustable alarm volume can be controlled manually or set to turn off automatically in seven seconds or one minute. Time-of-day channel can be set to AM/PM or 24-hour time.

Eight channels:

- Three countdown channels with memory recall
- One countdown channel with "thru-zero" function
- Stopwatch channel
- Two repeat channels

Specifications:

- Resolution: 1 second
- Accuracy: 0.01%
- Display: ½"H (1.3cm) LED
- Dimensions: 4½L × 6½W × 3½"H (11.4 × 16.5 × 8.9cm)
- Electrical requirements: 115VAC 60Hz

Cat. No.	Each
06-662-6	195.53

LOOKING FOR MORE TIMERS?

A variety of Fisher Scientific* clocks and stopwatches are available online.

Visit www.fishersci.com and search for Timers

Fisher Scientific* Traceable* Single-Direction Benchtop Timers

Without clocks

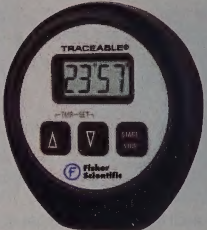
Fisher Scientific
03 11
MIN
SEC
START/STOP
CLEAR
MEMORY
TRACEABLE

02-401-7

- Memory recall

TRACEABLE
19:59
Fisher Scientific
HR
MIN
START
STOP

06-662-49


TRACEABLE
23 57
Fisher Scientific

06-662-8

- Memory recall
- Displays in seconds for last 10 minutes

Fisher Scientific
TIMER
Count Down
99 59
TRACEABLE
MIN
SEC
CLEAR
MEMORY
START STOP

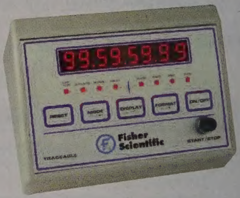
06-662-51

- Memory recall

6:53:29.72
Fisher Scientific
SPLIT/LAP RESET
MODE
START STOP

06-662-40

- Cumulative- and interval-split


99.59.59.99
RESET
MODE
DISPLAY
FORMAT
ON/OFF
Fisher Scientific
TRACEABLE
START/STOP

06-662-1

- Single-action, time-in/-out, cumulative- and interval-split
- Reads in hours, minutes, seconds, and hundredths or in decimals

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

	Countdown Timers				Countup Timers	
Cat. No.	**02-401-7**	**06-662-49**	**06-662-8**	**06-662-51**	**06-662-40**	**06-662-1**
Each	18.03	18.07	26.21	16.17	102.64	255.71
No. of Channels	One	One	One	One	One	12
Timing Capacity	100 minutes	20 hours	24 hours	100 hours	10 hours	100 hours
Resolution	1 second	1 minute	1 second	1 second	0.01 second	0.001 second
Accuracy	0.01%	0.01%	0.01%	0.01%	0.001%	0.001%
Display	⅝"H	¾"H LCD, readable from 20'	⅓"H LCD	¾"H LCD, readable from 20'	¾"H can be read from 8'	8-digit, ½"H
Alarm	30 seconds	1 minute, silenced automatically or manually	1 minute, silenced automatically or manually	30 seconds, silenced automatically or manually	----	"Up alarm" on each channel
Dimensions	2½ × 2¼ × ¾"	½L × 2W × 3½"H	2⅜ dia. × ½"H	½L × 2½W × 2½"H	4 × 4¼ × 1¾"	3½ × 6⅝ × 4¾"
Includes	Easel stand, clip, and magnetic back	Clip and magnetic back	Easel stand, clip, and magnetic back	Easel stand, clip, and magnetic back	Test leads	----
Batteries Included	3-year "AA"	3-year "AAA"	2-year silver-oxide	2-year "AAA"	2-year "AA"	120VAC 60Hz, with 9V battery backup

*Trademark. See Trademark Reference.

isher Scientific* Traceable* Countdown/Countup One-Channel Benchtop Timers

ith one-second resolution and 0.01% accuracy

TRACEABLE
99M59S
Timer
Stopwatch
Start
Stop Reset

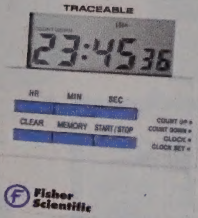
4-649-14

- Time-out mode
- Full keyboard

TIMER CLOCK
Fisher Scientific
9:59 29
TRACEABLE
CLEAR
START STOP

06-662-50

- Memory recall
- Full keyboard


TRACEABLE
23:45 36
HR MIN SEC
CLEAR MEMORY START/STOP
COUNT UP
COUNT DOWN
CLOCK
CLOCK SET
Fisher Scientific

14-648-35

- "Thru-zero" function and time-out mode
- During countdown, announces each hour until 1 hour is reached, every 10 minutes until 1 minute, every 10 seconds until 10 seconds remain, and then each second
- Announces elapsed time since alarming

ELECTRONIC
Clock-Timer
23:47 47
TRACEABLE
HR MIN SEC
CLEAR MEMORY
START/STOP
Fisher Scientific

6-662-45

- Countdown channel instantly resets
- Memory remains until reprogrammed

Fisher Scientific
TIMER-CLOCK
23:59 48
CLOCK
HR MIN SEC
SET
TIMER
STOP START
RESET

06-662-16

- Memory recall, "thru-zero" function, and time-out mode

99:59 59
Fisher Scientific
Start Stop
Reset
MINI-ALARM
TIMER-STOPWATCH
MEMORY 100 HOUR

14-649-15

- "Thru-zero" function
- Full keyboard

ERTIFICATIONS:

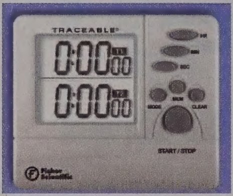
dividually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to andards provided by NIST*.

at. No.	14-649-14	06-662-50	14-648-35	06-662-45	06-662-16	14-649-15
ach	37.67	22.87	23.99	22.15	30.62	40.99
iming apacity	Countdown from 100 minutes; count up to 60 minutes	10 hours	24 hours	24 hours	24 hours	100 hours
isplay	⅜"H LCD	¾"H LCD; readable from 20'	½"H LCD	½"H LCD	⅓"H LCD	⅜"H LCD
lock	No	Yes	Announces time when any key is pressed	Yes	With AM/PM indicators	
topwatch	With automatic rollover and time-out mode	With AM/PM indicators	Yes	Yes	Yes	With automatic rollover and time-out mode
larm	1 minute, silenced automatically or manually	High-decibel; 1 minute, silenced automatically or manually	6 distinct alarm sounds; 1 minute, silenced automatically or manually	1 minute, silenced automatically or manually	1 minute visual and audible, silenced automatically or manually	1 minute, silenced automatically or manually
imensions	½L × 2½W × 2¼"H	1L × 2½W × 3"H	½L × 3¼W × 2½"H	¾L × 3¼W × 3¼"H	2¼L × 2¼W × ½"H	½L × 2¾W × 2¾"H
ncludes	Easel stand, clip, hole for lanyard, and magnetic back	Magnetic back	Easel stand, clip, and magnetic back	----	Easel stand, lapel clip, and magnetic back	Easel stand, clip, and magnetic back
attery Included	2-year silver-oxide	2-year "AAA"	2-year silver-oxide	3-year "AA"	2-year silver-oxide	2-year silver-oxide

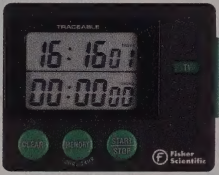
Fisher Scientific* Traceable* Countdown/Countup Two-Channel Benchtop Timers

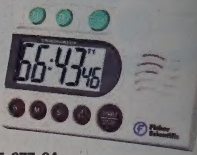
With clocks and stopwatches

- Resolution: 1 second
- Accuracy: 0.01%
- Feature memory recall


02-401-8

06-662-47


06-662-44


15-077-64

- "Thru-zero" function and time-out mode
- Channels may be programmed individually or concurrently

CERTIFICATIONS:
Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

Cat. No.	02-401-8	06-662-48†	06-662-47	06-662-44	15-077-64
Each	19.37	23.69	23.69	22.72	23.90
Timing Capacity	Countdown from 20 hours; countup to 100 minutes	24 hours	24 hours	24 hours	100 hours
Display	Double-line LCD, each ½"H, readable from 8 ft.	Double-line LCD, each 1"H	Double-line LCD, each 1"H	Double-line LCD, each ⅜"H	¾"H LCD, readable from 20'
Alarm	Distinct alarms for each channel; 1 minute, silenced automatically or manually	Distinct alarm for each channel; 1 minute, silenced automatically or manually	Distinct alarm for each channel; 1 minute, silenced automatically or manually	Distinct alarm for each channel, 1 minute, silenced automatically or manually	Extra-extra-loud (100 decibels); distinct alarm for each channel; 1 minute, silenced automatically or manually
Dimensions	3L × 2½W × ½"H	½L × 3¾W × 5½"H	½L × 3¾W × 5½"H	⅞L × 2¾W × 2⅛"H	½L × 4W × 2½"H
Includes	Easel stand, clip, and magnetic back	Wall-mounting brackets	Wall-mounting brackets	Easel stand, clip, and magnetic back	Easel stand and magnetic back
Battery Included	2-year "AAA"	2-year "AAA"	2-year "AAA"	1-year silver-oxide	2-year "AAA"

† 06-662-48 is white, but otherwise looks the same as 06-662-47.

isher Scientific* Traceable* Countdown/Countup Three- and Four-Channel enchtop Timers

ne-second resolution

06-662-55

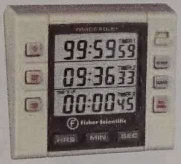
06-662-3

- Memory recall, "thru-zero" function, and time-out mode
- Channels may be started simultaneously or individually

14-648-34

06-662-46

- Memory recall and "thru-zero" function
- Channels may be programmed individually or concurrently

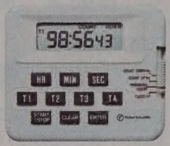


06-662-5

- Memory recall, "thru-zero" function, and time-out mode
- Channels can be started simultaneously or individually

14-649-17

- Memory recall, "thru-zero" function, and time-out mode



06-662-9

- "Thru-zero" function and time-out mode

ERTIFICATIONS:

ndividually serial-numbered Traceable Certificate is provided om an ISO 17025 calibration laboratory accredited by A2LA. indicates traceability to standards provided by NIST*.

	Three-Channel Timers					Four-Channel Timers	
at. No.	**06-662-55**	**06-662-3**	**14-648-34**	**06-662-46**	**06-662-5**	**14-649-17**	**06-662-9**
ach	45.23	28.65	29.45	39.07	62.83	28.68	36.94
iming Capacity	10 hours	20 hours	100 hours	100 hours	100 hours	100 hours	100 hours
ccuracy	0.001%	0.01%	0.01%	0.01%	0.001%	0.01%	0.01%
isplay	¼"H LCD	Triple-line LCD, each ½"H (1.3cm)	Double-line LCD, each 1"H, readable from 30'	Triple-line LCD, each ⅜"H	Triple-line LCD, each ⅜"H	6-digit, ¾"H LCD	⅓"H LCD
lock	No	Yes	Yes	Yes	Yes	Yes	Yes
topwatch	No	Yes	Yes	Yes	Yes	Yes	Yes
larm	Distinct alarm for each channel; 1 minute, silenced automatically or manually	Extra-loud alarm; 1 minute, silenced automatically or manually	Distinct alarm for each channel; 1 minute, silenced automatically or manually	Audible and visual alarms	Distinct audible and visual alarm for each channel; 1 minute, silenced automatically or manually	High-decibel; 1 minute, silenced automatically or manually	Visual and audible alarm for each channel; 1minute, silenced automatically or manually
imensions	1⅜L × 3W × 3"H	⅞L × 2½W × 3⅛"H	¾L × 4W × 4½"H	½L × 2¾W × 3¼"H	1L × 3W × 3¼"H	2½L × 2⅜W × ½"H	2¾L × 2⅜W × ⅝"H
ncludes	Chemical-resistant ABS plastic case	Magnetic back	Wall-mounting brackets	Easel stand and magnetic back	Four rubber feet	Easel stand, clip, hole for lanyard and magnetic back	Easel stand, clip, hole for lanyard and magnetic back
attery Included	2-year "AA"	2-year "AAA"	2-year "AAA"	1½-year silver-oxide	2-year "AAA"	2-year silver-oxide	2-year silver-oxide

HANDHELD

isher Scientific* Mechanical Timers

Vind up, analog timers eliminate batteries

- Adjustable from 0 to 60 min. with one-minute increments
- Turn pointer to the desired countdown setting to automatically wind the timers
- Indicating pointer always shows exact time remaining
- Loud five-second bell rings at zero
- Easy-to-read and use—no buttons or confusing setting

X-Timer (14-649-58)

- Translucent blue and white
- 2¼ dia. × 1"H (5.7 × 2.5cm)
- Weighs 2¼ oz. (63.8g)

Quick-Timer* (14-649-57)

- Blue and white, with magnet on back
- 2½ dia. × 1"H (6.4 × 2.5cm)
- Weighs 3 oz. (85g)

INCLUDES:

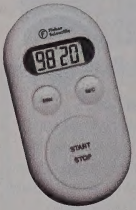
Chemical-resistant ABS plastic case, lanyard and keychain

14-649-58 (left); 14-649-57 (right)

Description	Cat. No.	Pack of 3
SX-Timer Mechanical Timer	**14-649-58**	29.91
Quick-Timer Mechanical Timer	**14-649-57**	29.91

Fisher Scientific* Traceable* Handheld Timers

One channel, countdown/countup timers



06-662-26

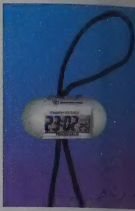
Min
Hr
Fisher Scientific Touchtimer

06-662-2

06-662

06-662-25

06-662-11



06-662-52

CERTIFICATIONS:

Individually serial numbered certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

Cat. No.	06-662-26	06-662-2	06-662	06-662-25	06-662-11	06-662-52
Each	19.92	17.97	29.95	18.58	32.40	25.75
Timing Capacity	100 minutes	20 hours	20 hours	20 hours	24 hours	24 hours
Resolution	1 second	1 minute	1 minute	1 minute	1 second	1 second
Accuracy	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Display	⅓"H LCD	4-digit, ⅛"H LCD	4-digit, ⅓"H LCD	⅓"H LCD	6-digit, ¼"H LCD	⅜"H LCD
Clock	No	No	No	No	With choice of AM/PM or military time	Yes
Stopwatch	Yes	Yes	With automatic repeat	With automatic repeat	Yes	Yes
Alarm	30 seconds, silenced automatically or manually	20 seconds, silenced automatically or manually	1 minute, silenced automatically or manually	1 minute, silenced automatically or manually	15 seconds	1 minute, silenced automatically or manually
Dimensions	½L × 1¹³⁄₁₆W × 3½"H	¼L × 1W × 1¾"H	⅜L × 2W × 1⅛"H	1½L × 2W × ¾"H	¼L × 1W × 1¾"H	1⅛ dia. × 2⁷⁄₁₆"L
Included	Magnetic back with Velcro* strips for mounting	Key-ring clip	Key-ring clip	Key-ring clip	Key-ring clip	36"L lanyard
Battery Included	2-year silver-oxide	1-year silver-oxide	1½-year silver-oxide	1½-year silver-oxide	2-year silver-oxide	1-year silver-oxide
Features	Memory recall	----	Time-out mode	Time-out mode	Time-out mode	Memory recall

Fisher Scientific* Traceable* Credit Card Timer

Thin, lightweight timer fits easily in wallet or pocket

- Counts down from 99 minutes, 59 seconds with a one-second resolution
- Accuracy: 0.01%
- Memory automatically recalls the last set time, timeouts, and a countup stopwatch
- Alarm sounds for one minute when zero is reached
- Magnet and Velcro* strip allow attachment to almost any surface

ORDERING INFORMATION:

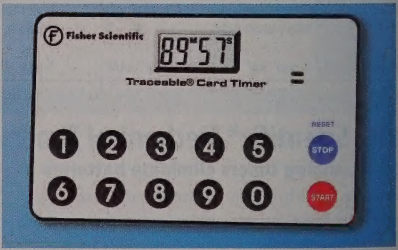
Dimensions: 3⅜L × 2⅛W × ³⁄₁₆"H (8.6 × 5.4 × 0.5cm). Weight: 0.7 oz. (19.8g).

INCLUDES:

Two-year silver-oxide battery

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.



06-664-41

Cat. No.	Eac
06-664-41	16.2

*Trademark. See Trademark Reference.

Prices subject to change.

isher Scientific* Traceable* Water-Resistant, Flashing Timer

plashproof, water-resistant timer

leal for wet labs, washdown areas, plants, and field use.

- Times from 99 minutes, 59 seconds to zero with one-second resolution
- Accuracy: 0.01%
- When zero is reached, a bright-red LED flashes as a visual sign
- Audible alarm sounds for one minute or until manually turned off
- Unit also features infinite timeouts

RDERING INFORMATION:

imensions (D x O.D.): ½ × 3" (1.3 × 7.6cm). Weight: 1½ oz. (42.5g).

NCLUDES:

anyard, magnet, Velcro* (to affix to surfaces), and two-year lver-oxide battery.

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

06-664-40

Cat. No.	Each
06-664-40	19.04

STOPWATCHES

isher Scientific* Traceable* 10-Hour topwatches

epetitive programmable countdown alarm timing

- Resolution: 0.01 seconds
- Offers sinlge-action, time-out, interval-/cumulative split, and continuous roll-over timing
- Double-line LCD models show interval/cumulative split; triple-LCD models display interval/cumulative split and running time

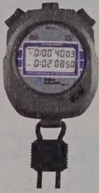
ERTIFICATIONS:

dividually serial-numbered Traceable Certificate is provided om an ISO 17025 calibration laboratory accredited by A2LA. indicates traceability to standards provided by NIST*.

14-649-5

14-649-8

- Eight memories


14-648

14-649

- Nine memories
- Four timing formats are HMS; 1/1000 min.; 1/100,000 hr.; and 1/100 sec.

14-649-9

- 60 memories recall all splits and display sample numbers 1–60

14-648-4

- 300 memories recall during and after event timing; display sample numbers from 1 to 300

Cat. No.	14-649-5	14-649-8	14-648	14-649	14-649-9	14-648-4
Each	89.70	56.42	121.35	140.26	34.56	43.82
Accuracy	0.0005%	0.001%	0.0005%	0.0005%	0.001%	0.001%
Display	Single-line LCD, ⅜" H	Double-line LCD, top line ⅛"H (0.3cm), bottom line ¼"H	Double-line LCD, ¼"H	Triple-line LCD, top two lines ⅛"H, third line ¼"H	Triple-line LCD, each ¼"H	Triple-line LCD, ¾"H
Clock	----	Displays time of day to the second, indicates AM/PM, date, and the day of the week	----	Displays time of day to the second, indicates AM/PM, date, and the day of the week	Displays time of day to the second, indicates AM/PM, date, and the day of the week	Displays time of day to the second, indicates AM/PM, date, and the day of the week
Dimensions	2½L × 3W × ½"H	2⅜ dia. × ⅝"	2½L × 3W × ¾"H	2½L × 3W × ¾"H	2⅛L × 2⅝W × ¾"H	3L × 2½W × ⅞"H
Includes	Water-resistant, O-ring-sealed ABS plastic case and lanyard	Shockproof ABS plastic case and lanyard	Water-resistant, O-ring-sealed ABS plastic case and lanyard	Water-resistant, O-ring-sealed ABS plastic case and lanyard	Lanyard	Water- and shock-resistant, O-ring-sealed ABS plastic case with nonskid rubber sides, detachable clip, and Velcro* for vertical mounting
Battery Included	4-year silver oxide	2-year silver-oxide	4-year silver-oxide	4-year silver-oxide	2-year silver-oxide	2-year silver-oxide

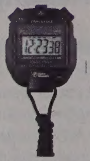
Fisher Scientific* Traceable* 24-Hour Stopwatches

Single-action, time-out, cumulative split, and continuous timing

- Timing Capacity: 29 minutes, 59 seconds, and 99 hundredths; for times exceeding 30 minutes, reads 23 hours, 59 minutes, and 59 seconds
- Resolution: 0.01 seconds for first 30 minutes, 1 second thereafter
- Alarm: Time-of-day
- Clock: Displays time of day to the second, AM/PM, date, and day of the week

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.



14-648-3

14-649-7

14-648-1

14-649-18

14-649-13

- Countdown/alarm timing in preprogrammed increments of 1, 5, or 10 min. up to 45 min.
- User programmable in increments of 1 sec. from 59 min., 59 sec. to 1 sec.

14-649-19

06-662-56

- Waterproof to three atmospheres

14-649-11

Cat. No.	14-648-3	14-649-7	14-648-1	14-649-18	14-649-13	14-649-19	06-662-56	14-649-11
Each	21.31	43.10	23.33	15.92	38.70	12.64	13.91	14.93
Accuracy	0.001%	0.001%	0.001%	0.01%	0.01%	0.1%	0.01%	0.01%
Single-Line Display	½"H	⅜"H	½"H	⅜"H	⅜"H	¼"H	⅜"H	⅜"H
Dimensions	3L × 2½W × ⅞"H	2⅜ dia. × ⅝"	2⅜ dia. × ⅝"	2⅜ dia. × ⅝"	2½ dia. × ⅝"	2⅛ dia. × ⅝"	2⅛L × 2⅜W × ½"H	2⅛L × 2⅜W × ½"H
Includes	Water-resistant case, lanyard, detachable clip, Velcro* mounting	Shockproof ABS plastic case and lanyard	Shockproof case and lanyard	Shockproof case and lanyard	Shockproof ABS plastic case and lanyard	Shockproof ABS plastic case and lanyard	O-ring-sealed, shock- and waterproof ABS plastic case and lanyard	Water- and shock-resistant case and lanyard
Battery Included	2-year silver-oxide	2-year silver-oxide	2-year silver-oxide	2-year silver-oxide	1½-year silver-oxide	1-year silver-oxide	2-year silver-oxide	2-year silver-oxide

Fisher Scientific* Traceable* Kaleidoscope Stopwatches

Digital stopwatches with choice of six translucent colors—color code to a specific test or instrument

- Timer range: 24 hour with 0.01 second resolution for the first 30 minutes; 1 second after that, 0.01% accuracy
- Single-action, time-out, cumulative-split, and continuous timing
- Stopwatch displays time of day in hour, minute, and second, AM/PM, date, and day of the week
- Time-of-day alarm
- Tactile-feel, audible "click" provides a positive action
- ¼" (0.64cm) high LCD digits

ORDERING INFORMATION:

Dimensions: 2L × 2¼W × ½"H (5.1 × 5.7 × 1.3cm). Weight: 1 oz. (28.4g).

INCLUDES:

Two-year "always-on" battery, breakaway, easy-safety-release lanyard, and keychain carabiner

CERTIFICATIONS:

Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA. It indicates traceability to standards provided by NIST*.

14-649 Series

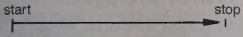
Description	Cat. No.	Pack of
Shocking Red	14-649-50	3/20.31
Sunrise Yellow	14-649-51	3/20.31
Inspirational Blue	14-649-52	3/20.31
Forest Green	14-649-53	3/20.31
Plum Purple	14-649-54	3/20.31
Shadow Gray	14-649-55	3/20.31
Assortment Pack (1 of each color above)	14-649-56	6/40.62

*Trademark. See Trademark Reference.

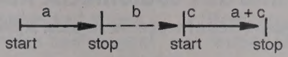
Prices subject to change.

isher Scientific* Traceable* Digital Stopwatch Functions

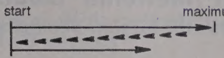
ombinations depend on model. See individual stopwatch specifications.)



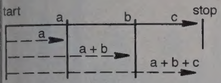
Single-action Timing: Press START button to begin timing; press again to stop clock.



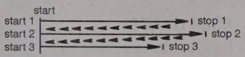
Time-in/Time-out: Records total elapsed time with any number of "time-outs." Permits stopping the timer for "off" periods, holds reading where stopped, and starts again from that point.



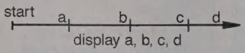
Continuous Timing: When maximum display is reached, digits roll over to zero and automatically begin timing again. Permits timing for hours, days, or weeks.



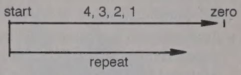
umulative Split: Freezes display r partial event times while ternal clock continues to measure tal elapsed time.



Interval Split: Yields readout of each individual time increment of connected series of events.



Memories: Capture and store separate times. Display times after the event is over.



Programmable I: Allows setting unit to count down from 10 hours to one second in 0.1-second increments. Alarm sounds at zero, and program automatically repeats.

TITRATION

POTENTIOMETRIC

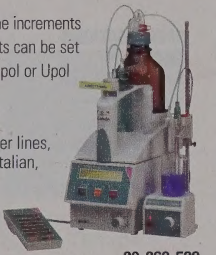
rinkmann*/Metrohm* 702 SM Titrino*

NEW

ompact, economical, versatile set-endpoint potentiometric titrator

our Versatile Modes

- MET: monotonic titration with selectable volume increments
- SET: titration to preset endpoint; two endpoints can be set
- MEAS: reads pH, potential U, temperature T, Ipol or Upol
- CAL: pH calibration with up to nine buffers



20-860-529

nformative Display, Versatile Control

- Backlit LCD is 5mm high with two 24-character lines, dialogs in English, Spanish, French, German, Italian, Portuguese, Swedish
- Keypad accesses all functions; disconnectable for routine operation via front-panel controls

ultiple Memories

- Use one titration dataset to reevaluate endpoints, recalculate
- Stores user methods
- Silo memory for series of sample data, useful for sample changer applications
- Comes with method memory for commonly applied methods

ensor Inputs

- Two high-impedance inputs for pH electrodes, ISEs
- Separate input for polarized electrode
- Input for Pt 100 or Pt 1000 resistance thermometer

xtensive Programmability and Statistical Capabilities

- Programmable to ask for sample IDs and sample size after each start of a titration
- Lets you specify start volume at beginning of titration in absolute terms (0 to 99.99mL) or as a function of sample size
- Lets you specify dosing rate for the start volume
- After addition of start volume, a reaction time can be inserted
- Up to nine formulae can be freely programmed per method; result designations can be formulated by the user in %, ppm, g/L, mg/mL, mol/L, g, mg, mL, mg/pc (mg per piece)
- Program common variables to be used in different methods, including titers, blank values, other specific results to be used in subsequent titrations
- Calculate mean value, absolute/relative standard deviation; delete a given result and recalculate statistics

Flexible Connectivity and Control Options

- RS-232-C data interface lets user print relevant data (results, endpoints, titration curve, parameters) on most IBM*-compatible printers; or pass data to a LIMS
- Connect to Sartorius*, Mettler* or Precisa* balances, alone or together with a printer

APPLICATIONS:

Set End Point applications in petrochemistry, pharmaceutical, water/wastewater/environmental testing, food and beverage testing, metals and electroplating, and many more.

ORDERING INFORMATION:

Available with stirrer and buret options as listed in table; additional accessories are available online.

Dimensions, including Exchange Unit: 5.9 × 17.7 × 10.8" (150 × 450 × 275mm). Weight, including keypad: 7.5 lb. (3.4kg). All models operate on 110V 50/60Hz.

INCLUDES:

Instrument; stirrer and buret options as shown in table; pH electrode; required cables.

Buret Capacity	Mfr. No.	Cat. No.	Each
With 728 Magnetic Stand/Stirrer			
5mL	020860502	**20-860-502**	6510.00
10mL	020860529	**20-860-529**	6510.00
20mL	020860545	**20-860-545**	6510.00
50mL	020860561	**20-860-561**	6510.00
With 727 Stand, Rinse and Magnetic Stirrer			
5mL	020860707	**20-865-600**	7500.00
10mL	020860723	**20-865-602**	7500.00
20mL	020860740	**20-865-604**	7500.00
50mL	020860766	**20-865-606**	7500.00
With 727 Stand, Rinse and Propeller Stirrer			
5mL	020860804	**20-865-601**	7700.00
10mL	020860821	**20-865-603**	7700.00
20mL	020860847	**20-865-605**	7700.00
50mL	020860863	**20-865-607**	7700.00

KARL FISCHER

Brinkmann*/Metrohm* Models 756 and 831 Coulometric Karl Fischer Titrators

Compact coulometric titrators determine trace quantities of water in liquids, solids, and gases down to 10µg

Features

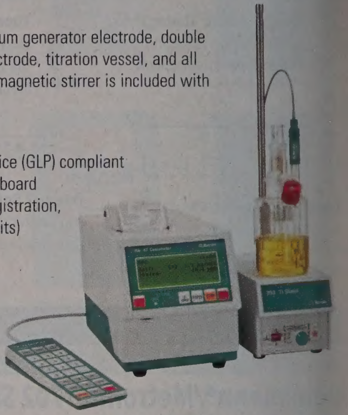
- Generate necessary reagent electrolytically in the titration vessel
- Precisely measured and controlled current allows the addition of high-resolution reagent necessary for trace moisture analysis
- Use titration time and current (two absolute values) to eliminate the need for reagent calibration or standardization
- Available with two titration cell types; cell without diaphragm reduces reagent consumption and electrode contamination, and is easy to clean (Standard cell with diaphragm is also available; see ordering chart below)
- Large-screen display for observation of real-time curves for side reactions or titration progress, or scrolling through method parameters
- Method memory creates and stores settings specifically for your samples and applications
- Dual RS-232-C interfaces connect to a balance and PC or external printer simultaneously
- **Model 756** has built-in printer
- **Model 831** requires an accessory printer for documentation
- **Model 703 Pump/Stirrer,** included with 20-815-159 and 20-814-152, aspirates KF waste and adds fresh reagent at the touch of a button without exposing the titration vessel to atmospheric moisture. Reduces personal contact with reagent

INCLUDES:

All cells include platinum generator electrode, double platinum indicator electrode, titration vessel, and all required accessories; magnetic stirrer is included with 20-815-108.

COMPLIANCE:

Good Laboratory Practice (GLP) compliant (user-level access, keyboard lockout, user-name registration, and result window limits)



756 Coulometric Titrator with 703 Pump/Stirring Stand (20-815-159)

Includes	Mfr. No.	Cat. No.	Each
Model 756 KF Coulometer with Magnetic Stirrer and Built-In Printer			
Cell without diaphragm	20 81 510-8	**20-815-108**	8410.00
Cell with diaphragm	20 81 500-1	**20-815-001**	8300.00
Model 756 KF Coulometer with Model 703 Pump/Stirrer and Built-In Printer			
Cell without diaphragm	20 81 515-9	**20-815-159**	9050.00
Model 831 KF Coulometer with Model 703 Pump/Stirrer			
Cell without diaphragm	20 81 415-2	**20-814-152**	7750.00

SPECIFICATIONS

Precision	<±3% at mg/g
Resolution/Accuracy	10–1000µg H_2O: <±3µg; >1000µg: 0.3% or better
Calibration Range	Full scale
Endpoint Time/Level	Max. 2.24mg H_2O/min.
Variable Stirrer Speed	Yes
Dimensions	12L × 10W × 8"H (30 × 25 × 20cm)
Electrical Requirements	100–240V 50/60Hz

ACCESSORIES

Accessories and Replacement Parts for Models 756 and 831 KF Coulometers

Description	Mfr. No.	Cat. No.	Each
For Model 756 KF Coulometer			
Thermal Paper; 1 roll	20 80 575-7	**20-805-757**	13.08
Thermal Paper; pack of 5 rolls	20 80 576-5	**20-807-565**	45.77
For Models 756 and 831 KF Coulometers			
Volumetric Electrode for KF Volumetric Cell (without cable)			
Double Platinum Wire Electrode	20 92 884-1	**20-928-841**	240.00
Coulometric Electrode for KF Coulometric Cell (without cable)			
Double Platinum Wire Electrode	20 92 890-5	**20-928-905**	245.92
Cable for Double Platinum Electrode	20 97 734-5	**20-977-345**	90.46
Generator Electrodes for Coulometric Cell			
Generator Electrode without diaphragm	20 92 897-2	**20-928-972**	700.00
Generator Electrode with diaphragm	20 92 896-4	**20-928-964**	760.00
Cable for Generator Electrodes	20 97 746-9	**20-977-469**	96.91

LOOKING FOR MORE?

For Automatic Burets, see the Burets section.

*Trademark. See Trademark Reference.

rinkmann*/Metrohm* Titrino* Model 95 Karl Fischer Titrators

uilt-in multiple method storage creates and stores p to 100 methods for different samples and reagent oncentrations

5 Karl Fischer Titrino with 703 Pump/Stirring Stand

its provide 100ppm to 100% H_2O content measuring range with duced personal contact with reagent. Large-screen display allows for sy programming and shows real-time titration curve, enabling you to ickly troubleshoot and change parameters during titration.

atures

100ppm to 100% H_2O content measuring range
Stirring begins automatically at the start of a titration and stops as soon as it is finished
Dual RS-232-C interfaces allow simultaneous connection of balance and printer or PC
Metrohm pump/stirrer aspirates Karl Fischer waste and adds fresh reagent at the touch of a button without exposing the titration vessel to atmospheric moisture

RDERING INFORMATION:

ailable accessories: Brinkmann Workcell* Titration Software for hanced data management (Cat. No. 20-810-004), Seiko* DPU-414 ermal Printer Package (Cat. No. 20-016-051).

CLUDES:

it with Metrohm pump/stirrer, cell and buret; cell includes double atinum indicator electrode, titration vessel, and all required accessories

MPLIANCE:

od Laboratory Practice (GLP) compliant (user-level access, keyboard kout, user-name registration, and result window limits)

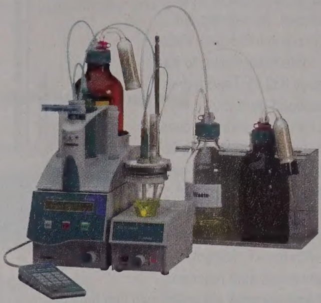
ret Capacity	Mfr. No.	Cat. No.	Each
nL	20 85 820 6	**20-858-206**	7990.00
mL	20 85 822 2	**20-858-222**	7990.00
mL	20 85 824 9	**20-858-249**	7990.00
mL	20 85 826 5	**20-858-265**	7990.00

ECIFICATIONS

ecision	<±0.3% relative
ccuracy	<±0.5% relative
alibration Range	Full scale
dpoint Time/Level	Programmable
riable Stirrer Speed	Yes
imensions	11L × 10W × 18"H (28 × 25 × 46cm)
ectrical Requirements	100 to 240V 50/60Hz

Brinkmann*/Metrohm* Titrino* Model 787 Volumetric Karl Fischer Titrator

Dedicated, economical, single-method titrators for routine volumetric KF analysis



787 Karl Fischer Titrator with 703 Pump/Stirring Stand

For routine volumetric KF analysis. Units provide 100ppm to 100% H_2O content measuring range with reduced personal contact with reagent.

Features

- Automatic storage and retrieval of titer and blank values
- Calculate the result, mean, standard deviation, and relative standard deviation
- With backlit LCD for easy viewing of results
- RS-232-C interface allows connection of balance, printer, or PC
- Metrohm pump/stirrer aspirates KF waste and adds fresh reagent at the touch of a button without exposing the titration vessel to atmospheric moisture

ORDERING INFORMATION:

Available accessories: Seiko* DPU-414 Thermal Printer Package (Cat. No. 20-016-051).

INCLUDES:

Unit with Metrohm pump/stirrer, cell and buret; cell includes double platinum indicator electrode, titration vessel, and all required accessories.

Buret Capacity	Mfr. No.	Cat. No.	Each
5mL	20 85 060 4	**20-850-604**	6560.00
10mL	20 85 062 1	**20-850-621**	6560.00
20mL	20 85 064 7	**20-850-647**	6560.00
50mL	20 85 066 3	**20-850-663**	6560.00

SPECIFICATIONS

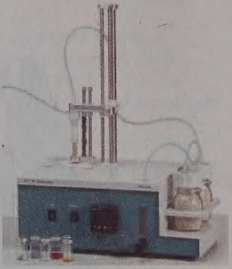
Precision	<±0.3% relative
Accuracy	<±0.5% relative
Calibration Range	Full scale
Endpoint Time/Level	Programmable
Variable Stirrer Speed	Yes
Dimensions	11L × 10W × 18"H (28 × 25 × 46cm)
Electrical Requirements	110 to 240V 50/60Hz

ACCESSORIES

Brinkmann*/Metrohm* KF Thermoprep 832 Drying Oven

NEW

Thermal sample preparation for use with any Metrohm Karl Fischer titrator



20-825-159

Quickly drives off moisture in solid and liquid samples, for subsequent coulometric or volumetric determination of the water content according to Karl Fischer. The new 832 KF Thermoprep has been developed from the conventional Karl Fischer drying oven for single determinations. Sample is heated in the oven and released water is transferred by carrier gas to the titration cell. Only the water enters the KF cell; sample itself does not come into contact with the KF reagent, eliminating unwanted side reactions and matrix effects. Samples are introduced into the oven in tightly sealed vials.

Refined methodology

- Sample vial (6mL) containing sample is positioned above oven and lowered into heating block
- At the same time, a double hollow needle pierces sample vial septum
- Via inlet needle, a stream of dry carrier gas (air or inert gas) is passed through heated sample
- Carrier gas, loaded with the released moisture, flows through outlet needle and connected tube directly into titration cell for Karl Fischer determination
- Depending on the sample water content, determination can be carried out either volumetrically or, at the trace level, coulometrically

Convenient features

- Temperature range, 50° to 250°C
- Manual sample introduction via tight-sealed vials
- Integrated oven heating block, gas pump, flowmeter and flow controller, and two drying flasks

Decisive advantages:

- Strictly reproducible conditions yield results with improved precision
- Manual sample preparation is reduced to a minimum
- Considerable savings in time
- No contamination of the oven by the sample; no carryover, no memory effects
- Reagent consumption is diminished, since the solvent is exchanged less frequently
- Improved water release from the sample, since carrier gas does not just pass over the sample but directly through it

COMMON APPLICATIONS:

Petrochemicals – including fuels, oils, crudes, hydraulic fluids and lubricants; polymers – including pellets, polymer/solvent mixtures, raw materials and precursors; pharmaceuticals – including powders, liquids, tablets/pills and lyophilized samples; any sample run currently using a conventional Karl Fischer oven, such as food, salts, metals, soaps and toothpaste

ORDERING INFORMATION:

Operates on 115V 60Hz. Accessories and replacements include Septa, 6mL Sample Vials, Molecular Sieve, Hollow Outlet Needle, Hollow Gas-inlet and Injection Needle; contact your Fisher Scientific Customer Service Representative for details.

Oven can be modified for use of other sample vial sizes; contact your Fisher Scientific Customer Service Representative for details.

INCLUDES:

Oven, integrated gas pump, flowmeter and flow controller, and two drying flasks

Mfr. No.	Cat. No.	Each
020817011	**20-825-159**	8350.0

Brinkmann*/Metrohm* Model 703 Pump/Stirrer

Titration stand with pump and magnetic stirrer

20-850-051

- Aspirates KF waste and adds fresh reagent at the touch of a button, without exposing the titration vessel to atmospheric moisture
- Reduces operator contact with reagent

Model Selection:

- Model for 9VDC connects directly to Metrohm Titrators
- Freestanding 110V models are for use with titrators from other manufacturers

Description	Mfr. No.	Cat. No.	Each
Model 703 for 9VDC Operation with Metrohm Titrators			
Standard model with all necessary accessories; without cell	20 85 005-1	**20-850-051**	1290.00
Model 703 for 110VDC Operation with other KF Titrators			
Standard model with all necessary accessories; without cell	20 85 003-5	**20-850-035**	1390.00
For use with standard pH electrodes; with electrode/buret tip holder	20 85 004-1	**20-850-041**	1195.00

ACCESSORIES

Seiko* DPU-414 Thermal Printer Package

Dimensions, 6$\frac{5}{16}$D × 2$\frac{3}{4}$W × 6$\frac{11}{16}$"H (16 × 7 × 17cm)

Description	Mfr. No.	Cat. No.	Each
Seiko DPU-414 Printer Package	20 01 605 1	**20-016-051**	620.00
Thermal Printer Paper for Seiko DPU-414 (5 rolls)	20 01 544-6	**20-015-446**	27.50

Model 739 Snap-In Buret Replacement

Buret Capacity	Mfr. No.	Cat. No.	Each
20mL	20 85 415-4	**20-854-154**	860.00

*Trademark. See Trademark Reference.

Prices subject to change.

ELECTRODES

rinkmann*/Metrohm* Titrator Electrodes

hoose from glass and metal electrodes

etrohm electrodes, designed for pH, redox, and surfactant titration, are necessary for potentiometric measurements. Indicator electrodes provide a otential dependent upon the composition of the analysis solution. Combination electrodes contain both indicator and reference electrodes within e sensor.

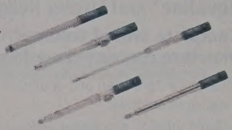
etrohm Glass pH Combination Electrodes

or aqueous and nonaqueous solvents, high-alkaline and high-temperature conditions, and w-ionic-strength solutions

- Respond to hydrogen ions in solution—ion selective for H⁺
- Ag/AgCl cartridge reference system ensures fewer diaphragm problems and provides longer life
- Ceramic diaphragm measures 1.0mm dia.; outflow rate, 5 to 25µL/h; resistant to alkali
- Internal buffer is exactly pH 7 or 0mV, simplifying pH measurements at elevated temperatures
- Allow for calibration at room temperature and measurements at a higher temperature
- Internal buffer and electrode design ensure rapid response to temperature changes and accuracy of measurements
- Wet chemical tested
- Manufacturing number for traceability and GLP/ISO documentation

INCLUDES:
Individual test certificate

REQUIRED ACCESSORIES:
Order electrode cables separately; see Accessories for Metrohm Electrodes.



Glass pH Combination Electrodes.

pe	Applications	Shaft Length	Shaft Dia.	Min. Immersion	Mfr. No.	Cat. No.	Each
olitrode*†	For field applications	125mm	12mm	15mm	20 91 219-7	**20-912-197**	286.00
nitrode*†	Dyes, electroplating baths, polymers, resins, wine, fruit and vegetable juice	125mm	12mm	30mm	20 91 066-6	**20-910-666**	430.00
nitrode	Dyes, electroplating baths, polymers, resins, wine, fruit and vegetable juice	125mm	12mm	30mm	20 91 067-4	**20-910-674**	310.00
at Membrane	Soil, paper, skin, leather	115mm	12mm	1mm	20 91 561-7	**20-915-617**	310.00
icro	Small sample volumes	125mm	3mm	7mm	20 91 073-9	**20-910-739**	390.00
olvotrode*	Nonaqueous solutions	125mm	12mm	20mm	20 91 055-1	**20-910-551**	335.00

Vith PT1000 temperature probe and attached electrode cables.

itrode* Redox Metal Combination Electrodes

nique electrodes combine glass and noble metal lectrodes into a single assembly

o reference diaphragm; therefore, no filling solution or aphragm-related problems. Electrodes are available in atinum (for redox reactions), silver or precipitation [argentometry] reactions), d double platinum sheet (for low-level dox reactions).

- Temperature range, 0° to 80°C (32° to 176°F); -20° to +70°C (-4° to +158°F) for double platinum sheet
- Easily stored in distilled water

Redox Metal Combination Electrodes.

OTE:
r pH titrations only, not for direct measurements

pe	Shaft Length	Shaft Dia.	Mfr. No.	Cat. No.	Each
atinum	125mm	12mm	20 94 855-8	**20-948-558**	370.00
lver	125mm	12mm	20 94 850-7	**20-948-507**	340.00
ouble Platinum Sheet	125mm	12mm	20 92 400-4	**20-924-004**	310.00

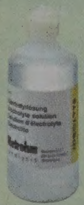
Accessories

For Metrohm* Electrodes

Electrode Cables

Description	Mfr. No.	Cat. No.	Each
Electrode cable for reference electrode (B to B)	20 97 770-1	**20-977-701**	26.52
Indicator and combination electrode cable for BNC plug instruments	20 97 733-7	**20-977-337**	96.43
Indicator and combination electrode cable for US Standard plug instruments	20 97 732-9	**20-977-329**	150.56

Electrolyte Solutions



20-095-059

Description	Mfr. No.	Cat. No.	Each
Potassium chloride, 3M, 250mL	20 09 610-1	**20-096-101**	23.14
Lithium chloride in ethanol, 250mL	20 09 444-3	**20-094-443**	43.26
Idrolyte for micro pH electrode, 250mL	20 09 505-9	**20-095-059**	32.70

REAGENTS

FisherChemical* Reagents for Titration

Coulometric KF Titration Conditioner Solution

Quantity	Cat. No.	Each	Case of 6
1L	**SC95-1**	87.61	418.04

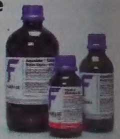
Volumetric KF Titration Reagents

Description	Quantity	Cat. No.	Each	Case of 6
Karl Fischer Reagent, Stabilized. Ready to use for moisture determination by electrometric titration. Minimum 6.0mg H_2O/mL; for lower titer, dilute with SK5 Karl Fischer Diluent.	500mL	**SK3-500**	141.74	684.73
	1L	**SK3-1**	232.42	1104.41
	4L	**SK3-4**	529.92	1680.66
Karl Fischer Reagent Diluent. For SK3 stabilized Karl Fischer Reagent.	1L	**SK5-1**	288.14	1378.63
	4L	**SK5-4**	606.11	1935.21
Water-in-Methanol. 1mL=1mg H_2O. Standard and back-titration titrant for KF analyses. 1L bottle.	1L	**SW2-1**	76.08	363.10

Aqualine* Karl Fischer Reagents

Complete line of volumetric and coulometric Karl Fischer reagents and standards required to analyze moisture content in a wide range of applications

- Carefully developed and optimized to meet the exacting demands of trace moisture analysis.
- Rapid titration and stable endpoint
- Extended product shelf life ensures stable titer, high titration speed, and accurate results
- Safer reagents are pyridine free, and less toxic with no unpleasant odor.
- Includes two nonhalogenated reagents, Electrolyte AG and Electrolyte CG



AL2100-212, AL2520-500, AL1950-1

Product	Description	Hazard Codes	Spill Cleanup Kit	Packaging	Quantity	Cat. No.	Each	Case of
Aqualine Volumetric Reagents: Single-Component Systems								
Aqualine Complete 1	Single-component reagent. Water equivalent: 1mg$H_2$0/mL. Pyridine free.	XI	Solvent	Amber Glass	1L	**AL1900-1**	136.26	4/454.97
		XI	Solvent	Amber Glass	2.5L	**AL1900-212**	273.04	4/911.73
Aqualine Complete 2	Single-component reagent. Water equivalent: 2mg$H_2$0/mL. Pyridine free.	XI	Solvent	Amber Glass	1L	**AL1950-1**	89.92	4/299.68
		XI	Solvent	Amber Glass	2.5L	**AL1950-212**	187.75	4/631.27
Aqualine Complete 5K	Single-component reagent. Water equivalent: 5mg$H_2$0/mL. For aldehyde and ketone analysis.	XN	Solvent	Amber Glass	1L	**AL2250R-1**	109.83	4/373.14
Aqualine Matrix K	Single-component reagent. Water equivalent: 5mg$H_2$0/mL. For aldehyde and ketone analysis.	XN	Solvent	Amber Glass	1L	**AL2300R-1**	81.30	4/274.90
Aqualine Buffer,	Buffer for use with acidic samples.	F C	Solvent	Amber Glass	500mL	**AL2350-500**	48.38	4/170.08
Methanol (Low Water) CAS: (67-56-1)	Low water methanol. Also meets ACS specifications. Water <100ppm. Low water working medium solvent.	T F	Solvent	Amber Glass	4L	**A935-4**	118.77	4/356.31
Methanol Anhydrous CAS: (67-56-1)	Anhydrous Methanol. Water <50ppm. Ultra low water working medium.	T F	Solvent	Amber Glass	1L	**AC61040-0010**	33.30	6/169.58
Aqualine Volumetric Reagents: Two-Component Systems								
Aqualine Solvent CAS: (67-56-1) (Methanol))	Solvent for two-component system. Water capacity: 8mg$H_2$0/mL. Pyridine free.	T F	Solvent	Amber Glass	1L	**AL2100-1**	66.90	4/229.29
		T F	Solvent	Amber Glass	2.5L	**AL2100-212**	135.11	4/461.11
Aqualine Solvent CM	Solvent for high hydrocarbon content. Pyridine free.	T F	Solvent	Amber Glass	1L	**AL2110-1**	79.07	4/271.32
		T F	Solvent	Amber Glass	2.5L	**AL2110-212**	155.15	4/529.93
Aqualine Titrant 5	Titrant for two-component system. Water capacity: 5.0mg$H_2$0/mL. Pyridine free.	T F	Solvent	Amber Glass	1L	**AL2200-1**	96.50	4/329.50
		T F	Solvent	Amber Glass	2.5L	**AL2200-212**	150.73	4/514.77
Aqualine Standards								
Aqualine Standard 1.0	1.0mg/mL$H_2$0 standard	XN	Solvent	Amber Glass Ampule	10 × 4mL	**AL2710-40**	86.67	6/428.06
Aqualine Standard 5.0	5.0mg/mL$H_2$0 standard	XN	Solvent	Amber Glass	500mL	**AL2730-500**	49.96	4/175.72
Aqualine Standard 10.0	10.0mg/mL$H_2$0 standard	XN	Solvent	Amber Glass Ampule	10 × 8mL	**AL2720-80**	84.28	6/415.96
Aqualine Sodium Tartrate Dihydrate Water Standard	Solid standard	----	----	Poly Bottle	100g	**AL2770-100**	47.79	6/238.84
Aqualine Water in Methanol Standard 5.0	1mL = 5.0mg $H_2$0	T F	Solvent	Amber Glass	1L	**AL9000-1**	67.83	4/233.01
Aqualine Coulometric Reagents: Anolyte Solutions								
Aqualine Electrolyte A	Anolyte solution for general use in conventional cells with a diaphragm	T F	Solvent	Amber Glass	500mL	**AL2500-500**	83.33	4/282.75
Aqualine Electrolyte ADG	Electrolyte solution for use in fritted and fritless cells	T F	Solvent	Amber Glass	500mL	**AL2515-500**	83.79	4/282.85
Aqualine Electrolyte AG	Nonhalogenated anolyte solution for general use in conventional cells with a diaphragm	T F	Solvent	Amber Glass	500mL	**AL2520-500**	85.59	4/295.90
Aqualine Coulometric Reagents: Catholyte Solutions								
Aqualine Electrolyte C	Catholyte solution for general use in conventional cells with a diaphragm	T F	Solvent	Amber Glass with Septum Seal	25mL	**AL2550-25**	44.96	4/149.98
Aqualine Electrolyte CG	Nonhalogenated catholyte solution for general use in conventional cells with a diaphragm	T F	Solvent	Amber Glass with Septum Seal	25mL	**AL2560-25**	44.96	4/153.18

*Trademark. See Trademark Reference.

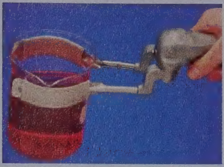
Prices subject to change.

TONGS

*Fisherbrand** Deluxe Beaker Tongs with Fiberglas*-Covered Jaws

Handle beakers from 100 to 2000mL

- Stainless-steel, Fiberglas-covered jaws are 3" (7.6cm) lower than handgrip
- Hand is a safe 6" (15cm) from beaker
- Diecast aluminum handgrip
- Screw adjustment for maximum opening


02-622

ORDERING INFORMATION:
Length: 13" (33cm). Replacement Fiberglas jaw mittens available online (see 02-621)

Cat. No.	Each	Case of 10
02-622	84.85	750.85

*Fisherbrand** Beaker Tongs with Fiberglas*-Covered Jaws

Handle beakers from 100 to 1500mL

- Stainless steel

ORDERING INFORMATION:
Length: 13" (33cm)

02-620

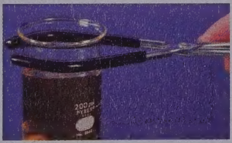
Cat. No.	Each
02-620	34.82

*Fisherbrand** Beaker Tongs

Handle beakers from 50 to 1500mL capacity

- Made of ¼" dia. (6mm) nickel-plated steel wire
- Flat riveted joint
- Plastisol*-coated jaws open to 4½" (11cm) maximum

ORDERING INFORMATION:
Length: 9" (23cm)

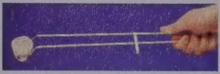

15-211

Cat. No.	Each
15-211	17.05

*Fisherbrand** Julian-Style Crucible Tongs

For crucibles in muffle furnace

- Nickel-plated steel
- Curved ends
- Compressing guide


15-210

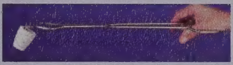
ORDERING INFORMATION:
Length: 22" (56cm)

Cat. No.	Each
15-210	62.88

*Fisherbrand** Jumbo Crucible Tongs

For grasping crucibles deep in furnace

- Fabricated with integral forefinger and thumb openings
- Handle extends into palm
- Stainless steel


15-207

ORDERING INFORMATION:
Length: 18" (46cm)

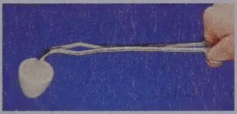
COMPLIANCE:
Meet OSHA standards

Cat. No.	Each
15-207	55.99

*Fisherbrand** Crucible Tongs with Platinum Shoes

For very high-temperature work

- Provide a contamination-free gripping surface
- Hollow platinum shoes for grasping crucibles


15-205

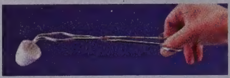
ORDERING INFORMATION:
Approx. weight: 1⁄16 oz. (2.5g)
Length: 10" (25cm)

Cat. No.	Each
15-205	807.55

*Fisherbrand** Economical Crucible Tongs

Stainless-steel tongs with nonbinding joints

- Accurately fabricated parts are flattened at the joint
- Fastened with a spun (not hammered) rivet
- Large finger openings facilitate firm grip and good control of tongs
- Corrosion resistant



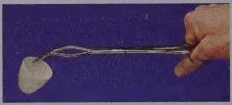
15-193

Cat. No.	Each
15-193	30.66

*Fisherbrand** Stainless-Steel Crucible Tongs

Well-balanced, strong, accurately aligned

- Precision instrument joint ordinarily found only on high-quality surgical instruments
- Carefully tapered, serrated tips meet precisely when closed
- Withstand high temperatures
- Won't rust



15-186

ORDERING INFORMATION:

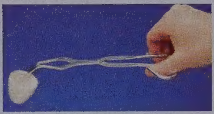
Length: 9" (23cm)

Cat. No.	Each	Case of 12
15-186	33.85	347.14

*Fisherbrand** Budget-Priced Crucible Tongs

Plated steel resists rust

- Long neck
- Serrated tips



15-200

ORDERING INFORMATION:

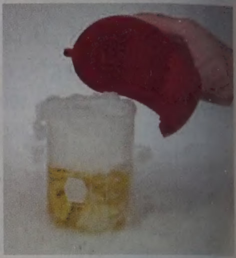
Length: 9" (23cm)

Cat. No.	Each	Case of 12
15-200	10.33	103.30

Scienceware* Hot-Hand* Protector

Pockets for thumb and fingers fit every hand size

- Silicone rubber hand protector
- Handles hot objects to 260°C (500°F)
- Handles cold objects to -57°C (-70°F)
- Gripping surface studded for positive grip
- Hole for hanging

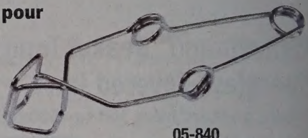


11-394-300

Mfr. No.	Cat. No.	Each	Case of 24
38000-0000	**11-394-300**	20.65	396.50

Test Tube Clamps

Easy to carry and pour



05-840

- Stoddard-style clamps
- Self-closing, rectangular jaw

ORDERING INFORMATION:

Jaw opening: up to 1" (25mm)

Length: 5" (12.7cm)

Type	Jaw Construction	Cat. No.	Each	Pack of 12
With finger grips	Nickel-Plated Steel Wire	**05-840**	24.10	245.80
Without finger grips	Plain Brass Wire	**05-841**	24.15	246.35

*Trademark. See Trademark Reference.

*Fisherbrand** Instrument Repair Kit

All the tools you need for design, research, maintenance, repair and service requirements

15-230

- Professional tool kit includes 46 precision-engineered tools (see list at right) on two removable, custom-fitted pallets
- Sturdy case covered with simulated black top-grain leather
- Large, extra-heavy vinyl pocket in lid holds catalogs, manuals
- Partitions create ample space in bottom for power tools, meters, and other equipment

RDERING INFORMATION:

ase is 14½L × 19W × 6"H (37 × 48 × 15cm). Net weight, 20 lb. (9kg).

ARRANTY:

ools have full lifetime warranty.

escription	Cat. No.	Each
nstrument Repair Kit	15-230	1005.94

Kit contains the following tools:

7 Hollow-shaft Nut Drivers:

Socket sizes of ³⁄₁₆, ¼, ⁵⁄₁₆, ¹¹⁄₃₂, ⅜, ⁷⁄₁₆, and ½"

18 Screwdrivers:

⅛" slotted
#0 Phillips
¼" slotted stubby
#1 Phillips
#1 Phillips stubby
#2 Phillips
¼" slotted, cushion grip
¼" Bull Driver*
#2 Phillips, cushion grip
#1 square recess
#2 square recess
⁵⁄₃₂" clutch head Frearson
Reversible ³⁄₁₆" slotted × #1 Phillips
Reversible ¼" slotted × #2 Phillips
⅛" slotted tip, screw holding
³⁄₁₆" slotted tip, screw holding
¼" slotted tip, screw holding
Phillips tip, screw holding

2 Wrenches:

6" adjustable
⅜ × ⁷⁄₁₆" ratcheting box

7 Pliers:

5" diagonal
6½" adjustable
6" diagonal
4" electronic chain nose
6" needle nose
6" long nose
4" electronic diagonal

Electronic Tools and Testers:

Adjustable wire stripper and cutter
Crimping tool with bolt slicer
Continuity tester with wire lead and clip
100-500 volt twin lead tester
6/24 volt tester

Problem-solving Tools:

Folding hex key wrench set
Slotted-tip offset screwdriver
Phillips-tip offset screwdriver
3-in-1 tapping tool
Spring tool
External snap-ring pliers
Magnetic screwdriver

*Fisherbrand** Original Labtool

Compact, folding multiuse tool meets hundreds of laboratory needs

- Scores/breaks glass tubing; opens septas and bottles; cuts stoppers and tubing; and much more
- Stainless steel

ORDERING INFORMATION:

losed length, 4" (10cm).

15-226-1

INCLUDES:

Large/medium/small slot and Phillips screwdrivers, knife blade, file, opener, saw, inch/millimeter ruler, needle-nose pliers, grippers, wire cutters, serrated blade, and nut driver

Cat. No.	Each
15-226-1	88.36

*Fisherbrand** Tool Kit

High-quality, precision-made tools

- 13 tools organized in heavy blue vinyl case with clear, heavy-duty vinyl compartments
- Tool Kit rolls and ties shut for compact storage
- Can be hung on wall with its three metal grommets
- Tool handles are cushioned in heavy rubber

Fisherbrand

15-226

ORDERING INFORMATION:
For replacement tools, contact your Fisher Scientific Customer Service Representative.

Description	Cat. No.	Each
Tool Kit	**15-226**	232.44

† Replacement not available individually.
‡ Additional batteries available from stock as Cat. No. 17-926C.

Kit contains the following tools:
6 Screwdrivers
Jeweler's
4 × 3/16", rubber grip
4 × 1/4", rubber grip
6 × 1/8"
Offset, 1/4"
Phillips #1, 3" long, rubber grip
3 Pliers
Utility, 7" long, rubber grip
Slip-joint, 6" long
Long-nose Side, 6" long, rubber grip
Adjustable Wrench
6" long, insulated grip
Folding Hex Key Set †
8 keys from 0.050 to 5/32"
Contact Burnishing Tool
Penlight
With pocket clip and 2 "AA" batteries‡

TRANSFECTION

CELLS

Genlantis* MaxPAK* Competent Mammalian Cells

NEW

The world's first commercially available competent mammalian cells

Ideal for both protein production and high-throughput testing of expression constructs. MaxPAK cells are not genetically modified and perform better than your routinely cultured cells without needing two days to prepare.

- Simply thaw cells, plate and transfect
- No cell passing—3 hr. incubation after thawing
- Revolutionary cell culture technology for achieving 4X more cell density, results in higher protein yield
- Start and finish your experiment in hours instead of days
- Available cell lines: HeLa, HEK 293, CHO-K1
- Comparable to competent *E. coli* cells

ORDERING INFORMATION:
Each kit contains four ampules of cryopreserved MaxPAK Mammalian Competent Cells (approximately 2.5 × 10^6 cells suspended in 0.5mL medium) and 90mL of MaxPAK Plating Medium (Incomplete).

STORAGE CONDITIONS:
Store at -80°C. Store in an area of the freezer where there is minimal temperature fluctuation. Cells can also be stored in the vapor phase of liquid nitrogen. The MaxPAK Plating Medium (Incomplete) should be stored at 4°C. Do not freeze the medium. All components are stable for six months if stored properly.

Description	Quantity	Cat. No.	Each
HeLa S3 Cells	4 vials (10 million cells)	**C501300**	236.32
CHO-K1 Cells	4 vials (10 million cells)	**C502300**	236.32
HEK 293 Cells	4 vials (10 million cells)	**C503300**	236.32

REAGENTS AND KITS

Mirus Bio *Trans*IT*-LT1 and -LT2 Transfection Reagents

A broad spectrum, low toxicity, DNA transfection reagent

- Broad spectrum DNA delivery—utilize one transfection reagent and protocol for a variety of cells
- Low cellular toxicity—maintain cell density and reduce experimental biases
- High efficiency delivery—achieve expression in a large population of cells for experimental success
- Deliver single or multiple plasmids—suitable for many applications such as gene expression, siRNA/shRNA expression, viral production, and promoter analysis

STORAGE CONDITIONS:
Store for one year at 4°C or -20°C.

	Trans IT-LT1 Reagent		*Trans* IT-LT2 Reagent	
Quantity	Cat. No.	Each	Cat. No.	Each
0.4mL	**MIR 2304**	148.00	**MIR 2404**	148.00
1mL	**MIR 2300**	234.00	**MIR 2400**	234.00
5 × 1mL	**MIR 2305**	1049.00	----	----
10 × 1mL	**MIR 2306**	1980.00	**MIR 2406**	1980.00

lirus Bio *Trans*IT*-Express ransfection Reagent

ecommended for high-throughput applications

- Combine an optimized reagent and a streamlined protocol for maximum speed and efficiency
- DNA/reagent complexes can be added directly to cells in complete media at any time in seeding cells) and do not have to be removed after transfection
- Supplied as a ready-to-use ethanol solution
- Performs 5000 transfections in 96-well plates per milliliter of reagent
- Cell lines successfully transfected include COS-7, HeLa, HEK293, and NIH3T3

'ORAGE CONDITIONS:
n be refrigerated at 4°C or frozen at -20°C for up to one year.

antity	Cat. No.	Each
.4mL	**MIR 2004**	160.60
nL	**MIR 2000**	247.42
‹ 1mL	**MIR 2005**	1104.00
× 1mL	**MIR 2006**	2168.00

enlantis* PerFectin* ransfection Reagent

ptimized to provide efficient transfection of several pularly used cell lines

- High efficiency with CHO, COS, 293, HeLa, NIH-3T3, and Jurkat cells
- Easy and optimized protocols for individual cell lines
- Compatible with serum-containing media
- Economical price
- Cationic lipid specifically formulated and optimized to provide efficient ransfection of several popularly used cell lines

ORAGE CONDITIONS:
ed PerFectin reagent and DNA Diluent are stable for one year at 4°C and drated PerFectin reagent is stable for six months at 4°C.

antity	Cat. No.	Each
5mL/100 reactions	**T303007**	95.71
mL/200 reactions	**T303015**	170.96

enlantis* GenePORTER* ransfection Reagents and Kits

gh-efficiency, serum-free transfection of a broad ectrum of adherent and suspension cells

- ow cytotoxicity
- deal for delivery of oligonucleotides
- Optional convenient single-use format (GenePORTER* QuikEase* Kit)
- Unique lipid formulation that allows efficient serum-free transfection of broad spectrum of adherent and suspension cells

ORAGE CONDITIONS:
ed GenePORTER reagent is stable for one year at 4°C and hydrated nePORTER reagent is stable for six months at 4°C.

scription	Quantity	Cat. No.	Each
nsfection Reagent	0.75mL	**T201007**	130.73
	1.5mL	**T201015**	231.29
	5 × 1.5mL	**T201075**	1000.00
ikEase Kit	96 vials	**T201096**	196.10

Genlantis* GenePORTER* 2 Transfection Reagents and Kits

Maximum transfection efficiency in hard-to-transfect cells

The GenePORTER 2 Transfection Reagent is a novel lipid formulation specifically designed to provide high transfection efficiencies in a broad range of mammalian cells. It is especially effective in difficult-to-transfect cells.

- ▸ Compatibility with serum-containing media
- ▸ Low cytotoxicity

STORAGE CONDITIONS:
Dried GenePORTER 2 reagent and Hydration Buffer are stable for one year at 4°C and hydrated GenePORTER 2 reagent is stable for six months at 4°C.

Description	Quantity	Cat. No.	Each
Transfection Reagent	0.75mL	**T202007**	181.01
	1.5mL	**T202015**	345.65
	5 × 1.5mL	**T202075**	1445.00
QuikEase* Kit	96 single-use tubes	**T202096**	275.52
DNA Diluent	5 × 8mL	**T20DA05**	60.45
	10 × 8mL	**T20DA10**	85.64
DNA Diluent B	5 × 8mL	**T20DB05**	60.45
	10 × 8mL	**T20DB10**	85.64

LOOKING FOR REPORTER SYSTEMS?
A wide selection of reporter systems can be found in the Cell Biology section.

Mirus Bio *Trans*IT-HeLaMONSTER* Transfection Kit

Enhances the overall transfection efficiency of HeLa cells[1]

Each milliliter of reagent performs up to 500 transfections in 35mm plates.

INCLUDES:
Pair of reagents, each supplied as ready-to-use ethanol solutions.

STORAGE CONDITIONS:
Can be refrigerated for up to one year at 4°C (do not freeze).

Quantity	Cat. No.	Each
0.4mL	**MIR 2904**	183.18
1mL	**MIR 2900**	282.85

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[1] *For best results, transfections should be performed in a complete growth medium and the media change eliminated*

Mirus Bio *Trans*IT*-CHO Transfection Kit

Developed for high transfection efficiency and cell viability in CHO-K1 cells

- Produces 50 to 60% efficiency using green fluorescent protein (GFP) as a reporter[1]
- One milliliter provides sufficient reagents to perform up to 500 transfections in 35mm dishes
- Quality control tested on a standard CHO-K1 cell line

Mirus
Gene Transfer Specialists
www.genetransfer.com

MIR 217 Series

INCLUDES:

Trans IT-CHO reagent and CHO Mojo reagent, both supplied as ready-to-use ethanol solutions.

STORAGE CONDITIONS:

Store for one year at -20°C.

Quantity	Cat. No.	Each
0.4mL	**MIR 2174**	183.18
1mL	**MIR 2170**	282.85

[1] *Transfections should be performed in serum-containing media, with no media change.*

Mirus Bio *Trans*IT*-COS Transfection Kit

Designed for high transfection efficiency in COS-7 and COS-1 cells

- Results in 90 to 95% efficiency using green fluorescent protein (GFP) as a reporter[1]
- One milliliter provides sufficient reagent to perform up to 500 transfections in 35mm dishes
- Quality control tested on a standard COS-7 cell line

Mirus
Gene Transfer Specialists
www.genetransfer.com

MIR 219 Series

INCLUDES:

Trans IT-COS reagent and COS Boss reagent, both as ready-to-use ethanol solutions.

STORAGE CONDITIONS:

Store for one year at -20°C.

Quantity	Cat. No.	Each
0.4mL	**MIR 2194**	189.28
1mL	**MIR 2190**	293.28

[1] *Transfections should be performed in serum-containing media, with no media change.*

Mirus Bio *Trans*IT*-293 Reagent

Designed for optimal plasmid DNA transfection in HEK293 cells

- Supplied as a ready-to-use ethanol solution
- Performs 500 transfections in 35mm plates per milliliter of reagent

STORAGE CONDITIONS:

Can be refrigerated for up to one year at 4°C (do not freeze).

Quantity	Cat. No.	Each
0.4mL	**MIR 2704**	173.00
1mL	**MIR 2700**	265.00
5 × 1mL	**MIR 2705**	1186.00
10 × 1mL	**MIR 2706**	2241.00

Mirus Bio *Trans*IT*-3T3 Transfection Kit

Designed for high transfection efficiency with minimal cellular toxicity in NIH 3T3 cells

- Produces 55 to 65% efficiency using green fluorescent protein (GFP) as a reporter[1]
- One milliliter provides sufficient reagents to perform up to 500 transfections in 35mm dishes
- Quality control tested on ATCC* 3T3 cells

Mirus
Gene Transfer Specialists
www.genetransfer.com

MIR 218 Series

INCLUDES:

Trans IT-3T3 Reagent and 3T3 Authority Reagent, both as ready-to-use ethanol solutions.

STORAGE CONDITIONS:

Store for one year at -20°C.

Quantity	Cat. No.	Eac
0.4mL	**MIR 2184**	183.1
1mL	**MIR 2180**	282.8

[1] *Transfections should be performed in serum-containing media, with no media change.*

Takara* RetroNectin* Reagent

Significantly enhances retrovirus-mediated gene transduction into mammalian cells when coated on the surface of dishes or flasks

RetroNectin is a chimeric peptide of human fibronectin produced in *E. coli* and consisting of three binding domains. Its enhancement of gene transduction is hypothetically attributed to the colocalization of retroviral particles and target cells.

- Available as a lyophilized protein or precoated dishes

STORAGE CONDITIONS:

Store lyophilized protein at -20°C; dishes at 4°C.

Description	Quantity	Cat. No.	Ea
Lyophilized Protein	0.5mg	**TAK T100A**	164.
	2.5mg	**TAK T100B**	633.
Precoated Dishes	10 dishes	**TAK T110A**	325.

LOOKING FOR ADDITIONAL EXPRESSION VECTOR

Fisher Scientific offers a wide selection of Expression Vectors. See the Cloning and Expression section or our Web site.

Visit www.fishersci.com and search for Expression Vectors

*Trademark. See Trademark Reference.

Prices subject to change.

SPECIALTY REAGENTS AND KITS

ienlantis* BioPORTER* Protein)elivery Reagents and Kits

NEW

ranslocate functional proteins directly into a wide ange of cell types

- Efficient delivery of proteins, peptides, and other macromolecules into a wide variety of cell types
- Fast and easy protocol
- Unique lipid formulation allows direct translocation of proteins into living cells

TORAGE CONDITIONS:

:ore for one year at -20°C.

escription	Quantity	Cat. No.	Each
rotein Delivery Reagent	24 Tests	**BP502401**	246.38
uikEase* Kit	24 Tests	**BP502424**	290.54
rotein Delivery Reagent	96 Tests	**BP509604**	760.00
uikEase Kit	96 Tests	**BP509696**	940.00
TC-labeled Goat IgG Control Protein	10μg	**ABFITC01**	70.53
	60μg	**ABFITC06**	295.55
:ta-gal Control Protein	10μg	**BGALCP01**	70.53
	60μg	**BGALCP06**	290.54

enlantis* NeuroPORTER* ransfection Reagent

NEW

fficient DNA Transfection into Neuronal Cells

- High-level transfection efficiencies in neuronal cell lines, glial cells, and certain primary neurons
- Optimized protocols for primary neurons, neuronal cell lines, and glial cells
- Minimized cytotoxicity
- Unique cationic lipid specifically formulated for efficient DNA transfection into neuronal cell lines, glial cells, and certain primary neurons

TORAGE CONDITIONS:

ied NeuroPORTER reagent, Hydration Buffer and DNA Diluent are stable one year at 4°C and hydrated NeuroPORTER reagent is stable for six onths at 4°C.

escription	Quantity	Cat. No.	Each
euroPORTER	1.5mL	**T400150**	300.56
euroPORTER	5 × 1.5mL	**T400750**	1260.00

lirus Bio *TransIT*-Neural* ransfection Reagent

ormulated for high transfection efficiency in a wide nge of neural cell types

- Produces up to 85% efficiency using pGFP as the reporter plasmid
- Achieves higher transfection efficiencies in less time when transfections are performed in the presence of serum and media changes are eliminated
- One milliliter provides sufficient reagent for up to 500 transfections in 12-well plates
- Quality control tested on a standardized Neuro-2a cell line

TORAGE CONDITIONS:

ore for one year at 4°C (do not freeze).

antity	Cat. No.	Each
4mL	**MIR 2144**	189.28
nL	**MIR 2140**	293.28

TRANSFORMATION

Fisher BioReagents* *TransMax** Competent Cells

Recommended for Blue/White screening and standard cloning applications

TransMax competent cells are produced according to rigorous quality control standards to ensure dependable performance and lot-to-lot consistency. Transformations are performed, at least in triplicate, to verify efficiency specifications using pUC19 plasmid DNA.

BP4001-1

- recA1 and endA1 markers minimize recombination and improve plasmid quality and yield
- Superior quality and consistency; equivalent to widely used host cells such as DH5α and DH10B
- Offered in a wide range of efficiencies (10^7 to 10^{10}) and formats (both tubes and 96-well plates)
- 96-well plates are ideal for high throughput cloning applications
- Both electrotransformable and chemically competent cells are available

APPLICATIONS:

Recommended for Blue/White screening and standard cloning applications, cloning PCR fragments, complex ligations, in vitro mutagenesis, cDNA and genomic library construction

STORAGE CONDITIONS:

Stable for two years at -70° C.

Description	Efficiency	Quantity	Cat. No.	Each
Electrotransformable Cells				
Recommended for cDNA or Genomic Library Construction using Electroporation				
eFB10B	1×10^{10}	5 × 0.1mL	**BP4100-1**	184.98
Chemically Competent Cells				
Ideal for Genomic and cDNA Library Construction using Heat-shock Transformation				
FB5α	1×10^9	5 × 0.2mL	**BP4000-1**	168.64
FB10B	1×10^9	5 × 0.2mL	**BP4005-1**	168.64
Great for Routine Cloning				
FB5α	1×10^9	10 × 0.05mL	**BP4000-2**	168.64
FB5α	1×10^9	20 × 0.05mL	**BP4000-3**	239.37
FB5α	1×10^9	50 × 0.05mL	**BP4000-4**	576.30
FB5α	1×10^8	5 × 0.2mL	**BP4001-1**	108.80
FB10B	1×10^9	10 × 0.05mL	**BP4005-2**	168.64
FB10B	1×10^9	20 × 0.05mL	**BP4005-3**	239.37
FB10B	1×10^9	50 × 0.05mL	**BP4005-4**	576.30
Provide Superior Economy and Convenience				
FB5α	1×10^7	4 × 0.5mL	**BP4002-1**	64.38

	FB5α	FB10B	eFB10B	eFB10BF'
Chemically Competent	Y	Y	N	N
Electro-Competent	N	N	Y	Y
Blue/White Screening	Y	Y	Y	Y
Recombination Deficient	Y	Y	Y	Y
Endonuclease Deficient	Y	Y	Y	Y
Methyl Restriction Deficient	N	Y	Y	Y
Single Strand Ability	N	N	N	Y
Tetracycline Resistant	N	N	N	Y
Lac Promoter Control	N	N	N	Y

Genlantis* TurboCells* Competent Cells

E. coli transformation in three minutes

- High transformation efficiencies
- No hour-long recovery step and no inconvenient 42°C water bath
- Useful genotypes
- Convenient and efficiency-preserving single-use packaging

STORAGE CONDITIONS:
Store TurboCells at -70°C and Transformation Buffer at room temperature.

Description	Quantity	Cat. No.	Each
E. coli	20 × 50µL	**C300020**	196.10
F' *E. coli*	20 × 50µL	**C301020**	196.10

Genlantis* TurboCells* BL21 Competent Cells

High-level *E. coli* expression using three-minute transformation protocol

- Achieve high-level recombinant protein expression with the T7 expression system
- No hour-long recovery step or inconvenient 42°C water bath
- Convenient and efficient single-use packaging
- Two useful genotypes

STORAGE CONDITIONS:
Store TurboCells BL21 at -70°C and Transformation Buffer at room temperature.

Description	Quantity	Cat. No.	Each
BL21 (DE3) Competent *E. coli*	20 × 50µL	**C302020**	196.10
BL21(DE3) pLysS Competent *E. coli*	20 × 50µL	**C303020**	196.10

Genlantis* SMARTCells* Competent Cells

Competent *E. coli* for the highest transformation efficiency of ligated DNA

- Optimized for difficult-to-transform ligated DNA
- Ideal for all miniprep DNA experiments
- Obtain maximum efficiencies at different DNA concentrations
- Easy-to-use format and protocol
- Provides the high transformation efficiencies using less-than-ideal conditions of post-ligation DNA

STORAGE CONDITIONS:
Store at -70°C.

Description	Cat. No.	Eac
SmartCells; For TAP cloning	**C100100**	135.76
SmartCells	**C101020**	191.07
SmartCells F'	**C101120**	191.07

Promega* JM109 and HB101 Competent Cells

Ready-to-use preparations provide convenient, efficie transformation

- Include positive control for reliable performance
- Each cell type is available in two preparations: High Transformation Efficiency (greater than 10^8cfu/µg); or Subcloning Efficiency (greater than 10^7cfu/µg)
- Versatile: Use JM109 cells for subcloning, T-vector cloning, blue/white screening, production of single-stranded DNA from phagemids; HB101 cells are recommended for cloning in vectors that do not require alpha-complementation for blue/white screening
- Safe: recA-mutation prevents undesirable recombination events; endA-mutation in JM109 cells prevents carryover nuclease in miniprep DN

STORAGE CONDITIONS:
Store at -70°C.

Description	Size	Cat. No.	Eac
JM109			
High Efficiency	5 × 200µL	**PR-L1001**	78.3
Subcloning Efficiency	5 × 200µL	**PR-L2001**	105.4
HB101			
High Efficiency	5 × 200µL	**PR-L1011**	68.3
Subcloning Efficiency	5 × 200µL	**PR-L2011**	91.4

*Trademark. See Trademark Reference.

Prices subject to change.

TRANSILLUMINATORS

pectroline* Ultraviolet Transilluminators

pical peak UV intensity of 9000 to 6000μw/cm^2 (6000 4500μw/cm^2 on dual-light models) produces brilliant uorescence and high clarity

11-992-84

ledium-wave 312nm UV light irtually eliminates transmission of estructive 254nm radiation

pecial diffusing screen on all 12nm and 365nm models ensures niform light distribution for mproved photographic results

oth dual-light and variable intensity models come with a hinged V-blocking cover and ON/OFF switches

ariable-intensity models provide both the highest intensity and the ongest sample preparation time

ixed-intensity models are equipped with either an ON/OFF switch or a imer that serves both as an ON/OFF switch and allows presetting of the V exposure time

DERING INFORMATION:

ailable in 120V 60Hz, 230V 50Hz, 240 50Hz or 100V 50/60Hz versions ecify voltage when ordering)

cription	Wavelength	Tubes	Filter Area	Mfr. No.	Cat. No.	Each
able Intensity						
h using een and /OFF tch	312nm	(6) 15w UV-B	8 × 8" (20 × 20cm)	TVC-312R	**11-992-80**	1582.63
	312nm	(6) 15w UV-B	8 × 16" (20 × 41cm)	TVL-312R	**11-992-82**	2057.96
	312nm	(6) 15w UV-B	6 × 14" (15 × 36cm)	TVR-312R	**11-992-83**	1722.43
d Intensity						
h using een and er	312nm	(6) 15w UV-B	8 × 8" (20 × 20cm)	TC-312R	**11-992-84**	1364.53
	312nm	(6) 15w UV-B	8 × 16" (20 × 41cm)	TL-312R	**11-992-86**	1890.21
h using een and /OFF tch	312nm	(6) 15w UV-B	6 × 6" (15 × 15cm)	TS-312R	**11-992-203**	1009.35
h using een and er	365nm	(6) 15w UV-A	8 × 16" (20 × 41cm)	TL-365R	**11-992-200**	889.18
h using een and /OFF tch	365nm	(6) 15w UV-A	9 × 13" (23 × 33cm)	TR-365R	**11-992-201**	781.81
	365nm	(6) 15w UV-A	6 × 6" (15 × 15cm)	TS-365R	**11-992-204**	721.42
Light						
able nsity	312nm, visible white	(5) 8w UV-B, (3) 8w white	(2) 8 × 8" (20 × 20cm)	TVD-1000R	**11-992-81**	1666.53
d nsity	312nm, visible white	(5) 8w UV-B, (3) 8w white	(2) 8 × 8" (20 × 20cm)	TD-1000R	**11-992-85**	1577.04

Spectroline* Slimline* UV Transilluminators

Compact models are ideal for photodocumentation of small electrophoresis gels

- Produce high UV intensity with even illumination
- Unique diffusing screen ensures excellent irradiance uniformity and improved photographic results

11-992-139

ORDERING INFORMATION:

Dimensions: 14L × 1½W × 2¼H (36 × 29 × 5.7cm). For 120V 60Hz.

INCLUDES:

Hinged UV blocking cover, four 8w UV tubes, 4¼ × 5½" (11 × 14cm) filter assembly and ON/OFF switch

Wavelength	Mfr. No.	Cat. No.	Each
312nm	TE-312S	**11-992-139**	777.34
254nm	TE-254S	**11-992-138**	758.38

LOOKING FOR MORE...?

A complete offering of transilluminators is available online.

Visit www.fishersci.com and search for Transilluminators

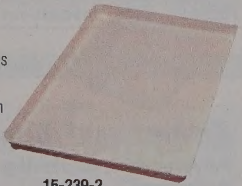
TRAYS AND TROUGHS

FIBERGLASS/GLASS

Fiberglass Safety Tray for Reagents

Lightweight tray resists acids, mild alkalis, and most solvents

- Rounded edge contains spills
- Won't corrode or warp
- Strong enough to carry several bottles
- Excellent dimensional stability
- Clean with steam or heat sterilization


15-239-2

ORDERING INFORMATION:

Outside dimensions: 30L × 20W × 2"H (76 × 51 × 5.1cm)

COMPLIANCE:

Meets OSHA requirements.

Cat. No.	Each
15-239-2	96.69

Pyrex* Glass Drying Trays

Designed for use as drying, staining, or developing trays

- Can be used with paper or gel electrophoresis or paper chromatography
- Autoclavable

NOTE:
Do not place over direct heat; for oven use only

Clockwise from top: 15-242-C, 15-242-D, 15-242-B, 15-242-A

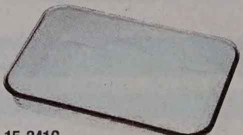
Approx. Capacity	Outside L × W × H	Mfr. No.	Cat. No.	Case of 4
1750mL	10¾ × 7⅛ × 2" (27 × 18 × 5cm)	3175 7	**15-242A**	40.82
2000mL	7⅞ × 7⅞ × 2⅛" (20 × 20 × 5.5cm)	3175 8	**15-242B**	45.04
3000mL	13 × 8½ × 2¾" (33 × 22 × 7cm)	3175 9	**15-242C**	53.25
3500mL	13¾ × 9¾ × 2⅜" (35 × 25 × 6cm)	3175 10	**15-242D**	70.57

Pyrex* Glass Sterilizing Tray

Useful for paper chromatography

- With heavy walls
- Withstands hot air or steam sterilization

ORDERING INFORMATION:
Exterior: 18L × 12"W (46 × 30cm).
Interior depth: 2⅞" (7.3cm)



15-241C

NOTE:
Do not place over direct heat; for oven use only

Mfr. No.	Cat. No.	Each	Case of 4
3170 12	**15-241C**	204.09	547.41

POLYMERIC

*Fisherbrand** Dispensing Trays

Polypropylene dispensing valve at one corner, close to bottom

- Durable ¼" thick (6.4mm) high-density polyethylene tray
- Welded corners and bottom

15-236-3F

Inside L × W × D	Cat. No.	Each
12 × 16 × 3" (30 × 41 × 7.6cm)	**15-236-3A**	72.55
12 × 16 × 8" (30 × 41 × 20cm)	**15-236-3G**	85.82
16 × 16 × 8" (41 × 41 × 20cm)	**15-236-3H**	99.75
16 × 20 × 4" (41 × 51 × 10cm)	**15-236-3B**	75.92
18 × 18 × 6" (46 × 46 × 15cm)	**15-236-3E**	102.05
18 × 22 × 4" (46 × 56 × 10cm)	**15-236-3C**	84.09
18 × 24 × 6" (46 × 61 × 15cm)	**15-236-3F**	104.41
22 × 26 × 4" (56 × 66 × 10cm)	**15-236-3D**	92.13

*Fisherbrand** Polymeric Trays

Durable trays made of 3/16" thick (4.8mm) autoclavable polypropylene or ¼" thick (6.4mm) high-density polyethylene

- With welded corners and bottom
- Won't rust

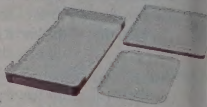
15-236-1E

Inside L × W × D	Cat. No.	Each
Polypropylene		
10 × 15 × 3" (25 × 38 × 7.6cm)	**15-236-1A**	75.08
12 × 16 × 8" (30 × 41 × 20cm)	**15-236-1F**	93.87
15 × 20 × 3" (38 × 51 × 7.6cm)	**15-236-1B**	97.09
18 × 18 × 4" (46 × 46 × 10cm)	**15-236-1C**	112.04
20 × 20 × 6" (51 × 51 × 15cm)	**15-236-1E**	139.04
22 × 26 × 4" (56 × 66 × 10cm)	**15-236-1D**	130.72
High-density Polyethylene		
12 × 16 × 8" (30 × 41 × 20cm)	**15-236-2D**	60.30
16 × 16 × 8" (41 × 41 × 20cm)	**15-236-2E**	76.53
18 × 18 × 6" (46 × 46 × 15cm)	**15-236-2B**	80.46
18 × 24 × 6" (46 × 61 × 15cm)	**15-236-2C**	86.46
22 × 26 × 4" (56 × 66 × 10cm)	**15-236-2A**	69.33

Chemical-Resistant Multipurpose Trays and Pans

Ideal for soaking, cleaning, autoclaving, storing, or carrying lab products and containing spills

- Reinforced white thermoset polyester composite construction
- Resistant to most detergents, mild acid and alkaline solutions, corrosive salts, and many reagents
- Withstand temperatures from -40° to +121°C (-40° to +250°F) continuous exposure or 149°C (300°F) intermittent
- High load-bearing capacity
- Excellent dimensional stability
- Easily steam cleaned



15-239 Series Chemical-Resist
Multipurpose Trays and Pans

ORDERING INFORMATION:
Available in 1" deep (2.5cm) trays, shallow pans from 1¼ to 2¾" deep (3 to 7cm), and ventilated stacking pans from 2¾ to 4⅛" deep (7 to 10.5cm)

Outside L × W × H	Cat. No.	Ea
Trays		
13¼ × 10⅝ × 1" (34 × 27 × 2.5cm)	**15-239-4**	18.
18 × 14 × 1" (46 × 35.5 × 2.5cm)	**15-239-7**	18.
20⅜ × 15⅛ × 1" (52 × 38.5 × 2.5cm)	**15-239-5**	22.
21⅞ × 16 × 1" (55.5 × 41 × 2.5cm)	**15-239-6**	22.
Shallow Pans		
19½ × 19½ × 1¼" (49.5 × 49.5 × 3.2cm)	**15-239-15**	27.
25¼ × 19¼ × 1⅛" (64 × 49 × 2.9cm)	**15-239-11**	33
26 × 26 × 1¼" (66 × 66 × 3.2cm)	**15-239-8**	45
28 × 28 × 1½" (71 × 71 × 3.8cm)	**15-239-13**	62
30 × 30 × 1¼" (76 × 76 × 3.2cm)	**15-239-10**	69
31 × 25 × 2¾" (79 × 63.5 × 7cm)	**15-239-14**	37
36½ × 17½ × 1⅝" (93 × 44.5 × 4.1cm)	**15-239-12**	47
36½ × 24¾ × 1½" (93 × 63 × 3.8cm)	**15-239-9**	63
Ventilated Stacking Pans		
24 × 12 × 2¾" (61 × 30.5 × 7cm)	**15-239-16**	17
30⅜ × 15⅞ × 2⅞" (77 × 40 × 7.3cm)	**15-239-17**	32
30⅜ × 15⅞ × 4⅛" (77 × 40 × 10.5cm)	**15-239-18**	2

*Trademark. See Trademark Reference.

Prices subject to change.

algene* Polypropylene Sterilizing Trays

r repeated autoclaving, storing, soaking, cleaning, d carrying of small instruments and labware

leavy-duty construction, extra-strong rims
rays are tapered for nesting
hemically resistant
orners rounded for easy cleaning

13-361-20

ninal pacity	Outside L × W × H	Mfr. No.	Cat. No.	Each	Case of 6
	10¼ × 6¼ × 2½" (26 × 16 × 6.4cm)	6902-1000	**13-361-20**	27.69	110.75
L	10¼ × 6¼ × 4⅛" (26 × 16 × 10cm)	6902-2000	**13-361-15**	35.06	140.25
L	12¾ × 10¼ × 2¾" (32 × 26 × 7cm)	6902-3000	**13-361-10**	47.63	190.50
	12¾ × 10⅛ × 4¼" (32 × 26 × 11cm)	6902-5000	**13-361-25**	51.44	205.75
L	14¼ × 12¼ × 5⅝" (36 × 31 × 14cm)	6900-0010	**13-359-20A**	40.94	163.75
2L	21⅜ × 17⅛ × 5⅛" (54 × 44 × 13cm)	6900-0020	**13-359-20B**	66.25	265.00

algene* High-Density Polyethylene Pans

e for soaking labware or as ice baths

ugged, durable pans tapered for nesting
igh-density pans have handles;
ithout covers

13-359-25

erior L × W × H	Mfr. No.	Cat. No.	Each	Case of 6
⁄8 × 12⅛ × 5⅝" (36 × 31 × 14cm)	7120-0010	**13-359-25**	32.43	129.75
⁄8 × 17⅛ × 5⅛" (54 × 43 × 13cm)	7120-0020	**13-359-26**	52.43	209.75

algene* Lab Carrier

gh-density polyethylene carier includes two foam erts with six holes (consisting of removable circular eves) to keep bottles separated

emove sleeves to accommodate up
six bottles with 2⅜" (6cm),
½" (9cm), or 4¼" (10.8cm) diameters
arrier used without inserts
ccommodates square and
ctangular bottles or Nalgene
nwire* test tube racks
tackable when empty

15-251-1

rior L × W × H	Mfr. No.	Cat. No.	Each	Case of 2
14 × 10½" (38 × 36 × 27cm)	7131-0001	**15-251-1**	94.66	126.22

Nalgene* Utility Carriers

Ideal for carrying glassware, samples, tools

Resilient, with molded-in center divider and handle.

15-251

ORDERING INFORMATION:
Choice of polyethylene or autoclavable polypropylene. Exterior L × W × H: 14⅞ × 9½ × 4½" (38 × 24 × 11cm).

COMPLIANCE:
Meets OSHA Standard 29CFR1910.1030 for use as protection against bloodborne pathogens.

Material	Mfr. No.	Cat. No.	Each	Case of 6
Polyethylene	7130-0010	**15-251**	29.04	116.18
Polypropylene	7134-0010	**15-251-3**	34.44	137.76

Scienceware* Polypropylene Sterilizing Trays with Cover

Easily cleaned and sterilized

- Outward taper
- Smooth, rounded corners
- Covers are inset
- Steam autoclavable at 121°C (250°F)

15-249A

Inside L × W × D	Mfr. No.	Cat. No.	Each
7 × 4 × 2⅛" (18 × 10 × 5.4cm)	16188-0000	**15-249A**	30.90
11 × 6 × 3¼" (29 × 15 × 8cm)	16189-0000	**15-249B**	36.77
11 × 6 × 5" (28 × 15 × 13cm)	16191-0000	**15-249C**	66.42

STAINLESS STEEL

Stainless-Steel Utility Trays

Seamless trays are corrosion resistant and easy to clean

13-361A

Outside L × W × H	Cat. No.	Each	Case of
10 1/16 × 6 9/16 × 2 1/16" (26 × 17 × 5.2cm)	**13-361A**	57.45	6/251.59
12 3/16 × 7 11/16× 2⅛" (31 × 20 × 5.4cm)	**13-361B**	72.95	6/319.48
16 11/32 × 9 13/16 × 2½" (42 × 25 × 6.4cm)	**13-361C**	64.16	12/561.93
20¾ × 12¾ × 2½" (53 × 32 × 6.4cm)	**13-361D**	75.36	6/330.03

Stainless-Steel Utility Trays with Cover

Outlast enamel trays

- Easy to clean
- Retain heat

ORDERING INFORMATION:
Cat. Nos. 15-248A and B have strap-handle cover. 15-248C has flat cover.

15-248A

Outside L × W × H (without cover)	Cat. No.	Each	Case of
8¼ × 3 × 1½" (22 × 8 × 3.8cm)	**15-248A**	67.98	6/297.72
8⅞ × 5 × 2" (23 × 13 × 5.1cm)	**15-248B**	102.78	6/450.13
12⅛ × 7⅝ × 2⅛" (30.1 × 19.4 × 5.4cm)	**15-248C**	115.16	3/295.27

TUBES

CENTRIFUGE—PLASTIC

*Fisherbrand** 50mL Higher-Speed Easy Reader Tubes

Withstand higher speeds than other Easy Readers—up to 9400×G

Key Features

- With black graduations and white marking area
- With conical bottoms
- Made of durable, chemical-resistant, clear polypropylene
- Black printed graduations are marked in 5mL increments from 5 to 50mL; a large white marking area makes labeling samples easy
- Tubes are sterilized by gamma radiation

06-443 Series

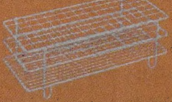
Two Cap Styles

- Both styles offer secure, leak-resistant seals
- Blue plug-seal closure features double-start thread design for an exceptionally tight seal
- Flat-top caps offer faster handling and allow you to label the top of the tube

ORDERING INFORMATION:
Available packaged in foam racks or in bulk packs.

O.D. × L	Max. RCF	Type	Closure	Packaging	Cat. No.	Case of 500
28 × 115mm	9400×G	Sterile	Plug Seal	25/rack	**06-443-20**	231.25
28 × 115mm	9400×G	Sterile	Plug Seal	25/sleeve	**06-443-21**	233.68
28 × 115mm	9400×G	Sterile	Flat Top	25/rack	**06-443-18**	231.25
28 × 115mm	9400×G	Sterile	Flat Top	25/sleeve	**06-443-19**	233.68

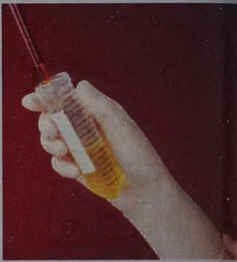
LOOKING FOR RACKS?
Fisherbrand* Vinyl-Coated Wire Racks are made of heavy-gauge steel for excellent chemical resistance. For details and ordering information, see the Racks section.



*Fisherbrand** Easy Reader Plastic Centrifuge Tubes

Polypropylene or PET graduated tubes are easy to read

- Conical bottoms
- Large labeling area
- Choice of closures
- Sterile and nonsterile styles
- Autoclavable at 120°C
- 15mL tubes are graduated in 0.5mL subdivisions from 2 to 14.5mL
- 50mL tubes are graduated in 5mL increments from 5 to 50mL



05-539-9

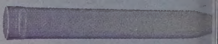
ORDERING INFORMATION:
Available packed in foam racks or sleeves

Capacity	O.D. × L	Max. RCF	Type	Closure	Packaging Type	Cat. No.	Case of 50
Polypropylene							
15mL	17 × 119mm	6000×G	Sterile	Plug Seal	Rack	**05-539-5**	180.2
15mL	17 × 119mm	6000×G	Sterile	Flat Top	Rack	**05-539-12**	186.1
50mL	28 × 115mm	6000×G	Sterile	Plug Seal	Rack	**05-539-6**	211.4
50mL	28 × 115mm	6000×G	Sterile	Plug Seal	Sleeve	**05-539-7**	211.4
50mL	28 × 115mm	6000×G	Sterile	Flat Top	Rack	**05-539-8**	242.0
50mL	28 × 115mm	6000×G	Sterile	Flat Top	Sleeve	**05-539-13**	217.1
50mL	28 × 115mm	6000×G	Nonsterile	Plug Seal	Sleeve	**05-539-9**	165.2
Polypropylene Terephthalate							
15mL	17 × 119mm	3600×G	Sterile	Plug Seal	Rack	**05-539-1**	176.8
50mL	28 × 115mm	3600×G	Sterile	Plug Seal	Rack	**05-539-10**	251.6

*Fisherbrand** 15mL Graduated Polystyrene Tube

Excellent general-purpose tube

- With conical bottom
- Nonsterile polystyrene
- Features molded-in graduations in 0.1mL increments up to 1mL and in 0.5mL subdivisions between 1 and 15mL



05-527-45

O.D. × L	Capacity	Cat. No.	Case of 10
17.5 × 119.5mm	15mL	**05-527-45**	101.

*Trademark. See Trademark Reference.

Prices subject to change.

*Fisherbrand** 50mL Graduated Polypropylene Tube

Skirt extends beyond the bottom of the tube so it can stand without support

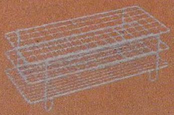
- Freestanding with conical bottom
- Made from durable polypropylene for excellent chemical resistance
- Features molded graduations in 2.5mL increments up to 10mL, and 5mL increments from 10 to 50mL
- Sterile
- Supplied with blue plastic plug-seal caps

14-375-150

O.D. × L	Capacity	Cat. No.	Case of 500
29.5 × 113.8mm	50mL	**14-375-150**	188.66

LOOKING FOR RACKS?

Fisherbrand* Vinyl-Coated Wire Racks are made of heavy-gauge steel for excellent chemical resistance. For details and ordering information, see the Racks section.



Corning* 15mL Graduated Tubes

Available with leakproof ergonomic, leak-resistant caps

- With conical bottoms
- Available with your choice of clear polypropylene (PP) or polyethylene tetraphthalate (PET)
- Sterile, certified RNase-/DNase-free and nonpyrogenic
- High speed RCF rating up to 12,000×G
- CentriStar* caps provide a revolutionary plug feature, wider knurls, and roll-over edge design to improve grip; easy-on, easy-off thread design; and a flat top with matte finish for easy marking
- Original plug-seal caps also available
- Large white marking spot and black printed graduations

05-538-51

ORDERING INFORMATION:

Tubes are packaged in a bulk pack resealable zip lock (sleeve) or a convenient polyfoam rack (07-200-611, also available separately).

O.D. × L	Max. RCF	Material	Packaging	Mfr. No.	Cat. No.	Case of 500
Tubes with CentriStar Caps						
17 × 119mm	12,000×G	Clear PP	50/rack	430790	**05-538-59A**	198.72
17 × 119mm	12,000×G	Clear PP	25/sleeve	430791	**05-538-59B**	191.73
Tubes with Plug-Seal Caps						
17 × 119mm	12,000×G	Clear PP	50/rack	430052	**05-538-53D**	208.36
17 × 119mm	12,000×G	Clear PP	25/sleeve	430766	**05-538-53F**	199.10
17 × 119mm	3600×G	PET	50/rack	430055	**05-538-51**	212.38
17 × 119mm	3600×G	PET	25/sleeve	430053	**05-538-51A**	199.10

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orning* 50mL Graduated Plastic Tubes

vailable with leakproof CentriStar* caps

- With conical bottoms
- Available in your choice of clear polypropylene (PP) or polyethylene tetraphthalate (PET)
- Sterile, certified RNase-/DNase-free and nonpyrogenic
- High speed RCF rating up to 15,500×G
- CentriStar caps provide a revolutionary plug feature, wider knurls, and roll-over edge design to improve grip; easy-on, easy-off thread design; and a flat top with matte finish for easy marking
- Original plug-seal caps also available
- Large white marking spot and black printed graduations

ORDERING INFORMATION:

Tubes are packaged in a bulk pack resealable zip lock (sleeve) or a convenient polyfoam rack (available separately, 07-202-531)

Universal rack for holding both 15mL and 50mL tubes is also available (07-200-610)

05-538-55

D. × L	Max. RCF	Material	Packaging	Mfr. No.	Cat. No.	Case of
bes w/CentriStar Caps						
3 × 115mm	15,500×G	PP	25/sleeve	430829	**05-538-60**	500/258.34
3 × 115mm	15,500×G	PP	25/rack	430828	**05-526B**	500/272.14
3 × 115mm	15,500×G	PP	25/rack	4558	**07-203-510†**	300/168.00
bes w/Plug-Seal Caps						
3 × 115mm	15,500×G†	PP	25/rack	430290	**05-538-55†**	500/282.61
3 × 115mm	15,500×G†	PP	25/sleeve	430291	**05-538-55A†**	500/268.28
) × 114mm	3600×G	PET	25/rack	430304	**05-538-49**	500/322.55

hermo Scientific IEC 8850 (05-375-79) rotor supports these tubes to 25,000xG.*

Corning* 50mL Polypropylene Tubes

Skirted bottom permits hands-free filling and measuring

- Freestanding with conical bottoms
- White marking spot and highly visible graduations
- Made from polypropylene for improved chemical durability and minimum protein binding
- Withstand forces up to 3000×G
- Available with original plug-seal cap or new CentriStar* caps
- Sterile, certified nonpyrogenic, and RNase-/DNase-free

CentriStar Caps

- Leakproof
- Wider knurls and roll-over edge design
- Improves grip and provides easy-on/easy-off thread design
- Flat top with matte finish for easy marking

05-538-67

ORDERING INFORMATION:

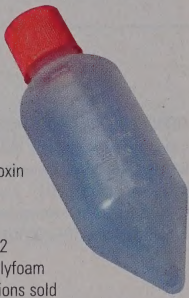
All tubes are packaged in resealable, zip lock sleeves of 25.

Cap Type	Mfr. No.	Cat. No.	Case of 500
CentriStar	430921	**05-538-68**	282.61
Original Plug Seal	430897	**05-538-67**	293.07

Corning* 250mL Polypropylene Tube

Ideal for applications requiring large-volume centrifugation

- Conical bottom
- Force: 6000×G
- Anti-drip lip for pelleting cells or other biological fluids and pouring off supernatant
- Graduations to the 250mL mark
- Polypropylene construction provides excellent chemical compatibility, thermal properties
- Sterile and certified nonpyrogenic with endotoxin level of less than 0.1EU/mL


05-538-53

ORDERING INFORMATION:

60 O.D. × 172mm long. Tubes sold in case of 102 tubes, packaged six per pack with recyclable polyfoam rack for easier handling. Reusable support cushions sold separately in case of six.

INCLUDES:

Plug-seal cap for secure seal during centrifugation with fixed-angle rotors and storage

REQUIRED ACCESSORIES:

Polycarbonate support cushions required for use with tubes, unless carrier contains conical support.

Description	Mfr. No.	Cat. No.	Case of
Centrifuge Tube	430776	**05-538-53**	102/189.81
Support Cushion	430236	**05-538-53A**	6/166.26

Nunc* EZ*Flip** Tubes

Clarified polypropylene provides chemical resistance

- Conical bottoms
- Hinged, flip-top cap provides easy, single-hand opening and closing
- Leakproof (see definition below) and airtight
- Use 50mL tubes up to 9500×G; 15mL tubes withstand forces up to 8500×G
- White writing area, printed volume markings, and graduations
- Compatible with any fixed-angle or swing rotor

12-565-800 Series

ORDERING INFORMATION:

Tubes are sterile and are supplied in a bulk pack (sleeve) or a rack.

O.D. × L (cap closed)	Packaging	Mfr. No.	Cat. No.	Case of 500
15mL				
17 × 121mm	50/sleeve	362694	**12-565-801**	171.16
17 × 121mm	50/rack	362695	**12-565-802**	181.49
50mL				
28 × 116mm	50/sleeve	362696	**12-565-803**	233.36
28 × 116mm	50/rack	362697	**12-565-804**	243.68

[†] Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

Nunc* 15mL Graduated Tubes

Fit a wide range of fixed and swing rotors used in research or medical labs

- Conical bottoms
- Polypropylene or polybutadiene styrene tubes with high-density polyethylene screw caps
- Frosted writing area and flat, leakproof (see definition above) cap
- Clear molded graduations on conical portion of tube from 0 to 1mL in 0.1mL subdivisions; remaining portion of tube has graduations printed in white from 1.5 to 14.5mL in 0.5mL subdivisions
- Autoclavable polypropylene has excellent resistance to many solvents, withstands a wide range of temperatures from -20° to +125°C (-4° to +257°F), and is RNase- and DNase-free
- Nonpyrogenic polybutadiene styrene has excellent clarity for easy viewing and withstands temperature to 90°C (194°F)
- Screw caps and polybutadiene styrene tubes not autoclavable
- Cap and both tubes are suitable for freezing
- Sterilized with gamma radiation

12-565-286 Seri

ORDERING INFORMATION:

Available packaged in bulk-pack sleeves or convenient foam racks.

O.D. × L	Max. RCF	Packaging	Mfr. No.	Cat. No.	Case of 5
Polypropylene					
17 × 120mm	7800×G	50/rack	366036	**12-565-286A**	216.1
17 × 120mm	7800×G	50/sleeve	366060	**12-565-286D**	205.
Polybutadiene Styrene					
17 × 120mm	3000×G	50/rack	366052	**12-565-286B**	216.
17 × 120mm	3000×G	50/sleeve	366079	**12-565-286C**	215.

*Trademark. See Trademark Reference.

lunc* 50mL Graduated Polypropylene Tubes

ood choice when working with certain solvents r at elevated temperatures

- Conical bottoms
- Durable polypropylene to withstand centrifugal forces up to 7500×G
- Tube features molded graduations from 0 to 10mL in 2.5mL increments and 10 to 50mL in 5mL increments

RDERING INFORMATION:

erilized and packaged in a bulk pack (sleeve) a rack.

ICLUDES:

ght-fitting polyethylene screw caps

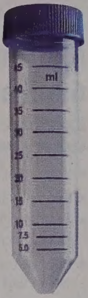
12-562-282 Series

.D. × L	Max. RCF	Packaging	Mfr. No.	Cat. No.	Case of
0 × 115mm	9500×G[1]	25/rack	334959	**12-565-282B**	300/160.06
0 × 115mm	9500×G[1]	25/sleeve	334940	**12-565-282A**	250/131.88

Tested in a conical-shaped rotor cavity or with a conical adapter.

D* Falcon* BlueMax* 50mL raduated Tubes

aps have level labeling area and a unique read design for easy one-handed manipulation



14-432-22

- Conical bottoms
- Clear polypropylene or modified polystyrene
- Polypropylene tubes withstand exposure to a range of temperatures, provide excellent solvent resistance
- Standard polypropylene tubes can be centrifuged to 9400×G
- Polystyrene tubes can be centrifuged to 2000×G
- Graduations from 5 to 10mL in 2.5mL increments and 10 to 50mL in 5mL increments
- Large white writing area
- Fit a variety of centrifuge rotors
- Sterile, nonpyrogenic and packaged in bags or foam racks made from expanded polystyrene

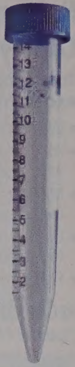
ICLUDES:

lyethylene flat-top screw caps

D. × L	Capacity	Packaging	Mfr. No.	Cat. No.	Case of 500
andard Polypropylene					
0 × 115mm	50mL	25/rack	352098	**14-959-49A**	263.90
0 × 115mm	50mL	25/bag	352070	**14-432-22**	248.30
dified Polystyrene					
0 × 115mm	50mL	25/rack	352074	**14-432-24**	292.70
0 × 115mm	50mL	25/bag	352073	**14-432-23**	277.00

BD* Falcon* BlueMax* Jr. 15mL Graduated Tubes

Come with polyethylene dome-seal screw caps for a positive seal over full circumference



- Conical bottoms
- Clear polypropylene or high optical quality polystyrene
- Graduations run from 1 to 15mL in 0.5mL increments
- Large white writing area
- Graduations and writing area resist many commonly used solvents
- Tubes are sterile, nonpyrogenic and packaged in bags or foam racks made from expanded polystyrene

INCLUDES:

14-959-53A comes with one rack

14-959 Series

O.D. × L	Max. RCF	Packaging	Mfr. No.	Cat. No.	Case of 500
Polypropylene					
17 × 120mm	6000×G	50/rack	352097	**14-959-70C**	191.00
17 × 120mm	6000×G	125/bag	352096	**14-959-49B**	185.40
17 × 120mm	6000×G	50/bag	352196	**14-959-53A**	184.80
Polystyrene					
17 × 120mm	1800×G	50/rack	352099	**14-959-49D**	190.30
17 × 120mm	1800×G	125/bag	352095	**05-527-90**	180.00

BD* Polypropylene Centrifuge Tubes

Conical tubes with molded graduations

- Polyethylene plug-seal screw cap
- Max RCF: 7500×G
- Sterilized by gamma radiation

ORDERING INFORMATION:

Supplied 48/bag.

O.D. x L	Capacity	Mfr. No.	Cat. No.	Each
61 × 118mm	175mL	352076	**05-538-62**	93.00
61 × 137mm	225mL	352075	**05-538-61**	105.00

Scienceware* Rimless Centrifuge Tubes

For use in centrifuges up to 50,000×G without refrigeration

- Polypropylene
- Round-bottomed
- Autoclavable at 121°C (250°F)

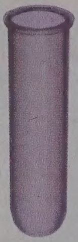
INCLUDES:

Stoppers

22-260 Series

Capacity	Mfr. No.	Cat. No.	Pack of 12	Case of 12 Pk.
45mL	198070000	**22-260-705**	25.45	429.00
90mL	198080000	**22-260-706**	41.83	261.00

Nalgene* High-Speed Polypropylene Copolymer Tubes



Translucent, autoclavable tubes with excellent chemical resistance

- With round bottoms
- For use to 50,000×G in all refrigerated and nonrefrigerated centrifuges
- Molding technique produces uniform wall thickness for increased strength
- Uniform diameter (no taper) for better rotor fit and force tolerance
- Economical; may also be used as test tubes

05-562-10 Series

REQUIRED ACCESSORIES:

Closures

O.D. × L	Capacity	Mfr. No.	Cat. No.	Pack of 10	Case of
16 × 103mm	12mL	3110-0120	**05-562-10A**	35.96	10 Pk./239.75
16 × 114mm	15mL	3110-0150	**05-562-10D**	37.58	10 Pk./250.50
18 × 99mm	16mL	3110-0160	**05-562-10G**	37.77	10 Pk./251.75
25 × 89mm	38mL	3110-0380	**05-562-10J**	40.50	10 Pk./270.00
29 × 103mm	50mL	3110-0500	**05-562-10B**	41.14	10 Pk./274.25
28.5 × 104mm	50mL[1]	3110-9500	**05-562-10K**	55.39	10 Pk./369.25
32 × 164mm	100mL[1]	3110-1000	**05-562-10C**	95.25	4 Pk./254.00

[1] *With lip.*

WARNING

Should be filled to 80% of total capacity and used with friction-fit closures (05-562-11 Series) for high-speed centrifugation.

Nalgene* High-Speed Polycarbonate Tubes

Made from crystal-clear polycarbonate

- Similar to 05-562-10 Series
- May be used in refrigerated or nonrefrigerated centrifuges up to 50,000×G
- Withstand temperatures from -135° to +135°C (-211° to +275°F)

REQUIRED ACCESSORIES:

Closures

05-528 Series

O.D. × L	Capacity	Mfr. No.	Cat. No.	Pack of 10	Case of
16 × 104mm	12mL	3117 0120	**05-528D**	30.53	10 Pk./203.51
16 × 114mm	15mL	3117 0150	**05-528E**	32.19	10 Pk./214.55
18 × 101mm	16mL	3117 0160	**05-528F**	32.37	10 Pk./215.81
26 × 89mm	38mL	3117 0380	**05-528H**	34.78	10 Pk./231.87
29 × 104mm	50mL	3117 0500	**05-528**	35.99	10 Pk./239.90
28.5 × 106mm	50mL[1]	3117 9500	**05-528K**	40.28	10 Pk./268.59
32 × 165mm	100mL[1]	3117 1000	**05-528J**	81.96	4 Pk./218.57

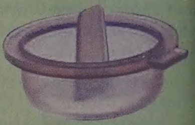
[1] *With lip.*

WARNING

Should be filled to 80% of total capacity and used with friction-fit closures (05-562-11 Series) for high-speed centrifugation.

ACCESSORIES

Nalgene* Friction-Fit Closures



Caps are autoclavable and feature a pull tab for easy removal

05-562-11 Series

Closure O.D.	Mfr. No.	Cat. No.	Case of 20
12mm	DS3111 0012	**05-562-11B**	22.64
13mm	DS3111 0013	**05-562-11C**	23.94
16mm	DS3111 0016	**05-562-11E**	26.56
17mm	DS3111 0017	**05-562-11F**	27.46
18mm	DS3111 0018	**05-562-11G**	27.87
25mm	DS3111 0025	**05-562-11K**	34.51
29mm	DS3111 0029	**05-562-11N**	34.51
30mm	DS3111 0030	**05-562-12**	32.09
32mm	DS3111 0032	**05-562-11Q**	38.43

WARNING

May not be liquidtight during high-speed centrifugation

Nalgene* Oak Ridge High-Speed 35mL Graduated Tubes

Excellent for separations and pelleting required in cell culture work and microbiology

- With conical bottoms
- Can withstand forces to 50,000×G
- Feature silk-screened graduations from 5 to 35mL in 1mL increments
- Supplied with linerless, polypropylene screw closure which will not leak during ordinary use
- For a more secure seal, see 05-563-2B (p. 1856)
- Polycarbonate tubes feature white graduations and are transparent for easy viewing
- Polypropylene copolymer tubes are translucent and offer better chemical resistance than polycarbonate
- Both tubes require white polycarbonate tube adapter (see 01-003-13 below) to centrifuge
- O.D. × L: 28.2 × 114mm

05-579-31

ORDERING INFORMATION:

To assure leakproof service (see definition p.1852), especially at speeds greater than 10,000×G or when spinning hazardous materials, use Nalgene sealing cap assemblies 05-563-1B or -1C (p.1856)

INCLUDES:

Supplied with linerless, polypropylene screw closure which will not leak during ordinary use.

REQUIRED ACCESSORIES:

Both tubes require white polycarbonate tube adapter (see 01-003-13 belo to centrifuge.

Description	Mfr. No.	Cat. No.	Pack of	Case of 1 P
Polycarbonate Tube	3146-0050	**05-579-31**	10/94.43	629.5
Polypropylene Copolymer Tube	3148-0050	**05-579-33**	10/85.35	569.0
Polycarbonate Tube Adapter	DS3147 0050	**01-003-13**	6/28.40	--

algene* Oak Ridge High-Speed olypropylene Copolymer Centrifuge Tubes

wo styles available

ith polypropylene screw caps d round bottoms

Greater chemical resistance than polycarbonate

Can be autoclaved repeatedly

May be used to 50,000×G

Supplied with leakproof (see definition, below) polypropylene screw caps

ith sealing cap and und bottoms

Similar to 05-529-1 Series, but includes both tubes and sealing-cap assemblies

05-529-1 Series

RDERING INFORMATION:

Optional sealing-cap assemblies available for 05-529-1B, -1C, and -1D tubes (see 05-563-2B, -2C, p.1856).

.D. × L (w/o cap)	Capacity	Mfr. No.	Cat. No.	Pack of 10
ith polypropylene screw caps				
6 × 81mm	10mL	3119 0010	**05-529-1A**	63.64
5.4 × 94mm	28mL	3119 0028	**05-529-1B**	71.58
5.7 × 93.5mm	30mL	3119 0030	**05-529-1C**	71.58
9 × 107mm	50mL[1]	3119 0050	**05-529-1D**	85.20
ith sealing caps				
6 × 82mm[2]	10mL	3139 0010	**05-563-10A**	109.80
8 × 107mm[2]	16mL	3139 0016	**05-563-10B**	130.20
5.5 × 101mm[2]	30mL	3139 0030	**05-563-10E**	123.07
9 × 114mm[2]	50mL	3139 0050	**05-563-10G**	192.38

Actual brim capacity, 43mL.

Measurement includes cap.

Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, nverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalgene advises customers to test Nalgene bottles and closures under conditions of their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closures.

WARNING

Must be filled to 80% of total capacity for centrifugation

LOOKING FOR RACKS?

Fisherbrand* Vinyl-Coated Wire Racks are made of heavy-gauge steel for excellent chemical resistance. For details and ordering information, see the Racks section.

Nalgene* Oak Ridge High-Speed Polycarbonate Centrifuge Tubes

Use at up to 50,000×G

- Withstand temperatures from -135° to +135°C (-211° to +275°F)
- Round bottom, with leakproof (see definition, left) polypropylene screw caps or sealing caps
- Autoclavable; transparent

05-529 Series

ORDERING INFORMATION:

Optional sealing caps for 05-529B, C, and E tubes are available; see 05-563-2B and -2C, p.1856.

O. D. × L (w/o cap)	Capacity	Mfr. No.	Cat. No.	Pack of 10	Case of
With polypropylene screw caps					
16 × 82mm	10mL	3118 0010	**05-529A**	78.37	10 Pk./522.50
25.5 × 102mm	28mL	3118 0028	**05-529E**	84.86	10 Pk./565.75
25.5 × 95mm	30mL	3118 0030	**05-529B**	84.86	10 Pk./565.75
29 × 107mm	50mL	3118 0050	**05-529C**	97.31	10 Pk./648.75
38 × 106mm	85mL	3118 0085	**05-529D**	117.75	10 Pk./785.00
With sealing caps					
16 × 82mm[2]	10mL	3138 0010	**05-563-7A**	86.96	5 Pk./289.86
18 × 107mm[2]	16mL	3138 0016	**05-563-7B**	108.13	5 Pk./360.45
25.5 × 102mm[2]	30mL	3138 0030	**05-563-7E**	142.76	5 Pk./475.84
29 × 115mm[2]	50mL	3138 0050	**05-563-7G**	152.92	5 Pk./509.75

[1] *Actual brim capacity for 05-529C is 43mL; for 05-529D, 81mL.*

[2] *Measurement includes cap.*

WARNING

Must be filled to 80% of total capacity for centrifugation

ACCESSORIES

Sealing Cap Assemblies

For Oak Ridge Style Polypropylene Copolymer, Polycarbonate, and Polysulfone Tubes

INCLUDES:
Polypropylene screw cap with silicone sealing ring

05-563-2B

For Tube Capacity	Mfr. No.	Cat. No.	Case of 2
28 to 30mL	DS3132 0020	**05-563-2B**	15.44
50mL	DS3132 0024	**05-563-2C**	18.46

Sealing Cap Assemblies

For Oak Ridge PTFE FEP Tubes

- Consist of polypropylene screw cap, Tefzel* ETFE plug and Viton* fluoroelastomer O-ring
- Guard against leakage—even with filled tubes at maximum speed
- Autoclavable

05-563-1B

For Tube	Mfr. No.	Cat. No.	Case of
05-562-16A	DS3131 0020	**05-563-1B**	18.9
05-562-16B	DS3131 0024	**05-563-1C**	21.0

Nalgene* Oak Ridge High-Speed Polysulfone Centrifuge Tubes

Can be used in refrigerated or nonrefrigerated centrifuges up to 50,000×G

- With round bottoms
- Autoclavable
- Transparent, with straw-colored cast
- Supplied with leakproof (see definition, right) polypropylene caps or sealing caps

ORDERING INFORMATION:
For optional sealing caps for 05-562-14C and -14D tubes, see 05-563-2B and -2C, above.

05-562-14 Series

O.D. × L (w/o Cap)	Capacity	Mfr. No.	Cat. No.	Pack of 10	Case of
With Polypropylene Screw Caps					
16 × 82mm	10mL	3115 0010	**05-562-14A**	95.55	10 Pk./637.00
25.5 × 95mm	30mL	3115 0030	**05-562-14C**	103.31	10 Pk./688.75
29 × 108mm	50mL[1]	3115 0050	**05-562-14D**	126.98	10 Pk./846.50
With Sealing Caps					
25.5 × 102mm[2]	30mL	3137 0030	**05-563-5E**	161.92	5 Pk./539.75
29 × 115mm[2]	50mL	3137 0050	**05-563-5G**	179.56	5 Pk./598.50

[1] *Actual brim capacity, 43mL.*
[2] *Measurement includes cap.*

WARNING
Must be filled to 80% of total capacity for centrifugation

Nalgene* Oak Ridge High-Speed Teflon* FEP Centrifuge Tubes

With round bottoms

- Withstand temperatures from -100° to +150°C (-148° to +302°F)
- Use to 50,000×G in refrigerated centrifuges
- Leakproof (see definition, below)
- Autoclavable

ORDERING INFORMATION:
Optional sealing caps available, 05-563-1 Series, above.

INCLUDES:
Tefzel* ETFE screw caps

05-562-16 Se

O.D. × L (w/o Cap)	Capacity	Mfr. No.	Cat. No.	Pack of 2	Case 5
16 × 82mm	10mL	3114 0010	**05-562-16C**	55.80	186
25.5 × 94mm	30mL	3114 0030	**05-562-16A**	82.88	276
29 × 108mm	50mL[1]	3114 0050	**05-562-16B**	89.93	299

[1] *Actual brim capacity, 46mL.*

†Nalgene assigns the term "leakproof": a) To bottle/closure systems with closures smaller than 100mm, after they are filled with water, inverted, withstand air pressure of 2psig for 2 minutes, and no water escapes;. b) To bottle/closure systems of 100 or 120mm after they are filled with water, inverted for 15 minutes, and no water escapes. **Note:** these tests, using other liquids, may not yield the same results. To ensure safe usage, Nalge advises customers to test Nalgene bottles and closures under conditions their planned applications. Nalgene bottles and carboys are leakproof at ambient temperature and pressure when used with their Nalgene closure

WARNING
Must be filled to 100% of total capacity for centrifugation

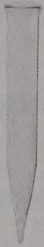
*Trademark. See Trademark Reference.

Prices subject to change.

CENTRIFUGE—GLASS

imax* Conical-Bottom Glass Centrifuge Tubes

20-183-5B



05-538-41C

05-569-2

05-538-33A

05-538-29A

05-538-32B

05-538-29B

.D. x L	Glass Type	Closure	Graduations	Special Features	Mfr. No.	Cat. No.	Pack of
mL capacity							
1 × 66mm	Kimax* Brand	None	None	Beaded rim	45150 2	**20-183-5B**	12/41.04
mL capacity							
3 × 110mm	Borosilicate	None	None	Disposable; withstand up to 2980×G	73790 5	**05-538-41B**	125/72.15
3 × 110mm	Borosilicate	None; GPI Thread 13-415 finish[1]	None	Disposable; resistant to organic chemicals	73785 5	**05-569-1**	125/83.61
mL capacity							
6 × 114mm	Borosilicate	None	None	Disposable; withstand speeds to 2980×G	73790 10	**05-538-41C**	125/72.95
6 × 114mm	Borosilicate	None; GPT Thread 15-415 finish[1]	None	Disposable; resistant to organic chemicals	73785 10	**05-569-2**	125/84.17
7 × 108mm	Kimax Brand	None	0.1mL	Calibrated "To Contain"; White enamel graduations	45165 10	**05-493**	12/179.64
7 × 116mm	Heavy-duty Kimax Brand	GPI Thread 15-415 Screw Cap	0.1mL	Calibrated "To Contain."	45200 10	**05-538-33A**	12/272.28
7 × 117mm	Heavy-duty Kimax Brand	ST No. 13 Pennyhead Stopper	0.1mL	Calibrated "To Contain."	45201 10	**05-538-38A**	6/173.88
mL capacity							
7 × 118mm	Heavy-duty Kimax Brand	None	None	Beaded rim	45194 12	**05-537-12**	12/46.44
7 × 118mm	Heavy-duty Kimax Brand	None	0.1mL	Beaded rim; Calibrated "To Contain."	45199 12	**K45199-12**	12/165.02
.5mL capacity							
7 × 118mm	Kimax Brand	None	0.2% from 0 to 3%, 0.5% from 3 to 10%, 1.0% from 10 to 50%, 100%	For determining water and bottom sediment in petroleum	45170 125	**05-603**	12/195.72
mL capacity							
7 × 130mm	Kimax Brand	ST No. 13 Flathead Stopper	0.1mL	Permanent red graduations	45176 13	**05-538-40A**	6/175.08
7 × 141mm	Heavy-duty Kimax Brand	ST No. 13 Flathead Stopper	None	Tapered bottom with straight sides to fit tapered holders	45174 13	**05-538-29A**	6/100.14
mL capacity							
7 × 118mm	Kimax Brand	None	None	Beaded rim	45160 15	**05-537-7A**	12/52.32
7 × 118mm	Kimax Brand	None	0.1mL	Calibrated "To Contain." White enamel graduations	45165 15	**05-494**	12/138.96
7 × 118mm	Kimax Brand	None	0.1mL	Permanent red graduations	45164 15	**05-494-1**	12/138.96
7 × 126mm	Borosilicate	None	None	Disposable; Withstand speeds to 2980×G	73790 15	**05-538-41D**	125/75.96
7 × 126mm	Borosilicate	None; GPI Thread 15-415 finish[1]	None	Resistant to organic chemicals	73785 15	**05-569-3**	125/87.96
7 × 130mm	Kimax Brand	GPI Thread 15-415 Screw Cap	0.1mL	Calibrated "To Contain."	45166 15	**05-538-32B**	12/217.56
7 × 136mm	Kimax Brand	ST No. 13 Pennyhead Stopper	0.1mL	Calibrated "To Contain."	45153 15	**05-537-6A**	12/302.64

ccepts Kimble Centrifuge Tube Screw Caps, p. 1859.*

Contd. on next page.

Kimax* Conical-Bottom Glass Centrifuge Tubes, Contd.

O.D. x L	Glass Type	Closure	Graduations	Special Features	Mfr. No.	Cat. No.	Pack of	Case of 2 Pk.
40mL capacity								
29 × 140mm	Heavy-duty Kimax Brand	GPI Thread 24-410 Screw Cap	None	Meets Fed. Spec. NNN-T-780	45196 40	**05-537**	12/237.36	----
29 × 140mm	Heavy-duty Kimax Brand	GPI Thread 24-410 Screw Cap	0.5mL from 0 to 10mL,1 from 10 to 40	Calibrated "To Contain."	45200 40	**05-538-33B**	12/360.72	----
50mL capacity								
29 × 133mm	Kimax Brand	None	0.5mL from 0 to 10mL; 1 from 10 to 50mL	Calibrated "To Contain"; White enamel graduations	45165 50	**05-569-6C**	12/233.55	----
29 × 133mm	Kimax Brand	None	0.1mL from 0 to 1mL, 0.2 from 1 to 2mL, 0.5 from 2 to 10mL, 1 from 10 to 20mL, 50mL	For determining the solubility index of dry milk solids	45167 50	**05-538-33C**	12/228.12	----
29 × 137mm	Borosilicate	None; GPI Thread 24-400 finish[1]	None	Resistant to organic chemicals	73785 50	**05-538-41A**	72/80.51	----
29 × 137mm	Borosilicate	None	None	Disposable; Bullet-nosed shape to withstand speeds to 2980×G	73790 50	**05-538-41E**	72/82.16	----
29 × 147mm	Kimax Brand	GPI Thread 24-410 Screw Cap	0.5mL from 0 to 10mL, 1 from 10 to 50mL	White enamel graduations	45166 50	**05-538-41E**	12/331.92	----
29 × 155mm	Heavy-duty Kimax Brand	Ŧ No. 16 Flathead PTFE Stopper	None	Tapered bottom with straight sides to fit tapered holders	45174 50	**05-538-32C**	6/145.92	----
29 × 155mm	Heavy-duty Kimax Brand	Ŧ No. 16 Flathead PTFE Stopper	0.5mL from 0 to 10mL, 1 from 10 to 50mL	Permanent red graduations	45176 50	**05-538-40B**	6/216.72	----
100mL capacity								
37 × 200mm	Kimax Brand	None	0.05mL from 0 to 0.5mL, 0.1 from 0.5 to 2mL, 0.2 from 2 to 3mL, 0.5 from 3 to 5mL, 1 from 5 to 10mL, 5 from 10 to 25mL, 25 from 25 to 100mL	For water and sediment determinations in petroleum products (ASTM* D 96, D 1796, and API Standard 2542). For use with Thermo Scientific* IEC* centrifuge models K and EXD with 05-155-31 rotor system.	45240 100	**05-605**	6/296.74	433.20
37 × 200mm	Kimax Brand	None	0.05mL from 0 to 1mL, 0.1 from 1 to 3mL, 0.2 from 3 to 6mL, 0.5 from 6 to 10mL, 1 from 10 to 100mL	California version of 05-605 tube. For use with Thermo Scientific IEC centrifuge models K and EXD with 05-155-31 rotor system.	45241 100	**05-606**	6/366.85	535.56
45 × 165mm	Kimax Brand	None	0.05mL from 0 to 0.5mL, 0.1 from 0.5 to 2mL, 0.2 from 2 to 3mL, 0.5 from 3 to 5mL, 1 from 5 to 10mL, 5 from 10 to 25mL, 50 and 100mL	For field use in testing petroleum; with white enamel graduations. For use in Thermo Scientific IEC centrifuge HN-SII with 05-152-2 rotor systems.	45243 100	**05-621**	6/405.16	591.48
45 × 165mm	Kimax Brand	None	0.1% from 0 to 1%, 0.2 from 1 to 4%, 0.4 from 4 to 6%, 1 from 6 to 10%, 2 from 10 to 20%, 10 from 20 to 50%, 100% and 200%	Same as 05-621, but graduated in percent; **Note:** 200% = 100mL. For use in Thermo Scientific IEC centrifuge HN-SII with 05-152-2 rotor systems.	45243 200	**05-569-6G**	6/258.96	----

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[1] *Accepts Kimble* Tube Centrifuge Screw Caps, p. 1859.*

*Trademark. See Trademark Reference.

Prices subject to change.

05-624

imax* Pear-Shaped Glass Centrifuge Tubes

imax Brand glass. For use in Thermo Scientific* IEC* HN-SII Centrifuge with 05-121-1 rotor.

.D. x L	Capacity	Closure	Graduations	Special Features	Mfr. No.	Cat. No.	Pack of	Case of
8 × 158mm	100mL	None	0.1mL from 0 to 1.5mL, 0.5 from 1.5 to 5mL, 1 from 5 to 10mL, 5 from 10 to 25mL, 50 and 100mL	For determination of water and bottom sediment in petroleum products	45244 100	**05-615**	6/610.09	2 Pk./890.64
8 × 160mm	100mL	$ No. 16 Pennyhead Stopper	0.01mL from 0 to 0.2mL, 25, 50, and 100mL	Goetz tube calibrated "To Contain"	45220 100	**05-624**	2/224.49	3 Pk./491.58
8 × 158mm	200mL	None	0.10mL from 0 to 3mL, 0.50 from 3 to 5mL, 1 from 5 to 10mL, 10 from 10 to 100mL, 20 from 100 to 200mL	For determination of water and bottom sediment in petroleum products	45244 200	**05-623-1**	6/450.06	----

imble* Round-Bottom Glass Centrifuge Tubes

ithout graduations

apacity	Glass Type	Closure	Special Features	Mfr. No.	Cat. No.	Case of
5mL	High-strength borosilicate	None	Withstand forces up to 13,100×G	45500 15	**09-500-34**[†]	6/48.65
5mL	High-strength borosilicate	GPI Thread 20-400 Screw Cap	Withstand forces up to 13,100×G	45600 15	**05-569-12**[†]	6/127.80
0mL	High-strength borosilicate	None	Withstand forces up to 13,100×G	45500 30	**09-500-37**[‡]	6/85.32
0mL	High-strength borosilicate	GPI Thread 24-400 Screw Cap	Withstand forces up to 13,100×G	45600 30	**05-569-13**[‡]	6/129.54
5mL	Heavy-duty Kimax* Brand	GPI Thread 24-410 Screw Cap	For microbiological separations	45212 35	**05-558-12A**	12/119.37
0mL	Heavy-duty Kimax Brand	GPI Thread 24-410 Screw Cap	For microbiological separations	45212 50	**05-558-12B**	12/168.63

Requires Rubber Adapter 05-569-10 to achieve 13,000×G in 50mL rotor.
Requires Rubber Adapter 05-569-11 to achieve 13,000×G in 50mL rotor.

09-500-34

05-569-12

ACCESSORIES

Kimble* Black Phenolic Screw-Thread Closures

Highly resistant to temperature and steam during autoclaving

- Cemented-in PTFE-faced 14B white rubber liner
- Three screw-thread finishes

05-569 Series

For Tubes	GPI Thread	Mfr. No.	Cat. No.	Case of
05-569-1	13-415	73802 13415	**05-569-4**	500/74.58
05-569-2, -3	15-415	73802 15415	**05-569-5**	500/79.57
05-538-41A	22-400	73802 22400	**06-421-20**	144/112.71

Kimble* Adapters for Round-Bottom Centrifuge Tubes

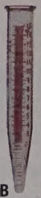
Required when centrifuging select Kimble high-strength round-bottom centrifuge tubes to 13,000×G in 50mL rotor

- Made of rubber

For Tube	Mfr. No.	Cat. No.	Pack of 2
09-500-34, 05-569-12	45550 15	**05-569-10**	25.31
09-500-37, 05-569-13	45550 30	**05-569-11**	28.73

Pyrex* Conical-Bottom Glass Centrifuge Tubes

05-538-35A


05-507-5B

05-543-5

05-538-35C

05-610R

O.D. × L	Glass Type	Closure	Graduations	Special Features	Mfr. No.	Cat. No.	Each	Case
3mL								
11 × 76mm	Pyrex Brand	None	None	Beaded rim	8060 3	**20-183B**	45.99	—
5mL								
13 × 101mm	Pyrex Brand	None	None	Beaded rim	8060 5	**20-183C**	45.99	—
13 × 135mm	Pyrex Brand	$ No. 9 Pennyhead Stopper	0.1mL	White enamel graduations	8084 5	**05-538-35A**	43.56	12/360.1
12mL								
17 × 120mm	Heavy-duty Pyrex Brand	None	None	Beaded rim	8120 12	**05-506**	43.70	—
17 × 120mm	Heavy-duty Pyrex Brand	None	0.1mL	White enamel graduations	8140 12	**05-496**	18.31	12/154.3
17 × 135mm	Heavy-duty Pyrex Brand	$ No. 13 Pennyhead Stopper	None	None	8124 12	**05-538-26A**	320.74	—
15mL								
17 × 119mm	Pyrex Brand	None	0.1mL	Beaded rim	8080 15	**05-495**	17.80	12/147.2
17 × 120mm	Pyrex Brand	None	None	Beaded rim	8060 15	**05-505**	53.33	—
17 × 120mm	Pyrex Brand	None	0.1mL	Colored graduations; beaded rim	8101 15	**05-507-5B**	147.22	—
17 × 134mm	Pyrex Brand	GPI Thread 15-415 Screw Cap	0.1mL	White enamel graduations	8082 15	**05-538-30A**	27.39	12/226.5
17 × 164mm	Pyrex Brand	$ No. 13 Pennyhead Stopper	0.1mL	White enamel graduations	8084 15	**05-538-35B**	38.66	12/319.8
40mL								
29 × 116mm	Heavy-duty Pyrex Brand	None	None	Pour spout	8320 40	**05-543-5**	10.22	12/84.3
29 × 118mm	Heavy-duty Pyrex Brand	None	0.5mL from 0 to 10mL, 1 from 10 to 40	Pour spout; white enamel graduations	8340 40	**05-542-5**	417.07	—
50mL								
28 × 135mm	Pyrex Brand	None	None	Beaded rim	8060 50	**05-535**	93.25	—
28 × 135mm	Pyrex Brand	None	0.5mL from 0 to 10mL, 1 from 10 to 50mL	Beaded rim	8080 50	**05-525**	51.66	6/226.3
28 × 135mm	Pyrex Brand	None	0.5mL from 0 to 10mL, 1 from 10 to 50mL	Colored graduations; beaded rim	8101 50	**05-507-5C**	22.32	—
28 × 150mm	Pyrex Brand	GPI Thread 24-410 Screw Cap	0.5mL from 0 to 10mL, 1 from 10 to 50mL	White enamel graduations	8082 50	**05-538-30C**	37.66	12/311.5
28 × 176mm	Pyrex Brand	$ No. 16 Pennyhead Stopper	0.5mL from 0 to 10mL, 1 from 10 to 50mL	White enamel graduations	8084 50	**05-538-35C**	53.02	12/438.7
29 × 118mm	Pyrex Brand	None	0.5mL from 0 to 10mL, 1 from 10 to 50mL	White enamel graduations	8300 50	**05-542**	43.33	12/370.
100mL								
37 × 200mm	Pyrex Brand	None	0.05mL from 0 to 0.5mL, 0.1 from 0.5 to 3mL, 0.5 from 3 to 5mL, 1 from 5 to 100mL	Weathering tube for testing gas mixtures (ASTM* D 1837, D 2158). For use in Thermo Scientific* IEC* centrifuge HN-Sii with 05-152-2 rotor systems.	9610 100	**08-261-6**	56.87	—
38 × 200mm	Pyrex Brand	None	0.05mL from 0 to 0.5mL, 0.1 from 0.5 to 2mL, 0.2 from 2 to 3mL, 0.5 from 3 to 5mL, 1 from 5 to 10mL, 5 from 10 to 25mL, 25 from 25 to 100mL	For water and sediment determinations in petroleum products (ASTM D 96, D 91, D 893, and D 1796). For use in Thermo Scientific IEC centrifuge models K and EXD with 05-155-31 rotor system.	8160 100	**05-610**	54.54	12/450.
38 × 200mm	Pyrex Brand	None	0.05mL from 0 to 0.5mL, 0.1 from 0.5 to 2mL, 0.2 from 2 to 3mL, 0.5 from 3 to 5mL, 1 from 5 to 10mL, 5 from 10 to 25mL, 25 from 25 to 100mL	Same as 05-610, but with red panel for permanent Lifetime Red* graduations. For use with Thermo Scientific IEC centrifuge models K and EXD with 05-155-31 rotor system.	8180 100	**05-610R**	64.86	12/536.

*Trademark. See Trademark Reference.

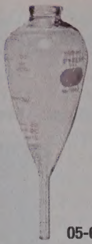
Prices subject to change.

yrex* Pear-Shaped Glass Centrifuge Tubes

ithout closures

For use in Thermo Scientific* IEC* HN-SII Centrifuge with 05-152-1 rotor, available online

apacity	Graduations	Special Features	Mfr. No.	Cat. No.	Each	Case of 12
00mL	0.1mL from 0 to 1.5mL, 0.5 from 1.5 to 5mL, 1 from 5 to 10mL, 15, 20, 25, 50, and 100mL	Oil tube for ASTM* D 96 and D 1966	8200 100	**05-620**	112.99	934.71
00mL	0.05mL from 0 to 1mL, 1 from 1 to 5mL, 5 from 5 to 50mL, 10 from 50 to 100mL	Goetz tube for phosphorus determinations in iron and steel	8220 100	**05-622**	103.26	854.40


05-620

yrex* Round-Bottom Glass Centrifuge Tubes

ithout graduations

apacity	Material	Closure	Special Features	Mfr. No.	Cat. No.	Price	Case of
0mL	Heavy-duty Pyrex Brand	GPI Thread 24-410 Screw Cap	For clinical and microbiological testing	8422 50	**05-558-5B**	Ea./21.19	12/174.45
0mL	Pyrex Brand	None	With pour spout	8240 50	**05-550**	Ea./6.85	12/56.75
0mL	Pyrex Brand	₷ No. 13 Pennyhead Stopper	Extra-thick walls for durability	8424 50	**05-558-10**	Pk. of 12/ 224.62	----
00mL	Pyrex Brand	None	With pour spout	8240 100	**05-565**	Pk. of 6/59.04	2 Pk./89.57

05-558-5B

ACCESSORIES

Corning* Black Phenolic Screw Caps

Resist effects of temperature and steam in autoclaving

- White-rubber liner

14-962-30G

GPI Thread	Mfr. No.	Cat. No.	Case of
15-415	9999-152	**14-962-30G**	288/64.08
18-415	9999-182	**02-883-9J**	192/68.69
38-430	9999-381M	**02-883-9L**	72/148.97
40-400	9999-40	**02-883-9D**	72/141.50

CENTRIFUGE—MICRO

*Fisherbrand** Premium Microcentrifuge Tubes

Flat-top snap caps provide a safe, liquid-tight, reliable seal even with prolonged boiling

- Choose from 0.5, 1.5, or 2.0mL tubes
- Made of high-clarity polypropylene
- Withstand forces up to 30,000xG
- Easy-open caps with needle insertion spot and textured marking area
- Labeling area on tube exterior
- Graduated: for 0.5mL tubes, 0.1mL markings; 1.5mL tubes, 0.1 and 0.25mL; 2.0mL tubes, 0.25mL

05-408 Series

- Highly polished interior for maximum sample recovery
- Temperature range of -80° to +121°C
- Fit all standard rotors
- Nonpyrogenic
- Autoclavable at 121°C/15psi for 15 minutes

ORDERING INFORMATION:
Available in eight colors or in assorted-color packs.

	0.5mL Tubes			1.5mL Tubes			2.0mL Tubes		
Color	O.D. × L	Cat. No.	Pack of 500	O.D. × L	Cat. No.	Pack of 500	O.D. × L	Cat. No.	Pack of 500
Natural	7.5 × 30.5mm	**05-408-120**	44.21	10.8 × 40.6mm	**05-408-129**	45.50	11 × 40.6mm	**05-408-138**	46.10
Red	7.5 × 30.5mm	**05-408-121**	43.75	10.8 × 40.6mm	**05-408-130**	45.50	11 × 40.6mm	**05-408-139**	46.10
Yellow	7.5 × 30.5mm	**05-408-122**	43.75	10.8 × 40.6mm	**05-408-131**	45.50	11 × 40.6mm	**05-408-140**	46.10
Blue	7.5 × 30.5mm	**05-408-123**	43.75	10.8 × 40.6mm	**05-408-132**	45.50	11 × 40.6mm	**05-408-141**	46.10
Green	7.5 × 30.5mm	**05-408-124**	43.75	10.8 × 40.6mm	**05-408-133**	45.04	11 × 40.6mm	**05-408-142**	46.10
Amber	7.5 × 30.5mm	**05-408-125**	44.21	10.8 × 40.6mm	**05-408-134**	45.04	11 × 40.6mm	**05-408-145**	46.10
Orange	7.5 × 30.5mm	**05-408-126**	43.75	10.8 × 40.6mm	**05-408-135**	45.04	11 × 40.6mm	**05-408-143**	46.10
Lavender	7.5 × 30.5mm	**05-408-127**	43.75	10.8 × 40.6mm	**05-408-136**	45.04	11 × 40.6mm	**05-408-144**	45.42
Assorted[†]	7.5 × 30.5mm	**05-408-128**	44.21	10.8 × 40.6mm	**05-408-137**	45.50	11 × 40.6mm	**05-408-146**	45.42

[†] *Pack of assorted colors includes 100 each of red, yellow, blue, green and orange*

*Fisherbrand** Snap-Cap* Flat-Top Tubes

Polypropylene

In 0.6 and 1.5mL sizes. Bulk packed. Nonsterile.

02-681 Series

Color	Capac.	O.D. × L	Max. RCF	Cat. No.	Pack of	Case of 10 Pk.
Natural	0.6mL	10 × 30mm	17,000×G	**02-681-240**	1000/90.00	798.50
Red	0.6mL	10 × 30mm	17,000×G	**02-681-241**	1000/90.00	796.50
Blue	0.6mL	10 × 30mm	17,000×G	**02-681-242**	1000/90.00	796.50
Green	0.6mL	10 × 30mm	17,000×G	**02-681-243**	1000/90.00	796.50
Yellow	0.6mL	10 × 30mm	17,000×G	**02-681-244**	1000/90.00	796.50
Orange	0.6mL	10 × 30mm	17,000×G	**02-681-245**	1000/90.00	796.50
Violet	0.6mL	10 × 30mm	17,000×G	**02-681-246**	1000/90.00	796.50
Assorted	0.6mL	10 × 30mm	17,000×G	**02-681-248**	1000/90.00	796.50
Natural	1.5mL	14 × 39mm	17,000×G	**02-681-272**	500/46.00	392.50
Red	1.5mL	14 × 39mm	17,000×G	**02-681-12**	500/44.75	383.00
Blue	1.5mL	14 × 39mm	17,000×G	**02-681-8**	500/44.25	383.25
Green	1.5mL	14 × 39mm	17,000×G	**02-681-9**	500/44.25	383.25
Yellow	1.5mL	14 × 39mm	17,000×G	**02-681-13**	500/44.75	383.00
Orange	1.5mL	14 × 39mm	17,000×G	**02-681-11**	500/44.75	383.00
Assorted	1.5mL	14 × 39mm	17,000×G	**02-681-10**	500/44.75	383.00

*Fisherbrand** Snap-Cap* Indented-Top Tubes

Polypropylene

Bulk packed, nonsterile.

Color	Capac.	O.D. × L	Max. RCF	Cat. No.	Pack of 500	Case of 10 Pk.
Orange	1.5mL	14 × 39mm	26,000×G	**02-681-235**	43.75	375.00
Violet	1.5mL	14 × 39mm	26,000×G	**02-681-236**	43.75	375.00

LOOKING FOR MORE TUBES?

Turn to p. 1861 for a complete selection of Fisherbrand* Premium Microcentrifuge Tubes.

*Fisherbrand** Snap-Cap* Flat-Top Graduated Tubes

Polypropylene

Color	O.D. × L	Max. RCF	Cat. No.	Pack of	Case of 10 Pk.
Capacity, 0.6mL (bulk/nonsterile); graduated in 0.2mL increments					
Natural	10 × 30mm	30,000×G	**02-681-257**	1000/90.00	798.50
Red	10 × 30mm	30,000×G	**02-681-249**	1000/90.00	796.50
Blue	10 × 30mm	30,000×G	**02-681-250**	1000/90.00	796.50
Green	10 × 30mm	30,000×G	**02-681-251**	1000/90.00	796.50
Yellow	10 × 30mm	30,000×G	**02-681-252**	1000/90.00	796.50
Orange	10 × 30mm	30,000×G	**02-681-253**	1000/90.00	796.50
Violet	10 × 30mm	30,000×G	**02-681-254**	1000/90.00	796.50
Amber	10 × 30mm	30,000×G	**02-681-255**	1000/90.00	796.50
Assorted	10 × 30mm	30,000×G	**02-681-256**	1000/90.00	796.50
Capacity, 0.6mL (single-wrapped/sterile); graduated in 0.2mL increments					
Natural	10 × 30mm	30,000×G	**02-681-268**	500/169.59	1449.50
Capacity, 1.5mL (bulk/nonsterile); graduated in 0.5mL increments					
Natural	14 × 39mm	17,000×G	**02-682-550**	500/16.00	137.25
Red	14 × 39mm	17,000×G	**02-682-553**	500/16.00	137.25
Blue	14 × 39mm	17,000×G	**02-682-551**	500/16.00	137.25
Green	14 × 39mm	17,000×G	**02-682-552**	500/16.00	137.25
Yellow	14 × 39mm	17,000×G	**02-682-555**	500/16.00	137.25
Violet	14 × 39mm	17,000×G	**02-682-554**	500/16.00	137.25
Assorted	14 × 39mm	17,000×G	**02-682-556**	500/16.00	137.25
Capacity, 1.5mL (single-wrapped/sterile); graduated in 0.5mL increments					
Natural	14 × 39mm	17,000×G	**02-681-5**	250/12.50	108.25
Capacity, 2.0mL (bulk/nonsterile); graduated in 0.5mL increments					
Natural	13 × 40mm	25,000×G	**02-681-258**	500/17.25	148.50
Red	13 × 40mm	25,000×G	**02-681-259**	500/54.75	468.50
Blue	13 × 40mm	25,000×G	**02-681-261**	500/54.75	468.50
Green	13 × 40mm	25,000×G	**02-681-262**	500/54.75	468.50
Yellow	13 × 40mm	25,000×G	**02-681-260**	500/54.75	468.50
Violet	13 × 40mm	25,000×G	**02-681-264**	500/54.75	468.50
Amber	13 × 40mm	25,000×G	**02-681-265**	500/54.75	468.50
Assorted	13 × 40mm	25,000×G	**02-681-266**	500/54.75	468.50
Capacity, 2.0mL (single-wrapped/sterile); graduated in 0.5mL increments					
Natural	13 × 40mm	25,000×G	**02-681-271**	250/94.50	836.25

*Fisherbrand** Snap-Cap* Tubes

Color: Natural

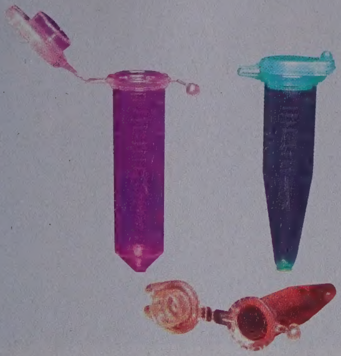
Packed in bulk. Nonsterile.

Material	Capac.	O.D. × L	Max. RCF	Cat. No.	Pack of 1000	Case of 10 Pk.
Polyethylene	0.25mL	8 × 35mm	28,000×G	**02-681-449**	99.25	878.50
Polypropylene	0.25mL	8 × 35mm	30,000×G	**02-681-230**	99.25	878.50
Polyethylene	0.4mL	8 × 48mm	----	**02-681-229**	99.25	878.50

*Trademark. See Trademark Reference.

Prices subject to change.

*Fisherbrand** Locking-Lid Microcentrifuge Tubes



02-681-297 (left), 02-681-282 (right), 02-681-278 (bottom)

Convenient, pierceable locking lids snap into place with one-handed operation

- Polypropylene tubes with flat tops
- Ideal for sample-handling applications, including centrifugation, boiling and freezing of specimens, incubation and storage
- With graduation marks for volume estimation

NOTE:
Centrifuges that develop excessive heat may damage this tube.

Color	Max. RCF	Cat. No.	Pack of	Case of 10 Pk.
Capacity, 0.6mL				
Natural	30,000×G	**02-681-273**	1000/65.00	576.25
Red	30,000×G	**02-681-274**	1000/65.00	576.25
Blue	30,000×G	**02-681-275**	1000/65.00	576.25
Green	30,000×G	**02-681-276**	1000/65.00	576.25
Yellow	30,000×G	**02-681-277**	1000/65.00	576.25
Orange	30,000×G	**02-681-278**	1000/65.00	576.25
Violet	30,000×G	**02-681-279**	1000/65.00	576.25
Amber	30,000×G	**02-681-280**	1000/65.00	576.25
Mixed	30,000×G	**02-681-281**	1000/65.00	576.25
Natural, single-wrapped/sterile	30,000×G	**02-681-300**	500/99.50	881.25
Capacity, 1.5mL				
Blue	26,000×G	**02-681-282**	500/33.75	288.75
Green	26,000×G	**02-681-283**	500/33.75	288.75
Natural	26,000×G	**02-681-284**	500/33.75	290.50
Yellow	26,000×G	**02-681-285**	500/33.75	288.75
Red	26,000×G	**02-681-286**	500/33.75	288.75
Orange	26,000×G	**02-681-287**	500/33.75	288.75
Violet	26,000×G	**02-681-288**	500/33.75	288.75
Amber	26,000×G	**02-681-289**	500/33.75	288.75
Mixed	26,000×G	**02-681-290**	500/33.75	289.50
Natural, single-wrapped/sterile	26,000×G	**02-681-301**	250/57.25	501.75
Capacity, 2.0mL				
Natural	25,000×G	**02-681-291**	500/43.50	373.77
Red	25,000×G	**02-681-292**	500/43.50	372.75
Blue	25,000×G	**02-681-293**	500/43.50	372.75
Green	25,000×G	**02-681-294**	500/43.50	372.75
Yellow	25,000×G	**02-681-295**	500/43.50	372.75
Orange	25,000×G	**02-681-296**	500/43.50	372.75
Violet	25,000×G	**02-681-297**	500/43.50	372.75
Amber	25,000×G	**02-681-298**	500/43.50	372.75
Mixed	25,000×G	**02-681-299**	500/43.50	372.75
Natural, single-wrapped/sterile	25,000×G	**02-681-302**	250/58.00	513.25

*Fisherbrand** Siliconized/Low Retention Microcentrifuge Tubes

Snap-cap lid provides a secure seal—even over extended periods

- Manufactured from durable chemical-resistant polypropylene
- Available in three sizes: 0.6mL, 1.5mL, and 2.0mL
- Fully graduated with a frosted writing area for easy marking
- 0.6mL tube is graduated in 0.2mL increments; 1.5mL tube, in 0.5mL increments with an additional graduation at 0.1mL; and 2.0mL size, in 0.5mL increments
- Designed for use in critical applications where minute sample recovery is important
- Withstand speeds up to 30,000×G
- Recommended for freezer-to-centrifuge use
- Autoclavable up to 120°C and withstand freezing temperatures as low as -80°C

02-681-300 Series

ORDERING INFORMATION:
Nonsterile tubes supplied in bulk pack. Sterile tubes (natural colored) come individually wrapped.

	0.6mL Tubes				1.5mL Tubes				2.0mL Tubes			
Color	O.D. × L	Cat. No.	Pack of 500	Case of	O.D. × L	Cat. No.	Pack of 250	Case of	O.D. × L	Cat. No.	Pack of 250	Case of
Bulk, Nonsterile												
Natural	10 × 30mm	**02-681-311**	44.00	20 Pk./ 754.50	13 × 40mm	**02-681-320**	24.75	20 Pk./ 426.00	13 × 40mm	**02-681-321**	30.25	20 Pk./ 516.50
Single-wrapped/Sterile												
Natural	10 × 30mm	**02-681-330**	139.76	10 Pk./ 1194.50	13 × 40mm	**02-681-331**	78.25	10 Pk./ 692.75	13 × 40mm	**02-681-332**	78.00	10 Pk./ 691.00

Fisherbrand* Threaded-End Nonsterile Tubes

Choose skirted- or conical-bottom style

- Threaded to accept colored screw caps (02-681 Series at right), sold separately
- Siliconized/low-retention conical-bottom tubes also available

Color	Capacity	Max. RCF	Cat. No.	Pack of 500	Case of 10 Pk.
Skirted-bottom Tubes					
Natural	0.5mL	30,000×G	**02-681-333**	54.50	468.50
Amber	0.5mL	30,000×G	**02-681-337**	56.00	480.00
Natural	1.5mL	18,000×G	**02-681-338**	56.00	480.00
Amber	1.5mL	18,000×G	**02-681-342**	57.25	501.75
Natural	2.0mL	18,000×G	**02-681-343**	55.00	471.25
Amber	2.0mL	18,000×G	**02-681-346**	59.25	524.25
Conical-bottom Tubes					
Natural	0.5mL	25,000×G	**02-681-334**	54.50	468.50
Amber	0.5mL	25,000×G	**02-681-335**	56.00	480.00
Natural	1.5mL	30,000×G	**02-681-339**	55.00	471.25
Amber	1.5mL	30,000×G	**02-681-340**	56.00	480.00
Natural	2.0mL	25,000×G	**02-681-344**	55.00	471.25
Amber	2.0mL	25,000×G	**02-681-345**	59.25	524.25
Conical-bottom Tubes, Siliconized/Low-retention					
Natural	1.5mL	30,000×G	**02-681-341**	58.00	513.25

Fisherbrand* Screw-Cap Sterile Tubes

Choose skirted- or conical-bottom style

- With attached caps
- Natural-colored screw caps with O-rings

Capacity	Max. RCF	Cat. No.	Pack of 500	Case of 5 Pk.
Skirted-bottom Tubes				
0.5mL	30,000×G	**02-681-370**	337.08	1440.50
1.5mL	18,000×G	**02-681-372**	337.08	1440.50
2.0mL	18,000×G	**02-681-374**	337.90	1444.00
Conical-bottom Tubes				
0.5mL	25,000×G	**02-681-371**	337.08	1440.50
1.5mL	30,000×G	**02-681-373**	335.91	1435.50
2.0mL	25,000×G	**02-681-375**	337.90	1444.00

02-681 Series

ACCESSORIES

Fisherbrand* Colored Screw Caps

For use with nonsterile skirted- and conical-bottom tubes

- Feature a frosted writing surface
- Can be pierced for sample removal

Color	With O-ring			Without O-ring		
	Cat. No.	Pack of 500	Case of 10 Pack	Cat. No.	Pack of 500	Case of 10 Pk.
Natural	**02-681-358**	86.75	772.25	**02-681-347**	46.00	395.50
Blue	**02-681-359**	86.75	769.50	**02-681-348**	50.00	428.00
Yellow	**02-681-360**	86.75	769.50	**02-681-349**	50.00	428.00
Red	**02-681-361**	86.75	769.50	**02-681-350**	50.00	428.00
Green	**02-681-363**	86.75	767.50	**02-681-356**	50.00	428.00
Orange	**02-681-364**	86.75	767.50	**02-681-352**	50.00	428.00
Black	**02-681-365**	86.75	767.50	----	----	----
Violet	**02-681-366**	86.75	767.50	**02-681-354**	50.00	428.00
Amber	**02-681-367**	86.75	767.50	**02-681-355**	50.00	428.00
Mixed	**02-681-368**	86.75	769.50	**02-681-357**	50.00	428.00

Fisherbrand* Microcentrifuge Tubes with Tether Cap

Reduce sample contamination by keeping cap with tube

Natural-colored polypropylene tubes include leash-and-loop tether. Ultragrade polypropylene caps are fitted with ethylene/propylene O-rings. Available sterile or nonsterile with round or skirted bottoms.

- Removable tether rotates freely for easy opening and closing
- O-ring forms positive seal with tube to reduce leakage
- Frosted writing area
- Withstand 20,000×G
- Suitable for vapor-phase liquid nitrogen storage, boiling and autoclaving

ORDERING INFORMATION:

Nonsterile tubes come separate from tether cap. Sterile tubes come attached; 500 per pack.

02-707-350 Series

Capacity	Description	Cat. No.	Pack of 500	Case
Round Bottom				
0.5mL	Nonsterile	**02-707-350**	123.80	10 Pk./1050.2
0.5mL	Sterile	**02-707-351**	144.29	5 Pk./612.0
1.5mL	Nonsterile	**02-707-352**	123.80	10 Pk./1050.2
1.5mL	Sterile	**02-707-353**	144.29	5 Pk./612.0
2.0mL	Nonsterile	**02-707-354**	123.80	10 Pk./1050.2
2.0mL	Sterile	**02-707-355**	144.24	5 Pk./611.7
Skirted Bottom				
0.5mL	Nonsterile	**02-707-356**	123.80	10 Pk./1050.2
0.5mL	Sterile	**02-707-357**	144.27	5 Pk./612.0
1.5mL	Nonsterile	**02-707-358**	123.80	10 Pk./1050.2
1.5mL	Sterile	**02-707-359**	144.27	5 Pk./612.0
2.0mL	Nonsterile, Graduated	**02-707-360**	123.80	10 Pk./1050.2
2.0mL	Sterile, Graduated	**02-707-361**	144.29	5 Pk./612.0

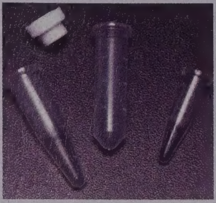
*Trademark. See Trademark Reference.

Prices subject to change.

*Fisherbrand** Rimmed Microcentrifuge Tubes

With graduation marks for estimating volume and frosted writing area for sample identification

- Natural-colored tubes without lids
- Made from durable, chemical-resistant polypropylene
- Autoclavable to 120°C; freezable to -80°C
- Withstand forces to 30,000×G



02-681-450 Series

ORDERING INFORMATION:
Plug-style closures available for 1.5 and 2.0mL tubes to prevent evaporation and contamination; see 05-562-11 Series Friction-Fit Closures, p. 1854.

Capacity	O.D. × L	Graduations	Cat. No.	Pack of 1000	Case of 10 Pk.
0.6mL	10 × 30mm	0.2, 0.4, 0.6mL	**02-681-451**	40.00	346.00
1.5mL	13 × 40mm	0.1; 0.5, 1.0, 1.5mL	**02-681-452**	45.00	399.00
2.0mL	13 × 40mm	0.5, 1.0, 1.5, 2.0mL	**02-681-453**	56.50	500.25

*Fisherbrand** Polystyrene Microcentrifuge Tube

Can be filled without capillary

- 1mL capacity
- Disposable polystyrene tube
- Conical and transparent
- Plug-type cap prevents evaporation and contamination, minimizes electrolyte disturbances caused by gas loss during centrifugation

04-978-145

O.D. × L	Cat. No.	Pack of 500
3.7 × 55mm	**04-978-145**	84.45

orning* Microcentrifuge Tubes

pecially designed polypropylene tubes protect ensitive samples and provide added security against eakage and contamination

- Screw caps feature one-handed capping and uncapping
- Marking spot
- Plug-seal top
- Standard conical bottom or freestanding skirted bottom
- Unattached rim-seal screw cap or attached-loop screw cap with silicone O-ring for optimum cap-to-vessel seal
- Withstand forces up to 13,000×G
- All tubes and caps sterilized

05-538-71A

crew Cap	Freestanding	Mfr. No.	Cat. No.	Case of 500
5mL				
ttached Loop	No	430909	**05-538-71A**	179.49
.0mL				
ttached Loop	Yes	430915	**05-538-69C**	179.49
nattached	Yes	430917	**05-538-70C**	141.34

Costar* Microcentrifuge Tubes

Certified RNase-and DNase-free

- Polypropylene tubes feature positive seal that allows for repeated opening and closing with flat-cap surfaces for convenient labeling; snap cap
- External graduations
- Frosted writing surfaces
- Compatible with all popular microcentrifuge rotors
- Withstand forces of 17,000×G
- Supplied nonsterile; autoclavable
- Natural color or rainbow assortment tubes (blue, green, yellow, red and orange)

07-200-530 Series (racks not included)

Capacity	Color	Mfr. No.	Cat. No.	Case of
0.65mL	Natural	3208	**07-200-185**	1000/77.84
0.65mL	Rainbow	3209	**07-200-186**	1000/77.84
1.7mL	Natural	3620	**07-200-534**	500/43.47
1.7mL	Natural	3621	**07-200-535**	5000/415.11
1.7mL	Rainbow	3622	**07-200-536**	500/43.47
2.0mL	Natural	3213	**07-200-210**	1000/86.92

Eppendorf* Snap-Cap Microcentrifuge Safe-Lock* Tubes

Polypropylene tube with patented locking cap

- Positive sealing cap snaps shut for sample incubation, storage, and transportation
- Can be easily and single-handedly opened
- Flat-top cap provides an ideal writing surface for sample identification
- Tubes are autoclavable, when opened, at 121°C (250°F), 20 minutes
- Volume graduation scale
- Rated to 30,000×G
- Choose from six colors, including amber for light-sensitive samples

05-402-25

ORDERING INFORMATION:
Assorted packages include 100 each of natural, blue, green, red and yellow

Color	O.D. × L [with Cap]	Mfr. No.	Cat. No.	Pack of
Capacity, 0.5mL				
Natural	9 × 33mm	022 36 361 1	**05-402-18**	500/43.00
Amber	9 × 33mm	022 36 363 8	**05-402-19**	500/53.25
Blue	9 × 33mm	022 36 364 6	**05-402-20**	500/53.25
Green	9 × 33mm	022 36 365 4	**05-402-21**	500/53.25
Red	9 × 33mm	022 36 366 2	**05-402-22**	500/53.25
Yellow	9 × 33mm	022 36 367 1	**05-402-23**	500/53.25
Assorted	9 × 33mm	022 36 369 7	**05-402-4**	500/53.25
Capacity, 1.5mL				
Natural	10 × 38mm	022 36 320 4	**05-402-25**	500/40.00
Natural	10 × 38mm	022 36 333 6	**05-404-30**	700/41.25
Amber	10 × 38mm	022 36 322 1	**05-402-26**	500/49.00
Blue	10 × 38mm	022 36 324 7	**05-402-27**	500/49.00
Green	10 × 38mm	022 36 326 3	**05-402-28**	500/49.00
Red	10 × 38mm	022 36 328 0	**05-402-29**	500/49.00
Yellow	10 × 38mm	022 36 330 1	**05-402-30**	500/49.00
Assorted	10 × 38mm	022 36 332 8	**05-402-5**	500/49.00
Capacity, 2.0mL				
Natural	11 × 42mm	022 36 335 2	**05-402-7**	500/42.25
Amber	11 × 42mm	022 36 337 9	**05-402-8**	500/52.25
Red	11 × 42mm	022 36 343 3	**05-402-11**	500/52.25
Assorted	11 × 42mm	022 36 347 6	**05-402-6**	500/52.25

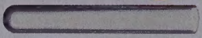
CULTURE—PLASTIC

*Fisherbrand** Nonsterile Plastic Tubes

Extra-heavy wall construction

NEW

- Round bottom
- Made from tough, translucent polypropylene or clear polystyrene
- Special molding avoids leaks and cracks
- 12 O.D. × 75mm long tube has 5mL capacity and heavier wall than competitive tubes
- Slight lip at top provides seal when used with Cat. No. 14-961-12 Snap Cap (see our Web site)



14-961-20

O.D. × L	Cap Supplied	Cat. No.	Pack of	Case of 4 Pk.
Translucent Polypropylene				
12 × 75mm	Snap	**14-959-10AA**	1000/206.57	----
12 × 75mm	None	**14-959-16**	1000/201.83	690.00
12 × 75mm	None	**14-959-16A**†	1000/181.20	----
12 × 75mm	None	**14-961-11**	5000/453.00	----
13 × 100mm	None	**14-956-7A**	1000/113.68	----
16 × 125mm	None	**14-956-7C**	1000/150.72	----
17 × 100mm	None	**14-956-7E**	1000/100.98	----
Clear Polystyrene				
12 × 75mm	Snap	**14-961-20**	1000/204.24	----
12 × 75mm	None	**14-961-10**	1000/187.31	640.36
12 × 75mm	None	**14-961-10A**†	1000/165.56	----
12 × 75mm	None	**14-961-13**	5000/392.22	----
13 × 100mm	None	**14-956-8E**	1000/122.49	----
16 × 125mm	None	**14-956-8G**	1000/140.20	----
17 × 100mm	None	**14-956-8J**	1000/107.39	----

† Tubes are oriented in one direction within box for easier, safer use.

*Fisherbrand** Sterile Plastic Tubes

Ideal for tissue culture procedures

NEW

- Gamma irradiated and tested for sterility; ready to use
- No chance of residual contamination
- All screw-cap tubes have outside threads and unconstricted necks, making filling and pipetting easier
- All snap caps can be positioned for aerobic or anaerobic applications

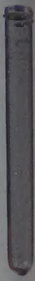
14-956-4A

O.D. × L	Cap Supplied	Packaging	Cat. No.	Case of
Translucent Polypropylene				
12 × 75mm	None	Blister pack of 125	**14-956-1B**	1000/175.58
12 × 75mm	Snap	Individually wrapped	**14-956-1C**	500/214.36
12 × 75mm	Snap	Blister pack of 25	**14-956-1D**	500/128.96
17 × 100mm	None	Blister pack of 125	**14-956-1G**	1000/175.72
17 × 100mm	Snap	Individually wrapped	**14-956-1H**	500/259.58
17 × 100mm	Snap	Blister pack of 25	**14-956-1J**	500/181.18
Clear Polystyrene				
12 × 75mm	Snap	Individually wrapped	**14-956-3B**	500/172.30
12 × 75mm	Snap	Blister pack of 25	**14-956-3C**	500/112.33
13 × 100mm	Screw	Blister pack of 125	**14-956-4A**	1000/338.45
16 × 125mm	Screw	Individually wrapped	**14-956-5A**	500/298.29
16 × 125mm	Screw	Blister pack of 125	**14-956-5B**	1000/453.59
16 × 150mm	Screw	Individually wrapped	**14-956-5C**	500/345.16
17 × 100mm	None	Blister pack of 125	**14-956-6C**	1000/147.44
17 × 100mm	Snap	Individually wrapped	**14-956-6A**	500/215.27
17 × 100mm	Snap	Blister pack of 25	**14-956-6D**	500/119.34
17 × 100mm	Snap	Blister pack of 125	**14-956-6B**	1000/220.32

Corning* Polystyrene Disposable Culture Tubes

Available treated or untreated

- Tissue culture-treated tubes are available in polyfoam racks of 50 tubes; untreated tubes are bulk packed 25 per bag
- Reference mark on tubes helps position cap
- Sterile
- O.D. × L: 16 × 125mm



14-959 Series

INCLUDES:

Plug-seal screw caps

Type of Tube	Mfr. No.	Cat. No.	Case of 500
Treated	430172	**14-959-15**	320.25
Untreated	430157	**14-959-14**	320.68

Corning* Costar* Brand Cluster Tube System

Ideal for harvesting cells, cell uptake and receptor binding assays, and radioimmunoassays

NEW

- Convenient for large-volume transfer and collection from microtitration plates
- Useful with single- and multi-channel pipetters and in robotic workstations and centrifuges
- 1.2mL individual tubes or breakaway strips of eight tubes; microtitration plate format
- Assembled in 12- or 96-tube racks†
- Both tubes and racks are autoclavable clarified polypropylene

07-200-300 Series

APPLICATIONS:

Ideal for harvesting cells, cell uptake and receptor binding assays, and radioimmunoassays

Type	Sterile	Rack	Mfr. No.	Cat. No.	Case of
96 per tray					
Individual	No	No	4401	**07-200-317**	960/42.35
Individual	No	Yes	4410	**07-200-319**	960/88.34
Individual	Yes	Yes	4411	**07-200-320**	960/93.1
12 per rack					
8-strip	No	No	4408	**07-200-318**	120/50.8
8-strip	No	Yes	4412	**07-200-321**	120/85.9
8-strip	Yes	Yes	4413	**07-200-322**	120/93.1

† 07-200-317 and 07-200-318 are supplied without racks.

Thermo Scientific* ABgene* 2DCypher* Twist-Lock Tube Rack with Tubes and Caps

deal for sample collection and storage of DNA, blood, cell lines, and tissue

AB-1248

- Suitable for storage at -20°C, -80°C and in vapor phase liquid nitrogen†
- Encapsulated 2D Matrix* code on each tube base provides robust sample management and tracking; all codes guaranteed to be unique
- Matching castellations on rack and tube allow caps to be applied and removed from tubes while still located in the rack
- Caps made of a proprietary inert polymer that increases seal strength at cold temperatures
- Internal thread design "locks in" with the cap in two distinct positions, providing robust 100% sealing down to -196°C
- Tubes and caps can be easily handled and accessed using Twist-Lock Cap-It (included) or Twist-Lock Tool (available separately through your Fisher Scientific Customer Service Representative)
- Tube working volume 900µL when capped (810µL recommended when freezing)
- Low height maximizes freezer space
- All components cleanroom produced and contamination free

COMPLIANCE:

Comply with SBS guidelines

Cat. No.	Price
AB-1248	692.00

† Immersion of tubes and racks in liquid nitrogen introduces safety and contamination risks. Recommended storage is in vapor-phase liquid nitrogen only.

Thermo Scientific* ABgene* 2DCypher* Cluster Tubes and Racks

Designed for high-throughput, individual sample identification

ubes are compatible with robotic systems. Labeled with a Data Matrix* and uman readable code encapsulated in clear polypropylene window to protect gainst abrasion and chemical solvents (including DMSO). Over 3.6 × 1015 nique code combinations; codes can be scanned while racked.

- Flat V internal well minimizes dead volume
- Lockable lid; sealable
- Temperature range -170° to +120°C
- Alphanumeric grid referencing molded into rack lid
- Grid-referenced racks have an alphanumeric grid-reference that corresponds to the tube's position in the rack
- Available loose (case of 960 tubes) or in heavy-duty rack (10 racks of 96 per pack) in microplate format with SBS footprint

0.65mL Cluster Tubes and Racks

Available packaged in low profile rack

AB1186

- Rack features a square well entrance for maximum placement area
- Tubes are supported at the base while still allowing scanning of codes in the rack

Description	Plug Type	Cat. No.	Price
10 Racks of 96 tubes	None	AB-1186	363.59
10 Racks of 96 tubes	Septum	AB-1187	759.48
960 Loose tubes	None	AB-1188	335.71

1.2mL Cluster Tubes and Racks, MK5

MK5 rack features a tapered well entrance to aid tube placement

- Stacking shoulders have been removed from rack for compatibility with certain robotic instruments
- With flat, V-shaped well, rounded end caps

Description	Plug Type	Cat. No.	Price
10 Racks of 96 tubes	None	AB-1185	363.59
10 Grid-referenced racks of 96 tubes	Septum	AB-1180	613.80

1.2mL Cluster Tubes and Racks, MK3

MK3 rack features stacking shoulders to allow racks to be stacked when open

Description	Plug Type	Cat. No.	Price
Flat, V-Shaped Well, Square End Caps			
10 Racks of 96 tubes	None	AB-1047	363.59
	Septum	AB-1048	613.80
Flat, V-Shaped Well, Round End Caps			
960 Loose tubes	None	AB-1150	335.71
Round Well, Square End Caps			
960 Loose tubes	None	AB-1054	335.71

Thermo Scientific* ABgene* Grid-Referenced Cluster Tube Racks

Lockable lid and silicone tube plugs for security during transport

AB-1260

- 96 individual 0.65 or 1.2mL tubes
- Alphanumeric grid-referencing molded into the rack and lid
- Temperature range -170° to +120°C
- Heavy-duty rack in a microplate format and in accordance with SBS footprint
- Stackable with or without lid
- Open bottom to allow full robotic access to micro-tubes—each tube is fully supported to withstand pressure applied by robotic systems
- Sealing options include MULTISIP* septum plugs, silicone tube plugs, storage plate cap strips (see following page)

ORDERING INFORMATION:

Supplied in packs of 10 racks, 96 tubes each

Description	Cat. No.	Price
1.2mL Grid-Referenced Cluster Tube Rack	AB-0977	233.33
0.65mL Grid-Referenced Cluster Tube Racks and MULTISIP* Plugs	AB-1260	524.47

Thermo Scientific* ABgene* 1.2mL Microtubes and Cluster Rack

Ideal for storage and screening applications

- 96 individual 1.2mL tubes in heavy-duty rack in a microplate format (tubes also available loose in bags of 1000)
- Temperature range -170° to +120°C
- Open bottom allows full robotic access to microtubes
- Alphanumeric grid-referencing molded into rack and lid
- Beveled corner for one-way fit
- Seal with MULTISIP* Septum Plugs, Silicone Tube Plugs, or Storage Plate Cap Strips (below)

Description	Cat. No.	Price
1000 Individual Tubes	**AB-0672**	49.47
10 Racks of 96 Tubes	**AB-0595**	59.53

ACCESSORIES

Thermo Scientific* ABgene* Storage Plate Cap Strips

Permit simultaneous sealing of eight wells

AB-0981

- Strips of eight caps for sealing storage plates and racked cluster tubes
- Each cap individually numbered, with low profile for increased well volume and end tabs for easy removal
- Use with microplates, 0.8mL storage plates, 1.2mL round-well storage plates, or 1.2mL cluster tube range

Cat. No.	Case of 120
AB-0981	49.32

Thermo Scientific* ABgene* Silicon Tube Plugs

Individual plugs for sealing cluster tubes

- Can be individually pierced up to 50 times
- High chemical resistance, including DMSO
- Excellent temperature stability (-80° to +200°C)
- Fully autoclavable

Cat. No.	Case of 1000
AB-0971	198.91

Thermo Scientific* ABgene* MULTISIP* Split Septum Plugs

Unique patented split septum design

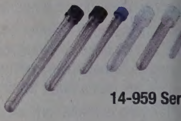
AB-0972

- Individual plugs made from an inert polymer
- Pierceable with standard pipetting equipment
- 96 plugs can be pierced simultaneously
- 100% resealing even after 200 piercings
- Less than 4N pierce pressure
- Solvent resistant, including acetonitrile and DMSO (for long-term storage with DMSO, samples should be stored at 4°C or below)
- Temperature range -170° to +120°C; fully autoclavable
- Apply 96 plugs individually with the Cap-It tool

Description	Cat. No.	Each
7mm Plugs; 1000/Case	**AB-0972**	318.55
10mm Plugs; 1000/Case	**AB-1065**	915.88
10 Trays of 96 7mm Plugs	**AB-1174**	408.64
MULTISIP Cap-It	**AB-1227**	140.85

BD* Falcon* Round-Bottom Plastic Tubes

Individual packages use medical-style packaging materials and allow aseptic access


14-959 Ser

- Widely referenced in published laboratory procedures and protocols (e.g., *Molecular Cloning, 2nd ed., T. Maniatis et al.*)
- Available with heavyweight, durable, dual-position snap cap for easy handling; with screw cap or without cap
- All sizes supplied sterile; 12 × 75mm size without cap also available nonst

Polypropylene Tubes

Can be centrifuged to approximately 3000×G

- All 17 × 100mm polypropylene tubes have printed graduations from 0.5 to 14mL in 0.5mL increments
- 17 × 100mm tubes also include solvent-resistant white writing patch

ORDERING INFORMATION:

Snap caps also available separately

O.D. × L	Mfr. No.	Type	Packaging	Cat. No.	Case
With Snap Cap					
12 × 75mm	352005	Sterile	Indiv. wrapped	**14-959-10A**	500/148
12 × 75mm	352063	Sterile	Bag of 25	**14-959-11A**	500/132
17 × 100mm	352006	Sterile	Indiv. wrapped	**14-959-10B**‡	500/181
17 × 100mm	352059	Sterile	Bag of 25	**14-959-11B**‡	500/181
Without Cap					
12 × 75mm	352002	Nonsterile	Bulk pack	**14-959AA**	1000/52
12 × 75mm	352053	Sterile	Bag of 125	**14-959-12B**	1000/180
17 × 100mm	352018	Sterile	Bag of 125	**14-959-12A**‡	1000/162

‡ *Printed graduations; white writing patch.*

Polystyrene Tubes

Can be centrifuged to approximately 1400×G

- Cat. Nos. 14-959-42 and -38B have reference mark for orientation

O.D. × L	Mfr. No.	Type	Packaging	Cat. No.	Case
With Snap Cap					
12 × 75mm	352003	Sterile	Indiv. wrapped	**14-959A**	500/119
12 × 75mm	352058	Sterile	Bag of 25	**14-959-1A**	500/116
12 × 75mm	352054	Sterile	Bag of 125	**14-959-2A**	1000/189
17 × 100mm	352001	Sterile	Indiv. wrapped	**14-959B**	500/143
17 × 100mm	352057	Sterile	Bag of 25	**14-959-1B**	500/124
17 × 100mm	352051	Sterile	Bag of 125	**14-959-7**	1000/224
With Screw Cap					
13 × 100mm	352027	Sterile	Bag of 125	**14-959-38C**	1000/312
16 × 125mm	352037	Sterile	Indiv. wrapped	**14-959-42**	500/203
16 × 125mm	352025	Sterile	Bag of 125	**14-959-38B**	1000/380
16 × 150mm	352045	Sterile	Indiv. wrapped	**14-959-40B**	500/224
Without Cap					
12 × 75mm	352052	Sterile	Bag of 125	**14-959-6**	1000/117
12 × 75mm	352008	Nonsterile	Bulk pack	**14-959-5**†	1000/56
17 × 100mm	352017	Sterile	Bag of 125	**14-959-8**	1000/13

† *RIA tube.*

ACCESSORIES

Sterile Polyethylene Snap Caps

For Falcon* Round-Bottom Tubes, above

- Dual position: loose for aerobic culturing, tight for sealing

ORDERING INFORMATION:

Supplied in bags of 500; case of four bags.

For Tube O.D. × L	Cap I.D.	Mfr. No.	Cat. No.	Case of 2
12 × 75mm	12mm	352032	**14-959-48**	170
17 × 100mm	17mm	352030	**14-959-47**	170

D* Falcon* Disposable Polystyrene crew-Cap Cell Culture Tubes

or tissue culture using open or closed ncubation conditions

14-959-45

- Compatible with most tube-rolling equipment
- Tissue culture treated
- With reference mark and screw caps
- Optically clear
- Sterile
- O.D. × L: 16 × 125mm

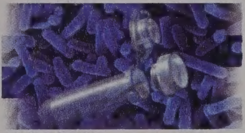
NCLUDES:

crew caps

ackaging	Mfr. No.	Cat. No.	Case of 500
5/bag	353033	**14-959-45**	326.70

ppendorf* Lid$_{Bac}$* Reusable Plastic ulture Tubes

nable growth of miniprep bacterial cultures in same ube needed for preparation



05-402-98

onsist of a gas-permeable, ydrophobic, 0.2µm pore-size embrane lid which is impermeable bacteria and a 2.0mL Eppendorf afe-Lock* microcentrifuge tube. Can e used easily for almost all xperimental steps, including entilation and drying, without transferring the sample to a new container.

ey Features

- Tubes can be centrifuged at 16,000×G when sealed with the membrane lid
- Reduce plastic waste associated with bacterial cultivation
- Tubes and membrane lid are produced in an automated manufacturing process and can be used directly for bacterial cultivation if handled under clean conditions
- Open tube and the lid can be autoclaved at 121°C without function being adversely affected
- Lid is compatible with all 1.5 and 2.0mL Eppendorf Tubes

uperior Bacterial Cultivation

- Reduce culture volumes needed
- Require the same cultivation period for *E. coli* and other bacteria as that required for 5mL cultures in other culture vessels and produce the same bacterial densities
- Increased shaker velocity is recommended for use in standard shakers; should mixing movements cause the culture medium to come into contact with cap membrane, its hydrophobic properties will prevent any adverse effect on gas exchange

fficient Lyophilization

- Protects samples from infiltration by foreign particles that are present in the freeze-drying unit, typically eliminating the need for expensive decontamination methods
- Following lyophilization, the tube can be sealed with its lid, and rewetting can be limited to <0.1% of the weight of the lyophilisate for a 20-day period if the tube is stored in a freezer
- When used to dry sample material in concentrators, prevents valuable, and sometimes radioactively labeled, sample material from being forced from the tube when the bowl is flushed with air

lfr. No.	Cat. No.	Pack of 10
2 65 500-1	**05-402-98**	43.25

CULTURE—GLASS

*Fisherbrand** Disposable Borosilicate Glass Tubes

Provide the chemical stability and biological inertness of hard, borosilicate glass—at the price of disposable tubes

- Round bottom
- Start clean—no lost samples due to contaminated, cloudy or scratched tubes
- Avoid pH problems caused by soft glass

With Polypropylene Screw Cap

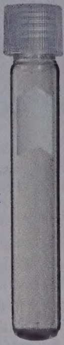
- With natural linerless polypropylene screw cap and marking spot

APPLICATIONS:

Ideal for tissue culture, bacteriology, clinical chemistry, blood typing, and crossmatching procedures

ORDERING INFORMATION:

Packed in trays of 500 or 250



14-962-26 Series

O.D. × L	No. Per Tray	Cat. No.	Case of
13 × 100mm	500	**14-962-26D**	1000/274.79
16 × 100mm	250	**14-962-26F**	1000/290.19
16 × 125mm	250	**14-962-26G**	1000/305.58
16 × 150mm	250	**14-962-26H**	1000/335.64
20 × 125mm	250	**14-962-26K**	500/247.25
20 × 150mm	250	**14-962-26M**	500/275.51

With Threaded End

Available with or without marking spot

ORDERING INFORMATION:

13 O.D. × 100mm long tubes supplied in shrink-wrapped shelf trays of 500; all other sizes come in trays of 250. Without cap; order separately

14-959-35C

O.D. × L	GPI Thread	Cat. No.	Case of
With marking spot			
13 × 100mm	13-415	**14-959-35C**	1000/245.55
16 × 100mm	15-415	**14-959-35AA**	1000/269.41
16 × 125mm	15-415	**14-959-35A**	1000/268.26
16 × 150mm	15-415	**14-959-35B**	1000/287.63
20 × 125mm	18-415	**14-959-37A**	500/197.56
20 × 150mm	18-415	**14-959-37C**	500/234.53
Without marking spot			
13 × 100mm	13-415	**14-957-76A**	1000/225.23
16 × 150mm	15-415	**14-957-76C**	1000/292.61
20 × 150mm	18-415	**14-957-76E**	500/229.65

Fisherbrand* Disposable Borosilicate Glass Tubes, Contd.

With Plain End

10 and 12mm O.D. sizes are suitable for cell washing procedures

- Packaged in shrink-wrapped trays of 250 or 125 to prevent contamination or breakage

14-962-25

O.D. × L	No. Per Tray	Cat. No.	Case of
10 × 75mm	250	**14-961-25**	1000/65.95
12 × 75mm	250	**14-961-26**	1000/69.42
13 × 100mm	250	**14-961-27**	1000/73.50
15 × 85mm	250	**14-961-28**	1000/86.38
16 × 100mm	250	**14-961-29**	1000/100.58
16 × 125mm	250	**14-961-30**	1000/114.96
16 × 150mm	250	**14-961-31**	1000/121.40
18 × 150mm	125	**14-961-32**	500/75.07
20 × 150mm	250	**14-961-33**	500/120.51
25 × 150mm	125	**14-961-34**	500/162.85

ACCESSORIES

*Fisherbrand** Screw Caps for Disposable Glass Tubes

Phenolic caps have cemented-in rubber liners

- Autoclavable
- Polypropylene cap is linerless

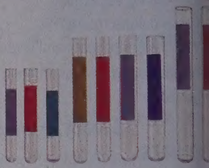
14-957-82 Series

GPI Thread	Material	Cat. No.	Case of 1000
13-415	Phenolic	**14-957-82A**	88.23
15-415	Phenolic	**14-959-36A**	101.81
15-415	Polypropylene	**14-959-36B**	65.63
18-415	Phenolic	**14-957-82E**	124.48

*Fisherbrand** Plain-End Disposable Glas Tubes with Color-Coded Label Area

End problem of lost or peeling labels

- Fused-in, textured, color patches accept any type of ink or pencil
- Expose to heat, steam, hours in a water bath, without affecting label
- Marking area is large enough for all necessary information—1⅜" (for 10 and 12mm O.D. tubes) or 2" (for 13 and 16mm O.D. tubes) long labeling area in five pastel colors
- Flint or borosilicate glass
- Round bottom
- Accept Fisherbrand TainerTop* Safety Closures, p. 1873



14-957 Series

	Flint Glass		Borosilicate Glass	
Label Color	Cat. No.	Case of 1000	Cat. No.	Case of 100
10 O.D. × 75mm long				
White	**14-957-10A**	63.33	**14-957-20A**	71.7
Yellow	**14-957-10B**	63.33	**14-957-20B**	71.7
Green	**14-957-10C**	63.33	**14-957-20C**	71.7
Orange	**14-957-10D**	63.33	**14-957-20D**	71.7
Blue	**14-957-10E**	63.33	**14-957-20E**	71.7
12 O.D. × 75mm long				
White	**14-957-12A**	64.01	**14-957-22A**	80.3
Yellow	**14-957-12B**	64.01	**14-957-22B**	80.3
Green	**14-957-12C**	64.01	**14-957-22C**	80.3
Orange	**14-957-12D**	64.01	**14-957-22D**	80.3
Blue	**14-957-12E**	64.01	**14-957-22E**	80.3
13 O.D. × 100mm long				
White	**14-957-14A**	65.40	**14-957-24A**	92.9
Yellow	**14-957-14B**	65.40	**14-957-24B**	92.9
Green	**14-957-14C**	65.40	**14-957-24C**	92.9
Orange	**14-957-14D**	65.40	**14-957-24D**	92.9
Blue	**14-957-14E**	65.40	**14-957-24E**	92.9
16 O.D. × 75mm long				
White	**14-957-16A**	74.36	**14-957-26A**	115.8
Yellow	**14-957-16B**	74.36	**14-957-26B**	115.8
Green	**14-957-16C**	74.36	**14-957-26C**	115.8
Orange	**14-957-16D**	74.36	**14-957-26D**	115.8
Blue	**14-957-16E**	74.36	**14-957-26E**	115.7
16 O.D. × 125mm long				
Orange	**14-957-18D**	86.21	----	--
Blue	**14-957-18E**	86.21	----	--

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*Fisherbrand** Disposable Flint Glass Tubes with Plain End

Specially annealed to reduce breakage along stress point

- Round bottom
- Smooth top and bottom prevent cuts

ORDERING INFORMATION:

Packed in trays

14-958A

O.D. × L	No. Per Tray	Cat. No.	Case o
6 × 50mm	500	**14-958A**	1000/49.8
10 × 75mm	250	**14-958B**	1000/50.6
12 × 75mm	250	**14-958C**	1000/52.1
13 × 100mm	250	**14-958D**	1000/61.7
15 × 85mm	250	**14-958E**	1000/83.9
16 × 100mm	250	**14-958F**	1000/78.8
16 × 125mm	250	**14-958G**	1000/92.2
16 × 150mm	250	**14-958H**	1000/103.3
18 × 150mm	125	**14-958J**	500/68.3
20 × 150mm	250	**14-958K**	500/106.9

*Fisherbrand** Heavy-Wall Disposable Borosilicate Glass Tubes

Chemically clean, fully annealed

- Plain end
- Round bottom

ORDERING INFORMATION:
Case of 1000 contains four lint-free trays.

14-958-10A

O.D. × L	Cat. No.	Case of 1000
10 × 75mm	**14-958-10A**	70.42
12 × 75mm	**14-958-10B**	75.00
13 × 100mm	**14-958-10C**	86.81

Pyrex* Disposable Culture Tubes with Threaded End

NEW

Ideal for tissue culture and general bacteriological work

- Available with round or flat bottoms
- With threaded finish for screw cap

ORDERING INFORMATION:
Without closure; order separately

14-957-Series

O.D. x L	G.P.I. Thread	Mfr. No.	Cat. No.	Case of
Round Bottom				
13 × 100mm	13-415	99449 13	**14-957-86C**	1000/268.73
16 × 100mm	15-415	99449 16	**14-957-86D**	1000/284.38
16 × 125mm	15-415	99449 16X	**14-957-1A**	1000/292.31
20 × 125mm	18-415	99449 20	**14-957-86E**	500/211.72
Flat Bottom				
16 × 125mm	15-415	99448 16	**14-957-86A**	1000/361.43
19.5 × 145mm	18-415	99448 19	**14-957-86B**	500/238.75

ACCESSORIES

Corning* Black Phenolic Screw Caps

Resist effects of temperature and steam in autoclaving

- White-rubber liner

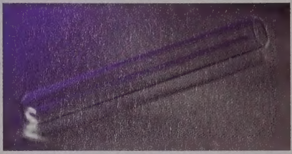
14-962-30G

GPI Thread	Mfr. No.	Cat. No.	Case of
15-415	9999-152	**14-962-30G**	288/64.08
18-415	9999-182	**02-883-9J**	192/68.69
38-430	9999-381M	**02-883-9L**	72/148.97
40-400	9999-40	**02-883-9D**	72/141.50

Pyrex* Disposable Round-Bottom Rimless Glass Tubes

Borosilicate glass reduces pH changes and contaminants

- Designed for both tissue culture and general bacteriological work
- Packaged in easy-to-open and -use packs


14-962-15A

Capacity	O.D. × L	Mfr. No.	Cat. No.	Case of
4mL	10 × 75mm	99445-10	**14-962-15A**	1000/53.50
6mL	12 × 75mm	99445-12	**14-962-1C**	1000/57.50
10mL	13 × 100mm	99445-13	**14-962-15C**	1000/63.20
11mL	15 × 85mm	99445-15	**22-255-312**	1000/67.10
15mL	16 × 100mm	99445-16	**14-962-15E**	1000/79.20
19mL	16 × 125mm	99445-16X	**14-962-15F**	1000/93.90
23mL	16 × 150mm	99445- 16XX	**14-962-1B**	1000/113.60
28.5mL	18 × 150mm	99445 18	**C99445-18**	500/72.10
36mL	20 × 150mm	99445-20	**14-962-1A**	500/113.30

Kimble* Disposable Borosilicate Glass Tubes with Threaded End

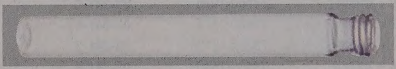
For tissue culture work and general bacteriological use

ORDERING INFORMATION:
Shrink-wrapped in modular trays. Without closure; order separately.

COMPLIANCE:
Comply with ASTM* E 438, Type I, Class B glass requirements.

With Flat Bottom

Stand without support


14-957-88A

O.D. × L	GPI Thread	Mfr. No.	Cat. No.	Case of 1000
16 × 125mm	15-415	73760-16125	**14-957-88A**	363.16

With Round Bottom

14-957-76F

O.D. × L	GPI Thread	Mfr. No.	Cat. No.	Case of 1000
16 × 100mm	15-415	73770-16100	**14-957-76F**	268.32

ACCESSORIES

Kimble* Screw Caps

Linerless, one-piece closures with inner sealing ring

03-340-77 Series

- Polypropylene
- Autoclavable

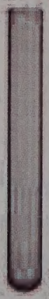
COMPLIANCE:
Designed from ASTM* E 982

GPI Thread	Mfr. No.	Cat. No.	Case of
13-415	73805B 13415	**03-340-77C**	1000/60.11
15-415	73805B 15415	**03-340-77D**	1000/60.30
18-415	73805B 18415	**03-340-77E**	500/34.01

Kimax* Disposable Glass Tubes

Designed from ASTM* Specification E 890

- Premium quality tubes with sturdy, uniform bottoms and consistent lengths
- Borosilicate glass KIMAX-51* composition ensures outstanding all-around chemical durability
- Excellent chemical resistance against sodium leaching
- 10 × 75mm and 12 × 75mm sizes are suitable for cell washing procedures and fit into Kimble* 73510 stainless-steel dispensers.
- 6 × 50mm size is often referred to as a "Durham tube"


03-341 Series

ORDERING INFORMATION:
Tubes are packed in convenient trays for ease of use on bench-tops and in drawers. Trays are shrink wrapped in plastic film with tubes remaining in constant alignment for protection against in-transit breakage and contamination. Tubes come in cases of 1000 except 14-957-96J and 14-957-96K, which come in cases of 500.

COMPLIANCE:
Complies with ASTM Specification E438, Type I, Class B glass requirements

O.D. x L	Mfr. No.	Cat. No.	Case of
6 × 50mm	73500-650	**14-957-90E**	1000/62.40
10 × 75mm	73500-1075	**03-341-0**	1000/64.85
12 × 75mm	73500-1275	**03-341-1**	1000/69.92
13 × 100mm	73500 13100	**03-341-3**	1000/76.97
16 × 100mm	73500-16100	**03-341-4**	1000/96.50
16 × 125mm	73500-16125	**03-341-5**	1000/114.19
16 × 150mm	73500-16150	**03-341-6**	1000/110.10
18 × 150mm	73500-18150	**14-957-96J**	500/86.48
20 × 150mm	73500-20150	**14-957-96K**	500/134.00

ACCESSORIES

KimKap* Disposable Closures

Available in natural (clear) or choice of four colors

- For plain-end culture tubes
- Keep tube contents sterile without need for cotton plugging
- Polypropylene
- Autoclavable

14-957 Series

NOTE:
Caps for 38mm O.D. are designed for baffled culture flasks.

For O.D.	Mfr. No.	Cat. No.	Case of	Mfr. No.	Cat. No.	Case of
		Red			**Green**	
13mm	73662 13	**14-957-92**	1000/63.34	73663 13	**14-957-92A**	1000/63.34
16mm	73662 16	**14-957-92D**	1000/65.71	73663 16	**14-957-92E**	1000/65.71
18mm	73662 18	**14-957-92H**	1000/75.76	73663 18	**14-957-92J**	1000/75.76
20mm	73662 20	**14-957-92M**	500/64.30	73663 20	**14-957-92N**	500/64.30
25mm	73662 25	**14-957-92R**	500/81.92	73663 25	**14-957-92S**	500/81.92
		Yellow			**Natural**	
13mm	73664 13	**14-957-92B**	1000/63.34	73660 13	**14-957-91**	1000/54.52
16mm	73664 16	**14-957-92F**	1000/65.71	73660 16	**14-957-91A**	1000/58.14
18mm	73664 18	**14-957-92K**	1000/75.76	73660 18	**14-957-91B**	1000/65.32
20mm	73664 20	**14-957-92P**	500/64.30	73660 20	**14-957-91C**	500/55.84
25mm	73664 25	**14-957-92T**	500/81.92	73660 25	**14-957-91D**	500/73.87
38mm	----	----	----	73660 38	**14-957-91E**	250/77.32
		Blue				
13mm	73665 13	**14-957-92C**	1000/63.34	----	----	----
16mm	73665 16	**14-957-92G**	1000/65.71	----	----	----
18mm	73665 18	**14-957-92L**	1000/75.76	----	----	----
20mm	73665 20	**14-957-92Q**	500/64.30	----	----	----
25mm	73665 25	**14-957-92V**	500/81.92	----	----	----

*Fisherbrand** Reusable Glass Tubes with Phenolic Screw Caps

- High-quality borosilicate glass
- Phenolic screw cap with white rubber liner
- Marking spot

ORDERING INFORMATION:
Packed in shrink-wrapped, lint-free trays of 250 or 500

14-959-25A

O.D. × L	GPI Thread	No. Per Tray	Cat. No.	Case of
13 × 100mm	13-415	500	**14-959-25A**	1000/324.63
16 × 100mm	15-415	250	**14-959-25B**	1000/322.81
16 × 125mm	15-415	250	**14-959-25C**	1000/346.82
16 × 150mm	15-415	250	**14-959-25D**	1000/364.55
20 × 125mm	18-415	250	**14-959-25E**	500/271.38
20 × 150mm	18-415	250	**14-959-25F**	500/299.73

*Trademark. See Trademark Reference.

Prices subject to change.

***Fisher**brand** Color-Coded TainerTop* Safety Closures

Seven colors correspond to Vacutainer* cap colors, ensuring easy identification

Recap blood drawing tubes, disposable glass test tubes, and plastic culture tubes. Protect from aerosols of highly infectious organisms such as TB and the HTLV-III virus. Guard samples against cross-contamination, and lab work areas against infectious agents and mess. Ensure integrity of serum samples after freezing or en route to reference labs.

- Polyethylene
- Information can be written directly on cap with indelible ink
- Don't require precutting
- Won't pop or crack when frozen
- Provide liquid-tight seal—will not aerosol when opened
- Hold fast under most rigorous procedures including agitation, centrifugation, refrigeration, and freezing
- Flexible closures are not autoclavable

14-376 Series

	For 10mm Tubes			For 12mm Culture Tubes and 13mm Blood Collection Tubes			For 13mm Culture Tubes			For 16mm Tubes		
Color	Cat. No.	Pack of 1000	Case of 10 Pk.	Cat. No.	Pack of 1000	Case of 10 Pk.	Cat. No.	Pack of 1000	Case of 10 Pk.	Cat. No.	Pack of 1000	Case of 10 Pk.
White	**14-376-60**	96.50	854.00	**14-376-74**	96.50	854.00	**14-376-69**	96.50	854.00	**14-376-83**	96.50	854.00
Red	**14-376-61**	96.50	854.00	**14-376-75**	96.50	854.00	**14-376-70**	96.50	854.00	**14-376-84**	96.50	854.00
Lavender	**14-376-62**	96.50	854.00	**14-376-76**	96.50	854.00	**14-376-71**	96.50	854.00	**14-376-85**	96.50	854.00
Green	**14-376-63**	96.50	854.00	**14-376-77**	96.50	854.00	**14-376-72**	96.50	854.00	**14-376-86**	96.50	854.00
Blue	**14-376-64**	96.50	854.00	**14-376-78**	96.50	854.00	**14-376-73**	96.50	854.00	**14-376-87**	96.50	854.00
Gray	**14-376-65**	96.50	854.00	**14-376-79**	96.50	854.00	**14-376-67**	96.50	854.00	**14-376-81**	96.50	854.00
Yellow	**14-376-66**	96.50	854.00	**14-376-80**	96.50	854.00	**14-376-88**	96.50	854.00	**14-376-82**	96.50	854.00

ACCESSORIES

***Fisher**brand** Sav-It* Tube Closures

Firm, leak-resistant seals protect personnel and samples

- One-hand application
- Can be punctured for through-cap sampling via closed-tube instrumentation systems
- Won't interfere with most common chemistry, coagulation, and drug monitoring methodologies
- Fit test tubes, centrifuge tubes, specialty tubes, and evacuated blood drawing tubes
- Won't crack or fall off
- Hold fast under most rigorous procedures including agitation, centrifugation, refrigeration, and freezing

02-707 Series

	16mm Closures			12 or 13mm Closures		
Color	Cat. No.	Pack of 1000	Case of 10 Pk.	Cat. No.	Pack of 1000	Case of 10 Pk.
Red	**02-707-1**	67.00	594.00	**02-707-9**	61.50	544.50
Green	**02-707-2**	67.00	594.00	**02-707-10**	73.75	653.75
Lavender	**02-707-3**	67.00	592.75	**02-707-11**	63.25	559.50
Black	**02-707-4**	67.00	592.75	**02-707-12**	63.25	559.50
Blue	**02-707-5**	67.00	592.75	**02-707-13**	74.00	655.25
Gray	**02-707-6**	67.00	592.75	**02-707-14**	63.00	559.50
Yellow	**02-707-7**	67.00	592.75	**02-707-15**	63.00	559.50
White	**02-707-8**	67.00	592.75	**02-707-16**	73.75	653.75

Pyrex* Reusable Test Tubes

All sizes except 6, 22, and 25mm O.D. have marking spot

- Round bottom
- Borosilicate glass

With Plain End

- Rimless, round-bottom tubes provide greater convenience for plugging and rack storage
- Walls and bottom are of uniform thickness
- Ends are fire-polished

14-957 Series

O.D. × L	Mfr. No.	Cat. No.	Pack of†
6 × 50mm	9820 6	**14-957AA**	72/34.26
10 × 75mm	9820 10	**14-957A**	72/36.43
12 × 75mm	9820 12	**14-957B**	72/36.43
13 × 100mm	9820 13	**14-957C**	72/38.16
16 × 100mm	9820 16	**14-957E**	576/266.27
16 × 125mm	9820 16X	**14-957F**	72/46.06
16 × 150mm	9820 16XX	**14-957G**	72/55.63
18 × 150mm	9820 18	**14-957H**	72/60.95
20 × 150mm	9820 20	**14-957J**	72/70.54
22 × 175mm	9820 22	**14-957K**	432/490.17
25 × 150mm	9820 25	**14-957M**	72/117.63
25 × 200mm	9820 25X	**14-957N**	48/102.69

† Also available in alternate quantity. Contact your Fisher Scientific Customer Service Representative for details. Or visit our Web Site.

Pyrex* Reusable Test Tubes, Contd.

With Beaded Rim

Sizes from 10 to 20mm O.D. have marking spot

- Fire-polished, beaded rim
- Ungraduated

14-955 Series

O.D. × L	Mfr. No.	Cat. No.	Pack of	Case of
10 × 75mm	9800-10	**14-955A**	72/38.54	10 Pk./279.88
12 × 75mm	9800-12	**14-955B**	72/38.54	10 Pk./279.88
13 × 100mm	9800-13	**14-955C**	72/42.86	10 Pk./310.13
15 × 125mm	9800-15	**14-955D**	72/55.62	10 Pk./408.48
16 × 150mm	9800-16	**14-955E**	72/57.75	8 Pk./338.88
18 × 150mm	9800-18	**14-955F**	72/69.55	8 Pk./405.45
20 × 150mm	9800-20	**14-955G**	72/78.14	8 Pk./453.86
25 × 150mm	9800-25	**14-955K**	72/120.95	4 Pk./372.16
25 × 200mm	9800-25X	**14-955L**	48/97.01	4 Pk./282.41

With Lifetime Red* Graduations

For determinations involving multiple calibrations and for carrying out digestions

- 50mL capacity
- Graduated at 12.5, 25, 35 and 50mL
- White scale and figures enameled on a red panel
- Durable enamel white marking spot
- Designed by Dr. F. N. L. Taylor, Boston City Hospital
- Tolerance: ±0.4mL

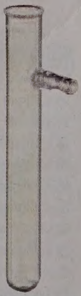
11-381-15

O.D. × L	Mfr. No.	Cat. No.	Each
25 × 200mm	7952-25	**11-381-15**	24.57

With Side Tubulation

Suitable for use as microfilter flasks

- Beaded rim
- Side tube, 10 O.D. × 25mm long



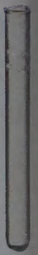
14-941 Series

O.D. × L	Mfr. No.	Cat. No.	Pack of 12
20 × 150mm	9840-20	**14-941A**	603.29
25 × 200mm	9840-25	**14-941C**	383.45

Heavy-Wall Ignition Tubes

For high-temperature work in the classroom

- Smooth top
- For continuous use at 500°C (932°F) or for short periods to 600°C (1112°F)
- Softening point: 821°C (1510°F)



14-960 Series

O.D. × L	Mfr. No.	Cat. No.	Pack of	Case of 5 Pk.
14 × 100mm	9860-14	**14-960B**	288/411.50	----
16 × 125mm	9860-16	**14-960C**	288/514.37	----
18 × 150mm	9860-18	**14-960D**	144/526.74	----
20 × 150mm	9860-20	**14-960E**	144/408.48	----
25 × 200mm	9860-25	**14-960F**	24/135.30	492.94

Pyrex* Round-Bottom Reusable Glass Tubes with Screw Caps

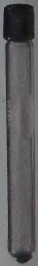
Round-bottom culture tubes have white enamel marking spot

- Black phenolic cap resists effects of temperature and steam in autoclaving

Tubes with Rubber-Lined Cap

Deep-form phenolic caps facilitate handling and sealing after autoclaving

- Caps are fabricated from a special formula resistant to the effects of temperature and steam in autoclaving
- White enamel marking spot gives an excellent surface for pencil notations; pencil marks are easily erased



14-932 Series

O.D. × L	GPI Thread	Mfr. No.	Cat. No.	Pack of	Case of
13 × 100mm	13-415	9825-13	**14-932-1A**	144/226.78	2 Pk./329.81
16 × 100mm	15-415	9825-16	**14-932-1B**	144/310.19	2 Pk./453.86
16 × 125mm	15-415	9825-16X	**14-932A**	144/310.19	2 Pk./453.86
16 × 150mm	15-415	9825-16XX	**14-932B**	144/310.19	2 Pk./453.86
20 × 125mm	18-415	9825-20	**14-932C**	96/253.82	2 Pk./371.16
20 × 150mm	18-415	9825-20X	**14-932D**	96/286.61	2 Pk./419.57
22 × 175mm	18-415	9825-22	**14-932-1C**	192/624.28	----
25 × 150mm	24-410	9825-25	**14-932E**	48/161.13	3 Pk./352.50
25 × 200mm	24-410	9825-25X	**14-932F**	48/184.67	3 Pk./405.45
38 × 200mm	38-430M	9825-38	**14-932-1D**	12/160.08	4 Pk./467.48

Tubes with PTFE-Faced Rubber-Lined Cap

PTFE interface is firmly bonded to glued-in rubber liner, providing a sure and highly inert sealing face

O.D. × L	GPI Thread	Mfr. No.	Cat. No.	Pack of	Case o
13 × 100mm	13-415	9826-13	**14-933A**	144/297.31	2 Pk./435.7
16 × 100mm	15-415	9826-16	**14-932H**	288/481.09	----
16 × 125mm	15-415	9826-16X	**14-933-1A**	144/361.43	2 Pk./529.5
20 × 125mm	18-415	9826-20	**14-933C**	96/318.01	2 Pk./463.9
20 × 150mm	18-415	9826-20X	**14-933-1B**	96/332.23	2 Pk./486.1
25 × 150mm	24-410	9826-25	**14-933D**	48/201.09	3 Pk./440.2
25 × 200mm	24-410	9826-25X	**14-933-1C**	48/211.80	3 Pk./464.4

*Trademark. See Trademark Reference.

Prices subject to change.

PyrexPlus* Reusable Tubes with Screw Caps

Protective PVC coating helps prevent glass from shattering

- Round-bottom culture tubes are fully autoclavable to 121°C (250°F) and resistant to thermal shock
- Deep-form phenolic cap that resists effects of autoclaving and features a glued-in, white-rubber liner

NOTE:

Do not place over direct heat or flame. Do not heat above 121°C (250°F) moist heat or 110°C (230°F) dry heat.

15-327 Series

O.D. × L	GPI Thread	Mfr. No.	Cat. No.	Case of
13 × 100mm	13-415	69825-13	**15-327A**	144/311.62
16 × 125mm	15-415	69825-16X	**15-327B**	144/405.27
20 × 150mm	18-415	69825-20X	**15-327C**	96/377.63
25 × 150mm	24-410	69825-25	**15-327D**	48/208.27

ACCESSORIES

Corning* Black Phenolic Screw Caps

Resist effects of temperature and steam in autoclaving

- White-rubber liner

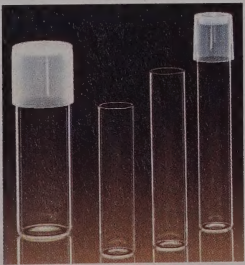
14-962-30G

GPI Thread	Mfr. No.	Cat. No.	Case of
15-415	9999-152	**14-962-30G**	288/64.08
18-415	9999-182	**02-883-9J**	192/68.69
38-430	9999-381M	**02-883-9L**	72/148.97
40-400	9999-40	**02-883-9D**	72/141.50

Pyrex* Disposable Rimless Flat-Bottom Glass Tubes

Ideal for plant tissue culture and general culture work

- Walls and bottoms are uniform thickness; flat bottom facilitates use with agar slants
- Tubes are rimless for greater ease in plugging and rack storage
- Two-position polypropylene closures available separately; position closure OPEN for gas exchange or CLOSED for humidified environment
- Internal drip ring minimizes contamination



Left to right: 14-957-85D with 14-957-85F Closure, 14-957-85A, 14-957-85B, and 14-957-85C with 14-957-85E Closure.

ORDERING INFORMATION:

Supplied without closures; accept Corning* 14-957-85E, -F, -G, and -K caps (sold seperately).

Dia. × L	Capacity	Mfr. No.	Cat. No.	Pack of	Case of
25 × 100mm	39mL	9850 25	**14-957-85A**	72/168.09	----
25 × 120mm	47mL	9850 25X	**14-957-85B**	72/168.09	----
25 × 150mm	59mL	9850 25XX	**14-957-85C**	36/98.95	2 Pk./144.48
40 × 130mm	130mL	9850 40	**14-957-85D**	72/270.19	----

Pyrex* Vista* Rimless Reusable Glass Culture Tubes

Functionality, economy, and quality

- Reusable tubes
- Fire-polished ends
- Blue marking spot (except 22 and 25mm O.D. tubes)
- Offer convenient plugging and rack storage

PYREX VISTA

07-250 Series

Capacity	O.D. × L	Mfr. No.	Cat. No.	Pack of 50	Case of 4 Pk.
0.5mL	6 × 50mm	70820-6	**07-250-132**	14.77	43.12
3mL	10 × 5mm	70820-10	**07-250-121**	15.69	45.81
5mL	12 × 75mm	70820-12	**07-250-122**	15.69	45.81
9mL	13 × 100mm	70820-13	**07-250-123**	16.61	48.49
11mL	16 × 100mm	70820-16	**07-250-124**	19.82	57.87
15mL	16 × 125mm	70820-16X	**07-250-125**	19.82	57.87
20mL	16 × 150mm	70820-16XX	**07-250-126**	23.97	69.99
27mL	18 × 150mm	70820-18	**07-250-127**	26.27	76.70
34mL	20 × 150mm	70820-20	**07-250-128**	30.42	88.82
50mL	22 × 175mm	70820-22	**07-250-129**	48.33	141.13
55mL	25 × 150mm	70820-25	**07-250-130**	51.10	149.20
70mL	25 × 200mm	70820-25X	**07-250-131**	66.75	194.89

Pyrex* Vista* Reusable Test Tubes with Beaded Rim

Well annealed

- Economical
- Fire-polished rims
- Heat-resistant and chemically stable
- With blue marking spot (except 25mm O.D. tubes)

07-250 Series

Capacity	O.D. × L	Mfr. No.	Cat. No.	Pack of 50	Case of 4 Pk.
3mL	10 × 75mm	70800-10	**07-250-112**	16.61	48.49
5mL	12 × 75mm	70800-12	**07-250-113**	16.61	48.49
9mL	13 × 100mm	70800-13	**07-250-114**	18.45	53.87
14mL	15 × 125mm	70800-15	**07-250-115**	23.96	69.95
20mL	16 × 150mm	70800-16	**07-250-116**	24.88	72.66
27mL	18 × 150mm	70800-18	**07-250-117**	29.95	87.44
34mL	20 × 150mm	70800-20	**07-250-118**	33.66	98.29
55mL	25 × 150mm	70800-25	**07-250-119**	54.80	160.00
70mL	25 × 200mm	70800-25X	**07-250-120**	62.60	182.78

Pyrex* Vista* Reusable Glass Tubes with Phenolic Screw Caps

Supplied with deep-form phenolic caps to facilitate handling and sealing after autoclaving

- Blue enamel marking spot provides excellent surface for pencil notations
- Pencil marks are easily erased

ORDERING INFORMATION:
Replacement caps available.

07-250-130 Series

Capacity	O.D. × L	Mfr. No.	Cat. No.	Pack of 50	Case of 4 Pk.
9mL	13 × 100mm	70825-13	**07-250-133**	54.05	157.81
11mL	16 × 100mm	70825-16	**07-250-134**	74.45	217.37
15mL	16 × 125mm	70825-16X	**07-250-135**	74.45	217.37
20mL	16 × 150mm	70825-16XX	**07-250-136**	74.45	217.37
25mL	20 × 125mm	70825-20	**07-250-137**	91.05	265.83
34mL	20 × 150mm	70825-20X	**07-250-138**	102.75	299.99
55mL	25 × 150mm	70825-25	**07-250-139**	114.95	335.62

Kimax* Reusable Tube with Brown Graduations

With permanently fused brown scale

- 10mL tube is graduated every 0.1mL from 0.5 to 10mL
- Reinforced bead

10-310-200

O.D. × L	Mfr. No.	Cat. No.	Each
16 × 125mm	46350-10	**10-310-200**	35.63

Kimax* Reusable Borosilicate Glass Tubes

Feature fire-polished top rim and uniform wall thickness for maximum heat transfer and chemical resistance

- Culture tubes made from KG-33 glass

COMPLIANCE:
Designed from ASTM* specification E982, Type IV requirements

With Plain End

Without marking spot

14-925 Series

O.D. × L	Mfr. No.	Cat. No.	Pack o
6 × 50mm	45060 650	**14-925B**	72/19.0
13 × 100mm	45060 13100	**14-925E**	72/35.1
16 × 150mm	45060 16150	**14-925J**	72/44.1
19 × 150mm	45060 19150	**14-925K**	72/44.1
25 × 150mm	45060 25150	**14-925M**	72/82.3
25 × 200mm	45060 25200	**14-925N**	24/30.1

† *Also available in alternate quantity. Contact your Fisher Scientific Customer Service Representative for details. Or visit our Web site.*

With Plain End and Marking Spot

With durable white ceramic marking spot on each tube

14-923 Series

O.D. × L	Mfr. No.	Cat. No.	Pack o
10 × 75mm	45048-1075	**14-923B**	72/35.1
12 × 75mm	45048-1275	**14-923C**	72/35.1
13 × 100mm	45048-13100	**14-923D**	72/37.1
15 × 125mm	45048-15125	**14-923F**	72/44.1
16 × 100mm	45048-16100	**14-923H**	72/46.1
16 × 125mm	45048-16125	**14-923J**	72/44.1
16 × 150mm	45048-16150	**14-923K**	72/53.
18 × 150mm	45048-18150	**14-923L**	72/59.
20 × 150mm	45048-20150	**14-923W**	576/392.
25 × 150mm	45048-25150	**14-923P**	72/113.
25 × 250mm	45048-25250	**14-923R**	144/398.

† *Also available in alternate quantity. Contact your Fisher Scientific Customer Service Representative for details. Or visit our Web site.*

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

KimKap* Disposable Closures

Available in natural (clear) or choice of four colors

- For plain-end culture tubes
- Keep tube contents sterile without need for cotton plugging
- Polypropylene
- Autoclavable

14-957 Series

NOTE:
Caps for 38mm O.D. are designed for baffled culture flasks.

For O.D.	Mfr. No.	Cat. No.	Case of	Mfr. No.	Cat. No.	Case of
	Red			**Green**		
13mm	73662 13	**14-957-92**	1000/63.34	73663 13	**14-957-92A**	1000/63.34
16mm	73662 16	**14-957-92D**	1000/65.71	73663 16	**14-957-92E**	1000/65.71
18mm	73662 18	**14-957-92H**	1000/75.76	73663 18	**14-957-92J**	1000/75.76
20mm	73662 20	**14-957-92M**	500/64.30	73663 20	**14-957-92N**	500/64.30
25mm	73662 25	**14-957-92R**	500/81.92	73663 25	**14-957-92S**	500/81.92
	Yellow			**Natural**		
13mm	73664 13	**14-957-92B**	1000/63.34	73660 13	**14-957-91**	1000/54.52
16mm	73664 16	**14-957-92F**	1000/65.71	73660 16	**14-957-91A**	1000/58.14
18mm	73664 18	**14-957-92K**	1000/75.76	73660 18	**14-957-91B**	1000/65.32
20mm	73664 20	**14-957-92P**	500/64.30	73660 20	**14-957-91C**	500/55.84
25mm	73664 25	**14-957-92T**	500/81.92	73660 25	**14-957-91D**	500/73.87
38mm	----	----	----	73660 38	**14-957-91E**	250/77.32
	Blue					
13mm	73665 13	**14-957-92C**	1000/63.34	----	----	----
16mm	73665 16	**14-957-92G**	1000/65.71	----	----	----
18mm	73665 18	**14-957-92L**	1000/75.76	----	----	----
20mm	73665 20	**14-957-92Q**	500/64.30	----	----	----
25mm	73665 25	**14-957-92V**	500/81.92	----	----	----

Kimax* Reusable Test Tubes

- Round bottom
- Ungraduated

With Beaded Rim

Made from N-51A borosilicate glass

- Uniform wall thickness for maximum heat transfer and chemical resistance

14-915 Series

.D. × L	Mfr. No.	Cat. No.	Pack of	Case of
19 × 150mm	45050-19150	**14-915E**	72/52.21	8 Pk./304.91
25 × 150mm	45050-25150	**14-915G**	72/87.36	4 Pk./255.07
25 × 200mm	45050-25200	**14-915H**	24/32.46	8 Pk./189.59

With Beaded Rim and Marking Spot

Marking spot is durable fused-on white enamel

NEW

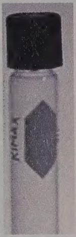
14-956 Series

O.D. × L	Mfr. No.	Cat. No.	Pack of	Case of
10 × 75mm	45042-1075	**14-956A**	72/37.16	10 Pk./271.20
12 × 75mm	45042-1275	**14-956B**	72/37.16	10 Pk./271.20
13 × 100mm	45042-13100	**14-956C**	72/41.17	10 Pk./300.51
15 × 125mm	45042-15125	**14-956D**	72/53.22	10 Pk./388.47
16 × 150mm	45042-16150	**14-956E**	72/56.23	8 Pk./328.37
18 × 150mm	45042-18150	**14-956F**	72/68.29	8 Pk./398.73
20 × 150mm	45042-20150	**14-956G**	72/77.32	8 Pk./451.50
25 × 150mm	45042-25150	**14-956K**	72/122.50	4 Pk./357.68
25 × 200mm	45042-25200	**14-956L**	24/46.86	8 Pk./273.64

With Rubber-Lined Screw Cap

Black phenolic cap with inert rubber liner

- White marking spot
- Cat. No. 14-930C tube is suitable for determination of insulin according to method of Alving, Rubin, and Millor (*Journal of Biological Chemistry* [1939], 127, 3)



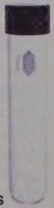
14-930 Series

O.D. × L	GPI Thread	Mfr. No.	Cat. No.	Pack of	Case of 4 Pk.
13 × 100mm	13-415	45066-13100	**14-930AA**	72/108.45	316.64
16 × 100mm	15-415	45066-16100	**14-930BB**	72/151.63	442.71
16 × 125mm	15-415	45066-16125	**14-930A**	72/151.63	442.71
16 × 150mm	15-415	45066-16150	**14-930B**	72/151.63	442.71
20 × 125mm	18-415	45066-20125	**14-930C**	48/123.18	359.64
20 × 150mm	18-415	45066-20150	**14-930D**	48/140.59	410.46
25 × 150mm	24-410	45066-25150	**14-930E**	36/115.98	338.63
25 × 200mm	24-410	45066-25200	**14-930F**	36/129.03	376.74
38 × 200mm	38-430	45066-38200	**14-930G**	24/227.22	----

With PTFE-Faced Rubber-Lined Screw Cap

Black phenolic cap with PTFE-faced rubber liner

- White marking spot



14-930-10 Series

O.D. × L	GPI Thread	Mfr. No.	Cat. No.	Pack of	Case of 4 Pk.
13 × 100mm	13-415	45066A-13100	**14-930-10A**	72/144.60	422.18
16 × 100mm	15-415	45066A-16100	**14-930-10B**	72/157.65	460.30
16 × 125mm	15-415	45066A-16125	**14-930-10E**	72/173.72	507.21
16 × 150mm	15-415	45066A-16150	**14-930-10F**	72/184.77	539.46
20 × 125mm	18-415	45066A-20125	**14-930-10G**	48/154.64	451.50
20 × 150mm	18-415	45066A-20150	**14-930-10**	192/474.96	----
25 × 150mm	24-410	45066A-25150	**14-930-10J**	36/145.61	425.12
25 × 200mm	24-410	45066A-25200	**14-930-10L**	144/447.11	----

ACCESSORIES

Kimble* Black Phenolic Screw Caps

Bond between liner and cap retains adhesive properties even after repeated autoclaving

14-930-14G

With PTFE-faced rubber liner

- Identified in ASTM* specification E 982-94, Class B requirements

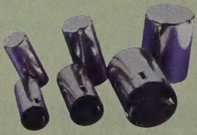
With 14B rubber liner (SBR)

- Has fewer threads than regular GPI caps for easier application and removal
- Not recommended for use with standard GPI finishes usually found on blown-molded bottles
- Identified in ASTM specification E 982-94, Class A requirements

GPI Thread	Mfr. No.	Cat. No.	Case of
With PTFE-Faced Rubber Liner			
13-415	45066C-13	**14-930-15D**	300/219.00
15-415	45066C-15	**14-930-15E**	300/219.00
24-410	45066C-24	**14-930-15J**	150/235.50
With 14B Rubber Liner (SBR)			
38-430	45066B-38	**14-930-14G**	150/291.00

Morton* Stainless-Steel Culture Tube Closures

Ideal for use with standard glass culture tubes



05-888 Series

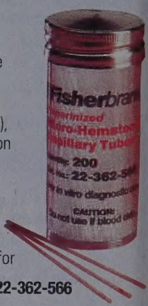
- Noncontaminating, noncorrosive stainless-steel cylindrical closures
- Top surface indentations allow adequate gas exchange under aerobic and anaerobic conditions, yet prevent buildup of dust and microorganisms
- Reduce amount of specimen evaporation by 50% as compared to cotton plugging
- Withstand repeated autoclaving without loss of resiliency
- Available as plain or lanced closures
- Lanced closures feature three resilient fingers that adjust to nominal variations in tube O.D

Size	Cat. No.	Pack of
Lanced Closures with Fingers		
13mm (½")	**05-888A**	144/227.40
16mm (⅝")	**05-888B**	144/253.49
18mm (¾")	**05-888C**	144/267.59
20mm (¾")	**05-888D**	144/286.73
25mm (1")	**05-888E**	72/198.16
Plain Closures		
13mm (½")	**05-888-1A**	144/182.62
16mm (⅝")	**05-888-1B**	144/212.48
18mm (¾")	**05-888-1C**	144/227.40
20mm (¾")	**05-888-1D**	144/241.31
25mm (1")	**05-888-1E**	72/153.17

MICROCAPILLARY

*Fisherbrand** Microhematocrit Capillary Tubes

Low-taper wall construction guarantees error less than 1% absolute, 0.4 hematocrit, relative



22-362-566

- Ends can be sealed by sealing clay or flame
- Manufactured from low-taper, soft glass
- Red band on tube indicates heparinization; blue band indicates nonheparinized tube
- Interior surface of heparinized tubes is evenly coated with ammonium heparin (4 to 7 USP units), which will not interfere with sodium determination
- Taper does not exceed 0.0254mm in 75mm
- Available plain or heparinized with not less than two USP units of ammonium heparinate
- Color-coded tube tips and labels
- Packaged in Fisher Scientific* shaker-top vials for ease in dispensing

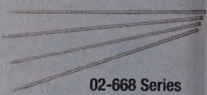
ORDERING INFORMATION:

Length: 75mm ±0.02mm. Inner diameter: 1.1 to 1.2mm. Wall: 0.2mm ±0.02mm. Capacity: 70µL 200 tubes per vial.

Description	Cat. No.	1 Vial	Case of 5 Vials
Heparinized	**22-362-566**	24.20	100.80
Plain	**22-362-574**	22.78	94.92

*Fisherbrand** Micro Blood Collecting Tubes

With tapered bottom tips to facilitate micro blood sample collection



02-668 Series

- For Natelson and Caraway techniques
- Color-coded tops distinguish between plain and heparinized tubes
- Heparinized tubes are treated with ammonium heparin
- Natelson tubes have 250µL capacity; 1.44 to 1.76mm I.D.; 147mm leng
- Caraway tubes have 350µL capacity; 2.59 to 2.81mm I.D.; 75mm lengt

Type	Anticoagulant	Color Code	Fill Volume	Cat. No.	Pack of 100	Case of 6 Pk.
Natelson	Ammonium heparin	Red	250µL	**02-668-10**	45.15	225.72
	None	Blue	250µL	**02-668-15**	40.11	200.53
Caraway	Ammonium heparin	Red	350µL	**02-668-25**	52.53	262.61
	None	Blue	350µL	**02-668-30**	42.94	214.73

ACCESSORIES

*Fisherbrand** Hemato-Seal* Capillary Tube Sealant

Nondrying, non-hardening, nontoxic compound for sealing hematocrit and other blood collecting tubes

02-678

- Light color provides sharp contrast for easy reading
- Excellent retention during centrifugation

Cat. No.	Pack of 10	Case of 10 Pk.
02-678	53.27	391.27

Hemato-Clad* Mylar*-Wrapped Hematocrit Tubes

Combine the precision of glass with the safety of Mylar wrapping

- The chance of contamination due to glass fragments or aerosols is greatly reduced
- Accidental breakage is significantly reduced, particularly when pressing into clay sealant (not included)
- In the event of breakage, the Mylar wrapping will help contain the blood sample and provide an added layer of protection against cuts from broken glass
- Available both plain and heparinized

Hemato-Clad
Hemato-Clad

21-176-6, -5

Type	Color Code	Inside Diameter	Tube Length	Wall Thickness	Cat. No.	Pack of 200
Heparinized	Red	1.1 to 1.2mm	75mm	0.2mm	**21-176-6**	13.75
Plain	Blue	1.1 to 1.2mm	75mm	0.2mm	**21-176-5**	12.46

ACCESSORIES

Critoseal* Capillary Tube Sealant

Seals any type of capillary tube with fast, heatless, flat-bottomed seal

- A vinyl plastic putty
- Remains pliable
- Will not dry out
- Supplied in tip-proof tray with numbered slots for 24 sets of tubes
- With sufficient sealant for several hundred tubes

02-676-20

Mfr. No.	Cat. No.	Pack of 6	Case of 36
8889 215003	**02-676-20**	14.86	76.22

NMR

Kontes* Brand Valved 5mm O.D. NMR Tubes

Ideal for handling volatile, air-sensitive and toxic samples

- Permit condensing of samples directly into NMR tube
- Greaseless, Hi-Vac* valve lets you recover samples, then reseal; no need to permanently seal off, as with conventional tubes
- With glass tube and Viton* O-ring for connection to a vacuum system
- Wall thickness is 0.01475" (0.37mm); Wall variation and camber depend, in part, on tube length

K897435-0000

For Instruments with Field Strength of	Length	Wall Variation TIR[1]	Camber TIR[1]	Cat. No.	Each
>360MHz	7" (17.7cm)	±0.0010"	±0.0005"	**K897435-0000**	101.50
>360MHz	8" (20cm)	±0.0010"	±0.0006"	**K897435-0008**	104.10
>360MHz	9" (23cm)	±0.0010"	±0.0008"	**K897435-0009**	107.14

[1] *Total Indicator Reading.*

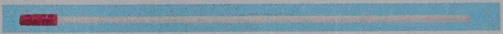
Kontes* NMR Sample Tubes

Each tube meets rigid specifications for wall thickness, variation and camber so as to assure precise measurements and reproducibility

- Precision-manufactured tubes designed for use in high-resolution NMR spectroscopy that characterizes organic molecules through measurement of the resonant frequencies of atomic nuclei. Research applications include analysis of polymer structures and organic solutions.
- Made from Type I borosilicate glass
- Wall variation and camber depend, in part, on tube length
- All sample tubes come with plastic compression-fit caps and sandblasted marking spots

3mm O.D. (0.12") Tubes

Wall thickness: 0.01118" (0.028cm)



K8978 Series

For Instruments with Field Strength of	Length	Wall Variation TIR[1]	Camber TIR[1]	Cat. No.	Case of 5
>400MHz	7"	±0.0005"	±0.00025"	**K897840-0000**	78.04
>400MHz	8"	±0.0005"	±0.00035"	**K897840-0008**	86.80
>400MHz	9"	±0.0005"	±0.00045"	**K897840-0009**	95.92
360MHz	7"	±0.0010"	±0.0005"	**K897835-0000**	67.42
360MHz	8"	±0.0010"	±0.0006"	**K897835-0008**	74.65
360MHz	9"	±0.0010"	±0.0007"	**K897835-0009**	84.19
270MHz	7"	±0.0015"	±0.0010"	**K897830-0000**	60.66
200MHz	7"	±0.0020"	±0.0005"	**K897825-0000**	60.66
200MHz	9"	±0.0020"	±0.0007"	**K897825-0009**	76.04
100MHz	7"	±0.0025"	±0.0020"	**K897805-0000**	56.44
80MHz	7"	±0.0030"	±0.0020"	**K897800-0000**	55.01
80MHz	8"	±0.0030"	±0.0020"	**K897800-0008**	56.20

[1] *Total Indicator Reading.*

5mm O.D. (0.019") Disposable Grade Tubes

Wall thickness: 0.015" (0.38mm)

- For instruments with field strength of approximately 60MHz

K897193 Series

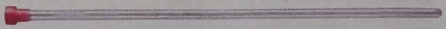
Length	Cat. No.	Pack of 25
7" (17.7cm)	**K897193-0000**	65.26
8" (20cm)	**K897193-0008**	70.94

Contd. on next page.

Kontes* NMR Sample Tubes, Contd.

5mm O.D. (0.19") High Grade Tubes

Wall thickness: 0.01475" (0.37mm)



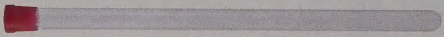
K8972 Series

For Instruments with Field Strength of	Length	Wall Variation TIR[1]	Camber TIR[1]	Cat. No.	Pack of 5
>400MHz	7" (17.7cm)	±0.0005"	±0.00025"	**K897240-0000**	62.78
>400MHz	8" (20cm)	±0.0005"	±0.00035"	**K897240-0008**	69.38
>400MHz	9" (23cm)	±0.0005"	±0.00045"	**K897240-0009**	75.52
360MHz	7" (17.7cm)	±0.0010"	±0.0005"	**K897235-0000**	46.55
360MHz	8" (20cm)	±0.0010"	±0.0006"	**K897235-0008**	51.16
360MHz	9" (23cm)	±0.0010"	±0.0007"	**K897235-0009**	56.42
270MHz	7" (17.7cm)	±0.0015"	±0.0010"	**K897230-0000**	39.59
270MHz	8" (20cm)	±0.0015"	±0.0011"	**K897230-0008**	43.92
270MHz	9" (23cm)	±0.0015"	±0.0012"	**K897230-0009**	49.85
200MHz	7" (17.7cm)	±0.0020"	±0.0005"	**K897225-0000**	39.59
200MHz	8" (20cm)	±0.0020"	±0.0006"	**K897225-0008**	43.92
150MHz	7" (17.7cm)	±0.0020"	±0.0010"	**K897220-0000**	30.04
150MHz	8" (20cm)	±0.0020"	±0.0011"	**K897220-0008**	33.09
100MHz	7" (17.7cm)	±0.0025"	±0.0020"	**K897205-0000**	24.14
100MHz	8" (20cm)	±0.0025"	±0.0020"	**K897205-0008**	27.66
80MHz	7" (17.7cm)	±0.0030"	±0.0020"	**K897200-0000**	21.00
80MHz	8" (20cm)	±0.0030"	±0.0020"	**K897200-0008**	22.04
80MHz	9" (23cm)	±0.0030"	±0.0020"	**K897200-0009**	23.44

[1] *Total Indicator Reading.*

10mm O.D. (0.39") Tubes

Wall thickness: 0.0182" (0.46mm)



K8973 Series

For Instruments with Field Strength of	Length	Wall Variation TIR[1]	Camber TIR[1]	Cat. No.	Each
>360MHz	7" (17.7cm)	±0.0015"	±0.0005"	**K897335-0000**	30.52
>360MHz	8" (20cm)	±0.0015"	±0.0005"	**K897335-0008**	33.11
>150MHz	7" (17.7cm)	±0.0020"	±0.0010"	**K897330-0000**	25.94
80MHz	7" (17.7cm)	±0.0030"	±0.0010"	**K897325-0000**	22.43
60MHz	7" (17.7cm)	±0.0090"	±0.0020"	**K897320-0000**	15.54
60MHz	8" (20cm)	±0.0090"	±0.0020"	**K897320-0008**	19.87

[1] *Total Indicator Reading.*

ACCESSORIES

Kontes* NMR Sample Tube Caps

For Kontes 5 or 10mm NMR sample tubes

K897095 Series

- Convenient 100-cap variety pack of tight-fitting polyethylene color caps
- Stay in place even with a buildup of internal vaporization pressure

ORDERING INFORMATION:

Variety pack for 5mm (0.19") tubes includes 20 caps each of red, black, white, green and yellow. Variety pack for 10mm (0.39") tubes contains 25 each of red, black, green, and yellow.

Description	Cat. No.	Case of 100
5mm Cap Variety Pack	**K897095-0011**	8.59
10mm Cap Variety Pack	**K897095-1011**	13.50

Pyrex* 5mm O.D. NMR Sample Tubes

Precision tubes made of Pyrex borosilicate glass

14-972 Series

- Compatible with all ground joints, valves, and vacuum racks
- Suitable for all types of NMR spectrometers
- Meet industry standards of magnetic susceptibility
- Supplied in 7 and 8" (17.7 and 20cm) lengths, with caps
- Cat. No. 14-972-7A has wall thickness of 0.01378" (0.35mm); all others 0.015" (0.38mm)

For Instruments with Field Strength of	Length	Concentricity TIR[1]	Camber TIR[1]	Mfr. No.	Cat. No.	Case of
300-500MHz	8" (20cm)	0.0005"	0.0006"	6980B-8	**14-972-2B**	5/94.01
200-400MHz	7" (17.7cm)	0.002"	0.0005"	6980D-7	**14-972-4A**	5/72.95
100-250MHz	7" (17.7cm)	0.002"	0.0010"	6980E-7	**14-972-5A**	10/105.18
60MHz	7" (17.7cm)	0.003"	0.0020"	6980G-7	**14-972-7A**	10/73.93

[1] *Total Indicator Reading.*

LOOKING FOR PCR TUBES?

PCR tubes have moved to the PCR Section.

*Trademark. See Trademark Reference.

TUBING SELECTION CRITERIA

S – Size (OD, ID, Wall, Length)
T – Operating and Cleaning Temperature Range
A – Application (USP, FDA, NSF, 3A)
M – Operating and Cleaning Medium
P – Operating and Cleaning Pressure or Vacuum

IMPORTANT KEY WORDS:

Absorption/Adsorption—When components of a fluid, such as drug, beverage, or food preservatives are absorbed into the wall of the tubing or adhere to the wall of the tubing, reducing fluid flow

Antimicrobial—Inhibiting growth of microbes in the tubing fluid path

Extractables—Contaminants that can be drawn out of a material during fluid transportation

Pump Life—Reduce downtime due to pump tubing failure and replacement

Regulatory Compliance—Products that have met government/market requirements for FDA, NSF, 3-A, or USP Class VI standards

Smooth Inner Bore—Reduces the risk of adsorption and microbial buildup

Spallation—The erosion of peristaltic pump tubing which creates particulate matter and contaminates the fluid path

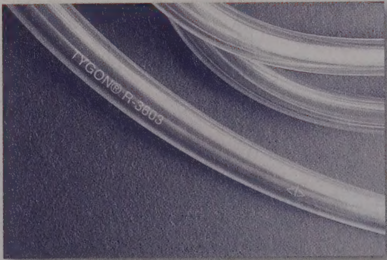
Validation—Fully characterized products with physical, chemical, and biological testing already completed

sponsored by:

SAINT-GOBAIN

BEFORE YOU BUY TUBING

APPLICATION	TYGON® B-44-3 & B-44-4X	TYGON® B-44-X-IB	TYGON® R-3603	TYGON® SILVER	TYGON® R-1000	TYGON® R-3400	TYGON® 3350	TYGON® 3370IB	TYGON® S-50-HL & S-54-HL	TYGON® 2001	TYGON® 2075	TYGON® 2275 & 2275-IB	TYGON® LFL	TYGON® SE-200	TYGON® F-4040-A	NORPRENE® A-60-F	NORPRENE® A-60-F-IB	NORPRENE® A-60-G	NORPRENE® CHEMICAL	PHARMED® BPT	FLURAN®	TYGOTHANE® C-544-A-IB & C-210-A	TYGOTHANE® XL-60
FOOD AND BEVERAGE	X	X	X	X	X		X	X		X	X					X	X		X			X	X
LABORATORY			X	X	X		X	X				X	X	X					X	X			
HEALTHCARE							X	X	X			X	X							X			
INDUSTRIAL	X	X	X	X		X				X	X			X	X			X	X		X	X	X
CHEMICAL			X	X		X				X	X			X	X			X	X		X	X	X
PERISTALTIC PUMP	X		X		X		X		X	X			X		X	X		X	X	X			X

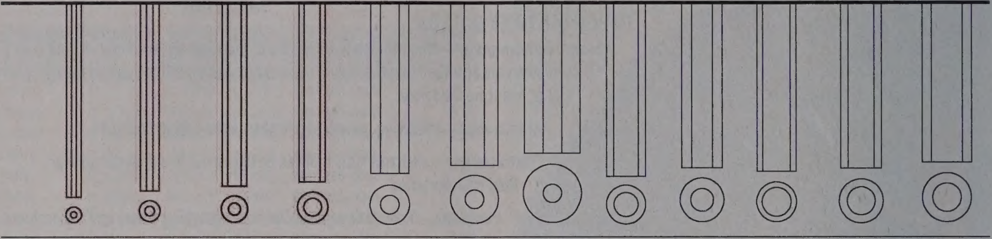


For a full selection of Saint-Gobain® Tubing, see pp. 1890-1895.

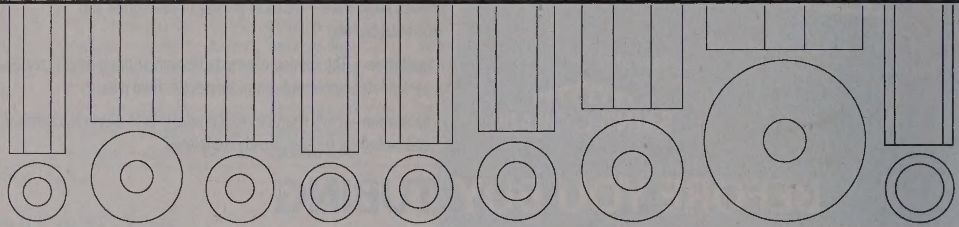
TUBING

Tubing Sizer

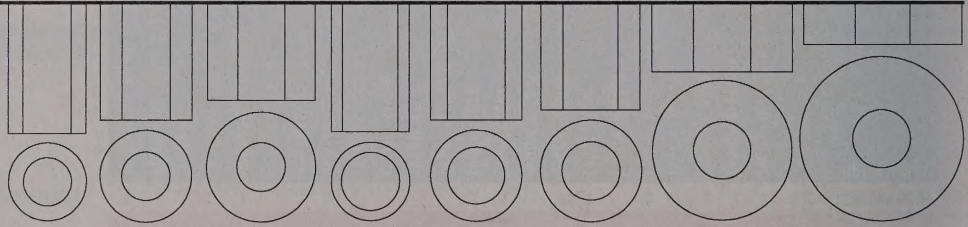
Hold a piece of your current tubing on top of the sizing chart to determine the best size for your needs. This guide includes many of the most popular tubing sizes. For those tubing sizes not listed here, a "Tubing Sizer" guide is available for download on our Web site.



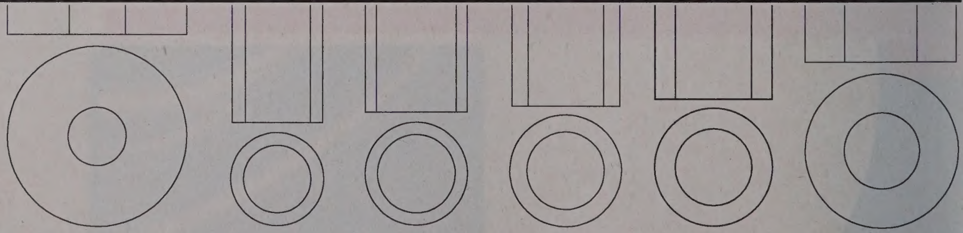
I.D.	1/32" (0.8mm)	1/16" (1.6mm)	3/32" (2.4mm)	1/8" (3.2mm)	1/8" (3.2mm)	1/8" (3.2mm)	1/8" (3.2mm)	5/32" (4mm)	5/32" (4mm)	3/16" (4.8mm)	3/16" (4.8mm)	3/16" (4.8mm)
O.D.	3/32 (2.4)	1/8 (3.2)	5/32 (4)	3/16 (4.8)	1/4 (6.4)	5/16 (7.9)	3/8 (9.5)	1/4 (6.4)	9/32 (7.1)	1/4 (6.4)	9/32 (7.1)	5/16 (7.9)
Wall	1/32 (0.8)	1/32 (0.8)	1/32 (0.8)	1/32 (0.8)	1/16 (1.6)	3/32 (2.4)	1/8 (3.2)	3/64 (1.2)	1/16 (1.6)	1/32 (0.8)	9/64 (1.2)	1/16 (1.6)



I.D.	3/16" (4.8mm)	3/16" (4.8mm)	3/16" (4.8mm)	1/4" (6.4mm)	1/4" (6.4mm)	1/4" (6.4mm)	1/4" (6.4mm)	1/4" (6.4mm)	5/16" (7.9mm)
O.D.	3/8 (9.5)	9/16 (14)	7/16 (11)	3/8 (9.5)	7/16 (11)	1/2 (12.7)	5/8 (15.8)	1 (25.4)	7/16 (11)
Wall	3/32 (2.4)	3/16 (4.8)	1/8 (3.2)	1/16 (1.6)	3/32 (2.4)	1/8 (3.2)	3/16 (4.8)	3/8 (9.5)	1/16 (1.6)



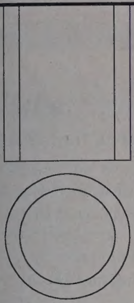
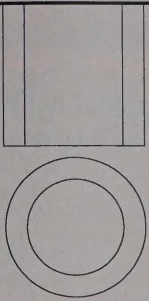
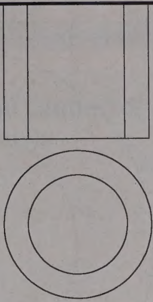
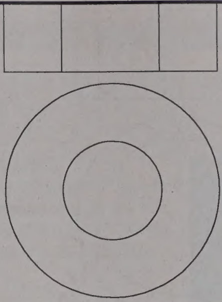
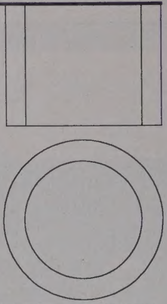
I.D.	5/16" (7.9mm)	5/16" (7.9mm)	5/16" (7.9mm)	3/8" (9.5mm)	3/8" (9.5mm)	3/8" (9.5mm)	3/8" (9.5mm)	3/8" (9.5mm)
O.D.	1/2 (12.7)	9/16 (14)	11/16 (17.4)	1/2 (12.7)	9/16 (14)	5/8 (15.8)	7/8 (22)	1 (25.4)
Wall	3/32 (2.4)	1/8 (3.2)	3/16 (4.8)	1/16 (1.6)	3/32 (2.4)	1/8 (3.2)	1/4 (6.4)	5/16 (7.9)



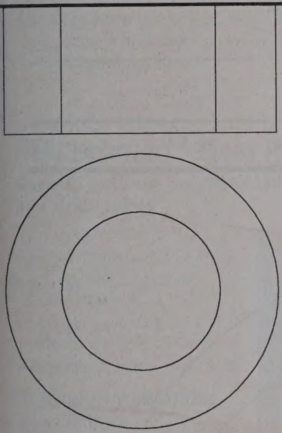
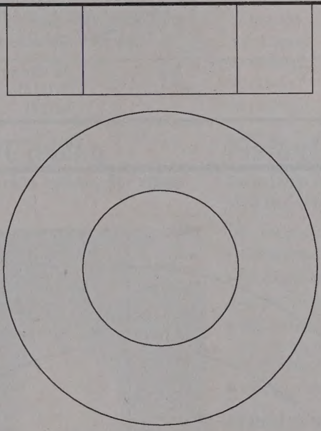
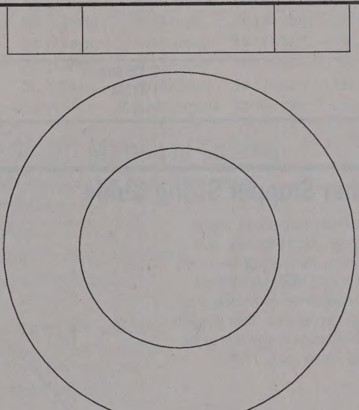
I.D.	3/8" (9.5mm)	7/16" (11mm)	1/2" (12.7mm)	1/2" (12.7mm)	1/2" (12.7mm)	1/2" (12.7mm)
O.D.	1 1/8 (29)	9/16 (14)	5/8 (15.8)	11/16 (17.4)	3/4 (19)	1 (25.4)
Wall	3/8 (9.5)	1/16 (1.6)	1/16 (1.6)	3/32 (2.4)	1/8 (3.2)	1/4 (6.4)

*Trademark. See Trademark Reference.

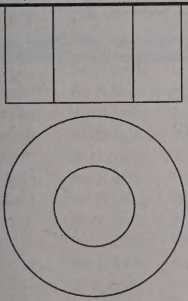
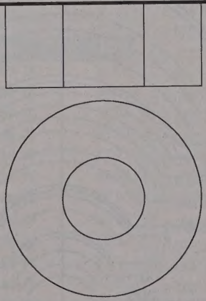
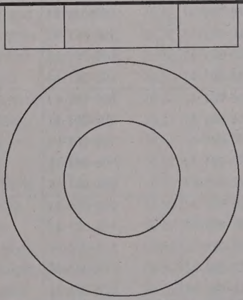
Tubing Sizer, Contd.

I.D.	5 1/8" (15.8mm)	5/8" (15.8mm)	5/8" (15.8mm)	5/8" (15.8mm)	3/4" (19mm)
O.D.	13/16 (21)	7/8 (22)	15/16 (24)	1 3/8 (35)	1 (25.4)
Wall	3/32 (2.4)	1/8 (3.2)	5/32 (4)	3/8 (9.5)	1/8 (3.2)

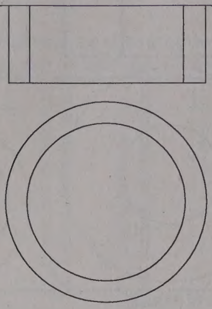




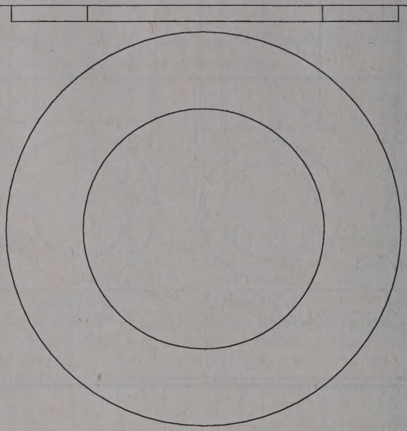
I.D.	1" (25.4mm)	1" (25.4mm)	1 1/4" (32mm)
O.D.	1 3/4 (44.4)	2 (51)	2 1/4 (57.1)
Wall	3/8 (9.5)	1/2 (12.7)	1/2 (12.7)

I.D.	1/2" (12.7mm)	1/2" (12.7mm)	3/4" (19mm)
O.D.	1 1/8 (29)	1 1/4 (32)	1 1/2 (38)
Wall	5/16 (7.9)	3/8 (9.5)	3/8 (9.5)

Tubing Sizer, Contd.

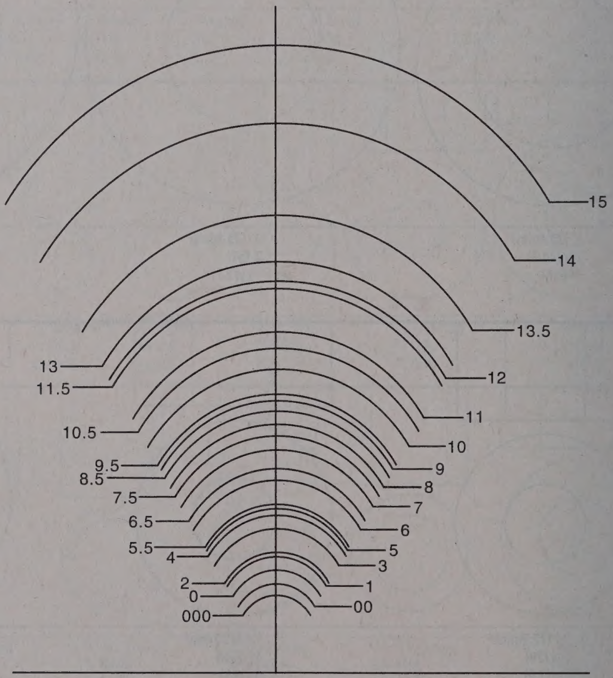




I.D.	1" (25.4mm)	1½" (38mm)
O.D.	1¼ (32)	2½ (63.5)
Wall	⅛ (3.2)	½ (12.7)

Rubber Stopper Sizing Guide

To use: Place large end of stopper flat on page. Align edge with horizontal line so that vertical line runs through middle of stopper. Where opposite edge intersects sizing arcs indicates stopper size. Other stopper sizing information is available in the Stoppers Section on p. 1784.



15
14
13.5
13
11.5
12
11
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6
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TUBING

PLASTIC

*Fisherbrand** Vinyl Tubing and Connector Kits

Resist fruit acids, lye, alcohol, greases, and oils

- Clear, flexible vinyl tubing
- Nontoxic and tasteless
- Can be used at temperatures from -33° to +100°C (-27° to +212°F) at low pressures
- Tensile strength: 2000psi (13.8MPa)
- Durometer hardness: Shore A, 65

ORDERING INFORMATION:

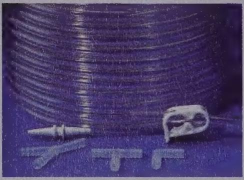
One kit per pack

INCLUDES:

50' (15.2m) of tubing, four autoclavable polypropylene connectors (one T, one elbow, one straight, and one Y), autoclavable polypropylene tubing clamp with 15-position flow control (Kits 14-174-1E and 14-174-1G have two clamps)

COMPLIANCE:

U.S. Pharmacopeia XIX, Class VI, and National Formulary Vol. 14 Standard. FDA criteria: 178.3740, 178.2010, and 175.300 (Tubing only).



14-174-1 Series

I.D.	Wall Thickness	O.D.	Cat. No.	Pack
3⁄16" (4.8mm)	1⁄16" (1.6mm)	5⁄16" (7.9mm)	**14-174-1A**	39.78
¼" (6.4mm)	1⁄16" (1.6mm)	⅜" (9.5mm)	**14-174-1C**	48.64
5⁄16" (7.9mm)	1⁄16" (1.6mm)	7⁄16" (11mm)	**14-174-1E**	58.29
⅜" (9.5mm)	1⁄16" (1.6mm)	½" (12.7mm)	**14-174-1G**	69.99
⅜" (9.5mm)	⅛" (3.2mm)	⅝" (15.9mm)	**14-174-1J**	127.41
½" (12.7mm)	1⁄16" (1.6mm)	⅝" (15.9mm)	**14-174-1M**	80.21

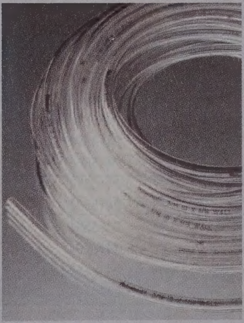
*Fisherbrand** Clear PVC Tubing

General-purpose polyvinyl chloride tubing for rinse and drain tubes

- Nonaging; nonoxidizing
- Highly flexible
- Size and foot markings at 1' (30cm) intervals
- Maximum operating temperature, 73.8°C (165°F)
- Durometer hardness: Shore A, 65

ORDERING INFORMATION:

In pack of 50' (15.2m)



14-169-7B

I.D.	Wall Thickness	O.D.	Cat. No.	Pack
⅛" (3.2mm)	1⁄16" (1.6mm)	¼" (6.4mm)	**14-169-7A**	21.54
3⁄16" (4.8mm)	1⁄16" (1.6mm)	5⁄16" (7.9mm)	**14-169-7B**	29.96
¼" (6.4mm)	1⁄16" (1.6mm)	⅜" (9.5mm)	**14-169-7C**	37.52
¼" (6.4mm)	3⁄32" (2.4mm)	7⁄16" (11mm)	**14-169-7D**	66.29
¼" (6.4mm)	⅛" (3.2mm)	½" (12.7mm)	**14-169-7E**	72.72
5⁄16" (7.9mm)	1⁄16" (1.6mm)	7⁄16" (11mm)	**14-169-7F**	47.86
⅜" (9.5mm)	1⁄16" (1.6mm)	½" (12.7mm)	**14-169-7G**	52.90
⅜" (9.5mm)	⅛" (3.2mm)	⅝" (15.9mm)	**14-169-7H**	100.09
½" (12.7mm)	1⁄16" (1.6mm)	⅝" (15.9mm)	**14-169-7J**	65.61
½" (12.7mm)	3⁄32" (2.4mm)	11⁄16" (17.4mm)	**14-169-7K**	87.24
½" (12.7mm)	⅛" (3.2mm)	¾" (19mm)	**14-169-7L**	116.37
⅝" (15.9mm)	⅛" (3.2mm)	⅞" (22.2mm)	**14-169-7M**	131.23
¾" (19mm)	⅛" (3.2mm)	1" (25.4mm)	**14-169-7N**	162.58

*Fisherbrand** Manifold Tubing

Two-stop tubing is color coded for easy size identification

Accu-Rated PVC

- Great versatility for a wide range of uses
- Moderate chemical resistance

Solva

- PVC-based compound with greater resistance to oil, gasoline, kerosene, and many aromatic hydrocarbons
- Flexible translucent yellow

ORDERING INFORMATION:

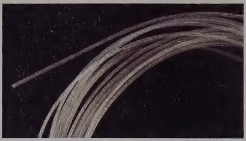
Supplied in 16" (41cm) lengths

14-190-500 Series

		Accu-Rated PVC		Solva	
I.D.	Color Code	Cat. No.	Pack of 12	Cat. No.	Pack of 12
0.010" (0.25mm)	Orange-Blue	**14-190-500**	26.52	**14-190-517**	28.81
0.015" (0.38mm)	Orange-Green	**14-190-501**	26.52	**14-190-518**	28.81
0.020" (0.51mm)	Orange-Yellow	**14-190-502**	26.52	**14-190-519**	28.81
0.025" (0.64mm)	Orange-White	**14-190-503**	26.52	**14-190-520**	28.81
0.030" (0.76mm)	Black-Black	**14-190-504**	26.52	**14-190-521**	28.81
0.035" (0.89mm)	Orange-Orange	**14-190-505**	26.52	**14-190-522**	28.81
0.040" (1.02mm)	White-White	**14-190-506**	26.52	**14-190-523**	28.81
0.045" (1.14mm)	Red-Red	**14-190-507**	26.52	**14-190-524**	28.81
0.051" (1.30mm)	Gray-Gray	**14-190-508**	26.52	**14-190-525**	28.81
0.056" (1.42mm)	Yellow-Yellow	**14-190-509**	26.52	**14-190-526**	28.81
0.060" (1.52mm)	Yellow-Blue	**14-190-510**	26.52	**14-190-527**	28.81
0.065" (1.65mm)	Blue-Blue	**14-190-511**	26.52	**14-190-528**	28.81
0.073" (1.85mm)	Green-Green	**14-190-512**	26.52	**14-190-529**	28.81
0.081" (2.06mm)	Purple-Purple	**14-190-513**	26.52	**14-190-530**	28.81
0.090" (2.29mm)	Purple-Black	**14-190-514**	26.52	**14-190-531**	28.81
0.100" (2.54mm)	Purple-Orange	**14-190-515**	26.52	**14-190-532**	28.81
0.110" (2.79mm)	Purple-White	**14-190-516**	26.52	**14-190-533**	28.77

Dow Corning* Silastic* Laboratory Tubing

Flexible, translucent silicone elastomer tubing


11-189-15 Series

- Platinum-cured to provide high purity for low extractables
- Contains no phthalates or plasticizers
- Easily cleaned and does not impart taste or odor
- Excellent tear strength and resistance to solvents and harsh chemicals
- Nonpyrogenic; bacteria-, fungus- and chemical-resistant
- Microbore sizes available
- Working temperature range, -54° to +249°C (-65° to +480°F)
- Autoclavable; also can be radiation-sterilized
- Durometer hardness is Shore A, 53 for 11-189-14 and 11-189-15A to -15K; Shore A, 51 for 11-189-15L to -15V and 11-189-13A to -13D
- Both elastomers and finished tubing are manufactured under Bulk Pharmaceutical cGMPs using ISO 9002: 2000-certified processes

APPLICATIONS:

Specially designed for applications requiring ultrapure fluid processing, separation, and filtration—such as parenteral drug manufacturing; oxygen delivery in production processes; and chemical, pharmaceutical, and environmental analyses. Also suitable for peristaltic pump use

ORDERING INFORMATION:

In pack containing 50' (15.2m) coil; packaged in sealed polybag.

COMPLIANCE:

Elastomers meet or exceed USP Class VI Plastics Test requirements.

NOTE:

Not intended for use in human implantation; in or in conjunction with cosmetic surgery, contraception, reproduction, obstetrics and gynecology; or in weight- or load-bearing devices.

I.D.†	Wall Thickness†	O.D.†	Mfr. No.	Cat. No.	Pack
0.012" (0.30mm)	0.006" (0.16mm)	0.025" (0.63mm)	2415496	**11-189-14**	38.98
0.020" (0.51mm)	0.085" (0.21mm)	0.037" (0.94mm)	2415500	**11-189-15A**	38.98
0.025" (0.63mm)	0.011" (0.27mm)	0.047" (1.19mm)	2415518	**11-189-15B**	39.25
0.030" (0.76mm)	0.017" (0.44mm)	0.065" (1.65mm)	2415526	**11-189-15C**	43.28
0.040" (1.01mm)	0.022" (0.57mm)	0.085" (2.16mm)	2415534	**11-189-15D**	47.50
0.058" (1.47mm)	0.009" (0.24mm)	0.077" (1.95mm)	2415542	**11-189-15E**	44.72
1/16" (1.6mm)	1/64" (0.4mm)	3/32" (2.4mm)	2415551	**11-189-15F**	44.61
1/16" (1.6mm)	1/32" (0.8mm)	1/8" (3.2mm)	2415569	**11-189-15G**	51.89
5/64" (2.0mm)	0.024" (0.6mm)	1/8" (3.2mm)	2415577	**11-189-15H**	49.05
0.104" (2.7mm)	0.044" (1.1mm)	0.192" (4.9mm)	2415585	**11-189-15J**	57.68
0.132" (3.4mm)	0.025" (0.065mm)	0.183" (4.6mm)	2415593	**11-189-15K**	54.81
1/8" (3.2mm)	1/16" (1.6mm)	1/4" (6.4mm)	515012	**11-189-15L**	79.56
3/16" (4.8mm)	1/16" (1.6mm)	5/16" (7.9mm)	2415615	**11-189-15M**	77.31
3/16" (4.8mm)	3/32" (2.4mm)	3/8" (9.5mm)	2415623	**11-189-15N**	87.85
1/4" (6.4mm)	1/16" (1.6mm)	3/8" (9.5mm)	2415631	**11-189-15P**	72.44
1/4" (6.4mm)	3/32" (2.4mm)	7/16" (11mm)	2415640	**11-189-15Q**	113.97
1/4" (6.4mm)	1/8" (3.2mm)	1/2" (12.7mm)	2415658	**11-189-13A**	150.99
5/16" (7.9mm)	3/32" (2.4mm)	1/2" (12.7mm)	2415666	**11-189-13B**	128.74
3/8" (9.5mm)	1/16" (1.6mm)	1/2" (12.7mm)	2415674	**11-189-15R**	105.63
3/8" (9.5mm)	3/32" (3.2mm)	9/16" (14mm)	2415682	**11-189-13C**	153.45
3/8" (9.5mm)	1/8" (2.4mm)	5/8" (15.8mm)	2415691	**11-189-15S**	249.90
1/2" (12.7mm)	3/32" (2.4mm)	1 1/16" (18mm)	2415704	**11-189-15T**	180.97
1/2" (12.7mm)	1/8" (3.2mm)	3/4" (19mm)	2415712	**11-189-13D**	274.64
5/8" (15.8mm)	1/8" (3.2mm)	7/8" (22mm)	2415721	**11-189-15V**	318.48

† Uncommon dimensions given in decimal form.

Spectra/Chrom* Tubing Cutter

Cuts to make an even, flat edge

11-187-15

- For all polymer-type tubing (vinyl, fluoroelastomer, silicone, polyethylene, TFE)
- Razor-sharp hardened-steel blade
- Special "V" socket firmly holds tubing perpendicular to the cutting blade

Description	Cat. No.	Each
Tubing Cutter	11-187-15	31.30

LOOKING FOR GLASS TUBING?
Please see the Glass Tubing section.

Nalgene* 180 Clear PVC Tubing

Transparent, nontoxic and noncontaminating

- Made from the highest-grade resins and special plasticizers—no fillers or extenders are added
- Resists hardening, discoloration, and a wide range of chemicals
- Marked every 12" for easy measurement
- All coils also marked with both I.D. and regulatory compliance
- Autoclavable
- Durometer hardness: Shore A, 55

COMPLIANCE:

Meets Food Additives Amendment of the Federal Food, Drug, and Cosmetic Act; also USDA and U.S. Pharmacopeia Class VI requirements for plastic materials (However, it is not a medical device as defined by Class VI criteria set forth in the current U.S. Pharmacopeia, as amended)

On reel of 500' (152.4m)

14-176 Series

I.D.	Wall Thickness	O.D.	Mfr. No. 8000-	Cat. No.	Each
¼" (6.4mm)	1⁄16" (1.6mm)	⅜" (9.5mm)	5060	**14-176-83**	560.50
⅜" (9.5mm)	1⁄16" (1.6mm)	½" (12.7mm)	5120	**14-176-87**	757.75

In pack of 250' (76.2m)

I.D.	Wall Thickness	O.D.	Mfr. No. 8000-	Cat. No.	Pack
⅛" (3.2mm)	1⁄32" (0.8mm)	3⁄16" (4.8mm)	9010	**14-176-86**	104.19
⅛" (3.2mm)	1⁄16" (1.6mm)	¼" (6.4mm)	9020	**14-176-88**	166.69
3⁄16" (4.8mm)	1⁄16" (1.6mm)	5⁄16" (7.9mm)	9030	**14-176-90**	234.41
¼" (6.4mm)	1⁄16" (1.6mm)	⅜" (9.5mm)	9060	**14-176-92**	296.19
5⁄16" (7.9mm)	1⁄16" (1.6mm)	7⁄16" (11mm)	9090	**14-176-94**	340.33
⅜" (9.5mm)	1⁄16" (1.6mm)	½" (12.7mm)	9120	**14-176-96**	397.52
½" (12.7mm)	1⁄16" (1.6mm)	⅝" (15.9mm)	9180	**14-176-98**	485.83

In pack of 100' (30.5m)

I.D.	Wall Thickness	O.D.	Mfr. No. 8000-	Cat. No.	Pack
¼" (6.4mm)	1⁄16" (1.6mm)	⅜" (9.5mm)	4060	**14-176-218**	110.43
¼" (6.4mm)	⅛" (3.2mm)	½" (12.7mm)	4080	**14-176-219**	275.40
5⁄16" (7.9mm)	1⁄16" (1.6mm)	7⁄16" (11mm)	4090	**14-176-220**	162.53
⅜" (9.5mm)	1⁄16" (1.6mm)	½" (12.7mm)	4120	**14-176-221**	189.61
⅜" (9.5mm)	⅛" (3.2mm)	⅝" (15.9mm)	4140	**14-176-222**	354.38

In pack of 50' (15.2m)

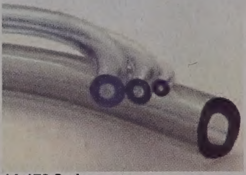
I.D.	Wall Thickness	O.D.	Mfr. No. 8000-	Cat. No.	Pack
1⁄32" (0.8mm)	1⁄32" (0.8mm)	3⁄32" (2.4mm)	0002	**14-176-194**	15.60
1⁄16" (1.6mm)	1⁄32" (0.8mm)	⅛" (3.2mm)	0004	**14-176-191**	18.20
3⁄32" (2.4mm)	1⁄32" (0.8mm)	5⁄32" (4mm)	0006	**14-176-192**	19.25
⅛" (3.2mm)	1⁄32" (0.8mm)	3⁄16" (4.8mm)	0010	**14-176-10**	21.30
⅛" (3.2mm)	1⁄16" (1.6mm)	¼" (6.4mm)	0020	**14-176-12**	41.60
5⁄32" (4mm)	1⁄32" (0.8mm)	7⁄32" (5.5mm)	0025	**14-176-197**	32.70
3⁄16" (4.8mm)	1⁄16" (1.6mm)	5⁄16" (7.9mm)	0030	**14-176-14**	58.20
¼" (6.4mm)	1⁄16" (1.6mm)	⅜" (9.5mm)	0060	**14-176-22**	76.80
¼" (6.4mm)	3⁄32" (2.4mm)	7⁄16" (11mm)	0070	**14-176-26**	120.00
¼" (6.4mm)	⅛" (3.2mm)	½" (12.7mm)	0080	**14-176-28**	145.00
5⁄16" (7.9mm)	1⁄16" (1.6mm)	7⁄16" (11mm)	0090	**14-176-30**	85.70
5⁄16" (7.9mm)	3⁄32" (2.4mm)	½" (12.7mm)	0100	**14-176-32**	125.75
5⁄16" (7.9mm)	⅛" (3.2mm)	9⁄16" (14mm)	0110	**14-176-34**	153.75
⅜" (9.5mm)	1⁄16" (1.6mm)	½" (12.7mm)	0120	**14-176-36**	99.70
⅜" (9.5mm)	3⁄32" (2.4mm)	9⁄16" (14mm)	0130	**14-176-38**	128.75
⅜" (9.5mm)	⅛" (3.2mm)	⅝" (15.9mm)	0140	**14-176-40**	186.50
7⁄16" (11mm)	3⁄32" (2.4mm)	⅝" (15.9mm)	0160	**14-176-46**	146.00
½" (12.7mm)	3⁄32" (2.4mm)	11⁄16" (18mm)	0190	**14-176-50**	168.25
½" (12.7mm)	⅛" (3.2mm)	¾" (19mm)	0200	**14-176-52**	230.00
⅝" (15.9mm)	⅛" (3.2mm)	⅞" (22mm)	0260	**14-176-58**	261.75
¾" (19mm)	⅛" (3.2mm)	1" (25.4mm)	0310	**14-176-64**	295.50
1" (25.4mm)	⅛" (3.2mm)	1¼" (32mm)	0350	**14-176-72**	369.75
1" (25.4mm)	3⁄16" (4.8mm)	1⅜" (35mm)	0370	**14-176-74**	583.50

In pack of 10' (3m)

I.D.	Wall Thickness	O.D.	Mfr. No. 8000-	Cat. No.	Pack	Case of 5
1⁄16" (7.9mm)	1⁄16" (1.6mm)	7⁄16" (11mm)	1090	**14-176-247**	29.58	98.59
1" (25.4mm)	⅛" (3.2mm)	1¼" (32mm)	1350	**14-176-251**	127.73	425.78

Nalgene* 180 PVC Vacuum Tubing

Similar to Nalgene 180 tubing, except with thicker walls for full vacuum applications



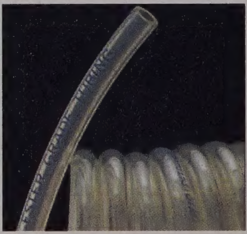
14-176 Series

I.D.	Wall Thickness	O.D.	Mfr. No. 8000	Cat. No.	Pack
In pack of 50' (15.2m)					
3⁄16" (4.8mm)	3⁄16" (4.8mm)	9⁄16" (14mm)	-0055	**14-176-20**	230.00
¼" (6.4mm)	3⁄16" (4.8mm)	⅝" (15.9mm)	-0065	**14-176-24**	265.75
⅜" (9.5mm)	¼" (6.4mm)	⅞" (22mm)	-0145	**14-176-42**	491.00
½" (12.7mm)	5⁄16" (7.9mm)	1⅛" (29mm)	-0210	**14-176-54**	693.00
In pack of 10' (3m)					
¼" (6.4mm)	3⁄16" (4.8mm)	⅝" (15.9mm)	-1065	**14-176-6B**	61.90
⅜" (9.5mm)	¼" (6.4mm)	⅞" (22mm)	-1145	**14-176-6C**	113.25
½" (12.7mm)	5⁄16" (7.9mm)	1⅛" (29mm)	-1210	**14-176-6D**	160.50
⅝" (15.9mm)	⅜" (9.5mm)	1⅜" (35mm)	-1270	**14-176-6E**	229.50
¾" (19mm)	⅜" (9.5mm)	1½" (38mm)	-1325	**14-176-6F**	269.25
1" (25.4mm)	½" (12.7mm)	2" (51mm)	-1375	**14-176-6G**	463.00

Nalgene* 280 Polyurethane Tubing

Ester Grade tubing ideal for high-purity work

- Contains no plasticizers and only low levels of extractables
- Superior chemical resistance to fuels, oils, and some solvents (not recommended for aqueous solvents)
- Marked every 12" for convenient cutting
- Not autoclavable; can be gas sterilized
- High tensile strength and toughness for pressure and vacuum applications; won't collapse under full vacuum



14-176-170 Series

ORDERING INFORMATION:
In packs of 50' (15.2m)

I.D.	Wall Thickness	O.D.	Mfr. No.	Cat. No.	Pack
⅛" (3.2mm)	1⁄16" (1.6mm)	¼" (6.4mm)	8030-0020	**14-176-170**	37.32
¼" (6.4mm)	1⁄16" (1.6mm)	⅜" (9.5mm)	8030-0060	**14-176-172**	57.29
⅜" (9.5mm)	1⁄16" (1.6mm)	½" (12.7mm)	8030-0120	**14-176-173**	76.18
½" (12.7mm)	1⁄16" (1.6mm)	⅝" (15.9mm)	8030-0180	**14-176-174**	100.88
⅝" (15.9mm)	1⁄16" (1.6mm)	¾" (19mm)	8030-0225	**14-176-175**	127.23
¾" (19mm)	⅛" (3.2mm)	1" (25.4mm)	8030-0310	**14-176-176**	264.08
1" (25.4mm)	⅛" (3.2mm)	1¼" (32mm)	8030-0350	**14-176-177**	349.19

Nalgene* 489 Linear Low-Density Polyethylene Tubing

Translucent so fluid levels can be easily seen

- Linear low-density, semirigid polyethylene
- Nontoxic, odorless, tasteless
- Not autoclavable; can be chemically sterilized

14-176-120 Series

ORDERING INFORMATION:
14-176-125 and 14-176-127 available in packs of 50' (15.2m); all others in packs of 100' (30.5m).

COMPLIANCE:
Complies with FDA regulations for food use.

NOTE:
Does not comply with NSF Standard 51 for Food Zone Use.

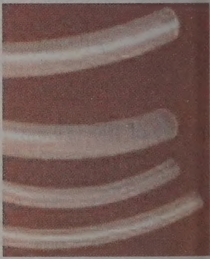
I.D.	Wall Thickness	O.D.	Mfr. No. 8010	Cat. No.	Pack
⅛" (3.2mm)	1⁄16" (1.6mm)	¼" (6.4mm)	-0125	**14-176-121**	36.60
3⁄16" (4.8mm)	1⁄16" (1.6mm)	5⁄16" (7.9mm)	-0187	**14-176-122**	46.20
¼" (6.4mm)	1⁄16" (1.6mm)	⅜" (9.5mm)	-0250	**14-176-123**	52.70
⅜" (9.5mm)	1⁄16" (1.6mm)	½" (12.7mm)	-0375	**14-176-120**	72.00
½" (12.7mm)	1⁄16" (1.6mm)	⅝" (15.9mm)	-0500	**14-176-124**	97.80
⅝" (15.9mm)	1⁄16" (1.6mm)	¾" (19mm)	-0625	**14-176-126**	122.50
¾" (19mm)	⅛" (3.2mm)	1" (25.4mm)	-0750	**14-176-127**	179.50
1" (25.4mm)	⅛" (3.2mm)	1¼" (32mm)	-1000	**14-176-125**	224.25

Nalgene* 689 Polypropylene Tubing

Translucent, semirigid tubing that has excellent chemical resistance to many acids and alkalis

- Unaffected by most solvents at ambient temperatures
- Should not be exposed to halogenated hydrocarbons for an extended period
- Autoclavable

ORDERING INFORMATION:
In packs of 50' (15.2m)



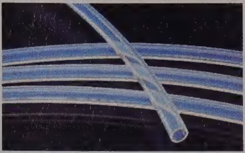
14-176-150 Series

I.D.	Wall Thickness	O.D.	Mfr. No. 8020	Cat. No.	Pack
3⁄16" (4.8mm)	1⁄32" (0.8mm)	¼" (6.4mm)	-0250	**14-176-159**	36.82
¼" (6.4mm)	1⁄16" (1.6mm)	⅜" (9.5mm)	-0370	**14-176-151**	105.90
5⁄16" (7.9mm)	1⁄16" (1.6mm)	7⁄16" (11mm)	-0437	**14-176-152**	127.48
⅜" (9.5mm)	1⁄16" (1.6mm)	½" (12.7mm)	-0500	**14-176-158**	140.27
½" (12.7mm)	1⁄16" (1.6mm)	⅝" (15.9mm)	-0625	**14-176-153**	148.81

Nalgene* 870 PFA Tubing

Tough, translucent tubing for low-pressure use with mechanical, compression-type fittings

- Matches chemical resistance of Nalgene 890 PTFE FEP Tubing, but withstands a wider temperature range of -270° to +260°C (-454° to +500°F)
- Very low water absorption
- Autoclavable
- Durometer hardness: Shore D


14-176-200 Series

ORDERING INFORMATION:

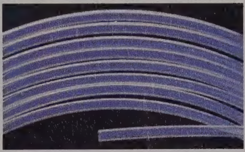
In pack of 25' (7.6m)

I.D.	Wall Thickness	O.D.	Mfr. No. 8051	Cat. No.	Pack	Case of 2 Pk.
1/16" (1.6mm)	1/32" (0.8mm)	1/8" (3.2mm)	-0125	**14-176-260**	95.42	127.23
1/8" (3.2mm)	1/32" (0.8mm)	3/16" (4.8mm)	-0187	**14-176-259**	150.93	201.25
5/32" (4mm)	3/64" (1.2mm)	1/4" (6.4mm)	-0250	**14-176-258**	299.06	398.75
1/4" (6.4mm)	1/16" (1.6mm)	3/8" (9.5mm)	-0375	**14-176-256**	363.20	----
5/16" (7.9mm)	1/16" (1.6mm)	7/16" (11mm)	-0437	**14-176-255**	411.76	----
3/8" (9.5mm)	1/16" (1.6mm)	1/2" (12.7mm)	-0500	**14-176-254**	478.35	----
1/2" (12.7mm)	1/16" (1.6mm)	5/8" (15.9mm)	-0625	**14-176-252**	619.25	----

Nalgene* 890 PTFE FEP Tubing

For trace metal analysis, pollution sampling, and corrosion testing; use also to transfer biological preparations, and in applications where binding/adsorption is a problem

- Noncytotoxic, noncontaminating
- Highly chemical and temperature resistant
- Autoclavable
- Durometer hardness: Shore D, 58


14-176 Series

ORDERING INFORMATION:

In pack of 25' (7.6m)

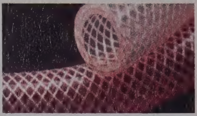
COMPLIANCE:

Meets FDA 21 CFR 177.1550 for food contact.

I.D.	Wall Thickness	O.D.	Mfr. No. 8050	Cat. No.	Pack	Case of 2 Pk.
1/16" (1.6mm)	1/32" (0.8mm)	1/8" (3.2mm)	-0125	**14-176-178**	44.62	59.50
1/8" (3.2mm)	1/32" (0.8mm)	3/16" (4.8mm)	-0187	**14-176-271**	64.45	85.93
3/16" (4.8mm)	1/32" (0.8mm)	1/4" (6.4mm)	-0250	**14-176-179**	94.66	126.22
1/4" (6.4mm)	1/32" (0.8mm)	5/16" (7.9mm)	-0310	**14-176-180**	120.26	160.35
5/16" (7.9mm)	1/32" (0.8mm)	3/8" (9.5mm)	-0375	**14-176-181**	146.05	194.73
3/8" (9.5mm)	1/32" (0.8mm)	7/16" (11mm)	-0437	**14-176-272**	158.66	211.54
7/16" (11mm)	1/32" (0.8mm)	1/2" (12.7mm)	-0500	**14-176-182**	195.24	260.33
1/2" (12.7mm)	1/32" (0.8mm)	9/16" (14mm)	-0562	**14-176-273**	208.20	277.60

Nalgene* 980 Braided Clear PVC Tubing

Braided, reinforced PVC tubing for high-pressure laboratory applications


14-169-10 Series

- Tasteless
- Excellent for use with weak acids, weak bases, and salt solutions
- Added flexibility makes it easier to bend and permits tighter compression of crimp fittings
- Marked with inside diameter and maximum working pressure for easy reordering

ORDERING INFORMATION:

In pack of 50' (15.2m)

COMPLIANCE:

Meets FDA regulations for food use.

I.D.	O.D.	Nominal Working Pressure	Mfr. No.	Cat. No.	Pack
3/16" (4.8mm)	3/8" (9.5mm)	275psig	8005-0040	**14-169-10F**	118.94
1/4" (6.4mm)	7/16" (11mm)	276psig	8005-0070	**14-169-10A**	127.73
5/16" (7.9mm)	1/2" (12.7mm)	276psig	8005-0100	**14-169-10G**	133.00
3/8" (9.5mm)	9/16" (14mm)	250psig	8005-0130	**14-169-10B**	137.76
1/2" (12.7mm)	3/4" (19mm)	230psig	8005-0190	**14-169-10C**	179.92
5/8" (15.9mm)	7/8" (22mm)	230psig	8005-0260	**14-169-10D**	278.60
3/4" (19mm)	1" (25.4mm)	176psig	8005-0310	**14-169-10E**	314.89
1" (25.4mm)	1 5/16" (33.3mm)	140psig	8005-0360	**14-169-10H**	460.07
1 1/4" (32mm)	1 5/8" (41.2mm)	100psig	8005 0378	**14-169-10J**	790.50
1 1/2" (38mm)	1 7/8" (47.6mm)	80psig	8005-0388	**14-169-10L**	948.75

Nalgene* 50 Platinum-Cured Silicone Tubing for Peristaltic Pumps

Flexible, durable, high-purity translucent tubing for use with peristaltic pumps; designed to extend service life of pump and tubing

14-176-200 Series

- Tasteless, odorless, nontoxic, nonpyrogenic, and nonhemolytic
- Contains no phthalate plasticizers that can leach out into transported fluid
- Resists adhesion of tissue, blood, proteins, and food products
- Provides greater durability and resiliency; improves stroke volume
- Operating temperature of -46° to +93°C (-50° to +200°F)
- Autoclavable; also can be sterilized by radiation, EtO and chemical procedures
- Durometer hardness: Shore A, 50

ORDERING INFORMATION:

Double-bagged in case of 25' (7.6m)

COMPLIANCE:

Meets FDA, USDA, U.S. Pharmacopeia XIX, Class VI requirements for plastic materials; and 3-A standards.

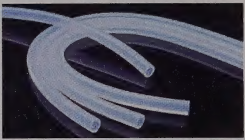
NOTE:

Not intended for invasive use.

Pump Tube Size	Hose Barb	Mfr. No.	Cat. No.	Case
No. 15	3/16" (4.8mm)	8060-3015	**14-176-276**	89.50
No. 16	1/8" (3.2mm)	8060-3016	**14-176-277**	65.00
No. 17	1/4" (6.4mm)	8060-3017	**14-176-278**	93.50
No. 18	5/16" (7.9mm)	8060-3018	**14-176-279**	101.75
No. 24	1/4" (6.4mm)	8060-3024	**14-176-281**	154.25
No. 25	3/16" (4.8mm)	8060-3025	**14-176-282**	85.50
No. 73	3/8" (9.5mm)	8060-3173	**14-176-294**	198.75
No. 82	1/2" (12.7mm)	8060-3182	**14-176-295**	288.25

Nalgene* 50 Platinum-Cured Silicone Tubing

Flexible, durable, high-purity translucent tubing for a variety of pump and transfer applications, including pharmaceutical, laboratory, bioprocess manufacturing, and food and beverage applications


14-176-332 Series

- Tasteless, odorless, nontoxic, nonpyrogenic, and nonhemolytic
- Contains no phthalate plasticizers that can leach out into transported fluid
- Resists adhesion of tissue, blood, proteins, and food products
- Working pressure of 5psig†
- Operating temperature of -46° to +93°C (-50° to +200°F)
- Autoclavable; also can be sterilized by radiation, EtO, or chemical means
- Durometer hardness: Shore A, 50

ORDERING INFORMATION:

Double-bagged in case of 50' (15.2m)

COMPLIANCE:

Meets FDA, USDA, U.S. Pharmacopeia XIX, Class VI requirements for plastic materials; and 3-A standards.

NOTE:

Not intended for invasive use.

I.D.	Wall Thickness	O.D.	Mfr. No. 8060	Cat. No.	Case
1/16" (1.6mm)	1/32" (0.8mm)	⅛" (3.2mm)	-0020	**14-176-332A**	47.30
⅛" (3.2mm)	1/16" (1.6mm)	¼" (6.4mm)	-0030	**14-176-332B**	65.00
3/16" (4.8mm)	1/16" (1.6mm)	5/16" (7.9mm)	-0040	**14-176-332C**	81.70
3/16" (4.8mm)	3/32" (2.4mm)	⅜" (9.5mm)	-0050	**14-176-332D**	106.00
¼" (6.4mm)	1/16" (1.6mm)	⅜" (9.5mm)	-0060	**14-176-332E**	89.20
¼" (6.4mm)	3/32" (2.4mm)	7/16" (11.1mm)	-0070	**14-176-332F**	169.75
¼" (6.4mm)	⅛" (3.2mm)	½" (12.7mm)	-0080	**14-176-332G**	217.25
5/16" (7.9mm)	3/32" (2.4mm)	½" (12.7mm)	-0100	**14-176-332H**	145.75
⅜" (9.5mm)	1/16" (1.6mm)	½" (12.7mm)	-0120	**14-176-332J**	162.25
⅜" (9.5mm)	3/32" (2.4mm)	9/16" (14mm)	-0130	**14-176-332K**	205.75
⅜" (9.5mm)	⅛" (3.2mm)	⅝" (15.8mm)	-0140	**14-176-332L**	256.25
½" (12.7mm)	3/32" (2.4mm)	11/16" (18mm)	-0190	**14-176-332M**	241.25
½" (12.7mm)	⅛" (3.2mm)	¾" (19mm)	-0200	**14-176-332N**	330.50
⅝" (15.8mm)	⅛" (3.2mm)	⅞" (22.2mm)	-0260	**14-176-332P**	360.00
¾" (19mm)	⅛" (3.2mm)	1" (25.4mm)	-0310	**14-176-332Q**	426.00

† Tubing with ¼" I.D. and 1/16" thick (6.4 × 1.6mm) wall, measured at room temperature. Higher temperatures will reduce working pressure.

Saint-Gobain* Tygon* Vacuum Tubing, Formula R-3603

Extra-heavy walls withstand full vacuum of 29.9"Hg (759mm) at 23°C (73°F) and up to 27"Hg (686mm) at 60°C (140°F)

- Outlasts rubber tubing; resists most inorganic chemicals, nonaging and highly resistant to cracking
- Can be used in corrosive atmospheres
- Clear walls enable an easy visual check for backups that could damage equipment
- Ideal for analytical testing of gases or vapors; well suited for use in making manometers
- Low vapor pressure (low outgassing) makes it suitable for vacuum applications down to 3×10^{-2}mmHg at 60°C (140°F)
- Will not swell closed if vacuum pump oil should back up into it

ORDERING INFORMATION:

In pack of 50' (15.2m)

14-169-2 Series

I.D.	Wall Thickness	O.D.	Mfr. No.	Cat. No.	Pack
3/16" (4.8mm)	3/16" (4.8mm)	9/16" (14mm)	AAC00015	**14-169-2A**	288.50
¼" (6.4mm)	3/16" (4.8mm)	⅝" (15.9mm)	AAC00020	**14-169-2B**	682.88
½" (12.7mm)	5/16" (7.9mm)	1⅛" (29mm)	AAC00040	**14-169-2D**	716.65
⅝" (15.9mm)	⅜" (9.5mm)	1⅜" (35mm)	AAC00049	**14-169-2G**	1179.66
¾" (19mm)	⅜" (9.5mm)	1½" (38mm)	AAC00058	**14-169-2E**	1217.36

*Trademark. See Trademark Reference.

Prices subject to change.

Saint-Gobain* Tygon* R-3603 Clear Laboratory Tubing

Crystal clear and flexible tubing with very high chemical resistance

14-169 Series

- Nonoxidizing and noncontaminating
- Handles virtually all inorganic chemicals found in the lab
- Long lasting and crack-resistant
- Foot markings at 3' intervals
- Durometer hardness: Shore A, 55

COMPLIANCE:

Meets FDA CFR Part 175.300 criteria.

In pack of 10' (3m)

I.D.	Wall Thickness	O.D.	Mfr. No.	Cat. No.	Pack	Case of 10 Pk.
⅛" (3.2mm)	1⁄16" (1.6mm)	¼" (6.4mm)	AACUN007	**14-169-3A**	10.84	90.36
3⁄16" (4.8mm)	1⁄16" (1.6mm)	5⁄16" (7.9mm)	AACUN012	**14-169-3B**	15.08	128.87
¼" (6.4mm)	1⁄16" (1.6mm)	⅜" (9.5mm)	AACUN017	**14-169-3C**	21.42	183.10
¼" (6.4mm)	⅛" (3.2mm)	½" (12.7mm)	AACUN019	**14-168-190M**	41.79	357.17
⅜" (9.5mm)	1⁄16" (1.6mm)	½" (12.7mm)	AACUN027	**14-169-3E**	24.77	211.71
½" (12.7mm)	1⁄16" (1.6mm)	⅝" (15.9mm)	AACUN036	**14-169-3G**	65.21	577.10
¾" (19mm)	⅛" (3.2mm)	1" (25.4mm)	AACUN053	**14-169-3H**	68.81	608.91
1" (25.4mm)	⅛" (3.2mm)	1¼" (32mm)	AACUN062	**14-169-3J**	85.82	759.48

In Pack of 50' (15.2m)

I.D.	Wall Thickness	O.D.	Mfr. No.	Cat. No.	Pack
1⁄32" (0.8mm)	1⁄32" (0.8mm)	3⁄32" (2.4mm)	AAC00001	**14-169-1A**	10.01
1⁄16" (1.6mm)	1⁄32" (0.8mm)	⅛" (3.2mm)	AAC00002	**14-169-1B**	11.83
1⁄16" (1.6mm)	1⁄16" (1.6mm)	3⁄16" (4.8mm)	AAC00003	**14-168-11**	30.96
3⁄32" (2.4mm)	1⁄32" (0.8mm)	5⁄32" (4mm)	AAC00004	**14-169-1C**	16.00
3⁄32" (2.4mm)	1⁄16" (1.6mm)	7⁄32" (5.5mm)	AAC00005	**14-168-190A**	39.30
⅛" (3.2mm)	1⁄32" (0.8mm)	3⁄16" (4.8mm)	AAC00006	**14-169-1D**	19.30
⅛" (3.2mm)	1⁄16" (1.6mm)	¼" (6.4mm)	AAC00007	**14-169-1E**	41.68
5⁄32" (4mm)	1⁄32" (0.8mm)	7⁄32" (5.5mm)	AAC00009	**14-168-13**	23.79
5⁄32" (4mm)	1⁄16" (1.6mm)	9⁄32" (7.2mm)	AAC00010	**14-168-14**	53.81
3⁄16" (4.8mm)	1⁄32" (0.8mm)	¼" (6.4mm)	AAC00011	**14-169-1F**	29.08
3⁄16" (4.8mm)	1⁄16" (1.6mm)	5⁄16" (7.9mm)	AAC00012	**14-169-1G**	85.03
3⁄16" (4.8mm)	3⁄32" (2.4mm)	⅜" (9.5mm)	AAC00013	**14-168-15**	103.00
3⁄16" (4.8mm)	⅛" (3.2mm)	7⁄16" (11mm)	ALC00014	**14-169-1H**	163.07
¼" (6.4mm)	1⁄16" (1.6mm)	⅜" (9.5mm)	AAC00017	**14-169-1J**	96.27
¼" (6.4mm)	3⁄32" (2.4mm)	7⁄16" (11mm)	AAC00018	**14-169-1K**	116.48
¼" (6.4mm)	⅛" (3.2mm)	½" (12.7mm)	AAC00019	**14-169-1L**	138.36
¼" (6.4mm)	1⁄32" (0.8mm)	5⁄16" (7.9mm)	AAC00016	**14-168-16**	34.34
5⁄16" (7.9mm)	1⁄16" (1.6mm)	7⁄16" (11mm)	AAC00022	**14-169-1M**	82.31
5⁄16" (7.9mm)	3⁄32" (2.4mm)	½" (12.7mm)	AAC00023	**14-169-1N**	140.47
5⁄16" (7.9mm)	⅛" (3.2mm)	9⁄16" (14mm)	AAC00024	**14-169-1P**	162.97
5⁄16" (7.9mm)	5⁄32" (4mm)	⅝" (15.9mm)	AAC00025	**14-168-17**	206.95
⅜" (9.5mm)	1⁄16" (1.6mm)	½" (12.7mm)	AAC00027	**14-169-1Q**	97.12
⅜" (9.5mm)	3⁄32" (2.4mm)	9⁄16" (14mm)	AAC00028	**14-169-1R**	140.64
⅜"(9.5mm)	⅛" (3.2mm)	⅝" (15.9mm)	AAC00029	**14-169-1S**	183.17
7⁄16" (11mm)	1⁄16" (1.6mm)	9⁄16" (14mm)	AAC00032	**14-169-1T**	139.38
7⁄16" (11mm)	3⁄32" (2.4mm)	⅝" (15.9mm)	AAC00033	**14-168-18**	152.01
½" (12.7mm)	1⁄16" (1.6mm)	⅝" (15.9mm)	AAC00036	**14-169-1U**	125.57
½" (12.7mm)	3⁄32" (2.4mm)	11⁄16" (18mm)	AAC00037	**14-169-1V**	202.76
½" (12.7mm)	⅛" (3.2mm)	¾" (19mm)	AAC00038	**14-169-1W**	225.71
½" (12.7mm)	5⁄32" (4mm)	13⁄16" (21mm)	AAC00039	**14-168-20**	305.53
⅝" (15.9mm)	3⁄32" (2.4mm)	13⁄16" (21mm)	AAC00045	**14-169-1X**	224.86
⅝" (15.9mm)	⅛" (3.2mm)	⅞" (22mm)	AAC00046	**14-169-1Y**	288.98
⅝" (15.9mm)	5⁄32" (4mm)	15⁄16" (24mm)	AAC00047	**14-169-1Z**	322.50
¾" (19mm)	⅛" (3.2mm)	1" (25.4mm)	AAC00053	**14-169-1AA**	435.61
¾" (19mm)	¼" (6.4mm)	1¼" (32mm)	AAC00057	**14-168-26**	692.61
⅞" (22mm)	⅛" (3.2mm)	1⅛" (28.6mm)	AAC00059	**14-168-27**	350.27
1" (25.4mm)	⅛" (3.2mm)	1¼" (32mm)	AAC00062	**14-169-1BB**	404.33
1¼" (32mm)	⅛" (3.2mm)	1½" (38mm)	AAC00069	**14-168-31**	435.68
1⅛" (28.6mm)	3⁄16" (4.8mm)	1½" (38mm)	AAC00068	**14-168-30**	624.73
1½" (38mm)	¼" (6.4mm)	2" (51mm)	AAC00074	**14-168-35**	1050.77

Saint-Gobain* Tygon* Sanitary Silicone Tubing Formula 3350

Translucent tubing ideal for biotechnological, pharmaceutical, and peristaltic applications

02-587 Series

Ultrasmooth inner bore reduces risk of particle entrapment, inhibits microscopic bacterial buildup during fluid transfer, and allows thorough cleaning and sterilization.

- Tasteless, odorless
- Nonpyrogenic, nontoxic, nonhemolytic
- Low extractable content helps to maintain integrity and purity of transported fluids
- Smooth inner surface provides low adsorption for improved fluid flow (hydrophobic surface also improves fluid flow)
- Maximum recommended operating temperature 200°C (392°F)
- Autoclavable; also can be radiation- and gas-sterilized
- Durometer hardness: Shore A, 50

ORDERING INFORMATION:
Packaged in heat-sealed, double-wrapped polyethylene packs of 50' (15.2cm)

COMPLIANCE:
Complies with requirements of USP XXII Class VI criteria. Meets 3-A Sanitary Standards, FDA 21 CFR Part 177.2600 criteria and NSF 51 Standard.

NOTE:
Not intended for use as an implant material.

I.D.	Wall Thickness	O.D.	Mfr. No.	Cat. No.	Pack
1⁄32" (0.8mm)	1⁄32" (0.8mm)	3⁄32" (2.4mm)	ABW00001	**02-587-1A**	57.04
1⁄16" (1.6mm)	1⁄32" (0.8mm)	1⁄8" (3.2mm)	ABW00002	**02-587-1B**	65.92
1⁄16" (1.6mm)	1⁄16" (1.6mm)	3⁄16" (4.8mm)	ABW00003	**02-587-1C**	87.82
3⁄32" (2.4mm)	1⁄32" (0.8mm)	5⁄32" (4mm)	ABW00004	**02-587-1D**	71.60
3⁄32" (2.4mm)	1⁄16" (1.6mm)	7⁄32" (5.6mm)	ABW00005	**02-587-1E**	102.48
1⁄8" (3.2mm)	1⁄32" (0.8mm)	3⁄16" (4.8mm)	ABW00006	**02-587-1F**	75.01
1⁄8" (3.2mm)	1⁄16" (1.6mm)	1⁄4" (6.4mm)	ABW00007	**02-587-1G**	110.45
5⁄32" (4mm)	1⁄32" (0.8mm)	7⁄32" (5.6mm)	ABW00009	**02-587-1H**	79.62
3⁄16" (4.8mm)	1⁄32" (0.8mm)	1⁄4" (6.4mm)	ABW00011	**02-587-1J**	94.17
3⁄16" (4.8mm)	1⁄16" (1.6mm)	5⁄16" (7.9mm)	ABW00012	**02-587-1K**	140.60
3⁄16" (4.8mm)	3⁄32" (2.4mm)	3⁄8" (9.5mm)	ABW00013	**02-587-1M**	200.43
1⁄4" (6.4mm)	1⁄32" (0.8mm)	5⁄16" (7.9mm)	ABW00016	**02-587-1P**	104.46
1⁄4" (6.4mm)	1⁄16" (1.6mm)	3⁄8" (9.5mm)	ABW00017	**02-587-1Q**	153.11
1⁄4" (6.4mm)	3⁄32" (2.4mm)	7⁄16" (11mm)	ABW00018	**02-587-1R**	234.90
1⁄4" (6.4mm)	1⁄8" (3.2mm)	1⁄2" (12.7mm)	ABW00019	**02-587-1S**	315.94
5⁄16" (7.9mm)	1⁄16" (1.6mm)	7⁄16" (11mm)	ABW00022	**02-587-1T**	191.65
5⁄16" (7.9mm)	3⁄32" (2.4mm)	1⁄2" (12.7mm)	ABW00023	**02-587-1U**	270.57
3⁄8" (9.5mm)	1⁄16" (1.6mm)	1⁄2" (12.7mm)	ABW00027	**02-587-1V**	209.67
3⁄8" (9.5mm)	3⁄32" (2.4mm)	9⁄16" (14mm)	ABW00028	**02-587-1W**	307.06
3⁄8" (9.5mm)	1⁄8" (3.2mm)	5⁄8" (15.8mm)	ABW00029	**02-587-1X**	393.23
7⁄16" (11mm)	3⁄32" (2.4mm)	5⁄8" (15.8mm)	ABW00033	**02-587-1Z**	353.76
1⁄2" (12.7mm)	1⁄16" (1.6mm)	5⁄8" (15.8mm)	ABW00036	**02-587-2A**	285.72
1⁄2" (12.7mm)	3⁄32" (2.4mm)	11⁄16" (18mm)	ABW00037	**02-587-2B**	376.87
1⁄2" (12.7mm)	1⁄8" (3.2mm)	3⁄4" (19mm)	ABW00038	**02-587-2C**	497.80
5⁄8" (15.8mm)	3⁄32" (2.4mm)	13⁄16" (21mm)	ABW00045	**02-587-2D**	463.00
5⁄8" (15.8mm)	1⁄8" (3.2mm)	7⁄8" (22mm)	ABW00046	**02-587-2E**	596.02
3⁄4" (19mm)	1⁄8" (3.2mm)	1" (25.4mm)	ABW00053	**02-587-2F**	675.06

Saint-Gobain* PharMed* BPT Tubing

Ideal for life science applications employing perisaltic pumps

14-170 Series

- Nontoxic, nonhemolytic, and nonpyrogenic tubing has long flex life and high biocompatibility—outlasts silicone tubing up to 30 times longer
- Very good general chemical resistance and excellent acid, alkali, and oxidation resistance
- Opaque to visible and UV light, tubing will protect sensitive fluids
- Withstands temperatures from -51° to +135°C (-60° to +275°F)
- Withstands repeated clean-in-place and steam-in-place cleaning and sterilization; can be repeatably autoclaved for up to five cycle times without affecting overal service life
- Durometer hardness: Shore A, 64

APPLICATIONS:
Ideal for life science applications employing peristaltic pumps such as diagnostic test product manufacturing, cell harvest, media process system vaccine manufacturing, bioreactor process lines, production filtration and fermentation, sterile filling, shear-sensitive fluid transfer

ORDERING INFORMATION:
In pack of 25' (7.6m)

COMPLIANCE:
Fully tested to ISO 10993 standards. Meets USP Class VI, FDA, and NSF criteria.

I.D.†	Wall Thickness	O.D.	Mfr. No.	Cat. No.	Pac
0.020" (0.5mm)	1⁄16" (1.6mm)	0.145" (3.7mm)	AY242605	**14-170-09**	55.6
1⁄32" (0.8mm)	1⁄16" (1.6mm)	5⁄32" (4mm)	AY242606	**14-170-02**	65.3
1⁄16" (1.6mm)	1⁄32" (0.8mm)	1⁄8" (3.2mm)	AY242002	**14-170-14**	59.8
1⁄16" (1.6mm)	1⁄16" (1.6mm)	3⁄16" (4.8mm)	AY242003	**14-170-03**	84.5
1⁄8" (3.2mm)	1⁄16" (1.6mm)	1⁄4" (6.4mm)	AY242007	**14-170-15**	76.2
3⁄16" (4.8mm)	1⁄16" (1.6mm)	5⁄16" (7.9mm)	AY242012	**14-170-04**	86.1
1⁄4" (6.4mm)	1⁄16" (1.6mm)	3⁄8" (9.5mm)	AY242017	**14-170-01**	92.1
1⁄4" (6.4mm)	1⁄8" (3.2mm)	1⁄2" (12.7mm)	AY242019	**14-170-00**	160.8
5⁄16" (7.9mm)	1⁄16" (1.6mm)	7⁄16" (11mm)	AY242022	**14-170-05**	106.5
3⁄8" (9.5mm)	1⁄8" (3.2mm)	5⁄8" (15.9mm)	AY242029	**14-170-07**	151.4
1⁄2" (12.7mm)	1⁄8" (3.2mm)	3⁄4" (19mm)	AY242038	**14-170-06**	204.4
5⁄8" (15.9mm)	1⁄8" (3.2mm)	7⁄8" (22mm)	AY242046	**14-170-13**	242.0
3⁄4" (19mm)	1⁄8" (3.2mm)	1" (25.4mm)	AY242053	**14-170-08**	300.8

† Nonstandard English size shown as decimal

*Trademark. See Trademark Reference.

Saint-Gobain* Tygon* Biocompatible Tubing, Formula S-50-HL

Tubing ends closed by heat-sealing to prevent contamination in shipment

- Crystal clear for easy visualization of fluid flow
- Nonwetting surface permits complete drainage
- Greater flex-life than rubber
- Can be autoclaved or sterilized with steam, radiation, chemicals, or gas
- Durometer hardness: Shore A, 66

14-169-9 Series

ORDERING INFORMATION:

In pack of 50' (15.2m)

COMPLIANCE:

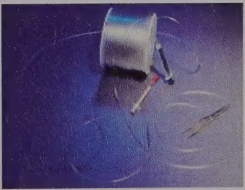
Meets U.S. Pharmacopeia Class VI criteria for medical plastics. Complies with CID A-A-55697 for medical tubing. Follows ISO 10993 standards.

I.D.	Wall Thickness	O.D.	Mfr. No.	Cat. No.	Pack
1/16" (1.6mm)	1/32" (0.8mm)	1/8" (3.2mm)	AAX00002	**14-168-111**	13.60
3/32" (2.4mm)	1/32" (0.8mm)	5/32" (4mm)	AAX00004	**14-168-113**	17.19
1/8" (3.2mm)	1/16" (1.6mm)	1/4" (6.4mm)	AAX00007	**14-169-9A**	63.12
3/16" (4.8mm)	1/16" (1.6mm)	5/16" (7.9mm)	AAX00012	**14-169-9B**	98.24
1/4" (6.4mm)	1/16" (1.6mm)	3/8" (9.5mm)	AAX00017	**14-169-9C**	107.27
1/4" (6.4mm)	3/32" (2.4mm)	7/16" (11mm)	AAX00018	**14-168-122**	132.14
1/4" (6.4mm)	1/8" (3.2mm)	1/2" (12.7mm)	AAX00019	**14-168-123**	189.45
5/16" (7.9mm)	1/16" (1.6mm)	7/16" (11mm)	AAX00022	**14-169-9D**	129.10
3/8" (9.5mm)	1/16" (1.6mm)	1/2" (12.7mm)	AAX00027	**14-169-9E**	115.86
3/8" (9.5mm)	3/32" (2.4mm)	9/16" (14mm)	AAX00028	**14-169-9F**	165.00
1/2" (12.7mm)	1/16" (1.6mm)	5/8" (15.8mm)	AAX00036	**14-169-9G**	145.80
1/2" (12.7mm)	3/32" (2.4mm)	11/16" (17.4mm)	AAX00037	**14-169-9H**	189.35
1/2" (12.7mm)	1/8" (3.2mm)	3/4" (19mm)	AAX00038	**14-169-9J**	257.00

Saint-Gobain* Tygon* Microbore Tubing, Formula S-54-HL

Use as catheters for intravenous and arterial infusion

- Nontoxic, nonpyrogenic, and blood compatible
- Flexible enough to permit use of single size with several different needle gauges; yet sufficiently rigid to minimize danger of wall collapse
- Gas, chemical, and gamma sterilizable
- Durometer hardness: Shore A, 80



14-170-15 Series

ORDERING INFORMATION:

On reel of 500' (152.4m)

COMPLIANCE:

Meets U.S. Pharmacopeia Class VI criteria for medical plastics.

I.D.	Wall Thickness	O.D.	Mfr. No.	Cat. No.	Pack
0.010" (0.25mm)	0.010" (0.25mm)	0.030" (0.76mm)	AAQ04091	**14-170-15A**	194.72
0.020" (0.51mm)	0.020" (0.51mm)	0.060" (1.53mm)	AAQ04103	**14-170-15B**	186.08
0.030" (0.76mm)	0.030" (0.76mm)	0.090" (2.28mm)	AAQ04119	**14-170-15C**	220.22
0.040" (1.02mm)	0.010" (0.25mm)	0.070" (1.78mm)	AAQ04127	**14-170-15D**	228.78
0.050" (1.27mm)	0.020" (0.51mm)	0.090" (2.28mm)	AAQ04133	**14-170-15E**	233.03

Micro-Mix Pack

ORDERING INFORMATION:

Contains a 100' (30m) reel of each size of Tygon* Microbore Tubing, Formula S-54-HL

Mfr. No.	Cat. No.	Pack
AAQ04118	**14-170-15F**	195.43

Saint-Gobain* Tygon* Formula 2275 High-Purity Tubing

Environmentally friendly—safe to dispose of through incineration

- Contains no plasticizers that can leach into or contaminate fluid, yet tubing remains flexible
- Virtually no absorption of key fluid constituents into tubing material or fluid adsorption onto tubing walls; fluid alteration and loss is limited
- Ideal for handling sensitive fluids such as pharmaceutical or biological solutions
- Also available braid-reinforced to withstand solutions with elevated working pressure (See Formula 2275 I.B., Cat. Nos. 02-593-1A and 1C to -1F. Contact your Fisher Scientific Customer Service Representative for details.)

14-169-23 Series

ORDERING INFORMATION:

In packs of 50' (15m)

COMPLIANCE:

Meets USP Class VI, FDA and NSF specifications. Documented biocompatibility to ISO 10993 standards.

I.D.	Wall Thickness	O.D.	Mfr. No.	Cat. No.	Pack
1/16" (1.6mm)	1/16" (1.6mm)	3/16" (4.8mm)	AER00003	**14-169-23A**	63.82
1/8" (3.2mm)	1/16" (1.6mm)	1/4" (6.4mm)	AER00007	**14-169-23B**	99.67
3/16" (4.8mm)	1/16" (1.6mm)	5/16" (7.9mm)	AER00012	**14-169-23C**	108.05
1/4" (6.4mm)	1/16" (1.6mm)	3/8" (9.5mm)	AER00017	**14-169-23D**	115.84
5/16" (7.9mm)	1/16" (1.6mm)	7/16" (11mm)	AER00022	**14-169-23E**	133.03
3/8" (9.5mm)	1/16" (1.6mm)	1/2" (12.7mm)	AER00027	**14-169-23F**	145.08
1/2" (12.7mm)	1/8" (3.2mm)	3/4" (19mm)	AER00038	**14-169-23G**	317.76
5/8" (15.8mm)	1/8" (3.2mm)	7/8" (22mm)	AER00046	**14-169-23H**	411.91
3/4" (19mm)	1/8" (3.2mm)	1" (25.4mm)	AER00053	**02-599-1A**	401.48

Saint-Gobain* Tygon* Ultra-Chemical-Resistant Tubing, Formula 2075

Suitable for many applications, from battery acid filling to hazardous material handling

14-169-22 Series

- Contains no plasticizers, eliminating fluid contamination and the premature embrittlement and cracking common with many flexible tubings
- Offers unequaled chemical resistance, clarity, and flexibility
- Virtually unaffected by acids, bases, ketones, salts and alcohols (resistant to highly aggressive chemicals)
- Exceptionally smooth inner surface inhibits particulate buildup and reduces the potential for contamination

I.D.	Wall Thickness	O.D.	Mfr. No.	Cat. No.	Pack
In pack of 50' (15.2m)					
1⁄16" (1.6mm)	1⁄16" (1.6mm)	3⁄16" (4.8mm)	AED00003	**14-169-22A**	58.34
1⁄8" (3.2mm)	1⁄16" (1.6mm)	1⁄4" (6.4mm)	AED00007	**14-169-22B**	99.68
3⁄16" (4.8mm)	1⁄16" (1.6mm)	5⁄16" (7.9mm)	AED00012	**14-169-22C**	100.22
1⁄4" (6.4mm)	1⁄16" (1.6mm)	3⁄8" (9.5mm)	AED00017	**14-169-22D**	112.11
5⁄16" (7.9mm)	1⁄16" (1.6mm)	7⁄16" (11mm)	AED00022	**14-169-22E**	123.44
3⁄8" (9.5mm)	1⁄16" (1.6mm)	1⁄2" (12.7mm)	AED00027	**14-169-22F**	152.12
1⁄2" (12.7mm)	1⁄8" (3.2mm)	3⁄4" (19mm)	AED00038	**14-169-22G**	340.45
5⁄8" (15.8mm)	1⁄8" (3.2mm)	7⁄8" (22mm)	AED00046	**14-169-22H**	365.32
3⁄4" (19mm)	1⁄8" (3.2mm)	1" (25.4mm)	AED00053	**02-600-1A**	398.50
In pack of 25' (7.6m)					
1" (25.4mm)	3⁄16" (4.8mm)	13⁄8" (35mm)	AED42064	**02-600-1B**	337.26

Saint-Gobain* Tygon* Tubing with Inert Liner, SE-200

Crystal clear, highly flexible PTFE jacket with inert fluoropolymer FEP liner

14-169-8 Series

- Liner is odor- and taste-free, important in food and beverage analysis, and it's inert—won't contaminate liquids
- Replaces PTFE tubing where continuous use doesn't exceed 82°C (180°F)
- Durometer hardness (of Tygon jacket): Shore A, 67

ORDERING INFORMATION:

In pack of 50' (15m)

COMPLIANCE:

Meets U.S. Pharmacopeia Class VI and 21 CFR 177.2600 criteria.

NOTE:

Not for use in peristaltic pumps.

I.D.	Wall Thickness	O.D.	Mfr. No.	Cat. No.	Pack
1⁄8" (3.2mm)	1⁄16" (1.6mm)	1⁄4" (6.4mm)	AJD00007	**14-169-8E**	89.20
3⁄16" (4.8mm)	1⁄16" (1.6mm)	5⁄16" (7.9mm)	AJD00012	**14-169-8F**	117.60
1⁄4" (6.4mm)	1⁄16" (1.6mm)	3⁄8" (9.5mm)	AJD00017	**14-169-8G**	153.36
3⁄8" (9.5mm)	3⁄32" (2.4mm)	9⁄16" (14mm)	AJD00028	**14-169-8H**	207.00
1⁄2" (12.7mm)	1⁄8" (3.2mm)	3⁄4" (19mm)	AJD00038	**14-169-8J**	290.19

Saint-Gobain* Vincon* Flexible PVC Tubing

Formula C-219-A Tubing

- Clear, flexible tubing
- 74°C (165°F) maximum operating temperature
- Tensile strength of 2450psi (16.9MPa)

ORDERING INFORMATION:

In pack of 100' (30.5m)

I.D.	Wall Thickness	O.D.	Mfr. No.	Cat. No.	Pack
1⁄8" (3.2mm)	1⁄16" (1.6mm)	1⁄4" (6.4mm)	ABH02007	**14-168-192B**	30.64
1⁄4" (6.4mm)	1⁄16" (1.6mm)	3⁄8" (9.5mm)	ABH02017	**14-168-192C**	45.40
1⁄4" (6.4mm)	1⁄8" (3.2mm)	1⁄2" (12.7mm)	ABH02019	**14-168-192E**	117.50
5⁄16" (7.9mm)	1⁄16" (1.6mm)	7⁄16" (11mm)	ABH02022	**14-168-192F**	54.48
3⁄8" (9.5mm)	1⁄16" (1.6mm)	1⁄2" (12.7mm)	ABH02027	**14-168-192G**	66.63
3⁄8" (9.5mm)	3⁄32" (2.4mm)	9⁄16" (14mm)	ABH02028	**14-168-192H**	111.38
1⁄2" (12.7mm)	1⁄8" (3.2mm)	3⁄4" (19mm)	ABH02038	**14-168-192L**	197.94

Saint-Gobain* Tygon* Pressure Tubing with Inner Braid, Formula B-44-4X-I.B.

Tubing wall has reinforced braid to handle long-term continuous pressure up to four times greater than nonreinforced tubing will withstand

14-169-12 Series; vacuum gauge not included

- Odorless, tasteless, and nontoxic
- Smooth bore won't entrap bacteria
- Outer surface is smooth, minimizing sanitation problems
- Also offers visual inspection, flow control, and flexibility

COMPLIANCE:

Meets FDA and 3-A Plastics Standard for food and dairy products handling and NSF criteria under Standard 51.

WORKING AND BURST PRESSURES AT 23°C FOR TYGON* PRESSURE TUBING WITH INNER BRAID

Tubing I.D.	Max. Working Pressure	Burst Pressure
1⁄4"	250psi	1000psi
3⁄8"	150psi	600psi
1⁄2"	200psi	800psi
5⁄8"	145psi	575psi
3⁄4"	112psi	450psi
1"	100psi	400psi

Safety factor of four to one burst-to-working pressure ratio. Pressures measured according to ASTM D 1599-99.*

I.D.	Wall Thickness	O.D.	Mfr. No.	Cat. No.	Pack
In pack of 50' (15.2m)					
1⁄4" (6.4mm)	3⁄32" (2.4mm)	7⁄16" (11mm)	ADA00018	**14-169-12A**	138.67
3⁄8" (9.5mm)	1⁄8" (3.2mm)	5⁄8" (15.9mm)	ADA00029	**14-169-12B**	221.57
1⁄2" (12.7mm)	1⁄8" (3.2mm)	3⁄4" (19mm)	ADA00038	**14-168-193**	259.32
5⁄8" (15.8mm)	1⁄8" (3.2mm)	7⁄8" (22mm)	ADA00046	**14-168-190N**	293.83
3⁄4" (19mm)	1⁄8" (3.2mm)	1" (25.4mm)	ADA00053	**14-168-190P**	351.00
1" (25.4mm)	3⁄16" (4.8mm)	13⁄8" (35mm)	ADA00064	**14-168-190Q**	565.27
In pack of 10' (3m)					
3⁄8" (9.5mm)	1⁄8" (3.2mm)	5⁄8" (15.9mm)	ADAUN029	**14-169-20B**	380.12
3⁄4" (19mm)	1⁄8" (3.2mm)	1" (25.4mm)	ADAUN053	**14-169-20E**	740.82

*Trademark. See Trademark Reference.

Prices subject to change.

Saint-Gobain* Tygon* Beverage Tubing, Formula B-44-3

Lightweight and flexible for easy installation

14-168 Series

- Crystal-clear tubing is taste- and odor-free—won't alter flavor or fragrance
- Ideal for food, beverage, odor, and fragrance analysis
- Use in permanent or temporary lines; also with rigid piping systems
- Nonwetting surface for complete drainage
- Maximum operating temperature, 74°C (165°F)
- Autoclavable
- Durometer hardness: Shore A, 63

COMPLIANCE:

Meets FDA and NSF criteria.

I.D.	Wall Thickness	O.D.	Mfr. No.	Cat. No.	Pack
In pack of 20' (6.1m)					
2¼" (57.4mm)	¼" (6.4mm)	2¾" (60mm)	AAB05081	**14-168-107**	571.33
In pack of 50' (15.2m)					
1⁄16" (1.6mm)	1⁄32" (0.8mm)	⅛" (3.2mm)	AAB00002	**14-168-52**	11.42
1⁄16" (1.6mm)	1⁄16" (1.6mm)	3⁄16" (4.8mm)	AAB00003	**14-168-53**	26.49
3⁄32" (2.4mm)	1⁄32" (0.8mm)	5⁄32" (4mm)	AAB00004	**14-168-54**	13.57
3⁄32" (2.4mm)	1⁄16" (1.6mm)	7⁄32" (5.5mm)	AAB00005	**14-168-55**	33.03
⅛" (3.2mm)	1⁄32" (0.8mm)	3⁄16" (4.8mm)	AAB00006	**14-168-56**	18.01
⅛" (3.2mm)	1⁄16" (1.6mm)	¼" (6.4mm)	AAB00007	**14-168-57**	42.93
5⁄32" (4mm)	1⁄32" (0.8mm)	7⁄32" (5.5mm)	AAB00009	**14-168-58**	19.36
5⁄32" (4mm)	1⁄16" (1.6mm)	9⁄32" (7mm)	AAB00010	**14-168-59**	45.48
3⁄16" (4.8mm)	1⁄32" (0.8mm)	¼" (6.4mm)	AAB00011	**14-168-60**	23.58
3⁄16" (4.8mm)	1⁄16" (1.6mm)	5⁄16" (7.9mm)	AAB00012	**14-168-61**	57.86
3⁄16" (4.8mm)	3⁄32" (2.4mm)	⅜" (9.5mm)	AAB00013	**14-168-62**	85.08
3⁄16" (4.8mm)	⅛" (3.2mm)	7⁄16" (11.1mm)	AAB00014	**14-168-63**	118.36
¼" (6.4mm)	1⁄32" (0.8mm)	5⁄16" (7.9mm)	AAB00016	**14-168-64**	27.88
¼" (6.4mm)	1⁄16" (1.6mm)	⅜" (9.5mm)	AAB00017	**14-168-65**	71.98
¼" (6.4mm)	3⁄32" (2.4mm)	7⁄16" (11mm)	AAB00018	**14-168-66**	106.68
¼" (6.4mm)	⅛" (3.2mm)	½" (12.7mm)	AAB00019	**14-168-67**	128.40
5⁄16" (7.9mm)	1⁄16" (1.6mm)	7⁄16" (11mm)	AAB00022	**14-168-68**	84.27
5⁄16" (7.9mm)	3⁄32" (2.4mm)	½" (12.7mm)	AAB00023	**14-168-69**	116.07
5⁄16" (7.9mm)	⅛" (3.2mm)	9⁄16" (14mm)	AAB00024	**14-168-70**	134.51
⅜" (9.5mm)	1⁄16" (1.6mm)	½" (12.7mm)	AAB00027	**14-168-71**	99.10
⅜" (9.5mm)	3⁄32" (2.4mm)	9⁄16" (14mm)	AAB00028	**14-168-72**	130.53
⅜" (9.5mm)	⅛" (3.2mm)	⅝" (15.8mm)	AAB00029	**14-168-73**	183.71
½" (12.7mm)	1⁄16" (1.6mm)	⅝" (15.8mm)	AAB00036	**14-168-75**	119.41
½" (12.7mm)	3⁄32" (2.4mm)	1 1⁄16" (18mm)	AAB00037	**14-168-76**	162.90
½" (12.7mm)	⅛" (3.2mm)	¾" (19mm)	AAB00038	**14-168-77**	221.15
⅝" (15.8mm)	⅛" (3.2mm)	⅞" (22mm)	AAB00046	**14-168-78**	236.26
¾" (19mm)	⅛" (3.2mm)	1" (25.4mm)	AAB00053	**14-168-80**	284.85
⅞" (22mm)	⅛" (3.2mm)	1⅛" (28.6mm)	AAB00059	**14-168-81**	292.08
1" (25.4mm)	⅛" (3.2mm)	1¼" (32mm)	AAB00062	**14-168-82**	371.84
1" (25.4mm)	3⁄16" (4.8mm)	1⅜" (34.9mm)	AAB00064	**14-168-83**	493.48
1" (25.4mm)	¼" (6.4mm)	1½" (38mm)	AAB00065	**14-168-84**	736.01
1¼" (32mm)	⅛" (3.2mm)	1½" (38mm)	AAB00069	**14-168-85**	429.32
1¼" (32mm)	3⁄16" (4.8mm)	1⅝" (41.3mm)	AAB00070	**14-168-86**	626.41
1¼" (32mm)	¼" (6.4mm)	1¾" (44.4mm)	AAB00071	**14-168-87**	874.34
1½" (38mm)	3⁄16" (4.8mm)	1⅞" (47.4mm)	AAB00073	**14-168-88**	769.40
1¾" (44.4mm)	¼" (6.4mm)	2¼" (57.4mm)	AAB00076	**14-168-90**	1091.11
In pack of 100' (30.5m)					
⅛" (3.2mm)	1⁄32" (0.8mm)	3⁄16" (4.8mm)	AAB02006	**14-168-98**	32.10
⅛" (3.2mm)	1⁄16" (1.6mm)	¼" (6.4mm)	AAB02007	**14-168-99**	76.03

Saint-Gobain* Tygon* Clear Tubing, Formula B-44-4X

Dense bore is smoother than bore of most stainless-steel tubing

- Nontoxic, taste- and odor-free
- Won't trap bacteria-harboring particles
- Resistant to alkaline cleaners and unaffected by sanitizers
- Excellent wetting properties facilitate complete drainage and permit simple flushing
- Maximum operating temperature, 74°C (165°F)

14-169 Series

- Durometer hardness: Shore A, 65

ORDERING INFORMATION:

In pack of 50' (15m), except as indicated in table.

COMPLIANCE:

Meets FDA, 3-A Plastics Standard, and NSF Standard 51 criteria.

I.D.	Wall Thickness	O.D.	Mfr. No.	Cat. No.	Pack
1⁄32" (0.8mm)	1⁄32" (0.8mm)	3⁄32" (2.4mm)	AAA00001	**14-169-28**	6.98
1⁄16" (1.6mm)	1⁄32" (0.8mm)	⅛" (3.2mm)	AAA00002	**14-169-29**	10.67
1⁄16" (1.6mm)	1⁄16" (1.6mm)	3⁄16" (4.8mm)	AAA00003	**14-169-30**	28.87
3⁄32" (2.4mm)	1⁄32" (0.8mm)	5⁄32" (4mm)	AAA00004	**14-169-31**	13.91
⅛" (3.2mm)	1⁄32" (0.8mm)	3⁄16" (4.8mm)	AAA00006	**14-169-33**	15.84
⅛" (3.2mm)	1⁄16" (1.6mm)	¼" (6.4mm)	AAA00007	**14-169-34**	43.14
5⁄32" (4mm)	1⁄32" (0.8mm)	7⁄32" (5.5mm)	AAA00009	**14-169-35**	22.02
5⁄32" (4mm)	1⁄16" (1.6mm)	9⁄32" (7.2mm)	AAA00010	**14-169-36**	50.15
3⁄16" (4.8mm)	1⁄32" (0.8mm)	¼" (6.4mm)	AAA00011	**14-169-37**	25.07
3⁄16" (4.8mm)	1⁄16" (1.6mm)	5⁄16" (7.9mm)	AAA00012	**14-169-38**	55.88
¼" (6.4mm)	1⁄16" (1.6mm)	⅜" (9.5mm)	AAA00017	**14-169-21A**	72.30
¼" (6.4mm)	3⁄32" (2.4mm)	7⁄16" (11mm)	AAA00018	**14-169-42**	115.78
¼" (6.4mm)	⅛" (3.2mm)	½" (12.7mm)	AAA00019	**14-169-21E**	136.01
5⁄16" (7.9mm)	1⁄16" (1.6mm)	7⁄16" (11mm)	AAA00022	**14-169-21C**	84.27
5⁄16" (7.9mm)	3⁄32" (2.4mm)	½" (12.7mm)	AAA00023	**14-169-44**	119.53
5⁄16" (7.9mm)	⅛" (3.2mm)	9⁄16" (14mm)	AAA00024	**14-169-45**	134.51
5⁄16" (7.9mm)	5⁄32" (4mm)	⅝" (15.9mm)	AAA00025	**14-169-46**	194.18
⅜" (9.5mm)	1⁄16" (1.6mm)	½" (12.7mm)	AAA00027	**14-169-21B**	109.28
⅜" (9.5mm)	3⁄32" (2.4mm)	9⁄16" (14mm)	AAA00028	**14-169-47**	114.88
⅜" (9.5mm)	⅛" (3.2mm)	⅝" (15.9mm)	AAA00029	**14-169-48**	187.08
7⁄16" (11mm)	1⁄16" (1.6mm)	9⁄16" (14mm)	AAA00032	**14-169-49**	104.29
7⁄16" (11mm)	3⁄32" (2.4mm)	⅝" (15.9mm)	AAA00033	**14-169-50**	129.24
½" (12.7mm)	1⁄16" (1.6mm)	⅝" (15.9mm)	AAA00036	**14-169-51**	107.11
½" (12.7mm)	3⁄32" (2.4mm)	1 1⁄16" (18mm)	AAA00037	**14-169-52**	165.89
½" (12.7mm)	⅛" (3.2mm)	¾" (19mm)	AAA00038	**14-169-21D**	225.22
½" (12.7mm)	5⁄32" (4mm)	13⁄16" (21mm)	AAA00039	**14-169-53**	254.88
⅝" (15.9mm)	3⁄32" (2.4mm)	13⁄16" (21mm)	AAA00045	**14-171-20**	172.04
⅝" (15.9mm)	5⁄32" (4mm)	15⁄16" (24mm)	AAA00047	**14-169-57**	284.86
¾" (19mm)	⅛" (3.2mm)	1" (25.4mm)	AAA00053	**14-169-58**	290.09
¾" (19mm)	5⁄32" (4mm)	1 1⁄16" (18mm)	AAA00054	**14-169-59**	353.68
¾" (19mm)	3⁄16" (4.8mm)	1⅛" (28.6mm)	AAA00055	**14-169-60**	421.54
¾" (19mm)	¼" (6.4mm)	1¼" (32mm)	AAA00057	**14-169-61**	592.10
⅞" (22mm)	⅛" (3.2mm)	1⅛" (28.6mm)	AAA00059	**14-169-62**	292.08
1" (25.4mm)	⅛" (3.2mm)	1¼" (31.8mm)	AAA00062	**14-169-63**	337.21
1" (25.4mm)	5⁄32" (4mm)	1 5⁄16" (33.3mm)	AAA00063	**14-169-64**	421.73
1" (25.4mm)	3⁄16" (4.8mm)	1⅜" (41.3mm)	AAA00064	**14-169-65**	541.61
1¼" (32mm)	3⁄16" (4.8mm)	1⅝" (47.7mm)	AAA00070	**14-169-69**	626.41
1½" (38mm)	3⁄16" (4.8mm)	1⅞" (54.1mm)	AAA00073	**14-169-71**	265.31
1½" (38mm)	¼" (6.4mm)	2" (51mm)	AAA00074	**14-171-21**	961.85
2" (51mm)	¼" (6.4mm)	2½" (63.7mm)	AAA05078	**14-169-81**†	531.83
2" (51mm)	¼" (6.4mm)	2½" (63.7mm)	AAA00078	**14-169-74**	567.51
2" (51mm)	½" (12.7mm)	3" (76mm)	AAA05080	**14-169-83**†	956.51
2½" (63.7mm)	¼" (6.4mm)	3" (76mm)	AAA05082	**14-169-85**†	589.75
2½" (63.7mm)	⅜" (9.5mm)	3¼" (83mm)	AAA05083	**14-169-86**†	840.61
3" (76.2mm)	¼" (6.4mm)	3½" (89mm)	AAA05085	**14-171-22**†	634.00
4" (102mm)	½" (12.7mm)	5" (540mm)	AAA06088	**14-169-91**‡	814.52
4" (102mm)	½" (12.7mm)	5" (540mm)	AAA05088	**14-169-90**†	1629.13

† In pack of 20' (6.1m). ‡ In pack of 10' (3m).

RUBBER

*Fisherbrand** General-Purpose Rubber Tubing

Seamless rubber tubing

- Nonslip surface and flexibility
- Black or red

14-150-2 Series

On Reel of 50' (15.2m)

I.D.	Wall Thickness	O.D.	Cat. No.	Each	Case of 5
Black, Thick Wall					
3/8" (9.5mm)	1/8" (3.2mm)	5/8" (15.9mm)	**14-150-2E**	211.29	----
Red, Thick Wall					
1/4" (6.4mm)	1/16" (1.6mm)	3/8" (9.5mm)	**14-150-2A**	149.61	639.35

In 12' (3.7m) Length

I.D.	Wall Thickness	O.D.	Cat. No.	Each	Case of 4
Black, Thick Wall					
1/4" (6.4mm)	1/16" (1.6mm)	3/8" (9.5mm)	**14-157C**	50.75	173.40
1/4" (6.4mm)	3/32" (2.4mm)	7/16" (11mm)	**14-158D**	53.60	183.20
5/16" (7.9mm)	3/32" (2.4mm)	1/2" (12.7mm)	**14-158E**	58.25	206.10
3/8" (9.5mm)	1/8" (3.2mm)	5/8" (15.9mm)	**14-158F**	66.95	236.95
Red, Thin Wall					
5/16" (7.9mm)	1/16" (1.6mm)	7/16" (11mm)	**14-166D**	40.35	137.95
3/8" (9.5mm)	3/32" (2.4mm)	9/16" (14mm)	**14-166E**	66.55	235.55
Red, Thick Wall					
1/2" (12.7mm)	1/8" (3.2mm)	3/4" (19.1mm)	**14-167G**	66.50	235.40

*Fisherbrand** Butyl Rubber Tubing

For use with air and carbon dioxide

- Resists oxygen degradation
- Heavy wall

ORDERING INFORMATION:
Package contains approximately 10' (3m).

14-168B

I.D.	Wall Thickness	O.D.	Cat. No.	Pack	Case of 5 Pk.
1/4" (6.4mm)	1/8" (12.7mm)	1/2" (12.7mm)	**14-168B**	57.25	242.30

*Fisherbrand** Natural Rubber Latex Tubing

Contains dry natural rubber

- Soft, pliable, seamless tubing in amber or black
- Talc-free; nontacky
- Environmentally friendly—manufactured with no ozone-depleting chemicals
- Use at temperatures from -18° to +70°C (0° to 158°F)
- Autoclavable; can be EtO-sterilized
- Tensile strength, 2500psi
- Ultimate elongation, 700%

14-178-2 Series

COMPLIANCE:
Meets Fed. Spec. ZZ-T-831D Types I and III. Amber tubing meets U.S. Pharmacopeia Class VI criteria.

On 50' (15.2m) Reel

I.D.	Wall Thickness	O.D.	Cat. No.	Each
Amber, Thin Wall				
3/16" (4.8mm)	1/16" (1.6mm)	5/16" (7.9mm)	**14-178-2B**	59.22
1/4" (6.4mm)	1/16" (1.6mm)	3/8" (9.5mm)	**14-178-2C**	75.90
5/16" (7.9mm)	1/16" (1.6mm)	7/16" (11.1mm)	**14-178-2D**	84.29
Amber, Thick Wall				
1/8" (3.2mm)	3/32" (2.4mm)	5/16" (7.9mm)	**14-178-2AA**	70.73
3/16" (4.8mm)	3/32" (2.4mm)	3/8" (9.5mm)	**14-178-2BB**	75.87
1/4" (6.4mm)	3/32" (2.4mm)	7/16" (11.1mm)	**14-178-2CC**	76.59

In 12' (3.7m) Length

I.D.	Wall Thickness	O.D.	Cat. No.	Each	Case of
Black, Thin Wall					
1/8" (3.2mm)	1/32" (0.8mm)	3/16" (4.8mm)	**14-150-5A**	20.25	8/138.40
1/4" (6.4mm)	1/16" (1.6mm)	3/8" (9.5mm)	**14-150-5C**	24.50	8/167.55
Amber, Thin Wall					
5/32" (4mm)	3/64" (1.2mm)	1/4" (6.4mm)	**14-178A**	17.75	8/121.30
3/16" (4.8mm)	1/16" (1.6mm)	5/16" (7.9mm)	**14-178B**	16.75	8/114.50
1/4" (6.4mm)	1/16" (1.6mm)	3/8" (9.5mm)	**14-178C**	22.45	8/153.25
5/16" (7.9mm)	1/16" (1.6mm)	7/16" (11.1mm)	**14-178D**	22.45	8/153.40
3/8" (9.5mm)	1/16" (1.6mm)	1/2" (12.7mm)	**14-178E**	26.75	8/182.70
1/2" (12.7mm)	3/32" (2.4mm)	11/16" (17.5mm)	**14-178F**	47.95	4/163.85
Amber, Thick Wall					
1/16" (1.6mm)	1/32" (0.8mm)	1/8" (3.2mm)	**14-178-5A**	20.05	16/273.95
1/8" (3.2mm)	1/16" (1.6mm)	1/4" (6.4mm)	**14-178-5B**	20.20	8/138.10
3/16" (4.8mm)	3/32" (2.4mm)	3/8" (9.5mm)	**14-178-5C**	24.55	8/167.60
1/4" (6.4mm)	3/32" (2.4mm)	7/16" (11.1mm)	**14-178-5D**	31.30	8/213.90
5/16" (7.9mm)	3/32" (2.4mm)	1/2" (12.7mm)	**14-178-5E**	31.45	8/215.05
3/8" (9.5mm)	1/8" (3.2mm)	5/8" (15.9mm)	**14-178-5F**	55.80	4/190.70
1/2" (12.7mm)	1/8" (3.2mm)	3/4" (19.1mm)	**14-178-5G**	55.80	4/190.70

*Trademark. See Trademark Reference.

Kantleke* Cloth-Covered Rubber Tubing

For burner and hotplate connections

- Each length has heavy rubber connections on both ends
- Flexible

14-185-5 Series

Length	Cat. No.	Each	Pack of
2' (61cm)	**14-185-5A**	62.38	100/4798.25
4' (122cm)	**14-185-5B**	86.95	50/3695.40

CHECK VALVES

Nalgene* Vacuum Check Valve

One-way high-density polyethylene valve for vacuum lines

- Serrated, 3/4" long (19mm) connectors taper from 5/16 to 1/4" (7.9 to 6.4mm)
- Silicone rubber flap in valve prevents back pressure in filter flask configurations
- Works best between 10 and 28"Hg
- Easy to disassemble for cleaning

NOTE:
Not for use with liquids.

15-339-2

Mfr. No.	Cat. No.	Pack of 6	Case of 12 Pk.
6120-0010	**15-339-2**	52.27	418.20

CONNECTORS—STANDARD

*Fisherbrand** Polypropylene Tubing Connectors

Very durable, autoclavable, and highly resistant to many chemicals

With Straight Ends

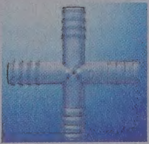
- Straight, serrated ends provide a secure fit
- Can accept flexible tubing of slightly smaller I.D. than the indicated size

With Tapered Ends

- Serrated ends with taper provide tight fit for several tubing I.D. sizes

Four-Way Connectors with Straight Ends

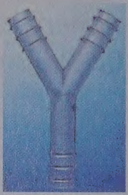
Fits Tubing I.D.	Cat. No.	Pack of 20	Case of 100
5/32" (4mm)	**15-315-32A**	----	141.39
7/32" (6mm)	**15-315-32B**	34.83	147.58
5/16" (8mm)	**15-315-32C**	----	186.32
3/8" (10mm)	**15-315-32D**	----	208.32
7/16" (12mm)	**15-315-32E**	----	214.31



15-315-32C

Y-Shaped Connectors with Straight Ends

Fits Tubing I.D.	Cat. No.	Case of 100
5/32" (4mm)	**15-315-30A**	118.23
7/32" (6mm)	**15-315-30B**	134.54
5/16" (8mm)	**15-315-30C**	138.35
3/8" (10mm)	**15-315-30D**	181.13
7/16" (12mm)	**15-315-30E**	199.21
9/16" (14mm)	**15-315-30F**	222.46
5/8" (16mm)	**15-315-30G**	256.87



13-315-30D

Straight Connectors with Tapered Ends

Fits Tubing I.D.	Cat. No.	Case of 100
1/8 to 7/32" (3.2 to 5.5mm)	**15-315-28A**	88.24
3/16 to 5/16" (4.8 to 7.9mm)	**15-315-28B**	110.95
1/4 to 3/8" (6.4 to 9.5mm)	**15-315-28C**	122.65
3/8 to 7/16" (9.5 to 11mm)	**15-315-28D**	120.51
7/16 to 9/16" (11 to 14mm)	**15-315-28E**	140.69
1/2 to 5/8" (12.7 to 15.9mm)	**15-315-28F**	156.07

15-315-28C

Nalgene* Tubing Connectors

Durable, autoclavable polypropylene

T-Shaped Connectors

15-319 Series

Fits Tubing I.D.	Mfr. No.	Cat. No.	Pack of 12	Case of
1/8" (3.2mm)	6151-0125	**15-319A**	22.61	6 Pk./90.45
3/16" (4.8mm)	6151-0187	**15-319B**	22.61	6 Pk./90.45
1/4" (6.4mm)	6151-0250	**15-319C**	22.61	6 Pk./90.45
5/16" (7.9mm)	6151-0312	**15-319D**	24.82	6 Pk./99.29
3/8" (9.5mm)	6151-0375	**15-319E**	31.66	4 Pk./84.42
1/2" (12.7mm)	6151-0500	**15-319F**	36.86	4 Pk./98.29

Y-Shaped Connectors

15-320-10 Series

Fits Tubing I.D.	Mfr. No.	Cat. No.	Pack of 12	Case of
1/8" (3.2mm)	6152-0125	**15-320-10A**	30.72	6 Pk./122.90
3/16" (4.8mm)	6152-0187	**15-320-10B**	30.72	6 Pk./122.90
1/4" (6.4mm)	6152-0250	**15-320-10C**	29.92	6 Pk./119.70
5/16" (7.9mm)	6152-0312	**15-320-10D**	32.86	6 Pk./131.40
3/8" (9.5mm)	6152-0375	**15-320-10E**	42.01	4 Pk./112.00
1/2" (12.7mm)	6152-0010	**15-320-10F**	48.79	4 Pk./130.10

CONNECTORS—QUICK-DISCONNECT

*Fisherbrand** Polyethylene Quick-Disconnects

For easy joining of plastic or rubber tubing

Tight fitting, with tapered ends that accept several tubing sizes.

Reducing connectors can be made by combining:

- 15-315-27C with 15-315-27D for tubing from ¼ to 7/16" (6.4 to 11cm)
- 15-315-27E with 15-315-27F for tubing from 7/16 to ⅝" (11 to 15.9cm)

15-315-27D

Fit Tubing I.D.	Cat. No.	Case of 100
¼ to ⅜" (6.4 to 9.5mm)	**15-315-27C**	215.14
⅜ to 7/16" (9.5 to 11mm)	**15-315-27D**	270.09
7/16 to 9/16" (11 to 14mm)	**15-315-27E**	288.45
½ to ⅝" (12.7 to 15.9mm)	**15-315-27F**	307.99

*Fisherbrand** All-Metal Quick-Disconnects

Inline hose connector with automatic shutoff on disconnect to prevent leakage

- Chrome-plated brass hookups
- Compatible with most tubing
- Operate at temperatures to 82°C (180°F), pressures to 250psi (1.7MPa) and vacuum to 30"Hg

ORDERING INFORMATION:

Order male and female connectors separately so tubing of the same or different size can be connected.

15-340 Series

Coupling Type	Fits Tubing I.D.	Cat. No.	Each
Female	⅛" (3.2mm)	**15-340-5**	44.09
Female	¼" (6.4mm)	**15-340-6**	46.12
Male	⅛" (3.2mm)	**15-340-10**	29.24
Male	¼" (6.4mm)	**15-340-11**	31.56

Nalgene* Quick-Disconnects

High-density polyethylene connecting tubes

- Consist of two tapered tubulations that fit tightly together with male/female connection
- Rapidly join or separate apparatus lines

15-315A

Fits Tubing I.D.	Mfr. No.	Cat. No.	Pack of 12	Case of 6 Pk.
¼ to 5/16" (6.4 to 7.9mm)	6150-0010	**15-315A**	37.84	151.37
⅜ to 7/16" (9.5 to 11mm)	6150-0020	**15-315B**	52.47	209.88

Nalgene* Valved Quick-Disconnects

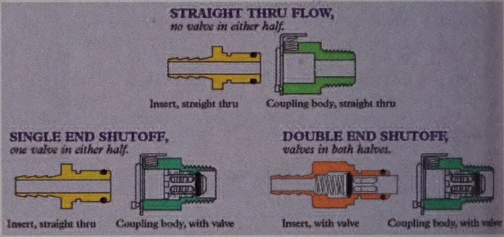
Two-part barbed fittings for one-handed quick disconnect

- Use with flexible tubing
- Fluid flow stops when fitting halves are separated
- Made of polypropylene, with acetal sleeve, stainless-steel springs and EPR seal

15-315-55

Fits Tubing I.D.	Mfr. No.	Cat. No.	Pack of 2	Case of 6 Pk.
¼" (6.4mm)	6177-0250	**15-315-55**	74.55	298.20
⅜" (9.5mm)	6177-0375	**15-315-56**	76.50	306.00

CPC* Quick-Disconnect Couplings



- Flow sizes to ⅜" (9.5mm)
- Easy push-button or twist-off disconnection
- Chemical and corrosion resistant quick-disconnect bodies and inserts compatible with polyurethane, polyethylene, nylon, PVC, silicone and other tubing materials
- In white acetal or almond polypropylene, which can be mixed or matched for a variety of coupling types
- Type 316 stainless-steel metal parts (internal springs, valves or thumb latches)
- Ideal for use in laboratory equipment, medical and surgical instrumentation, water transfer, air systems and other applications
- Audible click is heard when coupling has been fully engaged; push-button or twist-off disconnection
- Complete coupling set requires both a body and an insert (sold separately)
- Inserts are available in straight-through or shut-off valve flow configurations (see Flow Guide for examples of coupling types)

Note: Body and insert flow sizes must match, but tubing I.D. sizes can be different.

Contd. on next page

*Trademark. See Trademark Reference.

CPC* Quick-Disconnect Couplings, Contd.

CPC* Standard-Volume Quick-Disconnect MNPT Pipe-Thread Bodies

⅛" (3.2mm) or ¼" (6.4mm) flow diameter

- Convenient one-handed disconnect
- Leak-resistant O-ring seals and shut-off valves

MNPT pipe-thread body

Connectors with white acetal bodies and valves

- Buna-N seals and Type 316 stainless-steel springs, pin and latch
- Working pressure: vacuum to 120psi (8.3 bar); operating temperature: -40° to +82°C (-40° to +180°F)

Connectors with almond polypropylene bodies and valves

- EPDM seals and Type 316 stainless-steel springs, pin and latch
- Working pressure for ⅛" (3.2mm) flow diameter couplings: vacuum to 120psi (8.3 bar); for ¼" (6.4mm) flow diameter couplings: vacuum to 120psi (8.3 bar)
- Operating temperature: 0° to 71°C (32° to 160°F)
- Can be radiation sterilized

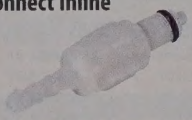
Flow Diameter	MNPT	Cat. No.	Pack of 5
Acetal			
⅛" (3.2mm)	⅛	**05-112-12**	23.31
⅛" (3.2mm)	¼	**05-112-13**	23.31
¼" (6.4mm)	¼	**05-112-22**	25.53
¼" (6.4mm)	⅜	**05-112-23**	25.53
Polypropylene			
⅛" (3.2mm)	⅛	**05-112-29**	29.52
⅛" (3.2mm)	¼	**05-112-30**	31.14

STERILIZATION AND DISINFECTANT METHODS FOR CPC COUPLINGS

Material	Acetal	Polypropylene	EPDM
Disinfectants			
Formalin	Y	Y	Y
Isopropyl Alcohol	Y	Y	Y
Ethyl Alcohol	Y	Y	Y
Ethylene Oxide, EtO	Y	Y	Y
Autoclave (121°C/250°F)	Y	N	Y
E-Beam Radiation (5 Megarads)	N	Y	Y
Gamma Irradiation (5 Megarads)	N	Y	Y
Dry Heat (121°C/250°F)	N	N	Y

CPC* Standard-Volume Quick-Disconnect Inline Hose-Barb Inserts

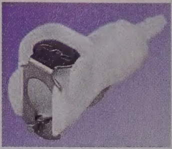
Inline hose-barb inserts with or without shut-off valve



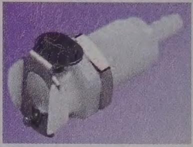
Inline hose-barb insert

		With Straight-Through Flow		With Shut-Off Valve	
Flow Diameter	Tube I.D.	Cat. No.	Each	Cat. No.	Each
Acetal					
⅛" (3.2mm)	⅛" (3.2mm)	**05-112-10**	21.96	**05-112-16**	114.63
⅛" (3.2mm)	¼"(6.4mm)	**05-112-11**	26.12	**05-112-17**	114.63
¼" (6.4mm)	¼" (6.4mm)	**05-112-18**	25.39	**05-112-26**	121.80
¼" (6.4mm)	⅜"(9.5mm)	**05-112-19**	24.43	**05-112-27**	121.80
Polypropylene					
⅛" (3.2mm)	⅛" (3.2mm)	**05-112-28**	42.20	**05-112-33**	136.94
⅛" (3.2mm)	¼" (6.4mm)	----	----	**05-112-34**	155.92
¼" (6.4mm)	¼" (6.4mm)	**05-112-35**	42.20	**05-112-39**	158.50

CPC* Standard-Volume Quick-Disconnect Inline and Panel-Mount Hose-Barb Bodies



Inline hose-barb body



Panel-mount hose-barb body

		Inline Hose-Barb Bodies		Panel-Mount Hose-Barb Bodies	
Flowrate Diameter	Tube I.D.	Cat. No.	Pack of 5	Cat. No.	Pack of 5
Acetal					
⅛" (3.2mm)	⅛" (3.2mm)	**05-112-14**	24.04	**05-122-64†**	32.94
⅛" (3.2mm)	¼" (6.4mm)	**05-112-15**	24.04	**05-112-65†**	33.51
¼" (6.4mm)	¼" (6.4mm)	**05-112-24**	24.92	**05-112-67‡**	48.73
¼" (6.4mm)	⅜" (9.5mm)	**05-112-25**	23.93	**05-122-68‡**	48.73
Polypropylene					
⅛" (3.2mm)	⅛" (3.2mm)	**05-112-31**	38.75	----	----
⅛" (3.2mm)	¼" (6.4mm)	**05-112-32**	40.90	----	----
¼" (6.4mm)	¼" (6.4mm)	**05-112-37**	42.62	----	----
¼" (6.4mm)	⅜" (9.5mm)	**05-112-38**	44.24	----	----

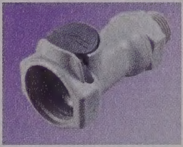
† Requires ½" dia. (12.7mm) opening, panel 0.050 to ½" thick (1.2 to 12.7mm). Includes ⅝" (15.9mm) hex panel nuts.

‡ Requires 11/16" dia. (17.5mm) opening, panel 0.020 to ½" thick (0.5 to 12.7mm). Includes 13/16" (20.6mm) hex panel nuts.

CPC* HFC Series High-Volume Quick-Disconnect Coupling Bodies

⅜" (9.5mm) flow diameter

- High-volume ⅜" (9.5mm) flow couplings permit flow comparable to many nominal ½" couplings
- With shut-off valves
- Chemical-resistant gray polypropylene with 316 stainless-steel springs and leak-resistant EPDM O-rings
- Working pressure: vacuum to 60psi (4.2 bar)
- Operating temperature: 0° to 71°C (32° to 160°F)
- Can be radiation sterilized
- Bodies have MNPT pipe-thread or hose-barb (for inline connection) fittings; with shut-off valves
- Inserts have MNPT pipe-thread, straight or right-angle hose-barb fittings; with or without shut-off valves



MNPT pipe-thread body

Hose-barb body

Type	Flow Diameter	Tube I.D.	Cat. No.	Pack of 10
⅜ MNPT pipe-thread body	⅜" (9.5mm)	⅜" (9.5mm)	**05-122-54**	85.95
½ MNPT pipe-thread body	⅜" (9.5mm)	½" (12.7mm)	**05-112-55**	85.95
⅜ Hose-barb body	⅜" (9.5mm)	⅜" (9.5mm)	**05-122-56**	90.22
½ Hose-barb body	⅜" (9.5mm)	½" (12.7mm)	**05-112-57**	90.22

LOOKING FOR MORE TUBING AND CONNECTORS?

Fisher Scientific's full selection of tubing and tubing connectors can be found on our Web site.

Visit www.fishersci.com and search for Tubing

CPC* Quick-Disconnect Coupling, Contd.

CPC* HFC Series High-Volume Quick-Disconnect Coupling Inserts

MNPT pipe-thread insert

Straight hose-barb insert

Right-angle hose-barb insert

		With Straight-Through Flow		With Shut-Off Valve	
Flow Diameter	Tube I.D.	Cat. No.	Pack of 10	Cat. No.	Pack of 10
3/8 MNPT pipe-thread insert					
⅜" (9.5mm)	⅜" (9.5mm)	**05-112-52**	33.34	**05-112-62**	68.54
1/2 MNPT pipe-thread insert					
⅜" (9.5mm)	½" (12.7mm)	**05-112-53**	33.34	**05-122-63**	68.54
Straight hose-barb insert					
⅜" (9.5mm)	⅜" (9.5mm)	**05-112-50**	31.17	**05-122-58**	67.83
⅜" (9.5mm)	½" (12.7mm)	**05-112-51**	31.17	**05-122-59**	67.83
Right-angle hose-barb insert					
⅜" (9.5mm)	⅜" (9.5mm)	----	----	**05-122-60**	78.19
⅜" (9.5mm)	½" (12.7mm)	----	----	**05-122-61**	78.19

Scienceware* Reducing Quick-Disconnects

Each consists of two tight-fitting, tapered connectors

Interchangeable male/female polyethylene connections to make reducing connections.

15-315-6B

Fits Tubing I.D.	Mfr. No.	Cat. No.	Pack of 12	Case of 6 Pk
⅛ to ¼" (3.2 to 6.4mm)	19727 0000	**15-315-6A**	26.42	135.5
¼ to ⅜" (6.4 to 9.5mm)	19728 0000	**15-315-6B**	26.42	135.5
⅜ to ½" (9.5 to 12.7mm)	19729 0000	**15-315-6C**	26.42	135.5

ULTRASONIC CLEANERS

Fisher Scientific* Digital Control Ultrasonic Cleaners

Digital control for consistent batch-to-batch cleaning

Ideal for use in laboratories, medical facilities, and manufacturing operations to remove contaminants, dirt and grease from glassware, tools or equipment parts.

- Power switch plus convenient touch controls
- SELECT OPTION lets you read or set solution temperature, set timers for sonics and degassing, turn heat on and off; lights indicate which mode you are using
- SET DISPLAY has + and - tabs to adjust temperature and timer settings
- CLEAR DISPLAY button lets you reset display
- Six digital models from 3 to 20 qt. (2.8 to 18.9L)
- Microprocessor-controlled timer with cycle times to 99 minutes
- Thermostat with LED readout maintains optimum cleaning temperature of 69°C (156°F)
- Automatically reset to last setting for consistent batch-to-batch cleaning
- Full-power instantly, no warmup
- Corrosion-resistant, Type 304 stainless-steel tank with rolled edges to minimize leaks
- Stainless-steel cover
- Manufactured using ISO 9001:2000-certified processes

15-335-100, 15-335-1
15-335-1

ORDERING INFORMATION:
Pans, covers, and beaker covers with rings available separately (see Accessories). Model sizes 6 qt. and larger include drains with valves; drain spout adds 3½" to listed widths in table

CERTIFICATIONS:
UL listed. CSA approved.

Model	Capacity	Tank Interior D × W × H	Exterior L × W × H	Electrical Requirements	Cat. No.	Eac
FS20D	3 qt. (2.8L)	5½ × 6 × 6" (14 × 15.2 × 15.2cm)	8 × 9 × 11¼" (20.3 × 22.9 × 28.6cm)	120V 50/60Hz, 1A, 143w	**15-335-100**	424.7
FS30D	4 qt. (3.8L)	5½ × 9½ × 6" (14 × 24.1 × 15.2cm)	8½ × 10× 11¼" (21.6 × 25.4 × 28.6cm)	120V 50/60Hz, 2A, 239w	**15-335-101**	558.6
FS60D	6 qt. (5.7L)	6 × 11¾ × 6" (15.2 × 29.8 × 15.2cm)	8½ × 12¼ × 11¼" (21.6 × 31.1 × 28.6cm)	120V 50/60Hz, 3A, 335w	**15-335-102**	862.6
FS110D	10 qt. (9.5L)	9½ × 11¾ × 6" (24.1 × 29.8 × 15.2cm)	12¼ × 12 × 11¼" (31.1 × 30.5 × 28.6cm)	120V 50/60Hz, 4A, 469w	**15-335-103**	1105.8
FS140D	13 qt. (12.3L)	11¾ × 9¼ × 8" (29.8 × 23.5 × 20.3cm)	12¼ × 12¼ × 12¾" (31.1 × 31.1 × 32.4cm)	120V 50/60Hz, 4A, 510w	**15-335-104**	1514.0
FS220D	20 qt. (18.9L)	11½ × 19¾ × 6" (29.2 × 50.2 × 15.2cm)	14¾ × 20½ × 11¼" (37.5 × 52.1 × 28.6cm)	120V 50/60Hz, 8A, 881w	**15-335-105**	1912.9

*Trademark. See Trademark Reference.

Prices subject to change.

Fisher Scientific* Ultrasonic Cleaners

Full power instantly—without warmup

Ideal for use in laboratories, medical facilities, and manufacturing operations to remove contaminants, dirt and grease from glassware, tools or equipment parts. Choose from six general-purpose models or compact Model FS6, all manufactured using ISO 9001:2000-certified processes.

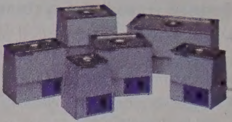
Models FS20, FS30, FS60, FS110, FS140 and FS220

- Deliver uniform ultrasonic activity for consistent cleaning
- Six sizes, from 3 to 20 qt. (2.8 to 18.9L), with or without built-in heater
- Full-power instantly, no warmup
- Corrosion-resistant, Type 304 stainless-steel tank with rolled edges to minimize leaks
- Stainless-steel cover
- Built-in, 60-minute countdown timer has continuous-run mode
- Heated models with thermostat that maintains an optimum cleaning temperature of 60°C (140°F)
- Pans, covers, and beaker covers with rings available separately (see Accessories)
- Model sizes 6 qt. and larger include drains with valves

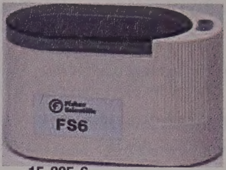
Model FS6

- Compact, portable nonheating unit for cleaning small parts and instruments
- 18 oz. (0.5L) stainless-steel tank and impact-resistant plastic housing
- Five-minute timer with automatic shutoff
- Cover and parts basket included

CERTIFICATIONS:
UL listed. CSA approved.



Back row (L to R): 15-335-140, -220. Middle: 15-335-110, -60, -30. Front: 15-335-20.



15-335-6

Capacity	Tank Interior D × W × H[†]	Exterior L × W × H	Model	Electrical Requirements	Cat. No.	Each
Without Heater						
18 oz. (0.5L)	3½ × 6½ × 2¼" (8.9 × 16.5 × 5.7cm)	4½ × 8¾ × 5" (11.4 × 22.2 × 12.7cm)	FS6	120V 50/60Hz, 0.4A, 40w	**15-335-6**	252.21
3 qt. (2.8L)	5½ × 6 × 6" (14 × 15.2 × 15.2cm)	8 × 9 × 11¼" (20.3 × 22.9 × 28.6cm)	FS20	120V 50/60Hz, 1A, 80w	**15-335-20**	411.65
4 qt. (3.8L)	5½ × 9½ × 6" (14 × 24.1 × 15.2cm)	8½ × 10 × 11¼" (21.6 × 25.4 × 28.6cm)	FS30	120V 50/60Hz, 1A, 130w	**15-335-30**	556.67
6 qt. (5.7L)	6 × 11¾ × 6" (15.2 × 29.8 × 15.2cm)	8½ × 12¼ × 11¼" (21.6 × 31.1 × 28.6cm)	FS60	120V 50/60Hz, 1A, 150w	**15-335-60**	826.47
10 qt. (9.5L)	9½ × 11¾ × 6" (24.1 × 29.8 × 15.2cm)	12¼ × 12 × 11¼" (31.1 × 30.5 × 28.6cm)	FS110	120V 50/60Hz, 2A, 185w	**15-335-110**	1138.93
13 qt. (12.3L)	11¾ × 9¼ × 8" (29.8 × 23.5 × 20.3cm)	12¼ × 12¼ × 12¾" (31.1 × 31.1 × 32.4cm)	FS140	120V 50/60Hz, 2A, 210w	**15-335-140**	1149.60
20 qt. (18.9L)	11½ × 19¾ × 6" (29.2 × 50.2 × 15.2cm)	14¾ × 20½ × 11¼" (37.5 × 52.1 × 28.6cm)	FS220	120V 50/60Hz, 3A, 320w	**15-335-220**	2049.66
With Heater						
3 qt. (2.8L)	5½ × 6 × 6" (14 × 15.2 × 15.2cm)	8 × 9 × 11¼" (20.3 × 22.9 × 28.6cm)	FS20H	120V 50/60Hz, 1A, 143w	**15-335-22**	456.42
4 qt. (3.8L)	5½ × 9½ × 6" (14 × 24.1 × 15.2cm)	8½ × 10× 11¼" (21.6 × 25.4 × 28.6cm)	FS30H	120V 50/60Hz, 2A, 239w	**15-335-32**	601.46
6 qt. (5.7L)	6 × 11¾ × 6" (15.2 × 29.8 × 15.2cm)	8½ × 12¼ × 11¼" (21.6 × 31.1 × 28.6cm)	FS60H	120V 50/60Hz, 3A, 335w	**15-335-62**	882.99
10 qt. (9.5L)	9½ × 11¾ × 6" (24.1 × 29.8 × 15.2cm)	12¼ × 12 × 11¼" (31.1 × 30.5 × 28.6cm)	FS110H	120V 50/60Hz, 4A, 469w	**15-335-112**	1193.39
13 qt. (12.3L)	11¾ × 9¼ × 8" (29.8 × 23.5 × 20.3cm)	12¼ × 12¼ × 12¾" (31.1 × 31.1 × 32.4cm)	FS140H	120V 50/60Hz, 4A, 510w	**15-335-142**	1263.71
20 qt. (18.9L)	11½ × 19¾ × 6" (29.2 × 50.2 × 15.2cm)	14¾ × 20½ × 11¼" (37.5 × 52.1 × 28.6cm)	FS220H	120V 50/60Hz, 8A, 881w	**15-335-222**	2184.34

[†] Drain spout adds 3½" to listed widths in table.

ACCESSORIES

Perforated Pans

For Cleaner Capacity	For Model(s)	Cat. No.	Each
18 oz. (0.5L)	FS6	**15-335-6A**	47.78
3 qt. (2.8L)	FS20, FS20H	**15-335-20A**	65.00
4 qt. (3.8L)	FS30, FS30H	**15-335-30A**	85.00
6 qt. (5.7L)	FS60, FS60H	**15-335-60A**	101.00
10 qt. (9.5L)	FS110, FS110H	**15-335-110A**	130.15
20 qt. (18.9L)	FS220, FS220H	**15-335-220A**	218.58

Beaker Covers

Require beaker rings with beakers 600mL or smaller.

For Cleaner Capacity	No./Size of Beakers	Cat. No.	Each
3 qt. (2.8L)	1/600mL	**15-335-20B**	35.81
4 qt. (3.8L)	2/600mL	**15-335-30B**	36.95
6 qt. (5.7L)	3/600mL	**15-335-60B**	47.62

Beaker Rings

- For Models FS20, FS30 and FS60
- Allows placement of smaller beakers in beaker covers

For Beaker Size	Cat. No.	Each
250mL	**15-335-50**	5.04
400/600mL	**15-335-51**	5.25

Branson* Ultrasonic Cleaners

Rugged transducer systems for effective cleaning of dirt, grease, and wax

- Ideal for safely removing blood, proteins, and contaminants from glassware, as well as dirt, grease, waxes, and oils from motors, gears, and parts
- Choose from heated digital models or mechanical models with or without heating
- All models provide deep cleaning action that removes stubborn contaminants, even from blind holes and internal surfaces
- Built-in sweep frequency ensures uniform cleaning activity throughout the bath
- Manufactured using ISO 9001:2000-certified processes
- **Digital models** automatically reset to last setting for consistent batch-to-batch cleaning and come with microprocessor-controlled timer, cycle time to 99 minutes and thermostat with LED readout. Heat to 69°C (156°F).
- **Mechanical models** have rugged mechanical timers, adjustable to 60 minutes, plus a HOLD feature for continuous cleaning. Mechanical heated models heat to 69°C (156°F).

Clockwise, from top left: 15-337-22F, 15-337-22M, 15-337-22A, 15-337-22J, 15-337-20

ORDERING INFORMATION:
115/120V, 50/60Hz.

CERTIFICATIONS:
UL listed. CSA approved.

Capacity	Interior L × W × H	Exterior L × W × H	Electrical Requirements	Cat. No.	Each
Digital Control with Heater					
½ gal. (1.9L)	5½ × 6 × 4" (14 × 15.2 × 10.1cm)	12 × 10 × 11½" (30.5 × 25.4 × 29.2cm)	1.4A, 160w	**15-337-22C**	450.00
¾ gal. (2.8L)	9½ × 5½ × 4" (24.1 × 14 × 10.2cm)	12 × 13½ × 11½" (30.5 × 34.3 × 29.2cm)	2.0A, 230w	**15-337-22E**	590.00
1 gal. (5.7L)	11½ × 6 × 6" (15.2 × 29.2 × 15.2cm)	12 × 16 × 14½" (30.5 × 40.6 × 36.8cm)	2.9A, 335w	**15-337-22H**	910.00
2½ gal. (9.5L)	11½ × 9½ × 6" (24.1 × 29.2 × 15.2cm)	15½ × 16 × 14½" (39.4 × 40.6 × 36.8cm)	4.2A, 495w	**15-337-22L**	1175.00
5½ gal. (20.8L)	19½ × 11½ × 6" (29.2 × 49.5 × 15.2cm)	18 × 24 × 14½" (45.7 × 60.9 × 36.8cm)	7.5A, 940w	**15-337-22P**	2025.00
Mechanical Control with Heater					
½ gal. (1.9L)	5½ × 6 × 4" (14 × 15.2 × 10.1cm)	12 × 10 × 11½" (30.5 × 25.4 × 29.2cm)	1.3A, 155w	**15-337-22B**	369.45
¾ gal. (2.8L)	9½ × 5½ × 4" (24.1 × 14 × 10.2cm)	12 × 13½ × 11½" (30.5 × 34.3 × 29.2cm)	2.0A, 230w	**15-337-22D**	522.67
1½ gal. (5.7L)	11½ × 6 × 6" (15.2 × 29.2 × 15.2cm)	12 × 16 × 14½" (30.5 × 40.6 × 36.8cm)	2.8A, 330w	**15-337-22G**	810.00
2½ gal. (9.5L)	11½ × 9½ × 6" (24.1 × 29.2 × 15.2cm)	15½ × 16 × 14½" (39.4 × 40.6 × 36.8cm)	4.2A, 495w	**15-337-22K**	1066.72
5½ gal. (20.8L)	11½ × 19½ × 6" (29.2 × 49.5 × 15.2cm)	18 × 24 × 14½" (45.7 × 60.9 × 36.8cm)	7.5A, 935w	**15-337-22N**	1838.44
Mechanical Control without Heater					
½ gal. (1.9L)	5½ × 6 × 4" (14 × 15.2 × 10.1cm)	12 × 10 × 11½" (30.5 × 25.4 × 29.2cm)	0.8A, 90w	**15-337-22A**	335.00
¾ gal. (2.8L)	9½ × 5½ × 4" (24.1 × 14 × 10.2cm)	12 × 13½ × 11½" (30.5 × 34.3 × 29.2cm)	1.1A, 130w	**15-337-20**	469.21
1½ gal. (5.7L)	11½ × 6 × 6" (15.2 × 29.2 × 15.2cm)	12 × 16 × 14½" (30.5 × 40.6 × 36.8cm)	1.1A, 130w	**15-337-22F**	709.72
2½ gal. (9.5L)	11½ × 9½ × 6" (24.1 × 29.2 × 15.2cm)	15½ × 16 × 14½" (39.4 × 40.6 × 36.8cm)	1.5A, 180w	**15-337-22J**	999.39
5½ gal. (20.8L)	19½ × 11½ × 6" (29.2 × 49.5 × 15.2cm)	18 × 24 × 14½" (45.7 × 60.9 × 36.8cm)	2.7A, 320w	**15-337-22M**	1605.42

ACCESSORIES

Branson* Ultrasonic Pipet Cleaners

Easily remove lipids, blood, and proteins from pipet capillary bores

- Similar to mechanical-controlled cleaners, but for cleaning pipets and large or odd-size parts

Pipet cleaning unit 15-336-45.

ORDERING INFORMATION:
Tank volume, 2¾ gal. (10.5L). Tank dimensions, 5¾L × 19½W × 6"D (14.6 × 49.5 × 15.2cm). Overall dimensions, 6¼L × 20¼W × 10½"H (15.9 × 51.4 × 26.7cm).

NOTE:
Basket and cover shown in photo are sold separately.

Description	Cat. No.	Each
With Heater	**15-336-46**	1250.00
Without Heater	**15-336-45**	1170.39

LOOKING FOR MORE BRANSON* ULTRASONIC CLEANERS?

Visit www.fishersci.com and search for Branson Ultrasonic Cleaners

Ultrasonic Cleaning Solutions

Safely clean metals including stainless steel, tin, and copper

- Safely and effectively remove soils, rust, and oxides from a variety of materials
- Solutions contain no phosphates and are biodegradable
- Dilute with water to the recommended working concentration listed on ordering table

IS
Formulated Cleaning Concentrate
BC
Formulated Cleaning Concentrate

Left to right 23-260-865, 15-345-114, 15-335-45

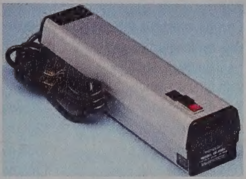
Uses	Working Concentration, pH	Container Size	Cat. No.	Case of
General-Purpose Cleaning Solution				
Soils, fingerprints, tissue, light oils	10 to 12%, 11 to 12pH	1 qt. (946mL)	**23-260-865**	12/120.00
Soils, fingerprints, tissue, light oils	10 to 12%, 11 to 12pH	1 gal. (3.8L)	**23-260-866**	4/110.00
Industrial Cleaning Solution				
Cutting oils, metal carbon	8 to 10%, 11 to 12pH	1 qt. (946mL)	**15-345-113**	12/132.00
Cutting oils, metal carbon	8 to 10%, 11 to 12pH	5 gal. (18.9L)	**15-345-114**	1/134.20
Oxide Remover				
Rust, metal oxides	6 to 7%, 3 to 4pH	1 gal. (3.8L)	**15-335-46**	4/135.00
Buffing Compound Remover				
Buffing compound, rouge, tripoli	6 to 7%, 6 to 7pH	1 gal. (3.8L)	**15-335-45**	4/129.86
Buffing compound, rouge, tripoli	6 to 7%, 6 to 7pH	5 gal. (18.9L)	**15-345-117**	1/132.14

ULTRAVIOLET LAMPS

FisherBiotech* UV Lamps

Use with viewing cabinets or as handheld lamps

- With aluminum reflector, UV-transmitting filter, anodized aluminum housing
- Available with one 365nm and one 254nm tube or two 312nm tubes



FB-UVM-80

ORDERING INFORMATION:
For 115V 60Hz

CERTIFICATIONS:
UL listed

15w Lamps

Each 15w tube has rated life of 7500 hours

- For use as handheld lamps or with FisherBiotech UV Viewing Cabinets FB-PDS-150 and -151 (order separately)
- Assembled lamps measure 18¾L × 4½W × 3½"H (47.6 × 11.4 × 8.9cm)

With Tubes	Intensity†	Cat. No.	Each
254/365nm	550/490µw/cm²	**FB-UVLS-150**	879.29
Two 312nm	1150µw/cm²	**FB-UVM-150**	871.94

† Relative intensity at 12" (30cm).

8w Lamps

Each 8w tube has rated life of 6000 hours

- Can be used as handheld lamps or with FisherBiotech UV Viewing Cabinets FB-PDS-80 and -81 (order separately)
- Assembled lamps measure 13¼L × 3¼W × 2½"H (33.7 × 8.3 × 6.4cm)

With Tubes	Intensity†	Cat. No.	Each
254/365nm	470/500µw/cm²	**FB-UVLS-80**	324.82
Two 312nm	620µw/cm²	**FB-UVM-80**	360.35

† Relative intensity at 6" (15cm).

Spectroline* Mini UV Shortwave/Longwave Lamps

Battery-operated 4w lamp with compact design

- Overall dimensions: 6¼L × 2W × 1"H (15.9 × 5.1 × 2.5cm)
- Includes carrying strap

11-992-140 Series

REQUIRED ACCESSORIES:
Four "AA" batteries

Wavelength	Mfr. No.	Cat. No.	Each
254nm (UV-C)	UV-4BSW	**11-992-146**	52.28
365nm (UV-A)	UV-4B	**11-992-145**	35.74
254/365nm (UV-C, UV-A)	UV-4BNF	**11-992-147**	78.51

Spectroline* Germicidal UV Sterilizing Lamps

Unfiltered 254nm shortwave (UV-C) lamps provide high-intensity, wide area UV sterilization coverage

- For use wherever disease may be transmitted by air currents
- Choose from 15w single-tube or 15w dual-tube models
- All units have enameled sheet metal or anodized aluminum housing with mounting brackets

11-992-103

ORDERING INFORMATION:
For 115V 60Hz

CERTIFICATIONS:
UL listed

Model	Dimensions (L × W × H)	Intensity†	Mfr. No.	Cat. No.	Each
Single-tube					
15w	18¾ × 4½ × 3½" (48 × 11 × 9cm)	820µw/cm²	X-15G	**11-992-103**	266.99
Dual-tube					
15w	18¾ × 4½ × 3½" (48 × 11 × 9cm)	1550µw/cm²	XX-15G	**11-992-150**	287.14

† Peak 254nm at 10" (25cm).

Spectroline* High-Intensity Longwave UV Lamps

Precision-engineered lamps ideal for inspection applications

- Ergonomically designed for easy handling
- Impact-resistant polymer housing
- Bulbs have a rated life of 5000 hours; unique Bulbsaver* feature protects and extends bulb life
- UV-absorbing spectacles included with lamp

SB-100P Model

- Comes with either a 100w spot or flood bulb
- Lamp head easily lifts from the handle of the transformer base for comfortable, handheld use
- For bench use, lamp can be conveniently rotated 360° when mounted on base handle

BIB-150P Model

- Features a 150w Built-in-Ballast* bulb that requires no heavy external transformer
- Equipped with a vinyl-coated heat guard/stand to protect against burns and act as a convenient lamp stand

11-992-135

INCLUDES:

SB-100P Model has two 8' long (2.4m) cords. BIB-150P Model has 8' long (2.4m) power cord.

ORDERING INFORMATION:

For 115V 50/60Hz

CERTIFICATIONS:

UL listed

Model	Intensity†	Mfr. No.	Cat. No.	Each
SB-100P (spot)	4800µw/cm²	SB-100P	**11-992-135**	502.12
SB-100P (flood)	1200µw/cm²	SB-100P(FLOOD)	**11-982-109**	507.45
BIB-150P (spot)	4500µw/cm²	BIB-150P	**11-992-101**	381.37

† Relative intensity at 15" (38cm).

NEED MORE LIGHT?

Fisher Scientific has many types of lights from which to choose—lights for inspection, general task, and classroom use, as well as light meters and even more UV lamps not listed here

Visit www.fishersci.com and search for Lamps, Lights, Lighting, Light Meters

Spectroline* E-Series Handheld Lamps

A full range of models in this lamp series

Select the best combination of UV wavelength, intensity, size and wattage for specific applications, including chromatography, gel electrophoresis, germicidal, UV irradiation, and UV curing.

- Specular aluminum reflector ensures optimum UV irradiance
- Aluminum housings provide comfortable, long-lasting service
- All short- and medium-wave models feature Longlife* filter glass for higher initial UV transmission and maximum resistance to solarizations
- Outfitted with convenient, removable carrying handle for use with lamp stand
- Available in 120V 60Hz, 230V 50Hz, or 100V 50-60Hz

11-99 and 11-98 Series

CERTIFICATIONS:

UL listed

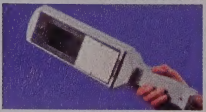
Model	Intensity†	Mfr. No.	Cat. No.	Each
UV-A				
One 4w longwave tube	800µw/cm²	EA-140	**11-993-2**	107.36
One 4w longwave tube	850µw/cm²	EN-140	**11-992-123**	107.36
One 4w longwave tube with filter assembly	555µw/cm²	EN-140L	**11-982-32**	120.66
Two 4w longwave tubes	620µw/cm²	EA-240	**11-992-42**	145.20
One 6w longwave tube	1280µw/cm²	EA-160	**11-982-30**	117.59
One 8w longwave tube	1850µw/cm²	EN-180	**11-992-124**	131.90
One 8W tube with filter assembly	1165µw/cm²	EN-180L	**11-992-125**	162.58
Two 8w longwave tubes with filter assembly	1090µw/cm²	EN-280L	**11-992-126**	219.84
One 6w longwave tube with filter assembly	900µw/cm²	EN-160L	**11-992-21**	138.04
UV-C				
One 4w shortwave tube with Longlife filter assembly	660µw/cm²	EF-140C	**11-992-20**	176.89
One 6w shortwave tube with Longlife filter assembly	1010µw/cm²	EF-160C	**11-982-31**	240.29
Germicidal UV-C				
One 4w germicidal shortwave tube	1370µw/cm²	EF-140	**11-992-120**	117.59
One 8w germicidal shortwave tube	1930µw/cm²	EF-180	**11-992-121**	133.95
UV-A/UV-B combination				
One 6w longwave tube, one 6w medium wave tube with Longlife filter assembly	350/330µw/cm²	ENB-260C	**11-992-127**	266.99
UV-B/UV-C combination				
One 6w medium wave tube, one 6w shortwave tube with Longlife filter assembly	330/390µw/cm²	EBF-260C	**11-992-151**	277.06
UV-A/UV-C combination				
One 4w longwave tube, one 4w shortwave tube with Longlife filter assembly	300/310µw/cm²	ENF-240C	**11-992-23**	213.70
One 6w longwave tube, one 6w shortwave tube with Longlife filter assembly	350/390µw/cm²	ENF-260C	**11-992-32**	266.99

† Relative intensity at 6" (15.2cm).

UVP* Compact and Handheld UV Lamps

Essential multipurpose UV lamps for laboratory use

UVP95 0016 14


UVP95 0004 09

Applications include bacterial identification, specimen staining, titration processes, thin layer chromatography, sterilization and visualization of DNA and RNA, and fluorescence of other materials.

- 4w compact model dimensions: 7 13⁄16L × 2 13⁄16W × 2⅛"H (19.8 × 7.1 × 5.4cm)
- 6w handheld model dimensions: 14⅞L × 3¼W × 2½"H (37.8 × 8.3 × 6.4cm)

ORDERING INFORMATION:
For 115V 60Hz or 230V 50Hz.
Replacement tubes available for all models.

CERTIFICATIONS:
ETL/ETLc listed (115V models).
CE marked (230V models).

Wavelength	Intensity†	Electrical Reqts.	Cat. No.	Each
4w Compact Models				
365nm	1000µw/cm²	115V 60Hz	**UVP95 0018 02**	112.49
365nm	100µw/cm²	230V 50Hz	**UVP95 0018 03**	113.12
254/365nm	760/720 µw/cm²	115V 60Hz	**UVP95 0021 12**	228.39
254/365nm	720/460µw/cm²	230V 50Hz	**UVP95 0021 10**	231.33
254/365nm	650/500µw/cm²	115V 60Hz	**UVP95 0017 09**	184.01
254/365nm	650/500µw/cm²	230V 50Hz	**UVP95 0017 10**	180.95
254nm	1400µw/cm²	115V 60Hz	**UVP95 0016 14**	183.33
254nm	1120µw/cm²	230V 50Hz	**UVP95 0016 15**	181.62
6w Handheld Models				
365nm	1350µw/cm²	230V 50Hz	**UVP95 0006 03**	146.05
365nm	1000µw/cm²	115V 60Hz	**UVP95 0006 02**	145.52
302nm	1500µw/cm²	115V 60Hz	**UVP95 0104 01**	282.69
302nm	1500µw/cm²	230V 50Hz	**UVP95 0104 02**	278.51
254/365nm	1290/950µw/cm²	115V 60Hz	**UVP95 0005 05**	225.95
254/365nm	1290/950µw/cm²	230V 50Hz	**UVP95 0005 06**	227.61
254/365nm	1350/1200µw/cm²	115V 60Hz	**UVP95 0007 05**	293.66
254/365nm	1350/1200µw/cm²	230V 50Hz	**UVP95 0007 06**	293.66
254nm	2250µw/cm²	115V 60Hz	**UVP95 0004 09**	254.03
254nm	2250µw/cm²	230V 50Hz	**UVP95 0004 10**	253.53

† Relative intensity at 3" (7.6cm)

VIALS

AUTOSAMPLER—CRIMP TOP

*Fisherbrand** Crimp-Top Vials

03-391-2

- Clear or amber
- Borosilicate glass
- 12 O.D. × 32mm long
- Convenience kit includes 100 vials and 100 seals with septa

Standard Opening

Description	Cat. No.	Pack of 100
Vials		
Clear	**03-391-2**	13.43
Amber	**03-391-38**	15.99
Convenience Kit		
Clear Vials w/Seals and PTFE/Red Rubber Septa	**03-391-4**	23.58

Wide Opening

03-391-6

- I-D* vial has write-on patch; graduated in 0.5mL increments
- Silver 11mm aluminum crimp-top seals offer a variety of septa material options

Description	Cat. No.	Pack of 100
Vials		
Clear	**03-391-5**	13.52
Amber I-D	**03-391-6**	17.00
11mm Aluminum Seals		
PTFE/Red Rubber Septa	**03-391-3**	9.26
PTFE/Silicone/PTFE Septa	**03-391-34**	29.15
PTFE/Silicone Septa	**03-391-33**	23.59
Convenience Kit		
Clear Vials w/Seals and PTFE/Red Rubber Septa	**03-391-7**	23.96

*Fisherbrand** 2mL Wide-Opening Snap Cap Glass Vials

NEW

Easier to fill and provide larger target area for autosampler needle

03-391-39 and -40

- Made from 33 expansion borosilicate clear glass (Type 1, Class A) or 51A amber glass
- Fit most autosamplers
- Vials with marking area are graduated at 0.5, 1.0 and 1.5mL
- Without caps

REQUIRED ACCESSORIES:
Snap caps (sold separately; see 03-391-42 and 03-391-43)

03-391-41

Description	Capacity	Cat. No.	Pack of 100
Clear, plain	1.8mL	**03-391-39**	15.75
Clear, with marking area	1.8mL	**03-391-40**	17.44
Amber, with marking area	1.8mL	**03-391-41**	18.28

ACCESSORIES

*Fisherbrand** Pre-assembled Snap Caps with Septa

Easy to apply and remove eliminating need for crimping or decapping tools

03-391-42

- For use with 2mL wide-opening snap cap glass vials
- PTFE/silicone septa
- 12mm I.D.
- 03-391-43 includes pre-slit septa

Description	Cat. No.	Pack of 100
With solid septa	**03-391-42**	21.61
With pre-slit septa	**03-391-43**	34.16

National Scientific Aluminum Crimp Seals with Prefitted Septa

For 12 O.D. x 32mm long vials

- Anodized aluminum seals fit all 11mm crimp top vials
- Seal 2000* material is specially formulated for improved background performance over PTFE/Red Rubber
- Viton* septa perform well with ECD detectors and are resistant to many aggressive solvents

06-406-19C, 06-406-19T, 06-406-19D, 03-378-343

06-406-19 Serie

Seal Color	Septum Material	Features	Mfr. No.	Cat. No.	Pack of 100	Case of
Silver	Clear PTFE/Red Rubber	Standard GC septum	C4011-1AP	**03-375-24**	10.81	----
Silver	Clear PTFE/Red Rubber	Standard GC septum	C4011-1A	**06-406-19B**	----	1000/99.46
Blue	Clear PTFE/Red Rubber	Standard GC septum	C4011-98B	**06-406-19H**	16.68	10/151.22
Red	Clear PTFE/Red Rubber	Standard GC septum	C4011-98R	**06-406-19K**	16.53	10/152.04
Green	Clear PTFE/Red Rubber	Standard GC septum	C4011-98G	**06-406-19J**	16.63	10/151.98
Yellow	Clear PTFE/Red Rubber	Standard GC septum	C4011-98Y	**06-406-19L**	16.63	10/151.98
Silver	Virgin PTFE	High Temperature, Not resealable	C4011-6A	**03-397-24**	----	1000/92.62
Silver	Polypropylene	For Corrosive Solvents	C4011-3A	**06-406-19T**	----	1000/188.55
Silver	Red PTFE/White Silicone	High Purity Septum	C4011-4A	**06-406-19D**	30.71	10/255.61
Blue	Red PTFE/White Silicone	High Purity Septum	C4011-4B	**03-376-408**	27.90	----
Red	Red PTFE/White Silicone	High Purity Septum	C4011-4R	**03-376-410**	27.90	----
Green	Red PTFE/White Silicone	High Purity Septum	C4011-4G	**03-376-409**	27.90	----
Yellow	Red PTFE/White Silicone	High Purity Septum	C4011-4Y	**03-376-411**	27.90	----
Silver	Red PTFE/White Silicone/Red PTFE	For aggressive solvents	C4011-2A	**06-406-19C**	36.38	10/330.73
Silver	Black Viton Elastomer	ECD, High chemical resistance	C4011-5A	**03-378-343**	44.84	10/407.60
Silver	Seal 2000	High Purity GC septum	C4011-7A	**03-377-91**	19.21	10/174.68
Blue	Seal 2000	High Purity GC septum	C4011-7B	**03-378-345**	17.24	10/156.76
Green	Seal 2000	High Purity GC septum	C4011-7G	**03-378-346**	16.74	10/152.21
Red	Seal 2000	High Purity GC septum	C4011-7R	**03-378-344**	16.76	10/152.32
Yellow	Seal 2000	High Purity GC septum	C4011-7Y	**03-378-348**	18.09	10/164.48
Silver, Blue, Green, Red, Yellow	Seal 2000	Kombo Kit; 200 of each color	C4011-7K	**03-378-347**	----	1000/171.90
Silver	Gray Chlorobutyl	Resealable, Intermediate Purity	C4011-37	**03-378-382**	----	1000/361.42

National Scientific Crimp-Top Vials

- 12 × 32mm
- Narrow neck vial fits many older GC autosamplers
- Borosilicate clear glass Type 1, Class A or 51A amber glass
- Uniformly flat bottom for security with inserts
- I-D* vials feature write-on patch with graduations at 0.5, 1.0 and 1.5mL
- Glastic* vial has a glass insert fixed inside of a plastic vial

03-377-999, 03-378-342

03-375-9D

Description	Max. Fill Volume	Mfr. No.	Cat. No.	Pack of 100	Case of
2mL Clear Glass	1.8mL	C4012-1	**06-406-19E**	15.14	20 Pk./294.49
2mL Clear Glass I-D	1.8mL	C4012-1W	**03-377-999**	18.45	20 Pk./350.32
2mL Amber Glass	1.8mL	C4012-2	**06-406-19M**	19.90	20 Pk./365.61
2mL Amber Glass I-D	1.8mL	C4012-2W	**03-378-342**	18.89	20 Pk./352.39
150µL Clear Solid Glass Microvial	150µL	C4012-10	**03-375-9A**	----	12/68.17
Glastic Glass Insert/TPX Vial	150µL	C4012-15	**03-375-9D**	206.72	----

National Scientific Standard Opening Crimp-Top Vial Kits

2mL, 12 × 32mm, Crimp-Top Vial Bulk Kits

- Include 2mL vials and separately packed assembled aluminum seals with PTFE/Red Rubber septa

03-375-10A

Description	Mfr. No.	Cat. No.	Pack of 500	Case of 100
Clear Glass	C4012-88	**03-375-10A**	146.08	281.5
Amber Glass	C4012-88A	**03-375-10B**	290.23	---

LOOKING FOR CRIMPERS OR DECRIMPERS?

National Scientific crimpers and decrimpers for seals from 8 to 32mm seals are available online.

Visit www.fishersci.com and search for Crimpers or Decrimpers

*Trademark. See Trademark Reference.

Prices subject to change.

National Scientific Limited Volume Wide Opening Plastic Crimp Top Vials

- Polypropylene vials are an economical alternative to glass for some applications
- Precision formed tips are designed to aid sample recovery
- Compatible with aluminum seals or Snap-It* snap cap closures

03-377-299

Description	Mfr. No.	Cat. No.	Pack of 100	Case of 1000
450µL Virgin Polypropylene MicroVial	C4011-13	**03-377-299**	18.09	155.56
600µL MicroVials	C4011-16	**03-376-471**	17.83	----
800mL Virgin Polypropylene MicroVial	C4011-11	**22-045618**	19.38	177.94
850mL Virgin Polypropylene AP-2000 MaxVial	C4011-15	**03-397-61**	----	242.86
1mL Virgin Polypropylene Flat Bottom Vial	C4011-14	**03-375-3N**	19.38	176.78
1mL TPX High Recovery Vial	C4011-24	**03-375-9C**	----	344.09

National Scientific Target* LoVial* Crimp Top Vials—Wide Opening 2mL, 12 × 32mm

- Wide opening vial is easy to fill
- Fit most autosamplers that accommodate the 12 × 32mm vial format
- Borosilicate clear glass Type 1, Class A or 51A amber glass
- Uniformly flat bottom for security with inserts
- I-D* vials feature write-on patch with graduations
- Target Colorband* crimp top vials feature color-coded graduations and patch
- Vials with an 11mm crimp finish require aluminum seal closures
- Crimp/snap vials can be used with either 11mm aluminum seals or Snap-It* Snap Caps

03-375-3JJ, 03-375-3KK, 03-375-3LL, 03-375-3MM

03-375-3 Series

03-397-15

Maximum Fill Volume	Description	Mfr. No.	Cat. No.	Pack of	Case of 20 Pk.
Target LoVial 2mL Vials					
1.8mL	Target LoVial, 2mL Clear Glass Vial	C4011-1	**03-375-3CC**	100/15.35	278.31
1.8mL	Target LoVial, 2mL Clear Glass I-D Vial	C4011-1W	**03-375-3R**	100/16.44	320.83
1.8mL	Target LoVial, 2mL Amber Glass I-D Vial	C4011-2W	**03-375-3S**	100/20.72	383.21
1.8mL	Target Colorband 2mL Clear Glass Vial w/Blue Patch	C4011-1B	**03-375-3JJ**	100/18.51	338.36
1.8mL	Target Colorband 2mL Clear Glass Vial w/Green Patch	C4011-1G	**03-375-3KK**	100/18.51	338.36
1.8mL	Target Colorband 2mL Clear Glass Vial w/Red Patch	C4011-1R	**03-375-3LL**	100/18.35	338.52
1.8mL	Target Colorband 2mL Clear Glass Vial w/Yellow Patch	C4011-1Y	**03-375-3MM**	100/18.61	338.27
Microsampling Vial for Use with 11mm Aluminum Crimp Seals					
250µL	MacroVial* 250µL Fused Insert Snap-It Vial, Clear Glass	C4011-LV1	**03-397-15**	100/104.43	----
250µL	MacroVial 250µL Fused Insert Vial, Clear Glass I-D	C4011-LV1W	**03-376-407**	100/103.90	----
250µL	MacroVial 250µL Fused Insert Snap-It Vial, Amber Glass	C4011-LV2	**03-397-16**	100/116.36	----
250µL	MacroVial 250µL Fused Insert Vial, Amber Glass I-D	C4011-LV2W	**03-376-457**	100/108.85	----
400µL	Solid Glass MicroVials*	C4011-10	**03-377-75**	12/70.64	----
1.1mL	Micro-V* Clear Glass Microsampling Vial, 15µL Reservoir	C4011-V1	**03-397-17**	100/82.16	----
1.5mL	1.5mL High Recovery MicroVials	C4011-9	**03-377L**	100/120.45	----
2.3mL	2.5mL Clear Glass Crimp-Top Vial—40mm Vial Height	C4011-1240	**03-397-60**	1000/191.60	----
Deactivated Vials					
1.8mL	2mL Clear Glass Vial, NSC Silanized	C4011-S1	**03-378-1A**	2000/747.30	----
1.8mL	2mL Clear Glass I-D Vial, NSC Silanized	C4011-S1W	**03-377-92**	100/43.07	783.06
1.8mL	2mL Amber Glass I-D Vial, NSC Silanized	C4011-S2W	**03-378-1B**	100/42.39	781.11
1.5mL	1.5mL High Recovery MicroVials, NSC Silanized	C4011-S9	**03-377-95**	100/138.98	----
1.8mL	2mL Clear Glass I-D Vial, Kimshield* Deactivated	C4011-K1W	**03-378-349**	100/44.26	----
1.8mL	2mL Amber Glass I-D Vial, Kimshield Deactivated	C4011-K2W	**03-378-350**	100/46.35	----

National Scientific Unassembled Target* LoVial* Wide Opening Vial Kits

- Two-compartment benchtop storage tray
- Include matched quantities of vials and silver aluminum seals with prefitted septa
- All items remain handy and dust-free

03-375 Series and 03-378 Series convenience kits

NOTE:
03-375-4A through 4D are bulk packs that do not include the convenience kit tray.

Vial	Seal with Septum	Mfr. No.	Cat. No.	Pack of	Case of 2 Pk.
Clear Glass	PTFE/ Red Rubber	C4011-87	**03-375-4AA**	100/29.00	----
Amber Glass	PTFE/ Red Rubber	C4011-87A	**03-376-208**	100/31.06	----
Clear Glass I-D*	PTFE/ Red Rubber	C4011-87W	**03-378-392**	100/31.27	----
Amber Glass I-D	PTFE/ Red Rubber	C4011-87AW	**03-378-393**	100/37.25	----
Amber Glass	PTFE/ Red Rubber	C4011-88A	**03-375-4B**	500/147.89	282.24
Clear Glass I-D	PTFE/ Red Rubber	C4011-88W	**03-375-4C**	500/148.27	283.72
Amber Glass I-D	PTFE/ Red Rubber	C4011-88AW	**03-375-4D**	500/165.24	304.57
Clear Glass	PTFE/ Red Rubber	C4011-88	**03-375-4A**	500/143.72	264.99
Clear Glass I-D	Seal 2000	C4011-89W	**03-378-351**	100/26.97	----
Clear Glass	PTFE/ Silicone	C4011-92	**03-375-45A**	100/46.19	----
Clear Glass I-D	PTFE/ Silicone	C4011-92W	**03-375-45B**	100/47.22	----
Amber Glass I-D	PTFE/ Silicone	C4011-92AW	**03-375-45D**	100/52.77	----
Clear Insert Vial	PTFE/ Silicone	C4011-92PT	**03-378-10**	100/119.37	----
Clear Glass	PTFE/Silicone/ PTFE	C4011-94	**03-375-46A**	100/56.44	----
Clear Glass I-D	PTFE/Silicone/ PTFE	C4011-94W	**03-375-46B**	100/58.43	----
Amber Glass I-D	PTFE/Silicone/ PTFE	C4011-94AW	**03-375-46D**	100/62.05	----
Clear Glass	PTFE/Red Rubber w/Poyspring Insert	C4011-95	**03-375-6A**	100/127.62	----
Amber Glass	PTFE/Red Rubber w/Poyspring Insert	C4011-95A	**03-375-6B**	100/68.15	----
Clear Glass I-D	PTFE/Red Rubber w/Poyspring Insert	C4011-95W	**22-045884**	100/139.42	----

National Scientific Target* Kim-Snap* Closures

- Preassembled with septa for use with Target Snap/Crimp LoVial* Vials
- Effective evaporation resistance—apply with simple thumb pressure
- Replace aluminum crimp seals and end tedious crimping/de-crimping

03-396 Series

Cap Color	Mfr. No.	Cat. No.	Pack of 100	Case of 1000
PTFE/Red Rubber				
Clear	C4011-51	**03-396A**	19.36	177.41
Blue	C4011-51B	**03-396B**	19.79	176.54
Yellow	C4011-51Y	**03-396E**	19.93	173.44
PTFE/Silicone				
Clear	C4011-54	**03-396R**	24.75	211.45
Blue	C4011-54B	**03-396S**	24.45	208.51
Green	C4011-54G	**03-396T**	24.53	208.94
Yellow	C4011-54Y	**03-396W**	24.73	210.65
Black	C4010-1296VO	**03-397-13**	----	402.31
PTFE/Silicone/PTFE				
Clear	C4011-53	**03-396L**	32.70	287.44
Blue	C4011-53B	**03-396M**	----	328.02
Yellow	C4011-53Y	**03-396Q**	32.53	279.50
PTFE				
Clear	C4011-52	**03-396F**	17.62	146.79
Blue	C4011-52B	**03-396G**	17.62	146.79
Green	C4011-52G	**03-396H**	17.64	146.60
Red	C4011-52R	**03-396J**	17.62	146.79
Yellow	C4011-52Y	**03-396K**	18.45	167.69
Pre-Slit Blue PTFE/Silicone				
Clear	C4011-55	**03-396X**	36.27	312.33
Blue	C4011-55B	**03-396Y**	36.27	312.33
Yellow	C4011-55Y	**03-396AB**	36.50	313.25
Black	C4011-55BLK	**03-397-14**	35.59	313.25
Star Design Pre-Slit Blue PTFE/Silicone				
Clear	C4011-59	**03-396-67**	36.41	326.01
Integral Polyethylene				
Clear	C4011-50	**03-375-24E**	7.05	58.67
Blue	C4011-50B	**03-375-24F**	7.05	58.67
Green	C4011-50G	**03-375-24G**	7.11	58.64
Red	C4011-50R	**03-375-24H**	7.05	58.67
Yellow	C4011-50Y	**03-375-24J**	7.11	58.64

National Scientific Target* Snap Cap Vials—Wide Opening

2mL, 12 × 32mm Crimp/Snap Ring Vials

- Wide-opening, 33, expansion, borosilicate glass vials
- Fit rotating or robotic arm autosamplers
- I-D* vials feature write-on patch with graduations at 0.5, 1.0 and 1.5mL
- Target Snap-It* vials can be used with snap caps or aluminum crimp seal closures

03-395C

Description	Mfr. No.	Cat. No.	Pack of 100	Case of 20 Pk.
2mL Clear Glass Vial	C4011-5	**03-395C**	15.69	300.69
2mL Clear Glass I-D Vial	C4011-5W	**03-375-27A**	17.58	319.65
1.5mL Clear Glass High Recovery MicroVials	C4011-4	**03-377-76**	117.32	----
2mL Amber Glass I-D Vial	C4011-6W	**03-375-27B**	18.53	342.60

*Trademark. See Trademark Reference.

SUN-SRi Standard Opening Crimp Top Vials

- 2.0mL, 12 × 32mm crimp top vials
- Manufactured of clear Type 1, Class A or amber, Type 1, Class B borosilicate glass
- I-D vials* feature write-on patch with graduations at 0.5, 1.0, and 1.5mL

Left: 22-313-375; Right: 14-823-12 Series

Description	Mfr. No.	Cat. No.	Pack of
Clear I-D	200 000	**14-823-128**	100/15.55
Clear I-D	200 001	**14-823-129**	2000/267.55
Amber I-D	200 002	**22-313-375**	100/18.49

ACCESSORIES

14-823 Series

Sun-SRI 11mm Aluminum Crimp Seals Preassembled with Septa

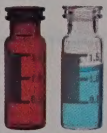
Use color coding to separate assays, standards or samples

Cap Color	Mfr. No.	Cat. No.	Pack of
PTFE/Red Rubber Septa			
Silver	200 104	**14-823-143**	100/10.20
	200 100	**22-314-855**	1000/81.54
Blue	200 122	**14-823-148**	100/12.66
	200 118	**22-021-963**	1000/117.76
Green	200 128	**14-823-150**	100/13.64
	200 124	**14-823-149**	1000/117.76
Red	200 134	**14-823-152**	100/12.66
	200 130	**14-823-151**	1000/117.76
Yellow	200 140	**14-823-154**	100/12.66
	200 136	**22-021-967**	1000/117.76
PTFE/Silicone Septa for GC			
Silver	501 311	**14-823-378**	100/14.53
	501 310	**14-823-377**	1000/144.03
PTFE/Silicone Septa			
Silver	200 158	**22-021-862**	100/22.86
	200 154	**22-021-861**	1000/193.16
PTFE/Silicone/PTFE Septa			
Silver	200 152	**22-021-860**	100/35.01
	200 148	**14-823-155**	1000/267.77
Polypropylene Septa			
Silver	200 178	**14-823-160**	100/15.51
PTFE Septa			
Silver	502 070	**14-823-416**	1000/82.13

SUN-SRi StepVial System* Vials

2mL, 12 × 32mm Crimp/Snap Ring Vials

- Wide-opening, expansion, borosilicate glass vials
- Fit rotating or robotic arm autosamplers
- I-D* vials feature write-on patch with graduations at 0.5, 1.0 and 1.5mL
- System design automatically seats inserts at optimal center and position for injection



14-823-372, 14-823-370

Description	Mfr. No.	Cat. No.	Pack of 100
Clear I-D	501 300	**14-823-370**	15.92
Amber I-D	501 302	**14-823-372**	17.50

ACCESSORIES

14-823-379, 14-823-380, 14-823-399, 14823-381

SUN-SRi StepVial System* Closures

- Orange caps, preassembled with septa for use with StepVial System Snap/Crimp Vials
- Effective evaporation resistance—apply with simple thumb pressure
- Audible click ensures a secure seal has been applied

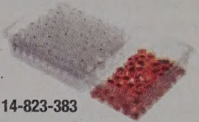
Septa	Mfr. No.	Cat. No.	Pack of
Clear PTFE/Red Rubber	501 312	**14-823-379**	100/19.20
PTFE/Silicone	501 313	**14-823-380**	100/21.99
PTFE/Silicone/PTFE	501 385	**14-823-399**	1000/329.69
0.010" PTFE	501 319	**14-823-381**	100/17.05

SUN-SRi StepVial System* Kits

StepVial w/standard graduated I-D* patch and your choice of preassembled seals with septa

Packaged in benchtop storage compartments.

- 2mL, 12 × 32mm
- Snap/crimp top vial
- In storage trays



14-823-383

Vial Type	Septa Type	Mfr. No.	Cat. No.	Pack of 100
Clear I-D	Orange Seal w/ PTFE/Red Rubber	501 327	**14-823-383**	35.84
Amber I-D	Orange Seal w/ PTFE/Red Rubber	501 329	**14-823-385**	37.88
Clear I-D	Orange Seal w/ PTFE/Silicone	500 726	**14-823-352**	40.01
Clear I-D	Orange Seal w/ PTFE/Silicone/PTFE	501 326	**14-823-382**	49.57
Clear I-D	Orange Seal w/ PTFE 0.010"	501 328	**14-823-384**	33.92

SUN-SRi Glass Microsampling Vials

Good for use when working with small samples or samples that must be evaporated/reconstituted without using multiple vials

- 12 × 32mm format
- Comprised of Type 1, Clear, Class A or Amber, Class B borosilicate glass
- Most vials are compatible with 11mm aluminum seal closures and 11mm snap closures

Description	Mfr. No.	Cat. No.	Pack of
SunSpot* MicroVial, Clear, 1.5mL			
Crimp†	500 092	**14-823-310**	100/109.66
Snap/Crimp	501 092	**14-823-368**	100/127.55
Pulled-point MicroVial, Clear, 1.1mL			
Crimp†	500 196	**14-823-325**	100/74.04
Snap/Crimp	502 366	**14-823-451**	500/291.40
Micro+* Vial, Clear, Fused Insert, 900µL			
Crimp†	502 031	**14-823-412**	500/493.58
MacroVial*, Fused Insert, Snap/Crimp Cap, 300µL			
Clear	500 854	**14-823-359**	100/73.33
Amber	500 855	**14-823-360**	100/79.65
Solid Vial, Clear, 100µL			
Snap/Crimp	200 032	**14-823-133**	12/84.56

AUTOSAMPLER—SCREW CAP

*Fisherbrand** 2mL Standard Opening Screw Thread Glass Vials

NEW

With 8-425 screw thread for 12 × 32mm profile

- Made from 33 expansion borosilicate clear glass (Type 1, Class A) or 51A amber glass
- Without caps

03-391-44 and -45

REQUIRED ACCESSORIES:

Screw caps (sold separately; see 03-391-46, right)

Color	Fill Capacity	Cat. No.	Pack of 100
Clear	1.8mL	**03-391-44**	18.13
Amber	1.8mL	**03-391-45**	20.86

*Fisherbrand** 2mL Screw-Thread Autosampler Vials

03-391-16

- Wide-opening, 10-425 thread, borosilicate glass vials
- I-D* vial with write-on patch graduated at 0.5, 1.0, and 1.5mL
- Black closure is preassembled with a 9mm thread and PTFE/Silicone
- Conical glass insert with attached polyspring, 300µL capacity
- Convenience kit includes 100 vials and 100 seals with septa

Description	Cat. No.	Pack of 100
Vials		
Clear	**03-391-16**	17.06
Amber I-D	**03-391-36**	19.54
Closures		
Black 10mm PTFE/Silicone Preassembled Closure	**03-391-17**	32.38
Inserts		
Polyspring Vial Insert, Glass, 300µL	**03-391-35**	80.22
Convenience Kit		
Clear Vials w/Black Caps and PTFE/Silicone Septa	**03-391-18**	57.39

*Fisherbrand** Robotic Screw-Top Autosampler Vials

03-391-8

2mL, 12 × 32mm screw-top vials with a 9mm thread finish

- 40% larger opening than other comparable vials
- Fit rotating or robotic arm autosamplers
- Convenience of a screw thread vial with the integrity of a crimp cap vial
- Clear vials are made from Type I, borosilicate glass; amber vials are made from amber borosilicate glass
- Blue closures are preassembled with a 9mm thread and choice of PTFE/Silicone, PTFE/Silicone/PTFE, or PTFE/Red Rubber septa
- Convenience kit includes 100 vials and 100 seals with septa

Description	Cat. No.	Pack of 100
Vials		
Clear Glass	**03-391-8**	14.09
Amber with Write-on Patch	**03-391-9**	18.56
Closures		
Blue 9mm PTFE/Silicone Preassembled Closures	**03-391-14**	20.27
Blue 9mm PTFE/Red Rubber Preassembled Closures	**03-391-31**	16.82
Blue 9mm PTFE/Silicone/PTFE Preassembled Closures	**03-391-32**	26.46
Convenience Kit		
Clear Vials w/Blue Caps and PTFE/Silicone Septa	**03-391-15**	31.48

ACCESSORIES

Screw Thread Caps with Septa

NEW

Convenient caps minimize contamination from handling

For use with 2mL standard opening screw thread glass vials.

- 8-425 screw thread
- Black polypropylene cap
- Preassembled with red PTFE/white silicone septa

03-391-46

Cat. No.	Pack of 100
03-391-46	33.55

National Scientific Standard-Opening 12 × 32mm Screw Thread Glass Vials

- Standard neck vial—8-425 thread finish
- Superior quality borosilicate clear glass Type 1, Class A or 51A amber glass
- Uniformly flat bottom for security with inserts
- I-D* vials feature write-on patch with graduations at 0.5, 1.0 and 1.5mL
- Deactivated vials are Silanized or Kimshield* pretreated

03-375-16A, 03-375-16B

03-375-16BB, 03-375-18C

03-375-17C

Maximum Fill Volume	Description	Mfr. No.	Cat. No.	Pack of	Case of
1.8mL	2mL Clear Glass	C4013-1	**03-375-16A**	100/18.10	20/355.76
1.8mL	2mL Clear Glass	C4013-1500	**C40131500**	1000/151.32	----
1.8mL	2mL Clear Glass I-D	C4013-1W	**03-375-18C**	100/24.92	20/358.23
1.8mL	2mL Amber Glass	C4013-2	**03-375-16B**	100/21.55	20/397.28
1.8mL	2mL Amber Glass I-D	C4013-2W	**03-375-16BB**	100/25.43	20/492.09
150µL	150µL MicroVials*, Clear Solid Glass	C4013-12	**03-375-17C**	----	12/114.53
Deactivated Glass Vials					
1.8mL	2mL Clear Glass I-D, Kimshield	C4013-K1W	**03-378-317**	100/47.85	----
1.8mL	2mL Amber Glass I-D, Kimshield	C4013-K2W	**03-378-335**	100/53.99	----

*Trademark. See Trademark Reference.

Prices subject to change.

National Scientific Target* DP* Screw Thread Vials—2mL, 12 × 32mm

Convenience of a screw thread with the outer profile of a crimp vial for the broadest autosampler compatibility

- Superior quality 33 expansion borosilicate clear glass (Type 1, Class A) or 51A amber glass
- Uniformly flat bottom for security with inserts
- I-D* vials feature write-on patch with graduations at 0.5, 1.0, and 1.5mL
- Deactivated vials are treated with NSC Silanization

03-377B, 03-377-45, 03-377A

03-377D

03-377K, 03-377-47

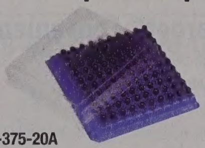
Capacity	Description	Mfr. No.	Cat. No.	Pack of 100	Case of 20 Pk.
350μL	MacroVial* 350μL Fused Insert Vial, Clear Glass	C4000-LV1	**03-396-86**	100.89	----
350μL	MacroVial 350μL Fused Insert Vial, Clear Glass I-D	C4000-LV1W	**03-396-74**	128.37	----
350μL	MacroVial 350μL Fused Insert Vial, Amber Glass	C4000-LV2	**03-396-76**	116.41	----
350μL	MacroVial 350μL Fused Insert Vial, Amber Glass I-D	C4000-LV2W	**03-397-35**	107.23	----
950μL	Clear Glass Precision Taper	C4000-1PT	**03-378-05**	117.62	----
1.5mL	Amber Glass I-D High Recovery with 30μL Reservoir	C4000-9A	**03-377-44**	125.69	----
1.5mL	Clear Glass High Recovery with 30μL Reservoir	C4000-9	**03-377K**	120.13	----
1.5mL	Micro-V* Tapered MicroVial with 150μL reservoir, Clear Glass	C4000-V1	**03-397-02**	79.54	----
1.5mL	Micro-V Tapered MicroVial with 150μL reservoir, Amber Glass	C4000-V2	**03-397-03**	85.61	----
1.8mL	2mL Clear Glass	C4000-1	**03-377A**	16.19	306.69
1.8mL	2mL Clear Glass I-D	C4000-1W	**03-377B**	17.70	335.61
1.8mL	2mL Amber Glass I-D	C4000-2W	**03-377D**	20.44	395.05
Deactivated Glass Vials					
1.5mL	Clear Glass High Recovery, Silanized, with 30μL Reservoir	C4000-S9	**03-377-47**	138.58	----
1.8mL	2mL Clear Glass I-D, Silanized	C4000-S1W	**03-377-45**	43.69	793.35

National Scientific Assembled Standard Opening Vial, Cap and Septum Kits

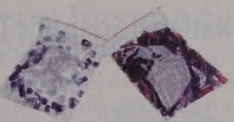
- Packaged in convenient vial trays with clear covers or in economical polybags
- Vial trays are stackable for easy storage
- All caps are manufactured from virgin polypropylene unless noted

INCLUDES:

100 vials with pre-attached caps and septa



03-375-20A



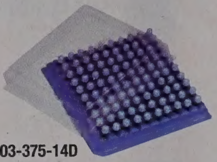
03-375-38A, 03-375-38B

Vial	Cap	Septum	Mfr. No.	Cat. No.	Pack of 100
Clear Glass	Black	White PTFE	C4013-10A	**03-375-3E**	37.32
Clear Glass	Black	Red PTFE/White Silicone	C4013-15A	**03-375-3F**	52.87
Clear Glass	Black Flanged	Blue PTFE/White Silicone - Pre-slit	C4013-32A	**03-375-20E**	59.17
Clear Glass	Black Flanged	Red PTFE/White Silicone	C4013-57	**03-375-50E**	53.11
Clear Glass	Black Flanged	Red PTFE/White Silicone - Pre-slit	C4013-195	**03-378-367**	56.54
Clear Glass	White Flanged	Red PTFE/White Silicone	C4013-58	**03-375-50B**	53.34
Clear Glass	Yellow Flanged	Red PTFE/White Silicone - Pre-slit	C4013-36A	**03-378-50**	61.61
Clear Glass	Black Phenolic	White PTFE	C4013-410A	**03-378-361**	35.79
Clear Glass	Black Phenolic	PTFE/Silicone/PTFE	C4013-486A	**03-378-366**	62.42
Clear Glass	Black Phenolic	Tan PTFE/White Silicone	C4013-491A	**03-378-363**	56.08
Clear Glass	Black Phenolic	Red PTFE/White Silicone	C4013-492A	**03-378-397**	47.65
Clear Glass	Black Phenolic	Red PTFE/White Silicone	C4013-494A	**03-378-365**	54.25
Amber Glass	Black	White PTFE	C4013-19A	**03-375-20A**	38.90
Amber Glass	Black	Red PTFE/White Silicone	C4013-17A	**03-375-20B**	54.30
Amber Glass	Black Flanged	Red PTFE/White Silicone	C4013-57A	**03-375-50C**	54.98
Amber Glass	Black Phenolic	White PTFE	C4013-415A	**03-378-362**	37.46
Amber Glass I-D	White Flanged	Red PTFE/White Silicone	C4013-58AW	**03-376-460**	49.40
Packaged in Polybag					
Clear Glass	Black	White PTFE	C4013-010A	**03-375-38A**	35.87
Clear Glass	Black	Red PTFE/White Silicone	C4013-015A	**03-375-38C**	50.47
Clear Glass	Black	Red PTFE/White Silicone/Red PTFE	C4013-016A	**03-375-38E**	62.69
Amber Glass	Black	White PTFE	C4013-019A	**03-375-38B**	37.41
Amber Glass	Black	Red PTFE/White Silicone	C4013-017A	**03-375-38D**	52.22

National Scientific Target* LoVial* Preassembled Vial Kits

Assembled Vial Kits feature screw-thread vials with preassembled and preattached caps

- 2mL, 12 × 32mm
- Wide opening
- 10-425 vials with pre-attached caps


03-375-14D

Vial Type	Mfr. No.	Cat. No.	Pack of 100
With PTFE/Silicone Septa			
Clear	C4010-17	**03-375-14A**	69.16
Clear I-D*	C4010-17W	**03-375-14G**	71.66
Amber	C4010-17A	**03-375-14D**	70.38
Amber I-D	C4010-17AW	**03-375-14H**	72.83
With PTFE/Silicone/PTFE Septa			
Clear	C4010-19	**03-375-14B**	78.43
Amber	C4010-19A	**03-375-14E**	78.46
With White Virgin PTFE Septa			
Clear	C4010-21	**03-375-14C**	53.93
Clear I-D	C4010-21W	**03-375-14L**	55.26
With White PTFE/Silicone-Shimadzu* Septa			
Clear	C4010-57	**03-375-43A**	69.06
With Star Split PTFE/Silicone Cap			
Clear	C4010-24W	**03-378-51**	75.16
Amber	C4010-24AW	**03-378-52**	77.55

National Scientific Target* Wide-Opening Screw-Thread Vials

Wide neck vial is easy to fill

- 10-425 thread
- Borosilicate clear glass (Type 1, Class A) or 51A amber glass
- Uniformly flat bottom for security with inserts
- Graduated I-D* patch measures 0.5, 1.0 and 1.5mL

03-375-11B, -11BA

Description	Mfr. No.	Cat. No.	Pack of 100	Case o 20 Pk
2mL Vials				
Clear Glass	C4010-1	**03-375-11B**	20.19	373.7
Clear Glass I-D	C4010-1W	**03-375-11BA**	21.59	397.6
Amber Glass	C4010-2	**03-375-11A**	23.56	435.6
Amber Glass I-D	C4010-2W	**03-375-11AA**	23.78	448.2
Microsampling Vials				
MacroVial* 350µL Fused Insert Vial, Clear Glass	C4010-LV1	**03-397-08**	102.32	---
MacroVial 350µL Fused Insert Vial, Amber Glass	C4010-LV2	**03-397-09**	113.19	---
Micro-V* 1.5mL Tapered MicroVial with 150µL reservoir, Clear Glass	C4010-V1	**03-376-400**	78.55	---

National Scientific Target* Convenience Kits

- Two-compartment benchtop storage tray
- I-D* vials feature write-on patch with graduations
- All items remain handy and dust-free
- Caps with septa are not attached to vials (packed in separate polybag)

NOTE:
PTFE septa are not pretreated into caps (packed in separate polybag).

INCLUDES:
100 vials and 100 caps with pre-assembled septa

03-375-15A

Vial	Cap Color	Septum	Mfr. No.	Cat. No.	Pack of 10
Clear Glass	Lt Blue	PTFE Unassembled	C4010-90	**03-375-15C**	36.7
Clear Glass I-D	Lt Blue	PTFE Unassembled	C4010-90W	**03-376-443**	29.3
Amber Glass	Lt Blue	PTFE Unassembled	C4010-90A	**03-375-15F**	54.8
Clear Glass	Lt Blue	PTFE/Silicone	C4010-88	**03-375-15A**	56.0
Amber Glass	Lt Blue	PTFE/Silicone	C4010-88A	**03-375-15D**	59.2
Clear Glass I-D	Lt Blue	PTFE/Silicone	C4010-88W	**03-375-15G**	57.7
Amber Glass I-D	Lt Blue	PTFE/Silicone	C4010-88AW	**03-375-15H**	59.4
Clear Silanized	Lt Blue	PTFE/Silicone	C4010-S88	**03-378-310**	57.1
Clear Glass I-D	Black	PTFE/Silicone	C4010-88WBLK	**03-339-355**	56.2
Clear Glass	White Shimadzu*	PTFE/Silicone	C4010-95	**03-377-70**	56.7
Clear Glass I-D	White Shimadzu	PTFE/Silicone	C4010-95W	**03-377-72**	58.4
Clear Glass	Black	PTFE/Silicone Tan/White	C4010-84	**03-378-53**	56.5
Clear Glass	Lt Blue	PTFE/Silicone—Pre-slit	C4010-92	**03-378-04**	68.0
Clear Silanized	Lt Blue	PTFE/Silicone—Pre-slit	C4010-S92	**03-376-402**	75.2
Clear Glass I-D	Lt Blue	PTFE/Silicone—Star-slit	C4010-93W	**03-376-445**	60.9
Clear Glass I-D	Black	PTFE/Silicone—Star-slit	C4010-97W	**03-378-00**	59.1
Clear Glass	Lt Blue	PTFE/Silicone/PTFE	C4010-89	**03-376-441**	58.2
Clear Glass I-D	Lt Blue	PTFE/Silicone/PTFE	C4010-89W	**03-376-414**	56.7
Amber Glass I-D	Lt Blue	PTFE/Silicone/PTFE	C4010-89AW	**03-376-442**	47.5

National Scientific Target* 10mm Septa

For use with 10-425 threaded caps.

03-375-12A, 03-375-12D, 03-377-66

Description	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
White Virgin PTFE	C4010-10	**03-375-12A**	38.43	----
Ivory PTFE/Red Rubber	C4010-30	**03-377-64**	15.72	136.06
Red PTFE/White Silicone—Soft	C4010-35	**03-375-12D**	22.19	184.99
Red PTFE/White Silicone	C4010-60	**03-375-12C**	19.44	156.99
Red PTFE/White Silicone, Star-slit	C4010-65	**03-397-06**	29.64	265.39
Red PTFE/White Silicone/Red PTFE	C4010-40	**03-375-12B**	29.35	231.00
Blue PTFE/White Silicone—Pre-slit	C4010-55	**03-377-66**	29.36	266.32

National Scientific Limited Volume Polypropylene Vials with 10-425 Finish

- Economical alternative to glass for some applications
- Precision formed tips are designed to aid sample recovery for limited volume applications

03-375-17CA, 03-375-17CB

Description	Fill Volume	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
MicroVials*, Tapered Tip	400µL	C4010-11	**03-375-17CA**	23.01	206.74
High Recovery Vial	550µL	C4010-14	**03-375-17CB**	21.62	194.78

National Scientific Polypropylene and Glastic* Vials with 8-425 Finish

- Economical alternative to glass for some applications
- Precision formed tips are designed to aid sample recovery for limited volume applications
- Glastic vial features a glass insert pre-inserted inside of a clear TPX vial

03-378-340

Description	Maximum Fill Volume	Mfr. No.	Cat. No.	Pack of 100	Case of 1000
250µL MicroVials*	250µL	C4013-11	**22-045918**	22.87	209.96
750µL MicroVials	650µL	C4013-13	**03-378-334**	----	242.86
150µL Glastic Glass Insert TPX MicroVials	100µL	C4013-15GST	**03-378-340**	231.22	----

National Scientific Assembled Caps and Septa for 8-425 Standard-Opening Vials

- Open top caps can be used with any 8mm septa
- Phenolic caps are suitable for autoclaving and low temperature applications
- Polypropylene caps are chemically inert and suitable for most chromatography applications
- Kim-Lok* cap/septum assemblies feature a molded centering ring to eliminate septum movement during injection
- PTFE/Red Rubber septa are economical for many GC applications
- PTFE/Silicone septa are most popular for HPLC and IC applications
- Pre-slit septa are easier to pierce with thin-gauge needles

03-378-35 Series

03-375-20G, -37A

Cap Type	Cap Color	Material	Septum	Mfr. No.	Cat. No.	Pack of 100	Case of 1000
Open top cap	Black	Polypropylene	Ivory PTFE/Red Rubber	C4013-30A	**03-375-20G**	35.98	----
Open top cap	Black	Polypropylene	Red PTFE/White Silicone/Red PTFE	C4013-40A	**03-375-37A**	37.03	----
Open top cap	Black	Polypropylene	Red PTFE/White Silicone	C4013-60A	**03-375-37B**	34.87	313.18
Open top cap	Black	Phenolic	Ivory PTFE/Red Rubber	C4013-71A	**03-378-318**	34.75	----
Open top cap	Black	Phenolic	Red PTFE/White Silicone	C4013-74A	**03-378-339**	43.27	----
Open top cap w/flange	Black	Polypropylene	Red PTFE/White Silicone	C4013-63A	**03-377-100**	36.27	324.53
Open top cap w/flange	White	Polypropylene	Red PTFE/White Silicone	C4013-63W	**03-377-101**	36.00	324.25
Open top cap w/flange	Black	Polypropylene	Blue PTFE/White Silicone—Pre-slit	C4013-64A	**03-377-102**	39.40	344.74
Open top cap w/flange	White	Polypropylene	Blue PTFE/White Silicone—Pre-slit	C4013-64W	**03-377-103**	39.78	344.58
Open top cap w/flange	Black	Polypropylene	Red PTFE/White Silicone—Pre-slit	C4013-77A	**03-378-319**	38.81	----
Kim-Lok cap w/flange	Black	Polypropylene	Kim-Lok Red PTFE/White Silicone	C4013-61A	**03-378-352**	46.36	----
Kim-Lok cap w/flange	Blue	Polypropylene	Kim-Lok Red PTFE/White Silicone	C4013-61B	**03-378-353**	46.68	----
Kim-Lok cap w/flange	Green	Polypropylene	Kim-Lok Red PTFE/White Silicone	C4013-61G	**03-378-355**	46.68	----
Kim-Lok cap w/ flange	Red	Polypropylene	Kim-Lok Red PTFE/White Silicone	C4013-61R	**03-378-354**	46.68	----
Kim-Lok cap w/flange	White	Polypropylene	Kim-Lok Red PTFE/White Silicone	C4013-61W	**03-378-357**	46.68	----
Kim-Lok cap w/flange	Yellow	Polypropylene	Kim-Lok Red PTFE/White Silicone	C4013-61Y	**03-378-356**	46.68	----
SepCap*	Natural	Polypropylene	Integral Polypropylene	C4013-5A	**03-375-18D**	107.96	----

National Scientific 8-425 Empty Caps (No Septum)— for 8-425 Standard Opening Vials

- Open top caps are designed to be used with any 8mm septa
- Phenolic caps are suitable for autoclaving and low temperature applications
- Polypropylene caps are chemically inert and suitable for most chromatography applications
- Flanged caps are particularly suitable for many Japanese autosamplers
- Kombo-Kit contains 200 each of black, blue, green, red, and yellow flanged caps

Note:
Caps with a flange are preferred for use with Shimadzu* and Hitachi*

03-378-358

03-375 and 03-378 Series

Description	Cap Color	Material	Mfr. No.	Cat. No.	Pack of 100	Case of 1000
Open top cap	Black	Polypropylene	C4013-1A	**03-375-18A**	6.60	51.70
Open top cap, phenolic	Black	Phenolic	C4013-66	**03-378-358**	----	81.35
Open top cap with flange	Black	Polypropylene	C4013-3A	**03-375-18B**	9.90	81.87
Open top cap with flange	White	Polypropylene	C4013-98W	**03-377-104**	10.06	81.30
Open top cap with flange	Blue	Polypropylene	C4013-98B	**03-378-388**	5.73	52.69
Open top cap with flange	Green	Polypropylene	C4013-98G	**03-378-337**	5.73	52.69
Open top cap with flange	Red	Polypropylene	C4013-98R	**03-378-336**	5.73	52.69
Open top cap with flange	Yellow	Polypropylene	C4013-98Y	**03-378-326**	5.73	52.22
Kombo-Kit, flanged caps	Black, Blue, Green, Red, Yellow	Polypropylene	C4013-98K	**03-378-389**	----	62.60

National Scientific Septa for 8-425 Screw Thread Caps

- PTFE Disk septa are chemically inert
- PFTE Red Rubber septa are economical for many GC applications
- PTFE/Silicone septa are most popular for HPLC and IC applications
- Pre-slit septa are easier to pierce with thin gauge needles

03-340, 03-37 Series

Description	Comment	Mfr. No.	Cat. No.	Pack of 100	Case of 1000
White Virgin PTFE	Not re-sealable, single use	C4013-10	**03-340-10A**	----	36.15
Ivory PTFE/Red Rubber	For general chromatography	C4013-30	**03-377-99**	12.05	109.51
Blue PTFE/White Silicone, Pre-slit	For fragile needles	C4013-32	**03-375-10K**	----	309.80
Red PTFE/White Silicone/Red PTFE	For use with aggressive solvents	C4013-40	**03-340-10B**	24.38	221.64
Red PTFE/Clear Silicone	55mil for Hitachi* autosamplers	C4013-55	**03-340-10F**	21.12	191.68
Red PTFE/White Silicone	For high sensitivity chromatography	C4013-60	**03-340-10C**	13.68	112.68
Red PTFE/White Silicone, Pre-slit	Single slit	C4013-60TW	**03-378-338**	----	282.38
Tan PTFE/White Silicone	Kimble* PTFE/Silicone septum	C4013-61	**03-376-469**	----	150.45

National Scientific Screw Thread Caps with Bonded Septa

NEW

- Septa and polypropylene caps bonded together for an integral system
- Eliminates septa push-through
- Available with choice of GPI thread sizes and preslit septa for easier thin-gauge needle penetration

03-342-001 to -004

03-342-005 to -006

03-342-008

Cap	Septum	Mfr. No.	Cat. No.	Pack of 10	Case of 10 Pk
8-425 Screw Thread Black Polypropylene	Bonded White 0.010" PTFE	C4013-78A	**03-342-001**	22.15	221.54
9-425 Screw Thread Blue Polypropylene	Bonded White 0.010" PTFE	C4000-78A	**03-342-002**	23.10	231.00
10-425 Screw Thread Black Polypropylene	Bonded White 0.010" PTFE	C4010-78A	**03-342-003**	24.00	239.97
13-425 Screw Thread Black Polypropylene	Bonded White 0.010" PTFE	C4015-78A	**03-342-004**	24.25	242.51
8-425 Screw Thread Black Polypropylene	Bonded Red 0.005" PTFE/White Silicone	C4013-65A	**03-342-005**	28.96	289.57
10-425 Screw Thread Black Polypropylene	Bonded Red 0.005" PTFE/White Silicone	C4010-68A	**03-342-006**	29.30	---
13-425 Screw Thread Black Polypropylene	Bonded Red 0.005" PTFE/White Silicone	C4015-67A	**03-342-007**	38.75	---
8-425 Screw Thread Black Polypropylene	Bonded Preslit Red 0.005" PTFE/White Silicone	C4013-69A	**03-342-008**	31.90	318.9
10-425 Screw Thread Black Polypropylene	Bonded Preslit Red 0.005" PTFE/White Silicone	C4010-69A	**03-342-009**	31.40	---
13-425 Screw Thread Black Polypropylene	Bonded Preslit Red 0.005" PTFE/White Silicone	C4015-69A	**03-342-010**	41.55	---

National Scientific Assembled Certified* Vial Kits

High-quality chromatography vial kits certified to give the extra assurance that the vials uphold rigorous manufacturing standards

- Include choice of vials and closures, conveniently packaged in benchtop storage compartments
- Vials of clear or amber borosilicate glass, with or without an I-D* patch
- Feature the vials with PTFE/silicone caps already assembled

Description	Mfr. No.	Cat. No.	Pack of 100
2mL Certified Clear I-D Vial Kit with 9mm Preslit PTFE/Silicone Caps	CERT4000-193W	**03-377-401**	55.90
2mL Certified Amber I-D Vial Kit with 9mm Preslit PTFE/Silicone Caps	CERT4000-176W	**03-377-400**	49.50
4mL Certified Clear Vial Kit with 13mm Preslit PTFE/Silicone Caps	CERT4015-84-ASM	**03-377-402**	79.15
4mL Certified Amber Vial Kit with 13mm Preslit PTFE/Silicone Caps	CERT4015-87-ASM	**03-377-403**	79.90

National Scientific Unassembled Certified* Vial Kits

High quality chromatography kits certified to give the extra assurance that the vials uphold rigorous manufacturing standards

- Include choice of vials and closures, conveniently packaged in benchtop storage compartments
- Vials of clear or amber borosilicate glass, with or without an I-D* patch
- Closures with pre-inserted septa for GC, HPLC, and headspace analysis, except for SepCap* Kits, which have caps without septa

03-377 Series

Description	Mfr. No.	Cat. No.	Pack of
PTFE/Rubber Septa			
Target DP* 2mL Certified Clear Vial Kit	CERT4000-80	**03-377-345**	100/37.95
Target DP 2mL Certified Clear I-D Vial Kit	CERT4000-80W	**03-377-346**	100/39.25
Target DP 2mL Certified Amber I-D Vial Kit	CERT4000-82W	**03-377-348**	100/42.05
PTFE/Silicone/PTFE Septa			
Target DP 2mL Certified Clear I-D Vial Kit	CERT4000-86W	**03-377-349**	100/51.66
PTFE/Silicone Septa			
Target DP 2mL Certified Clear I-D Vial Kit	CERT4000-92W	**03-377-347**	100/44.80
Target DP 1.5mL Certified High Recovery Clear Vial Kit	CERT4000-992	**03-377-333**	100/137.20
Target DP 0.9mL Certified Precision Taper Clear Vial Kit	CERT4000-98PT	**03-377-335**	100/138.00
Target DP 2mL Certified Clear I-D Vial Kit	CERT4000-78W	**03-377-337**	100/47.21
Target DP 350µL Certified Clear I-D Insert Vial Kit	CERT4000-69LV	**03-377-339**	100/103.85
Target DP 2mL Certified Amber I-D Vial Kit	CERT4000-75W	**03-377-341**	100/45.70
Target DP 350µL Certified Amber I-D Insert Vial Kit	CERT4000-72LV	**03-377-343**	100/112.10
4mL Screw Top Certified Clear Vial Kit	CERT4015-83	**03-377-352**	100/73.60
4mL Screw Top Certified Amber Vial Kit	CERT4015-86	**03-377-354**	100/74.69
3.5mL Certified Max Recovery Clear Vial Kit	CERT4015-992	**03-377-356**	100/157.50
2mL Certified 10-425 Clear Vial Kit	CERT4010-91	**03-377-358**	100/56.60
Slit PTFE/Silica Septa			
Target DP 1.5mL Certified High Recovery Clear Vial Kit	CERT4000-79	**03-377-334**	100/142.50
Target DP 0.9mL Certified Precision Taper Clear Vial Kit	CERT4000-99PT	**03-377-336**	100/149.60
Target DP 2mL Certified Clear I-D Vial Kit	CERT4000-93W	**03-377-338**	100/52.75
Target DP 350µL Certified Clear I-D Insert Vial Kit	CERT4000-71LV	**03-377-340**	100/115.50
Target DP 2mL Certified Amber I-D Vial Kit	CERT4000-76W	**03-377-342**	100/46.71
Target DP 350µL Certified Amber I-D Insert Vial Kit	CERT4000-73LV	**03-377-344**	100/125.65
4mL Screw Top Certified Clear Vial Kit	CERT4015-84	**03-377-353**	100/74.69
4mL Screw Top Certified Amber Vial Kit	CERT4015-87	**03-377-355**	100/75.45
3.5mL Certified Max Recovery Clear Vial Kit	CERT4015-79	**03-377-357**	100/158.61
SepCap Shell Vial Kits			
SepCap 1mL Certified Clear Shell Vial Kit	CERT4015-96	**03-377-350**	200/19.70
SepCap 1mL Certified Amber Shell Vial Kit	CERT4015-99	**03-377-351**	200/24.54

National Scientific Target DP* Caps

Use color coding to separate assays, standards or samples

- Preassembled with septa

03-377 Series

Cap Color	Mfr. No.	Cat. No.	Pack of	Case of 10 Packs
Ivory PTFE/Red Rubber Septa				
Black	C4000-51A	**03-396-96**	100/20.76	188.18
Blue	C4000-51B	**03-377-1A**	100/20.00	184.98
Green	C4000-51G	**03-377-1B**	100/20.70	184.98
Red	C4000-51R	**03-377-1C**	100/20.70	184.98
Yellow	C4000-51Y	**03-377-1D**	100/20.70	184.98
Pre-slit Ivory PTFE/Red Rubber Septa				
Blue	C4000-57B	**03-375-77A**	1000/357.90	----
Green	C4000-57G	**03-375-77B**	1000/330.91	----
Red	C4000-57R	**03-375-77C**	1000/359.11	----
Yellow	C4000-57Y	**03-375-77D**	1000/357.90	----
PTFE/Silicone/PTFE				
Black	C4000-53A	**03-396-97**	100/32.93	294.68
Blue	C4000-53B	**03-377-2A**	100/32.08	290.88
Green	C4000-53G	**03-377-2B**	100/32.08	290.88
Red	C4000-53R	**03-377-2C**	100/32.08	290.88
Yellow	C4000-53Y	**03-377-2D**	100/32.04	290.73
PTFE/Silicone				
Black	C4000-54A	**03-396-98**	100/24.84	223.65
Blue	C4000-54B	**03-377-3A**	100/23.90	220.82
Green	C4000-54G	**03-377-3B**	100/24.48	220.82
Red	C4000-54R	**03-377-3C**	100/24.48	220.82
Yellow	C4000-54Y	**03-377-3D**	100/24.48	220.82
Pre-slit Blue PTFE/Silicone				
Black	C4000-55A	**03-396-78**	100/34.97	314.98
Blue	C4000-55B	**03-375-77E**	100/37.69	342.67
Green	C4000-55G	**03-375-77F**	1000/383.93	----
Red	C4000-55R	**03-375-77G**	1000/383.93	----
Yellow	C4000-55Y	**03-375-77H**	100/37.25	338.66
Solid Top Storage Cap with PTFE/Rubber Liner				
Black	C4000-99	**03-375-55C**	100/39.68	360.76

National Scientific Target DP* Bonded Caps

- Cap and septa bonded for an integral system
- Eliminates septa push-through
- Proprietary solvent-free bonding process

03-378-31 and 03-377-332

Septa	Mfr. No.	Cat. No.	Pack of 10	Case of 10 Pack
Bonded PTFE/Silicone	C4000-64B	**03-378-31**	26.58	240.81
Bonded PTFE/Silicone, Pre-slit	C4000-75C	**03-377-332**	38.27	347.91

National Scientific Target DP* Vial Kits

- Convenience Kits with 2mL, 12 × 32mm vials
- I-D* vials feature write-on patch with graduations at 0.5, 1.0 and 1.5mL
- Blue caps with your choice of vial and preassembled seals with septa
- Packaged in benchtop storage compartments

03-3776 Series

Description	Septa	Mfr. No.	Cat. No.	Pac of 10
Clear Glass	Ivory PTFE/Red Rubber	C4000-80	**03-377-6A**	37.4
Clear Glass I-D	Ivory PTFE/Red Rubber	C4000-80W	**03-377-6B**	38.7
Amber Glass I-D	Ivory PTFE/Red Rubber	C4000-82W	**03-377-6D**	42.6
Clear Glass	Ivory PTFE/Red Rubber-Pre-slit	C4000-83	**03-375-60**	47.7
Clear Glass I-D	Ivory PTFE/Red Rubber-Pre-slit	C4000-83W	**03-375-60A**	51.2
Amber Glass I-D	Ivory PTFE/Red Rubber-Pre-slit	C4000-84W	**03-375-60B**	55.1
Clear Glass	Red PTFE/White Silicone/Red PTFE	C4000-86	**03-377-7A**	49.9
Clear Glass I-D	Red PTFE/White Silicone/Red PTFE	C4000-86W	**03-377-7B**	51.7
Amber Glass I-D	Red PTFE/White Silicone/Red PTFE	C4000-88W	**03-377-7D**	54.0
Clear Glass	Red PTFE/White Silicone	C4000-92	**03-377-8A**	43.5
Clear Glass I-D	Red PTFE/White Silicone	C4000-92W	**03-377-8B**	44.1
Amber Glass I-D	Red PTFE/White Silicone	C4000-94W	**03-377-8D**	47.6
Clear Glass	Blue PTFE/White Silicone, Pre-slit	C4000-95	**03-375-60C**	54.1
Clear Glass I-D	Blue PTFE/White Silicone, Pre-slit	C4000-95W	**03-375-60D**	56.1
Amber Glass I-D	Blue PTFE/White Silicone, Pre-slit	C4000-96W	**03-375-60E**	58.0

National Scientific Preassembled Target DP* Kits

- Blue DP caps with choice of installed septa—attached to Target DP vials (See also 03-377-10A)

03-377-9A

ORDERING INFORMATION:
Packaged in vial trays with clear covers.

INCLUDES:
Assembled kits include 100 vials with preattached caps and septa

Vial	Mfr. No.	Cat. No.	Pack of 10
With PTFE/Red Rubber Septa			
Clear Glass	C4000-180	**03-377-9A**	41.1
Clear Glass I-D*	C4000-180W	**03-377-9B**	43.2
Amber Glass I-D	C4000-182W	**03-377-9D**	45.5
With Pre-Slit PTFE/Red Rubber Septa			
Clear Glass I-D	C4000-183	**03-375-60F**	50.6
With PTFE/Silicone/PTFE Septa			
Amber Glass I-D	C4000-188W	**03-377-10D**	57.9
With PTFE/Silicone Septa			
Clear Glass	C4000-192	**03-377-11A**	46.6
Clear Glass I-D	C4000-192W	**03-377-11B**	47.4
Amber Glass I-D	C4000-194W	**03-377-11D**	50.3
With Pre-Slit PTFE/Silicone Septa			
Clear Glass I-D	C4000-195W	**03-375-60J**	61.0
Amber Glass I-D	C4000-196W	**03-375-60K**	64.7

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*Trademark. See Trademark Reference.

National Scientific Target DP* Preassembled Kits, Contd.

Vial, Cap and Septum Kits

- Packaged in convenient vial trays with clear covers
- I-D* vials feature write-on patch with graduations

INCLUDES:

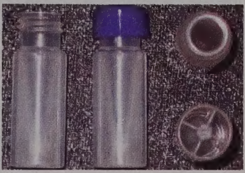
100 vials with pre-attached caps and septa

Vial	Cap Color	Mfr. No.	Cat. No.	Pack of 100
Ivory PTFE/Red Rubber, Pre-slit Septa				
Clear Glass I-D	Blue	C4000-183W	**03-376-415**	53.09
Amber Glass I-D	Blue	C4000-184W	**03-376-416**	57.46
Red PTFE/White Silicone/Red PTFE Septa				
Clear Glass	Blue	C4000-186	**03-377-10A**	54.95
Clear Glass I-D	Blue	C4000-186W	**03-377-10B**	54.32
Clear Glass I-D	Red	C4000-186WR	**03-375-1**	55.05
Amber Glass I-D	Red	C4000-188WR	**03-375-2**	59.36
Deactivated Assembled Vial Kits, Ivory PTFE/Red Rubber Septa				
Clear Glass I-D, Silanized	Blue	C4000-S180W	**03-376-406**	67.65
Amber Glass I-D, Silanized	Blue	C4000-S182W	**03-376-426**	84.30

National Scientific Target DP* Polypropylene MicroVials*

NEW

12 × 32mm microvials designed with the profile of glass vials


03-340-620 Series

- Manufactured from molded polypropylene—ideal for inert microsampling
- Sharp shoulder and high neck clearance ensure dependable operation with all autosamplers; external neck width is smaller, making it easier for robotic autosamplers to grasp the vials
- Compatibility with Target DP 9-425 screw thread closures provides a wide variety of closures
- Mandrel reservoir allows for maximum sample extraction and working volumes from <5 to 300µL
- Four-radiating–fin base provides high stability in autosampler trays
- High-quality molding process produces a clean profile, eliminating autosampler stalls

ORDERING INFORMATION:

Choose from Vials Only, Convenience Kits (include vials and caps), and Assembled Kits (vials with PTFE/silicone caps already assembled).

Description	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
300µL Target DP Polypropylene Vial	C4000-11	**03-340-620**	17.61	176.07
300µL Target DP Polypropylene Vial Convenience Kit, Blue Caps with PTFE/Silicone Septa	C4000-87	**03-340-621**	39.35	----
300µL Target DP Polypropylene Vial Convenience Kit, Blue Caps with Pre-slit PTFE/Silicone Septa	C4000-97	**03-340-622**	46.35	----
300µL Target DP Polypropylene Vial Convenience Kit, Black Bonded Caps with PTFE/Silicone Septa	C4000-387	**03-340-623**	41.05	----
300µL Target DP Polypropylene Vial Assembled Kit, Blue Caps with PTFE/Silicone Septa	C4000-187	**03-340-624**	44.41	----

SUN-SRi Microsampling Vials

Excellent for small samples or samples that must be evaporated and reconstituted without having to use multiple sample vials

- Have a standard 12 × 32mm profile

8-425 Polypropylene Vials

- For aqueous samples in pharmaceutical applications, sodium analysis or for pH sensitive samples
- Excellent clarity
- Highly resistant to chemical attack

14-823-168, 14-823-313

Description	Capacity	Mfr. No.	Cat. No.	Case of
Mandrel; Pulled Point	250µL	200 264	**14-823-168**	1000/156.17
Conical; Pulled Point	300µL	500 114	**14-823-313**	1000/157.30
Tapered; Pulled Point	500µL	500 124	**14-823-315**	100/18.60
Tapered; Pulled Point	1.1mL	502 044	**14-823-415**	500/337.50

9mm Vials

- Clear glass MacroVial with fused Insert

14-823-387

Maximum Fill Volume	Description	Mfr. No.	Cat. No.	Pack of 100
350µL	12 × 32mm	501 340	**14-823-387**	82.65

ACCESSORIES

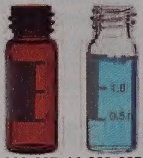
SUN-SRi 20mm Septa

- Designed for special applications
- Compatible with all 20mm magnetic and nonmagnetic crimp seals

Material	Application	Cat. No.	Pack of
Red Silicone/Aluminum Face Seal, 3mm Thick	For temperatures greater than 170°C	**22-030-210**	500/283.63
High-Purity Silicone/ PTFE Seal	For liquid-liquid extraction and trace analysis	**22-030-211**	100/77.88
Silicone/PTFE Ultraclean Seal	For temperatures up to 250°C	**22-030-212**	250/184.34
Blue Silicone/PTFE Seal; 1.01mm Thick	----	**14-823-423**	500/251.64

SUN-SRi 10-425 Wide Opening Vials

Clear, Type 1 Class A or Amber, Type 1 Class B borosilicate glass



14-823-337, 14-823-335

- Requires the use of 10-425 screw thread closures and 10mm septa

Description	Quantity	Mfr. No.	Cat. No.	Pack of 100
Clear Glass	1.5mL	500 306	**14-823-335**	17.24
Amber Glass	1.5mL	500 322	**14-823-337**	19.91
Polypropylene	750µL	501 353	**14-823-391**	25.25

SUN-SRi StepVial II Vials

Designed to ensure proper centering of limited volume inserts, eliminating missed injections

22-030 Series

- Standard graduated write-on patch provides easy filling and identification of sample
- Manufactured of Clear, Type 1 Class A or Amber, Type 1 Class B, borosilicate glass
- May be used with robotic autosamplers in place of crimp style vials
- 40% larger opening for easier sample preparation
- Must be used with 9mm, StepVial II closures to ensure proper fit and functionality
- Maximum fill volume: 1.5 mL
- 12 × 32mm

Description	Mfr. No.	Cat. No.	Pack of 100
Clear	500 778	**14-823-355**	16.57
Amber	500 779	**22-030187**	18.18

SUN-SRi Step Vial II Unassembled Vial/Cap/Septa Kit

Maximum fill volume: 1.5mL

- 12 × 32mm

22-030 Series

Mfr. No.	Cat. No.	Pack of 100
500 798	**22-030-203**	43.93

SUN-SRi Unassembled 10-425 Vial Kits

Economical alternative to ordering multiple components

- Caps and septa are pre-assembled to save time during sample preparation and to minimize contamination during assembly
- Vials are conveniently provided in an adjacent well for easy accessibility
- 12 × 32mm

14-823 Series of unassembled vial kits

Description	Mfr. No.	Cat. No.	Pack of 100
Clear	200 403	**14-823-182**	50.79
Amber	200 514	**14-823-199**	42.29

SUN-SRi Shell Vials for Waters WISP*

15x45mm vials in high quality polypropylene

- The tear-away design of the polyethylene plug closure ensures excellent penetration and ventilation during sampling
- Shell vials are kitted unassembled with the appropriate closures
- Maximum fill volume: 4mL
- 12 × 32mm

14-823-320

Mfr. No.	Cat. No.	Pack of 100
500 160	**14-823-320**	21.45

ACCESSORIES

SUN-SRi Magnetic Screw-Thread Closures

- 18mm closures fit both the 10 and 20mL screw-top headspace vials
- Can be used with Gerstel*, CTC/Leap* Technologies, and other magnetictransport autosamplers

22-030-20 Series

Septa	Mfr. No.	Cat. No.	Pack of 100
SPME	405 029	**22-030-204**	41.27
PTFE/Silicone	405 031	**22-030-205**	50.06
PTFE/Chlorobutyl	405 035	**22-030-206**	36.17

National Scientific Silanized Target* Screw-Thread Vials

Clear glass vials feature full surface coverage of noncontaminating, highly resistive, silane reagent coating. Deactivates active sites of glass to prevent analyte loss.

- Excellent for use with analysis of polar compounds, biological, pH sensitive samples
- Maximum fill volume: 2mL
- 12 × 32mm

03-375-16 Series

Description	Mfr. No.	Cat. No.	Pack of 100	Case of 20
Silanized	C4013-S1	**03-375-16AS**	48.20	876.
I-D*, Silanized	C4013-S2	**03-375-16BS**	1001.16	-

*Trademark. See Trademark Reference.

AUTOSAMPLER—4ML

***Fisher**brand** 4mL Autosampler Vials

- 15 × 45mm, 13-425 screw-top vials
- Type 1, borosilicate glass
- Black closures are preassembled with a red and white PTFE/Silicone septa (0.075") and 13-425 GPI thread
- Fully compatible with Waters* WISP* and Shimadzu* autosamplers
- Convenience kit includes 100 vials and 100 caps with septa

03-391-19

Description	Cat. No.	Pack of 100
Vials		
Clear	**03-391-19**	17.34
Amber	**03-391-37**	20.21
13-425 Threaded Black Cap w/Septa		
PTFE/Silicone Septa	**03-391-21**	38.85
Convenience Kit		
Clear Vials w/Black Caps and PTFE/Silicone Septa	**03-391-22**	53.64

National Scientific Assembled Screw Thread Vial Kits

With 4mL vials

- Assembled kits include 100 vials with pre-attached caps and septa
- Packaged in convenient vial trays with clear covers or in polybags
- Vial trays are stackable for easy storage and feature alphanumeric indexing
- Vial trays hold vials upright for easy filling and maintaining sample order

22-045948

Vial	Cap	Septum	NSC No.	Cat. No.	Pack of 100
Assembled Vials in NSC Stackable Trays with Clear Covers					
Clear Glass	Black Polypropylene	White Virgin PTFE	C4015-21	**03-375-3H**	39.70
Clear Glass I-D*	Black Polypropylene	White Virgin PTFE	C4015-21W	**03-376-462**	37.86
Amber Glass I-D	Black Polypropylene	White Virgin PTFE	C4015-21AW	**03-375-3T**	41.30
Clear Glass	Black Polypropylene	PTFE/Silicone	C4015-17	**03-375-3G**	65.04
Amber Glass	Black Polypropylene	PTFE/Silicone	C4015-17A	**03-375-3P**	65.35
Clear Glass I-D	Black Polypropylene	PTFE/Silicone	C4015-17W	**03-375-3J**	66.35
Amber Glass I-D	Black Polypropylene	PTFE/Silicone	C4015-17AW	**03-375-3K**	66.83
Clear Glass	Black Polypropylene	PTFE/Silicone Pre-Slit	C4015-85	**03-376-464**	55.06
Clear Glass	Black Phenolic	White Virgin PTFE	C4015-410A	**03-378-378**	49.09
Clear Glass	Black Phenolic	PTFE/Red Rubber	C4015-482A	**03-378-375**	60.75
Amber Glass I-D	White Urea	PTFE/Rubber Liner	C4015-18AW	**03-376-405**	63.35
Polybagged Assembled Vials					
Clear Glass	Black Polypropylene	PTFE/Silicone	C4015-017	**03-375-40A**	63.26
Amber Glass	Black Polypropylene	PTFE/Silicone	C4015-017A	**03-375-40C**	63.67
Clear Glass I-D	Black Polypropylene	PTFE/Silicone	C4015-017W	**03-375-40B**	64.01
Amber Glass I-D	Black Polypropylene	PTFE/Silicone	C4015-017AW	**03-375-40D**	64.47
Clear Glass	Black Polypropylene	White Virgin PTFE	C4015-021	**03-375-40E**	41.70
Clear Glass I-D	Black Polypropylene	White Virgin PTFE	C4015-021W	**03-375-40F**	39.20
Amber Glass I-D	Black Polypropylene	White Virgin PTFE	C4015-021AW	**22-045948**	39.65

National Scientific 15 × 45mm Screw Thread Vials

- Original Waters* 4mL WISP* autosampler vial
- Superior quality borosilicate clear glass Type 1, Class A or 51A amber glass
- Uniformly flat bottom for security with inserts
- I-D* vials feature write-on patch
- AP2000* High Recovery vials feature a tapered bottom for maximum sample extraction
- Glastic* vials have a glass insert fixed inside of a plastic vial
- Deactivated vials are available with either NSC Silanization or Kimshield* pretreatment

06-406-19FF and 03-340-12B

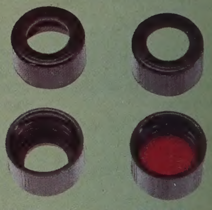
Standard Fill Volume	Description	Mfr. No.	Cat. No.	Pack of 100	Case of
4mL	15 × 45mm Clear Glass	C4015-1	**06-406-19F**	20.43	20 Pk./376.97
4mL	15 × 45mm Clear Glass I-D	C4015-11W	**06-406-19FF**	23.34	20 Pk./429.80
4mL	15 × 45mm Amber Glass	C4015-2	**03-340-12A**	19.95	20 Pk./385.52
4mL	15 × 45mm Amber Glass I-D	C4015-2W	**03-340-12B**	26.13	20 Pk./481.07
2.5mL	15 × 45mm AP2000 High Recovery Vial, Polypropylene	C4015-14	**03-378-329**	21.05	10 Pk./191.28
1.0mL	Glastic 15 × 45mm TPX vial with glass insert	C4015-15	**03-378-330**	234.38	----
Deactivated Vials					
4mL	15 × 45mm Clear Glass, Silanized	C4015-S1	**06-406-19FS**	55.09	20 Pk./1096.14
4mL	15 × 45mm Clear Glass I-D, Silanized	C4015-S11W	**03-377-115**	46.35	20 Pk./813.66
4mL	15 × 45mm Amber Glass, Silanized	C4015-S2	**03-340-12C**	58.55	20 Pk./1116.34
4mL	15 × 45mm Amber Glass I-D, Silanized	C4015-S2W	**03-377-116**	49.03	20 Pk./861.29

ACCESSORIES

National Scientific Screw Caps

For 4mL vials

- Open-top caps are designed to be used with any 13mm septa
- Polypropylene caps are chemically inert and suitable for most chromatography applications
- Phenolic resin caps perform well at high temperatures and with exposure to corrosives


03-378-315 and 03-378-316

Assembled, With Inserted Septa

- PTFE/Red Rubber septa are economical for many GC applications
- PTFE/Silicone septa are most popular for HPLC and GC applications
- Pre-slit septa are easier to piece with thin gauge needles

Cap Type	Cap Color	Septum	Mfr. No.	Cat. No.	Pack of 100	Case of 1000
Polypropylene Open Top Cap	Black	Ivory PTFE/Red Rubber	C4015-30A	**03-377-106**	28.99	262.94
	Black	Red PTFE/White Silicone/Red PTFE	C4015-40A	**03-377-108**	40.94	351.16
	White	Red PTFE/White Silicone, 0.045“, Soft	C4015-45W	**03-377-110**	35.95	320.23
	Black	Blue PTFE/White Silicone—Pre-slit	C4015-55BLK	**03-376-250**	42.34	----
	Black	Red PTFE/White Silicone	C4015-75A	**03-375**	49.72	452.04
	Red	Red PTFE/White Silicone	C4015-75R	**03-376-463**	46.31	421.00
Single Piece Polypropylene	Natural	Integral Molded Polypropylene	C4015-5A	**03-375-25C**	----	137.20
Phenolic Open Top Cap	Black	Red PTFE/White Silicone	C4015-66A	**03-378-316**	54.11	----

03-378-315, 03-375-25B

Empty Caps, Without Septa

Color	Mfr. No.	Cat. No.	Pack of 100	Case of 1000
Polypropylene Open-Top Cap				
Black	C4015-1A	**03-375-25A**	6.33	50.76
White	C4015-1W	**03-375-25B**	----	66.40
Blue	C4015-97B	**03-378-384**	----	48.37
Green	C4015-97G	**03-378-385**	----	48.37
Red	C4015-97R	**03-378-386**	----	48.37
Yellow	C4015-97Y	**03-378-387**	----	48.37
Phenolic Open Top Cap				
Black	C4015-66	**03-378-315**	----	75.36

*Trademark. See Trademark Reference.

Prices subject to change.

ACCESSORIES

National Scientific Septa

For 4mL screw thread vials

- PTFE Disk septa are chemically inert
- PFTE/Red Rubber septa are economical for many GC applications
- PTFE/Silicone septa are most popular for HPLC and IC applications
- Pre-slit septa are easier to pierce with thin gauge needles

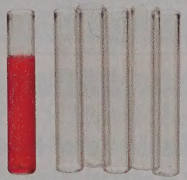
03-377-10 Series

Description	Features	Mfr. No.	Cat. No.	Pack of 100	Case of 1000
White Virgin PTFE	Not re-sealable, single use	C4015-10	**03-340-10D**	----	42.86
Ivory PTFE/Red Rubber	For general chromatography	C4015-30	**03-377-105**	18.81	172.54
Red PTFE/White Silicone/Red PTFE	For use with aggressive solvents	C4015-40	**03-377-107**	31.31	272.65
Red PTFE/White Silicone, 0.045"	Soft durometer, for thin gauge needles	C4015-45	**03-377-109**	21.98	197.01
Red PTFE/White Silicone, 0.060"	Most popular PTFE/Silicone product	C4015-60	**03-340-10G**	22.11	203.21
Ivory PTFE/White Silicone, 0.060"	Same as Kimble* 73818T-13	C4015-61	**03-378-379**	----	197.66
Blue PTFE/White Silicone—Pre-slit	Single slit septum	C4015-55	**03-377-112**	31.64	279.95

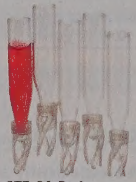
AUTOSAMPLER—INSERTS

National Scientific Inserts

- Polyspring* inserts feature a polyethylene spring to center the bottom of the insert and to provide a cushion against needle contact
- Precision point inserts minimize residual sample losses
- Deactivated inserts are Silanized or Kimshield* pretreated
- Pulled point inserts are an economical choice for non-critical applications



03-375 Series



03-375-3A Series

For Target* LoVial* Wide–Opening Vials

- Have a nominal O.D. of 6mm to fit Target wide-opening vials

Description	Features	Mfr. No.	Cat. No.	Pack of	Case of 10 Pk.
400µL MicroSert*, Glass Flat Bottom Insert	Open end has fill marking	C4011-631	**03-375-3B**	500/55.50	----
400µL MicroSert, Polypropylene Flat Bottom Insert	Molded plastic insert	C4011-631P	**03-375-24AD**	500/35.65	----
300µL Polyspring, Glass Conical Insert	Polyspring centers and cushions insert	C4010-630	**03-375-3A**	100/91.74	----
300µL Polyspring, Polyspring Conical Insert	Precision formed tip with Polyspring	C4010-630P	**03-375-18E**	100/35.19	322.43
350µL Glass Conical Insert, Pulled Point	Precision formed tip, rests on vial bottom	C4010-627L	**03-377-68**	100/47.06	370.26
350µL Glass Conical Insert, Precision Point	Insert is suspended in vial by top spring	C4010-629L	**03-377-69**	1000/534.33	----
250µL Glass Conical Insert with Top Spring	Insert is suspended from the rim of the vial	C4010-630TS	**03-378-383**	500/516.05	----
Deactivated Inserts					
300µL Glass Conical Insert, Silanized	Insert rests on bottom of vial	C4010-S629	**03-375-24CS**	100/79.80	689.28
300µL Polyspring, Glass Conical Insert, Silanized	Precision formed tip, NSC silanized	C4010-S630	**03-375-3AS**	100/113.85	----
400µL MicroSert, Glass Flat Bottom Insert, Silanized	Insert rests on bottom of vial	C4011-S631	**03-375-3BS**	500/144.50	----
300µL Polyspring, Glass Conical Insert, Kimshield	Precision formed tip, Kimshield deactivated	C4010-K630	**03-397-58**	100/117.34	----

For Standard-Opening Vials

- Have a nominal O.D. of 5mm to fit standard-opening vials

03-375-1D

03-375-1A

Description	Fill Volume	Residual Volume	Mfr. No.	Cat. No.	Pack of	Case of 10 Pk.
250µL MicroSert*, Flat Bottom	200µL	12µL	C4012-465	03-375-1D	500/52.58	----
200µL Polyspring, Conical	175µL	5µL	C4012-530	03-375-1A	100/54.15	----
200µL Conical	175µL	5µL	C4012-529L	03-377-96	100/35.23	312.05
200µL Top Spring Conical	175µL	4µL	C4013-529T	03-378-321	500/340.48	----
175µL Polyspring	125µL	3µL	C4012-530P	03-378-341	100/36.32	----
Metal Spring for Standard Opening Vials	N/A	N/A	C4012-540	03-375-24P	1000/273.90	----
Deactivated Inserts						
200µL Polyspring, Conical	175µL	5µL	C4012-S530	03-375-1AS	100/81.88	----
250µL MicroSert Flat Bottom	200µL	12µL	C4013-K465	03-378-360	1000/361.46	-----
200µL Polyspring, Conical	175µL	5µL	C4012-K530	03-378-359	100/89.49	-----

Contd. on next page.

National Scientific Inserts, Contd.

03-375-39C

03-375-39A

For 15 × 45mm 4mL Vials

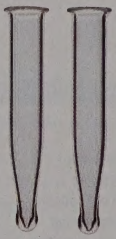
- Have a nominal O.D. of 6mm or 8mm to fit 15 × 45 4mL vials

Description	Features	Mfr. No.	Cat. No.	Pack of 10	Case of 10 Pk.
1000µL MicroSert*, Glass Flat Bottom Insert	Rests on vial bottom	C4015-843	**03-378-390**	16.39	112.05
800µL Polyspring Glass Conical Insert, Pulled Point	Straight sided insert	C4015-638	**03-375-1C**	55.05	----
300µL Polyspring Polypropylene Conical Insert	Polyspring supports bottom of the insert	C4015-638P	**03-378-312**	39.34	----
500µL Polyspring Glass Conical Insert	Flange at insert lip improves fit in vial	C4015-641	**03-375-39A**	61.04	----
300µL Glass Conical Insert with Top Spring	Insert is suspended from rim of vial	C4015-639TS	**03-378-391**	109.96	----
350µL Glass Conical Insert, Pulled Point	Flanged lip, requires C4015-640 metal spring	C4015-643	**03-375-39C**	32.59	----
Metal spring for glass inserts and 4mL vial	Supports inserts lacking a bottom spring	C4015-640	**03-375-24X**	10.53	88.39
500µL Glass Conical Insert, Pulled Point	Flanged lip, requires C4015-640 metal spring	C4015-642	**03-375-39B**	58.44	----
Deactivated Inserts					
500µL Polyspring Silanized Conical Insert	Flange at insert lip improves fit in vial	C4015-S641	**03-375-39AS**	81.66	----

AUTOSAMPLER—HEADSPACE

SUN-SRi StepVial System* Inserts

Automatically seat at optimal height and center; no springs or supports needed



14-823-374

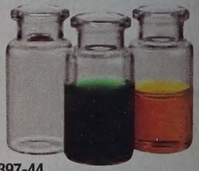
Description	Nominal Residual Volume	Mfr. No.	Cat. No.	Pack of 100
200µL Glass StepVial	2µL	501 304	**14-823-374**	74.26

LOOKING FOR MORE CHROMATOGRAPHY SUPPLIES?

See Fisher Scientific's complete line of chromatography products in the Chromatography section.

National Scientific Headspace Vials

- Type 1 borosilicate glass
- Flat bottom vials feature a longer neck for fit with Carlo Erba* and Agilent* units
- Round bottom vials are designed for Perkin-Elmer*, Tekmar* and Varian* units



03-397-44

Description	Mfr. No.	Cat. No.	Pack of 100	Case of 1000
6mL, Flat Bottom	C4020-60	**03-397-55**	----	242.64
10mL, Flat Bottom	C4020-10	**03-375-21C**	31.25	226.86
10mL, Round Bottom	C4020-210	**03-377-120**	31.28	270.84
20mL, Flat Bottom	C4020-20	**03-377-119**	30.34	263.67
20mL, Round Bottom	C4020-2	**03-377-118**	30.34	263.67
27mL, Flat Bottom	C4020-27	**03-397-44**	----	472.15

ACCESSORIES

Crimp seals with Septa

- Septa and crimp seals also sold separately

Description	Septa	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
Regular	Tan PTFE/White Silicone	C4020-32A	**03-375-22E**	72.21	639.05
Regular	Ivory PTFE/Red Rubber	C4020-34A	**03-375-22F**	61.91	521.73
Pressure Release[1]	Tan PTFE/White Silicone	C4020-32AP	**03-377-121**	76.59	677.78
Pressure Release[1]	Ivory PTFE/Red Rubber	C4020-34AP	**03-377-122**	65.22	577.16

[1] *Will vent pressure when 3 bar is exceeded.*

ACCESSORIES

Headspace 20mm Crimp Seals

Unlined aluminum seals for use with all headspace vials

03-377-124, 03-375-23C

Description	Mfr. No.	Cat. No.	Case of 1000
One-piece	C4020-3A	**03-375-23C**	73.82
Tear-off Seal[1]	C4020-5A	**03-375-23D**	74.57
Pressure Relief Cap[2]	C4020-6A	**03-377-124**	114.73

[1] Center tears out to expose top of liner to syringe.
[2] Will vent pressure when 3 bar is exceeded.

Septa

For use with unlined 20mm crimp seals

03-375-22 Series

Description	Temperature Range	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
Gray Butyl Stopper	-40 to +120°C	C4020-30	**03-375-22AA**	170.18	----
PTFE/Silicone[1]	-60 to +125°C	C4020-32	**03-375-22B**	65.64	591.29
PTFE/Red Rubber Septa	-40 to +100°C	C4020-34	**03-375-22C**	55.95	471.99
Gray PTFE/Black Butyl	-40 to +125°C	C4020-36	**03-375-22D**	64.54	----
Assembled 20mm Seal and Septa	-40 to +125°C	C4020-36A	**03-375-22G**	88.11	779.75

[1] Packaged in glass jar to prevent contamination.

SUN-SRi Headspace Vials

Designed with a round bottom that is more easily handled by robotic arms

- Available with a 20mm crimp-seal or an 18mm screw-thread finish
- Compatible with Gerstel* and CTC/Leap* Technologies headspace samplers when used with magentic closures
- Beveled-edge finish on crimp-top vials provide for a sturdy rim that presses into the septum for a more effective seal

NEW

14-823-530, -533 14-823-340 14-823-531

Description	O.D. x H	Mfr. No.	Cat. No.	Pack of
20mm Crimp-Top Vials				
10mL Clear	22 × 45mm	502 046	**14-823-530**	125/34.20
20mL Clear	22 × 75mm	500 550	**14-823-340**	100/29.45
20mL Amber	22 × 75mm	502 554	**14-823-531**	125/55.16
18mm Screw-Top Vials				
10mL Clear	22 × 45mm	502 460	**14-823-532**	125/50.78
20mL Clear	22 × 75mm	502 458	**14-823-533**	125/65.29

AUTOSAMPLER—SHELL

*Fisherbrand** Shell Vials for Waters* Autosamplers

- 1mL vials are made from clear borosilicate glass and are for use with a 96-position autosampler
- 4mL vials are made from Type I, Class A clear borosilicate glass and are for use with a 48-position autosampler

INCLUDES:
Natural-colored polyethylene SepCap* closures

03-391-23

03-391-24

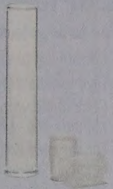
Size	Cat. No.	Pack of
1mL	**03-391-23**	200/17.07
4mL	**03-391-24**	100/15.08

*Fisherbrand** 8 × 35mm Shell Vials

1mL shell vials for Alcott/Micrometrics 728 Autosamplers

- Made from chemically resistant clear borosilicate glass
- Feature uniform wall thickness, fully annealed top

INCLUDES:
Natural-colored polyethelene push-in caps



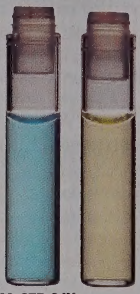
03-391-30

Cat. No.	Pack of 1000
03-391-30	198.18

National Scientific Shell Vial for Micrometrics/Alcott Model 728

1mL, 8 × 35mm shell vials with closures

- Meet or exceed manufacturers' specifications
- Polyethylene push-in caps ease needle penetration/withdrawal
- Uniform wall thickness and fully annealed tops for strength



03-375-24Y

Description	Mfr. No.	Cat. No.	Pack of 1000
Clear Glass Positive Displacement Vial with Plug Cap	C4008-50	**03-375-24Y**	241.90

National Scientific SepCap* Shell-Style Vials

1mL, 8 × 40mm shell vials with closures

- SepCap starburst center design at 0.010" eases needle penetration
- Vials are supplied with SepCap polypropylene caps

03-375-2G, 03-375-2Q

Description	Mfr. No.	Cat. No.	Pack of
Shell-Style Vials			
1mL Clear Glass Shell Vial with SepCap	C4015-96	**03-375-2G**	200/19.34
1mL Amber Glass Shell Vial with SepCap	C4015-99	**03-375-2Q**	200/25.04
1mL Polypropylene Shell Vial with SepCap	C4015-95P	**03-378-3B**	250/63.05
Replacement Caps			
Natural	C4015-97	**03-375-2H**	500/21.66

COD VIALS

accu-Test* Vials for COD Testing

For low-, standard- and high-range concentrations

- Convenient to use
- Give excellent analytical results
- Compatible with all standard COD reactors and spectrophotometers
- For samples with low chloride and ammonia levels, mercury-free reagents are available for nonreporting purposes

ORDERING INFORMATION:

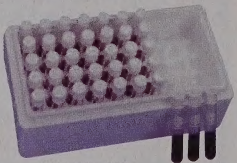
Supplied in modular packs that are easy to stack

INCLUDES:

16mm vial with 1.5mL digestion solution, 3.5mL catalyst solution, and screw cap

CERTIFICATIONS:

U.S. EPA approved (for standard and low ranges) micro Chemical Oxygen Demand test



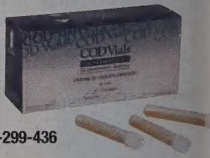
01-215-22B

01-215-22A

Range	Cat. No.	Pack of 50	Case of 150
With Mercury			
5–150mg/L	**01-215-22B**	126.50	309.00
20–900mg/L	**01-215-22A**	126.50	309.00
100–4500mg/L	**01-215-22C**	126.50	309.00
Mercury-free			
5–150mg/L	**01-215-29**	268.35	----
20–900mg/L	**01-215-28**	268.35	----

CHEMetrics* COD Reagent Vials

Contain premeasured reagents for accurate, economical determination of COD



13-299-436

- No need to modify or recalibrate existing equipment or procedures
- Optical-quality glass for accuracy
- Available in mercury and mercury-free versions
- Screw caps lined with PTFE for inertness
- Standard ⅝" (16mm) diameter for compatibility with standard COD reactors and spectrophotometers; can also be used in micro-COD reactors
- Follow the EPA-approved method for compliance reporting and use potassium dichromate as the oxidizing agent, silver sulfate as the catalyst, and mercury chloride to remove chloride interference
- Mercury-free version uses the same oxidizing agent and catalyst without the chloride compensator

ORDERING INFORMATION:

In packs of 30 reagent vials

INCLUDES:

Instructions and MSDS

Range	MDL	Cat. No.	Pack of 30
EPA-approved			
0–150ppm	10ppm	**13-299-435**	38.3
0–1500ppm	30ppm	**13-299-436**	38.3
0–15,000ppm	300ppm	**13-299-437**	38.3
Mercury-free			
0–150ppm	10ppm	**13-299-438**	38.3
0–1500ppm	30ppm	**13-299-439**	38.3
0–15,000ppm	300ppm	**13-299-440**	38.3

LOOKING FOR COD REACTORS?

Turn to the Water/Wastewater section of this catalog.

EPA

*Fisherbrand** Glass EPA Vials

Packaged in partitioned trays

- Borosilicate glass
- Clear vials for general analysis; amber vials for light-sensitive materials
- GPI thread, 24-400

INCLUDES:

White polypropylene open-top screw caps with 0.125" PTFE /silicone septa

COMPLIANCE:

Precleaned to meet or exceed EPA standards for volatile organic analysis

02-912 Series

Color	Capacity	O.D. × H	Cat. No.	Case of 144
Precleaned with certification				
Clear	10 dr. (40mL)	28 × 95mm	**02-912-376**	545.59
Amber	10 dr. (40mL)	28 × 95mm	**02-912-377**	614.78
Clear	5 dr. (20mL)	28 × 57mm	**02-912-378**	566.18
Precleaned				
Clear	10 dr. (40mL)	28 × 95mm	**02-912-379**	361.53
Amber	10 dr. (40mL)	28 × 95mm	**02-912-380**	394.25
Clear	5 dr. (20mL)	28 × 57mm	**02-912-381**	423.84
Amber	5 dr. (20mL)	28 × 57mm	**02-912-382**	457.91

*Fisherbrand** Economical Glass EPA Vials

Unassembled EPA vials

- Available in clear and amber Type I borosilicate glass
- Ideal for use in water sampling according to the revised U.S. EPA 40CFR136 and 40CFR141 specifications

INCLUDES:

White polypropylene open-top closures with 0.125" TFE/silicone septa

03-340-120

03-340-121

Capacity	O.D. × H	Cat. No.	Case of 72
Clear			
20mL	28 × 57mm	**03-340-121**	110.26
40mL	28 × 95mm	**03-340-119**	139.92
Amber			
20mL	28 × 57mm	**03-340-122**	146.78
40mL	28 × 95mm	**03-340-120**	190.36

*Fisherbrand** EnviroWare* Assembled Borosilicate Glass EPA Vials

For the collection and storage of water samples

- Manufactured from Type I, Class A or amber 203 borosilicate glass
- GPI thread: 24-400

ORDERING INFORMATION:

Replacement caps and septa available.

INCLUDES:

White open-top polypropylene closures and 0.005" PTFE/0.120" silicone rubber septa

COMPLIANCE:

All EnviroWare vials comply with guidelines for establishing test procedures for the analysis of pollutants (Ref. U.S. EPA Methods 601, 602, 603, and 624).

03-339-14E

03-339-14A

Assembled EPA vials meet the revised U.S. EPA 40CFR136 and 40CFR141 specifications for discrete water sampling.

Capacity	O.D. × H	Cat. No.	Pack of 72	Case of 6 Pk.
Clear				
20mL	28 × 60mm	**03-339-14C**	138.39	572.68
40mL	28 × 98mm	**03-339-14A**	207.46	858.46
Amber				
20mL	28 × 60mm	**03-339-14E**	164.53	680.77

ACCESSORIES

EnviroWare* Borosilicate Glass EPA Vials Replacement Caps

- White polypropylene screw-thread style
- Open top
- GPI thread: 24-400

Cat. No.	Case of 144
03-340-7L	17.98

I-Chem Certified* and Economy Vials

05-719 Series

I-Chem Certified 300 Series Vials

- Come with a Certificate of Analysis showing that the vials meet the specifications of U.S. EPA document Specifications and Guidance for Contaminant-free Sample Containers
- The Certificate includes a bar code of the production number for traceability
- A bar code label attached to each vial contains the production number and the vial's unique identification number
- Analysis labels are included

I-Chem Certified 200 Series Vials

- Processed under the same procedures as the 300 Series vials but a Certificate of Analysis[†] and bar code labels are not provided
- Analysis labels are included

I-Chem 100 Economy Series Vials

- Made of the same materials and subject to the same material specifications as the I-Chem Certified 300 and 200 Series; however, they are not processed, certified or bar code labeled, and analysis labels are not included

20mL Vials

Clear borosilicate glass vials with blue polypropylene cap and choice of open top with 0.125" PTFE-resin/silicone septum or closed top with PTFE-resin liner.

- GPI thread, 24-414
- Vials measure 1¹⁄₁₆ diameter × 2¼" high (28 × 57mm)

	I-Chem Certified 300 Series			I-Chem Certified 200 Series			I-Chem 100 Economy Series		
Closure	**Mfr. No.**	**Cat. No.**	**Case of 72**	**Mfr. No.**	**Cat. No.**	**Case of 72**	**Mfr. No.**	**Cat. No.**	**Case of 72**
Open top with 0.125" septum	S326-0020	**05-719-115**	121.65	S226 0020	**05-719-116**	110.32	S126-0020	**05-719-117**	77.66
Closed top with liner	C326-0020	**05-719-109**	145.99	C226-0020	**05-719-110**	123.34	C126-0020	**05-719-111**	86.16

40mL Vials

Clear or amber borosilicate glass with blue polypropylene closures in choice of open- or closed-top styles.

- Vials with 0.125" septa come with or without attached SeptaGard* polyethylene protective tabs
- Vials with low-bleed septa have reduced siloxane bleed and are ideal for EPA Method 5035
- Molded-in retainer ring holds septa in place
- Closed-top closures have PTFE-resin liners
- GPI thread, 24-414
- All vials measure 1¹⁄₁₆ diameter × 3¾" high (27 × 95mm)
- Without graduations

		I-Chem Certified 300 Series			I-Chem Certified 200 Series			I-Chem Economy 100 Series		
Color	**With SeptaGard Tab**	**Mfr. No.**	**Cat. No.**	**Case of 72**	**Mfr. No.**	**Cat. No.**	**Case of 72**	**Mfr. No.**	**Cat. No.**	**Case of 72**
Open top with 0.125" septum										
Clear	No	S336-0040	**05-719-104**	145.18	S236-0040	**05-719-101**	120.99	S136-0040	**05-719-98**	85.52
Clear	Yes	G336-0040	**05-719-121**	220.22	G236-0040	**05-719-122**	181.70	G136-0040	**05-719-123**	128.83
Amber	No	S346-0040	**05-719-105**	145.18	S246-0040	**05-719-102**	120.99	S146-0040	**05-719-99**	85.52
Amber	Yes	G346-0040	**05-719-130**	220.22	G246-0040	**05-719-131**	181.70	G146-0040	**05-719-132**	128.83
Open top with 0.125" low-bleed septum										
Clear	No	LB336-0040	**05-719-255**	177.44	LB236-0040	**05-719-556**	132.15	----	----	----
Open top with 0.060" septum[‡]										
Clear	No	T336-0040	**05-719-124**	188.74	T236-0040	**05-719-125**	157.28	T136-0040	**05-719-126**	110.10
Amber	No	T346-0040	**05-719-300**	188.74	T246-0040	**05-719-301**	157.28	T146-0040	**05-719-302**	110.10
Closed top with liner										
Clear	N/A	C336-0040	**05-719-118**	169.38	C236-0040	**05-719-119**	145.59	C136-0040	**05-719-120**	99.78
Amber	N/A	C346-0040	**05-719-127**	169.38	C246-0040	**05-719-128**	145.59	C146-0040	**05-719-129**	99.78

[†] *Certificate of Analysis available for 200 Series products.*
[‡] *Recommended for some autosamplers.*

Contd. on next page.

I-Chem* Certified and Economy Vials, Contd.

60mL Vials

Clear or amber Type I borosilicate glass with blue polypropylene closures in choice of open- or closed-top styles.

- Closed-top closures have PTFE/silicone liners
- Open-top closures have 0.125" PTFE/silicone septa
- Molded-in retainer ring holds septa in place without bonding to the closure, yet allows for easy removal/replacement
- GPI thread 24-414
- Vials measure 1 1/16 diameter × 5 11/16" high (27 × 144.8mm)

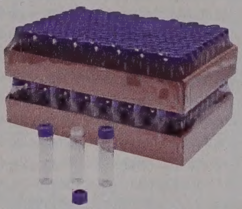
	I-Chem Certified 300 Series			I-Chem Certified 200 Series			I-Chem Economy 100 Series		
Color	**Mfr. No.**	**Cat. No.**	**Case of 72**	**Mfr. No.**	**Cat. No.**	**Case of 72**	**Mfr. No.**	**Cat. No.**	**Case of 72**
Clear	S336-0060	**05-719-399**	194.65	S236-0060	**05-719-403**	162.21	S136-0060	**05-719-398**	113.55
Amber	S346-0060	**05-719-402**	194.65	S246-0060	**05-719-401**	162.21	S146-0060	**05-719-400**	113.55

† Certificate of Analysis available for 200 Series products.

I-Chem* Economy Pack 40mL Vials

Ideal for U.S. EPA Volatile Organics Analysis, yet economically priced for general laboratory use

- Borosilicate glass vials available in clear glass or amber glass for light-sensitive materials
- Similar to I-Chem Certified* 200 and 300 Series vials, except supplied without certification or container labels



14-965-90 (top), 05-719-106

ORDERING INFORMATION:
Use with I-Chem color-coded labels to easily identify samples and type of environmental preservative.

INCLUDES:
Vials with 0.125" thick PTFE resin/silicone septa and polypropylene closures with 24-414 finish

Color	O.D. × H	Mfr. No.	Cat. No.	Case of 144
Clear	1 1/16 × 3¾" (27 × 95.2mm)	SB36-0040	**05-719-106**	185.86
Amber	1 1/16 × 3¾" (27 × 95.2mm)	SB46-0040	**14-965-90**	185.86

I-Chem* Field-Ready* 40mL Vials

No need to transport, measure and pour from reagent bottles

- I-Chem Certified 300 Series containers prefilled with chemical preservative for convenient sample preparation in the field
- Color-coded labels/seals are attached to each container to identify preservative, concentration, and tamper evidence

05-719-528

ORDERING INFORMATION:
Each case is sealed with tamper evident tape.

INCLUDES:
Blue polypropylene caps and PTFE-resin/silicone septa

COMPLIANCE:
Meet EPA analyte specifications for volatile organic analysis. Certificate of Analysis stating a listing of all analytes and their respective detection/quantitation limits and a special Field-Ready Certificate accompany each case.

Color	Chemical Preservative	Mfr. No.	Cat. No.	Case of 72
Clear	0.5mL 1:1 Conc. HCl	S336D0.5012	**05-719-528**	200.77
Amber	0.5mL 1:1 Conc. HCl	S346D0.5012	**05-719-540**	201.51
Amber	65mg Ammonium Chloride Powder	S346D6 5179	**14-965-89**	255.84

I-Chem* Low Level TOC Certified Vials

Vials contain less than 50ppb total organic carbon

- 40mL capacity
- Manufactured from clear borosilicate glass
- O.D. × H: 1 1/16 × 3¾" (2.8 × 9.5cm)

05-719-420

APPLICATIONS:
Ideal for use in pharmaceutical water sampling (Ref. U.S. EPA Method 643).

INCLUDES:
Open-top 24-414 polypropylene caps with bonded 0.125" thick PTFE/silicone septa, Certificate of Analysis; vials are bar-coded and lot number traceable

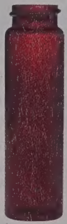
COMPLIANCE:
Meet specifications outlined in *EPA Specifications and Guidelines for Contaminant-free Sample Containers for Volatile Organic Analysis.* Analysis labels included.

Mfr. No.	Cat. No.	Case of 72
S336 0040TOC	**05-719-420**	226.83

Kimble* Glass Vials for EPA Water Analysis

Clear KG-33 or amber 203 borosilicate glass vials with screw threads.

- GPI threads 24-400
- Without closures



03-339-11C

COMPLIANCE:
Vials comply with guidelines for establishing test procedures for analyzing pollutants in water (Ref. U.S. EPA Methods 601, 602, 603, and 604).

Capacity	O.D. × H	Mfr. No.	Cat. No.	Pack of 144	Case of 3 Pk.
Clear					
20mL	28 × 57mm	60958A 4	**03-339-5A**	97.53	213.56
30mL	28 × 70mm	60958A 6	**03-339-5B**	112.19	245.66
40mL	28 × 95mm	60958A 912	**03-339-5C**	115.02	251.86
45mL	28 × 108mm	60958A 11	**03-339-5D**	121.92	266.98
60mL	30 × 123mm	60958A 16	**03-339-5E**	126.17	276.28
Amber					
20mL	28 × 57mm	60960A 4	**03-339-11A**	117.03	256.26
40mL	28 × 95mm	60960A 912	**03-339-11C**	138.00	302.20

Wheaton Glass EPA Vials

Choose clear or amber borosilicate glass vials

- 40mL capacity
- GPI thread, 24-400

APPLICATIONS:
Ideal for use in water sampling according to U.S. EPA 40CFR136 *Guidelines for Establishing Test Procedures for the Analysis of Pollutants.*

INCLUDES:
Open-top screw caps with 10mm TFE and 90mm silicone septum

06-412-37

Color	O.D. × H	Mfr. No.	Cat. No.	Pack of 72
Clear	27.75 × 98mm	225310	**06-412-37**	157.73
Amber	27.75 × 98mm	225315	**06-412-38**	170.41

SAMPLE VIALS—GLASS

*Fisherbrand** Class A Clear Glass Threaded Vials

- Low alkali content
- Borosilicate glass vials are free of calcium, magnesium and zinc

ORDERING INFORMATION:
Closures are packaged separately.

INCLUDES:
Autoclavable black phenolic closures with white rubber liners

COMPLIANCE:
Meet Type I, Class A ASTM* E 438 requirements.

03-339-25A

Capacity	O.D. × H	GPI Thread Finish	Cat. No.	Pack of	Case of
½ dr. (1.8mL)	12 × 35mm	8-425	**03-339-25A**	144/69.95	16/771.93
1 dr. (3.7mL)	15 × 45mm	13-425	**03-339-25B**	144/60.14	16/663.62
2 dr. (7.4mL)	17 × 60mm	15-425	**03-339-25C**	144/73.06	12/604.63
3 dr. (11.1mL)	19 × 65mm	15-425	**03-339-25D**	144/74.51	8/411.08
4 dr. (14.8mL)	21 × 70mm	18-400	**03-339-25E**	144/86.80	8/478.88
6 dr. (22.2mL)	23 × 85mm	20-400	**03-339-25F**	144/110.44	6/457.01

*Fisherbrand** Class B Clear Glass Threaded Vials

- Made from Type I, Class B borosilicate glass
- Closures with white rubber liners, packaged separately
- Won't alter pH of sample
- Autoclavable

INCLUDES:
Black phenolic screw-top closures

03-339-22 Series

Capacity	O.D. × H	GPI Thread Finish	Cat. No.	Pack of 144	Case of
½ dr. (1.8mL)	12 × 35mm	8-425	**03-339-22A**	68.67	16/757.66
1 dr. (3.7mL)	15 × 45mm	13-425	**03-339-22B**	55.69	16/614.49
1½ dr. (5.5mL)	16 × 50mm	13-425	**03-339-22C**	80.65	16/889.98
2 dr. (7.4mL)	17 × 60mm	15-425	**03-339-22D**	63.55	12/525.92
3 dr. (11.1mL)	19 × 65mm	15-425	**03-339-22E**	65.59	8/361.89
4 dr. (14.8mL)	21 × 70mm	18-400	**03-339-22F**	79.87	8/440.62
4 dr. (14.8mL)	28 × 57mm	24-400	**03-339-22J**	110.97	3/229.61
6 dr. (22.2mL)	23 × 85mm	20-400	**03-339-22G**	89.57	6/370.65
6 dr. (22.2mL)	28 × 70mm	24-400	**03-339-22K**	113.62	3/235.06
8 dr. (29.6mL)	25 × 95mm	22-400	**03-339-22H**	97.90	4/270.06
9½ dr. (35.1mL)	28 × 95mm	24-400	**03-339-22M**	118.90	3/245.99
11 dr. (40.7mL)	28 × 108mm	24-400	**03-339-22N**	123.66	3/255.84

Closures With Polyvinyl-faced Pulp Liners, Packaged Separately

- General-purpose vials

03-339-21F

Capacity	O.D. × H	GPI Thread Finish	Cat. No.	Pack of 144	Case of
½ dr. (1.8mL)	12 × 35mm	8-425	**03-339-21A**	60.14	16/663.64
1 dr. (3.7mL)	15 × 45mm	13-425	**03-339-21B**	49.64	16/547.73
1½ dr. (5.5mL)	16 × 50mm	13-425	**03-339-21C**	53.51	16/590.41
2 dr. (7.4mL)	17 × 60mm	15-425	**03-339-21D**	56.42	12/466.86
3 dr. (11.1mL)	19 × 65mm	15-425	**03-339-21E**	61.43	8/338.96
4 dr. (14.8mL)	21 × 70mm	18-400	**03-339-21F**	71.15	8/392.51
4 dr. (14.8mL)	28 × 57mm	24-400	**03-339-21J**	86.67	3/179.31
6 dr. (22.2mL)	23 × 85mm	20-400	**03-339-21G**	75.58	6/312.72
6 dr. (22.2mL)	28 × 70mm	24-400	**03-339-21K**	92.49	3/191.35
8 dr. (29.6mL)	25 × 95mm	22-400	**03-339-21H**	81.65	4/225.24
9½ dr. (35.1mL)	28 × 95mm	24-400	**03-339-21M**	99.90	3/206.68
11 dr. (40.7mL)	28 × 108mm	24-400	**03-339-21N**	106.21	3/219.74

*Trademark. See Trademark Reference.

Vials with Polyvinyl-faced Closures, Attached

- General-purpose vials

03-338C

Capacity	O.D. × H	GPI Thread Finish	Cat. No.	Pack of	Case of
½ dr. (1.8mL)	12 × 35mm	8-425	**03-338AA**	144/88.48	36/2196.62
1 dr. (3.7mL)	15 × 45mm	13-425	**03-338A**	144/83.43	16/920.62
1½ dr. (5.5mL)	16 × 50mm	13-425	**03-338B**	144/86.67	18/1075.90
2 dr. (7.4mL)	17 × 60mm	15-425	**03-338C**	144/88.38	12/731.44
3 dr. (11.1mL)	19 × 65mm	15-425	**03-338D**	144/102.39	12/847.32
4 dr. (14.8mL)	21 × 70mm	18-400	**03-338F**	144/106.81	8/589.30
4 dr. (14.8mL)	28 × 57mm	24-400	**03-338E**	72/70.54	10/486.53
6 dr. (22.2mL)	23 × 85mm	20-400	**03-338H**	144/131.59	6/544.48
6 dr. (22.2mL)	28 × 70mm	24-400	**03-338G**	72/82.44	8/454.82
8 dr. (29.6mL)	25 × 95mm	22-400	**03-338J**	72/97.70	8/539.03
9½ dr. (35.1mL)	28 × 95mm	24-400	**03-338K**	72/90.62	6/375.00
11 dr. (40.7mL)	28 × 108mm	24-400	**03-338L**	72/103.30	6/427.44

*Fisherbrand** Class B Amber Glass Threaded Vials

- General-purpose vials for light-sensitive materials
- Made from Type I, Class B amber borosilicate glass
- Autoclavable

With Closures Packaged Separately

INCLUDES:
Black phenolic screw-top closures with white rubber liners

03-339-23A

Capacity	O.D. × H	GPI Thread Finish	Cat. No.	Pack of 144	Case of
½ dr. (1.8mL)	12 × 35mm	8-425	**03-339-23A**	78.97	16/871.41
1 dr. (3.7mL)	15 × 45mm	13-425	**03-339-23B**	68.17	16/752.22
2 dr. (7.4mL)	17 × 60mm	15-425	**03-339-23C**	76.22	12/630.85
4 dr. (14.8mL)	21 × 70mm	18-400	**03-339-23D**	93.93	8/518.26
8 dr. (29.6mL)	25 × 95mm	22-400	**03-339-23E**	116.91	4/322.52

With Attached Caps

Packaged in partitioned trays

INCLUDES:
Attached black phenolic screw-top closures with PTFE-faced white 14B rubber liners

COMPLIANCE:
Meet ASTM* Type I, Class B and USP Type I standards

02-912-360 Series

Capacity	O.D. x H	GPI Thread Finish	Cat. No.	Case of
½ dr.	12 × 35mm	8-425	**02-912-360**	288/303.98
1 dr.	15 × 45mm	13-425	**02-912-361**	144/139.61
2 dr.	17 × 60mm	15-425	**02-912-362**	144/147.50
5 dr.	28 × 57mm	24-400	**02-912-363**	72/83.21
10 dr.	28 × 95mm	24-400	**02-912-364**	72/86.50

*Fisherbrand** Class A Clear Glass Threaded Vials with Attached Caps

- General-purpose vials
- Made from Type I, Class A borosilicate glass
- Short style vials feature low profile for greater stability and compound storage
- Packaged in partitioned trays

INCLUDES:
Attached black phenolic screw-top closures

COMPLIANCE:
Meet ASTM* Type I, Class A and USP Type I standards

02-912-300 Series

Capacity	O.D. × H	GPI Thread Finish	Cat. No.	Case of
With PTFE-faced white 14B rubber liner				
½ dr. (2mL)	12 × 35mm	8-425	**02-912-351**	288/340.17
½ dr. (2mL)	15 × 28mm	13-425	**02-912-365**	200/190.48
1 dr. (4mL)	15 × 45mm	13-425	**02-912-352**	144/141.24
1 dr. (4mL)	17 × 38mm	15-425	**02-912-366**	200/192.85
1½ dr. (6mL)	19 × 40mm	15-425	**02-912-367**	200/194.05
2 dr. (8mL)	17 × 60mm	15-425	**02-912-353**	144/169.38
3 dr. (12mL)	19 × 65mm	15-425	**02-912-354**	144/147.55
4 dr. (16mL)	21 × 70mm	18-400	**02-912-355**	144/324.33
5 dr. (20mL)	28 × 57mm	24-400	**02-912-357**	72/125.81
6 dr. (24mL)	23 × 85mm	20-400	**02-912-356**	144/260.40
6¼ dr. (25mL)	28 × 70mm	24-400	**02-912-358**	72/123.87
8 dr. (30mL)	25 × 95mm	22-400	**02-912-359**	144/280.16
With low-density polyethylene Poly-Seal* cone liner				
1 dr. (4mL)	15 × 45mm	13-425	**02-912-368**	144/81.41
2 dr. (8mL)	17 × 60mm	15-425	**02-912-369**	144/89.76
3 dr. (12mL)	19 × 65mm	15-425	**02-912-370**	144/92.28
4 dr. (16mL)	21 × 70mm	18-400	**02-912-371**	144/104.58
5 dr. (20mL)	28 × 57mm	24-400	**02-912-373**	72/66.53
6 dr. (24mL)	23 × 85mm	20-400	**02-912-372**	144/121.70
6¼ dr. (25mL)	28 × 70mm	24-400	**02-912-374**	72/64.42
8 dr. (30mL)	25 × 95mm	22-400	**02-912-375**	144/130.46

*Fisherbrand** Glass Shell Vials

Straight-sided

- Made from Type 1, N-51A borosilicate glass
- Ideal for storing dry products
- Good visibility of contents

ORDERING INFORMATION:
Vials without closures use corks (See Corks).

03-339-26G

Capacity	O.D. × H	Cat. No.	Pack of 144	Case of
Bulk Pack with Tite-Seal* Closures				
½ dr. (1.8mL)	12 × 35mm	**03-339-26A**	39.63	16/437.31
1 dr. (3.7mL)	15 × 45mm	**03-339-26B**	37.54	16/414.31
2 dr. (7.4mL)	19 × 51mm	**03-339-26C**	45.84	12/379.39
3 dr. (11.1mL)	19 × 65mm	**03-339-26D**	62.82	8/346.61
7 dr. (25.9mL)	29 × 65mm	**03-339-26F**	104.64	3/216.50
10 dr. (37.0mL)	29 × 80mm	**03-339-26G**	107.81	3/223.05
12 dr. (44.4mL)	29 × 94mm	**03-339-26H**	110.45	3/228.51
Lab Pack without Closures				
¼ dr. (0.9mL)	9 × 30mm	**03-339-30A**	31.71	10/218.68
½ dr. (1.8mL)	12 × 35mm	**03-339-30B**	25.53	10/176.05
1 dr. (3.7mL)	15 × 45mm	**03-339-30C**	31.23	10/215.35
1½ dr. (5.5mL)	15 × 50mm	**03-339-30D**	54.70	6/226.35
2 dr. (7.4mL)	17 × 60mm	**03-339-30E**	65.53	6/271.15
3 dr. (11.1mL)	19 × 65mm	**03-339-30F**	52.86	6/218.71
4 dr. (14.8mL)	21 × 70mm	**03-339-30G**	56.68	4/156.36
6 dr. (22.2mL)	23 × 85mm	**03-339-30H**	65.79	4/181.50
8 dr. (29.6mL)	25 × 95mm	**03-339-30J**	108.21	4/298.51

*Fisherbrand** Glass Tooled-Neck Vials with Polyethylene Closures

General-purpose

- Made from Type 1, N-51A borosilicate glass
- Tooled necks ensure accurate fit with closures

ORDERING INFORMATION:
Closures are packaged separately.

INCLUDES:
The 1- and 2-dram sizes come with open-bottom closures; all other sizes come with closed-bottom, two-piece closures.

03-339-27A

Capacity	O.D. × H	Cat. No.	Pack of 144	Case of
1 dr. (3.7mL)	15 × 45mm	**03-339-27A**	47.95	16/529.15
2 dr. (7.4mL)	19 × 48mm	**03-339-27B**	54.37	10/374.98
3 dr. (11.1mL)	21 × 50mm	**03-339-27C**	62.03	8/342.23
4 dr. (14.8mL)	25 × 52mm	**03-339-27D**	72.14	6/298.50
5 dr. (18.5mL)	27 × 55mm	**03-339-27E**	81.24	4/224.13
7 dr. (25.9mL)	29 × 65mm	**03-339-27F**	86.12	3/178.19

National Scientific Glass Screw Thread Sample Vials

Excellent for sample storage

- Choice of 33 expansion borosilicate clear glass (Type I, Class A) or 51A amber glass
- Eliminate leaching of ions
- Provide consistent pH for duration of sample storage life

Without Caps

Capacity	O. D. x H	GPI Thread Finish	Mfr. No.	Cat. No.	Pack of
Clear					
½ dr. (2mL)	12 × 32mm	8-425	B7999-1	**03-391-10A**	100/20.78
1 dr. (4mL)	15 × 45mm	13-425	B7999-2	**03-391-10B**	100/18.33
2⅛ dr. (8mL)	17 × 60mm	15-425	B7999-3	**03-391-10C**	200/50.01
3¼ dr. (12mL)	19 × 65mm	15-425	B7999-12	**03-391-10D**	200/58.49
4⅜ dr. (16mL)	21 × 70mm	18-400	B7999-4	**03-391-10E**	200/66.84
6 dr. (22mL)	23 × 85mm	20-400	B7999-5	**03-391-10F**	200/89.19
10⅞ dr. (40mL)	28 × 95mm	24-400	B7999-6	**03-391-10G**	100/47.41
Amber					
½ dr. (2mL)	12 × 32mm	8-425	B7999-1A	**03-391-11A**	100/25.79
1 dr. (4mL)	15 × 45mm	13-425	B7999-2A	**03-391-11B**	100/25.21
2 dr. (8mL)	17 × 60mm	15-425	B7999-3A	**22-045681**	200/72.73
3¼ dr. (12mL)	19 × 65mm	15-425	B7999-12A	**03-391-11D**	200/75.75
4⅜ dr. (16mL)	21 × 70mm	18-400	B7999-4A	**03-391-11E**	200/84.53
10⅞ dr. (40mL)	28 × 95mm	24-400	B7999-6A	**03-391-11F**	100/54.15

With PTFE-Lined Solid Storage Caps

Excellent chemical-resistant storage

- Model 03-375-25, EPA Class 100 clear glass vials

ORDERING INFORMATION:
Each carton contains shrink-wrapped vials and plastic bags containing storage caps, with the exception of clear glass 03-375-25 where caps are attached to the vials.

03-391-7 Series

Capacity	O.D. × H	GPI Thread Finish	Mfr. No.	Cat. No.	Pack of
Clear EPA Class 100					
5⅜ dr. (20mL)	28 × 57mm	24-400	B7800-20	**03-375-25**	100/64.70
Clear Sample					
½ dr. (2mL)	12 × 32mm	8-425	B7800-1	**03-391-7A**	100/51.78
1 dr. (4mL)	15 × 45mm	13-425	B7800-2	**03-391-7B**	100/42.24
2⅛ dr. (8mL)	17 × 60mm	15-425	B7800-3	**03-391-7C**	200/97.86
3¼ dr. (12mL)	19 × 65mm	15-425	B7800-12	**03-391-7D**	200/116.45
4⅜ dr. (16mL)	21 × 70mm	18-400	B7800-4	**03-391-7E**	200/125.12
6 dr. (24mL)	23 × 85mm	20-400	B7800-5	**03-391-7F**	200/148.56
10⅞ dr. (40mL)	28 × 95mm	24-400	B7800-6	**03-391-7G**	100/77.56
Amber Sample					
½ dr. (2mL)	12 × 32mm	8-425	B7800-1A	**03-391-8A**	100/55.73
1 dr. (4mL)	15 × 45mm	13-425	B7800-2A	**03-391-8B**	100/51.05
2⅛ dr. (8mL)	17 × 60mm	15-425	B7800-3A	**03-391-8C**	200/106.53
3¼ dr. (12mL)	19 × 65mm	15-425	B7800-12A	**03-391-8D**	200/120.27
4⅜ dr. (16mL)	21 × 70mm	18-400	B7800-4A	**03-391-8E**	200/127.64
10⅞ dr. (40mL)	28 × 95mm	24-400	B7800-6A	**03-391-8F**	100/86.55

Contd. on next page.

*Trademark. See Trademark Reference.

National Scientific Glass Screw Thread Sample Vials, Contd.

With Open Top Caps and Septa

Great packaging for storerooms or laboratory cabinets

- With polypropylene open top screw caps and PTFE/silicone septa
- Each carton contains shrink-wrapped vials and separately packaged open top caps and septa

Capacity	O.D. × H	GPI Thread Finish	Mfr. No.	Cat. No.	Pack of
Clear					
½ dr. (2mL)	12 × 32mm	8-425	B7990-1	**03-393F**	100/45.90
1 dr. (4mL)	15 × 45mm	13-425	B7990-2	**03-393G**	100/49.68
2⅛ dr. (8mL)	17 × 60mm	15-425	B7990-3	**03-393A**	200/108.49
3¼ dr. (12mL)	19 × 65mm	15-425	B7990-12	**03-393B**	200/115.44
4⅜ dr. (16mL)	21 × 70mm	18-400	B7990-4	**03-393C**	200/142.66
6 dr. (22mL)	23 × 85mm	20-400	B7990-5	**03-393D**	200/184.92
10⅞ dr. (40mL)	28 × 95mm	24-400	B7990-6	**03-393E**	100/94.17
Amber					
½ dr. (2mL)	12 × 32mm	8-425	B7990-1A	**03-391-9A**	100/46.76
1 dr. (4mL)	15 × 45mm	13-425	B7990-2A	**03-391-9B**	100/49.51
2⅛ dr. (8mL)	17 × 60mm	15-425	B7990-3A	**03-391-9C**	200/119.09
3¼ dr. (12mL)	19 × 65mm	15-425	B7990-12A	**03-391-9D**	200/123.09
4⅜ dr. (16mL)	21 × 70mm	18-400	B7990-4A	**03-391-9E**	200/150.05
10⅞ dr. (40mL)	28 × 95mm	24-400	B7990-6A	**03-391-9F**	100/100.88

ACCESSORIES

PTFE-Lined Sample Storage Caps

PTFE lining offers broad chemical resistance

- White urethane solid cap
- Film/foam backing
- Not autoclavable

03-391-12 Series

03-391-12A

GPI Thread Finish	Mfr. No.	Cat. No.	Case of 100
8-425	B7815-8	**03-391-12A**	27.10
13-425	B7815-13	**03-391-12B**	24.40
15-425	B7815-15	**03-391-12C**	31.28
18-400	B7815-18	**03-391-12D**	33.14
20-400	B7815-20	**03-391-12E**	41.14
24-400	B7815-24	**03-391-12F**	52.06

Kimble* Shell N-51A Borosilicate Glass Plain Top

With or without closure

- 24mm O.D. × 62mm

Closure	Height	O.D.	Capacity	Mfr. No.	Cat. No.	Pack of 144	Case of 4 Pk.
Open-bottom Tite-Seal*, unattached	45mm	15mm	1 Dram	60965D-1	**03-339-15A**	36.94	431.35
None	62mm	24mm	4 Drams	60965 4	**03-339-32**	52.88	154.40

Kimble* Glass Screw-Thread Sample Vials

Without Closure

03-340-5 Series

03-339-17 Series

Capacity	O.D. × H	GPI Thread Finish	Mfr. No.	Cat. No.	Pack of 200	Case of 5 Pk.
Clear						
8mL	17 × 60mm	15-425	60810 1760	**03-340-5P**	73.06	266.62
12mL	19 × 65mm	15-425	60810 1965	**03-340-5S**	92.26	336.73
16mL	21 × 70mm	18-400	60810 2170	**03-340-5R**	108.30	395.27
20mL	23 × 85mm	20-400	60810 2385	**03-340-5V**	124.43	454.14
Amber						
8mL	17 × 60mm	15-425	60815 1760	**03-339-17B**	107.46	392.21
12mL	19 × 65mm	15-425	60815 1965	**03-339-17C**	129.89	474.02

ACCESSORIES

Closures for Sample Vials

Black phenolic closure with PTFE-faced 14B white rubber liner

03-340-14A

GPI Thread Finish	Mfr. No.	Cat. No.	Case of 144
8-425	73802 8425	**03-340-14D**	34.37
13-425	73802 13425	**03-340-14F**	53.27
15-425	73802 15425	**03-340-14E**	57.76
18-400	73802 18400	**03-340-14B**	79.40
20-400	73802 20400	**03-340-14C**	108.26
24-400	73802 24400	**03-340-14A**	113.94

Contd. on next page.

Kimble* Glass Screw-Thread Sample Vials, Contd.

03-340-60

With PTFE Closure

Capacity	O.D. × H	GPI Thread Finish	Mfr. No.	Cat. No.	Case of 144
2mL	12 × 35mm	8-425	60940A 2	**03-340-60**	152.34
4mL	15 × 47mm	13-425	60940A 4	**03-340-60A**	112.66
8mL	17 × 63mm	15-425	60940A 8	**03-340-60B**	134.72
12mL	19 × 67mm	15-425	60940A 12	**03-340-60C**	149.40
16mL	21 × 72mm	18-400	60940A 16	**03-340-60D**	171.14
24mL	23 × 87mm	20-400	60940A 24	**03-340-60E**	196.06

With PTFE/Silicone Septa and Open-Top Polypropylene Closure

03-340-47 Series

Capacity	O.D. × H	GPI Thread Finish	Mfr. No.	Cat. No.	Case of
8mL	17 × 63mm	15-425	60942A 8	**03-340-47A**	144/134.93
12mL	19 × 67mm	15-425	60942A 12	**03-340-47B**	144/152.11
16mL	21 × 72mm	18-400	60942A 16	**03-340-47C**	144/109.24
24mL	23 × 87mm	20-400	60942A 24	**03-340-47D**	144/142.43
40mL	28 × 98mm	24-400	60942A 40	**03-340-47E**	72/72.78

Wheaton E-C Borosilicate Glass Screw Thread Sample Vials

Economically priced vials shrink-wrapped in two packs of 100 each to reduce contamination from corrugated material

- Available with rubber-lined or TFE-lined caps, or without caps
- Caps are packed separately
- Choice of amber or clear glass

Without Closures

Capacity	O.D. × H	GPI Thread Finish	Mfr. No.	Cat. No.	Pack of 200
Clear					
⅜ dr. (1.5mL)	12 × 32mm	8-425	224700	**03-343A**	44.42
½ dr. (2mL)	12 × 35mm	8-425	224701	**03-343B**	47.27
1 dr. (4mL)	15 × 45mm	13-425	224702	**03-343C**	48.80
3 dr. (12mL)	19 × 65mm	15-425	224705	**03-343F**	62.41
4 dr. (16mL)	21 × 70mm	18-400	224706	**03-343G**	65.74
6 dr. (24mL)	23 × 85mm	20-400	224708	**03-343J**	86.20
Amber					
⅜ dr. (1.5mL)	12 × 32mm	8-425	224710	**03-343-1A**	68.27
1 dr. (4mL)	15 × 45mm	13-425	224712	**03-343-1C**	57.56
2 dr. (8mL)	17 × 60mm	15-425	224714	**03-343-1E**	66.26

With Rubber-Lined Caps

Capacity	O.D. × H	GPI Thread Finish	Mfr. No.	Cat. No.	Pack of 200
Clear					
⅜ dr. (1.5mL)	12 × 35mm	8-425	224720	**03-343-3A**	70.66
½ dr. (2mL)	12 × 38mm	8-425	224721	**03-343-3B**	73.50
1 dr. (4mL)	15 × 48mm	13-425	224722	**03-343-3C**	74.73
2 dr. (8mL)	17 × 63mm	15-425	224724	**03-343-3E**	76.45
3 dr. (12mL)	19 × 68mm	15-425	224725	**03-343-3F**	76.70
4 dr. (16mL)	21 × 73mm	18-400	224726	**03-343-3G**	94.22
6 dr. (24mL)	23 × 78mm	20-400	224728	**03-343-3J**	116.47
Amber					
⅜ dr. (1.5mL)	12 × 35mm	8-425	224730	**03-343-4A**	94.39
½ dr. (2mL)	12 × 38mm	8-425	224731	**03-343-4B**	79.87
1 dr. (4mL)	15 × 48mm	13-425	224732	**03-343-4C**	80.69
2 dr. (8mL)	17 × 63mm	15-425	224734	**03-343-4E**	85.73

With TFE-lined caps

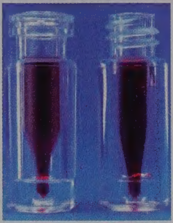
Capacity	O.D. × H	GPI Thread Finish	Mfr. No.	Cat. No.	Pack of 200
Clear					
⅜ dr. (1.5mL)	12 × 35mm	8-425	224740	**03-343-6A**	110.52
½ dr. (2mL)	12 × 38mm	8-425	224741	**03-343-6B**	115.29
1 dr. (4mL)	15 × 48mm	13-425	224742	**03-343-6C**	125.23
2 dr. (8mL)	17 × 63mm	15-425	224744	**03-343-6E**	148.32
3 dr. (12mL)	19 × 68mm	15-425	224745	**03-343-6F**	166.19
4 dr. (16mL)	21 × 73mm	18-400	224746	**03-343-6G**	184.28
6 dr. (24mL)	23 × 78mm	20-400	224748	**03-343-6J**	205.57
Amber					
⅜ dr. (1.5mL)	12 × 35mm	8-425	224750	**03-343-7A**	139.44
½ dr. (2mL)	12 × 38mm	8-425	224751	**03-343-7B**	145.71
1 dr. (4mL)	15 × 48mm	13-425	224752	**03-343-7C**	155.81
2 dr. (8mL)	17 × 63mm	15-425	224754	**03-343-7E**	170.78

*Trademark. See Trademark Reference.

Wheaton 12 x 32mm Glass Autosampler Vials

Limited volume, glass/plastic vials

- 0.1mL volume
- Vials with glass inner core combine Type I borosilicate glass with thermoplastic polymer outer shell
- Glass is only contact between sample and seal
- Polymer provides excellent dimensional tolerance reliability for capping and instrumentation, and prevents breakage


03-336-7, 03-336-3

Closure	Closure Size	Mfr. No.	Cat. No.	Case of 100
Clear				
Screw Top	8-425mm	225195	**03-336-3**	198.98
Snap/Crimp	11mm	225190	**03-336-7**	181.15
Amber				
Screw Top	8-425mm	225205	**22-293-668**	223.97
Snap/Crimp	11mm	225200	**03-343-10**	216.24

Wheaton Lab File* Glass Sample Vials with Rubber-Lined Caps

Wheaton-33* low-extractable borosilicate glass protects against change of pH and maintains purity of contents

- Suited for research studies
- Autoclavable
- Can be stored at low temperatures
- Packaged in corrugated trays with partitions

INCLUDES:

Rubber-lined screw caps

06-408 Series

Capacity	O.D. × H	GPI Thread Finish	Mfr. No.	Cat. No.	Case of
½ dr. (2mL)	12 × 38mm	8-425	224881	**06-408A**	288/127.27
1 dr. (4mL)	15 × 48mm	13-425	224882	**06-408B**	144/68.44
2 dr. (8mL)	17 × 63mm	15-425	224884	**06-408C**	144/79.58

Wheaton Glass Sample Vials with Snap Caps

Cap snaps over special sealing ring to provide effective barrier against moisture

- Excellent storage of hygroscopic materials

03-335-10, -20 Series

Capacity	O.D. × H	Mfr. No.	Cat. No.	Case of
4⅜ dr. (16mL)	30 × 40mm	225536	**03-335-20A**	144/145.93
8⅛ dr. (30mL)	37 × 50mm	225543	**03-335-10A**	72/90.34
8¾ dr. (32mL)	30 × 63mm	225539	**03-335-20D**	144/161.09
16⅜ dr. (60mL)	45 × 60mm	225544	**03-335-10B**	72/106.93
32½ dr. (120mL)	50 × 95mm	225546	**03-335-10D**	72/118.75

Wheaton Glass Screw-Thread Sample Vials

For storage of reagents and standards

- 5 dr. (20mL) or 10 dr. (40mL) capacity
- Excellent for derivatization reactions
- Clear glass vials made from Wheaton-33* low-extractable borosilicate glass
- Wheaton "320" amber borosilicate glass available for light-sensitive materials
- GPI Thread Finish: 24-400

Color	Capacity	O.D. × H	Mfr. No.	Cat. No.	Case of 200
Clear	20mL	27.75 × 57mm	224831	**06-412-36**	148.22
Clear	40mL	27.75 × 95mm	224833	**06-406-9**	168.87
Amber	40mL	27.75 × 95mm	224836	**06-412-10**	190.10

Wheaton V Vial*

Conical interior bottoms are designed to provide total downward drainage and maximum retrieval of contents by syringe

- Clear vials are manufactured from Wheaton-33* low extractable borosilicate glass
- Amber vials are made of "320" Type I glass for light-sensitive materials

06-444A, 06-444B, 06-444C, 22-281-410, 02-927-005

INCLUDES:

14B rubber-lined black phenolic screw caps faced with PTFE

Capacity	O.D. × H	GPI Thread Finish	Mfr. No.	Cat. No.	Pack of
Clear					
0.3mL	13 × 35mm	13–425	986253	**06-444A**	12/68.83
1mL	13 × 44mm	13–425	986254	**06-444B**	12/78.07
2mL	17 × 61mm	15–415	986256	**06-444C**	12/93.26
5mL	20 × 65mm	20–400	986259	**22-281-410**	12/108.88
10mL	24 × 72mm	22–400	W986260	**02-927-005**	6/94.81
Amber					
1mL	13 × 44mm	13–425	W986334	**02-927-012**	12/149.32
5mL	20 × 65mm	20–400	W986339	**02-927-015**	12/167.96

Wheaton LVI* Vials with Crimp Top

One-piece 0.3mL clear or amber glass vials eliminate leakage and evaporation

A 300µL tapered insert is fused into a 12 × 32mm vial, ensuring that sample is sealed in by cap and septa.

- Vial features a residual volume that can be as low as 4µL, depending on the solvent, needle style, and depth adjustment of the autosampler
- Compatible with autosamplers using 12 O.D. × 32mmH vials
- Slight flare at top of insert provides a larger needle target area
- Inserts and clear vials are made from ASTM* Type I Class A borosilicate glass
- Amber vials are made from ASTM Type I Class B borosilicate glass
- With white ceramic marking spot for easier sample identification

03-344-130, 03-337-47

Color	Closure	Mfr. No.	Cat. No.	Case of 100
Clear	11mm Crimp Top	225220-01	**03-344-130**	117.47
Clear	10mm Screw Thread	225326	**06-446-1**	124.40
Amber	11mm Crimp Top	225221-01	**03-337-47**	135.10
Amber	10mm Screw Thread	225328	**06-446-2**	131.26

Wheaton LVI* Vials with ABC Screw Thread

Similar to Wheaton LVI Vials with Crimp Top, except feature a 9mm ABC screw-thread finish that can be used only with ABC caps

- Available in both clear and amber with white ceramic marking spot for sample identification
- Cap color: natural

03-410-400 Series

ORDERING INFORMATION:

Packaged in convenience packs of 100 LVI Vials with inserts and 100 lined polypropylene ABC caps. Additional cap colors are available, contact your Fisher Scientific Customer Service Representative for details.

Liner Type	Mfr. No.	Cat. No.	Pack of 100
Clear			
PTFE	W225326-06	**03-410-438**	142.76
PTFE/Red Rubber	W225326-01	**03-410-422**	146.85
Red PTFE/White Silicone	W225326-02	**03-410-428**	150.92
PTFE/Silicone/PTFE	W225326-03	**03-410-434**	157.85
PTFE Slit/Silicone	W225326-0801	**03-410-441**	159.16
Amber			
PTFE	W225328-06	**03-410-458**	149.80
PTFE/Red Rubber	W225328-01	**03-410-442**	153.89
White PTFE/Blue Silicone	W225328-04	**03-410-456**	159.31
PTFE/Silicone/PTFE	W225328-03	**03-410-454**	164.94

Glass Sample Vial with TFE-Lined Cap

Flint glass with positive sealing, TFE-lined screw cap

- ½ dr. (1.8mL) capacity
- GPI Thread Finish: 8-425
- Autoclavable
- 12 O.D. × 35mm H)

03-339

APPLICATIONS:

Preparation and storage of tester strains for determination of carcinogenic compounds via Ames test; Toxicology studies

Cat. No.	Pack of 144	Case of 36 Pk.
03-339	97.43	2961.27

SAMPLE VIALS—PLASTIC

*Fisherbrand** Polyethylene Sample Vials with Hinged Cap

- General-purpose sample vials
- Durable, lightweight polyethylene
- Unbreakable
- Withstand temperatures to 80°C (176°F)
- Snap-top hinged lids cannot be lost; provide tight friction fit

03-338-1 Series

Capacity	O.D. × H	Cat. No.	Case of 100
¼ dr. (1mL)	9 × 32mm	**03-338-1A**	51.79
11⁄16 dr. (2.5mL)	14 × 32mm	**03-338-1B**	51.79
1⅜ dr. (5mL)	15 × 50mm	**03-338-1C**	74.20
2¼ dr. (8mL)	17 × 56mm	**03-338-1D**	69.06
2¾ dr. (10mL)	22 × 32mm	**03-338-1E**	97.46
6⅞ dr. (25mL)	24 × 72mm	**03-338-1F**	158.66
13¾ dr. (50mL)	30 × 74mm	**03-338-1G**	211.22

*Fisherbrand** Polypropylene Sample Vials with Hinged Cap

- High-density polypropylene vials
- Withstand temperatures up to 100°C (212°F)
- Hinged cap provides leak-resistant, airtight seal
- Cap permanently attached to vial
- Flat surface on cap top for sample identification and organization; suitable for bar coding
- For storing dairy samples, blue and red vials have fill ridges at 45mL
- For water sampling, opaque 4 oz. (120mL) vial has 1 oz. marked graduations and fill ridge at 100mL
- Opaque 8 oz. (240mL) size also graduated

03-341-75E

Capacity	Color	Cat. No.	Case of
1½ oz. (45mL)	Opaque	**03-341-75A**	100/27.42
1½ oz. (45mL)	Opaque	**03-341-75C**	600/141.25
1½ oz. (45mL)	Blue	**03-341-77A**	100/29.74
1½ oz. (45mL)	Blue	**03-341-78B**	600/146.17
1½ oz. (45mL)	Red	**03-341-77B**	100/29.74
1½ oz. (45mL)	Red	**03-341-78A**	600/153.09
4 oz. (120mL)	Opaque	**03-341-75E**	100/32.51
4 oz. (120mL)	Opaque	**03-341-75G**	300/91.25
8 oz. (240mL)	Opaque	**03-341-76A**	50/24.44
8 oz. (240mL)	Opaque	**03-341-76B**	150/66.24

*Fisherbrand** Polystyrene Containers

- With snap-on caps
- Ideal for storing dry materials, powders, tablets

03-338-3 Series

Capacity	I.D. × H	Cat. No.	Case of
3 dr. (11.1mL)	19 × 48mm	**03-338-3A**	144/34.51
5 dr. (18.5mL)	22 × 48mm	**03-338-3B**	144/36.05
7 dr. (25.9mL)	26 × 51mm	**03-338-3C**	144/39.21
10 dr. (37.0mL)	27 × 50mm	**03-338-3D**	144/49.18
13 dr. (48.1mL)	30 × 56mm	**03-338-3E**	144/55.46
15 dr. (55.5mL)	32 × 64mm	**03-338-3F**	144/58.56
20 dr. (74mL)	38 × 64mm	**03-338-3G**	144/71.70
30 dr. (111mL)	45 × 76mm	**03-338-3H**	72/48.46
40 dr. (148mL)	45 × 102mm	**03-338-3J**	72/57.90

*Trademark. See Trademark Reference.

Nalgene* Sample Vials with Snap Caps

Will not shatter

- Low-density polyethylene (LDPE)
- Useful for samples, as pH cups, or weighing bottles
- With friction-fit, snap closures
- Height does not include caps

03-388 Series

Capacity	O.D. × H	Mfr. No.	Cat. No.	Pack of 12	Case of 12 Pk.
1⅜ dr. (5mL)	24 × 25mm	6250 0005	**03-388A**	10.22	81.70
3¼ dr. (12mL)	27 × 36mm	6250 0012	**03-388C**	11.39	91.10
4⅞ dr. (18mL)	27 × 53mm	6250 0018	**03-388E**	15.91	127.25
43¼ dr. (160mL)	27 × 85mm	6250 9028	**03-388N**	21.56	172.50
7⅝ dr. (28mL)	37 × 71mm	6250 9050	**03-388P**	26.10	208.75
13½ dr. (50mL)	37 × 107mm	6250 9075	**03-388Q**	33.37	267.00
20¼ dr. (75mL)	54 × 100mm	6250 0160	**03-388M**	33.57	268.50

Nunc* Containers with Caps

High mechanical strength for safe handling and transport of blood, urine, and fecal specimens

Universal Containers

- Hold 25mL
- Made of polystyrene with polyethylene caps
- Available sterile or nonsterile, and with a spoon for handling of solid and semi-solid samples
- Available with writing area

12-565-20 Series

Transport Container

- Polypropylene with polyethylene cap

COMPLIANCE:

Transport and Universal Containers have passed the 95 kPa test described in UN packaging instructions 602/650 for transport of infectious substances and diagnostic specimens.

CERTIFICATIONS:

Universal containers are CE marked.

Capacity	Spoon	Writing Area	Mfr. No.	Cat. No.	Pack of 300
Sterile Universal Containers					
25mL	No	No	364238	**12-565-206**	268.08
25mL	No	Yes	364246	**12-565-209**	274.34
25mL	Yes	Yes	360585	**12-565-208**	319.65
Nonsterile Universal Containers					
25mL	No	Yes	363282	**12-565-205**	245.92
Transport Containers					
----	----	----	365048	**12-565-249**	283.75

Wheaton* 12 x 32mm Polypropylene Autosampler Vials

- 0.10mL volume
- Offer good chemical resistance
- Conical interior eliminates time-consuming assembly of vials and limited volume inserts
- Designed for maximum retrieval of contents

03-336-1, 03-336-2

Closure	Closure Size	Mfr. No.	Cat. No.	Case of 1000
Screw Top	8-425mm	225185	**03-336-2**	190.65
Crimp Top	11mm	225180	**03-336-1**	180.49

SCINTILLATION—GLASS

*Fisherbrand** 7mL Borosilicate Glass Scintillation Vial

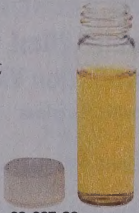
Smaller capacity vial saves in solvent use and disposal

ORDERING INFORMATION:

Packed in five shrink-wrapped trays of 200 vials; five polybags of 200 caps

INCLUDES:

White plastic screw cap with cork-backed metal foil liner



03-337-26

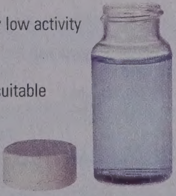
O.D. × H	GPI Thread Finish	Cat. No.	Case of 1000
17 × 54mm	15-425	**03-337-26**	283.17

*Fisherbrand** 20mL Borosilicate Glass Scintillation Vials

- Potassium-free glass provides consistently low activity counts and excellent light transmission
- Fit all common counters`
- Caps fit GPI 22-400 thread finish and are suitable for marking

ORDERING INFORMATION:

O.D. × H (with cap): 28 × 61mm. Vials with caps attached are shrink-wrapped in five trays of 100 per case. When caps are separate, vials are shrink-wrapped in five trays of 100 per case, and caps are packed in five polybags of 100 caps each.



03-337-15

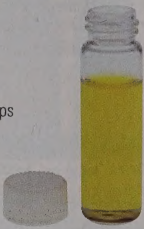
Cap Style	Packaging	Cat. No.	Case of 500
White Urea Caps			
Cork-backed metal foil liner	Caps attached	**03-337-5**	198.99
Cork-backed metal foil liner	Caps separate	**03-340-4E**	212.15
Cone-shaped plastic liner	Caps separate	**03-337-7**	266.77
White Polypropylene Caps			
Pulp-backed metal foil liner	Caps attached	**03-337-4**	181.51
	Caps separate	**03-337-15**	189.14
White Polyethylene Caps			
No liner	Caps separate	**03-337-14**	174.92

Kimble* 7mL Solvent-Saver* Scintillation Vials

Use same volume of radioactive sample as 20mL vials for savings in solvent and solvent disposal costs

- Choice of urea closure with cork-backed foil liner or polypropylene closure with pulp-backed foil liner
- GPI Thread Finish: 15-425

ORDERING INFORMATION:
Caps are packed separately in five polybags of 200 caps each. Vials are shrink-wrapped in plastic film in five trays of 200 vials each.



03-340 Series

O.D. × H (with cap)	Mfr. No.	Cat. No.	Case of
Urea Closure with Cork-backed Foil Liner			
17 × 57mm	74502 7	**03-340-4A**	1000/323.11
17 × 57mm	74502-7	**03-340-4APK**	200/64.62
Polypropylene Closure with Pulp-backed Foil Liner			
17 × 57mm	74503 7	**03-340-128**	1000/296.03

Kimble* 20mL Glass Screw Thread Scintillation Vials

Borosilicate glass

- 28 O.D.× 57mm H

ORDERING INFORMATION:
Vials with attached caps are packaged in trays of 100 vials. Vials with unattached caps are packaged in trays of 100 and shrink wrapped to preserve cleanliness. Caps come in polyethylene bags of 100.

03-340 Series

Cap Liner	Mfr. No.	Cat. No.	Case of
Attached Polypropylene Cap			
Pulp-backed foil	74504-20	**03-340-4C**	500/191.53
Foamed polyethylene	74505 20	**03-340-4D**	500/176.61
Attached Urea Cap			
Poly-Seal* cone	74516-20	**03-340-4L**	500/240.84
Unattached Polypropylene Cap			
Pulp-backed foil	74512-20	**03-337-15PK**	100/52.25
Unattached Urea Cap			
Foil lined	74503 20	**03-340-4B**	500/204.87
Poly-Seal cone	74515 20	**03-340-4F**	500/252.14
Without Cap			
NA	74506 20	**03-340-129**	500/145.99

ACCESSORIES

Kimble* Closures

For 20mL Fisherbrand* and Kimble scintillation vials, except 03-340-4B and 03-340-129. GPI 22-400 thread.

03-340-131

Mfr. No.	Cat. No.	Case of
White Urea Closure with Polyethylene Cone-shaped Liner		
74525 22400	**03-337-8**	1000/221.81
White Urea Closure with PTFE Liner		
74526 22400	**03-340-131**	500/253.68

Wheaton Glass 20mL Scintillation Vials

GPI 22- or 24-400 thread

- Manufactured from Wheaton "180," low-potassium borosilicate glass
- Choose from vials with white caps made of polypropylene or urea

03-341-25 Series

ORDERING INFORMATION:
O.D. × H: 28 × 61mm with cap. Vials (with caps attached) are packed in individual cells in five trays of 100 per case.

COMPLIANCE:
Meets ASTM* Type I, Class A and USP Type I standards.

Cap Style	GPI Thread Finish	Mfr. No.	Cat. No.	Case of 500
White Urea				
Metal foil	22-400	986542	**03-341-25G**	188.34
Metal foil	24-400	986562	**03-340-25N**	203.13
Polyethylene disc	22-400	986548	**03-341-25H**	213.63
Polyethylene disc	24-400	986568	**03-340-25P**	212.10
Poly-Seal* cone	22-400	986546	**03-341-25J**	221.28
Metal Foil	22-400	986582	**03-341-25B**	196.03
Poly-Seal	22-400	986586	**03-341-25S**	230.28
White Polypropylene				
Metal foil	22-400	986541	**03-341-25E**	176.00
Metal foil	24-400	986561	**03-341-25L**	182.36
Foamed polyethylene	24-400	986540	**03-341-25D**	174.58
Foamed polyethylene	24-400	986560	**03-341-25K**	179.13
Foamed polyethylene	24-400	986590	**03-341-25T**	180.57

Wheaton Glass Sampule* "180" Low-Potassium Glass

Durable and disposable

- 03-341-80 specifically designed for instruments requiring a smaller cap size to prevent jamming

ORDERING INFORMATION:
Vials are packaged in individual cells in trays of 200 which are shrink-wrapped to prevent contamination. Caps are packed separately in polybags.

03-340-81A

GPI Thread Finish	Mfr. No.	Cat. No.	Case of 1000
15-425	986492	**03-340-81A**	261.38
13-425	986491	**03-341-80**	261.38

*Trademark. See Trademark Reference.

Prices subject to change.

SCINTILLATION—PLASTIC

*Fisherbrand** 20mL HDPE Scintillation Vials

03-337-23B

Provide low background counts and excellent light transmission

- Resist leaking and swelling caused by solvent degradation
- Fit all common counters
- Caps fit GPI 22-400 thread, and are suitable for marking

ORDERING INFORMATION:

O.D. × H (with cap): 28 × 61mm. Vials with caps attached are shrink-wrapped in five trays of 100 per case. When caps are separate, vials are shrink-wrapped in five trays of 100 per case, and caps are packed in five polybags of 100 each. Also available in bulk pack with vials and caps in polybags of 1000 each.

Cap Style	Packaging	Cat. No.	Case of
White urea			
Cork-backed metal foil liner	Caps separate	**03-337-2**	500/156.85
Cone-shaped plastic liner	Caps separate	**03-337-23C**	500/200.52
White polypropylene			
Pulp-backed metal foil liner	Caps separate	**03-337-23B**	500/140.03
Pulp-backed metal foil liner	Caps attached	**03-337-23A**	500/131.08
Pulp-backed metal foil liner	Bulk pack	**03-337-23**	1000/206.11

*Fisherbrand** 4, 6, and 8mL HDPE ScintiVials*

High-density polyethylene (HDPE) vials with white polypropylene caps

03-337-41

Choose 4mL Scinti-4* vial, 6mL Scinti-6* vial, or 8mL Scinti-8* vial.

- 4mL vial supplied with six polypropylene push caps connected by a plastic string (string "disappears" into cap's notches for snag-free operation in counter)
- 6mL vial available with a "twist-off" cap with unique shouldered design (allowing vial to be centered in 20mL carrier vial) or with a flush cap (for immediate use in miniature vial LS counters)
- 8mL vial supplied with flush cap

Capacity	Cap Style	O.D. × H (with cap)	Cat. No.	Case of 1000
4mL	String of 6 push caps	14.2 × 60.8mm	**03-337-40**	147.19
6mL	Twist-off cap with shoulder	16 × 56.6mm	**03-337-41**	255.93
6mL	Flush cap	16 × 56.6mm	**03-337-39**	251.19
8mL	Flush cap	17.5 × 62mm	**03-337-42**	264.69

*Fisherbrand** 7mL HDPE Scintillation Vials

03-337-1

Smaller capacity saves in solvent use and disposal

- With linerless white polyethylene closure and improved sealing membrane
- Resists swelling caused by solvent degradation
- Saves in solvent use and disposal

In Trays

In four trays of 250 vials, with polybag of 250 caps packed in each tray.

O.D. × H	GPI Thread Finish	Cat. No.	Case of 1000
17 × 54mm	15-425	**03-337-1**	245.31

Bulk-Packed

One polybag of 2000 vials and two polybags of 1000 caps each.

Cat. No.	Case of 2000
03-337-20	277.79

Kimble* Polyethylene Scintillation Vials

03-337-34

Especially suitable for low activity counting

- Made from high density polyethylene to rigid specifications for low background characteristic
- Smaller vial dimensions permit a substantial reduction in the quality of solvent required
- Linerless white polyethylene closure

Capacity	Cat. No.	Case of
7mL	**03-337-34**	1000/164.79
20mL	**K58515-20**	500/204.78

Kimble* 4mL Polypropylene Scintillation Vial

For low-activity counting

- Seamless with wide-mouth openings
- Polyethylene plug-style stoppers permit fast application and removal

ORDERING INFORMATION:

1000 vials are bulk packed in a single polybag; separate polybag contains 1000 plug-style stoppers.

O.D. × H	Mfr. No.	Cat. No.	Case of 1000
14 × 56mm	58552 4	**03-337-25**	130.57

Kimble* 20mL Screw Thread Polyethylene Scintillation Vials

- Vials supplied with choice of 22-400 GPI thread closure
- 28 O.D. × 57mm H

03-337-24 Series

Mfr. No.	Cat. No.	Case of 1000
Urea Closure with Aluminum Foil Liner		
58510B 20	**03-337-24A**	248.75
Urea Closure with Cork-Backed Foil Liner		
FS58500 20	**03-337-24**	131.50
Polypropylene Closure with Foamed Polyethylene Liner		
58511B 20	**03-337-24B**	194.11

Wheaton 4mL Polypropylene Omni-Vial* Scintillation Vial

- Can be autoclaved or incinerated
- Press-on caps—easier to use than screw caps

ORDERING INFORMATION:
In two polybags of 500 vials, two polybags of 500 caps per case of 1000.

Mfr. No.	Cat. No.	Case of 1000
225402	**03-337-22**	131.24

Wheaton 20mL HDPE Liquid Scintillation Vials

- Choose from white polypropylene caps or white urea caps
- GPI 22-400 thread

ORDERING INFORMATION:
O.D. × H: 1⅛ × 2⅜" (28 × 61mm) with cap. Minimum neck I.D., ½" (12.3mm). Packed with caps attached in individual cells in five trays of 100 per case.

03-341-72 Series

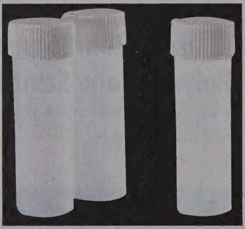
Cap Material	Liner	Mfr. No.	Cat. No.	Case of
Vials with Screw Caps Attached				
Urea	Metal foil	986702	**03-341-72B**	500/145.76
Urea	Poly-Seal cone	986706	**03-341-72D**	500/197.59
Polypropylene	Metal foil	986701	**03-341-72A**	500/122.53
Polypropylene	Foamed polyethylene	986700	**03-341-72**	500/122.53
Polyethylene	No liner	986704	**03-341-72C**	500/137.99
Vials with Screw Caps Packed Separately				
Urea	Metal foil	986712	**03-341-72G**	500/160.19
Urea	Poly-Seal cone	986716	**03-341-72J**	500/197.59
Urea	Metal foil	986722	**03-341-72M**	1000/243.08
Urea	Poly-Seal cone	986726	**03-341-72P**	1000/332.66
Polypropylene	Metal foil	986711	**0334172F**	500/125.77
Polypropylene	Metal foil	986721	**03-341-72L**	1000/192.72
Polypropylene	Foamed polyethylene	986710	**03-341-72E**	500/123.56
Polypropylene	Foamed polyethylene	986720	**03-341-72K**	1000/192.72
Polyethylene	No liner	986714	**03-341-72H**	500/135.40
Polyethylene	No liner	986724	**03-341-72N**	1000/219.62

Wheaton HDPE Sampule*

Economical alternative to standard scintillation vials

- White polypropylene linerless cap
- Resists leaking and swelling caused by solvent degradation

ORDERING INFORMATION:
Vials and caps are packed in separate plastic bags. Screw cap size: 18mm O.D. × H (with cap): 17 × 57mm.


03-341-25A

Mfr. No.	Cat. No.	Case of
986644	**03-341-25A**	1000/124.29
986645	**03-341-25W**	2000/243.28

Wheaton 20mL PET Liquid Scintillation Vials

Polyethylene terephthalate (PET) vials provide benefits previously unavailable in counting vials. Safely dispose by incineration—no harmful gases are emitted; generates only CO_2 and H_2O.

- Vials also offer low permeability to solvents and minimal background count
- Lightweight, unbreakable plastic construction provides the same clarity as glass
- GPI 22-400 thread

03-341-73 and -71 Series

STYLES:
Choose from caps made from polypropylene, urea, or polyethylene. Polypropylene caps are available with foamed polyethylene or metal foil liners. Urea caps available with metal foil or Poly-Seal* cone liners. Polyethylene caps are not lined.

ORDERING INFORMATION:
Vials with caps attached are packed in individual cells in five trays of 100 per case. O.D. × H: 27 × 61mm with cap on. Minimum neck I.D., ½" (12.3mm).

With Caps Attached

Cap Style	Mfr. No.	Cat. No.	Case of 500
White polypropylene			
Metal foil	986731	**03-341-73A**	151.51
Foamed polyethylene	986730	**03-341-73**	149.92
White urea			
Metal foil	986732	**03-341-73B**	168.41
Poly-Seal cone	986736	**03-341-73D**	220.43
White polyethylene			
No liner	986734	**03-341-73C**	151.51

With Caps Packaged Separately

Supplied with 1000 screw caps with metal foil liners.

Cap Style	Mfr. No.	Cat. No.	Case of 500
Polypropylene	986741	**03-341-71A**	276.94
Urea	986742	**03-341-71K**	294.90

*Trademark. See Trademark Reference.

VIAL ACCESSORIES

National Scientific Crimping and Decapping Tools

Precision tools for crimp and flip-off seals

03-375 Series

For Use With	Mfr. No.	Cat. No.	Each
Manual Crimper			
8mm crimp seals	C4008-100	**06-406-19R**	197.08
11mm crimp seals	C4012-100	**03-375-7**	200.94
13mm crimp seals	C4013-100	**03-375-17A**	200.04
13mm flip-off seals	C4013-100F	**03-375-75C**	190.64
20mm crimp seals	C4020-100	**03-375-24A**	198.13
20mm flip-off seals	C4020-100F	**03-375-75D**	190.64
28mm crimp seals	C4028-100	**03-375-75A**	300.43
30mm crimp seals	C4030-100	**03-375-52A**	302.60
32mm crimp seals	C4032-100	**03-375-75B**	317.64
Manual Decrimper			
8mm crimp seals	C4008-102	**06-406-19AD**	221.40
11mm crimp seals	C4012-102	**03-375-8A**	212.54
13mm crimp seals	C4013-101	**03-375-17B**	65.11
20mm crimp seals	C4020-102	**03-375-24AC**	222.83
28mm crimp seals	C4028-102	**03-375-75F**	300.43
30mm crimp seals	C4030-102	**03-375-52C**	334.85
32mm crimp seals	C4032-102	**03-377-125**	302.60
Manual Decapping Pliers			
8mm crimp seals	C4008-101	**06-406-19S**	61.10
11mm crimp seals	C4012-101	**03-375-8**	61.61
13mm crimp seals	C4013-102	**03-375-17D**	218.47
20mm crimp seals	C4020-101	**03-375-24B**	63.11
30mm crimp seals	C4030-101	**03-375-52B**	71.86

SUN-SRi Electronic Crimpers and Decrimpers

Ergonomically designed, handheld tools with quick and easy push-button operation

- Attach or remove aluminum seals from 11mm and 20mm microsampling vials while vials remain in most standard sample trays
- Both crimpers and decrimpers include adjustable settings to allow for septa with varying thicknesses and compatibility with most vial/septum/seal combinations

03-340-900, -902

INCLUDES:

Wall plug charger

REQUIRED ACCESSORIES:

Black & Decker* 3.6V VersaPak* Gold Rechargeable Battery Module (Cat. No. 03-340-904) that easily snaps into the instrument

Description	Mfr. No.	Cat. No.	Each
11mm Electronic Crimper	350 246	**03-340-900**	668.35
11mm Electronic Decrimper	350 442	**03-340-901**	671.54
20mm Electronic Crimper	350 972	**03-340-903**	660.35
20mm Electronic Decrimper	350 446	**03-340-902**	671.54

ACCESSORIES

Black & Decker* VersaPak* Battery Modules

Rechargeable NiMH battery

- For use with SUN-SRi Electronic Crimpers and Decrimpers

Cat. No.	Each
03-340-904	40.73

SUN-SRi Manual Crimpers and Decappers

High-quality construction for durability and long life

NEW

- Painted, plated, and coated for maximum corrosion resistance
- Textured handle surface provides a sure grip
- Adjustable stop accommodates a wide range of cap thicknesses for optimal sealing performance
- Decapping pliers are made of stainless steel with precision-machined jaws

Description	Mfr. No.	Cat. No.	Pack of
20mm Hand Crimper	200 972	**14-823-503**	1/157.53
20mm Pliers-Type Hand Decapper	200 974	**14-823-504**	1/56.07
20mm Hand Decapper	502 277	**14-823-505**	1/266.40
Aluminum Rack, Holds 28—22mm diameter vials	500 555	**14-823-501**	5/94.10

National Scientific National Storeroom* Storage Cabinet

Organizes autosampler and chromatography supplies

- Stackable cabinets constructed of heavy-gauge steel with metal shelves and nine injection-molded drawers
- Features nesting lugs and stacks up to six cabinets high

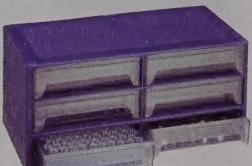
ORDERING INFORMATION:

Cabinet dimensions: 12½L × 19W × 12"H (32 × 48 × 30cm). Storeroom can be ordered prestocked with Vials, Septa and Closures; contact your Fisher Scientific Customer Service Representative for details.

Description	Mfr. No.	Cat. No.	Each
9-Drawer Storeroom, Full Size—Cabinet Only	C4075-500	**03-377-15**	116.12
DP 9-Drawer Storeroom, DP Clear Vial, PTFE/RR Caps	C4075-201	**03-377-12A**	710.93
6-Drawer Mini Storeroom—Cabinet Only	C4000-MS	**03-378-20**	32.27

National Scientific Target DP* 6 Drawer Storeroom

Packed with multiple vial/cap configurations—organize your benchtop

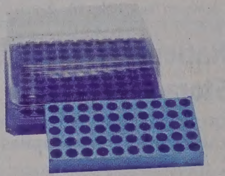


03-378-21

Description	Mfr. No.	Cat. No.	Each
DP Clear Vial, Blue Cap w/PTFE/Red Rubber Septa	C4000-680	**03-378-21**	205.59
DP Clear I-D* Vial, Blue Cap w/PTFE/Red Rubber Septa	C4000-680W	**03-378-22**	214.54
DP Clear Vial, Blue Cap w/Silicone/PTFE Septa	C4000-692	**03-378-27**	231.71
DP Clear I-D Vial, Blue Cap w/Silicone/PTFE Septa	C4000-692W	**03-378-28**	232.89

National Scientific Vial Racks for 2mL and 4mL Vials

Use for storage, sample preparation or transport



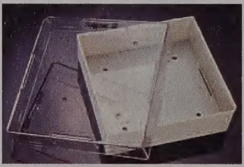
03-375-24L (top), 03-375-9 (bottom)

Description	Mfr. No.	Cat. No.	Each
For 2mL, 12 × 32mm vials			
Polystyrene with Lid, 100 holes with alphanumeric index	C4011-25	**03-375-24L**	8.75
Polypropylene Rack, 50 holes with alphanumeric index	C4012-25	**03-375-9**	15.64
For 4mL, 15 × 45mm vials			
Polystyrene with Lid, 100 holes with alphanumeric index	C4015-27	**03-375-24Q**	8.79
Polypropylene Rack, 50 holes with alphanumeric index	C4015-25	**03-389A**	20.71

Nalgene* Storage Box

Sturdy polycarbonate box for storage of various sizes of vials, bottles, and bags in a wide range of environments

- For storage from -196° to +121°C (-320.8° to +249.8°F)
- Sturdier than cardboard boxes — can be washed and autoclaved repeatedly
- For extra versatility, accommodates 5¼" (13.3cm) cardboard inserts (not supplied) for storing glass dram vials
- Removable clear polycarbonate lid



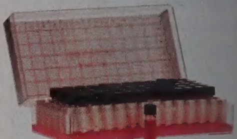
15-350-55

L × W × H	Mfr. No.	Cat. No.	Pack of 4	Case of 6 Pk.
5¼ × 5¼ × 2" (13.3 × 13.3 × 5.1cm)	5050 0001	**15-350-55**	49.19	196.75

Wheaton Vial File* Storage System Case

Compartmentalized storage case of clear polystyrene with foam inserts

- Alphanumerical index card in hinged case lid for sample location
- Stackable
- Vial File Case holds up to 40 vials with ⅝ O.D. × 2" high (16 × 60mm)
- Without vials



03-336-30

ORDERING INFORMATION:

Overall dimensions: 7½L × 3¾W × 2½"H (190 × 95 × 63mm)

Mfr. No.	Cat. No.	Case of 6
228780	**03-336-30**	93.02

Wheaton Lab File* Storage System with Clear Vials with Solid Caps

Provides economical, space-saving organization

- Vials are made of Wheaton-33* low-extractable borosilicate glass to protect against changes of pH and maintain purity of contents
- Vials can be sterilized and stored at low temperatures
- With white marking area for sample identification
- Caps have 14B white rubber liner

INCLUDES:

144 vials packaged in a Lab File

03-337-21A

Capacity	Vial O.D. × H	Mfr. No.	Cat. No.	Case of 144
1⅛ dr. (4mL)	15 × 48mm	225012	**03-337-21A**	89.91
2 dr. (8mL)	17 × 63mm	225014	**06451188**	105.19

Wheaton Vial File* Storage System with Borosilicate Glass Vials

- Vials are made of Wheaton-33* low-extractable borosilicate glass and come with white 14B rubber-lined solid top caps
- Standard autosampler type
- Autoclavable

INCLUDES:

60 or 40 vials packaged in a Vial File

Vial Capacity	Vial O.D. × H	Mfr. No.	Cat. No.	Case of
½ dr. (2mL)	12 × 38mm	224891	**03-336**	60/56.48
1⅛ dr. (4mL)	15 × 48mm	224892	**03-336-5**	40/45.49

VISCOSITY

VISCOMETERS

Thermo Scientific* Haake Viscotester* 1 Plus and 2 Plus Rotational Viscometers

One-button operation for quick, reliable tests and comparative measurements

- Can be operated handheld or on support stand
- Viscosity value is shown on easy-to-read digital display
- Push button once to turn unit on; push again to select rotor type and start measurement
- Use almost anywhere—small, battery-operated unit requires no electrical supply
- Measuring principle: a rotor rotating at constant speed is immersed in sample fluid; fluid's resistance to rotation is a measure of viscosity
- Temperature up to 150°C
- Rotor speed: 62.5rpm
- Standard measuring accuracy of ±5%—also available with increased accuracy of ±1%; contact your Fisher Scientific Customer Service Representative for details

13-874-71 Series

APPLICATIONS:

- Viscosity testing for process optimization, machine adjustment, or batch control in production
- Samples that can be processed include printing inks, paints, shampoos, creams, lotions, oils, greases, pastes, sauces and thickeners

INCLUDES:

Sturdy carrying case, Viscotester, batteries, support stand, three rotors and measuring cup

Model	Viscosity Range	Mfr. No.	Cat. No.	Each
VT1 Plus	1.5 to 330mPas	399-0100	**13-874-711**	2350.00
VT2 Plus	0.3 to 4000dPas	399-0200	**13-874-715**	2350.00

Thermo Scientific* Haake Viscotester* 550 Rotational Viscometer

Speed-controlled viscometer with cylinder measuring system

- Step motor with up to 100 predefined speeds
- Viscosity measurements according to DIN53019/ISO3219
- Substances with small particles (<0.3mm) can be measured
- Time measurements, automatic recording of flow curves, temperature programs (with optional circulator), CD-method (preset deformation) for determination of yield point
- Measurements can be performed manually (push button), internally via programmed methods, or computer controlled (with optional accessory)
- Printout of measuring results to printer via RS-232 interface
- Interchangeable rotors for medium and high viscous products

13-874-580

APPLICATIONS:

- Suitable for extensive quality-control investigations as well as routine measurements
- Food: sauces, mayonnaise, mustard, ketchup, thickening agents, stabilizers, starch, pectin
- Cosmetic/pharmaceutical: creams, lotions, shampoos, toothpastes, liquid soaps
- Paint: water-based and latex paints, bonding agents, resins
- Chemical: liquid and paste-like raw materials

INCLUDES:

Viscotester 550, support stand for base unit, temperature control vessel with connector to circulator, PT100 temperature sensor, MV DIN and SV DIN measuring cup and rotor

SPECIFICATIONS

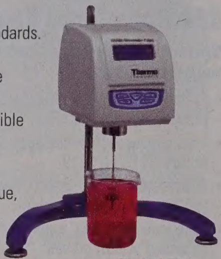
No. of Speeds	Continuous
Speed Range	0.5–800rpm
Temperature Range	-20° to +100°C
Typical Measuring Time	2 to 3 min.
No. of Sensors	2 cups, 2 rotors
Reproducibility	±1%
Voltage/Frequency	100-230V 50/60Hz

Mfr. No.	Cat. No.	Each
362-0022	**13-874-580**	14,872.00

Thermo Scientific* Haake Viscotester* VT6 Plus and VT7 Plus Rotational Viscometers

Available in two models for measuring medium- and low-viscosity substances

Ideal for quickly determining viscosity as defined in ISO 2555 and many ASTM* standards. Measure the torque resistance of a test substance at a preset speed; the higher the resistance to the substance, the higher the viscosity. Measurements are 100% compatible to the Brookfield method.



13-874-708

Model VT6 Plus

- Features a digital display of mPas, % torque, rpm, and rotor spindle number
- RS-232-C interface for data transfer to PC or printer
- Sample temperature range is up to 150°C (302°F)
- Speed steps: 0.1, 0.2, 0.3, 0.5, 0.6, 1, 1.5, 2, 2.5, 3, 4, 5, 6, 10, 12, 20, 30, 50, 60, 100, and 200rpm
- Sample volume: $600cm^3$
- Typical test time is 1 to 2 min.
- Viscosity accuracy, ±1% of full scale; reproducibility, ±0.2%

Model VT7 Plus

- Offers all the features of the VT6 Plus
- Also includes RS-232-C bidirectional control interface, Pt100 temperature sensor to monitor sample temperature
- Optional RheoWin* software for measurement and data evaluation

APPLICATIONS:

- R-version is typically used for medium-viscosity substances (e.g., sewing machine oil and whipped cream)
- L-version is ideal for low-viscosity substances such as diluted solutions, milk-like fluids, motor oils, dispersions, and emulsions

ORDERING INFORMATION:

Dimensions: 20⅞L × 17W × 10⅝"H (53 × 43 × 27cm). Electrical requirements: 110/240V 50/60Hz.

INCLUDES:

Base unit, spindles, spindle rack, spindle guard, and documentation

Model	No. of Spindles/ Type	Viscosity Range	Mfr. No.	Cat. No.	Each
VT6R Plus	4/R2 to R7	20 to 13 × 10^6mPas	388-0100	**13-874-728**	4017.00
VT6L Plus	4/L1 to L4	3 to 2 × 10^6mPas	387-0100	**13-874-727**	4017.00
VT7R Plus	6/R2 to R7	20 to 13 × 10^6mPas	390-0001	**13-874-708**	4680.00
VT7L Plus	6/L1 to L4	3 to 2 × 10^6mPas	389-0100	**13-874-729**	4680.00

*Fisherbrand** Cup-Type Viscometers

For quick measurement of the viscosity of liquids such as paint, lacquer, varnish, syrup, and oil

- Portable cups measure the viscosity of a liquid in Zahn seconds (the amount of time required for a steady stream to flow from the orifice in the bottom of the cup)
- One-piece, corrosion-resistant stainless steel

ORDERING INFORMATION:

Capacity, 1½ oz. (44mL); length, 13¾" (35cm)

15-348-50A

Orifice Diameter	No.	Uses	Centistoke Range	Cat. No.	Each
0.078" (2.0mm)	1	Very thin oil	18–56	**15-348-50A**	199.81
0.108" (2.7mm)	2	Thin oil or lacquer	40–230	**15-348-50B**	164.67
0.148" (3.8mm)	3	Medium oil or mixed paints	150–790	**15-348-50C**	164.67
0.168" (4.3mm)	4	Heavy mixtures	220–1100	**15-348-50D**	191.01
0.208" (5.3mm)	5	Very heavy mixtures	460–1725+	**15-348-50E**	191.01

VISCOMETER TUBES

*Fisherbrand** Glass Ubbelohde Calibrated Viscometer Tubes

For measurement of kinematic viscosities of petroleum products according to ASTM* D 445 and D 446

- Certified accurate (certificate included)
- Excellent precision
- Borosilicate glass
- Minimum sample volume, 11mL
- Require liquid bath depth of 241mm

ORDERING INFORMATION:

Holder not supplied. Popular sizes listed; other ASTM sizes available. Contact your Fisher Scientific Customer Service Representative for more information.

13-614F

ASTM Size	Viscosity Range	Conversion Factor	Cat. No.	Each
0C	0.6 to 3cSt	0.003	**13-614F**	241.06
1	2 to 10cSt	0.01	**13-614A**	241.06
1C	6 to 30cSt	0.03	**13-614B**	241.06
1B	10 to 50cSt	0.05	**13-614C**	241.06
2	20 to 100cSt	0.1	**13-614D**	241.06
2C	60 to 300cSt	0.3	**13-614E**	241.06
2B	100 to 500cSt	0.5	**13-614G**	241.06
3C	600 to 3000cSt	3.0	**13-614H**	241.06
4	2000 to 10,000cSt	10	**13-614J**	241.06

*Trademark. See Trademark Reference.

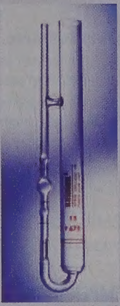
Prices subject to change.

Fisherbrand* Glass Vacuum Viscometer Tubes

Cannon*-Manning type

- Includes calibration certificate
- For measuring viscosities of highly viscous materials such as asphalt cement at 60°C (140°F) according to ASTM* D 2171
- Minimum sample volume, 6mL
- Require liquid bath depth of 180mm

ORDERING INFORMATION:
Holder not supplied. Smaller ASTM sizes available; contact your Fisher Scientific Customer Service Representative.



13-617-4

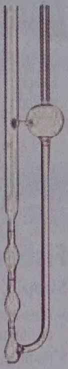
ASTM Size	Viscosity Range	Approx. Constant Bulb B	Approx. Constant Bulb C	Cat. No.	Each
10	36 to 800Ps	2 Ps/sec.	0.6 Ps/sec.	**13-617-1**	160.37
11	120 to 2400Ps	6 Ps/sec.	2 Ps/sec.	**13-617-2**	160.37
12	360 to 8000Ps	20 Ps/sec.	6 Ps/sec.	**13-617-3**	160.37
13	1200 to 24,000Ps	60 Ps/sec.	20 Ps/sec.	**13-617-4**	160.37
14	3600 to 80,000Ps	200 Ps/sec.	60 Ps/sec.	**13-617-5**	160.37

Fisherbrand* Glass Opaque Calibrated Viscometer Tubes

Cannon*-Fenske opaque type

- For measuring viscosity of dark liquids and lubricating oils by ASTM* D 445
- Borosilicate glass
- With calibration certificate
- Minimum sample volume, 12mL
- Require liquid bath depth of 229mm
- Excellent precision

ORDERING INFORMATION:
Holder not supplied. Popular sizes listed; other sizes available. Contact your Fisher Scientific Service Representative for more information.



13-615-5A

ASTM Size	Viscosity Range	Approx. Constant	Cat. No.	Each
25	0.4 to 2cSt	0.002cSt/sec.	**13-615-5A**	183.10
50	0.8 to 4cSt	0.004cSt/sec.	**13-615-5B**	183.10
100	3 to 15cSt	0.015cSt/sec.	**13-615-5C**	183.10
150	7 to 35cSt	0.035cSt/sec.	**13-615-5D**	183.10
200	20 to 100cSt	0.10cSt/sec.	**13-615-5E**	183.10
300	50 to 250cSt	0.25cSt/sec.	**13-615-5F**	183.10
350	100 to 500cSt	0.5cSt/sec.	**13-615-5G**	183.10
400	240 to 1200cSt	1.2cSt/sec.	**13-615-5H**	183.10
450	500 to 2500cSt	2.5cSt/sec.	**13-615-5J**	183.10

Fisherbrand* Glass Kinematic Viscometer Tubes

Cannon*-Fenske type

- Available calibrated (with calibration certificate) or uncalibrated
- Excellent precision
- Borosilicate glass
- For measuring kinematic viscosity of petroleum products by ASTM* D 445
- Specifications also conform with ASTM D 446
- Minimum sample volume, 7mL
- Require liquid bath depth of 203mm

ORDERING INFORMATION:
Holder not supplied.

13-617A

			Calibrated		Uncalibrated	
ASTM Size	Viscosity Range	Approx. Constant†	Cat. No.	Each	Cat. No.	Each
25	0.5 to 2cSt	0.002	**13-617A**	162.49	**13-616A**	121.53
50	0.8 to 4cSt	0.004	**13-617B**	162.49	**13-616B**	121.53
75	1.6 to 8cSt	0.008	**13-617M**	162.49	**13-616M**	121.53
100	3 to 15cSt	0.015	**13-617C**	162.49	**13-616C**	121.53
150	7 to 35cSt	0.035	**13-617D**	162.49	**13-616D**	121.53
200	20 to 100cSt	0.10	**13-617E**	162.49	**13-616E**	121.53
300	50 to 250cSt	0.25	**13-617F**	162.49	**13-616F**	121.53
350	100 to 500cSt	0.5	**13-617G**	162.49	**13-616G**	121.53
400	240 to 1200cSt	1.2	**13-617H**	162.49	**13-616H**	121.53
450	500 to 2500cSt	2.5	**13-617J**	162.49	**13-616J**	121.53
500	1600 to 8000cSt	8.0	**13-617K**	162.49	**13-616K**	121.53
600	4000 to 20,000cSt	20.0	**13-617L**	162.49	----	----

† Approximate constant in cSt/s (centistokes per second).

VISCOSITY BATHS

Koehler* KV3000 and KV4000 Constant-Temperature Baths

Simple push-button operation

22-172-591

- Constant-temperature baths with a range between ambient and 150°C (302°F); broader range of -20° to +150°C (-4° to +302°F) if used with an external chiller; sold separately
- Microprocessor PID circuitry for precise, reliable temperature control
- Selectable temperature scale in °C or °F
- Dual digital displays show setpoint and bath temperature

Timing Specifications

- **KV3000** has seven integrated digital timers on the front control panel for timing and monitoring efflux interval for each viscometer
- **KV4000** has integrated LCD microcomputer with start and stop buttons; enables user to enter the viscosity constant for each viscometer, then obtain the test result in both efflux time and viscosity units automatically after stopping each of the seven timers

Bath Specifications

- Clear Pyrex* bath chamber enclosed in polyester-epoxy finished steel housing
- Top working surface has seven 2" (51mm) viscometer ports to accommodate various types of glass capillary viscometers (contact your Fisher Scientific Customer Service Representative for selection)
- Glare-free fluorescent illumination and baffle background
- Motorized stirrer
- Built-in cooling coil connects unit to tap or recirculating water chiller

Safety Features

- Microprocessor temperature controller circuitry interrupts heater power under overtemperature conditions or if primary probes are disconnected
- Adjustable redundant controller with separate sensor probe also interrupts power under overtemperature situations
- Low liquid level cut-off circuitry
- Both circuit types will latch and prevent further operation until fault is removed

COMPLIANCE:

Conform to ASTM* D445, D2170, and related specifications

TEMPERATURE

Range	Ambient to 150°C (302°F); -20° to +150°C (-4° to +302°F) with an external chiller; sold separately
Resolution	0.1°
Calibration	0.01°
Integrated Timing	
KV3000	Seven individual start/stop timers
KV4000	Seven timers controlled by LCD microcomputer that includes start/stop buttons
Timer Display Resolution	KV3000: To 0.01 seconds KV4000: Viscosity units or in 0.1 seconds
Timer Accuracy	0.01%
Capacity	22L (5¾ gal.)
Overall Dimensions (L × W × H)	20¼ × 15¼ × 24½" (51 × 39 × 62cm)
Net Weight	78 lb. (35.5kg)
Electrical Reqts.	115V 50/60Hz, Single Phase 12.6A

Model	Mfr. No.	Cat. No.	Each
KV3000	K23700	**22-172-590**	5749.80
KV4000	K23702	**22-172-591**	6428.13

VISCOSITY ACCESSORIES

Kimble* Varnish Viscometer Tubes

For rough control work

Viscosity bubble tube has flat bottom with graduation lines at 27, 100, and 108mm from the outside bottom.

ORDERING INFORMATION:

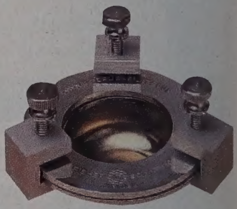
Approximate I.D., 0.42" ±0.005 (10.7mm ±0.125). Length, 4½" (11.4cm).

13-339

Mfr. No.	Cat. No.	Pack of 36	Case of 4 Pk.
46463 1075	**13-339**	90.75	264.96

Fisher Scientific* Permeability Cup

Simple, reproducible



13-338Q

- Aids in permeability determinations of paints, varnishes, and resins
- Paint is allowed to dry on a support (freshly amalgamated tin or Patapar parchment), then stripped off, cut, and clamped over cup with known amount of water
- Sample cup and water are then weighed and put into desiccator for specific length of time
- Weight checks are made at constant intervals (usually 24 hours)
- Permeability is directly determined from test data

INCLUDES:

Three aluminum clamps, aluminum clamp ring, chromium-plated brass cup body, and instructions

Cat. No.	Each
13-338Q	193.25

CSC Bostwick Consistometer

Accurately determines sample consistency

- Measures the distance a material flows under its own weight during a given time interval to determine consistency
- Used extensively by preservers, producers of jams, jellies, and other highly viscous products such as tomato paste, ketchup, baby foods, cosmetics, lotions, and paint
- Enables user to predetermine formulas to standardize production lots
- Made of durable stainless steel and equipped with a level and two leveling screws
- Spring-operated gate is held by a positive-release mechanism permitting instantaneous flow of sample
- Trough is graduated in 0.5cm divisions to permit accurate measurement of flow
- Engraved graduations won't wear off
- Originally designed by E. P. Bostwick of the U.S. Department of Agriculture, Canned Fruits and Vegetable Service

INCLUDES:

Instructions

15-347-50

L × W × H	Cat. No.	Each
14L × 3½W × 5½"H (35 × 9 × 14cm)	15-347-50	702.98

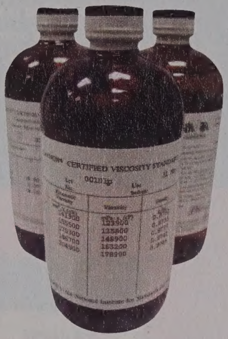
Cannon* Viscosity Standards

All standards are traceable to NIST*

- Cannon certified viscosity standards provide kinematic viscosities (in cSt or mm^2/s), densities (in g/mL), and viscosities (incP or mPa/s) at many temperatures, ranging from -55° to +150°C; prepared in Cannon's A2LA-accredited laboratory
- Values for viscosity, kinematic viscosity, and density at a variety of temperatures are printed on the container label
- Clearly identify your unit of viscosity measure (centistokes or centipoises) when ordering
- Multiple viscosities/temperatures available
- Custom-blended and/or added temperature standards can be provided—additional charges will apply
- Manufactured using ISO 9001: 2000- certified processes

ORDERING INFORMATION:

Ordering table provides an abridged listing of available standards, sold in 500mL quantities. High viscosity (to 5,300,000cp) and low-temperature standards (to -60°C) are available. Standards may also be purchased in 120mL, 500mL, 1L, and 4L quantities; contact your Fisher Scientific Customer Service Representative.



22-288 and 23-023 Series

Standard	Approximate kinematic viscosity in mm^2/s (centistokes)									Cat. No.	Each
	20°C (68°F)	25°C (77°F)	37.78°C (100°F)	40°C (104°F)	50°C (122°F)	60°C (140°F)	80°C (176°F)	98.89°C (210°F)	100°C (212°F)		
S3†	4.6	4.0	3.0	2.9	2.4	----	1.5	1.2	1.2	22-288-554	60.00
S6	11	8.9	6.0	5.7	4.4	----	2.4	1.8	1.8	22-288-553	60.00
N10	21	17	11	10	7.3	----	3.5	2.7	2.7	23-023-644	58.79
S20	44	34	20	18	13	----	5.6	3.9	3.8	22-288-555	60.00
N35	87	66	35	32	21	----	8.5	5.4	5.3	23-023-645	58.79
S60	160	120	60	54	35	----	12	7.7	7.5	22-288-556	60.00
N100	330	230	110	97	60	----	19	11	11	23-023-646	58.79
S200	550	400	200	180	110	----	35	22	20	22-288-557	60.00
N350	1000	720	340	310	190	----	55	34	32	23-023-647	58.79
S600	1700	1300	590	520	310	----	93	51	50	22-288-552	60.00
N1000	3400	2400	----	940	550	350	150	----	80	23-023-648	58.79
S2000	8300	5300	1900	1600	800	----	160	75	72	23-023-649	58.79
N4000	20,000	12,000	----	3400	1600	850	290	----	120	23-023-653	58.79
S8000	41,000	25,000	8000	6700	3200	----	530	----	240	23-023-650	58.79
N15000	77,000	47,000	----	13,000	6100	3000	980	----	360	23-023-651	58.79
S30000	----	79,000	28,000	23,000	11,000	----	1700	----	630	23-023-652	58.79

† *Also 70cSt at -40°C (-40°F).*

BEFORE YOU BUY GLASSWARE WASHE

Hand washing in the lab may be as simple as washing soiled glassware in hot, soapy water or as complicated as washing in an acid or base followed by rinsing and soaking. Either way, a final rinse in purified water usually completes the process. In most cases, hand washing water will reach 120°F maximum, requiring sanitization or sterilization to be done in an autoclave. For drying, the glassware can be hung on a drying rack, placed in an oven, or dried manually. Hand washing is time consuming, labor intensive and sometimes requires a person dedicated to the task full time.

GLASSWARE WASHING: HAND WASHING VERSUS AUTOMATIC LAB WASHERS

Automatic lab washers offer a variety of features designed to clean difficult to remove soils, with exposure to basic laboratory reagents, save time and increase productivity. Features to consider incl

Stainless steel interior—Components, including the liner, to withstand traces of everyday chem used in a laboratory; retain heat for faster drying

Purified water pump—When purified water rinses are part of the protocol, a built-in water pum eliminates the need for pressurized source or separate pump

High heat—Best for cleaning heavy and difficult-to-remove soil such as waxes, oil or agar

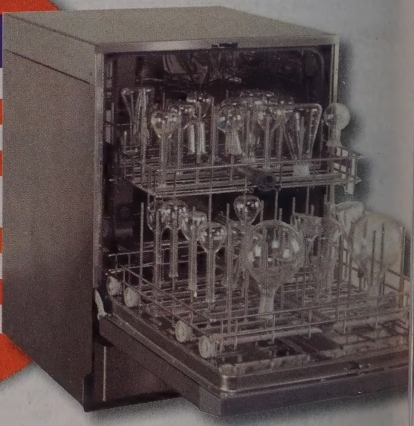
Spindle rack—Narrow-neck flasks and graduated cylinders effectively washed and dr on individual spindles

Built-in forced air dryer—Eliminates the need for a separate dryer or oven. HE filtered forced air drying, which traps dirt, lint and other particulate contaminan the air, should be considered if your research is sensitive to this type of contam

RS-232 port—If validation is required for your research, conditions are tra to a printer or computer

Accessory baskets and inserts—Accommodate various types of glass including beakers, pipets, culture tubes, BOD bottles and media plates

MODEL	FLASK SCRUBBER®	STEAM SCRUBBER®	FLASK SCRUBBER VANTAGE® SERIES
Warranty	2 years	2 years	2 years
Built-in purified water pump	Up to 6 rinses	Up to 6 rinses	Up to 6 rinses
Maximum H_2O Temperature	82° - 93°C	82° - 93°C	93°C
Spindle Rack	Standard	Accessory	Standard
Built-in dryer up to 99 minutes	Standard	Standard	Standard Includes HEPA filtered forced air
RS-232 Port	N/A	N/A	Standard
Liquid detergent dispenser	Accessory	Accessory	Standard
Spindle rack	Included	Accessory	Included
Upper general labware rack	Accessory	Standard	Accessory



PERFORM A LAB WASHING ANALYSIS

To determine the best washing system for your lab, an analysis tool may be used to calculate your p daily cost of hand washing vs. the cost of buying and using an automatic glassware washer. Inform tion—such as the amount of time spent per day hand washing glassware, costs of labor, electricity and detergent, types of glassware and how much of it—are important considerations. Once all the are calculated and compared, you can decide if the purchase of an automatic glassware washer pro a logical payback and consistent results. Find the analysis tool at **www.labconco.com/washerwo**

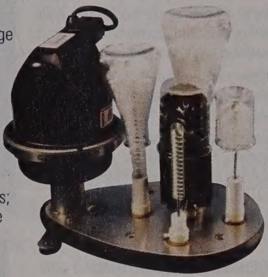
sponsored by:

Protecting your laboratory environment
LABCONCO

WASHERS/DRYERS

Fisher Scientific* Portable Electric Labware Washer

Compact and installs in any sink in seconds with no special plumbing or electrical requirements



- Heavy-duty motor, bronze bearings, and polished 11-gauge stainless-steel housing ensure high quality and reliability
- Partially submersible, sealed motor helps to maintain warm water temperature
- Cleaning base has enough ports to hold five brushes in a wide variety of styles and sizes; brushes spin quickly to remove residue and other substances from many types of labware quickly and easily
- Best results obtained using a low suds liquid detergent
- Made in the U.S.A.

13-641-705 shown with brushes 13-641-712 (back), 13-641-711 (middle), 13-641-708 (left), 13-641-707 (front), and 13-641-732 (right) (all sold separately). Note: For illustration purposes only; it is recommended that only one brush is used at a time.

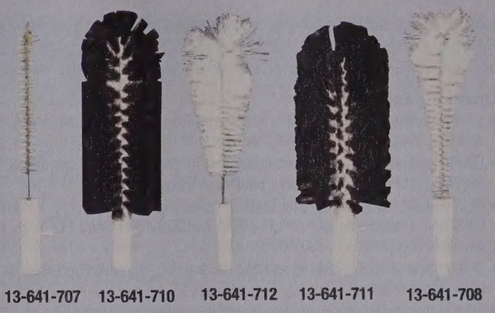
INCLUDES:

Three-wire 8' (2.4m) cord with switch. 13-641-706 includes four brushes: Small Flask Brush, 250mL; Standard Tall Brush: 8½" (21.6cm); Test Tube Brush; and Beaker Brush, 250mL. (13-641-705 does not include brushes). Other accessory brushes sold separately.

COMPLIANCE:

ETL tested; UL listed, CE marked, NSF certified. CSA approved.

Dimensions (L × W × H)	12 × 8 × 12" (30.5 × 20.3 × 30.5cm)
Shipping Weight	26 lb. (11.8kg)
Electrical Reqts.	115V
Model	FS-100B with four brushes
Cat. No.	**13-641-706**
Each	676.50
Model	FS-100 without brushes
Cat. No.	**13-641-705**
Each	594.50



*Fisherbrand** Labware Washer Brushes

Heavy-duty, long-life brushes are designed to give optimum cleaning results

- Brushes are stiffer on top and softer on the sides for better cleaning
- Variety of shapes and sizes to fit most labware
- Made in the U.S.A.

Description	Cat. No.	Each
Test Tube Brush	**13-641-707**	22.76
Small Flask Brush, 125mL	**13-642-706**	25.46
Small Flask Brush, 250mL	**13-641-708**	25.86
Flask Brush, 500mL	**13-641-712**	25.86
Standard Tall Brush, 8½" (21.6cm)	**13-641-710**	20.68
Beaker Brush, 50mL	**13-641-732**	23.79
Beaker Brush, 100mL	**13-641-713**	24.59
Beaker Brush, 250mL	**13-641-711**	20.68
Beaker Brush, 600mL	**13-641-709**	24.59
Beaker Brush, 1000mL	**13-641-725**	23.79

LOOKING FOR FISHERBRAND* SPARKLEEN* 2

For automated glassware washers, it's high-alkaline formula rinses free, even in hard water. See the Detergents section.

Sparkleen 2
Sparkleen 2

LOOKING FOR DETERGENTS?

You'll find a complete selection of detergents for use with laboratory glassware washers in the Detergents section.

Labconco* FlaskScrubber* and SteamScrubber* Glassware Washers

NEW

Provide thorough, efficient and economical cleaning that meets demanding laboratory standards

Ideal for college and university, government, pharmaceutical and industrial labs, or any facility utilizing reusable glassware. Choose from single-rack FlaskScrubber series models or dual-rack SteamScrubber models. Accessory spindle and open racks are designed specifically for laboratory glassware and are interchangeable between models to allow customization to user needs. Made in U.S.A.

Operating Features

- Achieve higher water temperatures for enhanced washing, faster drying, and sanitizing (see ordering table for specs)
- LCD information center for customizing cycles and monitoring operations, including internal water temperature (°C or °F) and alarms
- High water circulation rates for thorough cleaning: 96 gal./min. (363L/min.) when operated on 115V 60Hz and 230V 50Hz, and 112 gal./min. (424L/min.) on 230V 60Hz
- Dual pumps: one for washing and one for draining, to reduce potential for cross-contamination
- Built-in purified heater pump brings nonpressurized or pressurized purified water into tank for up to six pure water rinses
- Built-in steam generator produces hot vapor to penetrate and remove dried residue for cleaner glassware
- Manual-fill dispensers for detergent (powder or liquid) or rinse aid solution
- Built-in forced air drying up to 99 min. and programmable from 38° to 70°C (100°-158°F)
- Two user-set cycle programs
- User-set delayed start (up to 8 hours)

Structural Features

- Type 304 brushed stainless-steel door, tank, and upper and lower wash arms
- Free-standing models have stainless-steel exterior sides and top
- One-piece, stainless-steel, fine mesh particle drain filter to trap debris in tank to protect pumps
- Four leveling feet
- ⅜" female NPT inlet fitting for hot water tap connection
- Factory-installed drain hose and band clamp

FlaskScrubber Washers

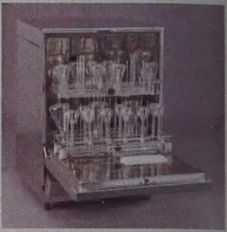
- Outfitted for washing narrow-necked flasks
- Supplied with one Type 304 stainless-steel spindle rack with 36 detachable large spindles, 18 holders, 36 clips and 10 interchangeable small spindles
- Factory-set cycle programs: For 115V models, 7 (RINSE ONLY, PLASTIC, GLASS, GLASS PLUS, SCIENTIFIC, SCIENTIFIC PLUS, DRY ONLY) for 208/240V models, 10 (add INTENSE, INTENSE PLUS and EXTREME)

FlaskScrubber Vantage* Series Washers

- Factory-set cycle programs: 10
- Automatic dispensers for liquid detergent dispenser (with peristaltic pump) and rinse aid
- Water conductivity monitor to confirm rinse water cleanliness and effective detergent removal
- Built-in HEPA[†]-filtered forced-air drying through the spindles up to 99 min. and programmable from 38° to 70°C (100° to 150°F)
- RS-232 port for monitoring washing operation on user-supplied computer or recorder
- Tempered safety glass viewing window with 25w interior light
- Other features same as FlaskScrubber washers

SteamScrubber Washers

- Supplied with upper and lower Type 304 open stainless-steel racks for washing wide-mouth glassware
- Upper rack has additional wash arm and side release latches for easy removal
- Factory-set cycle programs: For 115V models, 7 (RINSE ONLY, PLASTIC, GLASS, GLASS PLUS, SCIENTIFIC, SCIENTIFIC PLUS, DRY ONLY) for 208/240V models, 10 (add INTENSE, INTENSE PLUS and EXTREME)



10-359-100

10-359-112

ORDERING INFORMATION:

Accessories are interchangeable between models and are sold separately. Onsite validation is available through Labconco; contact your Fisher Scientific Customer Service Representative for details.

INCLUDES:

One spindle rack (FlaskScrubber and FlaskScrubber Vantage Series), or two open racks (SteamScrubber Series); see model information, above, for details

WARRANTY:

Two years on parts and labor

COMPLIANCE:

Meet NSF International sanitization requirements

CERTIFICATIONS:

ETL listed, CE marked

System Requirements

Inlet Water Temperature, Minimum	49°C (120°F)
Inlet Water Temperature, Recommended	60°C (140°F)
Purified Water Pressure, Minimum	0psi
Water Consumption per Fill	3.4 gal. (13L)
Hot Tap Water Pressure at Washer	20-120psi
Hot Tap Water Flowrate	1.25 gal./min. (4.7L/min.)
Connection	⅜" O.D. copper tubing for connection to water inlet valve Purified water with supply piping min. ⅜" I.D. to permit at least 0.9 gal./min. (3.4L/min.) flow

Contd. on next page.

*Trademark. See Trademark Reference.

Labconco* FlaskScrubber* and SteamScrubber* Glassware Washers, Contd.

Ordering Information

Style	Electrical Reqts.	Max. Internal Water Temp.	Viewing Window and Light	Overall Dimensions (L × W × H)‡	Shipping Wt.	Mfr. No.	Cat. No.	Each
FlaskScrubber Series Washers								
Undercounter	115V 60Hz, 16A	82°C (180°F)	No	27⅜ × 24⅛ × 36⅛" (69.6 × 61.2 × 91.7cm)	182 lb. (83kg)	4420320	**10-359-108**	8565.00
Undercounter	208/240V 50/60Hz, 12A	93°C (199°F)	No	27⅜ × 24⅛ × 36⅛" (69.6 × 61.2 × 91.7cm)	182 lb. (83kg)	4420321	**10-359-109**	8915.00
Undercounter	115V 60Hz, 16A	82°C (180°F)	Yes	27⅜ × 24⅛ × 36⅛" (69.6 × 61.2 × 91.7cm)	182 lb. (83kg)	4420330	**10-359-110**	9210.00
Undercounter	208/240V 50/60Hz, 12A	93°C (199°F)	Yes	27⅜ × 24⅛ × 36⅛" (69.6 × 61.2 × 91.7cm)	182 lb. (83kg)	4420331	**10-359-111**	9565.00
Free-standing	115V 60Hz, 16A	82°C (180°F)	No	27½ × 24¼ × 36¼" (69.9 × 61.5 × 91.9cm)	229 lb. (104kg)	4420420	**10-359-112**	8935.00
Free-standing	208/240V 50/60Hz, 12A	93°C (199°F)	No	27½ × 24¼ × 36¼" (69.9 × 61.5 × 91.9cm)	229 lb. (104kg)	4420421	**10-359-113**	9285.00
Free-standing	115V 60Hz, 16A	82°C (180°F)	Yes	27½ × 24¼ × 36¼" (69.9 × 61.5 × 91.9cm)	229 lb. (104kg)	4420430	**10-359-114**	9585.00
Free-standing	208/240V 50/60Hz, 12A	93°C (199°F)	Yes	27½ × 24¼ × 36¼" (69.9 × 61.5 × 91.9cm)	229 lb. (104kg)	4420431	**10-359-115**	9935.00
FlaskScrubber Vantage Series Washer								
Free-standing	208/240V 50/60Hz, 12A	93°C (199°F)	Yes	27½ × 32¼ × 36¼" (69.9 × 81.8 × 91.9cm)	260 lb. (118kg)	4540031	**10-359-116**	13,985.00
SteamScrubber Series Washers								
Undercounter	115V 60Hz, 16A	82°C (180°F)	No	27⅜ × 24⅛ × 36⅛" (69.6 × 61.2 × 91.7cm)	182 lb. (83kg)	4400320	**10-359-100**	6620.00
Undercounter	208/240V 50/60Hz, 12A	93°C (199°F)	No	27⅜ × 24⅛ × 36⅛" (69.6 × 61.2 × 91.7cm)	182 lb. (83kg)	4400321	**10-359-101**	6975.00
Undercounter	115V 60Hz, 16A	82°C (180°F)	Yes	27⅜ × 24⅛ × 36⅛" (69.6 × 61.2 × 91.7cm)	182 lb. (83kg)	4400330	**10-359-102**	7270.00
Undercounter	208/240V 50/60Hz, 12A	93°C (199°F)	Yes	27⅜ × 24⅛ × 36⅛" (69.6 × 61.2 × 91.7cm)	182 lb. (83kg)	4400331	**10-359-103**	7620.00
Free-standing	115V 60Hz, 16A	82°C (180°F)	No	27½ × 24¼ × 36¼" (69.9 × 61.5 × 91.9cm)	229 lb. (104kg)	4400420	**10-359-104**	6995.00
Free-standing	208/240V 50/60Hz, 12A	93°C (199°F)	No	27½ × 24¼ × 36¼" (69.9 × 61.5 × 91.9cm)	229 lb. (104kg)	4400421	**10-359-105**	7355.00
Free-standing	115V 60Hz, 16A	82°C (180°F)	Yes	27½ × 24¼ × 36¼" (69.9 × 61.5 × 91.9cm)	229 lb. (104kg)	4400430	**10-359-106**	7645.00
Free-standing	208/240V 50/60Hz, 12A	93°C (199°F)	Yes	27½ × 24¼ × 36¼" (69.9 × 61.5 × 91.9cm)	229 lb. (104kg)	4400431	**10-359-107**	8000.00

† HEPA filter is 99.97% efficient on particles 0.3 micron.

‡ With door closed. Height shown is with leveling feet fully extended; minimum height is approx. 2" lower.

ACCESSORIES

Base Stands

For use with Labconco* FlaskScrubber* and SteamScrubber* Washers

Elevate washers 17" (43.2cm) for convenient loading

- Type 304 stainless-steel construction
- For stationary use
- Includes storage compartment(s) with door, leveling feet and instructions
- No assembly required

For Use with	No. of Storage Compartments	L × W × H	Mfr. No.	Cat. No.	Each
Freestanding FlaskScrubber or SteamScrubber washers	1	27½ × 24¼ × 17"H (70 × 61 × 43"H)	4595400	**10-359-127**	780.00
FlaskScrubber Vantage Series washers	2	27½ × 32¼ × 17"H (70 × 82 × 43"H)	4595500	**10-359-126**	970.00

ACCESSORIES

Racks

For use with Labconco* FlaskScrubber* and SteamScrubber* Washers

Type 304 stainless-steel construction.

Upper Spindle Rack

- Provides direct injection cleaning and forced air drying through the spindles
- Accommodates glassware up to 8½"H (21.6cm)
- With side release latches and side rails for tank side wall installation
- Includes 30 removable spindles, 30 adjustable-height clips, 10 small spindles, 15 plastic glassware folders, tool, 30 nylon plugs and wash arm
- Spindles may be removed and plugged to accommodate various accessory inserts (sold separately)

Upper and Lower Standard Racks

- Supplied with SteamScrubber washers
- Can be used with FlaskScrubber and FlaskScrubber Vantage Series washers
- With acetal rollers
- Accessory basket inserts (sold separately) can be added to suit glassware washing needs

Description	For Use with	L × W × H	Mfr. No.	Cat. No.	Each
Upper Spindle Rack	FlaskScrubber and FlaskScrubber Vantage Series	20⅞ × 20 × 7¼" (53 × 51 × 18cm)	4595600	**10-359-125**	1760.00
Upper Standard Rack	SteamScrubber, FlaskScrubber and FlaskScrubber Vantage Series	20⅞ × 20¼ × 6" (53 × 51 × 15cm)	4587000	**10-359-117**	298.00
Lower Standard Rack	SteamScrubber, FlaskScrubber and FlaskScrubber Vantage Series	21 × 21⅛ × 3½" (53 × 54 × 9cm)	4588500	**10-359-118**	298.00

Inserts

For use with Labconco* FlaskScrubber* and SteamScrubber* Washers

Type 304 stainless-steel inserts are available in various styles to hold specific labware.

BOD Bottle Insert

- Capacity: 18 bottles
- Grid size: 70 × 70mm
- With handles for easy lifting

Culture Tube Insert

- Capacity: 242 tubes from 10 to 12mm O.D.
- With handles for easy lifting

48-Pin Insert

- Holds a variety of glassware
- Stainless-steel pins are plastic-tipped to protect glassware

Petri Dish Insert

- For Petri dishes, watch glasses and microplates
- Capacity: 24 plates
- Grid size: 22 × 140mm

Pipet Insert

- Permit direct injection pipet cleaning
- Capacity: 16 pipets, 1 to 50mL in size
- Self-sealing silicone check valves allow washing of partial or full loads
- Includes two 1¼" (3.2cm) mounting spindles and PVC-coated holder
- FlaskScrubber and FlaskScrubber Vantage Washers hold up to two inserts

Description	L × W × H	Mfr. No.	Cat. No.	Each
BOD Bottle Insert	8¾ × 19½ × 6" (22.2 × 49.5 × 15.2cm)	4589201	**10-359-121**	149.00
Culture Tube Insert	8⅝ × 18 × 4½" (22 × 46 × 11cm)	4588600	**10-359-119**	212.00
48-Pin Insert	8¾ × 19½ × 6" (49 × 20 × 13cm)	4591601	**10-359-122**	134.00
Petri Dish Insert	19⅜ × 7¾ × 5¼" (22 × 49 × 15cm)	4589701	**10-359-120**	212.00
Pipet Insert	----	4595200	**10-359-123**	355.00

LOOKING FOR MORE ACCESSORIES?

Additional racks, inserts and glassware holders as well as detergents, are available for your Labconco* FlaskScrubber* or SteamScrubber* washer. For more information, go online.

Visit www.fishersci.com and search for FlaskScrubber

*Trademark. See Trademark Reference.

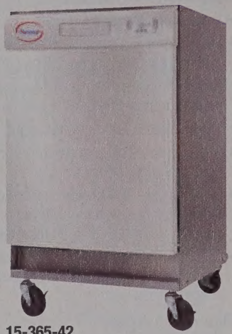
Prices subject to change.

National Undercounter Glassware Washers

Use in university, pharmaceutical, bioresearch, chemical research, clinical, and industrial environments

Simple-to-operate microprocessor control interface and multiple cycle selections ensure each load is processed with the minimum energy required.

- Depending on model selected, a maximum 4.3 gal. (15L) or 5.4 gal. (20L) of tap water and 1.3 gal. (5L) of DI water is used
- Smart fill system has 14 water management and control features to maintain proper fluid level and prevent leak damage
- 29° to 77°C (85° to 170°F) temperature selection range
- Easy flexible loading; all models have 7¾" (20cm) upper rack clearance and 9¾" (25cm) lower rack clearance
- Six wash programs
- Automatic detergent and neutralizer dosing
- Separate drain and wash pumps for high cleaning capability and controlled flowrate
- Three separate filters trap debris located in front of units for easy access; no tools required for filter removal
- Drain pump has magnetic impeller for protection from debris; units automatically reverse flow if debris is present
- Safe to use on plastic labware because of the inline heating element and no exposed high-temperature components in the wash chamber
- Fit in standard cabinet opening
- Adjustable legs on all models
- High-quality Type 304 stainless-steel chamber for corrosion protection and long life
- Acoustical and thermal insulation for ultra quiet operation
- Manufactured using ISO 9001:2000-certified processes
- All washers are available in a choice of undercounter installation versions, freestanding (FS) versions that have a stainless-steel outer cabinet, and freestanding mobile (FSM) versions that have a stainless-steel outer cabinets and casters
- **NLW-88 Series** models are a cost-effective choice for washing basic glassware
- **NLW-108 Series** models are similar to the NLW-88 series, but have a DI final rinse cycle
- **NLW-128 Series** models consist of spindle-ready models that can accommodate one or two direct injection spindle racks for narrow-neck glassware (clean 22 flasks 20¾" [53cm] tall or 44 shorter flasks—22 up to 9¾" [25cm] tall and 22 up to 7¾" [20cm] tall); also have the DI final rinse cycle
- **NLW-1285 Series** models are similar to the NLW-128, but add a high-performance pump for critical applications and tough cleaning requirements



15-365-42

CERTIFICATIONS:

ETL/ETLc listed

Model	NLW-88 Basic	NLW-108 Basic with DI	NLW-128 Spindle with DI	NLW-1285 with DI and Pump
Volume	6.0 ft.^{3} (170L)	6.0 ft.^{3} (170L)	6.0 ft.^{3} (170L)	6.0 ft.^{3} (170L)
Min. Water Consumption	Tap: 2.0 gal. (7.5L) DI: N/A	Tap: 1.3 gal. (5.0L) DI: 0.7 gal. (2.5L)	Tap: 1.3 gal. (5.0L) DI: 0.7 gal. (2.5L)	Tap: 1.3 gal. (5.0L) DI: 0.7 gal. (2.5L)
Max. Water Consumption	Tap: 5.4 gal. (20L) DI: N/A	Tap: 4.3 gal. (15L) DI: 1.3 gal (5L)	Tap: 4.3 gal. (15L) DI: 1.3 gal (5L)	Tap: 4.3 gal. (15L) DI: 1.3 gal (5L)
Pump Capacity	Tap Water: 2 gpm (8L/min.) at 18-60psig (1.3-4.1 bar) DI Water: N/A	Tap Water: 2 gpm (8L/min.) at 18-60psig (1.3-4.1 bar) DI Water: 2 gpm (8L/min.) at 18-60psig (1.3-4.1 bar) less than 1megohm/cm resistivity	Tap Water: 2 gpm (8L/min.) at 18-60psig (1.3-4.1 bar) DI Water: 2 gpm (8L/min.) at 18-60psig (1.3-4.1 bar) less than 1megohm/cm resistivity	Tap Water: 2 gpm (8L/min.) at 18-60psig (1.3-4.1 bar) DI Water: 2 gpm (8L/min.) at 18-60psig (1.3-4.1 bar) less than 1megohm/cm resistivity
Interior D × W × H	21½ × 19 × 25¼" (55 × 48 × 64cm)	21½ × 19 × 25¼" (55 × 48 × 64cm)	21½ × 19 × 25¼" (55 × 48 × 64cm)	21½ × 19 × 25¼" (55 × 48 × 64cm)
Shipping Weight	165 lb. (74.8kg)	170 lb. (77kg)	170 lb. (77kg)	195 lb. (88kg)
Electrical Reqts.	115V 60Hz 15A	115V 60Hz 15A	115V 60Hz 15A	230V 60Hz 20A
Undercounter				
Exterior L × W × H	24 × 24½ × 34¼ to 36½" adjustable H (61 × 62 × 87 to 93cm)	24 × 24½ × 34¼ to 36½" adjustable H (61 × 62 × 87 to 93cm)	24 × 24½ × 34¼ to 36½" adjustable H (61 × 62 × 87 to 93cm)	24 × 24½ × 34¼ to 36½" adjustable H (61 × 62 × 87 to 93cm)
Cat. No.	**15-365-41**	**15-365-44**	**15-365-47**	**15-365-50**
Each	3213.92	5236.40	5719.76	7290.68
Freestanding				
Exterior L × W × H	24 × 24½ × 38⅜" (61 × 62 × 97.5cm)	24 × 24½ × 38⅜" (61 × 62 × 97.5cm)	24 × 24½ × 38⅜" (61 × 62 × 97.5cm)	24 × 24½ × 38⅜" (61 × 62 × 97.5cm)
Cat. No.	**15-365-42**	**15-365-45**	**15-365-48**	**15-365-51**
Each	3715.00	5960.00	6270.00	7975.00
Freestanding Mobile				
Exterior L × W × H	24 × 24½ × 38⅜" (61 × 62 × 97.5cm)	24 × 24½ × 38⅜" (61 × 62 × 97.5cm)	24 × 24½ × 38⅜" (61 × 62 × 97.5cm)	24 × 24½ × 38⅜" (61 × 62 × 97.5cm)
Cat. No.	**15-365-43**	**15-365-46**	**15-365-49**	**15-365-52**
Each	4143.54	6312.30	6760.68	8364.46

National Large-Capacity Glassware Washers

Ideal for high volume washing in large laboratories and research centers

User-friendly Operation

- Single tube system
- PLC Control System located at eye level and incorporates easy-to-use touchscreen with menu-driven software
- Smart fill system features 14 water management and control features to maintain proper fluid level and prevent leak damage
- Three preset wash routines: light, medium, heavy
- Store up to 20 custom wash routines with up to 15 steps of flush, wash, rinse, exhaust, or dry
- For any cycle, select from hot, cold, warm tap water and DI water; wash/rinse water temperatures up to 95°C; dry water temperatures up to 105°C; and times up to 99 minutes
- Detergent and neutralizer dispensing system—select detergent or neutralizer to be used from control panel and it is automatically injected into the wash cycle

Cleaning System

- Multiple rows of laser-drilled spray tubes travel back and forth beneath the glassware, creating moving walls of water
- Spray tubes are grouped in two sets to provide complete corner to corner washing coverage for consistenly clean glassware
- Spray tubes are easily removed for quick cleaning
- Separate drain and wash pumps offer maximum cleaning capability and a controlled flowrate for discharge into typical lab drains
- Three separate filters trap debris
- Drain pump has magnetic impeller to protect pump if debris is present; units automatically reverse if it senses debris

Interior Features

- One loading level—large wash chamber is constructed of Type 316 stainless steel for corrosion resistance, heavy-duty use, and long life
- Washers hold two, four, or six baskets; and one, two, or three spindle racks—up to 96 spindles (baskets, spindles, and spindle racks are available separately; contact your Fisher Scientific Customer Service Representative for information); 25" (63cm) shelf clearance
- Insulation layer between inner and outer walls conserves heat and with the linear spray motion, provides extremely quiet operation

15-365-55

Exterior Features

- Ergonomically designed with a convenient chamber height for easy loading of glassware without bending
- Tempered glass door is electrically operated and lifts vertically for easy access to the chamber and to conserve floor space
- Exterior 304 stainless-steel panels
- Select from electric or steam-generated heat models.

Chamber Volume	**6.1 ft.^{3} (173L)**	**11.8 ft.^{3} (334L)**	**17.0 ft.^{3} (481L)**
Exterior L × W × H	32½ × 41 × 77" (83 × 104 × 196cm)	46⅛ × 41 × 77" (117 × 104 × 196cm)	59¼ × 41 × 77" (150 × 104 × 196cm)
Interior L × D × H	15 × 27 × 26" (38 × 69 × 66cm)	29 × 27 × 26" (74 × 69 × 66cm)	42 × 27 × 26" (107 × 69 × 66cm)
Shelf Area	2.8 ft.^{2} (0.26m^2)	5.4 ft.^{2} (0.5m^2)	7.9 ft.^{2} (0.73m^2)
Hold No. of Baskets	2	4	6
Hold No. of Spindles	1	2	3
Pump Capacity	Hot and Cold Tap Water: 20 gpm (76L/min.) at 25-45psig (1.7-3.1 bar) DI Water: 20 gpm (76L/min.) at 25-45psig (1.7-3.1 bar) less than 12megohm/cm resistivity	Hot and Cold Tap Water: 20 gpm (76L/min.) at 25-45psig (1.7-3.1 bar) DI Water: 20 gpm (76L/min.) at 25-45psig (1.7-3.1 bar) less than 12megohm/cm resistivity	Hot and Cold Tap Water: 20 gpm (76L/min.) at 25-45psig (1.7-3.1 bar) DI Water: 20 gpm (76L/min.) at 25-45psig (1.7-3.1 bar) less than 12megohm/cm resistivity
Shipping Weight	700 lb. (317.5kg)	885 lb. (401.4kg)	975 lb. (442.3kg)
Electric Heat Models			
Electrical Reqts.	208/230V 50/60Hz 60A	208/230V 50/60Hz 60A	208/230V 50/60Hz 60A
Mfr. No.	NLW-215-E	NLW-415-E	NLW-615-E
Cat. No.	**15-365-53**	**15-365-55**	**15-365-57**
Each	31,794.70	36,670.70	43,491.80
Steam Heat Models			
Steam Reqts.	90 lb./hr. (41kg/hr.) 60-80psig (4.1-5.5 bar)	120 lb./hr. (54kg/hr.) 60-80psig (4.1-5.5 bar)	150 lb./hr. (68kg/hr.) 60-80psig (4.1-5.5 bar)
Electrical Reqts.	208/230V 50/60Hz 17A	208/230V 50/60Hz 17A	208/230V 50/60Hz 25A
Mfr. No.	NLW-215-S	NLW-415-S	NLW-615-S
Cat. No.	**15-365-54**	**15-365-56**	**15-365-58**
Each	31,794.70	36,670.70	43,491.80

ACCESSORIES

Glassware Washer/Dryer Spindle Racks

- 6" high (15.2cm) on upper rack; 8" high (20.3cm) on the lower rack
- Glassware clearance is 8" (20.3cm) for the upper rack; 11" (28cm) for the lower rack
- Upper and lower racks 15-356-15 and 15-356-16 are designed to be used togetherS
- Lower rack 15-356-17 may be used alone for washing tall items
- Rack set 15-356-40 includes all three racks
- Can be used in Undercounter models NLW-128 and -1285 and in all National Large-Capacity models

Description	Cat. No.	Each
Upper Spindle Rack	**15-356-16†**	1834.86
Lower Spindle Rack	**15-356-15‡**	1834.86
Stand-alone Lower Spindle Rack for Tall Items	**15-356-17**	2196.99
Spindle Rack Set	**15-356-40**	3000.00

† Must be used with 15-356-15 lower spindle rack.

‡ Must be used with 15-356-16 upper spindle rack.

WASTE DISPOSAL

*Fisherbrand** Sharps-A-Gator* Sharps Container for Phlebotomy

Needle cap holder promotes one-handed, mechanical recapping

- Bright red, one-piece polypropylene container clearly marked with biohazard label
- Translucent top has convenient holder for blood tubes with a needle remover connected to the holder
- Sliding lid can snap into open position, slide fully shut without locking, or permanently lock shut
- Safe to autoclave or incinerate

14-827-109

Capacity	L × W × H	Cat. No.	Each	Case of 18
1 qt. (1L)	5 × 5 × 7" (12.7 × 12.7 × 18cm)	**14-827-109**	2.98	44.76

*Fisherbrand** Sharps-A-Gator* Point-of-Use Sharps Containers

Horizontal loading, nonmechanical sharps opening provides one-hand, one-step, no-touch sharps depositing

- For use in patient rooms and all patient-care areas
- Opening design impedes hand entry to reduce risk of needle sticks when disposing of sharps
- Clear tops and translucent containers allow you to monitor fill level
- Puncture-resistant, durable polypropylene
- Can be autoclaved or incinerated
- Clearly marked with biohazard label

Top, left to right: 14-827-129, 14-827-128, 14-827-131. Bottom: 14-827-122, 14-827-120, 14-827-117.

Capacity	Color	L × W × H	Cat. No.	Each	Case of
High Top					
2½ qt. (2.4L)	Red	4¼ × 11 × 7½" (11 × 28 × 19cm)	**14-827-62**	6.07	30/145.77
2½ qt. (2.4L)	Almond	4¼ × 11 × 7½" (11 × 28 × 19cm)	**14-827-117**	3.60	30/86.42
5 qt. (4.5L)	Clear	4¼ × 11 × 12¼" (11 × 28 × 31cm)	**14-827-120**	6.07	30/145.74
5 qt. (4.5L)	Red	4¼ × 11 × 12¼" (11 × 28 × 31cm)	**14-827-122**	6.08	30/145.80
3½ gal. (13.2L)	Translucent Almond	8 × 14¼ × 16⅝" (20.3 × 36 × 42cm)	**14-827-131**	11.36	10/94.68
Low Top					
3½ gal. (13.2L)	Translucent Almond	8 × 14¼ × 13½" (20.3 × 36 × 34.3cm)	**14-827-128**	10.31	10/85.89
3½ gal. (13.2L)	Translucent Red	8 × 14¼ × 13½" (20.3 × 36 × 34.3cm)	**14-827-129**	10.31	10/85.89

*Fisherbrand** Sharps-A-Gator* Sharps Containers

Puncture resistant with wide rectangular opening for horizontal loading of needles

- General-purpose sharps container with clear locking lid and marked with biohazard label
- Made from puncture-resistant polypropylene that can be autoclaved or incinerated
- Easily mount on walls and carts, nest to conserve storage space

14-827-104

ORDERING INFORMATION:

Additional sizes available. Contact your Fisher Scientific Customer Service Representative for ordering information.

COMPLIANCE:

Meet applicable OSHA standards for sharps and biowaste collection.

Capacity	Color	Cat. No.	Each	Case of
1 gal. (3.8L)	Red	**14-827-63**	5.79	32/148.29
1 gal. (3.8L)	Almond	**14-827-101**	5.13	32/131.36
7 gal. (26.5L)	Red	**14-827-104**	20.51	10/175.34
7½ gal. (28L)	Red	**14-827-105†**	18.17	6/93.19
10 gal. (38L)	Red	**14-827-71**	25.21	6/129.31

† Round container.

*Fisherbrand** Glass-Disposal Boxes

Keep glass separate from other waste

- Sturdy, corrugated cardboard
- Lined with tough, 2mil-thick polybag
- Identifying graphics with instructions (intermediate and floor models have top cover instructions in English and Spanish)
- Unique integral lid provides added safety

Fisherbrand
GLASS
12-009-7A (box), 17-988-449 (holder)

Model	L × W × H	Cat. No.	Pack of 6
Benchtop	8 × 8 × 10" (20 × 20 × 25cm)	**12-009-7B**	50.76
Intermediate	12 × 12 × 20" (30 × 30 × 51cm)	**17-988-448**	52.68
Floor	12 × 12 × 27" (30 × 30 × 69cm)	**12-009-7A**	71.38

ACCESSORIES

Acrylic Box Holders

Extra protection for glass-disposal boxes

- When box is full, top and center shield remove easily, while sturdy bottom tray stays in place to protect box during transport to disposal area
- Also accept heavy-duty plastic disposal bags

For Model	L × W × H	Cat. No.	Each
Benchtop	10 × 10 × 10¾" (25.4 × 25.4 × 27.3cm)	**17-988-451**	139.40
Intermediate	13 × 13 × 20¼" (33 × 33 × 52.1cm)	**17-988-450**	260.45
Floor	13 × 13 × 27¾" (33 × 33 × 70.5cm)	**17-988-449**	386.55

*Fisherbrand** Burn-up Bin* Biohazard Waste Boxes

Store flat, assemble in seconds

- Corrugated cardboard—single use
- 2mil polyliner safely holds biohazard waste
- Tight-fitting lid has flap opening to accept material; to dispose, simply close lid and transfer filled box to incinerator
- Graphics and biohazard symbols readily identify contents, encourage proper use

12-009-8A

Model	L × W × H	Opening Dia.	Cat. No.	Case of 6
Benchtop	8 × 8 × 10" (20 × 20 × 25cm)	5¼" (13.3cm)	**12-009-8B**	37.11
Floor	12 × 12 × 27" (30 × 30 × 69cm)	7" (17.8cm)	**12-009-8A**	54.00

Rubbermaid* Slim Jim* Wastebasket

Ideal for tight spots

- Large 23 gal. (87L) capacity rectangular container made of chemical-resistant polyethylene
- Durable, easy-to-clean construction
- Optional swing-top lid offers more hygienic hands-free disposal

15-353-17

Color	L × W × H	Mfr. No.	Cat. No.	Each
Wastebasket				
Beige	20 × 11 × 30" (51 × 28 × 76cm)	3540 BEIGE	**15-353-17**	62.96
Swing-top Lid				
Brown	20⅜ × 11⅜ × 4¾" (52 × 29 × 12cm)	2673 BROWN	**15-353-18**	44.38

Rubbermaid* Soft Wastebaskets

Space-efficient and economical

- Polyethylene construction—won't rust, chip, or dent
- Rolled rims for added durability and strength
- Fit under standard desk height
- Neutral gray color

15-353-16

Capacity	L × W × H	Mfr. No.	Cat. No.	Each
28⅛ qt. (26.6L)	14⅜ × 10¼ × 15" (36.5 × 26 × 38.1cm)	2956 GRAY	**15-353-15**	10.50
41¼ qt. (39L)	15¼ × 11 × 19⅞" (38.7 × 28 × 50.5cm)	2957 GRAY	**15-353-16**	19.74

Rubbermaid* Step-On Waste Containers

For hands-free, sanitary waste management

- Quiet, heavy-duty foot pedal conveniently opens durable plastic lid
- Seamless, all-plastic construction and rounded corners make disinfecting easier
- Overlapping, self-closing lid shuts tight to contain odors
- Puncture resistant and leakproof; won't rust or chip

15-353-23

ORDERING INFORMATION:

Containers also available in white; contact your Fisher Scientific Customer Service Representative for orderin information. Use with Fisherbrand* Biohazard Autoclavable Bags, availabl separately in the Bags section.

COMPLIANCE:

Assists in complying with OSHA 29CFR1910.1030 Occupational Exposure to Bloodborne Pathogens. **Note:** May be used for biohazards **only** when container is properly labeled with a biohazard label sold separately; see th Labeling section.

CERTIFICATIONS:

FM and California State Fire Marshal approved for fire safety.

Capacity	Color	L × W × H	For Bag Size	Cat. No.	Each
8 gal. (30.3L)	Red	16¼ × 15¾ × 17⅛" (41.3 × 40 × 43.5cm)	33 × 30"	**15-353-23**	106.36
12 gal. (45.4L)	Red Beige	16¼ × 15¾ × 23⅝" (41.3 × 40 × 60cm)	33 × 30"	**15-353-24** **19-046-705**	124.00 124.07
18 gal. (68.1L)	Red Beige	19¾ × 16⅛ × 26½" (50.2 × 41 × 67.3cm)	37 × 48"†	**15-353-25** **19-046-707**	140.49 140.48
23 gal. (87.1L)	Red	19¾ × 16⅛ × 32½" (50.2 × 41 × 82.6cm)	37 × 48"†	**15-353-26**	149.67

† 18-gal. container also uses 38 × 47" and 38 × 48" Fisherbrand Autoclavable Bags.

Nalgene* Large Waste Containers

With cover for added safety

- Made of autoclavable, heavy-duty polypropylene
- Ideal for holding and sterilizing refuse, clothing, equipment, labware, and contaminated material
- Molded-in handgrips

COMPLIANCE:

Meet OSHA Standard 29CFR1910.1030 for use as protection against bloodborne pathogens.

NOTE:

Cover must be removed before autoclaving.

15-353-5

Capacity	O.D. × H	Mfr. No.	Cat. No.	Each	Case of 4
6 gal. (23L)	11 × 18" (28 × 46cm)	6920 0060	**15-353-5**	205.68	548.50
12 gal. (45L)	14 × 23" (36 × 58cm)	6920 0120	**15-353-6**	319.13	851.00

*Trademark. See Trademark Reference.

Prices subject to change.

Nalgene* Safety Waste Systems

For temporary waste containment on the bench or under a hood

10-437-36, 10-437-35

System consists of a chemical- and break-resistant 1⅛ gal. (4L) HDPE or 2⅝ gal. (10L) fluorinated HDPE container, removable funnel with lid, closure/funnel adapter, filter, and screen insert.

- Large-diameter funnel has attached cover with Easy-Snap safety latch to minimize accidental spills and volatile emissions
- Funnel easily unscrews from polypropylene closure/funnel adapter for cleaning and quicker access
- Closure/adapter includes vent with polypropylene/PTFE vent plug that releases pressure during pouring, and prevents emissions during use; adapter can also connect to external syringe filter
- Removable polypropylene screen insert fits at bottom of funnel to trap large particles
- Resist common lab solvents, acids, and bases; not resistant to long-term UV light exposure

ORDERING INFORMATION:

Secondary containers (sold separately) should be used with Safety Waste Systems during transport, transfer or storage.

NOTE:

These systems are not safety cans as defined by OSHA guidelines and are designed for temporary waste disposal only. Waste should be disposed of prior to 90 days in accordance with OSHA regulations.

Capacity	Closure Size	Funnel Top Dia. × Stem L	Container Material	Mfr. No.	Cat. No.	Each
1⅛ gal. (4L)	38-430	5½ × 7⅛" (14 × 18cm)	HDPE	6379-0004	**10-437-35**	75.68
2⅝ gal. (10L)	83B	10 × 10⅝" (25 × 27cm)	FLPE	6379-0010	**10-437-36**†	108.41

† With molded-in handles for transportation.

ACCESSORIES

LDPE Secondary Containers

Recommended for use with Nalgene* Safety Waste Systems. Waste container and funnel fit securely inside secondary container. Designed to contain contents in case of a spill during transport, use or storage.

Capacity	Outside Dia. × H	Mfr. No.	Cat. No.	Each
1.0 gal. (3.9L)	6½ × 9" (17 × 23cm)	6377 0002	**15-353-46**	25.20
1.45 gal. (5.5L)	7¼ × 9¾" (18 × 25cm)	6377 0004	**15-353-47**	28.00

Replacement Funnels

HDPE funnel with attached lid, polypropylene closure/funnel adapter, screen insert, polypropylene/PTFE 0.45μm vent plug, and filter. Funnel with 40mm closure mates with Merck* Euro-Bottle.

Closure Size	Funnel Top Dia. × Stem L	Mfr. No.	Cat. No.	Case of
40mm	5½ × 7⅛" (14 × 18cm)	6378-0003	**10-437-32**	4/244.66
38mm-430	5½ × 7⅛" (14 × 18cm)	6378-0004	**10-437-33**	4/244.66
83mm-B	10 × 10⅝" (25 × 27cm)	6378-0010	**10-437-34**	2/147.30

Scienceware* Touch Free* Automatic Waste Cans

Automatically open and close without a touch

11-394-453, 11-394-451, 11-394-452

When a hand or solid object is moved over the top, waste can detects motion, opens lid to accept waste, and then closes automatically.

- Protect users from contact with waste receptacle and its contents
- Fitted well helps to reduce odor and airborne contamination
- ON-OFF switch deactivates AUTO-OPEN/CLOSE function

2.5 Gallon

- Ideal for benchtop use
- Removable rigid autoclavable polypropylene liner will not leak or rust
- Body and lid made from easy-to-clean, molded ABS plastic
- White pail with white top

7.3 Gallon

- Pail made from polypropylene with an ABS plastic top
- Small footprint enables a fit into tight spaces
- Gray pail with gray top

12 Gallon

- Small footprint enables a fit into tight spaces
- Stainless-steel pail with black ABS plastic top

INCLUDES:

Each unit is supplied with a brightly colored biohazard label and three other labels (recyclables, trash, and a blank label for individual applications).

REQUIRED ACCESSORIES:

Requires four "D" batteries (not included) which will provide approximately 4000 openings. All cans should be lined with disposable trash or biohazard bags (sold separately). Batteries and bags available on our Web site.

NOTE:

Prior to use, cans should be appropriately labeled with one of the included labels to indicate the type of waste to be placed inside the can.

Capacity	L × W × H	Mfr. No.	Cat. No.	Each
2.5 gal. (9.5L)	8½ × 12 × 17" (21.6 × 31 × 43cm)	132020010	**11-394-451**	49.29
7.3 gal. (27.6L)	14½ × 10½ × 22½" (37 × 27 × 57.1cm)	132020020	**11-394-452**	90.20
12 gal. (45.5L)	14½ × 10½ × 26½" (37 × 27 × 67.3cm)	132020030	**11-394-453**	140.53

Eagle* Step-On Biohazard Waste Containers

Durable and fire-safe

18-880C, 18-880B, 18-880A

- HPDE construction won't rust or dent
- Foot lever opens container for hands-free operation
- Labeled to advise workers of potential biohazards

ORDERING INFORMATION:

Use with Fisherbrand* Biohazard Autoclavable Bags sold separately

COMPLIANCE:

Comply with 29CFR1910.1030 requirements for exposure to bloodborne pathogens. FM approved.

Capacity	L × W × H	Bag Size	Mfr. No.	Cat. No.	Each
6 gal. (23L)	16½ × 13½ × 16" (42 × 34 × 41cm)	23 × 24" (58 × 61cm)	943BIO	**18-880A**	70.88
10 gal. (38L)	22 × 18 × 18" (56 × 45.7 × 46cm)	36 × 30" (91 × 76cm)	945BIO	**18-880B**	84.25
14 gal. (53L)	22 × 18 × 21" (56 × 45.7 × 53cm)	36 × 30" (91 × 76cm)	947BIO	**18-880C**	91.02

FISHERBRAND* BIOHAZARD AUTOCLAVE BAGS

Strong, pliable, leak- and puncture resistant bags are available in red and clear polyethylene and polypropylene. Bags available plain or printed with biohazard symbol.

Visit www.fishersci.com and search for Fisherbrand Biohazard Bags

NORTH* BLOODBORNE PATHOGEN RESPONSE KITS

Provides fast, effective cleanup of potentially infectious materials. Includes necessary supplies to clean up a spill containing bloodborne pathogens, such as blood, vomit and other bodily fluids. Three kit sizes available.

Visit www.fishersci.com and search for North Bloodborne Pathogen Kits

Eagle* Polyethylene Oily Waste Cans

Ideal for temporary storage of solvent, waste rags, and other materials subject to spontaneous combustion

- Durable, fire-safe cans won't rust or dent and resist most chemical compounds
- Cans feature foot treadle that opens cover; lid self-closes
- Choice of red or high-visibility yellow

18-010, 18-944, 18-009

COMPLIANCE:

Meet OSHA 29CFR1910.108 and 20CFR1910.106 requirements.

CERTIFICATIONS:

FM approved.

Capacity	Height	Mfr. No.	Cat. No.	Each
Red				
6 gal. (23L)	16" (41cm)	933FL	**18-010**	76.10
10 gal. (38L)	18" (46cm)	935FL	**18-944**	88.75
14 gal. (53L)	21" (53cm)	937FL	**18-009**	97.35
Yellow				
6 gal. (23L)	16" (41cm)	933FLY	**19-038-452**	76.11
10 gal. (38L)	18" (46cm)	935FLY	**19-038-453**	90.35
14 gal. (53L)	21" (53cm)	937FLY	**19-038-454**	97.48

WATCH GLASSES

WATCH GLASSES

02-617-1D

02-610-5 Series

For weighing, crystallization, drying, and covering beakers

PTFE; inert to most chemicals and solvents. Find more (smooth, beveled, ribbed, fire-polished) on our Web site. (Keywords: Watch Glasses).

O.D.	Fits Beaker Capacity	Cat. No.	Each
Fisherbrand* Watch Glasses			
⅘" (20mm)	1mL	**02-617-4**	4.73
1⅛" (30mm)	5, 10mL	**02-617-1A**	6.95
1½" (40mm)	25mL	**02-617-1B**	8.61
2" (50mm)	50mL	**02-617-1C**	9.37
2⅝" (65mm)	100mL	**02-617-1D**	12.04
3⅛" (80mm)	250mL	**02-617-1G**	13.88
4" (100mm)	400, 500mL	**02-617-1E**	15.71
5" (125mm)	600, 1000mL	**02-617-1F**	22.67
6" (150mm)	2000mL	**02-617-1H**	42.76
Chemware* Watch Glasses			
2" (5cm)	50mL	**02-610-5A**	7.79
3" (7.5cm)	125mL	**02-610-5C**	10.66
4" (10cm)	250mL	**02-610-5E**	14.59
5" (12.5cm)	1000mL	**02-610-5G**	42.50
6" (15cm)	----	**02-610-5J**	60.53

*Trademark. See Trademark Reference.

Prices subject to change.

A WATER SYSTEM IS NOT JUST THE "POLISHING" UNIT.

It is the "polishing" unit plus the feedwater; hence, a system.

Underlying all scientific applications is the universal need for high quality water and reagents. The quantity and quality of the water used in the lab has a profound effect on every phase of your research—from washing glassware to making culture media for sensitive cells.

There are four basic contaminants in water:

- **Inorganic ions** (measured in µs/cm or megaohms)
- **Organics** (measured in ppb)
- **Bacteria** (measured in cfu/mL)
- **Particles/colloid**s (measured by silt density index)

There are different types of purification technologies that will purify tap water, and advantages to each of them. The efficiency of each purification technology at removing the contaminants is demonstrated in the chart below:

- Deionization
- Distillation
- Reverse Osmosis
- Electrodeionization

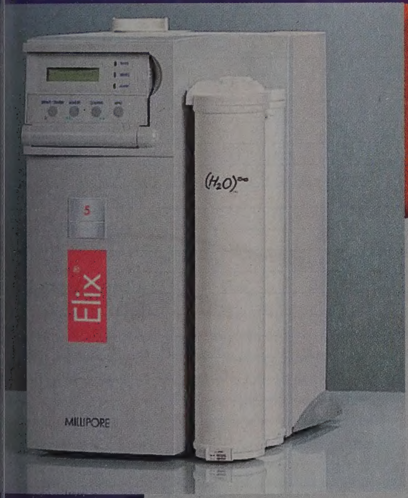
There are also different polishing technologies:

- UV light
- Membrane filtration

ore Elix 3/5/10 Systems*

er consistently pure water with low operating costs
solution for daily applications that require pure water
de 5 to 200L/day of Type II water

BEFORE YOU BUY WATER PURIFICATION SYSTEMS



Contaminant Removal Efficiency	Inorganics	Organics	Bacteria	Particulates
Distillation	◕	◑	◕	◕
Reverse Osmosis	◕	◕	◕	◕
Ultrapure Ion Exchange	●	◑	◔	
Electrodeionization	●	◑	◑	
Ultraviolet light		◕	●	
Carbon		●		◑
Ultrafiltration		◑	◕	◑
Microporous Filtration			●	●

QUESTIONS TO ASK

- What is the feedwater source?
- How much water is needed on a daily basis? Weekly basis?
- What is the final application for the water being produced?
- What final quality is needed?
- Conductivity?
- Total Organic Carbon?

red by Millipore

MILLIPORE

For a full selection of Millipore™ Water Purification products, see pp. 1958-1977.

WATER PURIFICATION

MILLIPORE

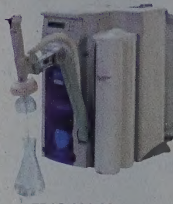
Millipore* Water Purification Systems Selection Guide

Millipore Water Purification Systems are designed to support a wide variety of applications and analyses to meet the needs of laboratories requiring from 5 to 8000L/day of pure and ultrapure water. Each system listed in the Selection Guide is designed to meet or exceed Type I, Type II or Type III water purity standards.

UL-listed: Milli-Q*, Elix*, RiOs*, and Simplicity* systems.

ZMQS 6VF T1

ZRDS VPO US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Water Quality	Type I			Type II			Type III		
	Ultrapure/Reagent-grade			Pure/Analytical-grade			Laboratory-grade		
	Systems	Flowrate	Page No.	Systems	Flowrate	Page No.	Systems	Flowrate	Page No
	Simplicity	0.6L/min.	1963	Milli-DI*	0.5L/min.	1969	Direct-Q 3	3L/hr.	1964
	Direct-Q 5	0.6L/min.	1964	RiOs-DI	3L/hr.	1968	RiOs*	2.5-16L/hr.	1967
	Direct-Q 3	0.2L/min.	1964	Elix 3/5/10	3-10L/hr.	1965			
	Synergy	1.5L/min.	1962						
	Milli-Q	1.5L/min.	1960						
Application*	Super-Q*	10-12L/min.	1969						
Amino Acid Assays		■							
Atomic Absorption/Emission		■							
Blots/Hybridization		■							
BOD/COD					■				
Buffers		■			■				
Capillary Electrophoresis		■							
Cell Culture - Bacterial/Mammalian		■							
Cell Culture - Plant Tissue		■			■				
Dissolution Testing		■			■				
DNA/RNA Testing		■							
DNA Sequencing		■							
Electrophoresis		■							
Environmental Mobile Lab		■			■				
Enzyme Assays/Kinetics		■			■				
Equipment Feed					■		■		
GC/GC-MS		■							
Glassware Washing					■		■		
HPLC		■							
Hydroponics					■		■		
ICP-MS		■							
Immunodiagnostics		■			■				
Ion Chromatography (IC)		■							
LC-MS		■							
MALDI-TOF MS		■							
PCR		■							
pH/ISE		■			■		■		
Protein Assays		■			■		■		
Protein Purification		■							
Proteomics/HTS		■							
Pyrogen-Free/Endotoxin-Free		■							
RNase-Free		■							
Solid Phase Extraction		■							
Tensiometer/Surface Tension		■							
TOC Analysis		■							
Toxicity Testing		■							
Trace Boron Analysis		■							
Trace Metals		■							
UV/Vis		■			■				

*Trademark. See Trademark Reference.

Millipore* Milli-Q* Advantage A10 Water Purification System

Delivers ultrapure water with flexibility for a wide variety of daily applications

Features two distinct components: compact production unit and Q-POD point-of-use delivery unit. Ideal for labs with limited space. Both units are required for a complete system. Manufactured using ISO 9001: 2000-certified processes.

Production Unit

- Built-in UV lamp and TOC monitor
- Small footprint
- Fits on or under bench, or can be wall-mounted
- Graphic display guides user through system operation, performance, troubleshooting and maintenance and can be password-protected
- RFID tag functions ensure that you are putting in the correct consumables

Q-POD (Quality-Point-of-Delivery) Unit

- Provides final polishing
- Multicolor graphic display allows easy interaction with system and provides water quantity/quality information
- Manual or precise-volume dispensing
- Maximum flowrate: 2L/min.
- Removable dispensing arm adjustable to lab glassware/plasticware
- Double monitoring allows control over both ionic and organic contaminants that can impact research results
- Up to three Q-POD units can be used with each Advantage system at different locations in the lab

How It Works

- Pure water from external purification system enters Q-Gard pretreatment pack (chosen based on feedwater source)
- Pretreated water passes into double wavelength UV lamp (destroys organic molecules and bacteria)
- Quantum polishing catridge removes ionic and organic contaminants below trace levels to match required water quality requirements
- Ultrapure water moves to Q-POD unit for final purification
- Calibrated TOC and resistivity meters measure organic/ionic water quality at system outlet

APPLICATIONS:

Spectrophotometry, spectroscopy, chromatography, and biochemistry

ORDERING INFORMATION:

Order both the production unit (Z00Q 0V0 US) and Q-POD point-of-use dispenser (ZMQS POD 01) for a complete system. Accessories and consumables, including wall mounting brackets, flow regulator, purification packs, filters and replacement lamps, are sold separately. Technical support, training, maintenance and laboratory validation services are available; contact your Fisher Scientific Sales Representative for details.

REQUIRED ACCESSORIES:

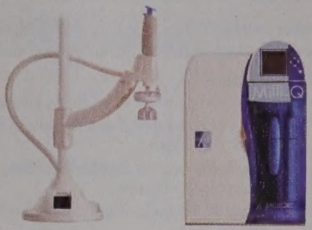
Pure water source (Elix* system or equivalent, not included); purification packs and cartridges (sold separately)

COMPLIANCE:

USP 645 suitability requirements

CERTIFICATIONS:

ISO 14001



ZMQS POD 01, Z00Q 0V0 US

SPECIFICATIONS

Resistivity	18.2MΩcm at 25°C
TOC	≤5ppb
Particulates	<1/mL
Bacteria	<1cfu/mL
Pyrogens (Endotoxins)	<0.001EU/mL
DNases	<4pg/mL
RNases	<0.01ng/mL
Flowrate	Up to 2L/min.
Dimensions (Production Unit)	14¼D × 13W× 19½"H (36 × 33.2 × 49.7cm)
Dimensions (Q-POD)	9 D× 22¾"H (23 × 57.9cm)
Length, Q-POD Arm	31½"(80cm)
Length, Power Cable	9½' (2.9m)
A10 Production Unit	
Electrical Requirements	100/230V 50/60Hz
Cat. No.	**Z00Q 0V0 US**
Each	7428.00
Q-POD Point-of-Delivery Unit	
Electrical Requirements	100/230V 50/60Hz
Cat. No.	**ZMQS POD 01**
Each	1415.71

ACCESSORIES

Description	Cat. No.	Each
Cartridges and Filters		
Q-Gard* T1 Purification Pack (Elix* RO distilled feed)	**QGAR DT1 X1**	331.24
Q-Gard T2 Purification Pack (DI feedwater)	**QGAR DT2 X1**	331.24
Q-Gard T3 Purification Pack (DI feedwater with high silt)	**QGAR DT3 X1**	320.60
Quantum* TEX (Organic resin) Cartridge Filter	**QTUM 0TE X1**	288.59
Quantum TEX (Ionex resin) Cartridge Filter	**QTUM 0TI X1**	288.59
Replacement UV Lamp	**ZMQU VLP 01**	360.00
Millipak* Express 40 Filter Unit, 0.22µm, nonsterile	**MPGP 040 01**	130.20
Millipak Express 40 Filter Unit, 0.22µm, sterile	**MPGL 04S K2**	108.40
BioPak* Ultrafiltration Cartridge	**CDUF BI0 01**	192.33
Accessories		
Wall Mounting Bracket	**WMBS MT0 02**	107.40
Q-Pod* Wall Mounting Bracket	**WMBQ POD 01**	260.52
Dispenser Flow Reducer	**FL0R DC0 01**	62.73
Feedwater Conductivity Cell	**ZFC0 NDC L1**	260.52
Foot Pedal	**ZMQS FTS 01**	142.70

Millipore* Milli-Q* Ultrapure Water Systems

Five systems support HPLC, IC, GC/MS, ICP-MS, PCR, 2-D electrophoresis, tissue culture, molecular biology, and more

Polish pretreated water to produce up to (1.5L/min.) ultrapure reagent-grade Type I water with 18.2 megohm·cm resistivity. Accept water pretreated by reverse osmosis, distillation, deionization or electrodeionization.

Left to right: ZMQS6V001, ZMQS6VF01, ZMQS60001, ZMQS60F01, ZMQS6VE01

Key Features

- Hold three, easy-to-install filters (sold separately)
    - Q-Gard* pretreatment pack, specific to feedwater source, provides initial purification
    - Application-specific Quantum* polishing cartridge provides secondary purification
    - Millipak* filter unit, at point-of-use, removes remaining bacteria and particles
- Choice of continuous or intermittent water circulation maintains water purity when system is not in use
- Point-of-use dispenser with ergonomic trigger delivers water continuously or at fixed volumes from 8 oz. to 17 gal. (0.25 to 64.5L) in 8 oz. (0.25L) increments
- Backlit LED displays system parameters in six languages (English, Spanish, French, German, Italian and Japanese)
- Setpoint alarm activates if system malfunctions
- Systems can be bench-, wall- or underbench-mounted

Optional Features

- Built-in, inline A10 TOC (Milli-Q Element only) monitor provides continuous TOC measurements when system is purifying water and intermittent measurements when system is not in use
    - Ensures low ppb levels of ionic contaminants
    - Designed according to current USP requirements
    - Measures between 1 and 999ppb
    - Outputs TOC and resistivity values to external printer (not included) via built-in RS-232-C port
- Gradient, Synthesis and Element systems irradiate water at 254 and 185nm to effectively destroy organic molecules and bacteria
- Element systems monitor and reduce TOC levels to <5ppb
- Bench-integrated systems come with a point-of-use dispenser that allows water to be dispensed where it is needed, not just where it was produced
- Accessory Remote display (Cat. No. ZMQS RMD S1) permits water-quality monitoring and operation up to 10' (3m) away
- Accessory Foot pedal (ZMQS FTS 01) provides hands-free water delivery
- Optional Remote point-of-use dispenser (ZMQS POU R1) adds a second dispenser that delivers purified water up to 8' away from nonbench-integrated Milli-Q systems; Accessory Kit (ZMQS POU KT) required

Milli-Q Academic System

- Designed for general laboratory applications
- Uses Q-Gard, Quantum, and 0.22µm Millipak filters
- Measures resistivity compliance

Milli-Q Gradient System

- Ideal for HPLC, GC/MS, LC and ILC analyses
- Incorporates the same purification and monitoring techniques as the Milli-Q Academic, plus photo-oxidation technology to reduce organics to <5ppb[1]
- Includes a UV lamp to lower bacterial levels within the system

Milli-Q Biocel System

- Designed for life science applications
- Ideal for electrophoresis gel preparation, mammalian cell culture, recombinant DNA studies, and monoclonal antibody production
- Removes pyrogens and other bacterial byproducts
- Utilizes Pyrogard* 5000 UF cartridge to ensure very low nuclease and pyrogen levels (<0.02Eu/mL)
- Produces water that can be used as replacement for DEPC-treated water

Milli-Q Synthesis System

- Designed for critical biological applications
- Incorporates three-step purification process and monitoring with UV photo-oxidation and ultrafiltration technologies
- Produces water with extremely low ionic, organic, pyrogen and nuclease contamination
- Ideal for PCR, 2-D electrophoresis, and DNA sequencing
- Can also be used for preparing buffers and media for mammalian cell culture

Milli-Q Element System

- For elemental ultratrace analyses such as ICP-MS, flame atomic absorption spectroscopy (FAAS), and ion-liquid chromatography (ILC)
- Utilizes an optimized succession of filters to produce water without contaminants detrimental to trace elemental analyses
- Uses Q-Gard B1 (removal of Boron), Quantum ICP, and 0.1µm Optimizer* LW final filter to produce ultrapure water with ppt and ppq detection limits (depending on element)
- Includes foot pedal for hands- and contamination-free operation in clean areas
- Available w/TOC monitoring

CERTIFICATIONS:

UL listed

Model	Description	Electrical Requirements	Cat. No.	Each
Milli-Q Academic	Non-TOC	120V 60Hz	**ZMQS 600 01**	4836.00
	Non-TOC Bench-Integrated	120V 60Hz	**ZMQK 600 01**	4905.71
Milli-Q Gradient	Non-TOC	120V 60Hz	**ZMQS 6V0 01**	6975.71
	Non-TOC Bench-Integrated	120V 60Hz	**ZMQK 6V0 01**	6975.71
Milli-Q Biocel	Non-TOC	120V 60Hz	**ZMQS 60F 01**	6975.71
	Non-TOC Bench-Integrated	120V 60Hz	**ZMQK 60F 01**	6975.71
Milli-Q Synthesis	Non-TOC	120V 60Hz	**ZMQS 6VF 01**	8004.29
	Non-TOC Bench-Integrated	120V 60Hz	**ZMQK 6VF 01**	8004.29
Milli-Q Element	A10	120V 60Hz	**ZMQS 6VE T1**	12,254.29
	Non-TOC	120V 60Hz	**ZMQS 6VE 01**	11,564.29

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[1] When fed with water pretreated by reverse osmosis or Elix technology.*

ACCESSORIES

Accessories and Consumables for Milli-Q* Water Purification Systems

Remote Display

- For operating and monitoring wall- or underbench-mounted Water Purification Systems up to 10' (3m) away (cable included)
- Displays all monitoring information shown on system display, including pressure, temperature, conductivity, resistivity, nontemperature operating parameters, maintenance requirements and alarm messages†
- Also shows nontemperature-compensated resistivity and conductivity values as required by USP 26
- Built-in RS-232-C interface connects remote display to printer or computer

ZMQS RMD S1

Description	Cat. No.	Each
Remote Display	**ZMQS RMD S1**	887.14

† Displays TOC on Milli-Q Element.

Additional Accessories and Replacement Parts

- For details on these products, see our Web site.

Description	Cat. No.	Each
Inlet Pressure Regulator	**ZFMQ 000 PR**	206.09
Water Detector Kit	**ZFWA TDE T1**	371.26
Replacement A10 UV Lamp Assembly	**ZFA1 0UV 01**	421.07
Replacement UV Lamp (Gradient [purple door] and Synthesis Models [orange door])[1]	**ZMQU VLP 01**	360.00
Replacement UV Lamp (Gradient and Synthesis Models [blue door])[2]	**QUVL QSL 01**	372.14

[1] Purchased after mid-2001.
[2] Purchased between 1996 and mid-2001.

Cartridges for Milli-Q* Systems

- For characterisics, see p. 1976.

Description	Cat. No.	Each
For use with Academic, Gradient, Biocel, and Synthesis Systems		
Q-Gard* 1 Purification Pack	**QGAR D00 R1**	216.61
Q-Gard 2 Purification Pack	**QGAR D00 D2**	216.61
Q-Gard VX Purification Pack for Volatile Organic Removal	**QGAR D00 VX**	369.82
Quantum* IX Cartridge	**QTUM 000 IX**	260.89
Quantum EX Cartridge	**QTUM 000 EX**	260.89
Quantum VX Cartridge	**QTUM 000 VX**	291.07
Quantum IX (Ionex)[1]	**QTUM MPE IX**	376.07
Quantum EX (Organex)[1]	**QTUM MPE EX**	376.07
Millipak Express 20 Filter	**MPGP 020 01**	129.66
Millipak-40 Filter Unit	**MPGL 04S K2**	108.40
For use with Element System		
Q-Gard Boron Purification Pack	**QGAR D00 B1**	307.33
Quantum ICP Cartridge	**QTUM 00I CP**	394.82
Optimizer* LW Final Filter	**MPEV ICP KJ**	317.08
For use with Academic and Gradient Systems		
Pyrogard* D Ultrafiltration Cartridge	**CDUF 000 D2**	143.04
For use with Biocel and Synthesis Systems		
Pyrogard* 5000 Hollow-Fiber UF Cartridge	**CDUF HF0 5K**	1318.75

[1] Comes with Millipak Express 20 Filter.

Remote Point-Of-Use (POU) Dispenser

ZMQS POU R1

- Dispenser connects to system's recirculation loop and precisely dispenses 8 oz. to 17 gal. (0.25 to 64.5L) up to 8' (2.5m) away from Milli-Q* Ultrapure System
- Ergonomic trigger enhances operator comfort
- Longer tubing facilitates filling tall flasks
- Durable dispensing arm rotates 180°
- Green LED indicates dispensed water meets specifications
- Unit can be wall mounted or set on benchtop

INCLUDES:
Millipak* 0.22µm final filter for removing microorganisms and particulates at point of use

REQUIRED ACCESSORIES:
Accessory kit (ZMQS POU KT, below) required when adding a remote dispensing unit to Milli-Q systems for two dispensing locations.

NOTE:
Bench-integrated models are supplied with remote point-of-use dispenser

Description	Cat. No.	Each
Remote Dispenser	**ZMQS POU R1**	947.00
Remote Dispenser Accessory Kit	**ZMQS POU KT**	122.68

Millipore* Synergy* Ultrapure Water Systems

Point-of-use system delivers up to 20L/day of ultrapure water from a purified water source

Synergy Water System with optional wall-mounting bracket

Compact design; fits easily on benchtop or on wall. Allows delivery of a fixed volume of Type I water and automatically shuts off once the selected volume has been delivered. Ideal complement to Millipore Elix* or RO systems. UV system is available for applications requiring very low levels of organic contaminants.

- Simple, intuitive operation
- Water quality parameters (resistivity, conductivity, temperature) are clearly indicated on color LED display
- Produces Type I water (18.2megohm·cm at 25°C ultrapure water) on demand from pretreated water (reverse osmosis or demineralized water)
- For users needing between 2 to 20L/day with instant flowrate of 1L/min.
- Dispensing can be adjusted for different size lab glassware
- Time-saving fixed volume dispense
- Low maintenance—only one cartridge to replace, one or twice per year based on usage

UV System

- Suitable for HPLC, GC ILC and TOC analyses
- Features dual-wavelength UV lamp
- Produces water with <5ppb TOC (when feedwater TOC is <50ppb)

APPLICATIONS:

HPLC and other spectrophotometric/spectroscopic analytical techniques for biological, biomedical and cell culture applications

ORDERING INFORMATION:

When equipped with optional BioPak* cartridge as final filter, Synergy produces pyrogen-free, Nuclease-free water.

REQUIRED ACCESSORIES:

SynergyPak* cartridge and one final filter (either MilliPak*-20 or BioPak)

Model	Electrical Requirements	Cat. No.	Each
Synergy Ultrapure Water System	120V 50/60Hz	**SYNS000US**	2936.00
Synergy UV Ultrapure Water System	120V 50/60Hz	**SYNSV00US**	3605.00

Specifications	Synergy System	Synergy UV System
Resistivity	18.2 megohm·cm	18.2 megohm·cm
Total Organic Carbon (TOC)	<10ppb	<5ppb
Final Filter	0.22µm sterilizing filter or BioPak ultrafilter	0.22µm sterilizing filter or BioPak ultrafilter
Flowrate	Up to 1.2L/min.	Up to 1.2L/min.
Dimensions (L x W x H)	15 x 11⅜ x 21¼" (38 x 29 x 54cm)	15 x 11⅜ x 21¼" (38 x 29 x 54cm)

LOOKING FOR STORAGE RESERVOIRS?

Store your purified water without compromising quality. Choose a Millipore* Pure Water Storage Reservoir. See p. 1970.

ACCESSORIES

Accessories/Replacement Parts for Synergy Systems

Description	Cat. No.	Each
Cartridges and Filters		
SynergyPak 1 (for Elix, RO or distilled feedwater)	**SYPK 0SI A1**	275.34
SynergyPak 2 (for Milli-Q or clean DI feedwater)	**SYPK 0SI A2**	275.00
SynergyPak 3 (for DI feedwater)	**SYPK 0SI X3**	275.34
Millipak Express 20 Filter, 0.22µm, nonsterile	**MPGP 020 01**	129.66
BioPak Ultrafiltration Cartridge	**CDUF BI0 01**	192.33
Accessories		
UV Lamp, 185nm	**SYN 185 UV1**	277.03
Inlet Pressure Regulator	**ZFMQ 000 PR**	206.09
Wall Mounting Bracket	**WMBS MT0 02**	107.40

*Trademark. See Trademark Reference.

Millipore* Simplicity* Ultrapure Water Systems

Economical alternative to bottled water

Portable, on-demand system delivers up to 5L/day of ultrapure water from pretreated water (Elix* system, distilled, deionized, or reverse osmosis water). Fits anywhere in the lab and requires no special installation or water feed connection. Simplicity ultrapure water is not subject to the degradation and contamination that affects bottled water. UV system is ideal for applications requiring very low contaminant levels.

- Produces Type I water (18.2megohm·cm at 25°C ultrapure water) on demand from pretreated water (reverse osmosis or deionized water)
- For users needing between 1 to 5L/day of ultrapure water with instant flowrate of 0.5L/min.
- System draws from a removable, refillable, built-in reservoir
- Installation requires no plumbing
- Alarm alerts user to sudden drop in quality of product water, ensuring water quality at all times
- Dispensing can be adjusted for different size lab glassware
- Very low maintenance—one catridge to change, once or twice per year based on resistivity displayed for product water

SIMS 600 00

Simplicity UV System

- Suitable for sensitive analyses such as HPLC, GC and TOC
- Built-in dual wavelength UV lamp (185 and 254nm)
- Produces water with <5ppb of organic contaminants

INCLUDES:

2L reservoir that stores pretreated water

REQUIRED ACCESSORIES:

Cartridge and final filter

Model	Electrical Requirements	Cat. No.	Each
Simplicity Ultrapure Water System	120V 60Hz	**SIMS 000 US**	2678.00
Simplicity UV Ultrapure Water System	120V 60Hz	**SIMS V00 US**	3090.00

Specifications	Simplicity System	Simplicity UV System
Resistivity	18.2 megohm·cm	18.2 megohm·cm
Total Organic Carbon (TOC)	<15ppb	<5ppb
Final Filter	0.05µm	0.05µm
Flowrate	>0.5L/min.	>0.5L/min.
Dimensions (L x W x H)	14¼ x 11⅜ x 20" (36 x 29 x 51cm)	14¼ x 11⅜ x 20" (36 x 29 x 51cm)

ACCESSORIES

Cartridge Kits for Simplicity* Systems

For use with Simplicity and Simplicity 185 Ultrapure Water Systems

Description	Cat. No.	Each
SimPak 1 Cartridge	**SIPKOSIA1**	195.46
SimPak 2 Cartridge	**SIPKOSIX2**	195.46
SimFilter	**SIM FILTER**	92.68
UV Lamp, 185nm	**SYN 185 UV1**	277.03
Wall Mounting Bracket	**WMBS MT0 02**	107.40

LOOKING FOR PRETREATMENT SYSTEMS?

Millipore* Elix* systems produce TypeII analytical-grade water–directly from potable tap. See p. 1965.

Millipore* Direct-Q* 5 Ultrapure Water System

Designed for labs that require 1¼ to 4 gal. (5 to 15L) of ultrapure water per day and do not have access to acceptable pretreated water

Produces up to 0.6L/min. Type I water "on demand" with 18.2 megohm·cm resistivity and <30ppb Total Organic Carbon (TOC) directly from potable tap water.

ZRQS 600 5Y

Key Features

- Flexible dispenser conveniently delivers water
- Compact unit can be wall- or bench-mounted
- RS-232-C interface

Direct-Q 5

- Built-in booster pump increases flowrate through the RO membrane and ensures constant, consistent flow regardless of feedwater density and temperature
- High-recovery loop after the RO membrane recycles water through the system, conserving water and reducing operating costs

APPLICATIONS:

Produce water ideal for preparing buffers, culture media, blanks and standard solutions.

REQUIRED ACCESSORIES:

- One pretreatment pack, one Quantum* cartridge and one Millipak* final filter (each sold separately)
    - Progard* pack pretreats feedwater
    - Quantum EX polishing cartridge removes organic contaminants
    - Quantum IX removes inorganics
    - Quantum VX cartridge removes volatile organic contaminants
    - Millipak-40 Filter Unit provides final filtration

Model	Direct-Q 5
Flowrate	1⅜ gal./hr. (5L/hr.)
Resistivity	18.2megohm·cm
Total Organic Carbon (TOC)	<30ppb with Quantum IX; <10ppb with Quantum EX
Particulates	0.22µm sterilizing filter
Dimensions†	18 × 10 × 20" (45.5 × 25.5 × 50cm)
Weight (Operating)	65¼ lb. (29.6kg)
Electrical Requirements	120V 60Hz
Cat. No.	**ZRQS 600 5Y**
Each	5718.57

† With 10L reservoir attached.

ACCESSORIES

Accessories and Consumables

- For details, see pp. 1971-1976.

Description	Cat. No.	Each
Accessories		
Wall-Mounting Bracket	**SYST FIX 01**	116.80
Computer Cable	**COMP CBL 01**	82.75
Print Cable (Epson* LX300)	**PRNT CBL 01**	67.85
Cartridges and Filters (Required for Direct-Q* 5)		
Progard* 2	**PROG 000 02**	261.00
Quantum* EX with Nonsterile Millipak*-40	**QTUM MPK EX**	303.57

Millipore* Direct-Q* 3 Ultrapure Water Systems

Provide Type I and Type III water from a single device

Designed for labs that require 1¼ to 4 gal. (5 to 15L) of ultrapure Type I water per day but do not have access to acceptable pretreated water. With Biopak* Final Filter (CDUFBI001, order separately), systems can produce pyrogen-free, RNase-free water at a flowrate of 0.2L/min. Type III water is available from built-in 1.5 gal. (5.6L) reservoir at a flowrate of ¾ gal./hr. (3L/hr.) at 15°C with a 15% recovery.

ZRQS OPO US

Key Features

- Water quality parameters (resistivity or conductivity, temperature) are clearly indicated on a bright color display
- Maintenance is limited to infrequent and easy replacement of required SmartPak* DQ3 cartridge (SPRO 0SI A1, available separately)
- Volumetric dispensing function regulates water delivery for volumes up to 2⅝ gal. (9.75L) in ⅛ gal. (0.25L) increments
- Systems connect to potable tap water feed with ½ NPTF connector and inlet strainer, and 8mm O.D. tubing (supplied)

Direct-Q 3

- Produces up to >0.1 gal./min. (>0.5L/min.) Type 1 water on demand at 25°C and 30ppb Total Organic Carbon (TOC) directly from potable tap water
- Product water is suitable for preparing buffers for liquid chromatography separations and biochemical experiments, also for use with such analytical techniques as spectrophotometry and spectroscopy

Direct-Q 3UV

- Reduces bacteria and TOC to 10ppb via a dual wavelength UV lamp
- Product water is suitable for applications requiring very low organic contaminants levels such as HPLC, GC, ILC and TOC analyses

REQUIRED ACCESSORIES:

SmartPak DQ3 Purification Pack (SPRO 0SI A1) and one final filter, either MilliPak*-20 (MPGP 020 01) or BioPak Ultrafiltration Cartridge (CDUF BI0 01)

CERTIFICATIONS:

UL listed

Model	Direct-Q 3	Direct-Q 3UV
Flowrates		
Type I (at 25°C)	>0.13 gal./min. (>0.5L/min.)	>0.13 gal./min. (>0.5L/min.)
Type III (at 25°C)	¾ gal./hr. (3L/hr.)	¾ gal./hr. (3L/hr.)
Resistivity (at 25°C)	18.2 megohm·cm	18.2 megohm·cm
Total Organic Carbon (TOC)	<30ppb	<10ppb
Particulate Removal	>0.22µm†	>0.22µm†
Pyrogens	0.01EU/mL‡	0.01EU/mL‡
Dimensions (L × W × H)	15¾ × 11⅜ × 20" (40 × 29 × 51cm)	15¾ × 11⅜ × 20" (40 × 29 × 51cm)
Net Weight	15⅜ lb. (7kg)	16½ lb. (7.5kg)
Electrical Requirements	120V 60Hz	120V 60Hz
Cat. No.	**ZRQS OPO US**	**ZRQS VPO US**
Each	3290.00	3838.57

† When used with Millipak Express 20 final filter.
‡ When used with Pyrogard D ultrafilter.*

Millipore* Elix* 3/5/10 Water Purification Systems

Purified water meets or exceeds CAP, ASTM*, NCCLS, BS 3978, and ISO 3696 Type II water quality

Combine reverse osmosis (RO) and the Millipore patented Elix electrodeionization technology to produce Type II analytical-grade water from potable tap water.

ZLXS 600 5Y

Key Features

- Three-step purification in one unit
    - Progard* Pretreatment Pack provides primary purification and protects RO membrane
    - Secondary purification is achieved with a high-recovery reverse osmosis cartridge that removes 95–99% of inorganic ions and 99% of dissolved organics (>200 Dalton), bacteria, and particulates
    - Elix module provides final purification using electrodeionization
- Advanced reverse osmosis technology minimizes reject water flow by recycling portion of rejected water to the RO membrane feedwater stream
- Final resistivity cell with 0.01cm^{-1} cell constant is linked to a temperature compensation system to assure accurate water quality measurements
- Unique temperature feedback and built-in booster pump maintain steady flowrate
- Small footprint saves benchtop space
- Can be wall-, benchtop-, or underbench-mounted
- Manufactured using ISO 9001:2000-certified processes

Elix Electrodeionization Technology Features

- Combines ion-permeable membranes, ion-exchange resins, and an electric field to remove ions from water without chemicals
- Utilizes a small, electric current within the Elix module to continuously regenerate resin and prevent exhaustion
- Flushes removed ions from system into waste stream
- Provides uninterrupted supply of water of consistent quality
- Requires no softeners to remove calcium ions, less than 60w to operate, and consumes less water than traditional deionization methods

System Operation Features

- Simple, four-button operation
- System status and performance are displayed on two-line alphanumeric LCD in choice of six languages (English, German, French, Spanish, Italian, and Japanese)
- System also signals need for cartridge replacement and RO-membrane cleaning
- Automatic RO-membrane flush simplifies maintenance
- Alarm signals and displays help messages if system malfunctions
- Built-in RS-232-C port for connection to external printer (not included) helps meet Good Laboratory Practice (GLP) requirements

UV Model

- Lamp operates at 254nm, assuring bacterial counts of less than 1 CFU/mL
- Upgrade kit available to add UV lamp to non-UV models (Cat. No. ZLXUVLP01)

APPLICATIONS:

- Ideal for preparing media, buffers and reagents, and as final rinse for glassware
- Can also be used as feedwater for Milli-Q* Water Systems and laboratory equipment

CERTIFICATIONS:

UL listed

Model	Elix 3	Elix 5	Elix 10
Flowrate	¾ gal./hr. (3L/hr.)	1⅜ gal./hr. (5L/hr.)	2⅝ gal./hr. (10L/hr.)
Conductivity[†] (at 25°C)	0.067–0.10µS/cm	0.067–0.10µS/cm	0.067–0.10µS/cm
Resistivity (at 25°C)	5 to 15 megohm·cm	5 to 15 megohm·cm	5 to 15 megohm·cm
Total Organic Carbon (TOC)	<30µg/L	<30µg/L	<30µg/L
Silica Rejection	>99.9%	>99.9%	>99.9%
Nominal Reject Flowrate	4½ gal./hr. (17L/hr.)	6⅛ gal./hr. (23L/hr.)	8¼ gal./hr. (31L/hr.)
System Water Recovery	15%	18%	24%
Dimensions (L × W × H)	12⅜ × 10 × 17⅞" (32 × 26 × 46cm)	12⅜ × 10 × 17⅞" (32 × 26 × 46cm)	12⅜ × 10 × 17⅞" (32 × 26 × 46cm)
Without UV lamp			
Weight (Operating)	33 lb. (15kg)	33 lb. (15kg)	35¼ lb. (16kg)
Electrical Requirements	120V 50/60Hz	120V 50/60Hz	120V 50/60Hz
Cat. No.	**ZLXS 600 3Y**	**ZLXS 600 5Y**	**ZLXS 601 0Y**
Each	4127.00	5060.00	5857.00
With UV lamp			
Weight (Operating)	34¼ lb. (15.5kg)	34¼ lb. (15.5kg)	35¼ lb. (16.5kg)
Electrical Requirements	120V 50/60Hz	120V 50/60Hz	120V 50/60Hz
Cat. No.	**ZLXS 6V0 3Y**	**ZLXS 6V0 5Y**	**ZLXS 6V1 0Y**
Each	4721.00	5631.00	6411.00

[†] *Where CO_2 ≤20ppm in tap water feed.*

Contd. on next page.

Millipore* Elix* 3/5/10 Water Purification Systems, Contd.

ACCESSORIES

Accessories and Consumables

- For low-volume Elix* Water Purification Systems

For details, see pp. 1971-1976

Description	Cat. No.	Each
Cartridges and Filters		
Progard 1 Pretreatment Pack	PROG 000 01	148.20
Progard 2 Pretreatment Pak, long	PROG 000 02	261.00
Progard 2 Pretreatment Pak (Bacteriostatic activated carbon), long	PROG 000 S2	301.56
RO Membrane Cartridge for RiOs 3/5	CDRC 002 01	438.00
RO Membrane Cartridge for RiOs 8	CDRC 602 01	502.00
RO Membrane Cartridge for RiOs 16	CDRC 602 02	937.00
Accessories		
Vent Filter (for use with water purified by any Millipore Water Purification System)	TANK MPK 01	129.82
Wall-Mounting Bracket	SYST FIX 01	116.80
Polyethylene Pure Water Reservoir, 30L	TANK PEO 30	768.00
Polyethylene Pure Water Reservoir, 60L	TANK PEO 60	1001.00
Polyethylene Pure Water Reservoir, 100L	TANK PE1 00	1129.00
Printer Cable (Epson* LX300)	PRNT CBL 01	67.85
Remote Display	ZMQS RMD S1	887.14
UV Lamp	ZLX UVL P01	166.07
UV Upgrade Kit	ZLX UPG UV1	701.00
Chlorine Sanitization Tablets	ZWCL 01F 50	55.91

† Kit includes lamp and fittings to upgrade base low-volume Elix water purification system to UV model.

COMING IN 2008!

MILLIPORE* MILLI-Q* INTEGRAL WATER PURIFICATION SYSTEM

Looking for total confidence and perfect convenience in your lab water supply? Millipore's new Milli-Q Integral System provides both pressurized and ultrapure water–directly from tap water – giving you complete control over the water quality and volume required for your lab.

Placed at the outlet of each of the three possible dispensers, the system purifies by removing the very specific contaminants that can impact your results, ensuring that the product water qualities perfectly match your application requirements.

For more information, contact your Fisher Scientific Customer Service Representative, or

Visit www.fishersci.com and search for Milli-Q Integral

Millipore* RiOs* 5/8/16 Reverse Osmosis Systems

Ideal for general laboratory use

Produce up to 16L/hr. of Type III water from tap water by reverse osmosis (RO).

Key Features

- Two purification steps in one compact unit
  - Plug-in Progard* pretreatment pack (available separately) provides primary purification
  - High-recovery reverse osmosis loop with RO membrane cartridge provides final purification
- Pump-assisted flow guarantees consistent flowrate at any temperature
- Automatic membrane sanitization simplifies maintenance
- Reverse osmosis loop generates high water recovery rate and reduces costs by purifying waste stream and decreasing the frequency of filter changeouts
- >95% of most contaminants and ions are removed
- Manufactured using ISO 9002:2000-certified processes

System Operation Features

- Easy to run—all operating parameters are monitored
- Mount on wall, on benchtop or under bench
- Can be upgraded to increase flowrate or converted to Elix* Water Purification Systems (contact your Fisher Scientific Customer Service Representative for details)
- RS-232-C printer interface
- Optional backlit Remote Display (ZMQS RMD S1) permits water quality monitoring when system is underbench-mounted

RiOs
MILLIPORE

RiOs-8 (ZROS 600 8Y)

APPLICATIONS:

Suitable for nonquantitative analyses, preparing chemical reagents, cleaning/rinsing glassware, and as feedwater for Milli-Q* Water Systems, humidifiers, autoclaves and glassware washers.

REQUIRED ACCESSORIES:

RO* Membrane Cartridges and Progard* 2 Pretreatment Pack (sold separately, see below)

Model	RiOs-5	RiOs-8	RiOs-16
Nominal Permeate Flowrate (<7°C<Temp<30°C)	1⅜ gal./hr. (5L/hr.) ±15%	2⅛ gal./hr. (8L/hr.) ±15%	4¼ gal./hr. (16L/hr.) ±15%
Nominal Reject Flowrate	4 gal./hr. (15L/hr.)	5¼ gal./hr. (20L/hr.)	6⅝ gal./hr. (25L/hr.)
System Water Recovery	25%	28%	38%
Contaminant Rejection			
Typical Ionic	96–99%	96–99%	96–99%
Minimum Ionic	95%	95%	95%
Organic (<100 dalton)	>99%	>99%	>99%
Particulate	99%	99%	99%
Microbiological	>99%	>99%	>99%
Dimensions (L × W × H)	12⅜ × 10 × 17⅞" (32 × 26 × 46cm)	12⅜ × 10 × 17⅞" (32 × 26 × 46cm)	12⅜ × 10 × 17⅞" (32 × 26 × 46cm)
Weight (Operating)	31 lb. (14kg)	31 lb. (14kg)	33.2 lb. (15kg)
Electrical Requirements	120V 60Hz	120V 60Hz	120V 60Hz
Cat. No.	**ZROS 600 5Y**	**ZROS 600 8Y**	**ZROS 601 6Y**
Each	3329.00	3860.00	4393.00

ACCESSORIES

Accessories and Consumables

- For low-volume RiOs Water Purification Systems
- For details, see pp. 1971-1976

Description	Cat. No.	Price
Accessories		
Printer Cable (Epson* LX300)	**PRNT CBL 01**	Ea./67.85
Remote Display	**ZMQS RMD S1**	Ea./887.14
Water Detector Kit	**ZFWA TDE T1**	Ea./371.26
Cleaning Pouches and Tablets		
RoClean A Cleaning Pouch (Acid)	**ZWAC ID0 12**	Pk. of 12/105.53
RoClean B Cleaning Pouch (Base)	**ZWBA SE0 12**	Pk. of 12/105.53
Chlorine Sanitization Tablets	**ZWCL 01F 50**	Pk. of 50/55.91
Cartridges and Packs		
RO Membrane Cartridges RiOs 3/5	**CDRC 002 01**	Ea./438.00
RO Membrane Cartridges RiOs 8	**CDRC 602 01**	Ea./502.00
RO Membrane Cartridges RiOs 16	**CDRC 602 02**	Pk. of 2/937.00
Progard* 2 Pretreatment Pack	**PROG 000 02**	Ea./261.00

Millipore* RiOs*-DI 3 Water Purification Systems

Ideal for low-volume, routine laboratory applications

Produce 10L/day of high-quality analytical grade (Type II) water from tap water.

Key Features

- Water is dispensed from fixed tap delivering about 1L/min. when using wall bracket (WMB SMT 001), sold separately
- Integral reservoir holds 1½ gal. (5.7L); larger reservoirs available separately
- Automatic stand-by mode stops production when the built-in tank is full; automatically begins refill when water has been withdrawn
- System alerts user when resistivity drops below acceptable levels
- Manufactured using ISO 9001:2000-certified processes

SmartPak* RODI "Plug-and-use" Cartridge Features

- Holds a reverse osmosis membrane, activated carbon, and an ion exchange resin to remove particles, ions, organics and bacteria
- Removes greater than 99% of the organics in the water, resulting in TOC levels of less than 100ppb
- Pump-assisted flow through the cartridge ensures a steady production rate and reliable contaminant removal, in spite of low pressure on the supply side or drop in water temperature
- Cartridge should be replaced once per year or every 400L of water produced

ZRDS VP0 US

System Operation Features

- Backlit color display shows resistivity, temperature and water level in tank
- A flashing icon on the display alerts operator to change cartridge and/or UV lamp (RiOs-DI 3 UV model only)
- Display dimensions: 1¾L × 1¾"W (4.3 × 4.3cm)
- System can be used on benchtop or mounted on wall

RiOs-DI 3 UV System Features

- Includes UV lamp to produce bacteria-reduced water

APPLICATIONS:

- Produces water suitable for use in analytical and bioscience laboratories, as well as for general rinsing tasks and for feeding small autoclaves, humidifiers and glassware washers
- Systems can also be used to produce direct feed water for Milli-Q* ultrapure water systems

REQUIRED ACCESSORIES:

- SmartPak RODI Cartridge (SPRO OSI A2)

CERTIFICATIONS:

UL listed

Model	RiOs-DI 3	RiOs-DI 3 UV
Flowrates		
Nominal Permeate	¾ gal./hr. (3L/hr.) at 15°C	¾ gal./hr. (3L/hr.) at 15°C
Nominal Reject Water	27L/hr.	27L/hr.
Resistivity	3 megohm·cm	3 megohm·cm
Conductivity (Typical Ionic Quality)	<0.33µS/cm	<0.33µS/cm
Total Organic Carbon (TOC)	<100ppb	<100ppb
System Water Recovery	15%	15%
Microbiological	NA	<100CFU/mL
Particulate	99% removed	99% removed
Silica	99% removed	99% removed
Dimensions (L × W × H)	14⅛ × 11⅜ × 20⅛" (36 × 29 × 51cm)	14⅛ × 11⅜ × 20⅛" (36 × 29 × 51cm)
Weight (Operating)	15⅜ lb. (7kg)	16½ lb. (7.5kg)
Electrical Requirements	120V 60Hz	120V 60Hz
Cat. No.	**ZRDS 0P0 US**	**ZRDS VP0 US**
Each	2946.00	3213.00

ACCESSORIES

- For details, see p. 1971-1976.

Description	Cat. No.	Each
Accessories		
Wall-Mounting Bracket	**WMB SMT 001**	150.56
Vent Filter	**TANK MPK 03**	49.29
Tank Connection Kit	**TANKPECKT**	65.33
Sanitization Kit	**SANI KIT 01**	65.37
Cartridges		
SmartPak RODI Cartridge	**SPRO OSI A2**	321.00

*Trademark. See Trademark Reference.

Millipore* Milli-DI* Water Purification System

Battery-powered system produces 3 to 5L/day of Type II purified water directly from tap water

Supplies purified water at a flowrate of 0.125 gal./min. (0.5L/min.) attaining >1 megohm·cm resistivity at 25°C (77°F).

Key Features

- Two-stage purification sequence
  - Activated carbon first removes chlorine and colloids
  - Ion exchange resins remove typical inorganic ions
- Optional Millipak*-40 Final Filter connects directly to water supply or faucet to remove bacteria particles >22µm at point of use (requires Millipak-40 thread adapter, MDI0 2AD AP)

System Operation Features

- LED indicates when it is time to change cartridges
- Temperature-compensated resistivity cell activates a red/green LED to indcate water quality meets requirements
- Resistivity meter operates on one 9V battery
- Minimum feedwater pressure: 14psi
- Maximum feedwater pressure: 65psi

DI-Pak* Deionization Cartridge (sold separately) Features

- Exclusive simple "plug-and-use" design
- Easily replaced in seconds with no risk of leakage
- Available in two sizes
  - Large pack contains 0.7 gal. (3.2L) of ion-exchange resin capable of purifying up to 106 gal. (400L) of feedwater (400µS/cm and 0ppm CO_2)
  - Medium pack contains 0.5 gal. (2.3L) of ion-exchange resin capable of purifying up to 79.3 gal. (300L) of feedwater (400µS/cm and 0ppm CO_2)

APPLICATIONS:

- Water produced is suitable for chemical and electrochemical applications, as well as for making buffers, reagents and microbiological culture media
- Can also be used as feedwater for Simplicity* Ultrapure Water Systems, small autoclaves, and humidifiers, as well as general applications in analytical and bioscience laboratories

REQUIRED ACCESSORIES:

DI-Pak deionization cartridge

Model	Milli-DI
Nominal Product Flowrate	⅛ gal./min. (0.5L/min.)
Resistivity	>1 megohm·cm @25°C
Total Organic Carbon (TOC)	<500ppb
Microbiological Rejection	>99% rejected[†]
Weight (Operating)	12 lb. (5.6kg)
Dimensions (L × W × H)	6¾ × 10⅝ × 16⅞" (17 × 27 × 43cm)
Cat. No.	**ZFDI 000 01**
Each	599.00

[†] *When used with Millipak-40 22µm filter option.*

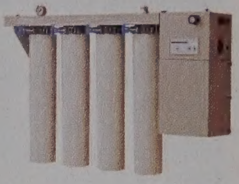
LOOKING FOR ACCESSORIES?

Purification packs, filter units and other parts are available online.

Visit www.fishersci.com and search for Milli-DI

Millipore* Super-Q* Plus Water Purification Systems

Produce up to 12L/min. of Type I ultrapure water



ZFSQ 115 Series

High-flow water systems provide final polish to water which has been pretreated by reverse osmosis, deionization or distillation. Eliminates need for water storage systems. Consistenlty produce ultrapure quality water that exceeds Type I ASTM*/CAP/CLSi specifications.

- Water in bowls is automatically recirculated hourly to maintain water quality between uses
- Gauge indicates pressure of incoming feedwater
- Display shows resistivity measurement
- Modular design allows customization for specific applications
- Also available with ⅓hp pump motor to move gravity-fed feedwater at a controlled flowrate and equalize flowrate in pressurized loops

APPLICATIONS:

Produce water ideal for preparing tissue culture media and reagents, and as rinse water for electronics.

ORDERING INFORMATION:

Systems shown here are 4-bowl systems; 3-bowl system without pump (ZFSQ 115 03) is available through your Fisher Scientific Customer Service Representative.

REQUIRED ACCESSORIES:

- Required filter cartridges each sold separately
  - Super-C* cartridge removes organic contaminants (CDFC 022 023)
  - Ion-Ex* cartridge removes inorganics (CPMB 022 02)
  - Organex-Q* cartridge removes trace organic contaminants (CPEX 02201)
  - For applications requiring particulate prefiltration and/or ultralow bacteria levels, contact your Fisher Scientific Customer Service Representative

Model	Super-Q Plus (4-bowl)	Super-Q Plus (4-bowl) with Pump
Flowrate	2⅝ to 3 gal./min. (10 to 12L/min.)	2⅝ to 3 gal./min. (10 to 12L/min.)
Resistivity @ 25°C	18.2 megohm·cm at 25°C	18.2 megohm·cm at 25°C
Total Organic Carbon (TOC)[†]	<20ppb	<20ppb
Heavy Metals	<0.01ppm	<0.01ppm
Silicates	<0.01ppb	<0.01ppb
Total Dissolved Solids	<0.03ppm	<0.03ppm
Microorganisms[‡]	<10CFU/mL	<10CFU/mL
Pump	No	Yes
Dimensions	8¾L × 45¼W × 31½"H (22 × 94.5 × 80cm)	8¾L × 45¼W × 31½"H (22 × 94.5 × 80cm)
Weight (Operating)	140 lb. (63.5kg)	140 lb. (63.5kg)[††]
Electrical Requirements	120V 60Hz	120V 60Hz
Cat. No.	**ZFSQ 115 04**	**ZFSQ 115 P4**
Each	7545.71	12,317.14

[†] *With Organex-Q cartridge installed and feedwater pretreated by reverse osmosis.*

[‡] *With Durapore* TPE cartridge installed.*

[††] *Does not include weight of operating pump.*

ACCESSORIES

Cartridges for Super-Q* Plus Systems

Super-C* Carbon Cartridge

- Contains synthetic activated carbon
- Removes organic contaminants in Super-Q Plus Systems

Ion-Ex* Cartridge

- For use in Super-Q Plus Systems
- Contains ion-exchange resin for removal of inorganic contaminants

Organex-Q* Cartridge

- Removes trace organic contaminants
- Contains mixed bed ion-exchange resin with carbon resin
- For use in Super-Q Plus Systems

Durapore* TPE Cartridge

- For bioburden reduction and particle removal

Description	Length	Cat. No.	Pack of
Super-C Carbon Cartridge	22" (56cm)	**CDFC 022 03**	3/506.11
Ion-Ex Cartridge	22" (56cm)	**CPMB 022 02**	2/490.40
Organex-Q Cartridge	22" (56cm)	**CPEX 022 01**	1/283.60
Durapore TPE Cartridge	20" (51cm)	**CVDI 02T PE**	1/216.30

Millipore* Pure Water Storage Reservoirs

Store purified water without compromising quality

Key Features

- Polyethylene construction minimizes extractables that can contaminate water
- Cylindrical shape minimizes area in contact with water
- Smooth inner surface prevents biofilm formation
- Conical bottom allows complete drainage for effective cleaning and sanitization
- Hermetically sealed lid on large reservoir opening prevents air from leaking into reservoir and facilitates manual sanitization

TANK PE series shown with Water Distribution Pump (far left) and Water Sensor (left), Vent Filter (top) and A.S.M. Module (top).

Filling and Dispensing Features

- Sensor-rod float triggers automatic reservoir refill
- Water is fed into bottom of reservoir to prevent absorption of CO_2
- Two bottom valves allow direct connection to water polishing system and glassware washer
- Water dispenses through valve on front of reservoir

Optional Features

- Vent filter (available separately) guards against airborne impurities
- 30, 60 and 100L reservoirs can be wall-mounted (require TANK FIX 01 wall mounting bracket)
- Automatic Sanitization Module (A.S.M.) available separately to reduce bacteria levels
- Optional distribution pump continuously delivers water under pressure
- Water detector sensor (available separately) detects water on most surfaces such as floors and lab bench

Capacity	Dimensions	Weight (Full)	Cat. No.	Each
2⅝ gal. (10L)	17¾L × 6W × 9"H (45.1 × 15.5 × 23cm)	24 lb. (11kg)	**TANK PE0 10**	503.00
7⅞ gal. (30L)	15 dia. × 23⅝"H (38 × 60cm)	66 lb. (30kg)	**TANK PE0 30**	768.00
15⅞ gal. (60L)	15 dia. × 33⅛"H (38 × 84cm)	130 lb. (59kg)	**TANK PE0 60**	1001.00
26⅜ gal. (100L)	15 dia. × 49⅜"H (38 × 125.5cm)	217 lb. (98.5kg)	**TANK PE1 00**	1129.00

ACCESSORIES

Accessories for Millipore* Pure Water Storage Reservoirs

Description	Cat. No.	Each
Vent Filter†	**TANK MPK 02**	61.60
Advanced Vent Filter‡	**TANK MPK 01**	129.82
Water Detector Kit	**ZFWA TDE T1**	371.26
Water Sensor with Cable††	**TANK LK0 02**	84.98
Wall Mounting Bracket	**TANK FIX 01**	89.29

† For use with storage system with Millipore RiOs Water Purification System.*
‡ For use with storage system with Millipore Elix Water Purification System.*
†† Additional sensor for use with ZFWA TDE T1 Water Detector Kit.

Millipore* Pure Water Storage Reservoir

Fit Millipore Pure Water Reservoirs with capacities from 7⅞ to 26⅜ gal. (30 to 100L)

TANK S60 UV

- Utilize low-pressure mercury-vapor lamp that produces ultraviolet (UV) light at 254nm
- Turn on twice a day to prevent bacterial growth and biofilm formation in purified water storage containers
- Eliminate need for chemical sanitization, conserving water and reducing risks associated with chemical residues
- Available with or without water detector

ORDERING INFORMATION:
Dimensions: 15L × 10¼W × 14⅞"H (38 × 26 × 38cm). Electrical requirements: 120V 60Hz.

Description	Cat. No.	Each
Automatic Sanitization Module	**TANK S60 UV**	1436.00
Automatic Sanitization Module with Water Detector	**TANK S6L UV**	1607.00
Replacement UV Lamp	**ZFRE S00 UV**	205.22

ACCESSORIES

Millipore* Water Purification System Accessories and Replacement Parts

A10 Total Organic Carbon (TOC) Monitor

Measures and controls trace dissolved organic impurities in ultrapure product water or distribution loop

- Large, easy-to-read LCD on monitor displays value and operating parameters
- One-button operation
- Low maintenance—requires only periodic replacement of UV lamp
- Attaches externally to most Millipore Water Purification Systems; Contact your Fisher Scientific Customer Service Representative for information on installation

ZFA1 060 01

REQUIRED ACCESSORIES:
Fittings Kit (ZF20 A10 MQ) required to connect to Milli-Q* Compact System.

Description	Cat. No.	Each
A10 TOC Monitor	**ZFA1 060 01**	3051.00

Contd. on next page.

*Trademark. See Trademark Reference.

Millipore* Water Purification System Accessories and Replacement Parts, Contd.

ACCESSORIES

Remote Display

For operating and monitoring wall- or underbench-mounted Millipore* Milli-Q* Ultrapure, Elix* 3/5/10 and RiOs* 5/8/16 Water Purification Systems up to 10' (3m) away

Milli-Q
MILLIPORE

ZMQS RMD S1

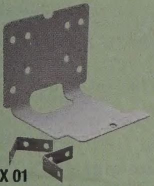
- Backlit display shows monitoring information, including pressure, temperature, conductivity, total organic carbons (TOC), resistivity, nontemperature operating parameters, maintenance requirements and alarm messages
- Also shows nontemperature-compensated resistivity and conductivity values as required by USP 26
- Built-in RS-232-C interface connects remote display to printer or computer

INCLUDES:
Cable

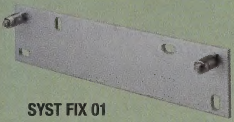
Description	Cat. No.	Each
Remote Display	**ZMQS RMD S1**	887.14

Wall-Mounting Brackets

Allow wall mounting of select Millipore* water purification systems, reservoirs and PrePaks



TANK FIX 01



SYST FIX 01

For Use With	Cat. No.	Each
Water Purification Systems		
Milli-Q* Ultrapure, Direct-Q* 5, Elix* 3/5/10, and RiOs* 3/5/8/16	**SYST FIX 01**	116.80
RiOs 3, RiOs-DI, Simplicity*†, Synergy*†, and Direct-Q 3	**WMB SMT 001**	150.56
Synergy‡ and Simplicity‡	**SYNS FIX 01**	120.00
Elix 20/35/70/100 and RiOs 30/50/100/150/200	**ZLXO WMB KT**	271.11
Storage Reservoirs		
30, 60L Pure Water Storage	**TANK FIX 01**	89.29
Pretreatment Packs		
PrePak L1 Pre-System (PRPK 0L0 S1)	**WBPR PKL 01**	765.71

† Purchased after June 2004.
‡ Purchased before June 2004.

Remote Point-Of-Use (POU) Dispenser

ZMQS POU R1

- Dispenser connects to system's recirculation loop and precisely dispenses 8 oz. to 17 gal. (0.25 to 64.5L) up to 8' (2.5m) away from Milli-Q* Ultrapure System
- Ergonomic trigger enhances operator comfort
- Longer tubing facilitates filling tall flasks
- Durable dispensing arm rotates 180°
- Green LED indicates dispensed water meets specifications
- Unit can be wall mounted or set on benchtop

NOTE:
Bench-integrated models are supplied with remote point-of-use dispenser

Description	L × W × D	Cat. No.	Each
Remote Dispenser	5⅛ × 2¾ × 1½" (13 × 7 × 3.8cm)	**ZMQS POU R1**	947.00
Remote Dispenser Accessory Kit	----	**ZMQS POU KT**	122.68

Inlet Pressure Regulator

Required when feedwater pressure exceeds 4.35psi (0.3 bar)

- Installs upstream of Milli-Q* Ultrapure, all Synergy*, all Direct-Q*, low-volume Elix* 3/5/10, and RiOs* 3/5/8/16 water purification systems to control feedwater line pressure

INCLUDES:
- Pressure regulator with 0-58psi (0-4 bar) gauge
- 8mm tubing connectors

ZFMQ 000 PR

Description	Cat. No.	Each
Inlet Pressure Regulator	**ZFMQ 000 PR**	206.09

ACCESSORIES

Chlorine Sanitization Tablets

Used in cleaning cycles of Millipore* RO systems

- Clean RO membrane of bacteria and fouling contaminants
- Use with Millipore high- and low-volume Elix*, RiOs*, Milli-RO*, and Milli-RX* Water Purification Systems

MILLIPORE
CHLORINE TABLETS

ZWCL 01F 50

Cat. No.	Pack of 45
ZWCL 01F 50	55.91

RoClean* Cleaning Pouches

For cleaning RO membrane in Elix*, Milli-RO*, Milli-RX*, and low-volume Millipore* RiOs* Water Purification Systems

- Available in acidic (ROClean A) and basic (ROClean B) formulas

Description	Cat. No.	Pack of 12
RoClean A Cleaning Pouch (Acid)	ZWAC ID0 12	105.53
RoClean B Cleaning Pouch (Base)	ZWBA SE0 12	105.53

Automatic Sanitization Modules (A.S.M.)

Fit Millipore* Pure Water Reservoirs with capacities from 7⅞ to 26⅜ gal. (30 to 100L)

- Lamp turns on twice a day to maintain quality of stored purified product water
- Available with or without water detector

ORDERING INFORMATION:

Dimensions: 15L × 10¼W × 14⅞"H (38 × 26 × 38cm)

Description	Cat. No.	Each
Automatic Sanitization Module	TANK S60 UV	1436.00
Automatic Sanitization Module with Water Detector	TANK S6L UV	1607.00
Replacement UV Lamp	ZFRE S00 UV	205.22

For Millipore* S.D.S. Water Storage Systems purchased after December 31, 2003, and used with all RiOs* or Elix* Water Purification Systems

- Compact design allows easy installation atop S.D.S. reservoirs
- A.S.M. module is operated directly from RiOs or Elix unit via 16¾' (5m) cable
- Flexible control options include preprogrammed automated 10-minute UV illuminations for a total of up to 60 minutes' exposure per day, and both manual and programmable application-specific UV illumination cycles
- Operating parameters are retained in event of power loss
- UV lamp exchange alarm alerts user to when lamp must be changed

Description	Cat. No.	Each
UV Lamp	ZLXU VLP L1	202.41

For Millipore* S.D.S Water Reservoirs purchased before December 31, 2003 and for use with Milli-RO* and Milli-RX* Water Purification Systems

- Lamp turns on once a day to maintain purified water in storage containers
- Fits Millipore S.D.S. reservoirs with capacities from 53 to 92 gal. (200 to 350L)

ORDERING INFORMATION:

- Dimensions: 25½L × 12W × 12"H (65 × 31 × 31cm)
- Weight: 5 lb. (2.3kg)

Description	Cat. No.	Each
Replacement UV Lamp	ZFRE S00 UV	205.22

Reservoir Vent Filters

For Millipore* Pure Water Reservoirs

- Polyethylene vent filters protect purified water stored in Millipore Pure Water Reservoirs when used with low-volume Elix* or RiOs* Water Purification Systems from ingress of airborne microorganisms

MILLIPAK
MILLIPORE

TANK MPK 01

TANK MPK 02

Description†	For Use With	Cat. No.	Each
Advanced Vent Filter	Elix 3/5/10 Systems	TANK MPK 01	129.82
Vent Filter	RiOs 5/8/16 Systems	TANK MPK 02	61.60

† Not for use with 10L reservoir (TANK PED 10).

UV Lamps and Assemblies

Control bacteria and oxidize organics

- Replacement parts for Millipore* Water Purification Systems and A10 TOC Monitor

ZFA1 OUV 01

For Use With	Wavelength	Cat. No.	Each
UV Lamp Assembly			
A10 TOC Monitor (external); Milli-Q* Ultrapure A10 Systems; High-volume Elix* TOC Upgrade Kit	254/185nm	ZFA1 OUV 01	421.07
UV Lamps			
Milli-Q Gradient (purple door) and Synthesis (orange door)¹	254/185nm	ZMQU VLP 01	360.00
Milli-Q Gradient and Synthesis (blue door)²	254/185nm	QUVL QSL 01	372.14
Synergy UV and Simplicity* UV	185nm	SIM 0000 UV	357.50
Elix 3/5/10	254nm	ZLX UVL P01	166.07
Elix 20/35/70/100, RiOs* 35/50/100/150/200	254nm	ZLXU VLP L1	202.41
A.S.M. Pure Water and older S.D.S Water Reservoirs	254nm	ZFRE S00 UV	205.22

[1] Purchased after mid-2001.
[2] Purchased between 1996 and mid-2001.

*Trademark. See Trademark Reference. Prices subject to change.

ACCESSORIES

Purification Packs, Cartridges, and Filters for Millipore* Water Purification Systems

QGAR-D00-R1

QTUM 000 IX

CDUF 000 D2

Purification Packs, Cartridges, and Filters for Milli-Q* Ultrapure Academic, Gradient, Biocel, and Synthesis*

Description	Characteristics	Cat. No.	Price
Purification Packs			
Q-Gard* 1	For use with water pretreated by reverse osmosis, distillation or electrodeionization. Contains mixed ion-exchange resin.	**QGAR D00 R1**	Ea./216.61
Q-Gard 2	For use with deionized water. Contains mixed bed ion-exchange resin, microfilter for particulate removal, and activated carbon for organic adsorption.	**QGAR D00 D2**	Ea./216.61
Q-Gard VX	For removing volatile organic compounds from feedwater.	**QGAR D00 VX**	Ea./369.82
Cartridges			
Quantum* IX	For removal of ionic contaminants to trace levels.	**QTUM 000 IX**	Ea./260.89
Quantum EX	For removal of ionic and organic contaminants to trace levels.	**QTUM 000 EX**	Ea./260.89
Quantum VX	For removal of ionic and volatile contaminants to ultralow levels.	**QTUM 000 VX**	Ea./291.07
Pyrogard* 5000 Hollow-Fiber UF	Internal replacement ultrafiltration cartridge for Biocel and Synthesis Systems to reduce pyrogen, endotoxin, and nuclease levels.	**CDUF HF0 5K**	Ea./1318.75
Cartridge Kits			
Quantum IX (Ionex)[1] Cartridge	For removal of ionic contaminants to trace levels. Includes point-of-use final filter.	**QTUM MPE IX**	Ea./376.07
Quantum EX (Organex)[1] Cartridge	For removal of ionic and organic contaminants to trace levels. Includes point-of-use final filter.	**QTUM MPE EX**	Ea./376.07
Final Filters			
Millipak*-40 Filter Unit	0.22µm point-of-use final filter removes bacteria from water. Sterile.	**MPGL 04S K2**	Pk. of 2/108.40
Millipak Express 20 Filter	Standard point-of-use final filter. Removes bacteria. Specialized construction also reduces VOC levels and endocrine disrupters. Nonsterile.	**MPGP 020 01**	Ea./129.66
Biopak* Cartridge	Disposable ultrafiltration cartridge for point-of-use dispenser. Removes pyrogens, endotoxins and nucleases for 30 days. For use in cell culture and molecular biology (13,000 d NMWL).	**CDUFB I001**	Pk. of 2/143.04

[1] Comes with Millipak Express 20 Filter

[2] Requires Pyrogard D Fitting (PYRO CNT 01) to connect to system.

Purification Pack, Cartridge, and Filter for Milli-Q* Ultrapure Element

Description	Characteristics	Cat. No.	Each
Q-Gard* Boron Purification Pack	Significantly lowers boron levels in feedwater. Ideal for use in applications, such as ICP-MS, that are sensitive to boron.	**QGAR D00 B1**	307.33
Quantum* ICP Cartridge	For removing contaminants detrimental to trace element analyses (sub-ppt).	**QTUM 00I CP**	394.82
Optimizer LW Final Filter	0.1µm, semiconductor-grade particle filter for ppt and ppq trace analyses.	**MPEV ICP KJ**	317.08

Cartridges for Super-Q*

Description	Characteristics	Cat. No.	Price
Super-C* Carbon	Contains synthetic activated carbon. Removes organic contaminants. Length: 22" (56cm).	**CDFC 022 03**	Pk. of 3/506.11
Ion-Ex*	Contains ion-exchange resin for removal of inorganic contaminants. Length: 22" (56cm).	**CPMB 022 02**	Pk. of 2/490.40
Organex-Q*	Removes trace organic contaminants. Contains mixed bed ion-exchange resin with carbon resin. Length: 22" (56cm).	**CPEX 022 01**	Ea./283.60

Pack, Cartridges, and Filter Unit for Direct-Q*

Description	Characteristics	Cat. No.	Price
For Direct-Q 3 Systems[1] and Direct-Q 5 Systems			
Progard* 2 Pretreatment Pack	Pretreats feedwater. Antiscaling compound provides primary purification and protects RO membrane when used with Elix systems.	**PROG 000 02**	Ea./261.00
Quantum* IX	For removal of ionic contaminants to trace levels.	**QTUM 000 IX**	Ea./260.89
Quantum EX	For removal of ionic and organic contaminants to trace levels.	**QTUM 000 EX**	Ea./260.89
Quantum VX	For removal of ionic and volatile contaminants to ultralow levels.	**QTUM 000 VX**	Ea./291.07
Millipak*-40 Filter Unit	0.22µm point-of-use final filter removes bacteria from water. Sterile.	**MPGL 04S K2**	Pk. of 2/108.40
For Direct-Q 3 Systems[2]			
SmartPak DQ3 Purification Pack	Pretreatment of tap water by activated carbon, purification by reverse osmosis followed by ion-exchange resin.	**SPRO 0SI A1**	Ea./420.52
Millipak Express 20 Filter	Standard point-of-use final filter. Removes bacteria. Specialized construction also reduces VOC levels and endocrine disrupters. Nonsterile.	**MPGP 020 01**	Ea./129.66
Biopak Cartridge	Disposable ultrafiltration cartridge for point-of-use dispenser. Removes pyrogens, endotoxins and nucleases for 30 days. For use in cell culture and molecular biology (13,000 d NMWL).	**CDUF BI001**	Pk. of 2/143.04

[1] Purchased before June 2005.

[2] Purchased after June 2005.

ACCESSORIES

Cartridges and Filter for Synergy*

Description	Characteristics	Cat. No.	Each
SimPak* 1	For use with water pretreated by reverse osmosis, electrodeionization or distillation.	**SIMP AK0 R1**	243.59
SimPak 2	For pretreated deionized water.	**SIMP AK0 D2**	242.51
Millipak* Express 20 Filter	Standard point-of-use final filter. Removes bacteria. Specialized construction also reduces VOC levels and endocrine disrupters. Nonsterile.	**MPGP 020 01**	129.66

[1] Requires Pyrogard D Fitting (PYRO CNT 01) to connect to system purchased before June 2004.*

Cartridges for Simplicity*

Description	Characteristics	Cat. No.	Each
SimPak* 1 Kit	For water pretreated by reverse osmosis, electrodeionization or distillation. Kit contains one Purification Pack; one self-venting SimFilter that removes residual particulates and bacteria; and one 0.05µm Reservoir Vent Filter that protects pretreated water from airborne contaminants.	**SIMP AKK R1**	329.65
SimPak 2 Kit	For pretreated deionized water. Kit contains one each Purification Pack, SimFilter, and 0.05µm Reservoir Vent Filter.	**SIMP AKK D2**	329.65

Cartridge for RiOs*-DI 3

Description	Characteristics	Cat. No.	Each
SmartPak* ROD*I Cartridge	Three-stage pack. Includes ion exchange resin, active carbon, and high-recovery reverse osmosis.	**SPRO OSI A2**	321.00

Pack and Cartridges for Elix* 3/5/10 and RiOs* 5/8/16

Description	Characteristics	For Use With	Cat. No.	Price
Progard* 2 Pretreatment Pack	Pretreats feedwater. Antiscaling compound provides primary purification and protects RO* membrane when used with Elix systems.	Elix 3/5/10, RiOs 3/5/8/16	**PROG 000 02**	Ea./261.00
RO Membrane Cartridges	Removes inorganic ions.	Elix 3, RiOs 3/5	**CDRC 002 01**	Ea./438.00
RO Membrane Cartridges	High-recovery reverse osmosis cartridge that removes 95–99% of inorganic ions and 99% of dissolved organics (200 d), bacteria and particulates.	Elix 5, RiOs 8	**CDRC 602 01**	Ea./502.00
		Elix 10, RiOs 16	**CDRC 602 02**	Pk. of 2/937.00

Pack and Cartridges for Milli-RO* Plus and Milli-RX*

Description	Characteristics	Cat. No.	Price
For Milli-RO Plus and Milli-RX Systems			
ROPak* Pretreatment Pack	Combines depth filtration, chlorine removal, and an antiscaling compound that protects RO membrane from contamination. Reverse double pretreatment pack when one half is exhausted. Housing constructed of pure polypropylene with thermally welded endcaps to minimize extractables associated with adhesives.	**CPRO P04 02**	Ea./368.00
Hi-flux RO Cartridge	In disposable housing. Removes inorganic ions.	**CDRC H12 HG**	Ea./1516.00
For Milli-RX Systems			
Rogard* II Prefilter	RO membrane. Mesh filter removes particles >5µm. Recommended for efficient pretreatment of water with high levels of Cl_2 or particulates. Use in combination with cartridge CDFC 012 04.	**CDPR M12 06**	Pk. of 6/274.00
Super C* Carbon Cartridge	12" (30cm) cartridge removes organics from water pretreated by reverse osmosis, deionization or distillation. Use in combination with prefilter CDPR M12 06.	**CDFC 012 04**	Pk. of 4/323.04

*Trademark. See Trademark Reference.

Prices subject to change.

CCESSORIES

tem and System Pretreatment Packs for Elix* 20/35/70/100 and RiOs* 35/50/100/150/200

n	Characteristics	Cat. No.	Each
k			
.1 System	For feedwater with low chlorine levels and low fouling index. Removes >0.5µm particles, free chlorine and colloids. Activated carbon (bacteriostatic), polyphosphate and CRW5 prefilter.	PROG TLO S1	344.71
k with Autoclean*			
.1 System C12	For feedwater with low chlorine levels and low fouling index. Includes chlorine tablet pack to autoclean RO membrane. Removes >0.5µm particles, free chlorine and colloids. Activated carbon (bacteriostatic), polyphosphate and CRW5 prefilter.	PROG TLC S1	366.17
Packs			
Pre-System	For moderate-to-high chlorine levels and fouling index. Removes >0.5µm particles, free chlorine and colloids. Activated carbon (bacteriostatic), CRW5 Prefilter. Requires holder (WBPR PKL 01) for preliminary treatment external to system.	PRPK OLO S1	323.26

cation Packs and Accessories for Millipore* Compact Water Systems

ance in choosing purification packs, cartridges, or filters for older Milli-Q* and Milli-RO* systems, ur Fisher Scientific Customer Service Representative.

tion Packs and Kits for Milli-Q* Compact Systems

n	For Use With	Characteristics	Cat. No.	Each
mosis or Distilled				
	Compact Milli-Q Plus; Milli-Q UF Plus; Milli-Q PF Plus; Milli-Q UV Plus; Milli-Q RG and Alpha-Q* Systems equipped with integral UF cartridge	Contains activated carbon to remove dissolved organics; nuclear-grade ion-exchange resins to remove trace inorganic ions to 18 megohm·cm resistivity; and Organex-Q* organic scavenger mixture to remove trace organics to 10ppb.	**CPMQ 004 R1**	476.00
	Same as CPMQ 004 R1, see above.	Same as CPMQ 004 R1, see above. Also includes 0.22µm Millipak* final filter.	**CPMQ K05 R1**	522.96
	Compact Milli-Q Plus; Milli-Q UF Plus; Milli-Q PF Plus; Milli-Q UV Plus; and Milli-Q RG Systems	Contains an initial 0.5µm prefilter; activated carbon to remove dissolved organics; nuclear-grade ion-exchange resins to remove trace inorganic ions to 18 megohm·cm resistivity; and Organex-Q organic scavenger mixture to remove trace organics to 10ppb.	**CPMQ 004 D2**	455.75
	Same as CPMQ 004 D2, see above.	Same as CPMQ 004 D2, see above. Also, includes 0.22µm Millipak final filter.	**CPMQ K05 D2**	506.98

tion Pack, Cartridge and Filter for Milli-RO Compact Systems

n	For Use With	Characteristics	Cat. No.	Price
nt	Milli-RO 3/5/6/8/10/12, 30, 60, 90 Plus and Plus 6/10; Milli-RX* 20, 45 and 75 Systems	Combines depth filtration, chlorine removal, and an antiscaling compound that protects RO membrane from contamination. Reverse double pretreatment pack when one half is exhausted. Housing constructed of pure polypropylene with thermally welded endcaps to minimize extractables associated with adhesives.	**CPRO P04 02**	Ea./368.00
	Compact Milli-RO, Milli-RO 3/5/6/8/10/12, 30, 60, 90 Plus and Plus 6/10; Milli-RX 20, 45 and 75 Systems	In disposable housing. Removes inorganic ions.	**CDRC H12 HG**	Ea./1516.00
ge	Compact Milli-RO Systems	In disposable housing. Removes inorganic ions.	**CDRC 012 HG**	Ea./1275.00
ane	Elix 3, RiOs* 3/5, Compact Milli-RO Systems	Removes inorganic ions.	**CDRC 002 01**	Ea./438.00
	Compact Milli-RO, Milli-RX Plus Systems	RO membrane. Mesh filter removes particles >5µm. Recommended for efficient pretreatment of water with high levels of Cl_2 or particulates. Use in combination with cartridge CDFC 012 04.	**CDPR M12 06**	Pk. of 6/274.00
rtridge	Compact Milli-RO, Milli-RX Plus Systems	12" (30cm) cartridge removes organics from water pretreated by reverse osmosis, deionization or distillation. Use in combination with prefilter CDPR M12 06.	**CDFC 012 04**	Pk. of 4/323.04

ACCESSORIES

Accessories for Millipore* Milli-RO* Compact Systems

Description	Cat. No.	Price
RoClean A Cleaning Pouch (Acid)	**ZWAC ID0 12**	Pk. of 12/105.53
RoClean B Cleaning Pouch (Base)	**ZWBA SE0 12**	Pk. of 12/105.53
Chlorine Tablets	**ZWCL 01F 50**	Pk. of 50/55.91
Water Detector Kit	**ZFWA TDE T1**	Ea./371.26

Millipore* Cartridges for Milli-Q* and Milli-RO* Bowl-Style Systems

Ultrapure Cartridge Kits and Individual Cartridges for Milli-Q Bowl-Style Systems

- For use with earlier generation Milli-Q water purification systems with individual bowl cartridges
- Cartridges available in kits or individually

Description	Includes	Cat. No.	Eac
Milli-Q Ion-free Kit	1 Milligard* prefiltration cartridge, 1 Super-C* organic removal cartridge, 2 Ion-Ex* deionization cartridges, 1 Millipak* filter unit	**CFIF 012 05**	359.2
Milli-Q Organic-free Kit for RO Water Feed	1 Super-C organic removal cartridge, 2 Ion-Ex deionization cartridges, 1 Organex-Q* trace organic removal cartridge, 1 Millipak filter unit	**CFOF 012 05**	425.0

Individual Cartridges and Filters

Description	Characteristics	Cat. No.	Pric
Super-C* Carbon Cartridge	12" (30cm) cartridge removes organics from water pretreated by reverse osmosis, deionization or distillation. Use in combination with prefilter CDPR M12 06.	**CDFC 012 04**	Pk. of 4/323.0
Ion-Ex* Cartridge	12" (30cm) cartridge removes ionized impurities from water pretreated by reverse osmosis, deionization or distillation. Constructed of pure polypropylene with thermally bonded endcaps to reduce the risk of extractables contamination.	**CPMB 012 02**	Pk. of 2/196.0
Organex-Q* Cartridge	12" (30cm) cartridge removes trace organics from water pretreated by reverse osmosis, deionization or distillation. Constructed of pure polypropylene with thermally bonded endcaps to reduce the risk of extractables contamination.	**CDEX 012 01**	Ea./127.8
Millipak*-40 Filter Unit	0.22µm point-of-use final filter removes bacteria from water. Sterile.	**MPGL 04S K2**	Pk. of 2/108.4
Pyrogard* UF Cartridge	12" (30cm) cartridge removes pyrogens.	**CDUF 012 01**	Ea./1034.103
Rogard* II Prefilter, 12" (30cm)	RO membrane. Mesh filter removes particles >5µm. Recommended for efficient pretreatment of water with high levels of Cl_2 or particulates. Use in combination with cartridge CDFC 012 04.	**CDPR M12 06**	Pk. of 6/274.0
Rogard II Prefilter, 31" (79cm)	Mesh filter removes particles >5µm.	**CDPR M31 06**	Pk. of 2/0.0

Individual Cartridges for Milli-Q* and Milli-RO* Bowl-Style Systems

Description	Characteristics	Cat. No.	Pric
Milli-RO 4 and 15 Cartridge	MR 15C polyamide TFC reverse osmosis cartridge. For use with Milli-RO 4 and Milli-RO 15 systems.	**CDRC 012 S0**	Ea./1127.112
Milli-RO 60 Cartridge	MR 40 polyamide TFC reverse osmosis cartridge. For use with Milli-RO 60 systems.	**CDRC M25 S1**	Ea./1737.173
Rogard* II Prefilter, 12" (30cm)	RO membrane. Mesh filter removes particles >5µm. Recommended for efficient pretreatment of water with high levels of Cl_2 or particulates. Use in combination with cartridge CDFC 012 04.	**CDPR M12 06**	Pk. of 6/274.0
Rogard II Prefilter, 26" (66cm)	Mesh filter removes particles >5µm.	**CDPR M26 06**	Pk. of 6/305.0
Super-C* Carbon Cartridge	12" (30cm) cartridge removes organics from water pretreated by reverse osmosis, deionization or distillation. Use in combination with prefilter CDPR M12 06.	**CDFC 012 04**	Pk. of 4/323.0
Ion-Ex* Cartridge	12" (30cm) cartridge removes ionized impurities from water pretreated by reverse osmosis, deionization or distillation. Constructed of pure polypropylene with thermally bonded endcaps to reduce the risk of extractables contamination.	**CPMB 012 02**	Pk. of 2/196.0
Organex-Q* Cartridge	12" (30cm) cartridge removes trace organics from water pretreated by reverse osmosis, deionization or distillation. Constructed of pure polypropylene with thermally bonded endcaps to reduce the risk of extractables contamination.	**CDEX 012 01**	Ea./127.8
Pyrogard* UF Cartridge	12" (30cm) cartridge removes pyrogens.	**CDUF 012 01**	Ea./1034.103

*Trademark. See Trademark Reference.

Prices subject to change.

THERMO SCIENTIFIC

Thermo Scientific* Barnstead* Nanopure* DIamond* Water Purification Systems

Choose from four application-specific models—all available with or without TOC monitoring

Ultrapure water systems supply Type I water with resistivity up to 18.2 megohm·cm.

Key Features

- Maximum flowrate (at 10psi pressurized feed): 0.40 gal./min. (1.5L/min.)
- Inlet water temperature: 40–104°F (4°–40°C)
- Built-in UV oxidation chamber in some models oxidizes and measures the levels of organics in the water
- 0.2µm absolute final filter maintains bacterial- and particle-free water
- Systems can be customized with a cartridge pack (available separately) to meet your specific needs and feedwater

System Operation Features

- Volumetric or timed dispensing of ultrapure water
- Multilanguage display
- Whisper-quiet operation
- Pressure-regulating valve minimizes problems associated with fluctuations in feedwater pressure
- Automatic sanitization cycle keeps system clean
- Standby mode recirculates water every 10 minutes per hour during periods of nonuse to maintain water quality
- Automatic calibration verifies electronics and assures accurate purity readings
- System may be wall or bench mounted without additional items
- Optional remote dispenser and Accu DIspens are available for water delivery up to 8' away (contact your Fisher Scientific Customer Service Representative)

DIamond Analytical

- For sensitive analytical procedures including atomic absorption, ICP and ICP/MS, ion chromatography (IC), gas chromatography (GC) and high-wavelength HPLC

DIamond UV

- For critical applications requiring 18.2megohm·cm water with <2ppb TOC, including low-wavelength HPLC, IC, GC/MS and TOC determinations
- Uses a dual-wavelength UV lamp to oxidize organics down to virtually undetectable levels and maintain minimal bacterial levels within the system
- Automatically alerts user for UV lamp replacement

09-035 Series

DIamond Bioresearch (UF)

- For any pyrogen determinant analysis including PCR and cell and tissue culture
- An ultrafilter in the system produces ultrapure water with undetectable levels of pyrogens—less than 0.001Eu/mL, log reduction values (LRV) over 6
- To prevent buildup of contaminants on surface of membrane, the DIamond will periodically flush water to drain
- Automatic sanitization cycle enables routine sanitization with the push of a button

DIamond Life Science (UV/UF)

- For the most demanding molecular biology applications including PCR, electrophoresis, cell and tissue culture
- Includes latest advances in ion exchange and filtration technologies as well as dual-wavelength UV bulb and ultrafilter
- Includes automatic sanitation and automatic and manual ultrafilter flushing
- Produces 0.40 gal./min. (1.5L/min.) ultrapure water containing <0.001Eu/mL of pyrogens, TOC values <3ppb, and resistivities up to 18.2megohm·cm

All Models Available with TOC-Monitoring Option

- TOC models measure and display Total Organic Carbon content from <1 to 250ppb

INCLUDES:

⅜" inlet tubing

COMPLIANCE:

Produces water that exceeds ASTM*, CAP and NCCLS Type I water requirements and complies with USP XXIII guidelines with compensated and uncompensated resistivity measurements

Model	L × W × H	Shipping Wt.	Electrical Requirements	Mfr. No.	Cat. No.	Each
Without TOC Monitoring						
Analytical	16⅞ × 13⅜ × 19½" (42.9 × 34 × 49.5cm)	35 lb. (15.9kg)	90–240VAC	D11901	**09-035-10**	4480.00
UV	16⅞ × 13⅜ × 19½" (42.9 × 34 × 49.5cm)	40 lb. (18.1kg)	90–240VAC	D11911	**09-035-11**	5985.00
Bioresearch (UF)	16⅞ × 13⅜ × 19½" (42.9 × 34 × 49.5cm)	40 lb. (18.1kg)	90–240VAC	D11921	**09-035-12**	5985.00
Life Science (UV/UF)	16⅞ × 13⅜ × 19½" (42.9 × 34 × 49.5cm)	45 lb. (20.4kg)	90–240VAC	D11931	**09-035-14**	6449.00
With TOC Monitoring						
Analytical	16⅞ × 13⅜ × 19½" (42.9 × 34 × 49.5cm)	35 lb. (15.9kg)	90–240VAC	D11941	**09-035-18**	6205.00
UV	16⅞ × 13⅜ × 19½" (42.9 × 34 × 49.5cm)	40 lb. (18.1kg)	90–240VAC	D11951	**09-035-19**	7867.00
Bioresearch (UF)	16⅞ × 13⅜ × 19½" (42.9 × 34 × 49.5cm)	40 lb. (18.1kg)	90–240VAC	D11961	**09-035-21**	7120.00
Life Science (UV/UF)	16⅞ × 13⅜ × 19½" (42.9 × 34 × 49.5cm)	45 lb. (20.4kg)	90–240VAC	D11971	**09-035-17**	9073.00

ACCESSORIES

Thermo Scientific* Barnstead* Nanopure* DIamond* Cartridge Packs

Customize your system with the cartridge pack that best suits your application and feedwater

- Simple, one-connection installation and removal

INCLUDES:

One 0.2µm absolute final filter

DIamond Cartridge Type	Capacity	Cat. No.	Each
Ultralow Organics, Type I Water			
Reverse osmosis or distilled water feed	1160 as NaCl	**09-050-284**	579.00
Deionized water feed	1160 as NaCl	**09-050-283**	604.00
Low Organics, Type I Water			
Reverse osmosis or distilled water feed	1160 as NaCl	**09-035-13**	569.00
Deionized water feed	1160 as NaCl	**09-050-282**	588.00

Thermo Scientific* Barnstead* Easypure* II Compact Ultrapure Water Systems

Six application-specific models meet most critical analytical, biological or life science needs

All systems produce Type I water with resistivity of 18.2 megohm·cm and TOC (Total Organic Carbon) levels as low as 1ppb. For applications requiring less than 4 gal./day (15L/day) of ultrapure water.

09-050-44

Key Features

- Ultrapure water is dispensed directly from the system, eliminating cross-contamination that may occur with use of large containers or bottled water
- Standby mode recirculates water within the system for 10 minutes during every hour of inactivity
- Digital resistivity monitor measures system purity
- Three disposable cartridges provide increased capacity over similar systems
- Lightweight system features small, space-saving footprint
- Optional remote dispenser 09-035-15 delivers water up to 8' (2.4m) from system

Reservoir Feed Models (RF and RF/UV)

- No permanent supply of water required; unit can be placed virtually anywhere in laboratory
- Integral 1¾ gal. (6.5L) reservoir is filled with pretreated water (RO, distilled, or DI) and is used to feed cartridges
- Model RF/UV uses integral dual wavelength (184 and 254nm) UV lamp that provides for organic-free water and bacterial control within the system

Line Feed (LF) Reagent-Grade Water System

- Fed from pretreated water (RO, distilled or DI) delivered by a pressurized line or a storage reservoir
- Ideal for analytical applications including AA, ICP/MS and higher wavelength HPLC

UV Line Feed Reagent-Grade Water System

- Incorporates dual wavelength UV lamp (185 and 254nm) that controls bacteria and oxidizes organics to virtually undetectable levels
- Produces water for critical organic applications including TOC determinations, HPLC, GC/MS and Ion Chromatography
- Fed from a pressurized pretreated water line or storage reservoir

UF Line Feed Reagent-Grade Water System

- Hollow fiber ultrafilter provides pyrogen-free water below 0.001EU/mL for critical biological applications, including monoclonal antibody production or cell and tissue culture
- Automatic intermittent flush cleans the ultrafilter
- Fed from pressurized pretreated water line or storage reservoir

UV/UF Line Feed Reagent-Grade Water System

- Comprehensive Type I reagent-grade water system produces water for any pure water needs applications, including DNA amplification where RNase-free water is critical for success
- Eliminates need to use DEPC for nuclease removal
- Incorporates hollow fiber ultrafilter and dual wavelength UV lamp (185 and 254nm)
- Fed from a pressurized pretreated water line or storage reservoir

INCLUDES:

Bracket for wall mounting (except RF and RF/UV)

REQUIRED ACCESSORIES:

Cartridges and filters must be ordered separately.

Model	Flowrate	TOC (ppb)	L × W × H	Shipping Wt.	Electrical Requirements	Mfr. No.	Cat. No.	Each
RF	1¾ pt./min. (0.8L/min.)	<5	19 × 12 × 18⅛" (48 × 30 × 46cm)	33 lb. (15kg)	120V 50/60Hz	D7031	**09-050-43**	2715.00
RF/UV	1¾ pt./min. (0.8L/min.)	<5	19 × 12 × 17⅛" (48 × 30 × 43.5cm)	35 lb. (15.9kg)	120V 50/60Hz	D7035	**09-050-51**	3177.00
LF	2⅜ pt./min. (1.1L/min.)	<5	19 × 12 × 17⅛" (48 × 30 × 43.5cm)	30 lb. (13.6kg)	120V 50/60Hz	D7381	**09-050-44**	3011.00
UV	2⅜ pt./min (1.1L/min.)	<5	19 × 12 × 17⅛" (48 × 30 × 43.5cm)	34 lb. (15.4kg)	120V 50/60Hz	D7401	**09-050-48**	3660.00
UF	2⅜ pt./min. (1.1L/min.)	<10	19 × 12 × 17⅛" (48 × 30 × 43.5cm)	34 lb. (15.4kg)	120V 50/60Hz	D7411	**09-050-49**	4145.00
UV/UF	2⅜ pt./min. (1.1L/min.)	<5	19 × 12 × 17⅛" (48 × 30 × 43.5cm)	45 lb. (20.4kg)	120V 50/60Hz	D8611	**09-050-50**	4863.00

Cartridge Kits, Cartridges and Filters

- Order Cartridge Kit or individual cartridges and filters based on application and feedwater type

ACCESSORIES

Cartridge Kits

Description	Cartridges (No.) Included	Mfr. No.	Cat. No.	Each
Deionized feedwater				
Ultralow Organics	09-034-17 (1), 09-050-46 (1), and 09-034-16 (1)	D502124	**09-034-165**	297.37
Type I Kit	09-034-17 (1), and 09-050-46 (2)	D502126	**09-034-167**	273.34
Distilled or RO-treated feedwater				
Ultralow Organics	09-034-18 (1), 09-050-46 (1), and 09-034-16 (1)	D502125	**09-034-166**	292.36
Type I Kit	09-034-18 (1), and 09-050-46 (2)	D502127	**09-034-168**	269.34

ACCESSORIES

Cartridges and Filters

Description	Mfr. No.	Cat. No.	Each
Cartridges			
Organicfree Organic Removal	D50229	**09-034-16**	115.44
Ultrapure Ion Exchange	D50233	**09-050-46**	92.00
Organic/Ion Exchange	D50231	**09-034-18**	88.00
Organic/Colloid Removal	D50230	**09-034-17**	92.00
Filter			
Hollow Fiber, 0.2µm	D3750	**09-034-145**	90.00

- Allows water delivery up to 8' (2.4m) from Thermo Scientific* Barnstead* Easypure* II water system

Mfr. No.	Cat. No.	Each
D11981	**09-035-15**	618.00

*Trademark. See Trademark Reference.

Thermo Scientific* Barnstead* EASYpure* RoDi System

Single compact system delivers up to 15L/day of Type 1 water directly from tap water

13-935-80

Easy to use, with automatic operation to dispense purified water on demand for a wide range of critical applications.

- Continuous water recirculation between reservoir, cartridges and UV lamp ensures highest purity
- Microprocessor-controlled system alerts operator to vital information including system water purity, membrane performance and pretreatment cartridge status
- 6.5L non-contaminating internal reservoir incorporates air filter to prevent airborne impurities from contaminating water during storage
- Dual-wavelength quartz UV lamp (185 and 254nm) oxidizes organics down to virtually undetectable levels and controls bacteria
- Capacity: 15L/day
- Maximum flowrate: 800mL/min.
- Resistivity up to 18megohm-com
- Total Organic Carbon (TOC) content: <5ppb
- Inlet temperature: 1° to 35°C (34° to 95°F)

ORDERING INFORMATION:

Start-up Kit (13-935-81) is available separately online.

Electrical Requirements	Shipping Weight	Mfr. No.	Cat. No.	Each
100/240V 60Hz	35 lb. (15.8kg)	D13321	**13-935-80**	4004.00

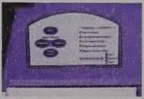
THERMO SCIENTIFIC* BARNSTEAD* FREE WATER ANALYSIS SERVICE

Do you have the right pure water equipment to meet your laboratory needs? Consult your Fisher Scientific Customer Service Representative for a Thermo Scientific Barnstead W.A.T.E.R. Analysis mailer. Based on your water purity requirements and an extensive analysis of a sample from your water supply, we will match the results to a system that is right for you.

Thermo Scientific* Barnstead* Dlamond* RO Reverse Osmosis System

Uses state-of-the-art prefiltration and membranes to purify water

09-313-711 Dlamond RO System, 09-313-713 Storage Reservoir, and 09-035-14 Nanopure* Dlamond System



Provides 6, 12, and 24L/hr. of purified water. Removes up to 99% of the impurities present in feedwater sources including ionized, organic, bacterial and particulate impurities commonly found in most tap water supplies.

Key Features

- Barnstead's MPS cartridge inhibits scale buildup on the membrane surface, extending the life of the membrane without the need to soften
- Microprocessor controls provide automatic operation with the required storage tanks (sold separately)
- Automatic flush cleanses RO membrane during periods of inactivity, eliminating buildup of contaminants on membrane surface

System Operation Features

- Series of internal pressure gauges allows user to monitor membrane operating pressure and pressure drops across pretreatment cartridges
- System operating conditions, including membrane performance and reservoir level, are monitored with indicator lights that alert if attention is required
- Minimum inlet pressure: 30psig (2kg/cm^2)
- Maximum inlet pressure: 100psi (7kg/cm^2)
- Units can be mounted on bench or wall
- Supplied with all required pretreatment cartridges and membranes (replacements available separately)
- Controls and indicators can be mounted up to 10' (3m) away from the system with the accessory remote mounting control panel assembly (09-313-714)

APPLICATIONS:

Provides source of purified water for general lab use such as glassware washing, or as feed to a Barnstead Ultrapure* water system such as the NANOpure Dlamond, Easypure* II or E-pure*.

Flowrate	L × W × H	Mfr. No.	Cat. No.	Each
1.6 gal./hr. (6L/hr.)	13½ × 16⅞ × 19½" (34.3 × 43 × 49.5cm)	D12671	**09-313-710**	2727.00
3.2 gal./hr. (12L/hr.)	13½ × 16⅞ × 19½" (34.3 × 43 × 49.5cm)	D12651	**09-313-711**	3672.00
6.3 gal./hr. (24L/hr.)	13½ × 16⅞ × 19½" (34.3 × 43 × 49.5cm)	D12661	**09-313-712**	4151.00

ACCESSORIES

Membranes, Cartridges and Prefilters for Thermo Scientific* Barnstead* ROpure LP* and ST* Systems

Membranes

- Flowrates in table are for new membranes under these conditions:
    - 25°C (77°F) feedwater temperature
    - Feedwater composition of 1000ppm NaCl at a pH of 6.0 to 6.5
    - Stated design specifications for operating pressure and feedwater recovery
- Membrane life expectancy will vary with feedwater conditions from one to three years

Membrane	Flowrate	Mfr. No.	Cat. No.	Each
For Thermo Scientific Barnstead ROpure LP System				
Standard CA	4 gal./hr. (15L/hr.)	D2730	**09-034-177B†**	968.00
High Flow CA	8 gal./hr. (30L/hr.)	D2731	**09-034-177C†**	1102.00
Polyamide	10 gal./hr. (40L/hr.)	D2732	**09-034-177D†**	1501.00
For Thermo Scientific Barnstead ROpure ST System (Discontinued)				
Standard CA	3 gal./hr. (11L/hr.)	D6317	**09-050-36**	717.00
Thin Film	5 gal./hr. (19L/hr.)	D6318	**09-050-37**	969.00

†Can also be used with discontinued Ultrapure systems. Flowrates: 16 gal./hr. (60L/hr.) for 09-034-177B membrane; 29 gal./hr. (110L/hr.) for 09-034-177C; 41 gal./hr. (157L/hr.) for 09-034-177D.*

Cartridges

- Pretreatment/Prefilter, Thin Film
- Extruded carbon cartridge (with 5µm prefilter) extends life of 09-050-37 membrane by removing chlorine from feedwater

Ultrapure Ion Exchange

- Capacity: 760 grains as NaCl to 1megohm endpoint
- Can also be used with Thermo Scientific Barnstead E-pure* systems and Thermo Scientific Barnstead Nanopure* systems

Cartridge Use, Composition	Mfr. No.	Cat. No.	Each
For Thermo Scientific Barnstead ROpure ST (Discontinued)			
Pretreatment/Prefilter, Thin Film	D63112	**09-050-47**	78.93
Ultrapure* Ion Exchange	D5027	**09-050-276**	103.00

5µm Prefilters

- Length: 10" (25.4cm)
- Can also be used with Economy Filter Holders

Material	Mfr. No.	Cat. No.	Each
For Thermo Scientific Barnstead ROpure LP			
Cellulose Acetate	D2729	**09-034-177A**	35.21
For Thermo Scientific Barnstead ROpure ST (Discontinued)			
Cellulose Acetate	D63111	**09-050-39**	80.40

Prefilters

- Remove suspended particles from feedwater
- Contain cellulose acetate fibers wound in precise patterns on polypropylene core
- Overall: 10 × 2½" (25 × 6.3cm)

Submicron Postfilters

- Remove all particulates and microorganisms larger than rated pore size
- 10" (25cm) double open-ended cartridges have 2 Buna-N gaskets for positive seal
- Pleated membrane has 4.75 sq. ft. (0.46m^2) surface area
- Recommended flowrate: 2 gal./min. (7.5L/min.)
- Autoclavable at 118°C (245°F)

Pore Size	Mfr. No.	Cat. No.	Each
Prefilters			
10µm	18011	**09-034-153**	34.21
5µm	18017	**09-034-162**	34.21
Submicron Postfilters			
0.45µm	D0748	**09-034-48**	212.79
0.2µm	D0749	**09-034-49**	212.79

Filters and Cartridges

Model	Mfr. No.	Cat. No.	Each
5µm Prefilter	D502113	**09-313-716**	80.00
MPS Cartridge	D502114	**09-313-717**	75.00
Carbon Cartridge	D502115	**09-313-718**	69.00
Membrane	FL1265X1	**09-313-719**	371.00

Storage Reservoirs

Capacity	Mfr. No.	Cat. No.	Each
30L	D12681	**09-313-713**	773.00
60L	D9021	**09-034-184**	1086.00

Mixing Valve

- For hot and cold water mixing

Mfr. No.	Cat. No.	Each
D7427	**09-028-34**	479.60

Control Panel Remote Mounting Assembly

- Mounts control panel up to 10' away from unit

Mfr. No.	Cat. No.	Each
AY1265X1	**09-313-714**	163.62

Thermo Scientific* Barnstead* ROpure LP* Reverse Osmosis System

Economical method of removing a high percentage of raw feedwater contaminants—90 to 99% of all impurities

Provides RO (reverse osmosis) purified water for volume requirements of 4, 8, or 10 gal./hr. (15, 30, or 40L/hr.) depending on membrane selection (order membranes separately). Operates from tap water line pressure.

- Built-in, solid-state periodic flush timer automatically flushes the membrane when storage reservoir is full; prevents accumulation of contaminants on the membrane
- Connects directly to a Nanopure* Quad-style, Nanopure II, or older Nanopure system, glassware washer and storage reservoir without complicated plumbing
- Maximum inlet pressure: 100psi (7kg/cm^2)
- Minimum inlet pressure: 30psi (2kg/cm^2)
- System is wall mounted

APPLICATIONS:

Ideal as pretreatment to a Nanopure Quad-style, Nanopure II, or older Nanopure system for significantly extending the life of consumable ion-exchange cartridges.

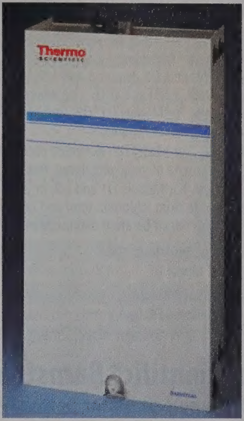
INCLUDES:

10" long (25cm), 5Rm prefilter; Wall bracket; 15' (4.5m) of ½" O.D. tubing; 20' (6m) of ⅜" O.D. tubing; Adapters; Storage interlock jumper plug

REQUIRED ACCESSORIES:

Membranes sold separately.

L × W × H	Shipping Weight	Electrical Requirements	Mfr. No.	Cat. No.	Each
8¾ × 20¾ × 38" (22 × 53 × 97cm)	75 lb. (34kg)	115V 60Hz	D2716	**09-034-125**	3029.00



09-034-125

SERVICE AGREEMENTS

Fisher Scientific offers several types of service agreements for the equipment featured here. For details on these agreements, equipment repairs and calibration services, see the Services section.

For immediate assistance, call 1-800-395-5442.

Thermo Scientific* Barnstead* MegaPure Deionizers

Pretreat feedwater for MegaPure still boilers[†]

Deliver 0.5 to 25L/hr. Feedwater valve provides system control.

- Unit preset for 50 kilohm·cm resistivity
- Green light on temperature-compensated purity monitor goes out if purity falls below setpoint
- Built-in drain valve for no-spill cartridge changes
- Sturdy aluminum housing has baked-epoxy finish
- Mount on wall or bench

Model D1

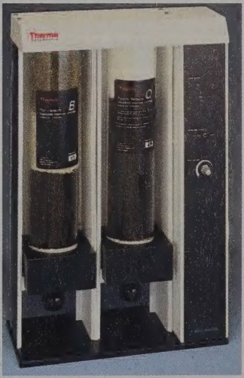
- Provides reagent-grade water for general lab use
- Accepts one cartridge (09-035-68 extended-capacity cartridge recommended)

Model D2

- Removes both organics and inorganics
- Ideal for pretreatment of still feedwater
- Accepts two cartridges (09-035-68 extended-capacity and 09-035-61 organic-removal cartridges recommended)

REQUIRED ACCESSORIES:

Cartridges sold separately.



09-035-91 shown with 09-035-68 (left) and 09-035-61 (right).

Model	L × W × H	Operating Weight	Electrical Requirements	Mfr. No.	Cat. No.	Each
D1 Deionizer	7½ × 10½ × 25½" (19 × 27 × 65cm)	26 lb. (12kg)	120V 50/60Hz	D440046	**09-035-90**	1540.00
D2 Deionizer	7½ × 16¾ × 25½" (19 × 43 × 65cm)	41 lb. (19kg)	120V 50/60Hz	D440066	**09-035-91**	1863.00

[†] *Not recommended for use with MP-1 still.*

ACCESSORIES

Cartridges and Filters for Thermo Scientific* Barnstead* MegaPure* Deionizers

Description	Mfr. No.	Cat. No.	Price
High-capacity 4 × 16" Cartridge			
High Purity. For Models D2 deionizer and MP-12A still, and discontinued Model DF deionizer. Removes 1600 grains as NaCl, 1370 as $CaCO_3$. Use where high-resistivity water is required.	D400377	**09-035-78**	Ea./183.00
Extended Capacity. For Models D1, D2. Removes 2810 grains as NaCl, 2400 as $CaCO_3$. Use where 1 megohm·cm average purity required.	D400499	**09-035-68**	Ea./191.00
Organic Removal. For Model D2. Activated carbon resin removes organics, taste, odor, color, most weak organic acids, products of vegetable decay, free chlorine, iron contamination and manganese.	D440265	**09-035-61**	Ea./169.00
Prefilter Cartridge. For Models D1 and D2, or prefiltering any distillation or deionization system. Removes particulates down to 5µm, chlorine, odor and color from tap water. Activated charcoal capped with hard porous foam above. Used before a demineralizer, will extend the resin bed life by absorbing chlorine.	440087	**09-035-303**	Ea./98.70
0.2µm Final Filters, Tank Vent Filter			
For discontinued Model DF.	440076	**09-035-60**	Cs. of 2/478.70
6.0µm Internal Filter/Prefilter			
For discontinued Model DF.	440431	**09-035-49**	Cs. of 2/358.00

Thermo Scientific* Barnstead* E-pure* 3- and 4-Module Deionization Systems

Virgin polypropylene water pathways prevent recontamination

Produce up to 2L/min. of Type I reagent-grade bacteria-free water. Use 3-module system for tap feedwater, the 4-module system for high-quality tap water or pretreated feed.

Key Features

- Solid-state digital purity meter displays output water resistance from 0.01 to 18.3 megohm·cm with automatic temperature compensation to 25°C (77°F)
- One-quarter turn quick-release canisters allow for easy cartridge replacement
- Positive O-ring seal on head-to-canister connection
- Flat-bottom canisters stand on benchtop during cartridge exchange
- High gear ratio recirculation pump supplies ultrapure water without long rinseup
- Inlet temperature range: 4° to 49°C (39° to 120°F)
- Both models have ¼ NPTF inlet connection, built-in pressure regulator

Optional Features

- Optional Organicfree* cartridge (Cat. No. 09-034-175K) lets you use E-pure systems for HPLC and other critical applications
- Can be used with optional remote dispenser accessory

09-050-255

INCLUDES:

Canisters; Digital meter; Pump; 6' (1.8m) of ¼" O.D. flexible tubing for inlet and recirculation connections

REQUIRED ACCESSORIES:

Cartridges and final filter are not included; see 09-050-268, -269, -277, -278.

No. of Modules	Dimensions (L × W × H)	Shipping Weight	Electrical Requirements	Mfr. No.	Cat. No.	Each
3	7½ × 29 × 28" (19 × 74 × 71cm)	50 lb. (23kg)	120V 50/60Hz	D4631	**09-050-254**	3346.00
4	7½ × 35 × 28" (19 × 89 × 71cm)	56 lb. (25kg)	120V 50/60Hz	D4641	**09-050-255**	3502.00

ACCESSORIES

Cartridge Kits for Thermo Scientific* Barnstead* E-pure* Systems

Cartridges/Filters Included	Mfr. No.	Cat. No.	Each
3-Module Type I Kit			
One 09-034-104 Organic/Colloid; two 09-050-276 Ultrapure*.	D5029	**09-050-278**	321.00
3-Module Type I Kit with ORGANICfree Cartridge			
1 ea. 09-034-5C Macropure* Pretreatment, 09-050-276 Ultrapure, 09-050-267 ORGANICfree.	D5022	**09-050-268**	485.00
4-Module Type I Kit			
1 ea. 09-034 High-capacity Ion Exchange, 09-034-104 Organic/Colloid; two 09-050-276 Ultrapure.	D5028	**09-050-277**	414.00
4-Module Type I Kit with Organicfree Cartridge			
1 ea. 09-050-276 Ultrapure, 09-034-5C Macropure Pretreatment, 09-034 High-capacity Ion Exchange, 09-050-267 ORGANICfree.	D5023	**09-050-269**	490.00

LOOKING FOR CARBOYS?

Fisherbrand* Carboys make dispensing and storage of laboratory solutions easy and convenient. They're available in a selection of materials and styles. See the Carboys section.

ACCESSORIES

Thermo Scientific* Barnstead* Accessories/Replacement Parts

Pump Protectors

Low Water

- Recommended when Thermo Scientific Barnstead Nanopure* (Nanopure Quad-style, Nanopure II or older Nanopure), Thermo Scientific Barnstead E-pure*, or older Easypure* UV, UF, LF and UV/UF systems draw pretreated water from a nonpressure tank
- Shuts off power to pump if tank is dry to prevent pump burnout
- Fits a ½" NPTF opening
- Includes everything necessary for installation

Low Pressure

- For installation in a pressurized feedwater line
- Shuts off pump if feedwater pressure falls below 5psi (0.35kg/cm^2)
- Plugs into Thermo Scientific Barnstead Nanopure (Nanopure Quad-style, Nanopure II or older Nanopure), Thermo Scientific Barnstead E-pure, or older Thermo Scientific Easypure UV, UF, UV/UF and LF systems
- Can also be used with select Thermo Scientific Barnstead Nanopure DIamond* systems
- Includes everything necessary for installation

Description	Mfr. No.	Cat. No.	Each
Low-water Pump Protector	D0603	**09-034-164**	452.57
Low-pressure Pump Protector	D2706	**09-034-105**	516.64

Remote Dispenser Device

Delivers up to 3 pt./min. (1.5L/min.) in a continuous stream

Attaches easily to older Quad-style Thermo Scientific Barnstead Nanopure, Thermo Scientific Barnstead E-pure*, or Thermo Scientific Barnstead Nanopure Infinity systems that have a recirculation pump. Easily adaptable to Quad-style Thermo Scientific Barnstead Nanopure, Thermo Scientific Barnstead Nanopure II or older Thermo Scientific Barnstead Nanopure systems.

- Device gives one-handed control
- Purified water is constantly recirculated through dispenser to reduce buildup of contaminants on the 0.2µm hollow fiber filter
- All wetted parts are made of virgin polypropylene or PTFE to eliminate the possibility of water recontamination
- ¼ NPTF connections

INCLUDES:

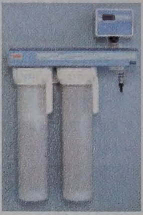
8' (2.4m) of retractable tubing

Max. Inlet Pressure	Operating Temp. Range	Mfr. No.	Cat. No.	Each
50psi (3.5kg/cm^2)	40° to 120°F (4° to 49°C)	D8952	**09-035-34**	604.00

Thermo Scientific* B-pure* Expandable Deionization Systems

Inert-material construction, quick-release canisters and positive O-ring seal on head-to-canister connection

Modular systems produce up to 1 gal./min. (4L/min.), for inline water purification as pretreatment, final polishing or stand-alone systems.[1] Can be connected directly to water line, assembled in many configurations.


09-050-253

Key Features

- ½ NPTF inlet connection
- Flat-bottom canisters stand on benchtop during servicing
- Inlet temperature range: 4° to 49°C (39° to 120°F)

Half-size Module

- Generally used as add-on to other modules
- Ideal for bacteria and particulate removal; prefiltration for RO, distillation or Thermo Scientific Barnstead Nanopure* systems; inline applications; or with faucet assembly for point-of-use applications[2]
- Small size allows for flexibility in mounting locations

Single Module

- Accepts any standard 17 3/16" (44cm) Thermo Scientific Barnstead cartridge
- Use as economical single-cartridge system, or attach to other modules with hardware supplied
- Accepts optional Digital Purity Meter
- For prefiltration, inline, or stand-alone applications

09-050-252

Dual Module

- Similar to Single Module above, but with two canisters, built-in digital temperature-compensated purity meter and polypropylene drawoff faucet
- Ideal for pretreatment or final polishing
- Easily expanded using single or half-size modules

INCLUDES:
Canisters, wall bracket

REQUIRED ACCESSORIES:
Cartridges sold separately.

Module	Dimensions (L × W × H)	Shipping Weight	Electrical Requirements	Mfr. No.	Cat. No.	Each
Half-size	6⅗ × 7 × 15" (16.8 × 18 × 38cm)	5 lb. (2.3kg)	N/A	D4505	**09-050-251**	355.00
Single	7 × 7 × 24" (18 × 18 × 61cm)	8 lb. (3.6kg)	N/A	D4511	**09-050-252**	351.00
Dual	7 × 15 × 27" (18 × 38 × 69cm)	15 lb. (6.8kg)	120V 50/60Hz	D4521	**09-050-253**	1751.00

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[1] A Thermo Scientific Barnstead W.A.T.E.R. Analysis of available supply water is recommended before selecting either an E-pure or B-pure system.*

[2] Faucet assembly is Cat. No. 09-034-76 (Thermo Scientific Barnstead D2746).

ACCESSORIES

Digital Purity Meter for Thermo Scientific* Barnstead* B-pure* Systems

Measures electrical resistivity from 0 to 18.3 megohm·cm, temperature compensated to 25°C (77°F)

Provides continuous inline monitoring of water purity for Thermo Scientific B-pure (and older PCS) Single-cartridge Holder and Half-size Cartridge Holder; replacement for purity meter supplied with Dual-cartridge Holder.

- Fits any ½ NPT opening
- Screws directly into head of holder; no external plumbing required
- With conductivity cell

Description	Height	Mfr. No.	Cat. No.	Each
Digital Meter for 120VAC	4½" (11cm)	D2770	**09-034-161**	1108.00

Thermo Scientific* Barnstead* Bantam* Deionizer 4

Deionizer indicates when it's time to change cartridges

Portable, nonpressure cartridge system for polishing pretreated water or single-stage purification of tap water. Delivers deionized water at 5 to 10 gal./hr. (19 to 38L/hr.) at atmospheric pressure.

- Shows resistivity of effluent from 25 kilohm·cm to 18 megohm·cm
- Easily replace disposable cartridges by turning a thumbscrew
- Used with 09-034 High-capacity Ion Exchange or 09-034-3 Ultrapure* Cartridge
- Inlet pressure range: 5 to 70psi (0.35 to 4.9kg/cm²)
- Mounts on benchtop or wall

INCLUDES:
3' (91cm) plastic inlet tubing; inlet flow adjustment valve; drain valve; removable pedestal for bench mounting

REQUIRED ACCESSORIES:
Cartridges sold separately

L × W × H	Net Weight	Electrical Requirements	Mfr. No.	Cat. No.	Each
8¾ × 6 × 28½" (22 × 15 × 72cm)	15 lb. (6.8kg)	120V 50/60Hz	D0800	**09-033-10**	866.00
8¾ × 6 × 28½" (22 × 15 × 72cm)	15 lb. (6.8kg)	240V 50/60Hz	D0805	**09-033-11**	866.00

09-033-10

Disposable Cartridges and Filters for Thermo Scientific* Barnstead* Cartridge Deionization Systems

Cartridge Kits

Feedwater	Description	Cartridges/Filters Included	Mfr. No.	Cat. No.	Each
Thermo Scientific Barnstead EASYpure* Compact Systems					
DI	Type I Kit	One ea. 09-034-17 Organic/Colloid, and two ea. 09-050-46 Ultrapure* Ion Exchange	D502126	**09-034-167**	273.34
DI	Ultralow Organics	One ea. 09-034-17 Organic/Colloid, 09-050-46 Ultrapure Ion Exchange and 09-034-16 ORGANICfree Organic Removal	D502124	**09-034-165**	297.37
RO/Distilled	Type I Kit	One ea. 09-034-18 Organic/Ion Exchange, and two ea. 09-050-46 Ultrapure Ion Exchange	D502127	**09-034-168**	269.34
RO/Distilled	Ultralow Organics	One ea. 09-034-18 Organic/Ion Exchange, 09-050-46 Ultrapure Ion Exchange, and 09-034-16 ORGANICfree Organic Removal	D502125	**09-034-166**	292.36
Thermo Scientific Barnstead Nanopure* II and older Nanopure Systems					
Tap/Pretreated	3-module Type I Kit	One 09-034-104 Organic/Colloid and two 09-034-3 Ultrapure Ion Exchange.	D3805	**09-034-109**	318.00
Tap/Pretreated	3-module Type I Kit with ORGANICfree* Cartridge	One ea. 09-034-5C MACROpure* Pretreatment, 09-034-3 Ultrapure Ion Exchange, and 09-034-175K ORGANICfree.	D3806	**09-050-237**	379.00
Tap/Pretreated	4-module Type I Kit	One ea. 09-034 High-Capacity Ion Exchange, 09-034-104 Organic/Colloid; and two 09-034-3 Ultrapure Ion Exchange.	D3804	**09-034-108**	410.00
Tap/Pretreated	4-module Type I Kit with ORGANICfree Cartridge	One ea. 09-034-5C MACROpure Pretreatment, 09-034 High-Capacity Ion Exchange, 09-034-175K ORGANICfree, and 09-034-3 Ultrapure Ion Exchange.	D3807	**09-050-238**	472.00
Thermo Scientific Barnstead Nanopure Quad-style Systems					
Tap	Type I Kit	One ea. 09-034 High-Capacity Ion Exchange, 09-034-104 Organic/Colloid; and two 09-050-276 Ultrapure.	D4801	**09-050-260**	402.00
Tap	Type I Kit with ORGANICfree Cartridge	One ea. 09-034-5C MACROpure Pretreatment, 09-034 High-Capacity Ion Exchange, 09-050-276 Ultrapure and 09-050-267 ORGANICfree.	D4802	**09-050-261**	480.00
Pretreated	Type I Kit	One 09-034-104 Organic/Colloid, two 09-050-276 Ultrapureand one 09-034-3 Ultrapure	D5025	**09-050-274**	429.00
Pretreated	Type I Kit with ORGANICfree Cartridge	One ea.: 09-034-5C MACROpure Pretreatment, 09-050-267 ORGANICfree; 09-050-276 Ultrapure and 09-034-3 Ultrapure	D5026	**09-050-273**	498.00
Thermo Scientific Barnstead Nanopure Infinity Systems					
Tap/DI	Type I Kit	One 09-050-226 Tap/DI Pretreatment; three 09-050-247 Ultrapure cartridges; and two 09-050-279 Remote Dispenser 0.2µm filters. Capacity, 2037 grains as NaCl.	D50256	**09-050-245**	638.00
Tap/DI	Type I Kit with ORGANICfree Cartridge	One ea. 09-050-226 Tap/DI Feed Pretreatment, 09-050-246 ORGANICfree cartridge; two 09-050-247 Ultrapure cartridges; and two 09-050-279 Remote Dispenser 0.2µm filters. Capacity, 1686 grains as NaCl.	D50254	**09-050-248**	621.00
RO/Distilled	Type I Kit	One 09-050-241 RO/Distilled Feed Pretreatment, three 09-050-247 Ultrapure cartridges, and two 09-050-279 Remote Dispenser 0.2µm filters. Capacity, 2037 grains as NaCl.	D50257	**09-050-244**	593.00
RO/Distilled	Type I Kit with ORGANICfree Cartridge	One ea. 09-050-241 RO/Distilled Feed Pretreatment, 09-050-246 ORGANICfree cartridge; two 09-050-247 Ultrapure cartridges; and two 09-050-279 Remote Dispenser 0.2µm filters. Capacity, 1686 grains as NaCl.	D50255	**09-050-243**	609.00

Contd. on next page

*Trademark. See Trademark Reference.

Disposable Cartridges and Filters for Thermo Scientific* Barnstead* Cartridge Deionization Systems, Contd.

Disposable Cartridges

Cartridge	Characteristics	For Use With	Mfr. No.	Cat. No.	Price
High-capacity Ion Exchange	High-capacity, two-bed anion/cation. 1725 grains as NaCl; endpoint 50 kilohms·cm. Resistance, 175 kilohms·cm (3ppm).	Thermo Scientific Barnstead Nanopure* Quad, Nanopure II and older-style Nanopure, E-pure*, B-pure*, Bantam*, cooling loop systems	D0803	**09-034**	Ea./99.00
Ultrapure* Ion Exchange	Ultrapure anion/cation mixed bed. 760 grains as NaCl; endpoint 1 megohm·cm. Produces water essentially free of silica and CO_2; pH between 6.7 and 7.2.	Thermo Scientific Barnstead Easypure* II.	D50233	**09-050-46**	Ea./92.00
		Thermo Scientific Barnstead Nanopure Quad, Nanopure II and older-style Nanopure, E-pure, B-pure, Bantam, cooling loop systems.	D0809	**09-034-3**	Ea./103.00
ORGANICfree* Organic Removal	Combination of carbon and Ultrapure mixed-bed resin. Used after deionization and colloid pretreatment, can provide water with <10ppb of TOC. The 60μm pore size prevents purifying media from entering product.	Thermo Scientific Barnstead Easypure* II.	D50229	**09-034-16**	Ea./115.44
		Thermo Scientific Barnstead Nanopure Quad, E-pure.	D5021	**09-050-267**	Ea./133.00
		Thermo Scientific Barnstead Thermo Scientific Barnstead Nanopure II and older-style Nanopure.	D0820	**09-034-175K**	Ea./124.00
Organic/Colloid Removal	Consists of ⅔ macroreticular resin (removes colloids and bacteria) and ⅓ granular activated carbon (removes organics and chloride). For pretreating deionized feedwater.	Thermo Scientific Barnstead Easypure* II.	D50230	**09-034-17**	Ea./92.00
		Thermo Scientific Barnstead Nanopure Quad, Nanopure II and older-style Nanopure, E-pure, B-pure.	D0835	**09-034-104**	Ea./97.00
Organic/Ion Exchange	Activated carbon and mixed-bed ion-exchange resin removes organics and chlorine. Use in first position with pretreated distilled or reverse osmosis feed.	Thermo Scientific Barnstead Easypure* II.	D50231	**09-034-18**	Ea./88.00
MACROpure* Pretreatment	Prefilter for systems using 09-034-175K cartridge. Removes colloids, chlorine and organics. Combines macroreticular resin and activated carbon.	Thermo Scientific Barnstead Nanopure Quad, Nanopure II and older-style Nanopure, E-pure, pretreatment.	D0836	**09-034-5C**	Ea./140.00
Sanitization	Sanitizes wetted surfaces, including canisters, connecting tubing and ultrafilter (on Thermo Scientific Barnstead Nanopure Bioresearch Grade Systems only.)	Thermo Scientific Barnstead Nanopure Quad, E-pure.	D50223	**09-034-15**	Pk. of 3/94.00
Cation Removal	Converts mineral salts to acids, resulting in effluent with low pH. For precious metal or isotope recovery, removal of volatile amines from steam condensate. Total exchange capacity, 2500 grains as NaCl.	Thermo Scientific Barnstead B-pure, Bantam, cooling loop.	D0815	**09-034-10**	Ea./78.00
Organic Removal	Activated carbon; removes organics and chlorine from raw water. For retreating deionizer feedwater, high-purity rinse systems to extend deionizer cartridge service. Capacity, 1320 gal. (5000L) average feedwater.	Thermo Scientific Barnstead B-pure, Bantam, cooling loop.	D0813	**09-034-5**	Ea./86.00
Oxygen Removal	Maintains low oxygen content to prevent corrosion in cooling loops. Removes 1ppm dissolved oxygen from 15,000L of water or 11L (15 gal.) S.T.P. of dissolved oxygen.	Thermo Scientific Barnstead B-pure, cooling loop.	D0811	**09-034-8**	Ea./107.00

Disposable Filters

Filter Type	Characteristics	For Use With	Pore Size	Mfr. No.	Cat. No.	Each
Prefilters	Remove suspended particles from feedwater. Cellulose acetate fibers wound in precise patterns on polypropylene core. Overall: 10 × 2½" (25 × 6.3cm). Weight: 1 lb. (0.5kg).	Economy Filter Holders 09-034-155, 09-034-156.	5μm	18017	**09-034-162**	34.21
			10μm	18011	**09-034-153**	34.21
Submicron Postfilters	Remove all particulates and microorganisms larger than rated pore size. 10" (25cm) double open-ended cartridges have 2 Buna-N gaskets for positive seal. Pleated membrane has 4.75 sq. ft. (0.46m²) surface area. Recommended flowrate: 2 gal./min. (7.5L/min.). Autoclavable at 118°C (245°F).	Economy Filter Holders 09-034-155, 09-034-156.	0.2μm	D0749	**09-034-49**	212.79
			0.45μm	D0748	**09-034-48**	212.79
Hollow Fiber 0.2μm Final Filter	Ideal for HPLC and trace metal analysis. Recommended final filter for 09-034-175K ORGANICfree* cartridge. Provides bacteria-free water. Made of mixed cellulose esters. Maximum flowrate: ½ gal./min. (2L/min.). Radiation sterilized. Autoclavable.	Thermo Scientific Barnstead Nanopure*, Dlamond Nanopure II and older-style Nanopure, E-pure*, Easypure* II.	0.2μm	D3750	**09-034-145**	90.00
0.2μm Final Filter with Filling Bell	Hollow fiber. Does not add organics to water. Automatic air venting. Demonstrated log reduction value of 9.38 when challenged with *P. diminuta*. Maximum flowrate: 1 qt./min. (1L/min.). Radiation sterilized. Autoclavable.	Older Thermo Scientific Barnstead Easypure* RF, UV, LF, UF or UV/UF; Remote Dispenser 09-035-34.	0.2μm	FL703X2	**09-050-279**	69.00
Remote Dispenser Filter	Sweeps bacteria and particles from membrane. Keeps particles larger than membrane pores in suspension and reduces buildup. Made of mixed cellulose esters. Radiation sterilized and individually sealed. Maximum flowrate, ½ gal./min. (2L/min.). Autoclavable.	Thermo Scientific Barnstead Nanopure Quad remote dispenser device (09-096-4, discontinued).	0.2μm	D3751	**09-050-229**	261.00

Thermo Scientific* Barnstead* Disposable Hose Nipple Deionization Cartridges

Easy-to-install system only requires wall bracket and cartridge

Nonpressure† cartridges process raw water, polish or repurify treated water. Achieve flowrates up to 38L/hr.

Left to Right: 09-035-22, 09-034-11, 09-035-20, 09-035-25

Key Features

- Cartridges are equipped with hose nipples on both ends for nonpressure connection to ordinary laboratory tubing with ⅜" I.D. (9.5mm)
- Resins in deionization cartridges (except Cat. Nos. 09-035-22 and 09-034-14) contain a special dye that changes color when cartridge is exhausted
- No meter required
- Inlet pressure range: 5 to 70psi (0.35 to 4.5kg/cm^2)

Oxygen Removal Cartridge

- Developed for a cooling water loop application to maintain low oxygen content to prevent corrosion
- Normally used ahead of deionization resin
- Feedwater must have less than 10ppm ionized solids
- Capacity: 11L S.T.P. (15g)

Economy Cartridge

- Produces high-quality water with average specific resistance of 175 kilohm·cm (about 3ppm)
- Total ion-exchange capacity: 1130 grains expressed as NaCl
- Endpoint: 50 kilohm·cm

Pretreatment Cartridge for Still Feedwater

- Prevents boiler scale in still; reduces cleaning problems
- Contains resin to deionize water and carbon to remove volatile chlorine additives
- Produces water >1 megohm·cm
- Capacity: 1450 grains expressed as NaCl

Organic Removal Cartridge

- For removal of organic impurities and chlorine commonly found in tap water
- Activated carbon composition
- Generally used before deionization cartridge
- Processes about 5500L of average-quality feedwater
- No dyes to interfere with organic analyses

Combination Cartridge

- Combines deionization and organic removal in one cartridge
- Removes ionized impurities to 10 megohm·cm or better, when used for polishing distilled water
- Total ion-exchange capacity (when used separately): 600 grains expressed as NaCl
- About ⅔ of processed water volume is >1 megohm·cm pure
- Special absorbent removes chlorine additives commonly found in municipal water supplies
- Economical for production of high-quality reagent-grade water
- Meets CAP specifications for Type II water

Ultrapure* Mixed-Bed Cartridge

- Produces high-resistance demineralized water that is largely free of silica and CO_2 from tap water
- Repurifies rinse water at workstations
- Increases purity of water from central demineralizer
- Total ion-exchange capacity: 760 grains as NaCl to 1 megohm·cm
- pH: typically between 6.8 and 7.2
- Available with or without resin dye to indicate cartridge exhaustion; cartridge without dye is ideal for applications such as organic analyses, where dyes might interfere

High-Capacity Cartridge

- Two-bed demineralizer with selected cation and anion resin beds
- Delivers more gallons per cartridge than mixed-bed types, but at a somewhat lower purity level
- Average resistance of effluent is 175 kilohm·cm
- Total ion-exchange capacity: 1725 grains (as NaCl)

APPLICATIONS:

Useful for raw water operation, polishing, or repurifying.

REQUIRED ACCESSORIES:

Wall bracket (09-035-50)

Description	Mfr. No.	Cat. No.	Each
Oxygen Removal	D8903	**09-034-11**	120.00
Economy	D8950	**09-035-28**	87.00
Pretreatment (still feedwater)	D8921	**09-035-32**	104.00
Organic Removal	D8904	**09-035-22**	81.00
Combination	D8922	**09-035-30**	110.00
Ultrapure Mixed-Bed (with dye)	D8902	**09-035-25**	95.00
Ultrapure Mixed-Bed (without dye)	D8911	**09-034-14**	104.00
High-Capacity	D8901	**09-035-20**	95.00

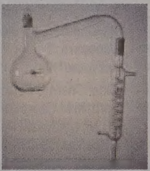
† Cartridges cannot accept back pressure. Output water must be diverted to an atmospherically vented receptacle.

DISTILLATION

Kimble* Kimax* Distilling Apparatus

Complete assembly

Use to distill small amounts of water or in APHA Method 4500-NH_3 for determining nitrogen (ammonia) in purified drinking water, natural water and highly purified wastewaters (concentration, <20µg/L)



Distilling apparatus with ₷ 19/38 joints. Use with tall-form Nessler tubes.

INCLUDES:

500 or 1000mL flat-bottom flask; distillation head with a ₷ 19/38 joint; ₷ stopper; jacketed (200mm) Graham condenser with ₷ 19/38 top joint

Capacity	₷ Stopper No.	Mfr. No.	Cat. No.	Each
500mL	22	21500 500	**13-631-6**	262.06
1000mL	27	21500 1000	**13-631-7**	263.89

ACCESSORIES

Flat-bottom flask only

Capacity	₷ Stopper	Mfr. No.	Cat. No.	Each
500mL	22	21500G 500	**13-631-8**	148.45
1000mL	27	21500G 1000	**13-631-9**	156.46

LOOKING FOR STILLS?

Thermo Scientific* Barnstead* offers a selection of traditional and glass stills, including steam stills.

Visit www.fishersci.com and search for Stills

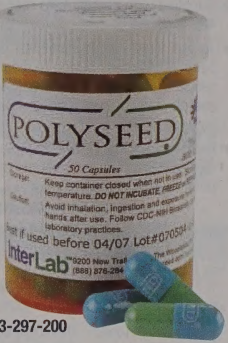
WATER/WASTEWATER

BOD

Polyseed* BOD and Polyseed-NX CBOD Capsules

Produce fast, economical BOD analyses with consistent results

- EPA accepted
- Each capsule contains 100mg of specialized bacterial cultures for use in a broad range of areas involving degradation of industrial and municipal waste
- To use, mix capsule contents with 0.5L of APHA standard dilution water at 20°C (68°F), stir for at least 60 minutes
- Mixture yields seed inoculum for up to 200 BOD tests
- For best results, use within one year of purchase
- Also available as **Polyseed-NX**, which contains an approved chemical additive for the inhibition of ammonia nitrogen (NH_3-N) in wastewater samples (CBOD)



13-297-200

ORDERING INFORMATION:

Supplied as a bottle of 50 capsules.

Type	Cat. No.	Pack of 50
Polyseed	13-297-200	106.75
Polyseed-NX	13-297-201	142.25

LOOKING FOR BOD BOTTLES?

See the Bottles section.

BOD FOR YOU

See the Oxygen Analysis section for more BOD products. Fisher Scientific carries BOD kits, Probes, and Meters from YSI, WTW, Orion, and other popular manufacturers. Can't find what you are looking for?

Visit www.fishersci.com and search for BOD Products

CHLORINE

LaMotte* Chlorine TRACER PockeTester*

TRACER PockeTester Total Chlorine Kit, Read Total Chlorine from 0.00 to 9.99ppm to 0.01ppm resolution, Extra bold display includes an analog bar graph feature, uses four LR-44 batteries, Readings are not affected by sample color

- Large ¾L × 15⁄16"W (1.9 × 2.8cm) LCD display with analog bar graph
- Memory saves calibration values and stores up to 15 readings; sample color or turbidity do not affect readings
- Sample temperature can be displayed in chlorine mode; or in pH mode when using optional pH sensor probe
- Automatically self-calibrates and shuts off when not in use; also indicates when batteries are low (uses four LR-44 batteries [included])

TRACER
PockeTester

22-278-617

ORDERING INFORMATION:

Overall dimensions: 7¼ L × 1⅜"W (18.4 × 3.5cm).

INCLUDES:

100 reagent tablets that deliver a precise amount of iodide for a 20mL sample, and four LR-44 batteries; optional accessories include pH, ORP, and Cl_2 sensor probes, and weighted stand with five sample cups; contact your Fisher Scientific Customer Service Representative for more details.

Test	Cat. No.	Each
Total Chlorine	22-278-617	169.95

HF Scientific Chlorine Pocket Photometer

Test Free or Total Chlorine anywhere in the field for sample sizes up to 5mL.

- Easy-to-use microprocessor-controlled photometer provides ±2% accuracy, three-second response time, and 0.01ppm resolution; testing range: 0 to 10ppm, optical path: 25mm
- Step-by-step menu on 16-digit alphanumeric LCD guides user through measuring process; keypad protected by splash-resistant tactile membrane
- PPD-2 DPD Powder Pop* Dispenser provides precise, convenient push-button reagent dispensing to sample
- Unit automatically shuts off after five minutes when not in use; 4 "AAA" batteries provide enough power for up to 1000 tests

15-393-92

ORDERING INFORMATION:

Overall dimensions, 3L × 7W × 10½"H (7.6 × 17.8 × 27cm). Powder Pop Dispenser also available separately—see p. 1988.

INCLUDES:

Unit includes four measuring cuvets with caps, Powder Pop Dispenser with 400 doses of DPD, four "AAA" batteries, and instructions.

COMPLIANCE:

Meets EPA approval for measuring residual chlorine according to Standard Method 4500-Cl G. DPD Colorimetric Method.

Test	Cat. No.	Each
Total Chlorine	15-393-90	394.31
Free Chlorine	15-393-92	394.31

HF Scientific Chlorine Dioxide Pocket Photometer

Test Free Chlorine Dioxide anywhere in the field for sample sizes up to 5mL

- Easy-to-use microprocessor-controlled photometer provides ±2% accuracy, three-second response time, and 0.01ppm resolution; testing range: 0 to 6.0ppm, optical path: 25mm
- Step-by-step menu on 16-digit alphanumeric LCD guides user through measuring process; keypad protected by splash-resistant tactile membrane
- PPD-2 DPD Powder Pop* Dispenser (included) provides precise, convenient push-button reagent dispensing to sample
- Unit automatically shuts off after five minutes when not in use; 4 "AAA" batteries provide enough power for up to 1000 tests

ORDERING INFORMATION:
Overall dimensions, 3L × 7W × 10½"H (7.6 × 17.8 × 27cm).

INCLUDES:
Four measuring cuvets with caps, PPD-2 DPD Powder Pop Dispenser with 100 doses of DPD Free Reagent, 30mL of Glycine Reagent, four "AAA" batteries, and instructions

COMPLIANCE:
Meets EPA approval for measuring residual chlorine dioxide according to Standard Method 4500-ClO_2D. DPD Colorimetric Method.

Test	Cat. No.	Each
Chlorine Dioxide	**15-393-91**	314.66

THERMOSAFE* COLIFORM WATER TEST MAILER

Durable yet lightweight foam mailer protects your water samples in transit. Engineered rib structure holds 100mL sample vials firmly in place. Reusable and recyclable.

Visit www.fishersci.com and search for ThermoSafe Coliform Test Mailer

Orbeco-Hellige Simplex Chlorine and pH Comparator Test Kits

15-398-390 Series

- Low-cost, compact test kits for accurate onsite testing of DPD or ortho-tolidine chlorine and pH in water/wastewater
- Test kit uses eight built-in, guaranteed nonfading color standards mounted in a durable, corrosion-resistant housing
- Test sample color is directly compared to standards, eliminating the need for color discs or slides

INCLUDES:
Comparator, carrying case, all necessary reagents and instructions. Replacement tubes are available. To order, contact your Fisher Scientific Customer Service Representative.

COMPLIANCE:
Chlorine DPD test kits meet U.S. EPA specifications. CE marked.

Range	Method	Cat. No.	Each
DPD Test Kits For Free and Total Chlorine			
0.1-1.0ppm	DPD[1]	**15-398-398**	38.01
0.2-3.0ppm	DPD[1]	**15-398-397**	38.01
Ortho-tolidine Test Kits For Chlorine			
0.2-3.0ppm	Acid Ortho-tolidine	**15-398-399**	42.60
pH Test Kits			
6.8-8.2	Phenol Red	**15-398-394**	41.90
Chlorine/pH Kit			
0.2-3.0ppm Cl_2; 6.8-8.2 pH	DPD[1]/Phenol Red	**15-398-396**	76.98

[1] *Uses DPD reagent tablets. Kit supplied with 50 tablets for Free Chlorine testing and 50 tablets for Total Chlorine Testing.*

PPD-2 DPD Powder Pop* Dispensers for Chlorine Testing

Use with any DPD-based photometer or test kit

Portable dispenser accurately delivers the correct volume of DPD reagent for Free or Total Chlorine—use with any DPD-based photometer or test kit.

- Supplied with enough DPD reagent for 400 tests
- To use, simply invert dispenser over sample and press button to dispense reagent; powder dissolves quickly in sample, leaving no messy residue behind
- Available for 5 and 10mL sample sizes, with formulations for a variety of photometers and test kits

15-393-70 Series

Test	Sample Size	For Manufacturers	Cat. No.	Each
Free Chlorine	5mL	HF Scientific (including Pocket Photometer), Hach*	**15-393-64**	57.58
	10mL	Hach	**15-393-68**	61.78
	10mL	Hanna Instruments*, LaMotte*, Palintest, Tintometer, YSI, Orbeco-Hellige*	**15-393-69**	61.78
Total Chlorine	5mL	HF Scientific (including Pocket Photometer), Hach	**15-393-65**	52.45
	10mL	Hach	**15-393-70**	61.78
	10mL	Hanna Instruments, LaMotte, Palintest, Tintometer, YSI, Orbeco-Hellige	**15-393-71**	61.78

LOOKING FOR MORE POWDER POP* DISPENSERS?

Fisher Scientific carries 100-test versions of the PPD-2 DPD Powder Pop Dispensers for Chlorine Testing.

Visit www.fishersci.com and search for Powder Pop Dispensers

*Fisherbrand** DPD Free Chlorine Test Reagent

NEW

Delivers the required dose of DPD reagent for a 5mL test sample

- Use with any DPD-based photometer
- Individual premeasured packages of reagent

15-393-57

Test	Sample Size	Cat. No.	Pack of 200
Free Chlorine	5mL	**15-393-57**	45.39

LaMotte* Test Strips

For iodine, QAC and chlorine testing

Test iodine from 12 to 100ppm, quaternary ammonium compunds from 50 to 400ppm, and chlorine from 10 to 200ppm.

- Chemically treated paper strips produce color changes in 30 seconds
- Simply dip strip into sample; compare strip color to color chart located on plastic vial
- Vials labeled with test instructions

IODINE TEST PAPERS
12 ppm
25 ppm
50 ppm
100 ppm
QAC QR TEST STRIPS
50 ppm
100 ppm
200 ppm
400 ppm
CHLORINE TEST PAPERS
10 PPM
50 PPM
100 PPM
200 PPM

Top to bottom: 22-307-863, 22-307-864, 22-307-808

APPLICATIONS:

Test disinfectants for food-preparation and sanitizer applications; test cleaning solutions in hospitals, clinics and food preparation areas; Iodine strips for warewash applications

ORDERING INFORMATION:

Iodine and chlorine strips packed 200 per plastic vial. QAC strips packed in opaque plastic vial of 100, with desiccant cap for longer life.

STORAGE CONDITIONS:

Shelf life: One year

Test	Test Ranges	No. of Tests	Cat. No.	Pack of
Iodine	0–12–25–50–100ppm	200 strips	22-307-863	200/5.35
QAC	0–50–100–200–400ppm	100 strips	22-307-864	100/5.10
Chlorine	0–10–50–100–200ppm	200 strips	22-479-808	200/5.15

LaMotte* Insta-Test* Sanitizer Test Strips

For chlorine dioxide and peracetic acid testing

- Chemically treated pads on plastic strips produce color change in 10 seconds
- Pop-Top vials have molded desiccant liner and hinged snap cap to protect from moisture
- 50 tests/factor/vial

NEW
Insta-TEST
50 Test Strips
High Range
Chlorine Dioxide
Just dip & read
LaMotte
Insta-TEST
Peracetic Acid
Just DIP & READ!
LaMotte

Left to right: 22-307-872, 22-307-873

APPLICATIONS:

Peracetic acid strips for use in food and beverage industries†; Chlorine dioxide strips for testing drinking, process and sanitation water†

Test	Test Range	Cat. No.	Each
Peracetic Acid	0-50ppm	22-307-873	7.96
	0-160ppm	22-307-874	7.96
Chlorine Dioxide	0-10ppm	22-307-871	7.96
	0-500ppm	22-307-872	7.96

† Strips have been evaluated for use in these applications. Use in other applications is subject to potential interferences.

HF Scientific Chlorine Micro Check Test Strips

Detect free or total chlorine concentrations as low as 0.05ppm

Test strips for field testing and quality-control procedures; provide a safe and economical alternative to reagent chlorine testing.

- Strips give readings at 0, 0.05, 0.2, 0.4, 0.6, 0.8, 1.2, 1.5, 2.0, 2.6, 4.0, 6.0, and 10ppm
- Accurate results produced in less than one minute
- Easy to use—simply dip strip into sample or hold under liquid stream to saturate, remove, and match color to the color-comparison scale

INCLUDES:

50 test strips are supplied in bottle labeled with instructions, color-comparison scale, and expiration date

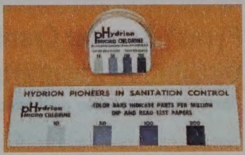
14-376-160 Series

Test	Cat. No.	Pack of 50
Total Chlorine	14-376-163	13.85
Free Chlorine	14-376-164	13.85

Hydrion* Micro Chlorine Tester

For chlorine sanitizing solutions from 10 to 200ppm

- Test paper gives instant readings at 10, 50, 100, and 200ppm
- Consists of dispenser with color chart and two 15' (4.6m) rolls of test paper
- Sufficient for more than 200 tests


pHydrion MICRO CHLORINE
HYDRION PIONEERS IN SANITATION CONTROL
COLOR BARS INDICATE PARTS PER MILLION
DIP AND READ TEST PAPERS
pHydrion MICRO CHLORINE
10
50
100
200

15-420-2Q

Cat. No.	Pack of 10
15-420-2Q	43.93

ACCESSORIES

Test Paper Refill

Refill for Hydrion* Micro Chlorine Tester

- 15' (4.6m) roll, carton of 50 rolls
- 10-200ppm free available chlorine

Cat. No.	Case of 50
15-420-2T	77.20

COD

BioScience COD Reactors

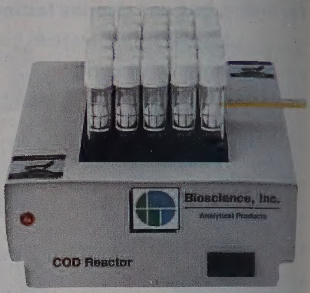
For BioScience U.S. EPA accepted micro-COD method

- Can also be used to determine COD readings in nonreporting purposes for readily oxidized wastes, culture inactivations, melting and boiling determinations, and other related tests or procedures
- Choose from two reactor sizes that hold 15 or 30 reagent vials (16 × 100mm)
- Units are factory preset and calibrated to 150°C (302°F), accuracy of ±2°C, include thermometer, and are compatible with other available 16mm test vials
- Sturdy, compact steel housing with baked enamel finish

Reactor Type	L × W × H	Cat. No.	Each
15-tube	7 × 8 × 4" (17.8 × 20.3 × 10.2cm)	**01-215-23**	761.70
30-tube	9½ × 8 × 4" (24.1 × 20.3 × 10.2cm)	**01-215-24**	970.60

ORDERING INFORMATION:
Electrical requirements: 110V 50/60Hz.

COMPLIANCE:
Designed specifically for BioScience U.S. EPA accepted micro-COD method requiring two-hour digestion of samples at 150°C (302°F).



01-215-23

WARNING
The products indicated contain mercury. Don't put products containing mercury in the trash. Products containing mercury are to be recycled or disposed of as hazardous waste. Products containing mercury may be regulated by Local, State, or Federal Laws. Some products containing mercury are not available for sale in some states.

LOOKING FOR COD VIALS?
Vials for COD testing are available in the Vials section, which begins on p.1905.

CYANIDE

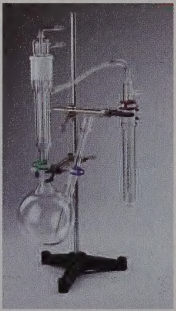
Pyrex* Regular Cyanide Distillation Apparatus

For testing soluble and insoluble cyanides in water

Cyanide as hydrocyanic acid (HCN) is released from cyanide complexes by reflux distillation and absorbed in a scrubber containing sodium hydroxide solution.

- Use for samples of 500mL
- Reaction/distillation section of apparatus connects to absorption/scrubber section by Tygon* tubing, reducing set-up time and eliminating a key source of glass breakage
- Inlet tubes have funnel openings for easier acid addition

COMPLIANCE:
Meets U.S. EPA SW-846 Methods 9010 and 9012 and ASTM* Method D 2036.



05-723-16; clamp and stand not included.

Test	Mfr. No.	Cat. No.	Each
Soluble/insoluble Cyanides in Water	3350 C	**05-723-16**	497.04

LOOKING FOR REPLACEMENT PARTS FOR THE PYREX* REGULAR CYANIDE DISTILLATION APPARATUS?
Fisher Scientific carries replacement parts for the Pyrex Regular Cyanide Distillation Apparatus: inlet tube, condenser, dispersion tube, and trap.
Visit www.fishersci.com and search for Pyrex Cyanide Distillation Apparatus

Wheaton Complete Cyanide Distillation Apparatus

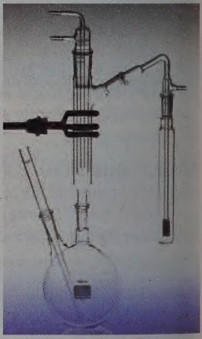
For removing interference substances in cyanide quantitative analyses according to ASTM* D 2036

Sample reacts with H_2SO_4 and $MgCl_2$ to convert any cyanide to hydrocyanic acid (HCN), HCN is distilled and absorbed in NaOH solution, and sample is analyzed for CN.

- With ClearSeal* grease-free joints and medium frit
- Wheaton-33* low extractable borosilicate glass

INCLUDES:
Absorber jacket, absorber top, cold finger condenser, cold finger jacket, 1000mL distilling flask, and inlet tube

COMPLIANCE:
For use according to ASTM D 2036



09-108; clamp not included.

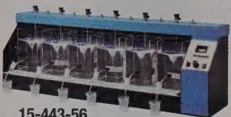
Description	Mfr. No.	Cat. No.	Each
Complete Assembly	377160	**09-108**	314.76
Component Parts			
Absorber Jacket	377161	**09-108-1**	23.04
Absorber Top	377162	**09-108-2**	87.00
Cold Finger Condenser	377163	**09-108-3**	60.44
Cold Finger Jacket	377164	**09-108-4**	75.68
Distilling Flask, 1000mL	377165	**09-108-5**	68.66
Inlet Tube	377166	**09-108-6**	27.04

*Trademark. See Trademark Reference.

SETTLEABLE SOLIDS

Six-Paddle Stirrer

Provides identical test conditions for all samples



15-443-56

Stainless-steel paddles stir water samples simultaneously at same speed.

- Paddles are 1W × 3"L (2.5 × 7.6cm), and driven by 1/30 hp variable-speed electronic motor from 1 to 300rpm
- Precise, easy-to-read digital display
- Paddle depths adjustable to a maximum of 9" (23cm)
- Rods are 6" (15cm) apart
- Fluorescent-lamp floc illuminator is built into the jar tester base for glare-free observation of samples
- Steel uniframe chassis

ORDERING INFORMATION:

Electrical Requirements: 120V 50/60Hz. For information about optional carrying cases, or beakers, contact your Fisher Scientific Customer Service Representative.

INCLUDES:

Comes complete with six standard 1L round glass beakers and dust cover.

L × W × H	Cat. No.	Each
8 × 40 × 18" (20 × 102 × 46cm)	**15-443-56**	2715.00

Nalgene* Plastic Settlometer Kit

Ideal for wastewater treatment plant operators

- All kit components are chemical resistant to "normal" sludge samples (pH range 3 to 10)
- ½ gal. (2L) lightweight, transparent jar has easy-to-read white graduations and high impact resistance
- Paddle permits agitation of sample without scratching jar
- Centrifuge tubes feature molded-in graduations and friction-fit closures
- For tabletop (clinical) centrifuges; shatterproof tubes will withstand forces up to 6000×G without cushions or adapters, eliminating risk of broken glass

15-443-35 with three centrifuge tubes (10 supplied).

ORDERING INFORMATION:

Approximate jar dimensions, O.D × H: 5 3/16" × 7½ (13.2 × 19.1cm). Tube dimensions, O.D × H: 4 11/16" × 4 11/16 (1.7 × 11.9cm).

INCLUDES:

Polycarbonate jar and cover, polypropylene paddle, ten ½ oz. (15mL) polycarbonate conical centrifuge tubes with friction-fit polypropylene closures, an instruction booklet and data sheet

COMPLIANCE:

Kit has been evaluated by the National Training and Operational Technology Center (NTOTC) of the U.S. EPA and has been determined to yield results equivalent to the equipment NTOTC has used in the past.

Mfr. No.	Cat. No.	Each	Case of 4
1010 0507	**15-443-35**	188.43	502.50

Pyrex* Direct-Reading Mallory Settlometer

2000mL heavy-wall cylinder

- Measures 5⅛ I.D. × 7½"H (13 × 19cm)
- Graduated in cc per liter and hundredths of a foot

15-443-30

Mfr. No.	Cat. No.	Each
7250 2L	**15-443-30**	191.62

Kimax* Glass Imhoff Sediment Cone

Capacity: 1000mL

Graduations: 0 to 2mL (in 0.1mL subdivisions); 2 to 10mL (in 0.5mL); 10 to 40mL (in 1.0mL); and at 1000mL.

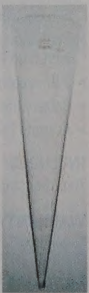
10-310-52

Mfr. No.	Cat. No.	Each
19000 1	**10-310-52**	184.40

Pyrex* Glass Imhoff Cone

Capacity: 1000mL

- Graduations: 0 to 1mL (in 0.1mL subdivisions); 1 to 10mL (in 0.5mL); 10 to 40mL (in 1.0mL); and at 1000mL
- With blunt or sharp tip



15-441

Tip	Mfr. No.	Cat. No.	Case of
Sharp	2160 454	**15-439**	2/985.76
Blunt	2180 439	**15-441**	4/1134.15

Nalgene* Polycarbonate Imhoff Settling Cone and Rack

Molded acrylic rack can also hold separatory funnels

Settling Cone

- Graduated from 0 to 1000mL, with 0.1mL increments in the 0 to 1mL range
- 13mm leakproof screw closure at bottom for withdrawing sediments
- Top diameter: 4 3/16" (10.6cm)

Cone Rack

- Holds separatory funnels or three Nalgene Imhoff cones
- Wide base provides stability on benchtop
- Dimensions: 7¾L × 16W × 14½"H (19.6 × 41 × 37cm)

15-438

Description	Mfr. No.	Cat. No.	Each	Case of 4
Settling Cone	1000 0010	**15-438**	40.97	109.25
Cone Rack	1001 0010	**15-443-60**	175.03	466.75

Wheaton Plastic Imhoff Cone

NEW

1000mL styrene-acrylonitrile unit

- Graduations: 0.3 to 1mL (in 0.1mL subdivisions); 1 to 10mL (in 0.5mL); 10 to 40mL (in 1mL); and 40 to 100mL (in 2mL)
- Markings also at 250, 500, and 1000mL
- Made of styrene-acrylonitrile and supplied with plugged polypropylene cap

02-927-011; rack not included.

Mfr. No.	Cat. No.	Each	Case of 4
W990800	**02-927-011**	33.82	115.62

TURBIDITY

Thermo Scientific* Orion* AQ4500 Portable Turbidimeter

Nephelometric and ratiometric measurements; excellent correlation with online instruments

- Autoranging from 0 to 1000 NTU, with choice of units: NTU, FTU, FNU, ASBC, or EBC
- In 0 to 40 NTU range, unit provides a ratiometric range that gives EPA, GLI method two equivalent numbers
- Dual-source LED allows readings that comply with both EPA 180.1 and ISO 7027
- IP67 waterproof to a depth of 3m
- Battery life of over 1000 hours; datalog capacity of 100 data points
- Accepts 24mm cuvets

NEW

13-650-100

INCLUDES:

Turbidity standards kit, carrying case, and replacement cuvets

WARRANTY:

Two years

COMPLIANCE:

Dual source to comply with EPA 180.1 and ISO 7027

Range	Cat. No.	Each
0-1000 NTU	**13-650-100**	1399.00

LaMotte* TC-3000 Tri-Meter

Measures turbidity, chlorine, and color

Compact handheld water analysis instrument with microprocessor-driven optical system and unique optics configuration. Available in EPA- or ISO-compliant versions.

- Provides precise, sensitive, and dependable measurements
- Reads low levels for turbidity (0.05 NTU), chlorine (0.02 ppm), and color (0.2 PCU)
- Expands to higher ranges: 0–4000 for turbidity and 0–10ppm for chlorine
- Response time: <5 seconds
- Features six languages, data logging (4000 points), signal averaging, RS-232 interface
- Uses 9V battery, with auto shut-off and optional AC power

22-278-589

INCLUDES:

Supplied with 0, 1, and 10 NTU standards; sample bottle; four sample vials; DPD tablets; and extra battery

CERTIFICATIONS:

CE marked

Model	Cat. No.	Each
TC-3000e (complies with US EPA 180.1 standard)	**22-278-589**	1095.00
TC-3000i (complies with ISO 7027 standard)	**22-278-590**	1095.00

SPECIFICATIONS

Test	Turbidity	Chlorine	Color
Unit of Measure	NTU, FNU, FAU, ASBC, and EBC	ppm	CU (color units)
Range	0–4000	0–10ppm	0–500 CU
Resolution	0.1 NTU/FNU (0.00–10.99)	0.01ppm (0–5)	0.1 CU (0–100 CU)
	0.1 NTU/FNU (11.00–109.9)	0.1ppm (5–10)	1 CU (100–500 CU)
	1 NTU/FNU (110–4000)	----	----
Accuracy	±2%	0.02 ± 2%	±0.5 CU or 2%
Detection Limit	0.05 NTU/FNU	0.02ppm	0.2 CU
Reproducibility	0.02 NTU/FNU, 0.5 FAU	----	----
Response Time	----	<5 seconds	<5 seconds
Light Source	860nm LED (ISO), Tungsten (EPA)	525nm LED	UV LED 375nm

HF Scientific MicroTPW Portable White Light Turbidimeter

Essential tool for monitoring turbidity on the go

15-393-55

- Autorange from 0 to 1100 NTU with accuracy of ±2% of reading or ±0.01 NTU
- Water-resistant, ABS-injection molded housing maintains laboratory performance in field operations
- Other field-friendly features include push-button calibration, four-digit (seven-segment) LCD display, and long life—performs over 1000 tests on a single set of four "AAA" alkaline batteries
- Response time: 14 seconds
- Maximum sample size: 10mL
- Resolution varies with turbidity range: 0.01 NTU for 0-99 NTU range, 0.1 NTU for 100-999.9 NTU range, and 1 NTU for 1000-1100 NTU range
- Light source: tungsten

ORDERING INFORMATION:

Meter dimensions: 6½L × 2¾W × 1¾"H (16.5 × 7.0 × 4.4cm).
Case dimensions: 8½L × 10W × 2½"H (22 × 25 × 6.3cm).

INCLUDES:

Shock-resistant, high-density polyethylene carrying case, one set of calibration standards (0.02, 10, 100, 1000 NTU), index rings, batteries, operator's manual, and measuring cuvets with light-shield caps

REQUIRED ACCESSORIES:

Set of four "AAA" alkaline batteries.

COMPLIANCE:

Conforms to IP67 standards and US EPA Method 180.1

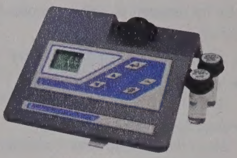
CERTIFICATIONS:

CE marked; NEMA 4X certified.

Description	Cat. No.	Each
Portable Turbidimeter, White Light (conforms to US EPA Method 180.1)	**15-393-55**	729.00

HF Scientific Micro 1000 White Light and Infrared Ratio Turbidimeters

Provides easy nephelometric measurements in less than six seconds from a 30mL sample



15-393-97

- Reads in NTU, EBC, Nephelos, FNU, and FAU
- Autoranges over entire measurement range
- Uses a quick-connect light source and features a full-time ratio mode that automatically compensates for background color
- Auto Alert Calibration Prompt automatically alerts operator to initiate simple, menu-driven calibration, and diagnostic software automatically monitors and detects errors

INCLUDES:

One set of calibration standards (0.2 to 1750 NTU), operator's manual, two measuring cuvets with light shield caps, and plug-in power adapter

COMPLIANCE:

White light model (Micro 1000 WL) exceeds U.S. EPA criteria for Method 180.1; Infrared model (Micro 1000 IR) conforms to ISO 7027 standards

CERTIFICATIONS:

CE marked; UL listed, CSA approved.

Model	Electrical Requirements	Cat. No.	Each
Micro 1000 WL (White Light)	100–240V 50/60Hz	**15-393-95**	1853.79
Micro 1000 IR (Infrared)	100–240V 50/60Hz	**15-393-97**	1884.79

SPECIFICATIONS

Range	0 to 10,000 NTU 0 to 2450 EBC 0 to 10,000 FNU 0 to 10,000 FAU
Accuracy	±2% of reading plus 0.01 NTU (0 to 1000 NTU) ±5% of reading (1000 to 4000 NTU) ±10% of reading (4000 to 10,000 NTU)
Resolution	0.0001 NTU on Lowest Range
Response Time	<6 seconds
Typical Sample Size	30mL
Light Source	Quick-connect Infrared (Model IR) or Tungsten (Model WL)
Operating Temperature	0° to 50°C (32° to 122°F)
Outputs	RS-232-C Serial Port (bidirectional)
Dimensions (L × W × H)	10¾ × 10 × 3¾" (27 × 25 × 9.5cm)
Weight	2⅞ lb. (1.3kg)

HF Scientific Micro 100 Laboratory Turbidimeter

Ideal for municipal water and wastewater facilities, environmental, commercial and industrial laboratories

Use for research as well as routine analytical measurements.

13-393-80

- Autoranging from 0 to 1000 NTU
- Sensitive to changes as small as 0.01 NTU
- Auto Alert Calibration Prompt alerts the operator when calibration is needed
- Reusable calibration standards save time and money over mixing primary standards
- Recordkeeping is simplified by outputting date, time and NTU reading to the RS-232-C serial port each time the READ button is pushed
- Multiline display shows the last reading as well as the current reading
- Quick Connect Lamp Module speeds up lamp replacement and reduces maintenance downtime

INCLUDES:

Three measuring cuvets with light shield cap, three calibration standards (0.02, 10.0, and 1000 NTU) and 120V or 100–240V universal power adapter

COMPLIANCE:

Exceeds US EPA criteria for Method 180.1.

CERTIFICATIONS:

CE marked

Description	Electrical Requirements	Cat. No.	Each
Micro 100	120V	**15-393-80**	1033.72
	100–240V	**15-393-81**	1133.43

SPECIFICATIONS

Range	Autoranging from 0 to 1000 NTU
Accuracy	±2% of reading plus 0.01 NTU
Resolution	0.01 NTU
Response Time	≤6 seconds
Typical Sample Size	30mL (27mL minimum)
Light Source	Quick Connect Tungsten Filament
Operating Temperature	0 to 50°C (32° to 122°F)
Outputs	RS-232-C Serial Port
Dimensions (L × W × H)	10 × 10¾ × 3¾" (25.4 × 27.3 × 9.5cm)
Weight	2⁷⁄₈ lb. (1.32kg)

ACCESSORIES

Micro 100 Replacement Calibration Kit

Premixed and reusable

- 0 to 1000 NTU
- Includes 0.02, 10, and 1000 calibration NTU

Cat. No.	Each
15-393-84	208.84

Orbeco-Hellige Model 965-10A, 966, and 966-IR Laboratory and Portable Turbidimeters

Assure compliance with NPDES permits, Clean Water Act and Safe Drinking Water Act regulations

Factory standardized in three ranges: 0 to 20 NTU, 0 to 200 NTU and 0 to 1000 NTU. Supplied 40 NTU primary copolymer standard is US EPA approved to be safe, nontoxic and noncarcinogenic, and has a guaranteed shelf life of one year.

15-375A

15-386

- Direct-reading digital display
- Accuracy ±1% of reading
- Horizontal optical path eliminates false readings due to settling materials obscuring the bottom of the sample cell
- Infrared Model 966-IR (860nm LED light source) is ideal for accurate measurement of colored samples

ORDERING INFORMATION:

Benchtop model dimensions: 9¼L × 11W × 5¼"H (24 × 28 × 13.5cm). Shipping weight: 13 lb. (5.9kg). Switch-adjustable for 110/220V, 50/60Hz operation. Portable models dimensions: 7½L × 4W × 3"H (19 × 10.2 × 7.6cm). Power: four "AA" batteries or AC adapter. Shipping weight: 5 lb. (2.2kg) (including carrying case).

INCLUDES:

Carrying case, package of 0 and 40 NTU standards, six sample cells, and operator's manual

COMPLIANCE:

Models 965-10A and 966 meet US EPA (180.1), ASTM*, AWWA, APHA and WEF specifications. Infrared Model 966-IR (860nm LED light source) meets ISO 7027 specifications.

CERTIFICATIONS:

CE marked

Description	Cat. No.	Each
Model 965-10A Benchtop Digital Turbidimeter	**15-375A**	1020.07
Model 966 Portable Turbidimeter	**15-386**	712.51
Model 966-IR Portable Infrared Turbidimeter	**15-398-181**	619.15

*Trademark. See Trademark Reference.

Prices subject to change.

GFS Chemicals Amco Clear* Individual Primary Turbidity Standards

Highly accurate, stable and reproducible standards for calibrating turbidimeters and nephelometers

Primary turbidity standards for use in 90° nephelometers such as the Hach* 2100A, HF Micro 100, GLI On-line instruments, Hanna Instruments*, HF DRT 100, and Monitek* Model 21.

- Ready to use—no mixing or dilution required
- Consist of patented, polymer microspheres suspended in a pure, aqueous medium
- Uniform in particle size distribution to ensure consistent light scattering and precise enough to permit calibration down to and including 0 NTU
- Nontoxic and won't settle out of suspension
- Guaranteed accuracy within 1%
- Designed for 90° white light turbidimeters (EPA 180.1 design)
- Guaranteed one-year shelf life

ORDERING INFORMATION:

In 1L bottles (additional volumes, values and kits are available; contact your Fisher Scientific Customer Service Representative).

COMPLIANCE:

The only alternative to formazin formally approved as a primary standard by the U.S. EPA.

NTU Value	Cat. No.	Each
0.1	**15-426-64**	95.86
0.2	**15-426-1**	99.98
0.5	**15-426-2**	100.16
1.0	**15-426-3**	93.75
5.0	**15-426-4**	127.75
8.0	**15-426-41**[1]	121.26
10.0	**15-426-5**	126.24
18.0	**15-426-42**[1]	188.68
20.0	**15-426-6**	188.68
40.0	**15-426-7**	200.51

[1] *For Hach ratio only.*

GFS Chemicals Amco Clear* Linear Calibration Sets

Highly accurate, stable and reproducible standards for calibrating turbidimeters and nephelometers

- Ready to use—no mixing or dilution required
- Consist of patented, polymer microspheres suspended in a pure, aqueous medium
- Uniform in particle size distribution to ensure consistent light scattering and precise enough to permit calibration down to and including 0 NTU
- Nontoxic and won't settle out of suspension
- Guaranteed accuracy within 1%
- Designed for 90° white light turbidimeters (EPA 180.1 design)
- Guaranteed one-year shelf life

ORDERING INFORMATION:

Available in three ranges. Each set consists of six 125mL bottles of primary standards.

COMPLIANCE:

Fulfill U.S. EPA recommendations for linear calibration of each range used to permit instrument-to-instrument correlation

NTU Range	NTU Values/Set	Cat. No.	Each
0 to 1	0.0/0.2/0.4/0.6/0.8/1.0	**15-426-10**	194.20
0 to 10	0.0/2.0/4.0/6.0/8.0/10.0	**15-426-11**	221.79
0 to 100	0.0/20.0/40.0/60.0/80.0/100.0	**15-426-12**	262.56

WATER QUALITY—COLORIMETERS

Thermo Scientific* Orion* AQUAfast* IV AQ4000 Colorimeter

Rugged, IP67-waterproof, handheld portable

Perfect for field or laboratory analyses.

Versatile programming

- Comes with over 30 preprogrammed methods; stores up to 190 methods
- Download up to 160 new procedures to keep methodology current, or create and store up to 10 custom methods in memory

Auto-Test cuvets and Auto-ID mode for automated measurements

- Place sample in the Auto-Test cuvet and position cuvet in instrument
- AQ4000 automatically identifies species of interest, selects proper method and wavelength, and sets built-in timer
- Read the result from the display
- Reagent is premeasured, and cuvets are opened only when a measurement is about to be taken, preserving reagent quality
- AQ4000 also uses all AQUAfast II and AQUAfast IV liquid, powder, and tablet chemistries for species from aluminum to zinc, and accepts standard round cuvets with diameters of 13, 16 and 24mm

Easy operation—easy documentation

- Keypad has 12 dual-function buttons with tactile feedback
- Setup, Calibrate, Blank, Zero, Verification, Measure or Standby modes
- Push-button select to display units: concentration (mg/L, µg/L, ppm), absorbance or % transmittance
- Liquid-crystal display shows numeric displays for measurement and program number; alphanumeric display for prompts and messages
- Icons indicate mode and unit of measurement; tell when unit is prompting, timer is active, data is in log, battery is low, print function is active, sample is overrange
- Log up to 100 data points in the field (in nonvolatile memory), complete with a time-and-date tag, then download to printer or computer via RS-232-C bidirectional connection (requires optional cable)

13-642-157

COMPLIANCE:

Waterproof to IP67 standards.

Description	Mfr. No.	Cat. No.	Each
AQUAfast IV Colorimeter	AQ4000	**13-642-157**	999.00

Thermo Scientific* Orion* AQUAfast* II Single Parameter Colorimeter Kits

Ideal for fast, accurate water quality testing in the laboratory and the field

- Compact, microprocessor-controlled, single wavelength colorimeters
- Optics include temperature-compensated LED with photosensor in waterproof sample chamber
- Operate over the temperature range 0 to 40°C (32° to 104°F) and in noncondensing atmospheres from 30 to 90% RH
- Feature large, easy-to-read LCD, three-button interface for error-free measurements, auto shutoff, and splashproof keypad

13-642-688 with cuvets and reagent tablets (included).

ORDERING INFORMATION:

Electrical requirements: 9V battery provides 40 hours of operation or approximately 600 tests, 13-642-688 (international model) requires 210-240V 50/60Hz. Reagents are also available separately.

INCLUDES:

Black carrying case with colorimeter, reagents, cuvets, stir rod, brush, and instructions. Turbidity kit comes in a carrying case with colorimeter, four standards, sample cuvet and instructions.

COMPLIANCE:

Turbidity unit meets ISO 7027 criteria for turbidimetric measurement.

CERTIFICATIONS:

CE marked

Analyte	Range	No. of Tests	Mfr. No.	Electrical Requirements	Cat. No.	Each
Chlorine, free and total	0.05 to 6.0mg/L	50	AQ2070	210-240V 50/60Hz†	**13-642-688**	351.00
Fluoride	0.1 to 2.0mg/L	50	AQ2009	9-volt Battery	**13-642-024**	463.00
Nitrate Nitrogen	1.0 to 40mg/L	50	AQ2007	9-volt Battery	**13-642-025**	340.00
Nitrate Nitrogen	0.05 to 0.5mg/L	100	AQ2046	9-volt Battery	**13-642-026**	340.00
Turbidity	0.1 to 2000 NTU	----	AQ2010	9-volt Battery	**13-642-027**	562.00

† *International Model.*

LaMotte* SMART 2 Colorimeter* Water Quality Analyzer

Multitest colorimeter measures numerous water quality parameters with laboratory accuracy and the convenience of a portable, handheld system

Simple menu-driven operation displays results in concentration (ppm) or absorbance.

- More than 75 preprogrammed tests in library and 10 user-entered tests
- Choose any of four wavelengths (see Specifications) to determine absorbance of a sample at a desired wavelength—proper wavelength selection is assured, since all optical filters are included and automatically selected
- Autoblank and auto-off
- Using optional SMARTLink 2 Program and cable (order online), the SMART 2 Colorimeter can interface with any DOS-based computer program to send test data to a database or ASCII delimited file

LaMotte
SMART 2

22-278-615

ORDERING INFORMATION:

Net weight: 11 oz. (311.8g). Dimensions: 6L × 3¼W × 2½"H (15 × 8 × 5.5cm).

INCLUDES:

9V battery and AC adapter, four sample tubes, instrument manual including test procedures and quick start guide

CERTIFICATIONS:

CE Marked

SPECIFICATIONS

Range	Absorbance: 0–2.0A
Resolution	Determined by reagent system
Wavelengths	430nm, 520nm, 570nm, 620nm
Bandpass	10nm (typical)
Light Source	4 LEDs
Detector	Four Silicon photodiode with integrated interference filters
Display	LCD 4 lines by 16 characters
Sample System	25mm flat-bottom round tubes, 10mm square cuvets, 16mm COD tubes
Output	RS-232, time and date stamps
Power	9V battery or AC adapter

Electrical Requirements	Cat. No.	Each
120V 60Hz	**22-278-615**	795.00
220V 50Hz	**22-278-616**	795.00

LAMOTTE* TC-3000 TRI-METER

Looking for a compact, handheld water analysis system that measures turbidity, chlorine, and color? Check out p.1992. For other colorimeters and photometers that measure chlorine, see the Chlorine Subsection of Water/Wastewater, pp.1987-1989.

ACCESSORIES

LaMotte* SMART 2 Colorimeter* Reagents

The perfect complement for your SMART 2 Colorimeter

- High-quality reagents manufactured from ACS raw materials for high reproducibility
- All systems are designed to overcome test interferences for fast and dependable results

ORDERING INFORMATION:
Additional reagent systems are available. Contact your Fisher Scientific Customer Service Representative for details.

Analyte	Range (ppm)	Test Method (No. of Reagents)	No. of Tests	Cat. No.	Each
Ammonia Nitrogen	0–3.0	Nesslerization (2)	50	**22-278-500**	33.00
Bromine/Chlorine/Iodine	0–9; 0–4.0; 0–14	DPD tablets (2)	100	**22-278-501**	44.00
Copper, High	0–6.0	Diethyldithiocarbamate (1)	100	**22-278-510**	13.55
Cyanide	0–0.35	Pyridine-barbituric Acid (5)	50	**22-278-512**	75.95
Fluoride	0–2.0	SPADNS (2)	50	**22-278-514**	40.00
Iron	0–5.0	1,10 Phenanthroline (2)	50	**22-278-517**	34.60
Nitrate Nitrogen	0–3.0	Cadmium Reduction (2)	20	**22-278-522**	36.10
Nitrite Nitrogen	0–0.8	Diazotization/Coupling (2)	20	**22-278-523**	36.10
Oxygen (Dissolved)	0–11.0	Winkler Colorimetric (3)	200	**22-278-524**	31.95
pH	5.0–9.5	Colorimetric (3)	100	**22-278-526**	46.83
Phosphate, High	0–70.0	Molybdovanadate (1)	50	**22-278-528**	16.65
Phosphate	0–3.0	Ascorbic Acid Reduction (2)	50	**22-278-529**	29.70
Potassium	0.5–10.0	Tetraphenylboron (2)	100	**22-278-530**	45.70
Silica, High	0–75	Silicomolybdate	50	**22-278-532**	31.95

Orbeco-Hellige Model 611-A Aqua Tester

Provides accurate, reproducible, sensitive results

15-398-400

Measures color of water over five ranges in accordance with APHA Pt-Co Color, ASTM* D 1209 specifications. Also measures low concentrations of 30 water test parameters, including chlorine, copper and fluoride.

To use:

- Place samples in 8" long (200mm) Nessler sample tubes
- Insert glass plungers (supplied) in top of tubes; plungers eliminate meniscus curvature and automatically adjust viewing depth of sample to 200mm to produce high color intensity, making color changes distinct and easy to see
- Match the sample color with the standard color and read the value of the standard printed on the color disc
- Prism and magnifying lens bring colors side-by-side in one field for mistake-proof comparisons
- Built-in color-corrected lamp assures accurate and reproducible results 15 times more sensitive than with conventional comparators

ORDERING INFORMATION:
For 110V AC/DC.

COMPLIANCE:
APHA Pt-Co Color, ASTM D 1209 specifications

INCLUDES:
Two Nessler tubes and two optical glass plungers; built-in magnifying prism eyepiece; color-corrected lamp; and instructions

Cat. No.	Each
15-398-400	462.50

Lamotte* Nickel Test Outfit

For determining nickel in effluents where organic matter is absent and the interfering ions cobalt, iron, copper, manganese, and chromium are each below 15ppm

- Detects nickel concentrations ranging from 0.5 to 10ppm using octet comparator method
- Nickel reacts with dimethylgloximine under acidic conditions to form orange-red complex

22-278-635

INCLUDES:
Sufficient quantities of seven different reagents to perform 20 tests, graduated cylinder, test tubes, pipets, spoon, and nickel comparator (0.5 to 10.0ppm)

No. of Tests	Range	Cat. No.	Each
20	0.5, 1.0, 2.0, 3.0, 4.0, 5.0, 7.5, and 10.0ppm Ni	**22-278-635**	10.55

WARNING
Kit includes 2.5N Hydrochloric Acid, Conc. Ammonium Hydroxide, 1% Dimethylgloximine, Ammonium Persulfate and 0.0141N Silver Nitrate, which are considered to be potential health hazards. To view or print a Material Safety Data Sheet (MSDS) for these reagents, see MSDS CSD or www.lamotte.com.

ACCESSORIES

Replacement Nessler Tube

Borosilicate glass

- 8" long (200mm)

Cat. No.	Each
15-398-405	31.16

LaMotte* Series 1200 Single-Parameter Colorimeters

Water-resistant, handheld single-parameter meters provide fast, accurate, direct results in actual ppm concentrations with photometric accuracy to ±0.001 absorbance units

Test for a variety of analytes using colorimetric single test kits or visual colorimetric/titration test kits.

- Microprocessor allows preprogrammed calibrations to optimally match non-linear curves
- Autozero function
- Flip-top lid over sample chamber eliminates problems with stray light and misplaced light caps
- Chlorine colorimeter kits use unit-dose DPD tablets or DPD liquid reagents; all analytes have enough reagent for 100 tests

LaMotte
1200
4.0
CAL
READ

22-307-838 with two sample vials (six included).

ORDERING INFORMATION:

Dimensions: 6L × 3¼W × 2½"H (15 × 8 × 5.5cm). 110V 60Hz. All kits require a 9-volt DC battery. Optional AC adapter sold separately (contact your Fisher Scientific Customer Service Representative for details).

INCLUDES:

Sturdy carrying case with six screw-cap sample vials, RS-232 port to interface with a datalogger or computer, and an instruction manual.

CERTIFICATIONS:

CE marked.

SPECIFICATIONS

Readout	3½" digit LCD
Photometric Accuracy	±0.001 Absorbance Unit
Detector	Silicon photodiode
Sample Chamber	Accepts 25mm dia. flat-bottom, capped tubes
Light Source	LED
Interface	RS-232 serial interface
Power	Alkaline, 9-volt DC battery or optional AC adapter

Analyte	Range (ppm)	Test Method/No. of Reagents	No. of Tests	Cat. No.	Price
Colorimetric Single Test Kits					
Ammonia Nitrogen	0–5.0	Nessler (2)	100	22-278-565	Ea./439.95
Chlorine, free and total	0–4.0	DPD Tablets (2)	100	22-278-567	Ea./352.19
Chlorine, free and total	0–4.0	DPD Liquid (3)†	140	22-278-568	Ea./352.19
Nitrate Nitrogen	0–3.0	Cadmium Reduction (2)	50	22-278-575	Ea./458.12
Phosphate	0–3.0	Ascorbic Acid (2)	100	22-278-577	Ea./415.27
Visual Colorimetric/Titration Test Kits					
Acidity	1 drop = 0.1 or 1.0%	Dropper Bottle (2)	50 at 10%	22-307-838	Ea./30.45
Ammonia Nitrogen	0–2.0	Salicylate Octa-Slide (3)	50	22-307-840	Ea./64.00
Chlorine Bleach Iodometric Titration	0–10%	Direct Reading Titrator (3)	50 at 10%	22-307-845	Ea./42.75
Chlorine, free and total	0.2–3.0	DPD Tablet Octa-Slide (2)	50	22-278-553	Pk. of 50/54.10
	Low: 0.1–1.0/High: 1.0–6.0	DPD Tablet 2 Octa-Slide (2)	100	22-307-854	Ea./85.17
Dissolved Oxygen	0–10	Direct Reading Titrator (Powder, 5)	50 at 10ppm	22-307-856	Ea./45.90
	0–10	Direct Reading Titrator (Liquid, 5)	50 at 10ppm	22-307-857	Ea./45.95
Hardness	1 drop = 10 or 1gpg	Calcium, Magnesium, Total Hardness Dropper Bottle (5)	50 at 200ppm or 20 gpg	22-307-861	Ea./46.95
Iron	0.05–1.0	Total Iron Octet Comparator with Axial Reader (2)	30	22-307-847	Ea./82.95
P & T Alkalinity	0-200 as $CaCO_3$	Direct Reading Titrator (3)	50 at 200ppm	22-307-839	Ea./45.70
Phosphate	0–15	Stannous Chloride Octa-Slide	50	22-307-851	Ea./77.65
Sulfide	1 drop = 0.1 or 1.0%	Total, Dissolved Hydrogen Sulfide Dropper Pipet (8)	70 at 10%	22-307-862	Ea./123.45

† Refills available online; see 22-278-643, -645, and 647.

Lamotte* DPD Chlorine Secondary Standards Kit for Series 1200 Colorimeters

Used for periodically rechecking calibration of Series 1200 colorimeters

- Use once meter has been calibrated with a primary standard
- Can be inserted periodically for a quick check of instrument calibration

22-307-837

INCLUDES:

Blank and three standards, each with Certificate of Analysis, for low-, mid-, and high-range chlorine calibrations, plus plastic case

Description	Cat. No.	Each
Secondary Chlorine Standards	**22-307-837**	69.55

*Trademark. See Trademark Reference.

Prices subject to change.

CHEMetrics* Chemets* Self-Filling Ampules

Provide results in two minutes or less

13-299 Series

Test kits and refills for Chlorine (DPD), Copper, Dissolved Oxygen, Hydrogen Peroxide, Phenols, Phosphate, Silica, Sulfide and more. Designed for maximum simplicity and accuracy, Chemets 7mm diameter ampules feature tapered, prescored tips with reagent vacuum-sealed inside.

- To perform a test, simply immerse Chemets ampule in the sample, snap off tip, and the correct sample volume
  is quickly drawn inside the ampule
- In two minutes or less, the reaction between the sample and reagent yields a color—which can then be compared to appropriate color standard for quantification of results

ORDERING INFORMATION:

Refill packs of 30 ampules are also available.

INCLUDES:

Complete test kits contain 30 ampules of reagent, comparator(s), snap cup (holds water sample), instructions, and MSDS sheets. All components are housed in a sturdy, plastic case.

NOTE:

Comparators have two-year shelf life.

			Complete Test Kits		Ampule Refill Kits	
Analyte	**Range**	**Analytical Method**	**Cat. No.**	**Each**	**Cat. No.**	**Pack of 30**
Ammonia	0–1 and 1–10ppm	Nesslerization	**13-299-209**	57.41	**13-299-209A**	25.52
Chlorine (DPD)	0.1–2.0ppm	DPD	**13-299-248**	39.58	**13-299-508B**	22.86
Chlorine (DDPD)	0–1.0 and 1.0–5.0ppm	DDPD Chemistry	**13-299-215B**	54.79	**13-299-215C**	23.30
Copper	0–1.0 and 1–10ppm	Bathocuproine	**13-299-216A**	54.79	**13-299-216B**	22.86
Hydrogen Peroxide	0–1 and 1–10ppm	Ammonium Thiocyanate and Ferrous Iron	**13-299-232A**	54.79	**13-299-232B**	22.86
Iron	0–1.0 and 1–10ppm	1, 10 Phenanthroline	**13-299-213**	54.79	**13-299-213A**	22.86
Nitrate	0–1 and 1–5ppm	Cadmium Reduction/Azo Dye Formation	----	----	**13-299-508F**	28.98
Nitrite	0–0.4 and 0.40–2.0ppm	Azo Dye Formation	**23-291-215**	54.79	**13-299-242**	23.50
Oxygen (Dissolved)	0–1ppm	Rhodazine D*	**13-299-201**	47.96	**13-299-201A**	23.16
	1–12ppm	Indigo Carmine	**13-299-200**	47.96	**13-299-200B**	23.50
	0–40ppb	Rhodazine D	**13-299-202**	56.16	**13-299-202A**	33.21
	0–100ppb	Rhodazine D	**13-299-203**	56.01	----	----
Phenols	0–1 and 0–12ppm	4-Aminoantipyrine	**13-299-205**	57.41	**13-299-205A**	25.52
Phosphate	0–1 and 1–10ppm	Molybdenum Blue/Stannous Chloride	**13-299-216N**	54.79	**13-299-216P**	22.86
Silica	0–1 and 1–10ppm	Heteropoly Blue	**13-299-257**	54.79	**13-299-508L**	22.86
Sulfide	0–1 and 1–10ppm	Methylene Blue	**13-299-258**	54.79	**13-299-508M**	23.30

WATER QUALITY—SAMPLERS

Masterflex* E/S* Portable Sampler

Portable and versatile sampler

PORTABLE SAMPLER
PORTABLE SAMPLER

13-310-490

Encased in a high-visibility yellow polyethylene housing for easy recognition and recovery in the field. When closed and latched, sampler can float for 30 minutes if dropped in water.

- Features single-turn potentiometer, ON indicator, and three-position reversible flow/prime/purge switch
- Maximum speed of variable-speed drive is 400rpm, allowing flowrate adjustment for different applications
- Uses AC or 12VDC power supply, or can run up to four hours on rechargeable internal 12VDC battery
- Manufactured using ISO 9001:2000-certified processes

ORDERING INFORMATION:

Net weight: 17 lb. (7.8kg). Dimensions: 10½L × 11⅓W × 16"H (26.7 × 28.8 × 40.6cm).

INCLUDES:

Supplied as a complete system with Masterflex Easy-Load* pumphead, 50' of L/S* 24 Tygon* LFL PVC tubing (sampler can use other tubing sizes), power supply (AC adapter with 12' cord), internal battery (12VDC), and instruction manual.

WARRANTY:

Two years

COMPLIANCE:

CE-marked; IP54 rated.

Electrical Requirements	Cat. No.	Each
115V 50/60Hz	**13-310-490**	1451.28

Tubing Size	Sampler Flow Range
L/S 15	125 to 650mL/min.
L/S 24 (supplied)	210 to 1100mL/min.

WATER QUALITY—TEST STRIPS

EM* Quant* Test Strips

Easy-to-use test strips for field testing, preliminary semi-quantitative analysis or quality control

Incorporate classical organic and inorganic reaction mechanisms that allow rapid, highly selective ion screening.

M100071

- Ready to use directly or comes as a kit; all necessary detection chemicals, buffers, masking agents and stabilizers are incorporated into the reaction pads or in the kits
- For most applications, pretreatment is unnecessary when other ionic species are present at concentrations less than 1000ppm
- Use appropriate dilution procedures to test solutions with concentrations above the upper range of the test strip
- Test strips are supplied in sturdy aluminum cylinders labeled with instructions, color comparison scale and expiration date

ORDERING INFORMATION:

For additional analytes not featured here, contact your Fisher Scientific Customer Service Representative for ordering information.

INCLUDES:

Any necessary reagents in dispenser bottles

Test	Range	Cat. No.	Pack of
Aluminum	10–250ppm	**M10015-1**	100/85.22
Ammonium Kit	10–400ppm	**M100241**	100/69.67
Arsenic Kit	0.1–3.0ppm	**M100261**	100/102.90
Ascorbic Acid	50–2000ppm	**M100231**	100/54.20
Calcium Kit	10–100ppm	**M100831**	60/76.04
Carbonate Hardness	0–425ppm	**M106481**	100/54.20
Chloride	500–3000ppm	**M100791**	100/54.20
Chlorine Kit	4–120ppm	**M100431**	100/105.38
Chromate Kit	3–100ppm	**M100121**	100/65.13
Cobalt	10–1000ppm	**EM100021**	100/54.20
Copper	10–300ppm	**M100031**	100/54.20
Cyanide Kit	1–30ppm	**M100441**	100/95.15
Formaldehyde Kit	10–100ppm	**M100361**	100/63.27
Iron	3–500ppm	**M100041**	100/54.19
Lead Kit	20–500ppm	**M100771**	100/92.97
Manganese Kit	2–100ppm	**M100801**	100/79.73
Molybdenum Kit	5–250ppm	**M100491**	100/104.84
Nickel	10–500ppm	**M100061**	100/54.20
Nitrate	10–500ppm	**M100501**	25/35.74
Nitrate	10–500ppm	**M100201**	100/54.19
Nitrite	2–80ppm	**M100071**	100/53.95
Nitrite	0.1–3.0g/L	**M100221**	100/54.19
Peracetic Acid	5–50ppm	**M100841**	100/54.20
Peroxide	0.5–25ppm	**M100111**	100/53.95
Peroxide	1–100ppm	**M100811**	100/54.19
Potassium Kit	250–1500ppm	**M100421**	100/74.65
Silver, Fixing Bath	0.5–10g/L	**M100081**	100/55.74
Sulfate	200–1600ppm	**M100191**	100/54.20
Sulfite	10–400ppm	**M100131**	100/53.95
Tin Kit	10–200ppm	**M100281**	50/83.22
Total Hardness	75–500ppm	**M100461**	100/47.36
Total Hardness	40–230ppm	**M100251**	100/54.20
Zinc Kit	10–250ppm	**M100381**	100/73.26

WATER QUALITY—TOXICITY TESTING

Millipore* Microbial Count Samplers

Sterilized, individually packaged, ready-to-use dip testers for Total Count and HPC Total Count

NEW

MHPC10025

- Convenient alternative to Standard Methods MF method for routine monitoring of microbiological organisms
- Consist of plastic paddle with air vent, filter in contact with nutrient-containing pad, and plastic sampling/incubation case
- 0.45μ filter is marked with a grid to aid in counting colonies on its surface
- Incubation time: 48 to 72 hours at 25° to 35°C (77° to 95°F)

NOTE:

Magnification of colonies is recommended.

Description	Applications	Color	Cat. No.	Pack of 25
HPC Total Count	Food/Beverage; Dental Unit Water; Dialysate; Pharmaceutical; and Cosmetic	Red	**MHPC10025**	104.39
Total Count	Food/Beverage	White	**MT0010025**	121.00

WAX

Apiezon* Wax W

Hard permanent vacuum sealing or mounting wax

- Vapor pressure less than 8 × 10^{-7} Pa (4.5 × 10^{-9} torr) at 20°C
- Softening point, 80° to 90°C (176° to 194°F)
- Resistant to etching fluids

APIEZON
W
WAX
APIEZON
Q
W
WAX

14-638-25C

ORDERING INFORMATION:

Supplied in packs of 25 sticks; total weight 1 lb. (500g).

Cat. No.	Pack of 500	Case of 5 Pk.
14-638-25C	216.34	924.51

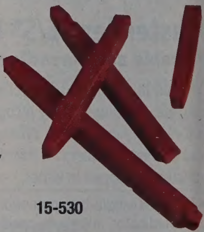
Red Sealing Wax

Seals corks in bottles

- Also for sealing packages, samples, communications, and various apparatus
- Length of stick, 11" (28cm)

ORDERING INFORMATION:

Supplied in packs of four sticks; total weight, 1 lb. (454g).



15-530

Cat. No.	Pack of 4
15-530	20.40

LOOKING FOR MORE WAX?

For our entire offering of waxes,

Visit www.fishersci.com and search for Wax

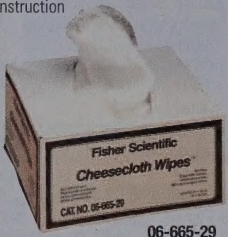
WIPERS

GENERAL-PURPOSE

*Fisherbrand** Certified Cheesecloth Wipes

Reagent-grade quality

- 100% brillant white, pure cotton construction will not scratch sensitive surfaces
- Have a high degree of cleanliness, softness, absorbency and strength
- Can be used to safely clean microscope and camera optical parts, as well as delicate glassware, syringes, pipets, and pH electrodes
- Absorb six times their weight in liquids and are useful for mopping up solvents and aqueous solutions
- Inert to even harsh solvents; ideal as filtering material
- Grade 10 (mesh size)



06-665-29

ORDERING INFORMATION:

Standard wipes folded to 9" square that unfolds to 18 × 36" (46 ×91cm); 60 per dispenser box (two boxes per pack). Mini wipes folded to 4" square that unfolds to 7 × 14" (17.8 " 35.6cm); 200 wipes per dispenser box. Wipes individually dispensed.

COMPLIANCE:

Meet USP and Federal Specification CCC-G-101c.

Description	Size	Cat. No.	Pack of
Standard Wipes	18 × 36" (46 × 91cm)	06-665-29	2/67.51
Mini-Wipes	7 × 14" (17.8 × 35.6cm)	06-665-28	200/30.34

Sofwipe* Cheesecloth Wipers

Biodegradable and silicone-free

- 100% woven cotton
- No ozone-depleting agents; incinerable
- Useful for cleaning, polishing, straining and filtering
- **Washable** style in Grade 40 fine weave (24 × 20 threads/sq. in.)
- **Heavy-duty** style is Grade 50 closely knit weave (28 × 24 threads/sq. in.)

ORDERING INFORMATION:

In handifold bolts of 70 yd. (64m).

sofwipe
cheese cloth
100% COTTON
SOFT & LINT FREE
ABSORBANT
REUSABLE

06-665-18

Description	Cat. No.	Each	Case of 10
Washable	06-665-18	154.17	1317.67
Heavy-duty	06-665-25B	172.08	1470.75

*Fisherbrand** Optik-Wipes* Premoistened Wipers

Nonwoven cloth wipes premoistened with a unique formulation

- Cleanroom-grade cellulose and polyester blend cloth is soft and lint-free; won't scratch surfaces or fall apart like paper wipes
- Designed specifically for wiping goggles, lenses, eyeglasses, gauge windows, fume hood windows, optical parts and microscope/magnifiers
- Easily remove oil, grease and lint from either glass or plastics
- Recloseable container dispenses single wipes, eliminates contamination from dust or dirt

OPTIK™ WIPES

15-077-63

ORDERING INFORMATION:

Packaged 100 wipes pér polyethylene canister.

Size	Cat. No.	Each
6 × 9" (15 × 23cm)	15-077-63	12.14

KimWipes* Delicate Task Wipers

Use for polishing glassware, cleaning instruments, or other delicate tasks

- Extra low-lint wipers made from 100% virgin wood fibers
- Soft, nonabrasive cellulose-fiber wipers won't scratch most delicate surfaces
- Absorb many times their own weight
- Handy one-at-a-time dispensing packs with special plastic guard reduce airborne lint, keep contaminants out of box, and reduce electrostatic discharge

KIMTECH Science
Kimwipes
Delicate Task Wipers
Essuie-tout pour tâches délicates
Paños para tareas delicadas
280

06-666A

Size	Mfr. No.	Cat. No.	Pack of	Case of
1-Ply				
4.4 × 8.4" (11.2 × 21.3cm)	34120	06-666	----	8400/166.96
4.4 × 8.4" (11.2 × 21.3cm)	34155	06-666A	280/5.27	60 Pk./243.41
11.8 × 11.8" (30 × 30cm)	34133	06-666-1A	----	2940/104.72
14.7 × 16.6" (37.3 × 42.2cm)	34256	06-666C	140/13.62	15 Pk./175.69
2-ply				
11.8 × 11.8" (30 × 30cm)	34705	06-666-11C	----	1785/131.35
14.7 × 16.6" (37.3 × 42.2cm)	34721	06-666-11	90/20.30	15 Pk./269.52
3-Ply				
11.8 × 11.8" (30 × 30cm)	34743	06-666-11D	119/18.35	15 Pk./243.27

ACCESSORIES

*Fisherbrand** Acrylic Holders

Extra weight for one-hand dispensing

- Clear holder mounts to wall or bench with two strips of double-sided tape or mounting screws (not included)
- Two sizes for small and large Kimwipes* boxes

06-666-51

Size	For Box Size	Cat. No.	Each
Small	4½ × 8½" (11 × 22cm)	06-666-50	19.57
Large	15 ×17" (38 × 43cm)	06-666-51	30.46

Kimwipes* Lens Cleaning Stations

Use anywhere glasses or safety lenses are worn

- 4½ × 8½" (11 × 22cm) wipers won't scratch glass or plastic lenses when used wet
- Silicone-free, antistatic, antifog cleaning solution removes dirt quickly and easily
- Disposable, self-contained stations resist liquids and hug wall, when used with 17-228C dispenser, sold separately on our Web site

34644
KIMTECH Science
1120

17-228B

INCLUDES:
1120 wipers and 16 oz. (473mL) of cleaner

Mfr. No.	Cat. No.	Each	Case of 4
34644	**17-228B**	25.68	90.65

Surpass* Facial Tissue

Signal* feature alerts you when it's time to change the box

- Soft, smooth, high-quality, two-ply tissue
- Made from 80% recycled paper

ORDERING INFORMATION:
100 white tissues per box

COMPLIANCE:
Meet EPA guidelines with a minimum of 10% post consumer waste.

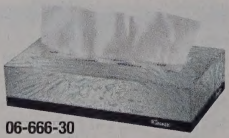
06-666-69

Size	Mfr. No.	Cat. No.	Case of 30
8 × 8.3" (20.3 × 21.1cm)	21340	**06-666-69**	40.85

Kleenex* Brand Facial Tissue

Polyshield opening protects unused tissues and improves dispensing

- Two-ply facial tissues in space-saving boxes
- White sheets; last 10 sheets are peach color to signal it's time to reorder



06-666-30

ORDERING INFORMATION:
Tissues measure 8½ × 9" (22 × 23cm).

Description	Mfr. No.	Cat. No.	Case of
Box of 100	21400	**06-666-30**	36/79.45
Box of 125	21606	**06-666-71**	48/118.18

Scott* and Kleenex* Folded Paper Towels

Offer excellent absorbency and hand-drying performance

- Special drying process produces a softer finished towel
- Reliable quality, softness and absorbency means fewer towels used for better economy
- Available in C-fold and multifold styles

Scott
Scott
Scott
Scott

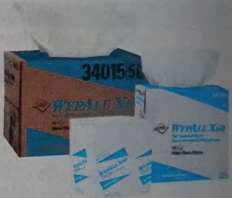
19-120-476

Description	Quantity per Pack	Mfr. No.	Cat. No.	Case of
Kleenex C-Fold	150	01500	**06-666-114**	2400/89.50
Scott C-Fold	200	01510	**06-666-32B**	2400/57.59
Scott Multifold	250	01804	**19-120-476**	4000/54.94

WypAll* X60 Wipers and Towels

Fast absorption and outstanding tear resistance

- Made from Hydroknit*, an advanced wiper material manufactured using jets of water to bond soft, absorbent paper to extra-strong, nonwoven fabric
- Reinforced for extra scrubbing and cleaning power
- No adhesives or binders—soft enough for face and hands
- **WypAll* Teri* Professional Towels** are reinforced, multipurpose wipers for use in health clubs, schools, mining, and manufacturing
- White



Left to right: 19-130-1633, 15-235-61, 15-235-79

Size	Packaging	Mfr. No.	Cat. No.	Pack of	Case of
X60 Wipers					
9.1 × 16.8" (23.1 × 42.7cm)	Pop-Up* box, 126 count	34790-50	**15-235-79**	----	1260/ 86.36
11 × 23" 28 × 60cm)	¼ fold, carton pack, 100 count	34770-50	**15-235-61**	100/31.12	9 Pk./ 242.28
12.5 × 14.4" (32 × 36.6cm)	¼ fold, carton pack, 76 count	34865-50	**15-235-77**	----	912/ 161.23
12.5 × 16.8" (32 × 42.7cm)	Brag* Box, 180 count	34015	**19-130-1633**	180/18.23	----
12.5 × 13.4" (32 × 34cm)	Roll, 1100 count	34955-50	**19-130-1632**	1/86.64	----
Teri Professional Towels					
22.5 × 39" (57.1 × 99cm)	Flat Sheet, 100 count	35010-50	**15-235-76**	----	300/ 162.20

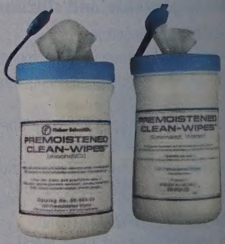
DISINFECTANT

*Fisherbrand** Premoistened Wipes

Ideal for cleaning or wiping optical parts, glassware, electrodes, cuvets and microscopes

Nonwoven cloth wipes available dry, or premoistened with 100% pure deionized water or a blend of pure reagent-grade 70% isopropyl alcohol and 30% deionized water.

- Cellulose and polyester blend cloth is soft and lint-free; will not scratch surfaces or fall apart like paper wipes
- Recloseable container dispenses single wipes, eliminates contamination from dust and dirt



06-665-24 and 06-665-23

ORDERING INFORMATION:
Wipes measure 6 × 9" (15 × 23cm); packed 100 per polyethylene canister.

Premoistened with	Cat. No.	Each
Deionized water	**06-665-23**	11.30
Deionized water and alcohol	**06-665-24**	22.03
Dry	**06-664-14**	7.97

*Fisherbrand** BloodBloc* Biohazard Wipes

Prevent leakage of fluids and chemicals to hands, gloves and work surfaces

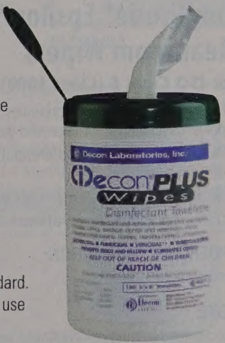
06-670-51

- Soft, white absorbent wipe with bright-orange polyethylene backing is impermeable to blood, body fluids, and strong solvents
- Nonwoven cellulose captures and retains fluid; nonlinting for use with delicate instrumentation such as blood counters
- Flexible backing prevents soak-through of pathogens and chemicals to help minimize cross-contamination
- Can also be used as mats and liners
- One time use only

Size	Cat. No.	Pack of	Case of
Standard Absorbency			
3 × 3" (8 × 8cm)	**06-670-1**	250/25.50	8 Pk./174.34
4 × 4" (10 × 10cm)	**06-670-35**	250/29.35	8 Pk./200.67
16" × 100' roll (41cm × 30.5m roll)	**06-670-55**	1/122.99	2 Pk./223.62
Heavy Absorbency			
3 × 3" (8 × 8cm)	**06-670-49**	200/19.82	10 Pk./169.39
4 × 4" (10 × 10cm)	**06-670-50**	200/22.64	10 Pk./193.53
8 × 9" (20 × 23cm)	**06-670-51**	50/31.20	8 Pk./213.32
11 × 16" (28 × 41cm)	**06-670-52**	----	200/174.71
16 × 16" (41 × 41cm)	**06-670-53**	----	125/153.41
16" × 100' roll (41cm × 30.5m roll)	**06-670-54**	1/126.56	2 Pk./230.11
Super Absorbency			
3 × 3" (8 × 8cm)	**06-670-36**	200/22.77	10 Pk./194.64
4 × 4" (10 × 10cm)	**06-670-5**	200/24.25	10 Pk./207.23
8 × 9" (20 × 23cm)	**06-670-15**	50/28.94	8 Pk./197.90
14 × 16" (36 × 41cm)	**06-670-40**	----	100/113.38
16 × 22" (41 × 56cm)	**06-670-38**	----	100/163.08
16" × 100' roll (41cm × 30.5m roll)	**06-670-48**	1/153.52	2 Pk./279.12

CiDecon* Plus Wipes

Premoistened disinfectant wipes for use on hard surfaces



04-355-87

- Achieve hospital disinfection in three minutes and maintain continual residual bacteriostatic activity for up to six months
- Economical, durable wipes display superior efficacy against a broad range of pathogenic organisms
- Tuberculocidal, virucidal, bactericidal, and fungicidal

ORDERING INFORMATION:
Size: 5 × 8" (12.7 × 20.3cm).

COMPLIANCE:
Meet OSHA Bloodborne Pathogen Standard. EPA registered. FDA 510K clearance for use on medical equipment and instruments.

Packaging	Cat. No.	Each	Case of 12
Pop-up canister (180 wipes)	**04-355-87**	27.38	280.77

CiDecon* Disinfectant Wipes

Hard-surface disinfectant wipes

Provide broad spectrum efficacy against bacteria, viruses, and fungi, including HIV-1 and TB.

CiDeconWipes
Disinfectant Wipes
04-355-82

ORDERING INFORMATION:
Size: 6 × 10½" (15.2 × 26.7cm)

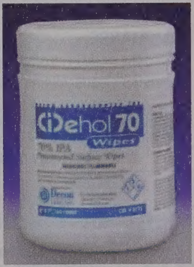
COMPLIANCE:
Meet OSHA bloodborne pathogens standard.
EPA registered.

Packaging	Cat. No.	Each	Case of 6
Pop-up canister (65 wipes)	**04-355-82**	29.94	153.52

CiDehol* 70 Wipes

NEW

Ideal for cleaning and decontaminating lab surfaces, production areas and equipment



04-355-300

- Hard-surface alcohol wipes in canister
- Presaturated with 70% isopropyl alcohol (IPA) and 30% USP grade water
- Solution evaporates completely; no rinsing required

Packaging	Cat. No.	Each	Case of 12
Canister (160 wipes)	**04-355-300**	24.79	258.65

Bacdown* Antimicrobial Skin Wipes

Cleans hands when soap and water are unavailable

BAC DOWN
Antimicrobial Skin Wipes
Fisher Scientific
04-355-60

- Textured towels are sturdy enough to provide a thorough hand scrubbing that meets OSHA requirements
- Specially formulated with cleansers and sanitizing agents to remove contaminants and skin conditioners to leave hands feeling soft and protected
- Individually packaged wipes are nondrying

ORDERING INFORMATION:
Size: 5 × 8" (12.7 × 20.3cm).

COMPLIANCE:
Meet OSHA requirement for antiseptic hand washing

Packaging	Cat. No.	Pack of 50	Case of 20 Pk.
Individually Wrapped	**04-355-60**	11.98	199.71

HYPE-WIPE* Disinfecting Towelettes with Bleach

Approved for new kill claims and contact times

- One-minute kill time for TB, streptococcus, salmonella, pseudomonas, and vegetative cells of *Clostridium difficile*; two-minute kill time for MRSA, VRE, and staphylococcus
- Premoistened with a formulation of 0.525%, 1:10 dilution of sodium hypochlorite towelettes—eliminates daily mixing of bleach
- Safe to use on glass, ceramics, plastic, and stainless steel; not for use on aluminum
- Standard size towelette can disinfect a 40 square-foot area
- Mini HYPE-WIPE towelettes are excellent for disinfecting glucometers, blood coagulation devices, as well as small spill cleanup

HYPE-WIPE®
DISINFECTING TOWEL WITH BLEACH
Keep Out of Reach of Children
CAUTION
current technologies, inc.
RE-ORDER # 9103

14-412-56

ORDERING INFORMATION:
Individually packaged. One-year shelf life with expiration date on each pouch.

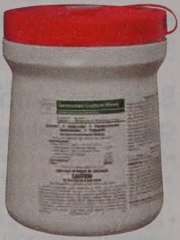
COMPLIANCE:
Passed the AOAC Hard Surface Disinfection Carrier test. EPA registered as a one-step cleaner/disinfectant on countertops, benchtops, and equipment.

Size	Open W × L	Mfr. No.	Cat. No.	Case of 100
Standard	6 × 12" (15.2 × 30.5cm)	9103	**14-412-56**	88.97
Mini	3 × 3" (7.6 × 7.6cm)	9803	**14-412-59**	50.34

Steris* Germicidal Surface Wipes

Nonwoven disposable cloths containing a stable, low pH disinfectant/deodorant cleaner

- Dual chain quaternary/isopropyl alcohol for use on hard, nonporous surfaces
- Provide broad spectrum biocidal activity, including *Mycobacterium tuberculosis* and HIV-1 virus



14-415-16

Size	Qty.	Cat. No.	Each	Case of 12
6 × 6¾" (15.2 × 17.1cm)	160 wipes	**14-415-16**	25.70	262.60
10 × 10" (25.4 × 25.4cm)	60 wipes	**14-415-17**	26.87	275.60

CLEANROOM

Amplitude* Delta* Specialty Cleanroom Wipers

NEW

For ISO Class 5 (Class 100) cleanroom applications

- Made of 100% polyester hydroentangled nonwoven for exceptional cleanliness, strength and durability
- Ideal for use with solvents
- Exceptional cleanliness
- Double packed to preserve product integrity

19-130-5922

ORDERING INFORMATION:
Basis weight, 68g/m².

Size	Mfr. No.	Cat. No.	Pack of
9 × 9" (23 × 23cm)	AMDE0001	**19-130-5921**	300/337.34
12 × 12" (30.5 × 30.5cm)	AMDE0002	**19-130-5922**	150/462.91

Amplitude* Helix* Economy Cleanroom Wipers

NEW

For ISO Class 5 (Class 100) cleanroom applications

- Made of 100% meltblown polypropylene for high solvent sorbent capacity
- Resistant to acids and chemicals
- Double packed to preserve product integrity

19-130-5936

ORDERING INFORMATION:
Basis weight, 71g/m².

Size	Mfr. No.	Cat. No.	Case of 2400
9 × 9" (23 × 23cm)	AMHX0003	**19-130-5936**	247.20

Amplitude* Epsilon* All-Purpose Cleanroom Wipers

NEW

For ISO Class 6 (Class 1000) cleanroom applications

- Made of hydroentangled premium polyester/cellulose for improved cleanliness
- Dye-fast blue color for differentiation from other wipers
- Strong and durable heavyweight wiper
- Double packed to preserve product integrity

19-130-5930

ORDERING INFORMATION:
Basis weight, 75g/m².

NOTE:
Recommend testing colorfastness with each process before using.

Size	Mfr. No.	Cat. No.	Pack of
9 × 9" (23 × 23cm)	AMEP0001	**19-130-5929**	300/235.02
12 × 12" (30.5 × 30.5cm)	AMEP0002	**19-130-5930**	150/340.02

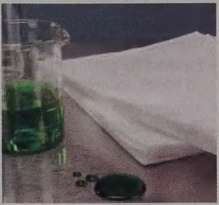
*Trademark. See Trademark Reference.

Amplitude* Sigma* All-Purpose Cleanroom Wipers

NEW

For ISO Class 6 (Class 1000) cleanroom applications

- Made of 100% hydroentangled polyester and cellulose nonwoven for high sorbency and cleanliness
- All-purpose, industry-standard wiper
- Double packed to preserve product integrity



19-130-5928

ORDERING INFORMATION:

Basis weight, 68g/m^2.

Size	Mfr. No.	Cat. No.	Pack of
9 × 9" (23 × 23cm)	AMSI0001	**19-130-5927**	300/212.18
12 × 12" (30.5 × 30.5cm)	AMSI0002	**19-130-5928**	150/296.94

LOOKING FOR HOUSEKEEPING PRODUCTS?

Fisher Scientific carries the complete series of Contec* Amplitude cleanroom wipers.

Visit www.fishersci.com and search for Amplitude Wipers

DuPont* Sontara* Nonpyrogenic Wipers

For ISO Class 5 (Class 100) cleanroom applications

- Ideal for wiping down products and cleaning equipment surfaces in sterile areas
- Sterile, nonpyrogenic nonwoven wiper made of contamination-control DuPont Sontara* fabric
- Unique surface texture provides effective cleaning and particle removal
- Low levels of particles and extractables
- High water and solvent sorbent capacity and rate

19-120-818

ORDERING INFORMATION:

Sterile packaging features peelable outer bag and linear tear inner bag; embossed lot numbers on both bag seals for lot traceability. Basis weight, 65g/m^2.

INCLUDES:

Certificate of Sterility and Certificate of Irradiation with each case.

COMPLIANCE:

Passes LAL test for endotoxins (<20 EU/device). Validated to a 10^{-6} SAL per AAMI/ISO 11137 Method 1 Guidelines for sterilization of medical devices.

Size	Mfr. No.	Cat. No.	Pack of 25	Case of 40 Pk.
12 × 12" (30.5 × 30.5cm)	NWPZ0002	**19-120-818**	14.53	484.34

PROSAT *Sterile** Nonwoven Presaturated Wipers

For ISO Class 4 (Class 10) applications

- Ideal for cleaning specialty equipment or process tools in the biotech, pharmaceutical and medical device industries
- Conveniently presaturated with 70/30 blend of semi-conductor grade IPA and DI water or 70/30 blend of denaturated ethyl alcohol and DI water to reduce VOC emissions and hazardous waste
- Individually lot numbered resealable pouches with tamper-evident labels ensure product integrity and cleanliness

19-170-356

COMPLIANCE:

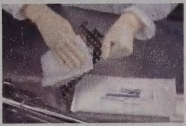
Validated sterile to a Sterility Assurance Level of 10^{-6} accordance with AAMI/ISO 1137 Method 1 Guidelines.

Size	Material	Mfr. No.	Cat. No.	Pack of	Case of
Presaturated with 70% IPA/30% deionized water					
9 × 9" (23 × 23cm)	100% Polyester	PS7030IR	**19-170-356**	200/137.90	4 Pk./ 501.45
9 × 11" (23 × 28cm)	Meltblown Polypropylene	PS911EB	**18-999-474**	48/16.03	48 Pk./ 641.12
9 × 11" (23 × 28cm)	Cellulose/ polyester	PSC20005	**19-150-0706**	28/437.16	----
Presaturated with 70% denatured ethyl alochol and 30% deionized water					
9 × 11" (23 × 28cm)	Meltblown Polypropylene	PS-911EB/ETOH	**19-037-876**	30/14.71	48 Pk./ 644.68

PROSAT* Nonwoven Presaturated Wipers

For ISO Class 5 (Class 100) cleanroom applications

- Nonwoven wipers presaturated with solution of 70% isopropyl alcohol and 30% deionized water (contain very low levels of sodium and other ions) or 91% isopropyl alcohol and 9% deionized water solution
- Eliminate the need to mix your own cleaning solutions, reducing worker exposure to hazardous chemicals
- Made of meltblown polypropylene, 100% polyester, or cellulose/polyester and effective and convenient for wipe downs and cleaning of process tools and other equipment



19-064-205

ORDERING INFORMATION:

Packaged in flat resealable pouches to preserve cleanliness and solvent saturation levels.

COMPLIANCE:

Meet SEMI specifications for metals and contaminants.

Size	Material	Mfr. No.	Cat. No.	Pack of	Case of 50 Pk.
Presaturated with 70% isopropyl alcohol/30% deionized water solution					
8 × 8" (20.3 × 20.3cm)	Meltblown polypropylene	PS-850	**19-150-0704**	250/ 393.90	----
9 × 11" (23 × 28cm)	Meltblown polypropylene	PS-911	**19-064-205**	30/ 11.96	478.50
9 × 11" (23 × 28cm)	Cellulose/ polyester	PSC20002	**19-150-0705**	50/ 459.55	----
9 × 11" (23 × 28cm)	Cellulose/ polyester	PSC20006	**19-150-0707**	28/ 414.59	----
Presaturated with 91% isopropyl alcohol/9% deionized water solution					
9 × 11" (23 × 28cm)	Meltblown polypropylene	PS-919	**19-121-001**	30/ 11.92	474.81
9 × 11" (23 × 28cm)	100% Polyester	PS-Si	**19-150-0709**	50/ 541.67	----

ProZorb* Nonwoven Cleanroom Wipers

For ISO Class 5 (Class 100) cleanroom applications

18-999-475B

- Textured polyester/cellulose nonwoven wiper
- Designed for nonabrasive applications in the biotech, pharmaceutical, electronics, semiconductor industries and more
- Surface texture promotes effective cleaning and particle removal
- Excellent sorptive capacity, particle removal capability, and low levels of particle and extractable contaminants
- No chemical binders or surfactants

ORDERING INFORMATION:

Basis weight: 58g/m².

Size	Mfr. No.	Cat. No.	Pack of	Case of 12 Pk.
4 × 4" (10 × 10cm)	PZ-44	**18-999-475A**	800/21.32	218.67
9 × 9" (23 × 23cm)	PZ-99	**18-999-475B**	200/22.90	234.90
12 × 12" (30.5 × 30.5cm)	PZ-1212	**18-999-475C**	800/288.35	----

Polywipe* Light Cleanroom Wipers

For ISO Class 6 (Class 1000) cleanroom applications

19-081-527

- Ideal for product or equipment wipe-down, surface preparation and back-end manufacturing in the electronics industry
- Lightweight wipers knitted from 100% polyester interlock knit provide maximum abrasion resistance
- Knife-cut edge for low particle generation
- Double bagged to ensure product integrity
- Lot numbers provide traceability

ORDERING INFORMATION:

Basis weight: 115g/m².

Size	Mfr. No.	Cat. No.	Pack of 150	Case of 12 Pk.
9 × 9" (23 × 23cm)	7070-99	**19-081-527**	27.71	284.21

SterileSorb* Sterile Cleanroom Wipers

For ISO Class 6 (Class 1000) cleanroom applications

CONTEC
CONTEC
19-130-1347

- Use for general-purpose cleaning in biotech, pharmaceutical, and medical device manufacturing environments
- Hydroentangled polyester/cellulose wiper is extremely absorbent, strong, and durable
- Low levels of particles and extractables
- Embossed lot numbers on inner and outer bags ensure traceability

ORDERING INFORMATION:

Basis weight, 67.8g/m². Gamma irradiated and validated sterile to a Sterility Assurance Level of 10^{-6} in accordance with AAMI guidelines; Certificate of Sterility available.

Size	Mfr. No.	Cat. No.	Case of
9 × 9" (23 × 23cm)	C2-99IR/25	**19-130-1346**	1050/390.80
12 × 12" (30.5 × 30.5cm)	C2-1212IR	**19-130-1347**	1500/407.68

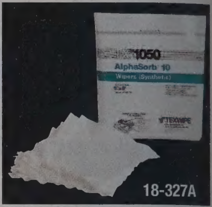
LOOKING FOR HOUSEKEEPING PRODUCTS?

Help keep your walls, floors and ceilings clean with the mops, cleaners, disinfectants and vacuums designed specifically for use in controlled environments.

Visit www.fishersci.com and search for Cleanroom Housekeeping

AlphaSorb* 10 Sealed-Border Polyester Wipers

For ISO Class 3 and 4 (Class 1 and 10) cleanroom applications



18-327A

- Two-ply, sealed-border wiper with highest sorptive capacity
- Excellent for picking up large amounts of liquids and for applying chemicals
- Abrasion-resistant wiper with soft, flexible hand
- Double-knit, no-run interlock construction of 100% continuous-filament polyester
- Ideal wiper for use in multiple environments
- Lot-to-lot traceability

ORDERING INFORMATION:

Available dry, sterile, and pre-wetted wtih 10% IPA. Basis weight: 185g/m².

Size	Mfr. No.	Cat. No.	Pack of	Case of
Dry Wipers				
9 × 9" (23 × 23cm)	TX1050	**18-327A**†	100/73.64	10 Pk./718.40
12 × 12" (30.5 × 30.5cm)	TX1052	**18-327B**‡	100/96.55	10 Pk./941.93
Sterile Dry Wipers				
12 × 12" (30.5 × 30.5cm)	TX3215	**19-036-86**‡	100/124.96	5 Pk./613.27
Wipers Wet with 10% IPA				
9 × 9" (23 × 23cm)	TX1057	**19-034-215**†	40/48.84	12 Pk./577.05

† Vectra processed.*

‡ Cleanroom laundered.

Alpha* 10 Sealed-Border Wipers

For ISO Class 3 to 4 (Class 1 to 100) applications

TX1010
Vectra Alpha 10
Vectra Sealed-Border Wipers
Texwipe
18-323A

- Sealed-border wiper for lowest resealable fibers and particles
- Vectra* processed for most consistent quality, low extractable ions and volatile residues, and hands-free quality inspection and stacking
- Optimum balance of wiping efficiency, abrasion resistance, and sorptive capacity
- Double-knit, no-run interlock construction of 100% continuous-filament polyester
- Ideal wiper for use in multiple environments
- Lot-to-lot traceability

ORDERING INFORMATION:

Available dry or sterile and prewetted with isopropanol. Basis weight: 130g/m². Sterile wipers 19-130-2061 packed 50 wipers/ flatpack, 5 flatpacks /case; 19165-653 packed 20 wipers per flexpack, 5 flexpacks/case.

Size	Mfr. No.	Cat. No.	Pack of 100	Case of
Dry Wipers				
9 × 9" (23 × 23cm)	TX1010	**18-323A**†	61.53	10 Pk./544.55
12 × 12" (30.5 × 30.5cm)	TX1012	**18-323B**‡	90.12	10 Pk./797.56
Sterile with 70% IPA and WFI				
12 × 12" (30.5 × 30.5cm)	TX3280	**19-130-2061**‡	----	5/529.61
Sterile with 70% IPA, Individually folded				
9 × 9" (23 × 23cm)	TX3285	**19-165-653**†	----	20/595.00

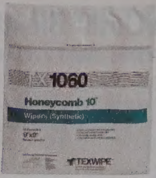
† Vectra processed.*

‡ Cleanroom laundered.

Honeycomb* 10 Sealed-Border Wipers

For ISO Classes 3 to 5 (Classes 1 to 100) applications

- Ideal for removing broken wafer fragments or process residues on smooth and uneven surfaces
- Unique surface texture encapsulates and removes grit during cleaning
- Excellent sorbency, good particle and fiber control, and abrasion resistance
- Vectra* processed for exceptional cleanliness and consistency



18-328A

ORDERING INFORMATION:

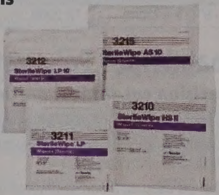
Basis weight: 170g/m²

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
9 × 9" (23 × 23cm)	TX 1060	**18-328A**	64.63	627.51

SterileWipe* Sterile Dry Wipers

For applying cleaning, sterilizing and disinfecting solutions in aseptic cleanrooms

Specifically developed for maximum control of particulate contamination in sterile environments.



Clockwise from top left: 18-335D, 19-036-86, 18-335B, 18-335C

SterileWipe LP

- Knitted from 100% continuous filament polyester
- Double-knit, no-run interlock construction ensures maximum abrasion resistance and low particle values
- Unique knit pattern also provides greater surface area for higher sorptive capacity and increased wiping efficiency
- Soft and nonabrasive; ideal for wiping sensitive surfaces
- Basis weight: 155g/m²

SterileWipe LP 10

- Sealed-edge wiper with no-run interlock double-knit construction of 100% continuous filament polyester
- All four edges thermally sealed to prevent release of fibers and particulates
- Designed for use in an ISO Class 4 (Class 10) cleanroom to further ensure ultralow particulate and extractable levels
- Ideal for wiping and spill control in critical, ultraclean environments
- Basis weight: 135g/m²

SterileWipe HS II

- Blend of 55% cellulose and 45% polyester combines the absorbency of natural fiber with the strength of synthetic fiber
- Ideal for applications where bacteriological contamination, particulates and extractables are concerns
- Appropriate for use in aseptic environments of the pharmaceutical, medical device and biomedical industries
- Basis weight: 67g/m²

ORDERING INFORMATION:

LP: 10 wipers/inner bag, 10 inner bags/outer bag, five outer bags/case in solvent-safe bags. Expiration date clearly marked on each package.

LP 10 and HS II: 20 wipers/inner bag, five inner bags/outer bag, five outer bags/case in solvent-safe bags. Expiration date clearly marked on each package.

INCLUDES:

Certificates of Processing and Compliance

COMPLIANCE:

All wipers sterilized by gamma radiation to a 10^{-6} Sterility Assurance Level in accordance with the Association for the Advancement of Medical Instrumentation guidelines.

Description	Size	Mfr. No.	Cat. No.	Case of 500
SterileWipe LP	9 × 9" (23 × 23cm)	TX3211	**18-335C**	284.51
SterileWipe LP 10	12 × 12" (30.5 × 30.5cm)	TX3212	**18-335D**	480.47
SterileWipe HS II	12 × 12" (30.5 × 30.5cm)	TX3210	**18-335B**	221.07

AlphaWipe* Polyester Wipers

For ISO Class 5 and 6 (Class 100 and 1000) applications

- Heavyweight, all-purpose wiper for surface cleaning and spill control
- Double-knit, no-run interlock construction of 100% continuous-filament polyester
- High sorptive capacity, good abrasion resistance, low releaseable particles
- Effective as a clean work surface and for packaging sensitive parts
- Lot-to-lot traceability

TX1013
AlphaWipe
TX1009
AlphaWipe
TX1004
AlphaWipe

18-324, 18-322, 18-320

ORDERING INFORMATION:

Laundered and cleanroom packaged in solvent-safe Bag-Within-A-Bag* cleanroom packaging. Basis weight: 165g/m².

Size	Mfr. No.	Cat. No.	Pack of	Case of
Stacked				
4 × 4" (10 × 10cm)	TX1004	**18-320**	300/66.62	20 Pk./1303.17
9 × 9" (23 × 23cm)	TX1009	**18-322**	150/49.39	10 Pk./483.53
12 × 12" (30.5 × 30.5cm)	TX1013	**18-324**	75/50.53	10 Pk./494.66
Bulk Packed				
9 × 9" (23 × 23cm)	TX1009B	**19-130-5610**	150/28.04	10 Pk./266.53
11 × 12" (28 × 30.5cm)	TX1003	**18-319**	250/111.16	6 Pk./655.88

Nylon MiracleWipe* Wipers

For ISO Class 5 to 6 (Class 100 to 1000) cleanroom applications

- Ultraclean, highly adsorbent wiper is static safe, abrasion safe, and run resistant
- Lint-free—exhibit extremely low particle levels
- Double-knit nylon construction creates large surface area that grips and holds contamination, preventing its transfer
- Cleaned and processed in an ISO Class 3 (Class 1) cleanroom environment in accordance with Fed. Spec. 209E

18-336B

ORDERING INFORMATION:

Basis weight: 170g/m².

Size	Mfr. No.	Cat. No.	Pack of	Case of
4 × 4" (10 × 10cm)	TX 4004	**18-336A**	600/117.83	8 Pk./926.95
9 × 9" (23 × 23cm)	TX 4009	**18-336B**	150/90.29	8 Pk./706.36
10 × 12" (25 × 30.5cm)	TX 4012	**18-336C**	200/187.69	4 Pk./738.31
14 × 18" (36 × 46cm)	TX 4018	**18-336D**	100/169.63	4 Pk./667.25

TechniCloth* Blended Wipers

For ISO Class 6 and 7 (Class 1000 and 10,000) applications

18-315A

- Economical all-purpose nonwoven wipers made from a blend of 55% cellulose and 45% polyester—combine the absorbency of natural fiber with the cleanliness and strength of synthetic fiber
- Hydroentanglement process uses jets of water to blend fibers, eliminating need for chemical binders
- Provide excellent bidirectional strength and very low solvent extractables levels
- Offer superior wet and dry strength, solvent-compatibility, and acid resistance
- Will not scratch or abrade delicate precision components—ideal for cleaning computer and other electronic equipment

ORDERING INFORMATION:

Available as dry wipers or in CleanPak* presaturated with 70% isopropyl alcohol. Basis weight: 67g/m².

Size	Mfr. No.	Cat. No.	Pack of	Case of
Dry Wipers				
4 × 4" (10 × 10cm)	TX 604	**18-315A**	1200/30.11	10 Pk./294.82
6 × 6" (15 × 15cm)	TX 606	**18-315B**	600/30.11	10 Pk./294.82
9 × 9" (23 × 23cm)	TX 609	**18-315C**	300/21.41	10 Pk./211.97
12 × 12" (30.5 × 30.5cm)	TX 612	**18-315D**	150/20.74	10 Pk./205.41
CleanPak Prewetted Wipers				
6 × 8" (15 × 20cm)	TX 1045[1]	**19-033-523A**	100/24.45	12 Pk./292.42
9 × 11" (23 × 28cm)	TX 1041[2]	**19-034-216**	70/26.08	12 Pk./310.24
9 × 11" (23 × 28cm)	TX 1065[3]	**18-031-081**	50/18.82	24 Pk./381.82

[1] *In a canister.*
[2] *In flip-top tub.*
[3] *In a FlexPack*.*

TechniCloth* II Blended Wipers

For ISO Class 6 and 7 (Class 1000 and 10,000) applications

18-330A, 18-330C

- Made of a hydroentangled blend of 55% cellulose and 45% polyester and treated with ITW Texwipe* proprietary ultralow particulate (ULP) finish
- Significantly reduces the wiper's particulate generation
- ULP finish formulated to resist extraction in commonly used solvents

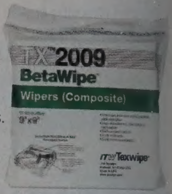
ORDERING INFORMATION:

Basis weight: 68g/m².

Size	Mfr. No.	Cat. No.	Pack of	Case of 10 Pk.
9 × 9" (23 × 23cm)	TX 1109	**18-330A**	300/28.57	279.74
12 × 12" (30.5 × 30.5cm)	TX 1112	**18-330C**	150/28.57	279.74
18 × 18" (46 × 46cm)	TX 1118	**18-330E**	75/28.64	280.51

BetaWipe* Composite Cotton Wipers

For ISO Class 7 (Class 10,000) cleanroom applications


18-331B

- Made of thermally bonded polypropylene/cellulose for high absorption and strong acid resistance
- Very soft texture
- Ideal for polishing and cleaning delicate instruments, especially scratch-sensitive surfaces.
- Excellent for removing acids, etchants, and chemical spills

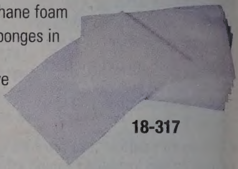
ORDERING INFORMATION:

Basis weight: 112g/m².

Size	Mfr. No.	Cat. No.	Pack of 100	Case of 10 Pk.
9 × 9" (23 × 23cm)	TX 2009	**18-331B**	26.35	239.53

FoamWipe* Polyurethane Foam Wipers

Precision cut for low particle generation


18-317

- Open-cell, 100 pore-per-inch polyurethane foam
- Excellent replacement for cellulose sponges in critical environments
- Can be used as a soft and nonabrasive work surface
- Silicone-free and solvent-safe Bag-Within-A-Bag* packaging

ORDERING INFORMATION:

Basis weight: 105g/m².

Size	Mfr. No.	Cat. No.	Pack of 60	Case of 8 Pk.
6 × 9" (15 × 23cm)	TX 704	**18-317**	26.51	192.80

Versawipe* Wipers

Lowest NVR in a nonwoven blended wiper

19-120-2433

Highly absorbent, durable wipers made of a nonwoven blend of 55% cellulose and 45% polyester.

- Ideal general wiping and spill control in controlled environments
- Low extractable levels and particle count
- Compatible with solvents
- Contain no chemical binders
- Excellent wet and dry strength
- Autoclavable

ORDERING INFORMATION:

4 × 4" wipers available 1200 wipers/case. 9 × 9" wipers available in packs of 300 and case of 10/pack. 12 × 12" wipers available 10 bags/case (150 wipers/bag).

Size	Mfr. No.	Cat. No.	Pack of 300	Case
4 × 4" (10.2 × 10.2cm)	TX624	**19-150-0105**	----	10/203.00
9 × 9" (23 × 23cm)	TX629	**19-120-2433**	20.24	10 Pk./184.01
12 × 12" (30.5 × 30.5cm)	TX622	**19-130-3863**	----	1500/237.02

*Trademark. See Trademark Reference.

Prices subject to change.

Kimtech Pure* W3 Wipers

For ISO Class 3 (Class 1) cleanroom applications

19-150-0297

- 100% continuous filament double-knit polyester construction absorbs liquid on contact
- Solvent- and abrasion-resistant
- Laser-sealed edges minimize particle generation
- Cleanroom laundered in water filtered to 0.2μm to minimize the potential for ion contamination

ORDERING INFORMATION:

Packaged flat and double-bagged with case liner. Certificates of Conformance and Irradiation (for sterile wipers) available.

COMPLIANCE:

Gamma irradiated wipers sterilized to 10^{-6} Sterility Assurance Level and compliant with AAMI guidelines.

Size	Mfr. No.	Cat. No.	Case of
Nonsterile			
9 × 9" (23 × 23cm)	76800	**19-150-0297**	10/700.38
12 × 12" (30.5 × 30.5cm)	76820	**19-150-0298**	10/1043.84
Sterile			
12 × 12" (30.5 × 30.5cm)	76840	**19-150-0299**	3/360.80

Kimtech Pure* W4 Task Wipers

For ISO Class 4 (Class 10) and higher applications

06-666-12

- Made of 100% polypropylene that resists acids, bases, and solvents
- Thermally bonded—no glues or binders
- Straight, clean, knife-cut edges minimize lint
- Available presaturated with 70% isopropyl alcohol in sterile and nonsterile wipers

ORDERING INFORMATION:

Dry wipers flat packed and double bagged with a case liner; presaturated wipers flat packed in resealable pouch with case liner.

Size	Mfr. No.	Cat. No.	Price
Dry Wipers			
4 × 4" (10 × 10cm)	33340	**19-130-1571**	Cs. of 3200/145.99
9 × 9" (23 × 23cm)	33390	**19-130-1572**	Cs. of 500/80.50
12 × 12" (30.5 × 30.5cm)	33330	**06-666-12**	Pk. of 100/43.48
Presaturated Wipers			
9 × 11" (23 × 28cm)	06070†	**19-130-1574**	Cs. of 400/121.55
Sterile Presaturated Wipers			
9 × 11" (23 × 28cm)	76490†	**19-150-0300**	Cs. of 10/188.28

†Packaged in resealable pouch.

Kimtech Pure* W6 Wipers

For ISO Class 6 (Class 1000) cleanroom applications

19-150-0302

- Made of a blend of 55% cellulose and 45% hydroentangled polyester without chemical binders or adhesives
- Excellent water absorbency
- Solvent resistant

ORDERING INFORMATION:

Packaged flat and double-bagged with case liner. Certificate of Conformance available.

Size	Mfr. No.	Cat. No.	Case of 10 Pk.
9 × 9" (23 × 23cm)	76600	**19-150-0302**	257.78
12 × 12" (30.5 × 30.5cm)	76610	**19-150-0303**	256.92

THE NEW FISHER SCIENTIFIC CONTROLLED ENVIRONMENTS CATALOG

Clean-room
Fisher Scientific
Controlled Environments

Features thousands of production supply, research and safety products for every controlled environment. Partnering with companies of all sizes across industrial markets including biotechnology, pharmaceutical, electronics, medical devices, food, agriculture and personal care, Fisher Scientific delivers cost savings and critical solutions for cleanrooms. Order your copy on our Web site.

WIRE

Chromel* Wire

Provides very efficient heating

ARCOR
18 AWG BNC
NICKEL CHROMIUM
RESISTANCE WIRE

15-540-2A

- 20% chromium, 80% nickel
- Highly resistant to oxidation
- Heats to 1090°C (1994°F)
- Lighter gauge wire also used to make inoculating needles

ORDERING INFORMATION:

Supplied in ¼ lb. (113g) spools. (Feet per spool varies; approximate values are given in chart.)

AWG Gauge	Dia.	Ohm/m	Meter/kg	Feet/lb.	Feet/ Spool	Cat. No.	Each
18	1.0mm	1.33	146	218	50	**15-540-2A**	90.70
20	0.81mm	2.08	229	341	79	**15-540-2B**	92.10
22	0.64mm	3.33	366	545	125	**15-540-2C**	91.00
24	0.51mm	5.28	581	865	198	**15-540-2D**	115.20
26	0.40mm	8.43	927	1380	315	**15-540-2E**	93.65

Multiple-Use Uninsulated Bare Copper Wire

15-545-1B

AWG Gauge	Dia. (mm)	Cat. No.	Each	Case of
1 lb. (454g) spools				
16	1.3	**15-545-2A**	55.80	12/569.15
18	1.0	**15-545-2B**	54.85	12/559.45
20	0.81	**15-545-2C**	50.35	12/513.55
22	0.64	**15-545-2D**	67.20	12/685.45
24	0.51	**15-545-2E**	35.40	8/240.70
¼ lb. (113g) spools				
16	1.3	**15-545-1A**	20.50	12/209.10
18	1.0	**15-545-1B**	21.05	12/214.70
20	0.81	**15-545-1C**	25.35	12/258.55

WRAPPING FILM

*Fisherbrand** Polyvinyl Wrapping Film

Pure food-grade polyvinyl chloride film in its own dispenser

- Gas permeable, making it especially good for covering culture trays
- Also useful for wrapping or covering any perishable material for refrigerator or freezer storage

15-610

Roll W × L	Cat. No.	Each
18" × 1000' (45cm × 305m)	**15-610**	47.85

*Fisherbrand** Clear Plastic Lab Wrap

Designed specifically for the laboratory

- Made of 100% ultraclean polyethylene—ensures sample purity and eliminates contamination
- High-cling properties make it ideal for wrapping of beakers, flasks, or Petri dishes with an extraordinarily tight seal that stays in place
- Low-tangle properties ensure wrap won't ball up when being handled
- Carton has convenient metal tear-off bar

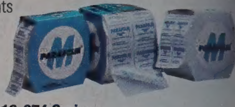
22-305-654

Roll W × L	Cat. No.	Each
12" × 100' (30.5cm × 30.5m)	**22-305-654**	10.08

Parafilm M* Laboratory Wrapping Film

Quickly, effectively seals labware

- Waterproof, moisture-proof film prevents sample evaporation, contamination; protects anhydrous materials
- Can be folded repeatedly and twisted around sharp surface without rupturing
- Increases approximately 200% when stretched lengthwise at 21°C (70°F)
- Partially returns to original length when tension is removed
- Becomes more flexible and softer as temperature increases
- Rolls are interlined with paper to prevent adhering



13-374 Series

ORDERING INFORMATION:

13-374-10, 13-374-12, and 13-374-16 rolls are packaged in cardboard dispensing cartons.

Roll W x L	Cat. No.	Each	Case of
2" × 250' (5cm × 76m)	**13-374-16**	33.75	24/675.03
4" × 125' (10cm × 38m)	**13-374-10**	33.70	12/345.61
4" × 250' (10cm × 76m)	**13-374-12**	58.48	12/621.01
20" × 50' (51cm × 15m)	**13-374-5**	72.21	6/383.41

Dynalon* Clear Acrylic Parafilm M* Dispenser/Cutter

Dust-free delivery of 4" wide (10cm) roll of Parafilm M wrapping film

- Easy to clean; ideal for cleanroom use
- Unit has serrated blade that cuts without deforming sheets

06-666-52

L x W x H	Cat. No.	Each
6⅜ × 5⅛ × 5¾" (16 × 13 × 14.6cm)	**06-666-52**	157.31

LOOKING FOR FOIL?

See Fisherbrand* aluminum foil on p. 4.

FISHER CHEMICAL PACKAGING

Leading the way in Safer, Greener, and Smarter Packaging.

Products in the Fisher Chemical line come in a wide variety of innovative packaging designed for safety, environmental protection, convenient handling and storage, and preservation of product integrity. Our packaging is compliant with all government regulations.

OUR RECENT INNOVATIONS INCLUDE:

ECOSAFPAK

- 100% recyclable and Styrofoam®-free to protect the environment
- Only package to pass the ISTA (International Safe Transport Association) "3A" test that ensures safety and handling

PRESSURE SENSITIVE SAFETY LABELS

- 23% larger label to provide more visible chemical name and attributes for safe handling and storage
- Color coded for appropriate storage handling
- Complete lot analysis on most solvents for purity and consistency assurance

NEW AND IMPROVED FISHERPAK® SOLVENT DELIVERY SYSTEM

- Available in color quick connects for safe handling and identification
- Bigger label for safe handling and storage
- Pressurized for high purity and consistency

FISHERLOCK™ TAMPER EVIDENT CAPS

- Provide a tight, tamper-evident, secure seal to assure chemical contents arrive fresh and unopened
- Caps are designed to resist back-off during transport, reducing risk of leakage

Visit www.fishersci.com/smartpack to learn more about our other innovative packaging including Safe-Cote® PVC, square poly bottles and specialized acid containers.

Through excellence in packaging, the Fisher Chemical line has provided a smarter, greener, safer way to conduct research and help prevent costly accidents.

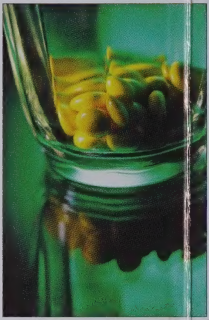
Sponsored by:

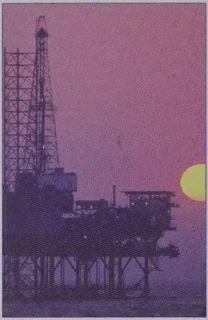
Fisher Chemical

RIGHT. READY. RICCA.

Your chemical solutions partner with Fisher Scientific

MULTIPLE NATIONWIDE MANUFACTURING LOCATIONS—ENSURES DELIVERY ANYTIME AND ANYWHERE





- Rapid nationwide delivery
- Tightest specifications in the industry with minimal lot-to-lot variation
- Three manufacturing sites—products arrive on time and to your specifications
- Packaged to your specific requirements
- Quality products made under cGMP compliant and ISO-9000 quality system
- Custom products manufactured to your specifications and schedule
- Contract packaging, blending and filling services
- Excellent environmental record

RICCA CHEMICAL MANUFACTURES A BROAD RANGE OF CHEMICAL TESTING REAGENTS FOR EVERY INDUSTRY:	
PHARMACEUTICAL	EP Solutions USP Test Solutions (TS) USP Volumetric Solutions (VS) USP Colorimetric Solutions (CS)
ENVIRONMENTAL	APHA Reagents SW-846 Reagents
CLINICAL	Stains Fixatives Preservatives
FOOD AND BEVERAGE	AOAC Reagents Conductivity Standards Ethanol Standards
PETROCHEMICAL	ASTM Reagents TAN/TBN Titrants E-200 Reagents Non-aqueous Titrants
FOOD AND BEVERAGES	AOAC Reagents Conductivity Standards Ethanol Standards
PULP/PAPER	TAPPI Reagents Permanganates Starches
ELECTRONICS	Sub-micron Filtered Bagged Low Particulate Standards Reagents

RICCA CHEMICAL SAVES YOU TIME AND MONEY WITH PRODUCTS SUCH AS:	
ELECTROCHEMISTRY	pH Reference Buffers Conductivity Standards Total Dissolved Solids (TDS) Standards Ion-Selective Electrode (ISE) Standards
TITRANTS	Acid/Base Non-aqueous Complexometric Precipitive
COLOR STANDARDS	United States Pharmacopoeia (USP) European Pharmacopoeia Gardner Hazen (Platinum/Cobalt)
INDICATORS	pH Universal Adsorption Oxidation-Reduction Complexometric

THIS END UP
FRAGILE LIQUID

Sponsored by: RICCA CHEMICAL COMPANY™

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For even more, visit our Web site. It's your link to more products, technical resources (including MSDSs online), literature, and special promotions.

Fisher Scientific

YOUR SOURCE FOR MORE THAN 60,000 LABORATORY CHEMICALS...

PRODUCT HELP IS ALWAYS AVAILABLE

Call our chemical service technical support at 1-800-227-6701

Trained chemical personnel will answer your questions about our chemicals and their applications. *(Available to customers in the continental United States, Alaska, Hawaii, Puerto Rico, and Canada Monday through Friday from 8:00 a.m. to 6:30 p.m. Eastern Standard Time.)*

Call our safety product technical support specialists at 1-800-772-6733

They will assist you in choosing the correct products for safely handling chemicals and for protecting laboratory workers and their environment. *(Available to customers in the continental United States, Alaska, Hawaii, Puerto Rico, Monday through Friday from 7:00 a.m. to 8:00 p.m. Eastern Standard Time.)*

Fax on demand MSDSs

Access FisherChemical and Acros Organics* Material Safety Data Sheets (MSDSs) and FisherChemical Certificates of Analysis through the FisherChemical Fax on Demand System **(201-703-3165)** or by visiting our Web site.

Terms and Conditions

Purchase terms and conditions, including information about orders, prices, payment methods, shipping, delivery, returns, Toxic Substances Control Act, safe handling and use of chemicals, and the Fisher Scientific Chemical Warranty can be found at the back of the catalog.

...FROM THE MANUFACTURERS YOU KNOW AND TRUST

Fisher Chemical

Fisher BioReagents®

SPEX CertiPrep

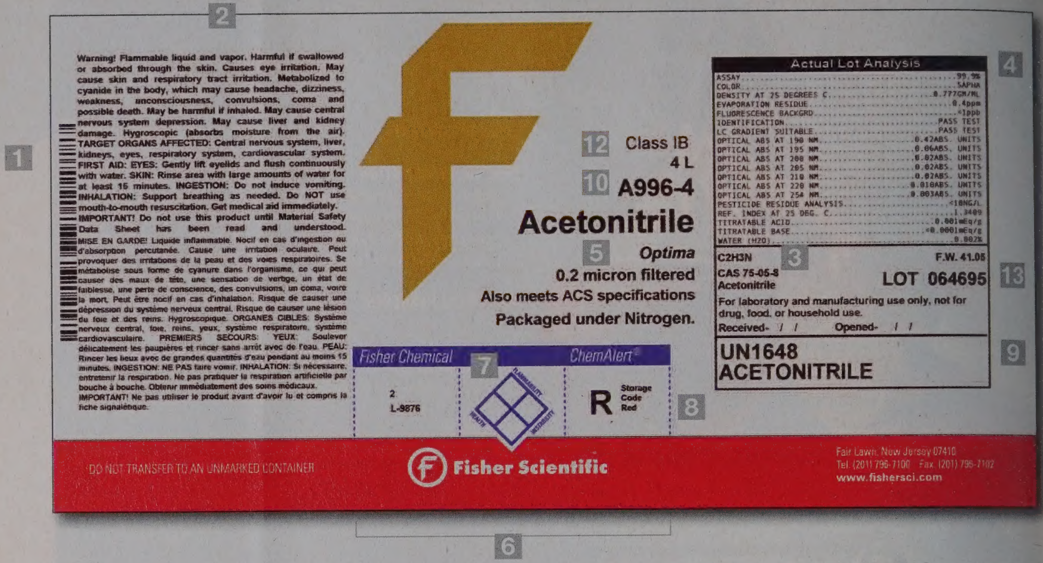
ACROS ORGANICS

MAYBRIDGE

EMD

ULTRA SCIENTIFIC

RICCA CHEMICAL COMPANY™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FLAMMABILITY
HEALTH
INSTABILITY

Warning! Flammable liquid and vapor. Harmful if swallowed or absorbed through the skin. Causes eye irritation. May cause skin and respiratory tract irritation. Metabolized to cyanide in the body, which may cause headache, dizziness, weakness, unconsciousness, convulsions, coma and possible death. May be harmful if inhaled. May cause central nervous system depression. May cause liver and kidney damage. Hygroscopic (absorbs moisture from the air). TARGET ORGANS AFFECTED: Central nervous system, liver, kidneys, eyes, respiratory system, cardiovascular system. FIRST AID: EYES: Gently lift eyelids and flush continuously with water. SKIN: Rinse area with large amounts of water for at least 15 minutes. INGESTION: Do not induce vomiting. INHALATION: Support breathing as needed. Do NOT use mouth-to-mouth resuscitation. Get medical aid immediately.

IMPORTANT! Do not use this product until Material Safety Data Sheet has been read and understood.

MISE EN GARDE! Liquide inflammable. Nocif en cas d'ingestion ou d'absorption percutanée. Cause une irritation oculaire. Peut provoquer des irritations de la peau et des voies respiratoires. Se métabolise sous forme de cyanure dans l'organisme, ce qui peut causer des maux de tête, une sensation de vertige, un état de faiblesse, une perte de conscience, des convulsions, un coma, voire la mort. Peut être nocif en cas d'inhalation. Risque de causer une dépression du système nerveux central. Risque de causer une lésion du foie et des reins. Hygroscopique. ORGANES CIBLES: Système nerveux central, foie, reins, yeux, système respiratoire, système cardiovasculaire. PREMIERS SECOURS: YEUX: Soulever délicatement les paupières et rincer sans arrêt avec de l'eau. PEAU: Rincer les lieux avec de grandes quantités d'eau pendant au moins 15 minutes. INGESTION: NE PAS faire vomir. INHALATION: Si nécessaire, entretenir la respiration. Ne pas pratiquer la respiration artificielle par bouche à bouche. Obtenir immédiatement des soins médicaux.

IMPORTANT! Ne pas utiliser le produit avant d'avoir lu et compris la fiche signalétique.

Class IB
4 L
A996-4

Acetonitrile

Optima
0.2 micron filtered
Also meets ACS specifications
Packaged under Nitrogen.

Actual Lot Analysis

ASSAY	99.9%
COLOR	SAPHA
DENSITY AT 25 DEGREES C	0.777GM/ML
EVAPORATION RESIDUE	0.4ppm
FLUORESCENCE BACKGRD	<1ppb
IDENTIFICATION	PASS TEST
LC GRADIENT SUITABLE	PASS TEST
OPTICAL ABS AT 190 NM	0.42ABS. UNITS
OPTICAL ABS AT 195 NM	0.06ABS. UNITS
OPTICAL ABS AT 200 NM	0.02ABS. UNITS
OPTICAL ABS AT 205 NM	0.02ABS. UNITS
OPTICAL ABS AT 210 NM	0.02ABS. UNITS
OPTICAL ABS AT 220 NM	0.010ABS. UNITS
OPTICAL ABS AT 254 NM	0.003ABS. UNITS
PESTICIDE RESIDUE ANALYSIS	<10NG/L
REF. INDEX AT 25 DEG. C	1.3409
TITRATABLE ACID	0.001mEq/g
TITRATABLE BASE	<0.0001mEq/g
WATER (H2O)	0.002%

C2H3N F.W. 41.05
CAS 75-05-8
Acetonitrile
LOT 064695

For laboratory and manufacturing use only, not for drug, food, or household use.

Received- / / Opened- / /

UN1648
ACETONITRILE

Fisher Chemical *ChemAlert*®

2
L-9876

R Storage Code Red

DO NOT TRANSFER TO AN UNMARKED CONTAINER

Fisher Scientific

Fair Lawn, New Jersey 07410
Tel. (201) 796-7100 Fax. (201) 796-7102
www.fishersci.com

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1 The bar code is an alphanumeric code widely used by industry for inventory and tracking control. This "three-of-nine" code meets the Health Industry Bar Code (HIBC) Supplier Labeling Standard as prepared by the Health Industry Business Communication Council (HIBCC).

2 This area contains the appropriate precautionary signal word, i.e., DANGER, WARNING, CAUTION, and highlights the potential health hazards, both acute and chronic, of the product.

3 In this area, the molecular formula and formula weight are indicated along with the product Chemical Abstract Service (CAS) Registry Number.

4 The Maximum Limits of Impurities are indicated.

5 The full Product Name and Purity Grade are listed.

6 **FisherChemical* ChemAlert Guide:** A three-part guide provides instant personal-protection information: the Safety Code, the NFPA Code and a Storage Code guide. The Date Received is blank so that the customer can write in the date the bottle was received to assist in inventory control.

7 **NFPA Code:** The National Fire Protection Association (NFPA) ratings provide information relating to the severity of health, flammability, reactivity, and related hazards that may be presented by short-term, acute exposure to material during handling under emergency conditions such as spills, leaks, and fires. Each section displays a numerical severity rating from four (most severe) to zero (least severe). The fourth section, as stipulated by NFPA, is left blank and is reserved for indicating any unusual reactivity with water or oxidizing properties. (For more information, see the Technical References section.)

8 **Storage Code:** This color-coded bar provides an instant guide to storage. The storage code is also spelled out for additional clarification. The five storage colors and their descriptions are listed on p. 2013.

9 The U.S. Department of Transportation (DOT) shipping information includes the DOT Proper Shipping Name and the UN/NA Number identifies the United Nations/North American numerical designation for transportation hazards.

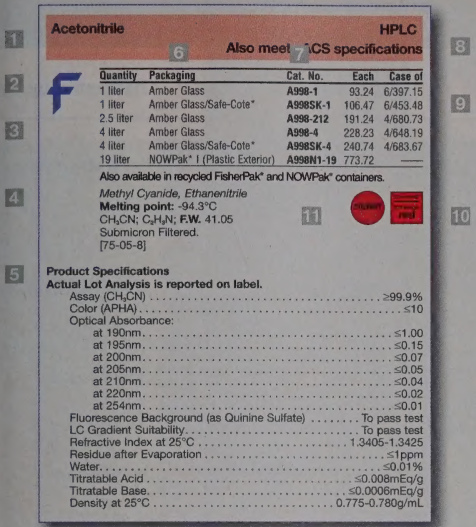
10 The catalog number is shown for identification and reference.

11 The address and telephone number of the manufacturer, Fisher Chemical, is listed.

12 **Package Size:** The amount of material per unit or case.

13 Lot Number

NOTE: *ChemAlert is an instant guide only. It should be supplemented by reading the rest of the label (which provides detailed instructions in the event of accidental exposure, spill, or fire, and applicable OSHA, DOT, and ANSI* data) and also by the appropriate Material Safety Data Sheet (MSDS) and standard references.*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SOLVENT
STORAGE red

Acetonitrile **HPLC**

Also meet ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1 liter	Amber Glass	**A998-1**	93.24	6/397.15
1 liter	Amber Glass/Safe-Cote*	**A998SK-1**	106.47	6/453.48
2.5 liter	Amber Glass	**A998-212**	191.24	4/680.73
4 liter	Amber Glass	**A998-4**	228.23	4/648.19
4 liter	Amber Glass/Safe-Cote*	**A998SK-4**	240.74	4/683.67
19 liter	NOWPak* I (Plastic Exterior)	**A998N1-19**	773.72	——

Also available in recycled FisherPak* and NOWPak* containers.

Methyl Cyanide, Ethanenitrile
Melting point: -94.3°C
CH_3CN; C_2H_3N; **F.W.** 41.05
Submicron Filtered.
[75-05-8]

Product Specifications
Actual Lot Analysis is reported on label.

Assay (CH_3CN) . . . . ≥99.9%
Color (APHA) . . . . ≤10
Optical Absorbance:
  at 190nm . . . . ≤1.00
  at 195nm . . . . ≤0.15
  at 200nm . . . . ≤0.07
  at 205nm . . . . ≤0.05
  at 210nm . . . . ≤0.04
  at 220nm . . . . ≤0.02
  at 254nm . . . . ≤0.01
Fluorescence Background (as Quinine Sulfate) . . . . To pass test
LC Gradient Suitability . . . . To pass test
Refractive Index at 25°C 1.3405-1.3425
Residue after Evaporation . . . . ≤1ppm
Water . . . . ≤0.01%
Titratable Acid . . . . ≤0.008mEq/g
Titratable Base . . . . ≤0.0006mEq/g
Density at 25°C 0.775-0.780g/mL

1 Product name
2 Company logo
3 Container size
4 Synonym(s), Formula, Formula Weight, CAS Registry Number. Also: physical data; special application notes.
5 Product specifications
6 Type of primary container
7 Catalog number
8 Purity grade. Grades of FisherChemicals are described on next page.
9 Price
10 Storage code color. ChemAlert* storage codes are described at right.
11 Spill cleanup kit symbol. See right for more information.

FINDING CHEMICALS IN THE LISTINGS

Analytical reagents can be found in the red-coded pages starting on p. 2016. Within the analytical reagents pages, there are several subsections for certain specialized chemicals such as deuterated solvents, ion exchange resins, and Karl Fischer reagents.

Fisher BioReagents* are in a separate section (color-coded purple) at the end of the analytical reagents listings. There are no subsections within the bioreagents pages; all bioreagents are listed strictly alphabetically.

Standards are in a separate section (color-coded gold) following bioreagents. There are several subsections within the standards pages, outlined in a Quick Index on p. 2278.

ACCEPTED NOMENCLATURE

- Chemical salts and compounds are listed under element name: "Sodium Benzoate," not "Benzoate of Sodium."
- Prefixes for organic compounds—such as alpha, iso, meta, secondary, and abbreviations thereof—do not affect alphabetical order. *(Exceptions: Cases where prefix is considered part of the name.)*
- Numerical prefixes, such as tri and tetra, are treated as an integral part of the name. The prefix mono is not used.

PACKAGING FOR SAFETY, CONVENIENCE, AND PRODUCT QUALITY

FisherChemical* analytical reagents come in a wide variety of innovative packaging designed for safety, environmental protection, convenient handling and storage, and preservation of product integrity. Packaging also meets current government regulations. Shipping cartons covered by the U.S. Department of Transportation (DOT) regulations also meet international hazardous materials regulations and standards. The primary container is included in the product description of most chemicals in this catalog. Primary containers include:

- Plastic and glass bottles, jars
- Specialized acid containers
- SafeCote* PVC-coated bottles
- SafeTin* cans
- Aluminum cans
- Square poly bottles
- Poly pails
- PolyPac* containers
- Poison Pack

CHEMALERT STORAGE CODES PROVIDE GUIDELINES

ChemAlert® STORAGE red	**RED (R):** Flammable. Store in an area segregated for flammable reagents.
ChemAlert® STORAGE blue	**BLUE (B):** Health hazard. Toxic if inhaled, ingested, or absorbed through skin. Store in secure area.
ChemAlert® STORAGE yellow	**YELLOW (Y):** Reactive and oxidizing reagents. May react violently with air, water, or other substances. *Store away from flammable and combustible materials.*
ChemAlert® STORAGE white	**WHITE (W):** Corrosive. May harm skin, eyes, mucous membranes. *Store away from red-, yellow-, and blue-coded reagents.*
ChemAlert® STORAGE gray	**GRAY (G):** Presents no more than moderate hazard in any of the categories above. For general chemical storage.

EXCEPTION: Reagent incompatible with other reagents of the same color bar. Store separately.

SPILL CLEANUP KIT SYMBOLS

To simplify ordering the appropriate spill cleanup kits, the following symbols have been used to identify chemicals that require special cleanup materials and the type of cleanup kit required. These are one-time-use kits containing everything necessary for spill cleanup.

Hg	**Mercury Warning.** This product contains Mercury.
ACID	**Acid Spill Emergency Cleanup Kit** for neutralizing and absorbing up to 1 liter of acid. **Cat. No. 18-061A**.
CAUSTIC	**Caustic Spill Emergency Cleanup Kit** for neutralizing and absorbing up to 1 liter of caustic. **Cat. No. 18-061C**.
SOLVENT	**Solvent Spill Emergency Cleanup Kit** for absorbing up to 4 liters of solvent. **Cat. No. 18-061B**.

FisherChemical*: Purity Grades for Every Application

GRADE	DEFINITION	APPLICATION	CERTIFICATE OF ANALYSIS
OPTIMA*	Acids and solvents of extremely high purity. Acids are analyzed for 65 metals by ICP/MS; impurity levels in ppt. Solvent impurity levels in ppm. UV absorbance curves and sample chromatograms available on request. For OPTIMA acids, a typical lot analysis is given in the catalog. Impurity levels in an actual lot received may vary from the amount listed.	HPLC, GC, plasma/ICP, spectrophotometry, and pesticide residue analysis	Provided with each shipment
GC *Resolv**	Solvents with the highest purity and lot-to-lot consistency. Free of contaminants to the ppb level, including those listed in Contract Laboratory Program Target Compound List. Meet ACS specifications. Chromatogram available on request.	Gas Chromatography (GC)	Provided with each shipment
HPLC	Solvents manufactured specifically for use with HPLC instruments. Meet all ACS specifications. Submicron filtered.	HPLC and spectrophotometry procedures	Available on request
Certified ACS	Reagent chemicals that meet or exceed the latest ACS Specifications. Actual lot analysis on label.	Analytical applications requiring tight specifications	Available on request
Certified ACS Plus	Acids that, in addition to meeting or exceeding the latest specifications of the ACS, are analyzed for more than 16 metals. Actual lot analysis on label.	Analytical applications with tighter metal specifications	Available on request
Certified	Reagent chemicals for which the purity standard is established by Fisher Scientific. Purity is guaranteed to meet published maximum limits of impurities.	General analytical procedures	Available on request
Plasma Grade	Solvents manufactured for use with plasma/ICP instruments. Impurity levels in ppt. Packaged in acid-cleaned polyethylene bottles.	Plasma/ICP, environmental testing, trace-metal analysis	Available on request
Environmental Grade	Solvents for use in HPLC analysis, trace-organic analysis, and environmental testing. Packaged in precleaned glass bottles in M3.5 (Class 100) cleanroom. Shipped with Certificate of Analysis.	HPLC, trace-organic analysis, environmental testing.	Provided with each shipment
Pesticide	Solvents for use in analysis of pesticide residue. Meet or exceed ACS standards of purity for pesticide residue analysis.	GC with electron capture detector (ECD), pesticide residue analysis	Available on request
USP/NF/FCC/ EP/BP/JP	Reagent chemicals that meet or surpass specifications of the United States Pharmacopeia (USP), the National Formulary (NF), the Food Chemicals Codex (FCC), the European Pharmacopeia (EP), the British Pharmacopeia (BP), and/or the Japanese Pharmacopeia (JP).	Food and drug laboratories, biological testing	20L or greater; 10kg or greater
Spectranalyzed*	Solvents for use in spectrophotometry. Also meet ACS specifications. Actual lot analysis on label.	Ultraviolet and visible wavelength detectors (UV-Vis)	Available on request
Biotechnology	Solvents and reagents that have been specially purified and assayed for biotechnology applications.	Electrophoresis, molecular biology, sequencing, and peptide and oligonucleotide synthesis	Available on request
Scintanalyzed*	Solvents, fluors, and prepared cocktails for liquid scintillation counting. Includes nonflammable, nontoxic, biodegradable ScintiSafe* cocktails.	Liquid scintillation counting	Available on request
Electronic	Solvents manufactured to ensure low levels of metal contamination. Meet Semiconductor Equipment and Materials Institute (SEMI) requirements. Actual lot analysis on label.	Electronics and circuit board manufacturing	Available on request
TraceMetal	Acids manufactured to achieve low metal contamination measurable in ppm to ppb range. Each lot is analyzed for more than 55 metals by ICP/MS. For TraceMetal acids, a typical lot analysis is given in the catalog. Impurity levels in an actual lot received may vary from amounts listed.	Primarily used in digestion of samples prior to instrument (ICP) analysis	Provided with each shipment
Histology	Solvents and products that are specially prepared for use in the histology laboratory setting. Solvents are filtered for tissue processing applications.	Tissue processing, clinical or histology procedures	Available on request
Laboratory and Technical	Chemicals of reasonable purity for situations where no official standard for quality or impurity levels exist.	Manufacturing and general laboratory use	Available on request

CONVENIENT ONSITE REPLENISHMENT
CORE
Fisher Scientific

CHEMICAL MANAGEMENT SERVICES

Minimizing the costs, risks and environmental impact of chemical operations

Chemical Management Services (CMS) provide a modular solution to manage, track, minimize and dispose of chemicals, solvents and reagents. CMS also provides services for Environmental Health and Safety (EH&S) groups to improve regulatory compliance and reporting.

Fisher Scientific has assembled a unique team of industry-leading chemical management service providers to develop a customizable, modular approach to supporting your chemical management needs across the entire life cycle. The services allow for cost-effective control of:

- Chemical life cycle process from beginning to end
- Chemical supplies from identification through disposal
- Chemical management data collection from initial request to waste removal, including chemical tracking activities

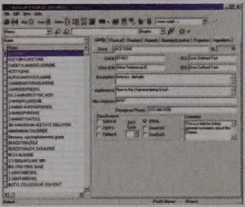
The Chemical Management Services portfolio includes:

- Sourcing/Purchasing Support
- Chemical Receiving Management
- Chemical Information Management
- Inventory Management
- Onsite Waste Management
- Waste Disposal Management
- EH&S Services

ChemSW* CIS Chemical Inventory System*—CISPro Desktop

High-performance, relational database system for tracking chemicals and laboratory supplies

Streamlines procurement, meets regulatory reporting requirements, and minimizes disposal costs.



CSW-1222015

- Tracks and monitors chemical amount and usage
- Generates reports, some of which list chemicals by location, vendor, name, CAS number, and formula
- Available populated with current information from Fisher Scientific, simplifying chemical look-up and ordering
- Provides quick access to hazard information during an emergency
- Includes structure and sub-structure searching capabilities
- Contains online help and a complete 11-part tutorial
- Features automatic e-mail notifications, easy-to-use inline filtering for loading and saving SQL queries, and secure customizable password support
- For use with Windows* 98, ME, NT, 2000, or XP

ORDERING INFORMATION:

Integrated remote inventory bar coding module and infrared communications interface to a handheld scanner, LaserLite Pro, (CSW-90051 sold separately). Contact your Fisher Scientific Customer Service Representative for details.

REQUIRED ACCESSORIES:

- Minimum requirements for operation:
- Pentium* class PC, 64MB RAM, CD-ROM drive, and hard drive with 50MB free space.

Configured for	Cat. No.	Each
1 User	**CSW-1222001**	1999.07
5 Users	**CSW-1222005**	4999.26

Acacia (Gum Arabic) — Laboratory

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**G85-500**	114.39	6/511.23

Gum Arabic
[9000-01-5]

ChemAlert STORAGE blue

Acetaldehyde — Certified

Quantity	Packaging	Cat. No.	Each	Case of
250mL	Amber Glass	**01004-250**	62.96	6/295.20

CH_3CHO
C_2H_4O
F.W. 44.05
Melting point: -123.5°C
Boiling point: 20°-21°C
Flash point: -38° to -40°C
[75-07-0]
Recommended storage: Store in explosion-proof refrigerator.

ChemAlert STORAGE red

Product Specifications

Acutal Lot Analysis is reported on label.

Assay (GC)	≥99.5%
Color (APHA)	≤10
Refractive Index at 20°C	1.3316 ± 0.001
Density at 16°C	0.788 ± 0.005

Acetate Buffer — APHA/ASTM*/EPA for Residual Chlorine

pH 4.0

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Plastic	**50-16**	23.89	- - - -
1L	Plastic	**50-32**	31.67	- - - -
4L	Plastic	**50-1**	93.23	- - - -
10L	Cubitainer*	**50-25**	122.58	- - - -
20L	Cubitainer	**50-5**	279.52	- - - -

Acetic Acid, Glacial — Optima*

Quantity	Packaging	Cat. No.	Each	Case of
250mL	PTFE	**A465-250**	290.07	- - - -
500mL	PTFE	**A465-500**	398.65	- - - -
1L	PTFE	**A465-1**	519.98	- - - -

Methanecarboxylic Acid
CH_3COOH
$C_2H_4O_2$
F.W. 60.05
Melting point: 16.6°-16.7°C
Boiling point: 118°C
Density: 1.05g/mL
Packaged in specially manufactured, precleaned PTFE bottle to protect product integrity.
Certificate of Analysis included with each bottle.
[64-19-7]

red

Product Specifications and Typical Values

	Max. Spec.	Typical Value
Assay (CH_3COOH)	>99%	99.40%
Aluminum	50ppt	<20ppt
Antimony	50ppt	<50ppt
Arsenic	50ppt	<20ppt
Barium	10ppt	<1ppt
Beryllium	10ppt	<5ppt
Bismuth	10ppt	<1ppt
Cadmium	10ppt	<1ppt
Calcium	50ppt	<50ppt
Cerium	10ppt	<0.1ppt
Cesium	10ppt	<0.1ppt
Chromium	10ppt	<10ppt
Cobalt	10ppt	<1ppt
Copper	50ppt	<5ppt
Dysprosium	1ppt	<0.1ppt
Erbium	1ppt	<0.1ppt
Europium	1ppt	<0.1ppt
Gadolinium	1ppt	<0.1ppt
Gallium	10ppt	<1ppt
Germanium	10ppt	<1ppt
Hafnium	10ppt	<10ppt
Holmium	1ppt	<0.1ppt
Indium	1ppt	<1ppt
Iron	50ppt	<50ppt
Lanthanum	1ppt	<0.1ppt
Lead	10ppt	<2ppt
Lithium	10ppt	<1ppt
Lutetium	10ppt	<0.1ppt
Magnesium	50ppt	<10ppt
Manganese	10ppt	<1ppt
Molybdenum	10ppt	<10ppt
Neodymium	1ppt	<0.1ppt
Nickel	50ppt	<10ppt
Platinum	50ppt	<50ppt
Potassium	50ppt	<30ppt
Praseodymium	1ppt	<0.1ppt
Rhenium	10ppt	<0.1ppt
Rhodium	50ppt	<20ppt
Rubidium	10ppt	<1ppt
Ruthenium	50ppt	<20ppt
Samarium	1ppt	<0.1ppt
Scandium	10ppt	<1ppt
Silver	50ppt	<50ppt

Sodium	100ppt	55ppt
Strontium	10ppt	<1ppt
Tellurium	1ppt	<1ppt
Terbium	1ppt	<0.1ppt
Thallium	10ppt	<0.1ppt
Thorium	1ppt	<0.1ppt
Thulium	1ppt	<0.1ppt
Tin	50ppt	<50ppt
Titanium	10ppt	<10ppt
Tungsten	10ppt	<10ppt
Uranium	1ppt	<0.1ppt
Vanadium	10ppt	<1ppt
Ytterbium	1ppt	<0.1ppt
Yttrium	1ppt	<1ppt
Zinc	50ppt	<5ppt
Zirconium	10ppt	<10ppt

Acetic Acid, Glacial HPLC

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass	**A35-500**	65.61	6/237.79

Methanecarboxylic Acid
CH_3COOH
$C_2H_4O_2$
F.W. 60.05
Melting point: 16.6°-16.7°C
Boiling point: 118°C
Density: 1.05g/mL
Application: HPLC
17.4N
[64-19-7]

ACID

red

Product Specifications

Actual Lot Analysis is printed on label.

Assay (CH_3COOH) w/w	≥99.7%
Color (APHA)	≤10
Optical Absorbance:	
at 255nm	≤1.0
at 280nm	≤0.05
at 350nm	≤0.02
Dilution Test	To pass test
Residue after Evaporation	≤5ppm
Chloride	≤0.4ppm
Sulfate	≤0.4ppm
Heavy Metals (Pb)	≤0.5ppm
Iron	≤0.2ppm
Substances Reducing Dichromate	To pass test
Acetic Anhydride [$(CH_3CO)_2O$]	≤0.01%
Copper	≤0.1ppm
Nickel	≤0.1ppm
Titratable Base	≤0.0004mEq/g
Water	≤0.1%
Substances Reducing Permanganate (color)	To pass test
Gold	≤0.3ppm
Magnesium	≤0.3ppm
Manganese	≤0.3ppm
Potassium	≤0.1ppm
Sodium	≤0.3ppm
Tin	≤0.3ppm
Titanium	≤0.3ppm
Zinc	≤0.3ppm

Acetic Acid, Glacial USP/FCC/EP/BP

Quantity	Packaging	Cat. No.	Each	Case of
2.5L	Glass Bottle	**A491-212**	139.53	- - - -

Methanecarboxylic Acid
CH_3COOH
$C_2H_4O_2$
F.W. 60.05
Melting point: 16.6°-16.7°C
Boiling point: 118°C
Density: 1.05g/mL
17.4N
[64-19-7]

ACID

red

Product Specifications

Identification	To pass test

Meets USP Chemical Specifications

Assay	99.5-100.5%
Congealing Temperature	≥15.6°C
Nonvolatile Residue	≤0.005%
Chloride	To pass test
Sulfate	To pass test
Heavy Metals	≤5ppm
Readily Oxidizable Substances	To pass test

Meets FCC Chemical Specifications

Assay	99.5-100.5%
Lead	≤0.5mg/kg
Nonvolatile Residue	≤0.005%
Readily Oxidizable Substances	To pass test
Solidification Point	≥15.6°C

Meets EP and BP Chemical Specifications

Assay	99.0-100.5%
Appearance	Clear and colorless
Freezing Point	≥14.8°C
Reducing Substances	To pass test
Chlorides	≤25ppm
Sulfates	≤50ppm
Iron	≤5ppm
Heavy Metals (as Pb)	≤5ppm
Residue on Evaporation	≤0.01%

Acetic Acid, Glacial USP/FCC

Quantity	Packaging	Cat. No.	Each	Case of
2.5L	Glass Bottle	**A490-212**	110.73	- - - -

Methanecarboxylic Acid
CH_3COOH
$C_2H_4O_2$
F.W. 60.05
Melting point: 16.6°-16.7°C
Boiling point: 118°C
Density at 25°C: 1.05g/mL
[64-19-7]

ACID

red

Product Specifications

Identification	To pass test

Meets USP Chemical Specifications

Assay (by weight)	99.5-100.5%
Congealing Temperature	≥15.6°C
Nonvolatile Residue	≤0.005%
Chloride	To pass test
Sulfate	To pass test
Heavy Metals	≤5ppm
Readily Oxidizable Substances	To pass test
USP Protocol Required	To pass test

Meets FCC Chemical Specifications

Assay (w/w)	99.5-100.5%
Lead	≤0.5mg/kg
Nonvolatile Residue	≤0.005%
Readily Oxidizable Substances	To pass test
Solidification Point	15.6°C

Acetic Acid, Glacial TraceMetal

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass	**A507-500**	67.30	6/267.85
2.5L	Glass	**A507-212**	143.40	6/570.74
2.5L	Glass/Safe-Cote*	**A507-SK212**	- - - -	6/623.90
4L	Poly Bottle	**A507-4**	- - - -	4/527.58

Methanecarboxylic Acid, Vinegar Acid
CH_3COOH
$C_2H_4O_2$
F.W. 60.05
Melting point: 16.6°-16.7°C
Boiling point: 118°C
Density: 1.05g/mL
Certificate of Analysis included with each shipment.
[64-19-7]

Product Specifications and Typical Values

	Max. Spec.	Typical Value
Assay (CH_3COOH)	>99%	99.4%
Color (APHA)	10	<10
Aluminum	1ppb	<0.5ppb
Antimony	1ppb	<0.1ppb
Arsenic	1ppb	<0.1ppb
Barium	1ppb	<0.1ppb
Beryllium	1ppb	<0.1ppb
Bismuth	1ppb	<0.1ppb
Cadmium	1ppb	<0.1ppb
Calcium	1ppb	<0.5ppb
Cerium	0.5ppb	<0.1ppb
Cesium	0.5ppb	<0.1ppb
Chromium	1ppb	<0.1ppb
Cobalt	1ppb	<0.1ppb
Copper	1ppb	<0.2ppb
Dysprosium	0.5ppb	<0.1ppb
Erbium	0.5ppb	<0.1ppb
Europium	0.5ppb	<0.1ppb
Gadolinium	0.5ppb	<0.1ppb
Gallium	0.5ppb	<0.1ppb
Germanium	0.5ppb	<0.1ppb
Hafnium	0.5ppb	<0.1ppb
Holmium	0.5ppb	<0.1ppb
Indium	0.5ppb	<0.1ppb
Iron	1ppb	<0.5ppb
Lanthanum	0.5ppb	<0.1ppb
Lead	1ppb	<0.1ppb
Lithium	1ppb	<0.1ppb
Lutetium	0.5ppb	<0.1ppb
Magnesium	1ppb	<0.2ppb
Manganese	1ppb	<0.1ppb
Molybdenum	1ppb	<0.2ppb
Neodymium	0.5ppb	<0.1ppb
Nickel	1ppb	<0.1ppb
Platinum	0.5ppb	<0.1ppb
Potassium	1ppb	<0.1ppb
Praseodymium	0.5ppb	<0.1ppb
Rhenium	0.5ppb	<0.1ppb
Rhodium	0.5ppb	<0.1ppb
Rubidium	0.5ppb	<0.1ppb
Ruthenium	0.5ppb	<0.1ppb
Samarium	0.5ppb	<0.1ppb
Scandium	0.5ppb	<0.1ppb
Selenium	1ppb	<0.5ppb
Silver	1ppb	<0.1ppb
Sodium	1ppb	<0.5ppb
Strontium	1ppb	<0.1ppb
Tellurium	0.5ppb	<0.1ppb
Terbium	0.5ppb	<0.1ppb
Thallium	0.5ppb	<0.1ppb
Thorium	1ppb	<0.1ppb
Thulium	0.5ppb	<0.1ppb
Tin	1ppb	<0.1ppb
Titanium	1ppb	<0.1ppb
Tungsten	0.5ppb	<0.1ppb
Uranium	1ppb	<0.1ppb
Vanadium	1ppb	<0.1ppb
Ytterbium	0.5ppb	<0.1ppb
Yttrium	0.5ppb	<0.1ppb
Zinc	1ppb	<0.5ppb
Zirconium	1ppb	<0.1ppb

Element concentrations are at the point of bottling.

Acetic Acid, Glacial Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass	**A38-500**	51.43	6/188.30
500mL	Glass/Safe-Cote*	**A38S-500**	57.60	6/210.90
2.5L	Glass	**A38-212**	98.35	- - - -
6x2.5L	Glass	**A38C-212**	285.16	- - - -
6x2.5L	Glass/Safe-Cote	**A38S-212**	386.41	- - - -
2.5L	Glass/Safe-Cote Individual	**A38SI-212**	96.73	- - - -
2.5L	Glass/Safe-Cote	**A38S-212E**	65.95	- - - -
20L	Poly Drum	**A38P-20**	232.88	- - - -
450 lb.	Poly Drum	**A38-450LB**	1719.45	- - - -

CH_3COOH
$C_2H_4O_2$
F.W. 60.05
[64-19-7]
Recommended storage: RT

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.7%
Color (APHA)	≤10
Dilution Test	To pass test
Residue after Evaporation	≤8ppm
Chloride	≤0.4ppm
Sulfate	≤0.4ppm
Heavy Metals (Pb)	≤0.5ppm
Acetic Anhydride [$(CH_3CO)_2O$]	≤0.01%
Titratable Base	≤0.0004mEq/g
Arsenic and Antimony (as As)	≤0.005ppm
Aluminum	≤0.3ppm
Boron	≤0.2ppm
Calcium	≤0.3ppm
Chromium	≤0.2ppm
Copper	≤0.1ppm
Gold	≤0.3ppm
Iron	≤0.2ppm
Lead	≤0.3ppm
Magnesium	≤0.3ppm
Manganese	≤0.3ppm
Nickel	≤0.1ppm
Potassium	≤0.3ppm
Sodium	≤0.3ppm
Tin	≤0.3ppm
Titanium	≤0.3ppm
Zinc	≤0.3ppm
Phosphate (PO_4)	≤1ppm
Substances Reducing Permanganate	To pass test
Substances Reducing Dichromate	To pass test

Acetic Acid, Glacial, 99.7% ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	- - - -	**AC42322-5000**	26.20	6/133.29
2.5L	- - - -	**AC42322-0025**	67.50	6/344.00

Glacial acetic acid
CH_3COOH
$C_2H_4O_2$
F.W.60.05
Melting point: 16-16.5°C
Boiling point: 117-118 (760mmHg)
Flash point: 40°C
Density: 1.048g/mL
n: 1.3715
[64-19-7]

*Trademark. See Trademark Reference.

▸*Acetic Acid, Glacial* *see Fisher BioReagents* BP-1185-1.*

Acetic Acid, 80% (w/w) Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A37-1**	90.88	6/330.95
4L	Amber Glass	**A37-4**	208.79	4/500.94

CH_3COOH
$C_2H_4O_2$
F.W. 60.05
Density: 1.07g/mL
[64-19-7]

ACID

ChemAlert® STORAGE white

Product Specifications
Actual Lot Analysis is reported on label.

Assay	80-82%
Color (APHA)	≤10
Residue after Evaporation	≤0.002%
Sulfate	≤4ppm
Substances Reducing Permanganate	To pass test
Chloride	≤4ppm
Heavy Metals (as Pb)	≤4ppm
Iron	≤4ppm
Formic or Sulfurous Acid	To pass test

Acetic Acid, 50% (v/v)

Clear, colorless liquid
pH < 1

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**140-16**	31.21	----
1L	Amber Glass	**140-32**	45.23	----
4L	Cubitainer*	**140-1**	81.40	----

Solvent/Matrix: Aqueous Solution
[64-19-7 (Acetic Acid)]
[7732-18-5 (Water, Deionized)]

Acetic Acid, 25% (v/v)

Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**13825-16**	27.43	----
1L	Poly Natural	**13825-32**	64.74	----
4L	Poly Natural	**13825-1**	79.24	----
20L	Hard Pack	**13622-600**	125.45	----

Acetic Acid, 5% (v/v)

Clear, colorless liquid
pH < 1

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**130-16**	15.59	----
1L	Poly Bottle	**R130-32**	20.30	----
4L	Poly Bottle	**130-1**	42.23	----
10L	Cubitainer*	**130-25**	96.98	----
20L	Cubitainer	**130-5**	138.31	----

Solvent/Matrix: Aqueous Solution
[64-19-7 (Acetic Acid)]
[7732-18-5 (Water, Deionized)]

Acetic Acid, 3% (v/v)

Clear, colorless liquid
pH < 1

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**120-32**	18.29	----
4L	Poly Natural	**R120-1**	43.48	----
500mL	Poly Bottle	**120-16**	12.41	----

Solvent/Matrix: Aqueous Solution
[64-19-7 (Acetic Acid)]
[7732-18-5 (Water, Deionized)]

Acetic Acid Solution, 1N Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SA36-1**	77.03	6/357.01

Methanecarboxylic Acid
CH_3COOH
$C_2H_4O_2$
F.W. 60.05

ChemAlert® STORAGE gray

A volumetric Standard Solution, titrated at 25°C to pH 8.2 (phenolphthalein endpoint) against Sodium Hydroxide, which has been standardized against NIST Potassium Acid Phthalate.
[64-19-7]

Product Specifications
Actual Lot Analysis is reported on label.

Color (APHA)	≤5
Normality	0.995-1.005

Acetic Anhydride Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**A10-100**	38.20	6/171.89
500mL	Amber Glass	**A10-500**	84.18	6/367.82
1L	Amber Glass	**A10-1**	135.24	6/596.55
4L	Amber Glass	**A10-4**	303.34	4/905.67

Also available in recyclable FisherPak and NOWPak* containers.*
Acetyl Oxide, Acetic Oxide
CH_3COCH_3
C_3H_6O
F.W. 102.09
Melting point: -73.1°C
Boiling point: 139°C
Density at 25°C: 1.08g/mL
[108-24-7]

STORAGE red

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥97.0%
Color (APHA)	≤10
Residue after Evaporation	≤0.002%
Chloride	≤3ppm
Phosphate	≤5ppm
Sulfate	≤5ppm
Heavy Metals (as Pb)	≤2ppm
Iron	≤5ppm
Substances Reducing Permanganate	To pass test

Acetone GC Resolv*

For High-resolution Chromatography; Suitable for Organic Residue Analysis

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A928-4**	149.70	4/420.75

2-Propanone, Dimethyl Ketone
CH_3COCH_3
C_3H_6O
F.W. 58.08
Melting point: -94.3°C
Boiling point: 56.5°C
Density: 0.788g/mL
Packaged under Nitrogen.
Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.
[67-64-1]

SOLVENT

STORAGE red

Product Specifications

Assay	≥99.5%
Color (APHA)	≤5
ECD-responsive Substances (as Heptachlor Epoxide)	5ppt maximum peak or 125ppt total
FID-responsive Substances (as Decane)	1ppb maximum peak or 10ppb total
Residue after Evaporation	≤1ppm
Titratable Acid	≤0.0003mEq/g
Water	≤0.5%

Acetone — Optima*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A929-1**	59.93	6/251.76
4L	Amber Glass	**A929-4**	113.77	4/321.50

Also available in recyclable FisherPak and NOWPak* containers.*

2-Propanone, Dimethyl Ketone
CH_3COCH_3
C_3H_6O
F.W. 58.08
Melting point: -94°C
Boiling point: 56.2°C
Density: 0.78g/mL
Packaged under Nitrogen. Submicron Filtered.
Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.
[67-64-1]

Product Specifications

Assay (by GC)	≥99.5%
Color (APHA)	≤5
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤10ng/L
Optical Absorbance:	
at 330nm	≤1.00
at 340nm	≤0.06
at 350nm	≤0.01
Fluorescence Background (as Quinine Sulfate)	≤1ppb
Water	≤0.5%
Residue after Evaporation	≤1ppm
Refractive Index at 25°C	1.3555-1.3580
Density at 25°C	≤0.7857g/mL
Solubility in H_2O	To pass test
Titratable Acid	≤0.0003mEq/g
Titratable Base	≤0.0006mEq/g
Methanol	≤0.05%
Isopropyl Alcohol	≤0.05%
Aldehyde (as HCHO)	≤0.002%
Substances Reducing Permanganate	To pass test

Acetone — HPLC

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A949-1**	53.36	6/228.41
1L	Glass/Safe-Cote*	**A949SK-1**	77.19	6/305.79
4L	Amber Glass	**A949-4**	110.87	4/311.95
4L	Glass/Safe-Cote	**A949SK-4**	130.53	4/372.51
19L	NOWPak* (Plastic Exterior)	**A949N1-19**	491.83	- - - -

*Also available in recyclable FisherPak**

Pyroacetic Ether, 2-Propanone, Dimethyl Ketone
CH_3COCH_3
C_3H_6O
F.W. 58.08
Melting point: -94.3°C
Boiling point: 56.1° ± 0.1°C
0.2 micron filtered.
[67-64-1]

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.5%
Color (APHA)	≤10
Optical Absorbance:	
at 330nm	≤1.00
at 340nm	≤0.06
at 350nm	≤0.02
at 400nm	≤0.01
Fluorescence Background (as Quinine Sulfate)	To pass test
Refractive Index at 25°C	1.3555-1.3580
Residue after Evaporation	≤1ppm
Solubility in H_2O	To pass test
Substances Reducing Permanganate	To pass test
Water	≤0.5%
Titratable Acid	≤0.0003mEq/g
Titratable Base	≤0.0006mEq/g
Aldehyde (as HCHO)	≤0.002%
Density at 25°C	≤0.7857g/mL
Isopropyl Alcohol	≤0.05%
Methanol	≤0.05%

Acetone — Pesticide

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A40-4**	106.76	4/301.33

Pyroacetic Ether, 2-Propanone, Dimethyl Ketone
CH_3COCH_3
C_3H_6O
F.W. 58.08
Melting point: -94.3°C
Boiling point: 56.1° ± 0.1°C
Density: ≤0.7857g/mL
n: at 25°C = 1.3555-1.3580
[67-64-1]

Product Specifications

Actual Lot Analysis is reported on label.

Color (APHA)	≤10
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤20ng/L

Acetone — NF/FCC/EP

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A9-4**	203.70	4/629.22
20L	Steel Pail	**A9-20**	403.25	- - - -
200L	Steel Drum	**A9-200**	1283.01	- - - -

2-Propanone, Dimethyl Ketone
CH_3COCH_3, C_3H_6O
F.W. 58.08
Melting point: -94.3°C
[67-64-1]

Product Specifications

Actual Lot Analysis is reported on label.

Identification	To pass test
Color (APHA)	≤10
Meets NF Chemical Specifications	
Assay (CH_3COCH_3; Anhydrous Basis)	≥99.0%
Specific Gravity	≤0.789
Water	≤0.5%
Nonvolatile Residue	≤0.004%
Readily Oxidizable Substances	To pass test
Meets FCC Chemical Specifications	
Assay (CH_3COCH_3; By Weight)	99.5-100.5%
Acidity (as Acetic Acid)	≤0.002%
Aldehyde (as HCHO)	≤0.002%
Alkalinity (as NH_3)	≤10mg/kg
Distillation Range	1° including 56.1°C
Lead (Pb)	≤1mg/kg
Nonvolatile Residue	≤10mg/kg
Phenols	To pass test
Substances Reducing Permanganate	To pass test
Water	≤0.5%
Refractive Index at 25°C	1.358-1.360
Solubility in Water	To pass test
Specific Gravity at 25°C	≤0.7880
Meets EP Chemical Specifications	
Appearance of Solution	Clear and colorless
Acidity or Alkalinity	To pass test
Relative Density	0.790-0.793
Related Substances:	
Impurity A. Methanol (CH_3OH)	≤0.05% v/v
Impurity B. Isopropyl Alcohol [$(CH_3)_2CHOH$]	≤0.05% v/v
Impurity C. Benzene (C_6H_6)	≤2ppm v/v
Any other impurity	≤0.05%
Matter Insoluble in Water	To pass test

*Trademark. See Trademark Reference.

Reducing Substances	To pass test
Residue on Evaporation	≤50ppm
Water (H_2O)	≤3g/L

Acetone **NF/FCC**

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A11-1**	78.58	6/350.88
4L	Amber Glass	**A11-4**	160.71	4/496.42
4L	SafeTin*	**A11S-4**	163.20	4/486.29
20L	Steel Pail	**A11-20**	349.84	- - - -
200L	Steel Drum	**A11-200**	999.03	- - - -

2-Propanone, Dimethyl Ketone
CH_3COCH_3
C_3H_6O
F.W. 58.08
Melting point: -94.3°C
[67-64-1]

SOLVENT
STORAGE red

Product Specifications

Identification	To pass test
Color (APHA)	≤10
Meets NF Chemical Specifications	
Assay (CH_3COCH_3; anhydrous)	≥99.0%
Specific Gravity	≤0.789
Water	≤0.5%
Nonvolatile residue	≤0.004%
Readily Oxidizable Substances	To pass test
Meets FCC Chemical Specifications	
Assay (CH_3COCH_3; by weight)	99.5-100.5%
Acidity (as Acetic Acid)	≤0.002%
Aldehyde (as HCHO)	≤0.002%
Alkalinity (as NH_3)	≤10mg/kg
Distillation Range	1° including 56.1°C
Lead (Pb)	≤1mg/kg
Methanol	≤0.05%
Nonvolatile Residue	≤10mg/kg
Phenols	To pass test
Substances Reducing	To pass test
Water	≤0.5%
Refractive Index at 25°C	1.358-1.360
Solubility in Water	To pass test
Specific Gravity at 25°C	≤0.7880

Acetone **Spectranalyzed***

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A19-1**	80.47	6/372.47
4L	Amber Glass	**A19-4**	173.03	4/534.54

Also available in recyclable FisherPak and NOWPak* containers.*
2-Propanone, Dimethyl Ketone
CH_3COCH_3
C_3H_6O
F.W. 58.08
Melting point: -94.3°C
Boiling point: 56.5°C
For use in the ultraviolet and infrared ranges.
[67-64-1]

SOLVENT
STORAGE red

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.5%
Color (APHA)	≤10
Isopropyl Alcohol	≤0.05%
Density at 25°C	≤0.7857g/mL
Residue after Evaporation	≤0.001%
Solubility in H_2O	To pass test
Aldehyde (as HCHO)	≤0.002%
Methanol	≤0.05%
Titratable Acid	≤0.0003mEq/g
Titratable Base	≤0.0006mEq/g
Water	≤0.5%
Optical Absorbance:	
at 330nm	≤1.00
at 340nm	≤0.10
at 350nm	≤0.02
at 400nm	≤0.01
IR Transmittance:	
at 2.5-2.75µm	≥70%
at 4.8-5.4µm	≥70%
at 11.7-12.6µm	≥70%
at 13.1-14.7µm	≥70%

Transmittance measured in a 0.025mm KBr cell. Ultraviolet Absorbance Curves are run against distilled water set at zero absorbance. Curves available on request.

Acetone **Spectranalyzed***

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A946-4**	131.74	4/406.90

Also available in recyclable FisherPak and NOWPak* containers.*
2-Propanone, Dimethyl Ketone
CH_3COCH_3
C_3H_6O
F.W. 58.08
Melting point: -94.3°C
[67-64-1]

SOLVENT
STORAGE red

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.5%
Color (APHA)	≤10
Aldehyde (as HCHO)	≤0.002%
Density at 25°C	≤0.7857g/mL
Isopropyl Alcohol	≤0.05%
Methanol	≤0.05%
Residue after Evaporation	≤0.001%
Solubility in H_2O	To pass test
Substances Reducing Permanganate	To pass test
Titratable Acid	≤0.0003mEq/g
Titratable Base	≤0.0006mEq/g
Water	≤0.5%
Conductivity at 25°C	≤1.0µmhos/cm
Aluminum	≤0.1ppm
Antimony	≤0.1ppm
Arsenic	≤0.1ppm
Boron	≤0.1ppm
Copper	≤0.1ppm
Gold	≤0.1ppm
Heavy Metals (as Pb)	≤1ppm
Iron	≤0.1ppm
Lead	≤0.1ppm
Nickel	≤0.1ppm
Silver	≤0.1ppm

Acetone **Certified ACS**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A18-500**	29.84	6/135.94
1L	Amber Glass	**A18-1**	72.63	6/331.44
4L	Amber Glass	**A18-4**	130.91	4/400.58
4L	Poly Bottle	**A18P-4**	128.29	4/390.55
4L	Amber Glass/ Safe-Cote*	**A18SK-4**	146.45	4/448.11
4L	SafeTin*	**A18S-4**	144.34	4/441.57
20L	Steel Pail	**A18-20**	323.08	- - - -
200L	Steel Drum	**A18-200**	1469.62	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*
2-Propanone, Dimethyl Ketone
C_3H_6O
F.W. 58.08
Melting point: -94°C
Density: 0.78g/mL
[67-64-1]

SOLVENT
STORAGE red

Contd. on next page.

Contd. from previous page.

Product Specifications

Assay	≥99.5%
Color (APHA)	≤10
Isopropyl Alcohol	≤0.05%
Density at 25°C	≤0.7857g/mL
Boiling Range (1 drop to dryness)	≤0.8°C
Boiling Point	56.1° ± 0.1°C
Residue after Evaporation	≤0.001%
Solubility in H_2O	To pass test
Aldehyde (as HCHO)	≤0.002%
Titratable Acid	≤0.0003mEq/g
Titratable Base	≤0.0006mEq/g
Methanol	≤0.05%
Substances Reducing Permanganate	To pass test
IR Transmittance	To pass test
Water	≤0.5%

Acetone, 99.6% ACS

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass Bottle	**AC42324-5000**	15.40	6/73.90
1L	- - - -	**AC42324-0010**	27.00	- - - -
4L	Glass Bottle	**AC42324-0040**	87.70	4/298.10

2-Propanone
CH_3COCH_3
C_3H_6O
F.W. 58.08
Melting point: -95°C
Boiling point: 56°C (at 760mmHg)
Flash point: -20°C
Density: 0.79g/mL
n: 1.3585
[67-64-1]

Acetone Histological

Quantity	Packaging	Cat. No.	Each	Case of
1 gal.	Poly Bottle	**A16F-1GAL**	83.68	4/256.91
4L	Poly Bottle	**A16P-4**	81.93	4/251.46
4L	SafeTin*	**A16S-4**	91.51	4/284.77
20L	Steel Pail	**A16S-20**	227.56	- - - -

2-Propanone, Dimethyl Ketone
CH_3COCH_3
C_3H_6O
F.W. 58.08
Melting point: -94.3°C
Boiling point: 56.5°C
[67-64-1]

SOLVENT

STORAGE red

Acetone-Alcohol
1 + 1 Decolorizer Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**200-16**	16.62	- - - -
1L	Poly Bottle	**200-32**	28.89	- - - -
4L	Poly Bottle	**200-1**	86.69	- - - -
10L	Cubitainer*	**200-25**	173.96	- - - -
20L	Cubitainer	**200-5**	248.22	- - - -

Application: For use in Gram Staining
[67-64-1 (Acetone)]
[67-56-1 (Methanol (Methyl Alcohol))]
[64-17-5 (Ethyl Alcohol (Ethanol))]

Acetonitrile Optima*
Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A996-1**	115.34	6/493.76
4L	Amber Glass	**A996-4**	253.68	4/713.75
19L	FisherPak*	**A996-N219**	998.83	- - - -

Also available in recyclable NOWPak container.*
Methyl Cyanide, Ethanenitrile
C_2H_3N
F.W. 41.05
Melting point: -46°C
Boiling point: 81–82°C
Density: 0.781g/mL
Packaged under Nitrogen. 0.2 micron filtered.
Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.
[75-05-8]

SOLVENT

STORAGE red

Product Specifications

Assay (by GC)	≥99.9%
Color (APHA)	≤5
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤10ng/L
Optical Absorbance:	
at 190nm	≤1.00
at 195nm	≤0.15
at 200nm	≤0.07
at 205nm	≤0.05
at 210nm	≤0.04
at 220nm	≤0.02
at 254nm	≤0.005
Fluorescence Background (as Quinine Sulfate)	≤1ppb
Water	≤0.01%
Residue after Evaporation	≤0.8ppm
LC Gradient Suitability at 254nm and 205nm	To pass test
Refractive Index at 25°C	1.3405-1.3425
Titratable Acid	≤0.008mEq/g
Titratable Base	≤0.0006mEq/g
Density at 25°C	0.775-0.780g/mL

Acetonitrile, 99.9% Min. Optima* LC/MS
Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A955-1**	121.11	6/568.11
4L	Amber Glass	**A955-4**	275.14	4/859.95

Methyl Cyanide
CH_3CN
C_2H_3N
F.W. 41.05
Suitable for LC/MS applications in Bio-Pharmaceutical, Drug Discovery, Peptide, and Protein analysis.
0.2 micron filtered.
Actual Lot Analysis reported on label; Certificate of Actual Lot Analysis available on request.
0.2 micron filtered.
[75-05-8]

*Trademark. See Trademark Reference.

Prices subject to change.

Acetonitrile HPLC

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A998-1**	108.50	6/464.41
1L	Amber Glass/Safe-Cote*	**A998SK-1**	123.92	6/530.36
2.5L	Amber Glass	**A998-212**	239.78	4/792.31
4L	Amber Glass	**A998-4**	265.61	4/758.01
4L	Amber Glass/Safe-Cote	**A998SK-4**	280.16	4/799.48
19L	NOWPak*	**A998N1-19**	888.60	- - - -

Also available in recyclable FisherPak container.*

Methyl Cyanide, Ethanenitrile

CH_3CN

C_2H_3N

F.W. 41.05

0.2 micron filtered.

[75-05-8]

SOLVENT

STORAGE red

Product Specifications

Actual Lot Analysis is reported on label.

Assay (CH_3CN)	≥99.9%
Color (APHA)	≤10
Optical Absorbance:	
at 190nm	≤1.00
at 195nm	≤0.15
at 200nm	≤0.07
at 205nm	≤0.05
at 210nm	≤0.04
at 220nm	≤0.02
at 254nm	≤0.01
Fluorescence Background (as Quinine Sulfate)	To pass test
LC Gradient Suitability	To pass test
Refractive Index at 25°C	1.3405-1.3425
Residue after Evaporation	≤1ppm
Water	≤0.01%
Titratable Acid	≤0.008mEq/g
Titratable Base	≤0.0006mEq/g
Density at 25°C	0.775-0.780g/mL

Acetonitrile, 99.9% HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	- - - -	**AC61001-0040**	119.60	4/406.49

Methyl cyanide

CH_3CN

C_2H_3N

F.W. 41.05

Melting point: -46°C

Boiling point: 81-82°C (at 760mmHg)

Flash point: 2°C

Density: 0.781g/mL

n: 1.343-1.345

[75-05-8]

Acetonitrile, 99.8% HPLC

Quantity	Packaging	Cat. No.	Each	Case of
1L	Glass Bottle	**AC26827-0010**	41.20	- - - -
2.5L	Glass Bottle	**AC26827-0025**	75.70	4/257.05
4L	- - - -	**AC26827-0040**	138.00	4/469.10

Methyl cyanide

CH_3CN

C_2H_3N

F.W.41.05

Melting point: -46°C

Boiling point: 81-82°C (at 760mmHg)

Flash point: 2°C

Density: 0.781g/mL

n:1.343-1.345

[75-05-8]

Acetonitrile, 99.9% Extra Dry, HPLC

Water <10ppm

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC32681-1000**	26.60	- - - -
250mL	- - - -	**AC32681-2500**	46.90	- - - -
1L	Septum Bottle	**AC32681-0010**	49.90	- - - -

Methyl Cyanide

CH_3CN

C_2H_3N

F.W.41.05

Melting point: -46°C

Boiling point: 81-82°C (at 760mmHg)

Flash point: 2°C

Density: 0.781g/mL

n: 1.343-1.345

[75-05-8]

Acetonitrile, 99.9% Extra Dry over molecular sieves

Water <50ppm

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC36431-1000**	27.50	- - - -
1L	Septum Bottle	**AC36431-0010**	50.20	- - - -

Methyl Cyanide

CH_3CN

C_2H_3N

F.W. 41.05

Melting point: -46°C

Boiling point: 81-82°C (at 760mmHg)

Flash point: 2°C

Density: 0.781g/mL

n: 1.343-1.345

[75-05-8]

NEW

Acetonitrile, 99.9%

Anhydrous

Quadrant Cap

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AcroSeal*	**AC61096-1000**	27.90	6/142.24

Methyl cyanide

C_2H_3N

F.W. 41.05

Melting point: -46°C

Boiling point: 81-82°C (at 760mmHg)

Flash point: 2°C

Density: 0.781g/mL

n: 1.343-1.345

[75-05-8]

Acetonitrile, 99.9%
Anhydrous

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AcroSeal*	**AC61022-1000**	27.40	6/139.54
1L	AcroSeal	**AC61022-0010**	48.60	6/247.50

Methyl Cyanide
C_2H_3N
F.W. 41.05
Melting point: -46°C
Boiling point: 81-82°C (at 760mmHg)
Flash point: 2°C
Density: 0.781g/mL
n: 1.343-1.345
[75-05-8]

Acetonitrile — Pesticide
Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A999-4**	194.25	4/554.36

Methyl Cyanide, Ethanenitrile
CH_3CN
C_2H_3N
F.W. 41.05
[75-05-8]

Product Specifications
Actual Lot Analysis is reported on label.

Color (APHA)....................≤10
Pesticide Residue Analysis (as Heptachlor Epoxide)....................≤10ng/L

Acetonitrile — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A21-1**	176.36	6/827.05
4L	Amber Glass	**A21-4**	325.31	4/1012.16
20L	Steel Pail	**A21-20**	571.26	- - - -
200L	Steel Drum	**A21-200**	4826.93	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*
Methyl Cyanide, Ethanenitrile
CH_3CN
C_2H_3N
F.W. 41.05
[75-05-8]

Product Specifications

Assay....................≥99.5%
Color (APHA)....................≤10
Titratable Acid....................≤0.008mEq/g
Titratable Base....................≤0.0006mEq/g
Density at 25°C....................0.775-0.780g/mL
Residue after Evaporation....................≤0.005%
Water....................≤0.3%

Acetonitrile — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**01034-500**	98.40	6/460.29

Methyl Cyanide, Ethanenitrile
CH_3CN
C_2H_3N
F.W. 41.05
Suitable for nonaqueous titrations.
[75-05-8]

Product Specifications

Color (APHA)....................≤10
Boiling Range....................2° incl. 81.5°C
Water Content (by Karl Fischer)....................≤0.03%
Impurity Content (by titration)....................≤0.01mEq acid or base per 50g

▸*Acetonitrile, Synthesis Grade* *see Fisher BioReagents* BP1170.*

Acetonitrile with 0.1% Formic Acid (v/v) — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**HB98234**	258.32	4/804.30

Acetonitrile with 0.05% Formic Acid (w/w) — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**HB98224**	253.52	4/792.95

Acetonitrile with 0.1% Formic Acid and 0.01% Trifluoroacetic Acid (w/w) — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**HB98344**	252.23	4/789.01

Acetonitrile with 0.1% Trifluoroacetic Acid (v/v) — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**HB98134**	292.26	4/903.232

Acetonitrile with 0.05% Trifluoroacetic Acid (v/v) — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**HB98124**	269.50	4/963.55

Acetonitrile with 0.035% Trifluoroacetic Acid (v/v) — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**HB9811-4**	267.50	4/826.70

Product Specifications

Assay of TFA (v/v)....................0.033 to 0.037%

Acetophenone — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A22-500**	123.94	6/539.62

Methyl Phenyl Ketone, 1-Phenylethanone, Hypnone
$CH_3COC_6H_5$
C_8H_8O
F.W. 120.15
Boiling point: 201.7°C
[98-86-2]

Product Specifications
Actual Lot Analysis is reported on label.

Freezing Point....................19°-20°C
Specific Gravity at 25°C....................1.023-1.027

*Trademark. See Trademark Reference.

Prices subject to change.

Acetyl Acetone Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A25-500**	197.68	6/873.61

2,4-Pentanedione, Diacetylmethane, Acetylpropionyl

$CH_3COCH_2COCH_3$

$C_5H_8O_2$

STORAGE red

F.W. 100.12

Melting point: -23°C

Boiling point: 140.5°C

n: Refractive Index at 20°C = 1.450-1.452

[123-54-6]

Product Specifications

Actual Lot Analysis is reported on label.

Specific Gravity at 20°C	0.972 to 0.978

Acetyl Chloride Certified

Quantity	Packaging	Cat. No.	Each	Case of
250mL	Amber Glass	**A27-250**	163.76	- - - -

Ethanoyl Chloride

CH_3COCl

C_2H_3ClO

STORAGE red

F.W. 78.50

Melting point: -112°C

Boiling point: 52°C

Density: 1.104g/mL

[75-36-5]

Product Specifications

Assay (CH_3COCl)	≥98%
Residue after Evaporation	≤0.005%
Solubility in H_2O	To pass test
Miscibility with Benzene and Chloroform	To pass test
Heavy Metals (as Pb)	≤5ppm

▸***Acetylpropionyl*** *see Acetyl Acetone A25.*

Acetylsalicylic Acid, 99%

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
500g	Plastic Bottle	**AC15818-5000**	31.80	- - - -

Acetoxybenzoic Acid

$2\text{-}(CH_3CO_2)C_6H_4CO_2H$

NEW

$C_9H_8O_4$

F.W. 180.16

Melting point: 136-140°C

Flash point: 250°C

Density: 1.35g/mL

[50-78-2]

▸***Acid Blue*** *see Aniline Blue A967.*

▸***Acid Green 5*** *see Light Green SF, Yellowish O3382.*

▸***Acid Red 2, Sodium Salt*** *see Methyl Red, Sodium Salt M301.*

▸***Acid Spill Cleanup Kit*** *see Spill Cleanup Kit, Acid 18-061A.*

Acrylamide Certified

Flake-like Crystals

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**O1065-500**	66.96	6/314.09

2-Propenamide

$CH_2{:}CHCONH_2$

STORAGE blue

C_3H_5NO

F.W. 71.08

Boiling point: at 25mmHg 125°C

[79-06-1]

Product Specifications

Melting Point	83°-85°C

Aerosol* OT, Solid

Anhydrous

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A349-500**	89.33	4/326.09

Dioctyl Sulfosuccinate, Docusate Sodium, Sulfobutanedioic Acid

$CH_3(CH_2)_3CH(Et)CH_2OC(O)CH_2CH(SO_3Na)C(O)OCH_2CH(Et)(CH2)_3$

ChemAlert® STORAGE gray

$C_{20}H_{37}O_7SNa$

F.W. 444

Melting point: 153-157°C

Density: 1.1g/mL

Specific gravity 1.1

[577-11-7]

Aerosol* OT Solution, 75% (w/w)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A345-500**	59.56	6/328.44

Contains: Sodium Dioctyl Sulfosuccinate, Ethyl Alcohol, Water.

STORAGE red

Product Specifications

Concentration	72-78%

Aerosol* OT Solution, 10% (w/w)

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**SA292-4**	156.45	4/577.35

Contains: Sodium Dioctyl Sulfosuccinate, Butyl Cellosolve*, Water.

ChemAlert® STORAGE gray

Aerosol OT 10% is a remarkable chemical solution that "makes water wetter" because it reduces surface tension and interfacial tension to a considerable degree even at low concentrations.

Product Specifications

Concentration	9-11%

Agar Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A360-500**	229.75	6/1077.75

[9002-18-0]

ChemAlert® STORAGE gray

▸***Agar*** *see Fisher BioReagents* BP264.*

▸***Agar, Granulated*** *see Fisher BioReagents* BP1423.*

▸***Agaroses*** *see Fisher BioReagents* for these types of agarose: Low Melting (for <1000 Base Pairs DNA) BP1360; Low Melting (for >1000 Base Pairs DNA) BP165; Molecular Biology Grade BP1356; PCR Grade BP2410; High-melting BP164; Low-EEO BP160; Medium-EEO BP161; High-EEO BP162; IEF Grade BP163.*

Albumin from Eggs
Soluble Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A388-500**	162.55	6/762.53

Egg White, Egg Albumin
[9006-50-2]

ChemAlert® STORAGE gray

Alcohol — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A995-4**	134.55	4/383.26

Also available in recyclable FisherPak and NOWPak* containers.*
Ethanol, Ethyl Alcohol, Denatured Alcohol
CH_3CH_2OH
C_2H_6O
Anhydrous Ethyl Alcohol 90% ±1% v/v; Methyl Alcohol approx. 5% v/v; 2-Propanol approx. 5% v/v
Maximum container size is 4 liters, under government regulations.
Filtered through a 0.5 micron filter.

SOLVENT

ChemAlert® STORAGE red

Product Specifications
Actual Lot Analysis is reported on label.

Assay:	
Ethanol	89-91%
Methanol	4.5-5.5%
2-Propanol	4.5-5.5%
Color (APHA)	≤5
Optical Absorbance	
at 205nm	≤1.00
at 210nm	≤0.65
at 220nm	≤0.35
at 254nm	≤0.04
Fluorescence Background	To pass test
Refractive Index at 25°C	1.3580-1.3610
Titratable Acid	≤0.0003mEq/g
Titratable Base	≤0.0002mEq/g
Residue after Evaporation	≤5ppm
Solubility in H_2O	To pass test
Substances Reducing Permanganate	To pass test
Water	≤0.10%

Alcohol, Reagent — Histological

Quantity	Packaging	Cat. No.	Each	Case of
1 gal.	Rectangular Poly Bottle	**A962F-1GAL**	96.46	4/306.58
1 gal.	Round Poly Bottle	**A962P-1GAL**	107.38	4/332.36
4L	Amber Glass	**A962-4**	101.28	4/312.90
4L	Poly Bottle	**A962P-4**	96.31	4/306.12
4L	SafeTin*	**A962S-4**	139.01	4/432.64
200L	Steel Drum	**A962-200**	1055.89	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*
Anhydrous Ethyl Alcohol 90% ±1% v/v; Methyl Alcohol approx. 5% v/v; 2-Propanol approx. 5% v/v
Specially Denatured Alcohol for histologic use.
Specially filtered for use in tissue processors.

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Assay:	
Ethanol	89-91%
Methanol	4.0-5.0 v/v%
Isopropyl Alcohol	4.5-5.5%
Color (APHA)	≤10
Specific Gravity at 25°C	0.782-0.793
Water	≤0.10%

Alcohol, Reagent, Absolute — ACS Reagent Grade
Denatured alcohol, Anhydrous

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**6590-16**	15.99	- - - -
4L	Poly natural	**6590-1**	45.49	- - - -

Alcohol, Reagent
Denatured Alcohol
Clear, colorless liquid
70% (v/v) Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**254670-32**	14.67	- - - -
4L	Poly Natural	**254670-1**	34.51	- - - -
4L	Amber Glass/Safety Coated	**254670-1SC**	44.96	- - - -
10L	Cubitainer*	**254670-25**	103.17	- - - -
20L	Cubitainer	**254670-5**	146.83	- - - -

Melting point: Approx. -50°C
Boiling point: Approx. 93°C
[64-17-5 (Ethyl Alcohol (Ethanol))]
[67-63-0 (2-Propanol)]
[67-56-1 (Methanol (Methyl Alcohol))]
[7732-18-5 (Water, Deionized)]

Alcohol, Reagent
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Natural	**254650-1**	43.25	- - - -

Melting point: Approx. -50°C
Boiling point: Approx. 93°C
Solvent/Matrix: Aqueous Solution
[67-56-1 (Methanol (Methyl Alcohol))]
[67-63-0 (Isopropanol)]
[64-17-5 (Ethyl Alcohol (Ethanol))]
[7732-18-5 (Water, Deionized)]

Alcohol Solvent Mixed Solution
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**320-32**	74.94	- - - -
4L	Amber Glass	**320-1**	378.89	- - - -

Melting point: Approx. -89°C
Boiling point: Approx. 118°C
Application: Determination of Salts in Crude Oil
[67-56-1 (Methanol (Methyl Alcohol))]
[71-36-3 (n-Butanol (n-Butyl Alcohol, 1-Butanol))]
[7732-18-5 (Water, Deionized)]

▸***Alcohol*** *see also alphabetic listings for Methanol, Ethyl Alcohol Denatured, Propanol, Butanol, Isopropyl Alcohol, Isobutyl Alcohol, etc.*

Alkacid* Wide Range pH Tester
pH 2 to 10

Quantity	Packaging	Cat. No.	Each	Case of
Three 15' (4.6m) rolls	Dispensers	**A979**	24.93	12/236.99

The tester consists of a disposable transparent plastic container with a color chart and a 15" long (4.6cm) roll of ¼" wide (0.6cm) Alkacid Ribbon. It has a specific color for each of five pH values, and the intermediate steps can be judged to approximately ± 1 pH.

Alkacid* Wide Range pH Test Paper

Quantity	Packaging	Cat. No.	Each	Case of
12 × 100	Strips/Vials	**A980**	52.68	12/494.29

This is the same test paper supplied with the Alkacid Wide Range pH Tester, but in strips 1⅞" long by ¼" wide (4.8 × 0.6cm). A color chart is attached to each vial. 100 strips/vial.

*Trademark. See Trademark Reference.

Alkacid* Short Range pH Test Ribbons

pH Range	Color	Cat. No.	Pack	Case of
0.0-3.0	Blue	**A981**	29.87	12/283.40
3.5-5.5	Green	**A982**	33.72	12/316.45
6.0-8.5	Yellow	**A983**	35.54	12/333.51
9.0-11.0	White	**A984**	29.15	12/275.23
10.5-12.5	Yellow	**A985**	29.15	12/275.17
12.0-14.0	Blue	**A986**	33.74	12/316.54

These dispensers are the same as the Short Range Test Ribbons included in the Full Range pH Test Kit. They can be used to determine the approximate pH value to within ±0.5 unit.

Alkacid* Full Range pH Test Kit

Quantity	Packaging	Cat. No.	Each	Case of
Seven 15' (4.6m) rolls	Dispensers	**A988**	67.94	12/637.52

This kit provides test papers giving speedy and accurate pH readings over the entire pH range from 0 to 14. The Alkacid Full Range Test Kit consists of a pocket-size pack containing one dispenser with Alkacid Wide Range Test Ribbon and six dispensers with Short Range Test Ribbons. Each of the seven dispensers fits in a separate compartment, with the range designated in a selection table in the top of the pack. The Wide Range paper is used to locate the approximate pH, and the appropriate Short Range paper is then used to determine the approximate pH value within ±0.5 unit.

Alkaline Iodide–Sodium Azide Solution

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SA435-1**	135.94	6/642.82

Used in APHA test for dissolved oxygen (Alsterberg azide modification).
Contains Potassium Hydroxide, Potassium Iodide, Sodium Azide.

ChemAlert® STORAGE **white**

Product Specifications

Suitability for Oxygen Testing .... Pass Test

Alkaline-Iodide-Azide

Alsterberg Formulation
Clear, colorless liquid
pH > 13

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**540-16**	36.59	----
1L	Poly Bottle	**540-32**	63.35	----
4L	Poly Bottle	**540-1**	200.08	----

Boiling point: Approx. 104°C
[7681-11-0 (Potassium Iodide)]
[26628-22-8 (Sodium Azide)]
[1310-73-2 (Sodium Hydroxide)]
[7732-18-5 (Water, Deionized)]

▸***Alumina for Chromatography*** *see Sorbents for Column Chromatography in the Chromatography section.*

Aluminum

Finest Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Can	**A559-500**	101.86	6/455.41

Al
At. Wt. 26.98
[7429-90-5]

ChemAlert® STORAGE **red**

Aluminum — Certified ACS

Wire

Quantity	Packaging	Cat. No.	Each	Case of
500g	Box	**A557-500**	167.77	6/777.58

Al
At. Wt. 26.98
Melting point: 660°C
[7429-90-5]

ChemAlert® STORAGE **gray**

Product Specifications
Actual Lot Analysis is reported on label.

Insoluble in Dilute HCl .... ≤0.050%
Silicon .... ≤0.1%
Nitrogen Compounds (as N) .... ≤0.001%
Copper .... ≤0.02%
Iron .... ≤0.1%
Manganese .... ≤0.002%
Titanium .... ≤0.03%

Aluminium Chloride, 99%

Granules

ACRŌS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
5g	----	**AC19578-0050**	25.60	----
500g	----	**AC19578-5000**	66.00	----
1kg	----	**AC19578-0010**	108.00	----

$AlCl_3$
F.W. 133.34
Melting point: 194°C
Density: 2.44g/mL
[7446-70-0]

NEW

Aluminium Chloride, 98.50%

Powder

ACRŌS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
5g	----	**AC21746-0050**	22.10	----
100g	----	**AC21746-1000**	28.00	----
500g	----	**AC21746-5000**	51.40	----

$AlCl_3$
F.W. 133.34
Melting point: 194°C
Density: 2.44g/mL
[7446-70-0]

NEW

Aluminum Chloride Hexahydrate — Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A573-500**	107.44	6/480.30
2.5kg	Glass	**A573-212**	394.84	4/1228.93

$AlCl_3{\cdot}6H_2O$
F.W. 241.43
[7784-13-6]

ChemAlert® STORAGE **white**

Product Specifications

Insoluble Matter .... ≤0.005%
Free Acid (as HCl) .... ≤0.10%
Sulfate .... ≤0.010%
Alkalis and Earths .... ≤0.20%
Ammonia .... ≤0.010%
Heavy Metals (as Pb) .... ≤5ppm
Iron .... ≤5ppm

Aluminum Hydroxide Hydrate — Certified
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A581-500**	49.24	6/226.69

ChemAlert® STORAGE gray

Product Specifications

Water of Hydration	32-35%
Chloride	≤0.002%
Silicate (SiO_3)	Trace
Sulfate	≤0.050%
Alkalis and Earths	≤0.25%
Heavy Metals (as Pb)	≤0.005%
Iron	≤0.005%
Water-soluble Substances	≤0.25%

Aluminum Nitrate Nonahydrate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**A586-250**	87.23	6/399.60
500g	Amber Glass	**A586-500**	127.48	6/597.99
3kg	Glass	**A586-3**	443.54	4/1370.53
10kg	Poly Pail	**A586-10**	826.34	- - - -

Nitric Acid Aluminum Salt
$Al(NO_3)_3 \cdot 9H_2O$
$AlN_3O_9 \cdot 9H_2O$
F.W. 375.13
Melting point: 73°C
[7784-27-2]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	98.0-102.0%
Insoluble Matter	≤0.005%
Chloride	≤0.001%
Sulfate	≤0.005%
Calcium	≤0.005%
Magnesium	≤0.001%
Potassium	≤0.002%
Sodium	≤0.005%
pH of a 5% Solution at 25°C	2.5 to 3.5
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.002%

Aluminum Oxide Anhydrous — Certified
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A591-500**	51.70	6/239.40
3kg	Glass	**A591-3**	173.13	4/550.50

Aluminum Trioxide, Alumina
Al_2O_3
F.W. 101.96
Melting point: about 2000°C
[1344-28-1]

ChemAlert® STORAGE gray

Product Specifications

Water-soluble Substances	≤0.75%
Loss on Ignition	≤1.0%
Silicate (SiO_3)	≤0.04%
Chloride	≤0.005%
Sulfate	≤0.070%
Alkalis and Earths	≤0.50%
Heavy Metals (as Pb)	≤0.002%
Iron	≤0.005%

Aluminum Potassium Sulfate Dodecahydrate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A601-500**	162.82	6/754.65
3kg	Poly Bottle	**A601-3**	738.79	4/2310.47

Potassium Alum
$AlK(SO_4)_2 \bullet 12H_2O$
$AlKS_2O_8 \bullet 12H_2O$
F.W. 474.39
Melting point: 92.5°C
[7784-24-9]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	98.0-102.0%
Insoluble Matter	≤0.005%
Chloride	≤5ppm
Ammonium	≤0.005%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%
Sodium	≤0.02%

Aluminum Sulfate Hydrate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A613-500**	195.03	6/914.84

$Al_2(SO_4)_3 \bullet nH_20$
F.W. 666.42 (for 18-hydrate)
Melting point: 86.5°C
[7784-31-8]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay (as H_20)	98.0-102.0%
Insoluble Matter	≤0.01%
Chloride	≤0.005%
Calcium	≤0.01%
Magnesium	≤0.002%
Potassium	≤0.005%
Sodium	≤0.02%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.002%

Aluminum Sulfate Hydrate — Technical

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Glass	**A611-3**	114.41	4/343.24

$Al_2(SO_4)_3 \bullet nH_20$
n = approx. 12-14
[7784-31-8]

ChemAlert® STORAGE gray

▸**Aluminum Trioxide** *see Aluminum Oxide Anhydrous A591.*

▸**Amberlite** *see Ion Exchange Resins.*

▸**Amberlyst** *see Ion Exchange Resins.*

▸**Aminoacetic Acid** *see Glycine G46 and G48.*

4-Aminoantipyrine — Certified
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**01123-100**	115.47	6/516.10

Ampyrone
$CH_3NN(C_6H_5)COC(NH_2):CCH_3$
$C_{11}H_{13}N_3O$
F.W. 203.25
[83-07-8]

ChemAlert® STORAGE **gray**

Product Specifications

Assay	≥98%
Melting Range	2° incl. 109°C
Suitability for Phenol Determination	To pass test

▸ ***Aminobenzene*** *see Aniline A740I.*

▸ ***4-Aminobenzenesulfonamide*** *see Sulfanilamide O4525.*

▸ ***4-Aminobenzenesulfonic Acid*** *see Sulfanilic Acid Anhydrous A296.*

▸ ***2-Aminoethanol*** *see Ethanolamine M251.*

▸ ***α-Aminoglutaric Acid*** *see L-(+)-Glutamic Acid A125.*

▸ ***2-Amino-2-(hydroxymethyl)-1,3-propanediol*** *see Tris(hydroxymethyl)-aminomethane T395.*

▸ *see also Fisher BioReagents* Tris Base BP152 and BP154.*

▸ ***2-Amino-2-(hydroxymethyl)-1,3-propanediol Hydrochloride*** *see Tris-(hydroxymethyl)aminomethane Hydrochloride O4997.*

▸ ***Amino-β-thiolactic Acid*** *see L-(+)-Cysteine Hydrochloride Monohydrate C562.*

▸ ***Ammonia Water*** *see Ammonium Hydroxide A669.*

Ammonium Acetate — HPLC
Also meets ACS specifications
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A639-500**	73.44	6/329.60

Acetic Acid Ammonium Salt
CH_3COONH_4
$C_2H_7NO_2$
F.W. 77.08
Melting point: 114°C
[631-61-8]

ChemAlert® STORAGE **gray**

Product Specifications

Assay	≥98.0%
Chloride	≤5ppm
Heavy Metals (as Pb)	≤5ppm
Insoluble Matter	≤0.005%
Iron	≤5ppm
Nitrate	≤0.001%
pH of a 5% Solution at 25°C	6.7 to 7.3
Residue after Ignition	≤0.01%
Sulfate	≤0.001%
Optical Absorbance of a 1M Solution:	
at 254nm	≤0.02
at 280nm	≤0.01
at 350nm	≤0.01

Ammonium Acetate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A637-500**	112.69	6/528.62
3kg	Poly Pail	**A637-3**	408.34	- - - -
10kg	Poly Pail	**A637-10**	511.93	- - - -

CH_3COONH_4
$C_2H_7NO_2$
F.W. 77.08
Melting point: 114°C
[631-61-8]

ChemAlert® STORAGE **gray**

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥97.0%
Insoluble Matter	≤0.005%
Residue after Ignition	≤0.01%
pH of a 5% Solution at 25°C	6.7 to 7.3
Chloride	≤5ppm
Nitrate	≤0.001%
Sulfate	≤0.001%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm

Ammonium Bicarbonate — Certified
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A643-500**	59.03	6/276.90
50kg	Fiber Drum	**A643-50**	974.89	- - - -

Carbonic Acid Monoammonium Salt
NH_4HCO_3
F.W. 79.06
[1066-33-7]

ChemAlert® STORAGE **gray**

Product Specifications

Assay (as NH_3)	21.30-21.73%
Residue after Ignition	≤0.005%
Chloride	≤5ppm
Sulfate	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm

Ammonium Bifluoride — Technical
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A664-500**	61.11	6/285.32
3kg	Poly Bottle	**A664-3**	212.11	4/652.21

Ammonium Acid Fluoride, Ammonium Hydrogen Difluoride
$NH_4F{\cdot}HF$
F.W. 57.04
[1341-49-7]

ChemAlert® STORAGE **white**

Ammonium Carbonate — Certified ACS
Lumps

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A656-500**	78.60	6/352.95
3kg	Poly Pail	**A656-3**	293.73	- - - -

[8000-73-5]

ChemAlert® STORAGE **gray**

Product Specifications
Actual Lot Analysis is reported on label.

Assay (NH_3)	≥30%
Insoluble Matter	≤0.005%
Nonvolatile Matter	≤0.005%
Chloride	≤5ppm
Sulfur Compounds (as SO_4)	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Iron	≤3ppm

Ammonium Carbonate — Laboratory

Powder

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Pail	**A652-3**	142.87	- - - -

[8000-73-5]

ChemAlert® STORAGE gray

Ammonium Chloride — USP/FCC/EP

White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A687-500**	75.70	6/329.62
2.5kg	Poly Bottle	**A687-212**	150.04	4/442.03
10kg	Poly Pail	**A687-10**	369.90	- - - -

NH_4Cl

F.W. 53.49

[12125-02-9]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Assay (dried basis)	99.5%-100.5%
pH of a 5% Solution at 25°C	4.6 to 6.0
Loss on Drying at 105°C	≤0.5%
Residue on Ignition	≤0.1%
Limit of Thiocyanate	To pass test
Heavy Metals	≤0.001%
Assay (dried basis)	99.5%-100.5%
USP Protocol Required	To pass test
Meets FCC Chemical Specifications	
Assay (after drying)	≥99.0%
Lead	≤4mg/kg
Loss on Drying	≤0.5%
Meets EP Chemical Specifications	
Assay (dried basis)	99.5% to 100.5%
Appearance of Solution	Clear and colorless
Acidity or Alkalinity	To pass test
Bromide and Iodide	To pass test
Sulfates (SO_4)	≤150ppm
Calcium (Ca)	≤200ppm
Heavy Metals	≤10ppm
Iron (Fe)	≤20ppm

Ammonium Chloride — USP/FCC

Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A649-500**	73.91	6/330.42
3kg	Poly Bottle	**A649-3**	169.18	4/529.08

NH_4Cl

F.W. 53.49

[12125-02-9]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Assay (Dried Basis)	99.5-100.5%
pH of a 5% Solution at 25°C	4.6-6.0
Loss on Drying	≤0.5%
Residue on Ignition	≤0.1%
Thiocyanate	To pass test
Heavy Metals	≤0.001%
USP Protocol Required	To pass test
Meets FCC Chemical Specifications	
Assay (After Drying)	≥99.0%
Lead	≤4mg/kg
Loss on Drying	≤0.5%

Ammonium Chloride — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A661-500**	65.03	6/305.05
3kg	Poly Bottle	**A661-3**	235.98	4/685.06
10kg	Poly Pail	**A661-10**	453.23	- - - -

Sal Ammoniac

NH_4Cl

F.W. 53.49

[12125-02-9]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.5%
Insoluble Matter	≤0.005%
Residue after Ignition	≤0.01%
pH of a 5% Solution at 25°C	4.5 to 5.5
Phosphate	≤2ppm
Sulfate	≤0.002%
Calcium	≤0.001%
Magnesium	≤5ppm
Heavy Metals (as Pb)	≤5ppm
Iron	≤2ppm

Ammonium Chloride-EDTA Solution

Clear, colorless liquid

pH Approx. 8.5

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**626-16**	31.55	- - - -
1L	Poly Natural	**626-32**	50.18	- - - -
4L	Poly Natural	**626-1**	98.81	- - - -

Application: For Nitrate by the Cadmium Reduction Method

[12125-02-9 (Ammonium Chloride)]

[1336-21-6 (Ammonium Hydroxide)]

[7732-18-5 (Water, Deionized)]

Ammonium Citrate Dibasic — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A663-500**	148.18	6/695.14
2.5kg	Glass	**A663-212**	520.11	4/1618.80

Citric Acid Diammonium Salt, Diammonium Citrate

$(NH_4)_2O_2CCH_2C(OH)(CO_2H)CH_2CO_2$

$C_6H_{14}N_2O_7$

F.W. 226.19

[3012-65-5]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	98.0-103.0%
Insoluble Matter	≤0.005%
Residue after Ignition	≤0.01%
Chloride	≤0.001%
Oxalate (C_2O_4)	To pass test (about 0.05%)
Sulfur Compounds (as SO_4)	≤0.005%
Phosphate	≤5ppm
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%
Bulk Density	≥0.76g/cm³

*Trademark. See Trademark Reference.

Prices subject to change.

Ammonium Dichromate **Certified**

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**A644-100**	68.76	6/318.68
500g	Amber Glass	**A644-500**	148.60	6/693.76
2.5kg	Amber Glass	**A644-212**	553.12	4/1721.52

Chromic Acid Diammonium Salt
$(NH_4)_2Cr_2O_7$
F.W. 252.07
[7789-09-5]

ChemAlert® STORAGE yellow

Product Specifications

Insoluble Matter	≤0.005%
Chloride	≤0.005%
Calcium	≤0.002%
Sulfate	≤0.006%
Alkali Salts	≤0.15%

▸***Ammonium Dihydrogen Phosphate*** *see Ammonium Phosphate Monobasic A684.*

Ammonium Fluoride **Certified ACS**

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**A665-100**	50.28	6/235.88
500g	Glass	**A665-500**	236.83	6/1110.96

NH_4F
F.W. 37.04
[12125-01-8]

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥98.0%
Insoluble Matter	≤0.005%
Residue after Ignition	≤0.01%
Chloride	≤0.001%
Sulfate	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm

Ammonium Formate **Certified**

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Glass	**A666-500**	94.15	6/422.96

Formic Acid Ammonium Salt
$HCOONH_4$
CH_5NO_2
F.W. 63.06
Melting point: 1156°C
[540-69-2]

ChemAlert® STORAGE gray

Product Specifications

Assay	97-103%
Insoluble Matter	≤0.005%
Residue after Ignition	≤0.005%
pH of a 5% Solution at 25°C	6.5 to 7.0
Sulfate	≤0.005%
Chloride	≤0.001%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%

▸***Ammonium Hydrosulfide*** *see Ammonium Sulfide Solution A705.*

Ammonium Hydroxide **Optima***

Quantity	Packaging	Cat. No.	Each	Case of
250mL	HDPE	**A470-250**	158.41	- - - -
500mL	HDPE	**A470-500**	213.62	- - - -
1L	HDPE	**A470-1**	370.31	- - - -

Aqueous Ammonia
NH_4OH
F.W. 35.05
Certificate of Analysis included with each bottle.
[1336-21-6]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications and Typical Values

	Max. Spec.	Typical Value
Assay (NH_3)	20–22%	21%
Aluminum	20ppt	<20ppt
Antimony	10ppt	<10ppt
Arsenic	10ppt	<10ppt
Barium	10ppt	<10ppt
Beryllium	10ppt	<5ppt
Bismuth	10ppt	<0.1ppt
Cadmium	10ppt	<1ppt
Calcium	20ppt	<20ppt
Cerium	10ppt	<0.1ppt
Cesium	10ppt	<0.1ppt
Chromium	10ppt	<10ppt
Cobalt	10ppt	<1ppt
Copper	20ppt	<10ppt
Dysprosium	10ppt	<0.1ppt
Erbium	10ppt	<0.1ppt
Europium	10ppt	<0.1ppt
Gadolinium	10ppt	<0.1ppt
Gallium	10ppt	<1ppt
Germanium	10ppt	<1ppt
Gold	10ppt	<5ppt
Holmium	10ppt	<0.1ppt
Indium	10ppt	<1ppt
Iron	20ppt	<20ppt
Lanthanum	10ppt	<0.1ppt
Lead	10ppt	<2ppt
Lithium	10ppt	<1ppt
Lutetium	10ppt	<0.1ppt
Magnesium	20ppt	<5ppt
Manganese	10ppt	<10ppt
Molybdenum	10ppt	<1ppt
Neodymium	10ppt	<0.1ppt
Nickel	10ppt	<10ppt
Niobium	10ppt	<10ppt
Potassium	20ppt	<20ppt
Praseodymium	10ppt	<0.1ppt
Rhodium	10ppt	<1ppt
Rubidium	10ppt	<1ppt
Samarium	10ppt	<0.1ppt
Scandium	10ppt	<2ppt
Silver	10ppt	<1ppt
Sodium	20ppt	<10ppt
Strontium	10ppt	<1ppt
Tellurium	10ppt	<10ppt
Terbium	10ppt	<0.1ppt
Thallium	10ppt	<1ppt
Thorium	10ppt	<0.1ppt
Thulium	10ppt	<0.1ppt
Tin	10ppt	<10ppt
Titanium	10ppt	<10ppt
Tungsten	10ppt	<10ppt
Uranium	10ppt	<0.1ppt
Vanadium	10ppt	<2ppt
Ytterbium	10ppt	<0.1ppt
Yttrium	10ppt	<1ppt
Zinc	10ppt	<10ppt
Zirconium	10ppt	<1ppt

Ammonium Hydroxide TraceMetal

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**A512-500**	53.14	6/211.32
4L	Poly Bottle	**A512-4**	688.15	- - - -

Aqueous Ammonia
NH_4OH
F.W. 35.05
Certificate of Analysis included with each shipment.
[1336-21-6]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications and Typical Values

	Max. Spec.	Typical Value
Assay (as NH_3)	20–22%	21%
Color (APHA)	10	<10
Aluminum	1ppb	<0.5ppb
Antimony	1ppb	<0.1ppb
Arsenic	1ppb	<0.1ppb
Barium	1ppb	<0.1ppb
Beryllium	1ppb	<0.1ppb
Bismuth	1ppb	<0.1ppb
Cadmium	1ppb	<0.1ppb
Calcium	1ppb	<0.5ppb
Cerium	0.5ppb	<0.1ppb
Cesium	0.5ppb	<0.1ppb
Chromium	1ppb	<0.1ppb
Cobalt	1ppb	<0.1ppb
Copper	1ppb	<0.5ppb
Dysprosium	0.5ppb	<0.1ppb
Erbium	0.5ppb	<0.1ppb
Europium	0.5ppb	<0.1ppb
Gadolinium	0.5ppb	<0.1ppb
Gallium	0.5ppb	<0.1ppb
Germanium	0.5ppb	<0.1ppb
Gold	0.5ppb	<0.1ppb
Holmium	0.5ppb	<0.1ppb
Indium	0.5ppb	<0.1ppb
Iron	1ppb	<0.5ppb
Lanthanum	0.5ppb	<0.1ppb
Lead	1ppb	<0.1ppb
Lithium	1ppb	<0.1ppb
Lutetium	0.5ppb	<0.1ppb
Magnesium	1ppb	<0.2ppb
Manganese	1ppb	<0.2ppb
Mercury	1ppb	<0.5ppb
Molybdenum	1ppb	<0.1ppb
Neodymium	0.5ppb	<0.1ppb
Nickel	1ppb	<0.2ppb
Niobium	0.5ppb	<0.1ppb
Potassium	1ppb	<0.2ppb
Praseodymium	0.5ppb	<0.1ppb
Rhodium	0.5ppb	<0.1ppb
Rubidium	0.5ppb	<0.1ppb
Samarium	0.5ppb	<0.1ppb
Scandium	0.5ppb	<0.1ppb
Selenium	1ppb	<0.1ppb
Silver	1ppb	<0.1ppb
Sodium	1ppb	<0.5ppb
Strontium	1ppb	<0.1ppb
Tellurium	0.5ppb	<0.1ppb
Terbium	0.5ppb	<0.1ppb
Thallium	0.5ppb	<0.1ppb
Thorium	1ppb	<0.1ppb
Thulium	0.5ppb	<0.1ppb
Tin	1ppb	<0.1ppb
Titanium	1ppb	<0.1ppb
Tungsten	0.5ppb	<0.1ppb
Uranium	1ppb	<0.1ppb
Vanadium	1ppb	<0.1ppb
Ytterbium	0.5ppb	<0.1ppb
Yttrium	0.5ppb	<0.1ppb
Zinc	1ppb	<0.5ppb
Zirconium	1ppb	<0.1ppb

Element concentrations are at the point of bottling.

Ammonium Hydroxide NF/FCC

26°Bé

Quantity	Packaging	Cat. No.	Each	Case of
2.5L	Glass	**A667-212**	79.64	6/357.94

Strong Ammonia Solution, Aqueous Ammonia
NH_4OH
F.W. 35.05
Density: about 0.90g/mL
[1336-21-6]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Identification	To pass test
Meets NF Chemical Specifications	
Assay (NH_3)	27.0-31.0%
Heavy Metals (as Pb)	≤0.0013%
Nonvolatile Residue	≤0.05%
Readily Oxidizable Substances	To pass test
Meets FCC Chemical Specifications	
Assay	27.0-30.0%
Arsenic	≤3ppm
Lead (Pb)	≤5mg/kg
Nonvolatile Residue	≤0.02%
Readily Oxidizable Substances	To pass test

Ammonium Hydroxide Certified ACS Plus

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass	**A669-500**	41.58	6/152.19
500mL	Glass/Safe-Cote*	**A669S-500**	52.65	6/192.61
2.5L	Glass	**A669-212**	68.85	- - - -
6x2.5L	Glass	**A669C-212**	207.26	- - - -
6x2.5L	Glass/Safe-Cote	**A669S-212**	251.83	- - - -
385 lb.	Poly Drum	**A669-385LB**	964.47	- - - -

Aqueous Ammonia
NH_4OH
F.W. 35.05
[1336-21-6]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Actual Lot Analysis is reported on label.

Assay (as NH_3) w/w	28.0-30.0%
Residue after Ignition	≤3ppm
Carbon Dioxide	≤0.002%
Chloride	≤0.5ppm
Phosphate	≤0.4ppm
Sulfate (as SO_4)	≤2ppm
Heavy Metals (as Pb)	≤0.5ppm
Iron	≤0.1ppm
Arsenic and Antimony (as As)	≤0.05ppm
Aluminum	≤0.3ppm
Boron	≤0.1ppm
Calcium	≤0.3ppm
Chromium	≤0.2ppm
Copper	≤0.1ppm
Gold	≤0.3ppm
Lead	≤0.2ppm
Magnesium	≤0.3ppm
Manganese	≤0.2ppm
Nickel	≤0.1ppm
Nitrate	≤2ppm
Potassium	≤0.3ppm
Tin	≤0.3ppm
Titanium	≤0.3ppm
Zinc	≤0.3ppm
Substances Reducing Permanganate	To pass test

*Trademark. See Trademark Reference.

Ammonium Hydroxide, 50% (v/v)

Clear, colorless liquid
Alkaline

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**640-16**	26.24	----
4L	Poly Bottle	**640-1**	86.05	----

Melting point: Approx. -72°C
Boiling point: Approx. 36°C
Solvent/Matrix: Aqueous Solution
[1336-21-6 (Ammonium Hydroxide)]
[7732-18-5 (Water, Deionized)]

Ammonium Hydroxide, 16.7% (v/v) — Electronic Grade

Clear, colorless liquid
Alkaline

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**632-16**	22.07	----
1L	Poly Natural	**632-32**	35.21	----
4L	Poly Natural	**632-1**	49.58	----
20L	Cubitainer*	**632-5**	140.80	----

Melting point: Approx. -72°C
Boiling point: Approx. 36°C
Solvent/Matrix: Aqueous Solution
[1336-21-6 (Ammonium Hydroxide)]
[7732-18-5 (Water, Deionized)]

Ammonia

ca 7N solution in methanol

ACRŌS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
25mL	Glass Bottle	**AC13371-0250**	30.20	----
1L	Glass Bottle	**AC13371-0010**	126.40	----

NH_3
[7664-41-7]

Ammonium Molybdate Tetrahydrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A674-500**	290.05	6/1354.14
3kg	Poly Bottle	**A674-3**	1390.17	4/4382.78
10kg	Poly Pail	**A674-10**	3522.69	----

Ammonium Heptamolybdate Tetrahydrate
$(NH_4)_6MO_7O_{24}\cdot 4H_2O$
F.W. 1235.86
[12054-85-2]

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay (MoO_3)	81.0-83.0%
Insoluble Matter	≤0.005%
Chloride	≤0.002%
Nitrate	To pass test
Arsenate, Phosphate, Silicate (as SiO_2)	≤0.001%
Sulfate	≤0.02%
Heavy Metals (as Pb)	≤0.001%
Magnesium	≤0.005%
Potassium	≤0.01%
Phosphate	≤5ppm
Sodium	≤0.01%

Ammonium Molybdate

Clear, colorless liquid
pH 5.0 - 5.5 (5% solution)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**665-16**	36.57	----
1L	Poly Bottle	**665-32**	47.74	----
4L	Poly Bottle	**665-1**	120.29	----

Solvent/Matrix: Aqueous Solution
[12054-85-2 (Ammonium Molybdate Tetrahydrate)]
[7732-18-5 (Water, Deionized)]

▸***Ammonium Monohydrogen Phosphate*** *see Ammonium Phosphate Dibasic A686.*

Ammonium Nitrate — Certified ACS

Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A676-500**	67.82	6/318.14
2.5kg	Poly Bottle	**A676-212**	188.79	4/587.56

NH_4NO_3
F.W. 80.04
Melting point: 169.6°C
Decomposes at 210°C
[6484-52-2]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥95.0%
Insoluble Matter	≤0.005%
Residue after Ignition	≤0.01%
pH of a 5% Solution at 25°C	4.5 to 6.0
Chloride	≤5ppm
Nitrite	≤5ppm
Phosphate	≤5ppm
Sulfate	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Iron	≤2ppm

Ammonium Oxalate Monohydrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A679-500**	170.09	6/788.32

Ethanedioic Acid, Diammonium Salt Monohydrate
$(NH_4)O(O)CC(O)O(NH_4)\cdot H_2O$
$C_2H_8N_2O_4\cdot H_2O$
F.W. 142.11
[6009-70-7]

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.0-101.0%
Insoluble Matter	≤0.005%
Residue after Ignition	≤0.02%
Chloride	≤0,002%
Sulfate	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Iron	≤2ppm

Ammonium Oxalate

Clear, colorless liquid
pH Approx. 6 - 7

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**685-16**	23.35	----
1L	Poly Bottle	**685-32**	37.90	----
4L	Poly Bottle	**685-1**	94.28	----

Melting point: Approx.-10
Solvent/Matrix: Aqueous Solution
[6009-70-7 (Ammonium Oxalate)]
[7732-18-5 (Water, Deionized)]

Ammonium Peroxydisulfate

Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A682-500**	73.21	6/343.42
3kg	Poly Bottle	**A682-3**	323.39	4/999.25
10kg	Poly Pail	**A682-10**	507.43	- - - -

Ammonium Persulfate, APS

$(NH_4)_2S_2O_8$

F.W. 228.19

[7727-54-0]

ChemAlert® STORAGE yellow

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥98.0%
Insoluble Matter	≤0.005%
Residue after Ignition	≤0.05%
Titratable Free Acid	≤0.04mEq/g
Chloride and Chlorate (as Cl)	≤0.001%
Heavy Metals (as Pb)	≤0.005%
Iron	≤0.001%
Manganese	≤0.5ppm

Ammonium Phosphate Monobasic

Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A684-500**	84.59	6/396.80
3kg	Glass	**A684-3**	363.44	4/1131.19

Ammonium Acid Phosphate, Ammonium Dihydrogen Phosphate

$NH_4H_2PO_4$

F.W. 115.03

[7722-76-1]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥98.0%
Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	3.8 to 4.4
Calcium	≤0.001%
Magnesium	≤0.0005%
Chloride	≤5ppm
Nitrate	≤0.001%
Sulfur Compounds (as SO_4)	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%
Potassium	≤0.005%
Sodium	≤0.005%

Ammonium Phosphate Monobasic

HPLC

Also meets ACS specifications

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A685-500**	82.17	6/369.05

Phosphoric Acid Monoammonium Salt, Ammonium Dihydrogen Phosphate

$NH_4H_2PO_4$

F.W. 115.03

[7722-76-1]

ChemAlert® STORAGE gray

Product Specifications

Assay	≥98.0%
Chloride	≤5ppm
Calcium	≤0.001%
Magnesium	≤0.0005%
Heavy Metals (as Pb)	≤5ppm
Insoluble Matter	≤0.005%
Iron	≤0.001%
Nitrate	≤0.001%
pH of a 5% Solution at 25°C	3.8 to 4.4
Potassium	≤0.005%
Sodium	≤0.005%
Sulfur Compounds (as SO_4)	≤0.005%
Optical Absorbance of a 1M Solution:	
at 254nm	≤0.03
at 280nm	≤0.01
at 350nm	≤0.01

Ammonium Phosphate Dibasic

Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A686-500**	115.96	6/518.42

Ammonium Monohydrogen Phosphate

Diammonium Hydrogen Phosphate

Phosphoric Acid Diammonium Salt

$(NH_4)_2HPO_4$

F.W. 132.06

[7783-28-0]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥98.0%
Insoluble Matter	≤0.005%
Calcium	≤0.001%
Magnesium	≤0.0005%
pH of a 5% Solution at 25°C	7.7 to 8.1
Chloride	≤0.001%
Nitrate	≤0.003%
Sulfate	≤0.01%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%
Potassium	≤0.005%
Sodium	≤0.005%

▸***Ammonium Purpurate, Acid*** *see Murexide M274.*

Ammonium Pyrrolidine Dithiocarbamate

Laboratory

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
10g	Amber Glass	**A182-10**	79.96	6/357.41

1-Pyrrolidinecarbodithioic Acid Ammonium Salt

APDC

$S_2CNCH_2CH_2CH_2CH_2 \cdot NH_4$

$C_5H_{12}N_2S_2$

F.W. 164.29

Melting Point: 148° - 155°C

[5108-96-3]

ChemAlert® STORAGE gray

▸***Ammonium Sodium Phosphate*** *see Sodium Ammonium Phosphate Tetrahydrate S218.*

Ammonium Sulfate

Crystalline

Primary Standard

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A938-500**	54.44	6/255.39

$(NH_4)_2SO_4$

F.W. 132.14

Standard for Kjeldahl determination of nitrogen.

[7783-20-2]

ChemAlert® STORAGE gray

Product Specifications

pH of a 5% Solution at 25°C	5.0 to 6.0
Kjeldahl Nitrogen Content (N)	20.98-21.38%

Ammonium Sulfate — Certified ACS
Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A702-500**	53.73	6/252.05
3kg	Poly Bottle	**A702-3**	180.39	4/564.15
10kg	Poly Pail	**A702-10**	273.09	- - - -

$(NH_4)_2SO_4$
F.W. 132.14
Melting point: 513°C
[7783-20-2]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.005%
Residue after Ignition	≤0.005%
pH of a 5% Solution at 25°C	5.0 to 6.0
Chloride	≤5ppm
Nitrate	≤0.001%
Phosphate	≤5ppm
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm

Ammonium Sulfate — Laboratory
Granular

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Glass	**A701-3**	87.36	4/273.22
50kg	Fiber Drum	**A701-50**	523.18	- - - -

$(NH_4)_2SO_4$
F.W. 132.14
Melting point: 513°C
[7783-20-2]

ChemAlert® STORAGE gray

Ammonium Sulfide Solution — Certified

Quantity	Packaging	Cat. No.	Each	Case of
225mL	- - - -	**A705-225**	88.18	4/275.86
500mL	Glass	**A705-500**	124.25	6/555.35

Flash point: 140°F
[12135-76-1]

Product Specifications
Actual Lot Analysis is reported on label.

Assay	20-24%
Residue after Ignition	≤0.05%
Arsenic	≤3ppm
Carbonate	To pass test
Chloride	To pass test (about 0.005%)

▸ ***Ammonium Sulfocyanate*** *see Ammonium Thiocyanate A709.*

Ammonium Thiocyanate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A709-500**	159.40	6/747.72
3kg	Poly Pail	**A709-3**	639.37	- - - -

Ammonium Rhodanate, Ammonium Sulfocyanate
NH_4SCN
F.W. 76.12
Melting point: 149.0°C
[1762-95-4]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥97.5%
Insoluble Matter	≤0.005%
Residue after Ignition	≤0.025%
pH of a 5% Solution at 25°C	4.5 to 6.0
Chloride	≤0.005%
Sulfate	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤3ppm
Iodine Consuming Substances	0.004mEq/g

▸ ***Ampicillin Sodium Salt*** *see Fisher BioReagents* BP1760.*

▸ ***Ampicillin Trihydrate*** *see Fisher BioReagents* BP902.*

Amyl Acetate — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A718-500**	69.17	6/308.16
4L	Amber Glass	**A718-4**	282.22	4/846.47

Pentyl Acetate, Pentacetate, Acetic Acid, Pentyl Ester
$CH_3(CH_2)_4OC(O)CH_3$
$C_7H_{14}O_2$
F.W. 130.19
[628-63-7]

SOLVENT ChemAlert® STORAGE red

Product Specifications

Boiling Range	144 - 150°C

▸ ***β-Amyl Alcohol*** *see tert-Amyl Alcohol A730.*

n-Amyl Alcohol — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A394-500**	84.47	6/369.52
4L	Amber Glass	**A394-4**	298.62	4/875.53

1-Pentyl Alcohol, 1-Pentanol
$CH_3(CH_2)_4OH$
$C_5H_{12}O$
F.W. 88.15
[71-41-0]

SOLVENT ChemAlert® STORAGE red

Product Specifications
Actual Lot Analysis is reported on label.

Assay (by GC)	≥98%
Color (APHA)	≤15
Residue after Evaporation	≤0.003%
Acid and Esters	≤0.075mEq/g
Carbonyl (as HCHO)	≤0.1%
Water	≤0.5%

tert-Amyl Alcohol — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A730-1**	146.73	6/688.00

Amylene Hydrate, tert-Pentyl Alcohol
2-Methyl-2-Butanol, tert-Pentanol
1,1-Dimethyl-1-propanol
$(CH_3)_2COHC_2H_5$
$C_5H_{12}O$
F.W. 88.15
[75-85-4]

SOLVENT ChemAlert® STORAGE red

Product Specifications

Specific Gravity at 25°C	0.807- 0.809
Boiling Range	100°- 103°C

▸ ***Amylene Hydrate*** *see tert-Amyl Alcohol A730.*

▸ ***Anhydroglucochloral*** *see α-Chloralose C287.*

Aniline — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass/Poison Pack	**A740I-500**	95.22	- - - -
4L	Glass/Poison Pack	**A740I-4**	307.52	- - - -

Phenylamine, Aminobenzene, Benzenamine

ChemAlert® STORAGE blue

$C_6H_5NH_2$

C_6H_7N

F.W. 93.13

This product darkens to a reddish-brown color on storage.

[62-53-3]

Product Specifications

Actual Lot Analysis is reported on label.

Assay (by GC)	≥99.0%
Color (APHA)	≤25
Residue after Ignition	≤0.005%
Chlorobenzene (C_6H_5Cl)	≤0.01%
Hydrocarbons	To pass test
Nitrobenzene ($C_6H_5NO_2$)	To pass test (about 0.001%)

Aniline Blue — Certified Biological Stain

Water Soluble

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**A967-25**	107.38	6/505.75

Acid Blue 93, Methyl Blue, Acid Blue, Soluble Blue

ChemAlert® STORAGE gray

$C_{37}H_{27}N_3Na_2O_9S_3$

F.W. 799.80

For use in histology.

C.I. 42780

[28631-66-5]

▸ ***Aniline p-Sulfonic Acid*** *see Sulfanilic Acid Anhydrous A296.*

Aniline Blue, 99%

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
5mL	Glass Bottle	**AC15392-0050**	10.70	- - - -
250mL	Glass Bottle	**AC15392-2500**	19.90	- - - -
1L	Glass Bottle	**AC15392-0010**	60.10	- - - -

Methoxybenzene

NEW

$C_6H_5OCH_3$

C_7H_8O

F.W. 108.14

Melting point: -37°C

Boiling point: 154°C (at 760mmHg)

Flash point: 43°C

Density: 0.99g/mL

n: 1.516-1.519

[100-66-3]

Antimony Potassium Tartrate Trihydrate — USP

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**A867-250**	97.34	6/437.14
500g	Amber Glass	**A867-500**	198.00	6/872.90

Tartrated Antimony

ChemAlert® STORAGE blue

$C_8H_4K_2O_{12}Sb_2 \bullet 3H_2O$

F.W. 667.85

Crystalline

[28300-74-5]

Product Specifications

Assay	99.0-103.0%
Loss on Drying at 105°C	≤2.7%
Arsenic	≤0.015%
Lead	≤0.002%
Acidity or Alkalinity	To pass test
Completeness of Solution	To pass test

▸ ***Ant Oil*** *see Furfural F94.*

▸ ***APDC*** *see Ammonium Pyrrolidine Dithiocarbamate A182.*

▸ ***Aqua Fortis*** *see Nitric Acid, Certified ACS Plus grade A200.*

▸ ***Aqualine* Karl Fischer Reagents*** *see Karl Fischer Reagents, Aqualine.*

▸ ***AquaStar* Karl Fischer Reagents*** *see Karl Fischer Reagents, AquaStar.*

▸ ***Arabic Gum*** *see Acacia (Gum Arabic) G85.*

L(+)-Arabinose, 99+%

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
25g	Plastic Bottle	**AC10498-0250**	36.70	- - - -

$C_5H_{10}O_5$

NEW

F.W. 150.13

Melting point: 160 - 163°C

alpha: $+10_3$ (c = 5, H_2O)

[87-72-9]

▸ ***Arsenic Sodium Oxide*** *see Sodium Arsenite S225I.*

Arsenic Trioxide — Certified

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Glass/Poison Pack	**A59I-100**	184.76	- - - -

White Arsenic, Arsenous Acid

ChemAlert® STORAGE blue

As_2O_3

F.W. 197.84

[1327-53-3]

Product Specifications

Assay	≥99.8%
Residue after Ignition	≤0.10%
Insoluble in Dilute NH_4OH	≤0.030%
Chloride	≤0.010%
Sulfide	To pass test (about 0.003%)
Antimony	≤0.030%
Lead	≤0.005%

▸ ***Arsenic White*** *see Arsenic Trioxide A59I.*

▸ ***Arsenous Oxide*** *see Arsenic Trioxide A59I.*

Ascorbic Acid — USP/FCC

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A62-500**	169.80	6/796.53
2.5kg	Poly Bottle	**A62-212**	574.42	4/1723.26
12kg	Poly Pail	**A62-12**	1940.67	- - - -

Vitamin C, L-Ascorbic Acid

$CH_2OHCHOHCHCOH{:}COHCOO$

ChemAlert® STORAGE gray

$C_6H_8O_6$

F.W. 176.13

Not for human use.

[50-81-7]

Product Specifications

Assay	99.0-100.5%
Heavy Metals (as Pb)	≤0.002%
Lead	≤2mg/kg
Organic Volatile Impurities	Meets the requirements
Solubility	Clear, colorless to faintly yellow solution
Specific Rotation at 25°C (C = 10% H_2O)	+20.5° to +21.5°
Residue on Ignition	≤0.1%

*Trademark. See Trademark Reference.

L-Ascorbic Acid — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**A61-25**	25.42	6/119.25
100g	Amber Glass	**A61-100**	57.15	6/268.10

Vitamin C, Ascorbic Acid
$CH_2OHCHOHCHCOH{:}COHCOO$
$C_6H_8O_6$
F.W. 176.13
Not for human use.
[50-81-7]

ChemAlert® STORAGE **gray**

Product Specifications

Actual Lot Analysis is reported on label.

Assay .... ≥99.0%
Specific Rotation at 25°C .... +20.5° to +21.5°
Residue after Ignition .... ≤0.1%
Heavy Metals (as Pb) .... ≤0.002%
Iron .... ≤0.001%

▸***Balsam, Canada*** *see Canada Balsam B10.*

Barbituric Acid

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**01308-100**	86.93	6/390.44

Pyrimidine Trione, Malonylurea
$NHCONHCOCH_2CO$
$C_4H_4N_2O_3$
F.W. 128.09
[67-52-7]

ChemAlert® STORAGE **gray**

Product Specifications

Assay .... ≥98.0%
Suitability .... To pass test

Barbituric Acid — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**01309-100**	77.53	6/346.56

Pyrimidine Trione, Malonylurea
$NHCONHCOCH_2CO$
$C_4H_4N_2O_3$
F.W. 128.09
[67-52-7]

ChemAlert® STORAGE **gray**

Barium Acetate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**B24-250**	51.30	6/240.66
500g	Amber Glass	**B24-500**	85.59	6/382.14
2.5kg	Poly Pail	**B24-212**	99.90	- - - -
5kg	- - - -	**B24-5**	195.36	- - - -

Acetic Acid Barium Salt
$Ba(C_2H_3O_2)_2$
$C_4H_6O_4Ba$
F.W. 255.42
[543-80-6]

ChemAlert® STORAGE **blue**

Product Specifications

Actual Lot Analysis is reported on label.

Assay 99.0-102.0%
Insoluble Matter .... ≤0.01%
Chloride .... ≤0.001%
Oxidizing Substances (as NO_3) .... ≤0.005%
Calcium .... ≤0.05%
Heavy Metals (as Pb) .... ≤5ppm
Iron .... ≤0.001%
Strontium .... ≤0.2%
Potassium .... ≤0.003%
Sodium .... ≤0.005%

Barium Chloride Anhydrous — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**B31-100C**	34.71	6/162.81
500g	Poly Bottle	**B31-500**	94.72	6/425.41

$BaCl_2$
F.W. 208.23
[10361-37-2]

ChemAlert® STORAGE **blue**

Product Specifications

Assay .... ≥97%

Barium Chloride Dihydrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**B34-100**	44.87	6/210.51
500g	Poly Bottle	**B34-500**	100.90	6/473.34
3kg	Poly Bottle	**B34-3**	475.80	4/1470.19
10kg	Poly Pail	**B34-10**	746.40	- - - -

$BaCl_2{\bullet}2H_2O$
F.W. 244.26
[10326-27-9]

ChemAlert® STORAGE **blue**

Product Specifications

Actual Lot Analysis is reported on label.

Assay ($BaCl_2{\cdot}2H_2O$) .... ≥99%
Loss on Drying at 150°C 14.0-16.0%
Insoluble Matter .... ≤0.005%
pH of a 5% Solution at 25°C .... 5.2 to 8.2
Oxidizing Substances (as NO_3) .... ≤0.005%
Calcium .... ≤0.05%
Heavy Metals (as Pb) .... ≤5ppm
Iron .... ≤2ppm
Strontium .... ≤0.1%
Potassium .... ≤0.0025%
Sodium .... ≤0.005%

Barium Chloride Dihydrate — Technical

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
10kg	Bag in Box	**B33-10**	220.38	- - - -
50kg	Fiber Drum	**B33-50**	698.84	- - - -

$BaCl_2{\bullet}2H_2O$
F.W. 244.26
[10326-27-9]

ChemAlert® STORAGE **blue**

Barium Chloride Dihydrate, 10% (w/w)

Neutralized

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SB10-1**	57.67	6/272.52

[10361-37-2]

ChemAlert® STORAGE **gray**

Product Specifications

Assay 9.5-10.5%
Color (APHA) .... ≤10

Barium Diphenylamine Sulfonate — Certified

Powder

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**B38-25**	460.13	6/2148.17

N-Phenylsulfanilic Acid Barium Salt
p-Diphenylaminesulfonic Acid Barium Salt
$Ba(C_6H_5NHC_6H_4SO_3)_2$
$C_{24}H_{20}BaN_2O_6S_2$
F.W. 633.90
Oxidation-reduction indicator.
[6211-24-1]

ChemAlert® STORAGE **blue**

Product Specifications

Sensitivity as Redox Indicator .... To pass test

Barium Hydroxide Octahydrate Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**B46-250**	79.43	6/356.83
500g	Amber Glass	**B46-500**	145.20	6/681.14

$Ba(OH)_2 \cdot 8H_2O$
F.W. 315.46
[12230-71-6]

ChemAlert® STORAGE white

Product Specifications
Actual Lot Analysis is reported on label.

Assay [$Ba(OH)_2 \cdot 8H_2O$]	≥98.0%
Carbonate (as $BaCO_3$)	≤2.0%
Insoluble in Dilute HCl	≤0.01%
Chloride	≤0.001%
Sulfide	Passes Test
Calcium	≤0.05%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%
Strontium	≤0.8%
Potassium	≤0.01%
Sodium	≤0.01%

Barium Nitrate Certified ACS

White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**B53-500**	94.78	6/444.60

Nitric Acid Barium Salt
$Ba(NO_3)_2$
F.W. 261.35
[10022-31-8]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99%
Insoluble Matter	≤0.01%
pH of a 5% Solution at 25°C	5.0 to 8.0
Chloride	≤5ppm
Calcium	≤0.05%
Heavy Metals (as Pb)	≤5ppm
Iron	≤2ppm
Strontium	≤0.1%
Potassium	≤0.005%
Sodium	≤0.005%

Barium Sulfate Certified

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**B68-500**	166.03	6/769.54

$BaSO_4$
F.W. 233.39
[7727-43-7]

ChemAlert® STORAGE gray

Product Specifications

Free Acid (as H_2SO_4)	≤0.020%
Free Alkalis	None
Organic Matter	No reaction
Chloride	≤0.015%
Phosphate	≤0.001%
Silicate	To pass test
Arsenic	≤1ppm
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.003%
Water-soluble Salts	≤0.04%

▸**Basic Blue 17** *see Toluidine Blue O T161 and LC26165-1.*

▸**Basic Blue 9** *see Methylene Blue M291.*

▸**Basic Fuchsin (C.I. 42510)** *see Fuchsin Basic F98.*

▸**Basic Green 4** *see Malachite Green Oxalate M290.*

▸**Basic Red 2** *see Safranin O S670.*

▸**Bath Oil** *see Oil, Stabilized O2.*

BDI Reagent

Slightly hazy, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Natural	**SB0117904A**	62.70	- - - -

[9002-93-1 (Triton* X-100)]
[10124-56-8 (Sodium Hexametaphosphate)]
[7732-18-5 (Water, Deionized)]

Bentonite Laboratory

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Glass	**B235-500**	45.23	6/211.15

Wilkinite, Sodium Montmorillonite
[1302-78-9]

ChemAlert® STORAGE gray

▸**Benzamidine Hydrochloride Hydrate** *see Fisher BioReagents* BP435.*

▸**1-Benzazine** *see Quinoline Q35.*

▸**1,4-Benzenediol** *see Hydroquinone H329.*

▸**1,2,3-Benzenetriol** *see Pyrogallol A263.*

Benzine (Petroleum Naphtha)

Quantity	Packaging	Cat. No.	Each	Case of
20L	Steel Pail	**B264-20**	232.82	- - - -

Naphtha
Density: 0.76g/mL at 15.6°C
[64742-89-8]

ChemAlert® STORAGE red

▸**Benzine** *see also Petroleum Ether, Certified ACS grade E139.*

Benzoic Acid Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A65-500**	135.31	6/634.74

Phenyl Formic Acid, Benzenecarboxylic Acid
C_6H_5COOH
$C_7H_6O_2$
F.W. 122.12
[65-85-0]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.5%
Freezing Point	122° - 123°C
Residue after Ignition	≤0.005%
Insoluble in Methanol	≤0.005%
Chlorine Compounds (as Cl)	≤0.005%
Sulfur Compounds (as S)	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Substances Reducing Permanganate	To pass test

Benzoic Acid

Primary Standard

rystalline

Quantity	Packaging	Cat. No.	Each	Case of
30g	Amber Glass	**A68-30**	50.71	6/237.86

Benzenecarboxylic Acid, Dracylic Acid

C_6H_5COOH

$C_7H_6O_2$

F.W. 122.12

Primary standard for calorimetry.

[65-85-0]

ChemAlert® STORAGE gray

roduct Specifications

B.T.U./Pound	11340 - 11430
Calories/Gram	6300 - 6350

Benzoic Acid Sodium Salt *see Sodium Benzoate S224.*

Benzophenone

Certified

rystalline Flakes

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**B270-500**	111.03	6/496.37

Diphenyl Ketone, Diphenylmethanone, Benzoylbenzene

$C_6H_5COC_6H_5$

$C_{13}H_{10}O$

F.W. 182.22

[119-61-9]

ChemAlert® STORAGE gray

roduct Specifications

Melting Range	45° - 49°C

Benzyl Alcohol

NF

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A395-500**	189.13	6/1008.47
4L	Amber Glass	**A395-4**	477.05	4/1736.42

Benzenemethanol, Phenylcarbinol

$C_6H_5CH_2OH$

C_7H_8O

F.W. 108.14

[100-51-6]

SOLVENT

ChemAlert® STORAGE gray

roduct Specifications

Assay (as C_7H_8O)	98.0 - 100.5%
Acidity	To pass test
Clarity of Solution	To pass test
Color of Solution	To pass test
Nonvolatile Residue	≤0.05%
Peroxide Value	≤5
Refractive Index at 20°C	1.539 -1.541
Related Compounds:	
Benzaldehyde	≤0.15%
Cyclohexylmethanol	≤0.1%
Other Impurities relative retention time < that of Benzyl Alcohol	≤0.04%
Other Impurities relative retention time > that of Benzyl Alcohol	≤0.3%
Residue on Ignition	≤0.005%
Solubility	To pass test

Benzyl Alcohol

Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A396-500**	115.56	6/516.57
4L	Amber Glass	**A396-4**	384.03	4/1175.39
200L	- - - -	**A396-200**	2877.96	- - - -

Benzenemethanol, Phenylcarbinol

C_7H_8O

F.W. 108.13

Melting point: -15.2°C

Boiling point: 205°C

Flash point: (closed cup) 93°C

Density: 1.04mg/L

[100-51-6]

SOLVENT

ChemAlert® STORAGE gray

Product Specifications

Boiling Range	202° - 206°C
Residue after Ignition	≤0.005%
Chlorine	To pass test (about 0.02%)

▸***Berthollet's Salt*** *see Potassium Chlorate, Certified ACS grade P212.*

▸***Biodegradable Detergent*** *see Detergent, FL-70* SF105.*

▸***D-Biotin*** *see Fisher BioReagents* BP232.*

▸***Bis(2-ethylhexyl) Sulfosuccinic Acid Sodium Salt*** *see Aerosol* OT, Solid A349.*

▸***3,3-Bis(p-hydroxyphenyl) Phthalide*** *see Phenolphthalein P79.*

Bismuth Nitrate Pentahydrate

Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**B337-500**	295.23	6/1328.52

$Bi(NO_3)_3{\cdot}5H_2O$

F.W. 485.07

[10035-06-0]

ChemAlert® STORAGE yellow

Product Specifications

Arsenic	≤6ppm
Chloride	≤0.003%
Copper	≤0.002%
Insoluble in HNO_3	≤0.005%
Iron	≤0.005%
Lead	≤0.01%
Silver	≤0.001%
Sulfate	≤0.005%
Calcium	≤0.005%
Potassium	≤0.01%
Sodium	≤0.02%

N,O-Bis(trimethylsilyl)trifluoroacetamide, 98+%

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
5g	Glass Bottle	**AC16800-0050**	27.80	- - - -
25g	Glass Bottle	**AC16800-0250**	79.20	- - - -
100g	Glass Bottle	**AC16800-1000**	269.70	- - - -

$CF_3C[=NSi(CH_3)_3]OSi(CH_3)_3$

$C_8H_{18}F_3NOSi_2$

F.W. 257.4

Boiling point: 145 - 147°C (at 760mmHg)

Flash point: 34°C.

Density: 0.974g/mL

[25561-30-2]

▸***Bleu de Lyon, Water Soluble*** *see Aniline Blue A967.*

▸***Blood Coagulating Preventive*** *see Heparin Sodium H19.*

Borane-Tetrahydrofuran Complex

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC17508-1000**	30.40	- - - -
800mL	Septum Bottle	**AC17508-8000**	155.40	- - - -

$C_4H_{11}BO$

F.W. 85.94

Flash point: -17°C

Density: 0.877g/mL

[14044-65-6]

Borate Buffer
Clear, colorless liquid
pH Approx. 9.5

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**1040-16**	21.30	- - - -
1L	Poly Natural	**1040-32**	32.71	- - - -
4L	Poly Natural	**1040-1**	65.79	- - - -

[1303-96-4 (Sodium Borate Decahydrate)]
[1310-73-2 (Sodium Hydroxide)]
[7732-18-5 (Water, Deionized)]

▸**Borax** *see Sodium Tetraborate Decahydrate NF grade powder or granular S246, Certified ACS grade crystalline S248, and Certified ACS grade powder S249.*

Boric Acid NF
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A78-500**	68.78	6/376.00
10kg	Poly Pail	**A78-10**	475.80	- - - -

Orthoboric Acid, Borofax
H_3BO_3
F.W. 61.83
[10043-35-3]

ChemAlert® STORAGE gray

Product Specifications

Assay (dried basis)	99.5-100.5%
Completeness of Solution	To pass test
Heavy Metals (as Pb)	≤0.002%
Loss on Drying	≤0.5%
Solubility in Alcohol	To pass test
NF Protocol Required	To pass test

Boric Acid Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A73-500**	75.05	6/352.08
1kg	Amber Glass	**A73-1**	124.35	6/583.31
3kg	Glass	**A73-3**	316.88	4/991.04
10kg	Poly Pail	**A73-10**	499.73	- - - -
50kg	Fiber Drum	**A73-50**	1501.92	- - - -
325 lb.	Fiber Drum	**A73-325LB**	1675.07	- - - -

Orthoboric Acid, Borofax
H_3BO_3
F.W. 61.83
[10043-35-3]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.5%
Insoluble Matter in Methanol	≤0.005%
Nonvolatile with Methanol	≤0.05%
Chloride	≤0.001%
Phosphate	≤0.001%
Sulfate	≤0.010%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%

Boric Acid Certified ACS
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Glass	**A74-500**	84.55	6/379.44
1kg	Poly Bottle	**A74-1**	128.44	4/401.68
3kg	Poly Pail	**A74-3**	341.31	- - - -
10kg	Fiber Drum	**A74-10**	533.18	- - - -

Orthoboric Acid, Borofax
H_3BO_3
F.W. 61.83
[10043-35-3]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.5%
Insoluble Matter in Methanol	≤0.005%
Nonvolatile with Methanol	≤0.05%
Chloride	≤0.001%
Phosphate	≤0.001%
Sulfate	≤0.01%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%

▸**Boric Acid** *see also Fisher BioReagents* BP168.*

Boric Acid
With Bromocresol Green-Methyl Red Indicator
Clear, reddish-orange colored liquid

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**1070-32**	26.24	- - - -
4L	Poly Bottle	**1070-1**	46.76	- - - -
10L	Cubitainer*	**1070-25**	68.89	- - - -
20L	Cubitainer	**1070-5**	97.23	- - - -

Solvent/Matrix: Aqueous Solution
[10043-35-3 (Boric Acid)]
[845-10-3 (Methyl Red, Sodium Salt)]
[62625-32-5 (Bromocresol Green, Sodium Salt)]
[7732-18-5 (Water, Deionized)]

Boron Trifluoride

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100g	Glass Bottle	**AC40276-1000**	44.40	- - - -
500g	Glass Bottle	**AC40276-5000**	80.60	- - - -

BF_3
F.W. 67.81
Boiling point: 65°C (at 760mmHg)
Flash point: 4°C
Density: 0.87g/mL
[7637-07-2]

NEW

▸**Bovine Serum Albumin (Fraction V), Cold-ethanol Precipitated** *see Fisher BioReagents* BP1605.*

▸**Bovine Serum Albumin (Fraction V), Heat-shock Treated** *see Fisher BioReagents* BP1600.*

▸**Brilliant Blue G-250** *see Fisher BioReagents* BP100.*

▸**Brilliant Blue R-250** *see Fisher BioReagents* BP101.*

Brilliant Green — Certified Biological Stain

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**B422-25**	70.87	6/336.78

Ethyl Green, Basic Green, Malachite Green G

ChemAlert® STORAGE **gray**

$C_{27}H_{34}N_2O_4S$

F.W. 482.65

For use in bacteriology in media.

C.I. 42040

[633-03-4]

Bromine — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
50mL	Amber Glass	**B385-50**	250.30	- - - -
250mL	Amber Glass	**B385-250**	302.02	- - - -

Br_2

At. Wt. 79.91

SOLVENT

ChemAlert® STORAGE **white**

Melting point: -7.3°C

Density: 3.10g/mL at 25°C

[7726-95-6]

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.5%
Residue after Evaporation	≤0.005%
Chlorine	≤0.05%
Iodine	≤0.001%
Sulfur Compounds (as S)	≤0.001%
Heavy Metals (as Pb)	≤2ppm
Nickel	≤5ppm

Bromine Water — Reagent

Saturated at 20°C

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass/Poison Pack	**SB841-500**	128.28	- - - -

[7726-95-6]

ChemAlert® STORAGE **white**

Product Specifications

Normality	≥0.2

Bromine Number Titration Solvent

Dichloromethane Formulation

Quantity	Packaging	Cat. No.	Each	Case of
2.5L	Glass	**11915PT**	135.55	- - - -
4L	Glass	**11911**	164.14	- - - -

Bromobenzene — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**B253-1**	194.58	6/875.61

Monobromobenzene, Phenyl Bromide

ChemAlert® STORAGE **red**

C_6H_5Br

F.W. 157.02

[108-86-1]

Product Specifications

Actual Lot Analysis is reported on label.

Color (APHA)	≤70
Boiling Range	155° - 157°C

Bromocresol Green — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
5g	Amber Glass	**B383-5**	134.06	6/628.85

3',3'',5',5''-Tetrabromo-m-cresol-sulfonephthalein

$C_{21}H_{14}Br_4O_5S$

F.W. 698.04

For pH indication.

[76-60-8]

ChemAlert® STORAGE **gray**

Product Specifications

Actual Lot Analysis is reported on label.

Clarity of Solution	To pass test
Visual Transition Interval	Yellow (pH 3.8) to Blue (pH 5.4)

Bromocresol Green Solution, 0.04% w/v — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SI14-500**	60.50	6/287.23

For colorimetric pH determinations over pH range 4.3 to 4.9; color changes from yellow to blue. Standardized and adjusted to exact midpoint.

ChemAlert® STORAGE **gray**

Bromocresol Purple — Certified

Quantity	Packaging	Cat. No.	Each	Case of
5g	Amber Glass	**B393-5**	56.00	6/262.67

5,5'dibromo-o-cresolsulfonphthalein

ChemAlert® STORAGE **gray**

$C_{21}H_{16}Br_2O_5S$

F.W. 540.24

For colorimetric pH determinations over pH range 5.2 to 6.8; color changes from yellow to purple.

[115-40-2]

Product Specifications

Visual Transition Interval	To pass test

Bromophenol Blue — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
5g	Amber Glass	**B392-5**	69.10	6/308.95

3',3'',5', 5''-Tetrabromophenolsulfonephthalein 4,4'-(3H-2,1-Benzoxathiol-3-ylidene) bis-[2,6-Dibromophenol] S,S-Dioxide

ChemAlert® STORAGE **gray**

$C_6H_4SO_2OC(C_6H_2\text{-}3,5\text{-}Br_2\text{-}4\text{-}OH)_2$

$C_{19}H_{10}Br_4O_5S$

F.W. 669.99

pH Indicator.

[115-39-9]

Product Specifications

Actual Lot Analysis is reported on label.

Clarity of Solution	To pass test
Visual Transition Interval	Yellow (pH 3.0) to Blue (pH 4.6)

Bromophenol Blue Solution, 0.04% — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SI12-500**	80.23	6/378.19

Solution of Bromophenol Blue Sodium Salt for colorimetric determinations over pH range 3.5 to 4.1; color changes from yellow to blue.

Actual Lot Analysis is reported on label.

[115-39-9]

ChemAlert® STORAGE **gray**

Product Specifications

Concentration	Pass test
pH at 25°C	3.5 to 4.1
Visual Transition Interval	To pass test

N-Bromosuccinimide, 99%

Quantity	Packaging	Cat. No.	Each	Case of
10g	Glass Bottle	**AC10745-0100**	16.60	- - - -
100g	Glass Bottle	**AC10745-1000**	17.80	- - - -
500g	Glass Bottle	**AC10745-5000**	50.20	- - - -
1kg	Glass Bottle	**AC10745-0010**	84.60	- - - -

1-Bromo-2,5-pyrolidinedione, NBS
$C_4H_4BrNO_2$
F.W. 177.99
Melting point: 175 - 178°C
[128-08-5]

NEW

Bromothymol Blue — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
10g	Amber Glass	**B388-10**	163.73	6/768.04

3',3''-Dibromothymolsulfonephthalein
$C_{27}H_{28}Br_2O_5S$
F.W. 624.40
pH Indicator.
[76-59-5]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Clarity of Solution	To pass test
Visual Transition Interval	Pass test

Bromothymol Blue Solution, 0.04% — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SI22-500**	62.39	6/296.19

Solution of Bromothymol Blue Sodium Salt for colorimetric determinations over pH range 6.5 to 7.1 color changes from yellow to blue.
[34722-90-2]

ChemAlert® STORAGE gray

Product Specifications

Concentration	Pass test
pH at 25°C	6.5-7.1
Visual Transition Interval	Pass test

▸ ***BSA (Cold-ethanol Precipitated)*** *see Bovine Serum Albumin, Fisher BioReagents* BP1605.*

▸ ***BSA (Heat-shock Treated)*** *see Bovine Serum Albumin, Fisher BioReagents* BP1600.*

BufferPac* Color-Coded Solutions — Certified

Quantity	Packaging	Cat. No.	Each	Case of
Pk. of 3	Poly Bottles	**SB105**	71.86	6/349.74

Pack contains 1 each:
- SB101-500, pH 4.00 (Red)
- SB107-500, pH 7.00 (Yellow)
- SB115-500, pH 10.00 (Blue)

Actual Lot Analysis is reported on label.

ChemAlert® STORAGE gray

Buffer Solution, Total Ionic Strength Adjustment Buffer (TISAB IV)

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**SB175-4**	149.22	4/478.35

For the determination of fluoride ion concentration by fluoride ion electrode.
Total Ionic Strength Adjustment Buffer
Contains 1,2-Cyclohexylene Dinitrilotetraacetic Acid to prevent Aluminum interference.

Product Specifications

pH	5.5 ± 0.1
Color (APHA)	≤30
Fluoride	≤0.1ppm
Ionic Strength	To pass test
Clarity	To pass test

Buffer Solution, Total Ionic Strength Adjustment Buffer (TISAB II)
With CDTA
APHA/EPA for Fluoride

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**8670-16**	28.36	- - - -
1L	Poly Natural	**8670-32**	61.42	- - - -
4L	Poly Natural	**8670-1**	106.51	- - - -
10L	Cubitainer*	**8670-25**	286.02	- - - -
20L	Cubitainer	**8670-5**	457.13	- - - -

Buffer Solution, Total Ionic Strength Adjustment Buffer (TISAB IV)
With Tartrate
Clear, pale yellow-green liquid

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Natural	**8673-1**	263.00	- - - -
10L	Poly Natural	**136226-20**	287.09	- - - -
20L	Cubitainer*	**8673-5**	719.50	- - - -

[77-86-1 (Tris(hydroxymethyl)aminomethane)]
[7647-01-0 (Hydrochloric Acid)]
[6106-24-7 (Sodium Tartrate Dihydrate)]
[7732-18-5 (Water, Deionized)]

NEW

Buffer Solution — Certified APHA Standard
For Water Hardness (Schwarzenback)

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SB119-1**	64.47	6/305.99

Ammonium Chloride/Disodium EDTA Dihydrate/Magnesium Chloride Hexahydrate/ Ammonium Hydroxide
pH≥10.3

ChemAlert® STORAGE white

Product Specifications

Color (APHA)	≤5

Buffer Solution, pH 1.00 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB140-500**	39.62	6/190.79

Potassium Chloride/Hydrochloric Acid
Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)	≤5
pH at 25°C	1.00 ± 0.02

Buffer, Reference Standard, pH 1.00
(±0.01 at 25°C)
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**R1489-16**	15.99	- - - -
1L	Poly Bottle	**1489-32**	25.66	- - - -
4L	Poly Bottle	**1489-1**	57.20	- - - -
10L	Cubitainer*	**1489-25**	62.80	- - - -
20L	Cubitainer	**1489-5**	86.21	- - - -

[7647-01-0 (Hydrochloric Acid)]
[7732-18-5 (Water, Deionized)]

*Trademark. See Trademark Reference.

Buffer, Reference Standard, pH 1.07

(± 0.01 at 25°C)
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**14-90-16**	15.99	- - - -
1L	Poly Bottle	**1490-32**	25.66	- - - -
4L	Poly Bottle	**1490-1**	57.20	- - - -
10L	Cubitainer*	**1490-25**	62.80	- - - -
20L	Cubitainer	**1490-5**	86.21	- - - -

[7647-01-0 (Hydrochloric Acid)]
[7732-18-5 (Water, Deionized)]

Buffer, Reference Standard, pH 1.68

(± 0.01 at 25°C)
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**1492-16**	21.31	- - - -
1L	Poly Bottle	**1492-32**	31.86	- - - -
4L	Poly Bottle	**1492-1**	78.46	- - - -
10L	Cubitainer*	**1492-25**	62.80	- - - -
20L	Cubitainer	**1492-5**	86.21	- - - -

[7447-40-7 (Potassium Chloride)]
[7647-01-0 (Hydrochloric Acid)]
[7732-18-5 (Water, Deionized)]

Buffer Solution, pH 2.00 **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB96-500**	30.19	6/146.25
1L	Poly Bottle	**SB96-1**	47.68	6/227.18
20L	PolyPac*	**SB96-20**	207.63	- - - -

Potassium Chloride/Hydrochloric Acid
Traceable to NIST.

ChemAlert® STORAGE **gray**

Product Specifications

Color (APHA)..........≤5
pH at 25°C..........2.00 ± 0.02

Buffer, Reference Standard, pH 2.00

(± 0.01 at 25°C)
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**1493-16**	15.99	- - - -
1L	Poly Bottle	**1493-32**	18.38	- - - -
4L	Poly Bottle	**1493-1**	57.20	- - - -
10L	Cubitainer*	**1493-25**	86.45	- - - -
20L	Cubitainer	**1493-5**	126.51	- - - -

[7447-40-7 (Potassium Chloride)]
[7647-01-0 (Hydrochloric Acid)]
[7732-18-5 (Water, Deionized)]

Buffer Solution, pH 3.00 **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB97-500**	31.47	6/153.72
20L	PolyPac*	**SB97-20**	214.44	- - - -

Potassium Acid Phthalate/Hydrochloric Acid
Traceable to NIST.

ChemAlert® STORAGE **gray**

Product Specifications

Color (APHA)..........≤5
pH at 25°C..........3.00 ± 0.02

Buffer, Reference Standard, pH 3.00

(± 0.01 at 25°C)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**1495-16**	15.99	- - - -
1L	Poly Natural	**1495-32**	25.66	- - - -
4L	Poly Natural	**1495-1**	57.20	- - - -
10L	Cubitainer*	**1495-25**	83.54	- - - -
20L	Cubitainer	**1495-5**	86.21	- - - -

[7647-01-0 (Hydrochloric Acid)]
[877-24-7 (Potassium Acid Phthalate)]
[7732-18-5 (Water, Deionized)]

Buffer, Precision Reference Standard, pH 4.00

(± 0.002) Color Coded Red

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB101-500**	28.13	6/133.23
4L	Poly Bottle	**SB101-4**	91.61	4/291.11
20L	PolyPac*	**SB101-20**	178.86	- - - -

Potassium Hydrogen Phthalate
pH/temperature conversions given on label.
Traceable to NIST.

ChemAlert® STORAGE **gray**

Product Specifications

Optical Absorbance..........To pass test
pH at 25°C..........4.00 ± 0.01

Buffer, Precision Reference Standard, pH 4.00

(± 0.002) Color Coded Red

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**1502-16**	19.27	- - - -

Buffer, Reference Standard, pH 4.00

(± 0.01 at 25°C)

Quantity	Packaging	Cat. No.	Each	Case of
20x20mL	Pouch	**1501-20**	34.07	- - - -
500mL	Plastic	**1501-16**	12.18	- - - -
1L	Plastic	**1501-32**	19.89	- - - -
4L	Cubitainer*	**1501-1CT**	40.90	- - - -
4L	Plastic	**1501-1**	40.77	- - - -
10L	Cubitainer	**1501-25**	61.63	- - - -
20L	Cubitainer	**1501-5**	82.84	- - - -

Buffer Solution, pH 4.00 **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB98-500**	30.54	6/147.51
1L	Poly Bottle	**SB98-1**	46.36	6/226.35
10L	PolyPac*	**SB98-10**	154.21	- - - -
20L	PolyPac	**SB98-20**	203.72	- - - -

Potassium Acid Phthalate
Traceable to NIST.

ChemAlert® STORAGE **gray**

Product Specifications

Color (APHA)..........≤5
pH at 25°C..........4.00 ± 0.01

Buffer, Reference Standard, pH 4.00

(± 0.01 at 25°C)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Plastic	**1500-16**	12.11	- - - -
1L	Plastic	**1500-32**	19.77	- - - -
4L	Plastic	**1500-1**	40.53	- - - -
4L	Cubitainer*	**1500-1CT**	40.66	- - -
10L	Cubitainer	**1500-25**	58.02	- - - -
20L	Cubitainer	**1500-5**	82.43	- - - -

Buffer Solution (Acetate), pH 4.00 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SB85-1**	47.39	6/225.94

Chlorine Titrimeter Reagent
For use with chlorine titrators.
Sodium Acetate/Acetic Acid
Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)........................≤5
pH at 25°C........................4.00 ± 0.02

Buffer Concentrate, pH 4.00 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB99-500**	75.82	6/355.91
1L	Poly Bottle	**SB99-1**	107.23	6/503.00

Potassium Acid Phthalate
pH is 4.00 ± 0.02 at 25°C when 1 volume is diluted with 4 volumes of distilled water.
Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)........................≤10
pH at 25°C........................4.00 ± 0.02

Buffer Solution (Acetate), pH 4.0-4.5 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
20L	PolyPac*	**SB103-20**	458.65	- - - -

For sewage treatment work.
Sodium Acetate/Acetic Acid
Traceable to NIST.
[6131-90-4 (Sodium Acetate, Trihydrate)]
[64-19-7 (Acetic Acid, Glacial)]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Color (APHA)........................≤5
pH at 25°C........................4.0 to 4.5

Buffer Salt, pH 4.01 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
12 packets per pack	Envelopes	**B79**	86.31	6/406.54

Potassium Acid Phthalate
Each packet contains sufficient material to prepare 1 liter of solution with a pH of 4.01 ± 0.02 at 25°C.
[877-24-7

ChemAlert® STORAGE gray

Buffer Solution, pH 4.63 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SB100-1**	53.34	6/252.06

Sodium Acetate/Acetic Acid
Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)........................≤5
pH at 25°C........................4.63 ± 0.02

Buffer Solution, pH 5.00 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB102-500**	31.35	6/151.22
1L	Poly Bottle	**SB102-1**	42.80	6/208.73

Potassium Acid Phthalate/Sodium Hydroxide
Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)........................≤5
pH at 25°C........................5.00 ± 0.01

Buffer, Reference Standard, pH 5.00

(± 0.01 at 25°C)
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**1505-16**	15.99	- - - -
1L	Poly Natural	**1505-32**	18.38	- - - -
4L	Poly Natural	**1505-1**	57.20	- - - -
10L	Cubitainer*	**1505-25**	87.21	- - - -
20L	Cubitainer	**1505-5**	126.51	- - - -

[1310-73-2 (Sodium Hydroxide)]
[877-24-7 (Potassium Acid Phthalate)]
[7732-18-5 (Water, Deionized)]

Buffer Solution, pH 6.00 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB104-500**	30.50	6/145.52
1L	Poly Bottle	**SB104-1**	48.28	6/233.65
20L	PolyPac*	**SB104-20**	219.46	- - - -

Potassium Phosphate Monobasic/Sodium Hydroxide
Traceable to NIST.

Product Specifications

Color (APHA)........................≤5
pH at 25°C........................6.00 ± 0.01

Buffer, Reference Standard, pH 6.00

(± 0.01 at 25°C)
Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**1510-16**	15.99	- - - -
1L	Poly Bottle	**1510-32**	25.66	- - - -
4L	Poly Bottle	**1510-1**	57.20	- - - -
10L	Cubitainer*	**1510-25**	62.80	- - - -
20L	Cubitainer	**R1510-5**	126.51	- - - -

[7778-77-0 (Potassium Phosphate, Monobasic)]
[7558-79-4 (Sodium Phosphate, Dibasic)]
[7732-18-5 (Water, Deionized)]

Buffer Solution, pH 6.00 — Certified

Concentrate

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB106-500**	54.58	6/259.10

Potassium Phosphate Monobasic/Sodium Hydroxide
pH is 6.00 ± 0.02 at 25°C when 1 volume is diluted with 9 volumes of distilled water.
Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)........................≤10
pH at 25°C........................6.00 ± 0.02

*Trademark. See Trademark Reference.

Buffer Salt, pH 6.86 Certified

Quantity	Packaging	Cat. No.	Each	Case of
12 packets per pack	Envelopes	**B78**	88.57	6/417.19

Potassium Phosphate Monobasic/Sodium Phosphate Dibasic
Each packet contains sufficient material to prepare 1 liter of solution with a pH of 6.86 ± 0.02 at 25°C.
[7778-77-0 and 7558-79-4]

ChemAlert® STORAGE gray

Buffer, Reference Standard, pH 6.86
(± 0.01 at 25°C)
Clear, colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**1540-16**	15.78	----
1L	Poly Bottle	**1540-32**	25.66	----
10L	Cubitainer*	**1540-25**	86.45	----
20L	Cubitainer	**1540-5**	126.51	----

[7778-77-0 (Potassium Phosphate, Monobasic)]
[7558-79-4 (Sodium Phosphate, Dibasic)]
[7732-18-5 (Water, Deionized)]

Buffer, Precision Reference Standard, pH 7.000
(±0.002 at 25°C)
Color Coded Yellow

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Plastic	**1552-16**	19.29	----

Buffer Solution, pH 7.00, Color Coded Yellow Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB107-500**	27.61	6/130.77
4L	Poly Bottle	**SB107-4**	91.08	4/289.49
20L	PolyPac*	**SB107-20**	177.09	----

Potassium Phosphate Monobasic/Sodium Hydroxide
pH/temperature conversions given on label.
Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Optical Absorbance	To pass test
pH at 25°C	7.00 ± 0.01

Buffer, Reference Standard, pH 7.00
(± 0.01 at 25°C) Color Coded Yellow

Quantity	Packaging	Cat. No.	Each	Case of
20x20mL	Pouch	**1551-20**	34.07	----
500mL	Plastic	**1551-16**	12.07	----
1L	Plastic	**1551-32**	19.89	----
4L	Plastic	**1551-1**	40.77	----
4L	Cubitainer*	**1551-1CT**	40.90	----
10L	Cubitainer	**1551-25**	61.63	----
20L	Cubitainer	**1551-5**	81.60	----

[7558-79-4 (Sodium Phosphate, Dibasic)]
[7778-77-0 (Potassium Phosphate, Monobasic)]

Buffer Solution, pH 7.00 Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB108-500**	30.88	6/145.94
1L	Poly Bottle	**SB108-1**	46.02	6/220.08
10L	PolyPac*	**SB108-10**	146.25	----
20L	PolyPac	**SB108-20**	177.97	----

Chlorine Titrimeter Reagent
Potassium Phosphate Monobasic/Sodium Hydroxide
Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Color (APHA)	≤5
pH at 25°C	7.00 ± 0.01

Buffer, Reference Standard, pH 7.00
(± 0.01 at 25°C)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Plastic	**1550-16**	12.00	----
1L	Plastic	**1550-32**	19.77	----
4L	Plastic	**1550-1**	40.53	----
4L	Cubitainer*	**1550-1CT**	40.66	----
10L	Cubitainer	**1550-25**	61.32	----
20L	Cubitainer	**1550-5**	81.19	----

Buffer Concentrate, pH 7.00 Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB109-500**	75.82	6/355.91
1L	Poly Bottle	**SB109-1**	107.77	6/505.49

Potassium Phosphate Monobasic/Sodium Hydroxide
pH is 7.00 ± 0.02 at 25°C when 1 volume is diluted with 25 volumes of distilled water.
Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Color (APHA)	≤10

Buffer, Reference Standard, pH 7.00
(± 0.01 at 25°C)
Clear, green liquid
Color Coded Green

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**15514-16**	12.67	----
1L	Poly Natural	**15514-32**	19.89	----
4L	Poly Natural	**15514-1**	40.77	----
10L	Cubitainer*	**15514-25**	61.63	----
20L	Cubitainer	**15514-5**	86.21	----

Shelf life: 24 months

NEW

[7558-79-4 (Sodium Phosphate, Dibasic)]
[7732-18-5 (Water, Deionized)]
[7778-77-0 (Potassium Phosphate, Monobasic)]
[Proprietary Inert Dye]
[Proprietary Preservative (No Mercury compounds or Formaldehyde]

Buffer Solution (Phosphate), pH 7
APHA for Chlorine and Chlorine Dioxide (Amperometric Method)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**5803-16**	33.50	----
1L	Poly Natural	**5803-32**	50.85	----
4L	Poly Natural	**5803-1**	144.13	----

Buffer Solution (Phosphate), pH 7.20

APHA

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SP341-1**	50.07	6/240.53

Application: For Biochemical Oxygen Demand.

Potassium Phosphate Monobasic/Potassium Phosphate Dibasic/Sodium Phosphate Dibasic/Ammonium Chloride Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Color (APHA)......≤5

pH at 25°C ......7.20 ± 0.02

Buffer Solution (Phosphate)

For Chlorine Determination (DPD Methods)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**5805-16**	23.68	- - - -
1L	Poly Natural	**5805-32**	33.50	- - - -
4L	Poly Natural	**5805-1**	116.93	- - - -

[7778-77-0 (Potassium Phosphate, Monobasic)]
[7558-79-4 (Sodium Phosphate, Dibasic)]
[7487-94-7 (Mercuric Chloride)]
[7732-18-5 (Water, Deionized)]

Buffer Solution (Phosphate), pH 7.2

Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**5800-16**	18.33	- - - -
1L	Poly Natural	**5800-32**	31.19	- - - -
4L	Poly Natural	**5800-1**	60.15	- - - -

Application: Biochemical Oxygen Demand (BOD) Testing
[7758-11-4 (Potassium Phosphate, Dibasic)]
[7778-77-0 (Potassium Phosphate, Monobasic)]
[12125-02-9 (Ammonium Chloride)]
[7558-79-4 (Sodium Phosphate, Dibasic)]
[7732-18-5 (Water, Deionized)]

Buffer Solution, pH 7.40 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB110-500**	32.34	6/153.65
1L	Poly Bottle	**SB110-1**	49.26	6/233.82

Potassium Phosphate Monobasic/Sodium Hydroxide Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)......≤5

pH at 25°C ......7.40 ± 0.01

Buffer Salt, pH 7.41 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
12 packets per pack	Envelopes	**B82**	89.04	6/417.75

Potassium Phosphate Monobasic/Sodium Phosphate Dibasic

Each packet contains sufficient material to prepare One liter of solution with a pH of 7.41 ± 0.04 at 25°C.
[7778-77-0 and 7558-79-4]

ChemAlert® STORAGE gray

Product Specifications

pH at 25°C......7.37 to 7.45

Buffer Solution, pH 8.00 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB112-500**	27.95	6/134.74
1L	Poly Bottle	**SB112-1**	44.68	6/210.41
20L	PolyPac*	**SB112-20**	215.37	- - - -

Potassium Phosphate Monobasic/Sodium Hydroxide Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)......≤5

pH at 25°C ......8.00 ± 0.02

Buffer, Reference Standard, pH 8.00

(± 0.01 at 25°C)
Clear, colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**1580-16**	15.99	- - - -
1L	Poly Bottle	**1580-32**	25.51	- - - -
4L	Poly Bottle	**1580-1**	57.20	- - - -
10L	Cubitainer*	**1580-25**	78.41	- - - -
20L	Cubitainer	**1580-5**	114.86	- - - -

[7778-77-0 (Potassium Phosphate, Monobasic)]
[7558-79-4 (Sodium Phosphate, Dibasic)]
[7732-18-5 (Water, Deionized)]

Buffer Solution, pH 9.00 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB114-500**	29.84	6/144.53
1L	Poly Bottle	**SB114-1**	47.87	6/230.88
20L	PolyPac*	**SB114-20**	219.46	- - - -

Boric Acid/Potassium Chloride/Sodium Hydroxide Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)......≤5

pH at 25°C ......9.00 ± 0.02

Buffer, Reference Standard, pH 9.00

(± 0.01 at 25°C)
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**1590-16**	13.27	- - - -
1L	Poly Bottle	**1590-32**	25.66	- - - -
4L	Poly Bottle	**1590-1**	57.20	- - - -
10L	Cubitainer*	**15902-5**	87.31	- - - -
20L	Cubitainer*	**R1590-5**	126.51	- - - -

[10043-35-3 (Boric Acid)]
[7447-40-7 (Potassium Chloride)]
[1310-73-2 (Sodium Hydroxide)]
[7732-18-5 (Water, Deionized)]

Buffer Salt, pH 9.18 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
12 packets per pack	Envelopes	**B80**	88.13	6/415.11

Sodium Tetraborate Decahydrate

Each packet contains sufficient material to prepare One liter of solution with a pH of 9.18 ± 0.02 at 25°C.
[1303-96-4]

ChemAlert® STORAGE gray

Product Specifications

pH at 25°C......9.16 to 9.20

Buffer, Precision Reference Standard, pH 10.000
(± 0.005 at 25°C) Color-Coded Blue

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Plastic	**1602-16**	19.29	- - - -

Buffer Solution, pH 10.00 — Certified
Color-Coded Blue

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB115-500**	28.13	6/133.87
4L	Poly Bottle	**SB115-4**	94.28	4/309.51
20L	PolyPac*	**SB115-20**	178.86	- - - -

Potassium Carbonate/Potassium Tetraborate/ Potassium Hydroxide/Disodium EDTA Dihydrate
pH/temperature conversions given on label.
Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Optical Absorbance........To pass test
pH at 25°C........10.00 ± 0.02

Buffer, Reference Standard, pH 10.00
(0.01 at 25°C) Color-Coded Blue

Quantity	Packaging	Cat. No.	Each	Case of
20x20mL	Pouch	**1601-20**	34.07	- - - -
20x20mL	Pouch	**1601-20B3**	12.32	- - - -
500mL	Poly Bottle	**1601-16**	12.18	- - - -
1L	Poly Bottle	**1601-32**	19.89	- - - -
4L	Poly Bottle	**1601-1**	40.65	- - - -
4L	Cubitainer*	**1601-1CT**	40.90	- - - -
10L	Cubitainer	**1601-25**	60.51	- - -
20L	Cubitainer	**1601-5**	81.50	- - - -

Buffer Solution, pH 10.00 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB116-500**	31.48	6/149.61
1L	Poly Bottle	**SB116-1**	47.46	6/227.97
10L	PolyPac*	**SB116-10**	150.94	- - - -
20L	PolyPac	**SB116-20**	213.29	- - - -

Potassium Carbonate/Potassium Tetraborate/ Potassium Hydroxide/Disodium EDTA Dihydrate
Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)........≤5
pH at 25°C........10.00 ± 0.02

Buffer, Reference Standard, pH 10.00
(± 0.01 at 25°C)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**1600-16**	12.11	- - - -
1L	Poly Natural	**1600-32**	19.77	- - - -
4L	Poly Natural	**1600-1**	40.41	- - - -
4L	Cubitainer*	**1600-1CT**	40.90	- - - -
10L	Cubitainer	**1600-25**	60.21	- - - -
20L	Cubitainer	**1600-5**	81.09	- - - -

[144-55-8 (Sodium Bicarbonate)]
[497-19-8 (Sodium Carbonate)]
[7732-18-5 (Water, Deionized)]

Buffer Concentrate, pH 10.00 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB141-500**	72.30	6/337.78

Boric Acid/Potassium Chloride/Sodium Hydroxide
pH is 10.00 ±0.02 at 25°C when 1 volume is diluted with 9 volumes of distilled water.
Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)........≤10
pH at 25°C........9.98 to 10.02

Buffer Salt, pH 10.4 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
12 packets per pack	Envelopes	**B77**	88.18	6/413.33

Each packet contains sufficient material to prepare 1 liter of solution with a pH of 10.3 to 10.5 at 25°C.

ChemAlert® STORAGE gray

Product Specifications

pH at 25°C of 0.1M Solution........10.3 to 10.5

Buffer, Reference Standard, pH 11.00
(± 0.01 at 25°C)
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**R1610-16**	20.22	- - - -
1L	Poly Bottle	**1610-32**	26.10	- - - -
4L	Poly Bottle	**1610-1**	59.79	- - - -

[1310-73-2 (Sodium Hydroxide)]
[7558-79-4 (Sodium Phosphate, Dibasic)]
[7732-18-5 (Water, Deionized)]

Buffer Concentrate, pH 11.00 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SB142-500**	76.22	6/357.80

Glycine/Sodium Chloride/Sodium Hydroxide/Disodium EDTA
pH is 11.00 ± 0.02 at 25°C when 1 volume is diluted with 9 volumes of distilled water.
Traceable to NIST.

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)........≤10
pH at 25°C........11.00 ± 0.02

Buffer, Reference Standard, pH 12.00
(± 0.01 at 25°C)
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**1615-16**	29.86	- - - -
1L	Poly Bottle	**1615-32**	26.10	- - - -
4L	Poly Bottle	**1615-1**	41.38	- - - -

[7447-40-7 (Potassium Chloride)]
[1310-73-2 (Sodium Hydroxide)]
[7732-18-5 (Water, Deionized)]

NEW

Buffer, Reference Standard, pH 12.45

(± 0.01 at 25°C)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	PETG Clear	**1618-16**	15.32	- - - -
1L	Poly Natural	**1618-32**	15.61	- - - -
4L	Poly Natural	**1618-1**	32.97	- - - -

[7447-40-7 (Potassium Chloride)]
[1310-73-2 (Sodium Hydroxide)]
[7732-18-5 (Water, Deionized)]

NEW

Buffer, Reference Standard, pH 13.00

(± 0.01 at 25°C)
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**1625-16**	26.32	- - - -
1L	Poly Bottle	**1625-32**	42.09	- - - -
4L	Poly Bottle	**1625-1**	76.30	- - - -

[7447-40-7 (Potassium Chloride)]
[1310-73-2 (Sodium Hydroxide)]
[7732-18-5 (Water, Deionized)]

▸***Butanedioic Acid*** *see Succinic Acid A294.*

1-Butanol — HPLC

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A383-1**	68.69	6/285.68
1L	Glass/Safe-Cote*	**A383SK-1**	76.12	6/319.40
4L	Amber Glass	**A383-4**	176.01	4/493.42
4L	Glass/Safe-Cote	**A383SK-4**	179.11	4/492.47

n-Propyl Carbinol
n-Butyl Alcohol

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.4%
Carbonyl Compounds (as butyraldehyde)	≤ 0.01%
Color (APHA)	≤10
Optical Absorbance:	
at 215nm	≤1.00
at 220nm	≤0.50
at 230nm	≤0.20
at 254nm	≤0.025
Fluorescence Background (as Quinine Sulfate)	Pass Test
Refractive Index at 25°C	1.3952-1.3992
Residue after Evaporation	≤0.005%
Water	≤0.1%
Titratable Acid	≤0.0008mEq/g
Boiling Range (1 drop to dryness)	≤1.5°C
Boiling Point	117.7°C ± 0.1°C
Butyl Ether	≤0.2%

1-Butanol — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A399-500**	52.20	6/241.66
1L	Amber Glass	**A399-1**	89.62	6/410.48
4L	SafeTin*	**A399S-4**	207.52	4/645.57
4L	Amber Glass	**A399-4**	170.39	4/526.34
20L	Steel Pail	**A399-20**	366.73	- - - -

n-Butyl Alcohol
$CH_3CH_2CH_2CH_2OH$
$C_4H_{10}O$
F.W. 74.12
Suitable for fluorometric analysis.
[71-36-3]

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.4%
Carbonyl Compounds (as Butyraldehyde)	≤0.01%
Color (APHA)	≤10
Titratable Acid	≤0.0008mEq/g
Residue after Evaporation	≤0.005%
Water	≤0.1%
Fluorescent Impurities (as Quinine Sulfate)	To pass test (≤0.02µg/mL)
Butyl Ether	≤0.2%
Boiling Range (1 drop to dryness)	≤1.5°C
Boiling Point	117.7°C ± 0.1°C
Specific Gravity at 20°C	0.808 ± 0.002

1-Butanol — Technical

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A398-4**	121.58	4/352.86

n-Butyl Alcohol
$CH_3CH_2CH_2CH_2OH$
$C_4H_{10}O$
F.W. 74.12
[71-36-3

sec-Butanol — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**01664-1**	102.74	6/449.48
4L	Amber Glass	**01664-4**	157.90	4/465.79

Also available in recyclable FisherPak and NOWPak* containers.*
sec-Butyl Alcohol, 2-Butanol
$CH_3CHOHCH_2CH_3$
$C_4H_{10}O$
F.W. 74.12
[78-92-2]

Product Specifications

Assay	≥99%
Color (APHA)	≤10
Boiling Range (1 drop to dryness)	≤1.5°C
Boiling Point	99.5°C ± 0.5°C

tert-Butanol — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**A401-500**	63.56	6/283.07
1L	Poly Bottle	**A401-1**	80.82	6/351.88

2-Methyl-2-propanol, Trimethyl Carbinol
$(CH_3)_3COH$
$C_4H_{10}O$
F.W. 74.12
tert-Butyl Alcohol
[75-65-0]

*Trademark. See Trademark Reference.

Product Specifications

Color (APHA) ≤10
Freezing Point 24.0°- 25.5°C
Boiling Range 81.5°- 83.0°C
Residue after Evaporation ≤0.002%
Acidity (as Acetic Acid) ≤0.005%

▸***2-Butanone*** *see also Methyl Ethyl Ketone, Certified grade M209.*

▸***cis-2-Butenedioic Acid*** *see Maleic Acid O3417.*

▸***2-Butoxyethanol*** *see Ethylene Glycol Monobutyl Ether E179.*

n-Butyl Acetate

Reagent

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**B396-1**	146.97	6/686.03
4L	Amber Glass	**B396-4**	240.69	4/743.56

Also available in recyclable FisherPak and NOWPak* containers.*

SOLVENT

STORAGE red

Acetic Acid Butyl Ester
$CH_3COOCH_2(CH_2)_2CH_3$
$C_6H_{12}O_2$
F.W. 116.16
Melting point: -77°C
Boiling point: 122–127°C
Density: 0.88gm/L
[123-86-4]

▸***n-Butyl-1-butanamine*** *see Dibutylamine O2199.*

▸***Butyl Carbitol**** *see Diethylene Glycol Monobutyl Ether D50.*

▸***Butyl Cellosolve**** *see Ethylene Glycol Monobutyl Ether E179.*

n-Butyl Chloride

HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**B429-4**	293.18	4/806.04
4L	Amber Glass/Safe-Cote*	**B429SK-4**	313.17	4/876.67

SOLVENT

STORAGE red

1-Chlorobutane
n-Propylcarbinyl Chloride
$CH_3(CH_2)_3Cl$
C_4H_9Cl
F.W. 92.57
[109-69-3]

Product Specifications

Actual Lot Analysis is reported on label.

Assay ≥99%
Color (APHA) ≤15
Optical Absorbance:
- at 220nm ≤1.00
- at 225nm ≤0.33
- at 235nm ≤0.07
- at 254nm ≤0.01
- at 400-254nm ≤0.01

Fluorescence Background (as Quinine Sulfate) To pass test
Refractive Index at 25°C 1.3985-1.4015
Residue after Evaporation ≤1ppm
Water ≤0.02%
Submicron Filtered.

n-Butyl Chloride

Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**B416-1**	144.64	6/650.87
4L	Amber Glass	**B416-4**	314.10	4/982.04

SOLVENT

STORAGE red

1-Chlorobutane, n-Propylcarbinyl Chloride
$CH_3(CH_2)_3Cl$
C_4H_9Cl
F.W. 92.57
[109-69-3]

Product Specifications

Color (APHA) ≤15
Boiling Range 2°C incl. 78.4°C
Water ≤0.05%

tert-Butylchlorodimethylsilane, 98%

Quantity	Packaging	Cat. No.	Each	Case of
5g	Glass Bottle	**AC18393-0050**	22.10	- - - -
25g	Glass Bottle	**AC18393-0250**	63.10	- - - -
100g	Glass Bottle	**AC18393-1000**	179.40	- - - -

TBSCl, tert-Butylchlorodimethylsilane
$(CH_3)_3CSi(CH_3)_2Cl$
$C_6H_{15}ClSi$
F.W. 150.72
Melting point: 85-91°C
Boiling point: 125°C (at 760mmHg)
Flash point: 22°C
Density: 0.87g/mL
[18162-48-6]

n-Butyl Phosphate

Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**B404-500**	66.93	6/308.67
4L	Amber Glass	**B404-4**	329.78	4/1014.22

ChemAlert® STORAGE gray

Tributyl Phosphate, Phosphoric Acid Tributyl Ester
$(C_4H_9)_3PO_4$
$C_{12}H_{27}O_4P$
F.W. 266.32
[126-73-8]

Product Specifications

Color (APHA) ≤50

n-Butyl Phthalate

Reagent

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**D30-500**	40.60	6/190.38
4L	Amber Glass	**D30-4**	216.63	4/669.25

ChemAlert® STORAGE gray

Dibutyl Phthalate
1,2-Benzenedicarboxylic Acid Dibutyl Ester
$C_6H_4\text{-}1,2\text{-}[COO(CH_2)_3CH_3]_2$
$C_{16}H_{22}O_4$
F.W. 278.35
[84-74-2]

▸***Cacodylic Acid*** *see Fisher BioReagents* BP324.*

Cadmium

Granular

Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C3-500**	162.94	6/764.37

ChemAlert® STORAGE red

Cd
At. Wt. 112.40
[7440-43-9]

Cadmium Acetate Dihydrate — Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**C4-100**	88.80	6/416.58
500g	Amber Glass	**C4-500**	279.83	6/1306.42

Acetic Acid Cadmium Salt
$Cd(CH_3CO_2)_2 \bullet 2H_2O$
$C_4H_6CdO_4 \bullet 2H_2O$
F.W. 266.53
[5743-04-4]

ChemAlert® STORAGE blue

Product Specifications

Insoluble Matter	≤0.010%
Chloride	≤0.001%
Nitrate	To pass test (about 0.02%)
Sulfate	≤0.005%
Zinc	≤0.05%
Copper	≤0.001%
Iron	≤0.001%
Lead	≤0.005%
Sodium	≤0.04%
Potassium	≤0.02%
Calcium	≤0.01%

Cadmium Sulfate 8/3 Hydrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**C19-100**	109.66	6/487.78
500g	Amber Glass	**C19-500**	372.20	6/1737.67

$CdSO_4 \bullet 8/3H_2O$
F.W. 256.52
[7790-84-3]

ChemAlert® STORAGE blue

Product Specifications

Actual Lot Analysis is reported on label.

Assay	98-102%
Insoluble Matter	≤0.005%
Chloride	≤0.001%
Nitrate and Nitrite (as NO_3)	≤0.003%
Copper	≤0.002%
Iron	≤0.001%
Lead	≤0.003%
Sodium	≤0.02%
Potassium	≤0.01%
Calcium	≤0.005%
Zinc	≤0.05%

Caffeine — USP/FCC

Powder, Anhydrous

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**01728-500**	160.92	6/754.85

1,3,7-Trimethylxanthine
Guaranine
$C_8H_{10}N_4O_2$
F.W. 194.19
Powder, Anhydrous
[58-08-2]

ChemAlert® STORAGE blue

Product Specifications

Identification	To pass test

Meets USP Chemical Specifications

Assay (Anhydrous Basis)	98.5-101.0%
Chromatographic Purity	To pass test
Heavy Metals (as Pb)	≤0.001%
Melting Range	235-239°C
Organic Volatile Impurities	To pass test
Other Alkaloids	To pass test
Readily Carbonizable Substances	To pass test
Residue on Ignition	≤0.1%
Water	≤0.5%
USP Protocol Required	To pass test

Meets FCC Chemical Specifications

Assay (Anhydrous Basis)	98.5-101.0%
Lead (Pb) (Flame Atomic Absorption Spectrophotometric Method)	≤1mg/kg
Melting Range	235-237.5°C
Other Alkaloids	To pass test
Readily Carbonizable Substances	To pass test
Residue on Ignition	≤0.1%
Water	≤0.5%

Calcium Acetate Monohydrate — Certified

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**C46-500**	182.29	6/855.11

Acetic Acid Calcium Salt
$Ca(CH_3COO)_2 \bullet H_2O$
F.W. 176.19
[5743-26-0]

ChemAlert® STORAGE gray

Product Specifications

Chloride	≤0.005%
Nitrate	≤0.003%
Insoluble Matter	≤0.01%
Iron	≤0.002%
Heavy Metals (as Pb)	≤0.001%
Magnesium	≤0.1%
Phosphate	Actual is reported on label
Potassium	≤0.02%
Sodium	≤0.3%
Strontium	≤0.05%
Sulfate	≤0.03%
Barium	≤0.005%

Calcium Carbonate — USP/FCC

Powder

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Pail	**C63-3**	149.20	- - - -
10kg	Fiber Drum	**C63-10**	427.30	- - - -

Chalk, Precipitated
$CaCO_3$
F.W. 100.09
[471-34-1]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test

Meets USP Chemical Specifications

Assay (Dry Basis)	98.0-100.5%
Acid-insoluble Substances	≤0.2%
Arsenic	≤3ppm
Barium	To pass test
Fluoride	≤0.005%
Heavy Metals (as Pb)	≤0.002%
Lead	≤3ppm
Loss on Drying	≤2.0%
Magnesium and Alkali Salts	≤1.0%
Iron	≤0.1%
Mercury	≤0.5µg/g
Organic Volatile Impurities	Meets requirements
USP Protocol Required	To pass test

Meets FCC Chemical Specifications

Assay (Dry Basis)	98.0-100.5%
Acid-insoluble Substances	≤0.2%
Arsenic	≤3mg/kg
Fluoride	≤0.005%
Lead	≤3mg/kg
Loss on Drying	≤2.0%
Magnesium and Alkali Salts	≤1%

*Trademark. See Trademark Reference.

Prices subject to change.

Calcium Carbonate — Certified ACS
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C64-500**	206.03	6/966.51
3kg	Poly Pail	**C64-3**	867.00	- - - -

Kalkspar, Carbonic Acid Calcium Salt
$CaCO_3$
F.W. 100.09
[471-34-1]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay (dried basis)	≥99.0%
Insoluble in Dilute HCl	≤0.01%
Water-soluble Titratable Base	≤0.002mEq/g
Chloride	≤0.001%
Sulfate	≤0.01%
Ammonium	≤0.003%
Barium	≤0.01%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.003%
Magnesium	≤0.02%
Potassium	≤0.01%
Sodium	≤0.1%
Strontium	≤0.1%
Fluoride	≤0.0015%

▸***Calcium Carbonate Chips*** *see Marble Chips M123.*

Calcium Chloride — Certified
Desiccant, 20 Mesh and Finer

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**C77-500**	188.32	6/883.40
2.5kg	Poly Bottle	**C77-212**	843.41	4/2625.04

$CaCl_2$
F.W. 110.99
[10043-52-4]

ChemAlert® STORAGE gray

Product Specifications

Assay	≥96.0%
Titratable Base	≤0.006 mEq/g
Magnesium and Alkali Salts (as SO_4)	≤2.0%
Mesh Size:	
Retention on U.S. No. 20 Sieve	≤10%
Retention on U.S. No. 200 Sieve	≤30%

Calcium Chloride Anhydrous
For Desiccators
Pellets, 4-20 Mesh

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**C614-500**	106.89	6/477.86
3kg	Poly Bottle	**C614-3**	348.97	4/1086.17
10kg	Poly Pail	**C614-10**	694.40	- - - -

$CaCl_2$
F.W. 110.99
[10043-52-4]

ChemAlert® STORAGE gray

Product Specifications

Mesh Size	Pass test

Calcium Chloride Dihydrate — USP/FCC/EP
White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**C69-500**	98.08	6/427.07

$CaCl_2{\cdot}2H_2O$
F.W. 147.02
[10035-04-8]

Product Specifications

Identification	To pass test

Meets USP Chemical Specifications

Assay	99.0-107.0%
pH of a 5% Solution	4.5-9.2
Iron, Aluminum, and Phosphate	To pass test
Heavy Metals (as Pb)	≤0.001%
Limit of Magnesium and Alkali Salts	≤1.0%
Organic Volatile Impurities	Meets requirements

Meets FCC Chemical Specifications

Assay	99.0-107.0%
Arsenic	≤3mg/kg
Fluoride	≤0.004%
Lead	≤5mg/kg
Magnesium and Alkali Salts	≤4.0%

Meets EP Chemical Specifications

Assay	97.0-103.0%
Appearance of Solution	To pass test
Acidity or Alkalinity	To pass test
Sulfates	≤300ppm
Barium	To pass test
Heavy Metals	≤20ppm
Iron	≤10ppm
Magnesium and Alkali Metals	≤0.5%

Calcium Chloride Dihydrate — USP/FCC
Fine, White Granules

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**C70-500**	100.89	6/451.01

$CaCl{\bullet}2H_2O$
F.W. 147.01
[10035-04-8]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test

Meets USP Chemical Specifications

Assay	99.0-107.0%
pH of a 5% Solution	4.5-9.2
Iron, Aluminum, and Phosphate	To pass test
Heavy Metals (as Pb)	≤0.001%
Magnesium and Alkali Salts	≤1.0%
Organic Volatile Impurities	Meets requirements
USP Protocol Required	To pass test

Meets FCC Chemical Specifications

Assay	99.0-107.0%
Arsenic	≤3mg/kg
Fluoride	≤0.004%
Lead	≤5mg/kg
Magnesium and Alkali Salts	≤4.0%

Calcium Chloride Dihydrate — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**C79-500**	88.53	6/397.25
3kg	Poly Bottle	**C79-3**	293.61	4/907.24

$CaCl_2{\bullet}2H_2O$
F.W. 147.01
[10035-04-8]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay ($CaCl_2{\cdot}2H_2O$)	99.0-105.0%
Insoluble Matter	≤0.01%
pH of a 5% Solution at 25°C	4.5 to 8.5
Oxidizing Substances (as NO_3)	≤0.003%
Sulfate	≤0.01%
Ammonium	≤0.005%
Barium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%
Magnesium	≤0.005%
Potassium	≤0.01%
Sodium	≤0.02%
Strontium	≤0.1%

Calcium Chloride Hexahydrate — Certified
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C78-500**	91.23	6/427.95

Recommended storage: Refrigerate
[7774-34-7]

ChemAlert® STORAGE gray

Product Specifications

Assay ($CaCl_2 \bullet 6H_20$)	99-103%
Insoluble Matter and NH_4OH Precipitate	≤0.006%
Acidity (as HCl)	≤0.004%
Alkalinity [as $Ca(OH)_2$]	≤0.004%
Nitrate	≤0.003%
Phosphate	≤0.001%
Sulfate	≤0.01%
Alkalis and Magnesium	≤0.30%
Ammonia	≤0.005%
Barium	≤0.005%
Heavy Metals (as Pb)	≤0.001%
Iron	≤6ppm

Calcium Chloride Solution, 2.5-3.0% (w/v)

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SC10-1**	87.97	6/412.97

For Biochemical Oxygen Demand.
[10043-52-4]

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)	≤5

Calcium Hydroxide — Certified
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**C97-500**	63.75	6/310.92
3kg	Poly Pail	**C97-3**	443.94	- - - -
10kg	Fiber Drum	**C97-10**	465.74	- - - -

Calcium Oxide, Hydrated
F.W. 74.09
[1305-62-0]

ChemAlert® STORAGE white

Product Specifications

Insoluble in HCl	≤0.03%
Sulfur Compounds (as SO_4)	≤0.1%
Iron	≤0.05%
Heavy Metals (as Pb)	≤0.003%
Chloride	≤0.10%
Magnesium and Alkali Salts	≤1.0%

Calcium Hypochlorite — Certified
Granular

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**C100-250**	49.31	6/231.29
500g	Amber Glass	**C100-500**	89.58	6/400.32

Chlorinated Lime, Calcium Oxychloride, Hypochlorous Acid Calcium Salt
$Ca(OCl)_2$
F.W. 142.98
[7778-54-3]

ChemAlert® STORAGE yellow

Product Specifications

Available Chlorine	≥65%
Aluminum Oxide	≤0.1%
Iron	≤0.5%
Sulfate	≤0.05%

Calcium Nitrate Tetrahydrate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**C109-500**	87.65	6/393.65
3kg	Poly Bottle	**C109-3**	378.44	4/1169.41

$Ca(NO_3)_2 \bullet 4H_2O$
F.W. 236.15
[13477-34-4]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.0-103.0%
Chloride	≤0.005%
Barium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Magnesium	≤0.05%
Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	5.0 to 7.0
Nitrite	≤0.001%
Potassium	≤0.005%
Sodium	≤0.01%
Strontium	≤0.05%
Sulfate	≤0.002%

Calcium Oxide — Certified
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C117-500**	57.63	6/269.06

Lime, Quicklime, Burnt Lime, Unslaked Lime
CaO
F.W. 56.08
[1305-78-8]

ChemAlert® STORAGE white

Product Specifications

Fluoride	≤0.015%
Loss on Ignition	≤10%

Calcium Oxide — Technical
Powder

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Glass	**C114-3**	180.44	4/557.53
50kg	Fiber Drum	**C114-50**	1777.27	- - - -

Quicklime
CaO
F.W. 56.08
[1305-78-8]

ChemAlert® STORAGE white

▸**Calcium Oxide, Hydrated** *see Calcium Hydroxide, Certified grade C97.*

▸**Calcium Oxychloride** *see Calcium Hypochlorite C100.*

Calcium Stearate — Technical
Powder

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Bag in Box	**C136-3**	179.97	- - - -

Stearic Acid Calcium Salt, Octadecanoic Acid Calcium Salt
$Ca(O_2C(CH_2)_{16}CH_3)_2$
$C_{36}H_{70}CaO_4$
F.W. 607.02
[1592-23-0]

ChemAlert® STORAGE gray

Canada Balsam
Neutral, Filtered

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**B10-100**	222.03	6/1228.90

Fir, Balsam
[8007-47-4]

ChemAlert® STORAGE **gray**

Product Specifications

Neutrality	To pass test
Refractive Index at 20°C	1.52-1.54

▸***Capryl Alcohol*** *see 2-Octanol O269.*

▸***n-Caprylic Alcohol*** *see 1-Octanol A402.*

▸***sec-Caprylic Alcohol*** *see 2-Octanol O269.*

▸***Carbamide*** *see Urea, Certified ACS grade U15.*

▸***Carbitol**** *see Diethylene Glycol Monoethyl Ether D51.*

▸***Carbolic Acid, Crystalline and Liquid forms*** *see Phenol beginning with A91.*

Carbon, Activated
USP

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**C272-500**	185.29	4/579.44
2.5kg	Poly Bottle	**C272-212**	305.88	- - - -

Fine black powder, free from gritty matter.
[7440-44-0]

ChemAlert® STORAGE **gray**

Product Specifications

Acid-soluble Substances	≤3.5%
Absorptive Powder	To pass test
Chloride	≤0.2%
Cyanogen Compounds	To pass test
Heavy Metals (as Pb)	≤0.005%
Loss on Drying	≤15.0%
Microbial Purity: Salmonella Species	Negative
Escherichia Coli	Negative
Reaction	To pass test
Residue on Ignition	≤4.0%
Sulfate	≤0.2%
Sulfide	To pass test
Uncarbonized Constituents	To pass test

Carbon, Activated
Grayish-black Granules

Quantity	Packaging	Cat. No.	Each	Case of
350g	Amber Glass	**C270C**	336.82	- - - -

Coconut Charcoal
[7440-44-0]

ChemAlert® STORAGE **gray**

Product Specifications

Granular Size	6 to 12 mesh

▸***Carbon Black*** *see Carbon, Lampblack C198.*

Carbon, Darco* G-60, Activated
Black Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**D127-500**	120.54	6/536.07

Activated Charcoal
[7440-44-0]

ChemAlert® STORAGE **gray**

Carbon, Decolorizing
Norit*, Neutral
Black Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C170-500**	77.54	6/348.34

[7440-44-0]

ChemAlert® STORAGE **gray**

Carbon, Lampblack

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C198-500**	85.16	6/382.56

Oil Black (Lampblack), Carbon Black
[1333-86-4]

ChemAlert® STORAGE **gray**

▸***Carbon Dioxide Absorbents, Liquid*** *see Potassium Hydroxide Solution, CO_2 Absorbent SP226.*

Carbon Disulfide
Spectranalyzed*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**C573-500**	50.86	6/228.76

Carbon Bisulfide
CS_2
F.W. 76.14
For use in ultraviolet and infrared spectroscopy.

SOLVENT

ChemAlert® STORAGE **red**

Product Specifications

Assay	≥99.9%
Color (APHA)	≤10
Hydrogen Sulfide	To pass test (≤1.5ppm)
Residue after Evaporation	≤0.002%
Sulfur Dioxide	To pass test (≤2.5ppm)
Water	≤0.05%
Optical Absorbance:	
at 383nm	≤1.00
at 388nm	≤0.50
at 394nm	≤0.25
at 403nm	≤0.10
at 410nm	≤0.05
at 500-700nm	≤0.01
IR Transmittance:	
at 2.5-4.3µm	≥70%
at 4.75-6.15µm	≥70%
at 7.2-11.8µm	≥70%
at 11.75-15.15µm	≥70%

Transmittance measured in a 0.025mm KBr cell. Ultraviolet Absorbance Curves are run against distilled H_2O set at zero absorbance. Curves available on request.

Carbon Disulfide
Low Benzene

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**C185-500**	316.98	6/1560.93

Carbon Bisulfide
CS_2
F.W. 76.14
[75-15-0]

SOLVENT

ChemAlert® STORAGE **red**

Product Specifications

Assay (by GC)	≥99.9%
Color (APHA)	≤10
Trace Organic Impurity (as Benzene)	≤1ppm
Hydrogen Sulfide	≤1.5ppm
Residue after Evaporation	≤0.002%
Sulfur Dioxide	≤2.5ppm
Water	≤0.05%

Contd. on next page.

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Optical Absorbance:

at 382nm	≤1.0
at 388nm	≤0.50
at 403nm	≤0.10
at 410nm	≤0.05
at 500nm	≤0.01

Carbon Disulfide — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**C184-500**	80.13	6/381.89
2.5L	Glass	**C184-212**	376.08	- - - -

Carbon Bisulfide
CS_2
F.W. 76.14
[75-15-0]

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Assay	≥99.9%
Color (APHA)	≤10
Residue after Evaporation	≤0.002%
Hydrogen Sulfide	To pass test (≤1.5ppm)
Sulfur Dioxide	To pass test (≤2.5ppm)
Water	≤0.05%

Carborundum
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C192-500**	85.72	6/385.08

Silicon Carbide
CSi
F.W. 40.07
[409-21-2]

ChemAlert® STORAGE gray

Carbowax* PEG 400 — NF

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**P167-1**	110.06	6/516.06

Polyethylene Glycol, Macrogol, PEG
$(C_2H_4O)_nH_2O$
Polyethylene Glycol
[25322-68-3]

ChemAlert® STORAGE gray

Product Specifications

Completeness and Color of Solution	To pass test
Ethylene Glycol and Diethylene Glycol	≤0.25%
Heavy Metals (as Pb)	≤5ppm
Average Molecular Weight	380-420
pH of a 5% Solution	4.5 to 7.5
Residue on Ignition	≤0.1%
Viscosity	6.8-8.0 centistokes
Organic Volatile Impurities	To pass test
Free Ethylene Oxide and 1,4-Dioxane	≤10ppm

Carbowax* PEG 3350
Powder

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Bag in Box	**P146-3**	218.06	- - - -

Polyethylene Glycol, Macrogol
$(C_2H_4O)_nH_2O$
Polyethylene Glycol
[25322-68-3]

ChemAlert® STORAGE gray

Carbowax* PEG 8000
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**P156-500**	65.89	6/309.10
3kg	Bag in Box	**P156-3**	178.77	- - - -

Polyethylene Glycol, Macrogol
$(C_2H_4O)_nH_2O$
[25322-68-3]

ChemAlert® STORAGE gray

Casamino Acids *see Fisher BioReagents* BP1424.*

Castor Oil — USP

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**046-4**	214.79	4/641.49

Ricinus Oil
[8001-79-4]

ChemAlert® STORAGE gray

Product Specifications

Heavy Metals (as Pb)	≤0.001%
Specific Gravity at 25°C	0.957-0.961
Distinction from Most Other Fixed Oils	To pass test
Free Fatty Acids	To pass test
Hydroxyl Value	160-168
Iodine Value	83-88
Saponification Value	176-182
USP Protocol Required	To pass test

Castor Oil, Hydrogenated *see Cello-Grease* Lubricant C602, and Cello-Seal* Lubricant C601, Grease & Lubricants section.*

Cation Exchange Resins *see Ion Exchange Resins table.*

Caustic Spill Cleanup Kit *see Spill Cleanup Kit, Caustic 18-061C.*

Celite *see Sorbents table.*

Cellosolve* *see Ethylene Glycol Monoethyl Ether E180.*

Cement, Alundum*, EA-1139

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**C218-3**	404.02	4/1309.98

A medium-coarse refractory cement made from fused alumina and possessing high thermal conductivity, chemical inactivity, low coefficient of expansion, and resistance to heat as high as 1900°C (3452°F).

Used for embedding and insulating resistance wires in electrically heated appliances and for repairing muffles and linings in electric furnaces, etc.

[1344-28-1]

ChemAlert® STORAGE gray

Ceric Ammonium Nitrate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C248-500**	359.66	6/1679.14

Cerium (IV) Ammonium Nitrate
$(NH_4)_2Ce(NO_3)_6$
F.W. 548.22
[16774-21-3]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥98.5%
Insoluble in Dilute H_2SO_4	≤0.05%
Chloride	≤0.01%
Phosphate	≤0.02%
Iron	≤0.005%

*Trademark. See Trademark Reference.

Ceric Ammonium Sulfate

Clear, orange liquid
pH <3

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**1890-16**	25.42	- - - -
1L	Poly Natural	**1890-32**	37.38	- - - -
4L	Poly Natural	**1890-1**	87.72	- - - -
10L	Cubitainer*	**1890-25**	192.94	- - - -
20L	Cubitainer	**1890-5**	259.23	- - - -

Solvent/Matrix: 1N Sulfuric Acid
[10378-47-9 (Ceric Ammonium Sulfate, Dihydrate)]
[7664-93-9 (Sulfuric Acid)]
[7732-18-5 (Water, Deionized)]

ChemAlert® STORAGE **gray**

Ceric Sulfate Solution, 0.1N

Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SC66-1**	88.97	6/426.16

Cerium (IV) Sulfate Solution, 0.1N
[13590-82-4 (Ceric Sulfate)]
[7664-93-9 (Sulfuric Acid)]

ChemAlert® STORAGE **white**

Product Specifications
Actual Lot Analysis is reported on label.

Normality .... 0.099 - 0.101

Ceric Sulfate Solution, 0.100N

Clear, orange colored liquid
pH <3

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**1900-16**	22.30	- - - -
1L	Poly Natural	**1900-32**	32.79	- - - -
4L	Poly Natural	**1900-1**	80.70	- - - -
20L	Cubitainer*	**1900-5**	254.79	- - - -

Solvent/Matrix: 2N Sulfuric Acid
[13590-82-4 (Ceric Sulfate)]
[7664-93-9 (Sulfuric Acid)]
[7732-18-5 (Water, Deionized)]

Cesium Chloride

Crystalline

Certified

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**C24-25**	205.33	6/958.59

CsCl
F.W. 168.36
[7647-17-8]

ChemAlert® STORAGE **gray**

Product Specifications
Actual Lot Analysis is reported on label.

Assay .... ≥99.9%

▸***CETAB*** *see Hexadecyltrimethylammonium Bromide O3042.*

▸***Cetyltrimethylammonium Bromide*** *see Hexadecyltrimethylammonium Bromide O3042.*

▸***Chalk, Precipitated*** *see Calcium Carbonate, USP/FCC grade C63.*

▸***Charcoal, Activated*** *see also Carbon, Activated, 6-12 Mesh, Granular, C270C.*

▸***China Blue*** *see Aniline Blue A967.*

α-Chloralose

Laboratory

Powder

Quantity	Packaging	Cat. No.	Each	Case of
10g	Amber Glass	**C287-10**	46.77	6/216.76

Anhydroglucochloral, alpha-D-Glucochloralose
$C_8H_{11}Cl_3O_6$
F.W. 309.53
[15879-93-3]

ChemAlert® STORAGE **blue**

Chloramine T Trihydrate

Powder

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**01779-250**	76.94	6/345.62

$C_7H_7ClNNaO_2S \cdot 3H_2O$
F.W. 281.7
[127-65-1]

ChemAlert® STORAGE **white**

Product Specifications

Active Chlorine .... ≥12.0%

▸***Chloramphenicol*** *see Fisher BioReagents* BP904.*

Chlorine Water

Saturated at 20°C

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SC70-1**	178.59	6/849.60

[7782-50-5]

ChemAlert® STORAGE **white**

Product Specifications

Assay (as Cl) .... ≥0.3%

Chlorine Water

Approx. 0.3%
Clear, yellow-green liquid

Quantity	Packaging	Cat. No.	Each	Case of
473mL	Amber Glass	**198016**	27.43	- - - -
946mL	Amber Glass	**198032**	49.42	- - - -

Solvent/Matrix: Saturated Aqueous Solution
[7782-50-5 (Chlorine)]
[7732-18-5 (Water, Deionized)]

Chloroacetic Acid

Certified

White Flakes

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A176-500**	73.71	6/329.51

Monochloroacetic Acid
Chloroethanoic Acid
$CH_2ClCOOH$
$C_2H_3ClO_2$
F.W. 94.50
[79-11-8]

ChemAlert® STORAGE **white**

Product Specifications
Actual Lot Analysis is reported on label.

Melting Range .... 61.3°- 63.3°C
Chloride .... ≤0.01%
Sulfate .... ≤0.001%
Water .... ≤0.5%
Iron .... ≤5ppm

▸***Chloroauric Acid*** *see Tetrachloroauric Acid Trihydrate G54.*

Chlorobenzene Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**B255-500**	54.74	6/245.11
1L	Amber Glass	**B255-1**	89.76	6/403.35

Monochlorobenzene
Benzene Chloride
C_6H_5Cl
F.W. 112.56
[108-90-7]

SOLVENT

STORAGE red

Product Specifications

Refractive Index at 20°C	1.5240-1.5250
Water	≤0.02%
Residue after Evaporation	≤0.02%

Chlorobenzene Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**B254-4**	162.76	4/488.28
20L	Steel Pail	**B254-20**	552.72	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*
Monochlorobenzene
Benzene Chloride
C_6H_5Cl
F.W. 112.56
[108-90-7]

SOLVENT

STORAGE red

Chloroform Optima*

Also meets ACS specifications
Approx. 50ppm Amylene as Preservative

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**C297-4**	237.96	4/661.67

Also available in recyclable FisherPak and NOWPak* containers.*
Trichloromethane
$CHCl_3$
F.W. 119.38
Melting point: -63°C
Boiling point: 61°C
Density: 1.5gm/L
Packaged under Nitrogen. Submicron filtered. Shelf Life: 1 year
Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.
[67-66-3]

SOLVENT

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay (including preservative)	≥99.9%
Color (APHA)	≤5
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤10ng/L
Preservative (Amylene)	40-100ppm
Optical Absorbance:	
at 245nm	≤1.00
at 250nm	≤0.32
at 254nm	≤0.13
Fluorescence Background (as Quinine Sulfate)	≤1ppb
Water	≤0.01%
Residue after Evaporation	≤1ppm
Refractive Index at 25°C	1.4430 to 1.4460
Acetone and Aldehyde [as $(CH_3)_2CO$]	To pass test (about 0.005%)
Acid and Chloride	To pass test
Free Chlorine	To pass test
Lead	≤0.05ppm

Chloroform HPLC

Also meets ACS specifications
Approx. 0.75%ppm Ethanol as Preservative

Quantity	PackagingCat. No.		Each	Case of
1L	Amber Glass	**C606-1**	69.14	6/291.58
1L	Amber Glass/Safe-Cote*	**C606SK-1**	81.12	6/344.88
4L	Amber Glass	**C606-4**	136.17	4/382.49
4L	Amber Glass/Safe-Cote	**C606SK-4**	185.27	4/525.56

Also available in recyclable FisherPak and NOWPak* containers.*
Trichloromethane
$CHCl_3$
F.W. 119.38
[67-66-3]

SOLVENT

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay (including preservative)	≥99.8%
Color (APHA)	≤10
Preservative (Ethanol)	0.5-1.3 v/v%
Optical Absorbance:	
at 244nm	≤1.00
at 245nm	≤0.80
at 250nm	≤0.28
at 254nm	≤0.13
Fluorescence Background (as Quinine Sulfate)	To pass test
Refractive Index at 25°C	1.4420-1.4450
Acid and Chloride	To pass test
Free Chlorine	To pass test
Residue after Evaporation	≤2ppm
Substances Darkened by H_2SO_4	To pass test
Water	≤0.02%
Acetone and Aldehyde [as $(CH_3)_2CO$]	To pass test (about 0.005%)
Density at 25°C	1.471-1.476g/mL
Lead	≤0.05ppm

Submicron Filtered.

Chloroform HPLC

Also meets ACS specifications
Approx. 50ppm Pentene as Preservative

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**C607-1**	81.24	6/331.38
1L	Glass/Safe-Cote*	**C607SK-1**	85.22	6/345.97
4L	Amber Glass	**C607-4**	145.30	4/401.49
4L	Glass/Safe-Cote	**C607SK-4**	243.78	4/676.54

Trichloromethane
$CHCl_3$
F.W. 119.38
Shelf Life: 1 year
[67-66-3]
Submicron Filtered

SOLVENT

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay (including preservative)	≥99.8%
Color (APHA)	≤10
Preservative (Amylene)	100 to 150ppm
Optical Absorbance:	
at 245nm	≤1.00
at 250nm	≤0.32
at 254nm	≤0.15
at 280nm	≤0.01
Fluorescence Background (as Quinine Sulfate)	To pass test
Refractive Index at 25°C	1.4430-1.4460
Residue after Evaporation	≤2ppm
Water	≤0.02%
Acid and Chloride	To pass test
Free Chlorine	To pass test
Lead	≤0.05ppm
Acetone and Aldehyde [as $(CH_3)_2CO$]	To pass test (about 0.005%)

*Trademark. See Trademark Reference.

Chloroform, 99.8% — Extra Dry

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
4L	- - - -	**AC61003-0040**	94.40	4/320.94

$CHCl_3$
F.W. 119.38
Melting point: -63°C
Boiling point: 61°C (at 760mmHg)
Density: 1.48g/mL
[67-66-3]

Chloroform, 99.9% — Extra Dry

Water <50ppm, Stabilized

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC32682-1000**	24.30	- - - -
250mL	Septum Bottle	**AC32682-2500**	40.60	- - - -
1L	Septum Bottle	**AC32682-0010**	43.10	- - - -

$CHCl_3$
F.W. 119.38
Melting point: -63°C
Boiling point: 61°C (at 760mmHg)
Density:1.48g/mL
[67-66-3]

NEW

Chloroform, 99.9% — Extra Dry with Molecular Sieves

Water <50ppm, Stabilized

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC36432-1000**	25.10	- - - -
1L	Septum Bottle	**AC36432-0010**	43.90	- - - -

$CHCl_3$
F.W. 119.38
Melting point: -63°C
Boiling point: 61°C (at 760mmHg)
Density: 1.48g/mL
[67-66-3]

NEW

Chloroform — Extra Dry

Anhydrous, Stabilized with Amylene

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AeroSeal*	**AC61028-1000**	23.80	6/121.24

$CHCl_3$
F.W. 119.38
Melting point: -63°C
Boiling point: 61°C (at 760mmHg)
Density: 1.48g/mL
[67-66-3]

NEW

Chloroform — Pesticide

With 150-200ppm Amylene (as 2-Methyl-2-butene) as Preservative

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**C603-4**	172.88	4/487.82

Trichloromethane
$CHCl_3$
F.W. 119.38
[67-66-3]

SOLVENT ChemAlert® STORAGE blue

Product Specifications

Pesticide Residue Analysis (as Heptachlor Epoxide)	To pass test
Color (APHA)	≤10
Preservative (Amylene)	150-200ppm

Chloroform — Spectranalyzed*

Also meets ACS specifications
Approx. 0.75%ppm Ethanol as Preservative

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**C574-1**	97.49	6/474.98
4L	Amber Glass	**C574-4**	276.82	4/829.42
4L	Glass/Safe-Cote*	**C574SK-4**	321.13	4/963.13

Trichloromethane
$CHCl_3$
F.W. 119.38
[67-66-3]

SOLVENT ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay (including preservative)	≥99.8%
Color (APHA)	≤10
Preservative (Ethanol)	0.5-1.0 v/v%
Acid and Chloride	To pass test
Free Chlorine	To pass test
Residue after Evaporation	≤2ppm
Substances Darkened by H_2SO_4	To pass test
Acetone and Aldehyde [as $(CH_3)_2CO$]	To pass test (about 0.005%)
Density at 25°C	1.471-1.476g/mL
Lead	≤0.05ppm
Optical Absorbance:	
at 245nm	≤1.00
at 255nm	≤0.15
at 260nm	≤0.05
at 270nm	≤0.02
at 280-400nm	≤0.01
IR Transmittance:	
at 2.5-2.7µm	≥70%
at 2.8-3.2µm	≥70%
at 3.45-4.1µm	≥70%
at 4.2-6.5µm	≥70%
at 7.15-7.85µm	≥70%
at 9.9-10.7µm	≥70%

Transmittance measured in a 0.025mm KBr cell. Ultraviolet Absorbance Curves are run against distilled H_2O set at zero absorbance. Curves available on request.

Chloroform — Certified ACS

Approx. 0.75% Ethanol as Preservative

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**C298-500**	46.46	6/230.91
1L	Amber Glass	**C298-1**	100.22	6/448.73
4L	Amber Glass	**C298-4**	232.51	4/696.76
4L	Glass/Safe-Cote*	**C298SK-4**	247.80	4/742.60
4L	SafeTin*	**C298S-4**	277.72	4/828.03
20L	Steel Pail	**C298-20**	524.20	- - - -
200L	Steel Drum	**C298-200**	2782.84	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

Trichloromethane
$CHCl_3$
F.W. 119.38
Melting point: -63°C
Boiling point: 61°C
Density: 1.5g/mL
[67-66-3]

SOLVENT ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay (including preservative)	≥99.8%
Color (APHA)	≤10
Preservative (Ethanol)	0.5-1.0 v/v%
Density at 25°C	1.471-1.476g/mL
Residue after Evaporation	≤0.001%
Acetone and Aldehyde [as $(CH_3)_2CO$]	To pass test (about 0.005%)
Acid and Chloride	To pass test
Free Chlorine	To pass test
Lead	≤0.05ppm
Substances Darkened by H_2SO_4	To pass test
Water	≤0.02%

Chloroform — Technical

Approx. 0.75% Ethanol as Preservative

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**C295-4**	216.39	4/648.41
4L	SafeTin*	**C295S-4**	218.23	4/651.14
20L	Steel Pail	**C295-20**	582.98	- - - -

Trichloromethane
$CHCl_3$
F.W. 119.38
[67-66-3]

SOLVENT
ChemAlert® STORAGE blue

▸**Chloroform with Ethanol as Preservative** *see also Fisher BioReagents* BP1145.*

Chloroplatinic Acid Hydrate — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
1g	Glass Ampule	**P154-1**	214.50	6/994.20
10g	Amber Glass	**P154-10**	1911.64	- - - -

Dihydrogen Hexachloroplatinum (IV) Hydrate
$H_2PtCl_6·6H_2O$
[16941-12-1]

ChemAlert® STORAGE white

Product Specifications
Actual Lot Analysis is reported on label.

Assay (Pt)	≥37.50%
Solubility in Alcohol	To pass test
Alkalis and Other Salts (as SO_4)	≤0.05%
Suitability for Potassium Determination	To pass test

Choline Chloride — Reagent

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**01972-250**	94.02	6/420.29

Hydroxyethyltrimethylammonium Chloride
$(CH_3)_3NClCH_2CH_2OH$
$C_5H_{14}ClNO$
F.W. 139.63
[67-48-1]

ChemAlert® STORAGE gray

Product Specifications

Assay (by titration)	≥98%

▸**Chrome Alum** *see Chromic Potassium Sulfate Dodecahydrate C337.*

▸**Chrome Black T** *see Eriochrome* Black T E512.*

▸**Chrome Green** *see Chromic Oxide, Certified grade C334.*

Chromerge* Cleaning Solution

Quantity	Packaging	Cat. No.	Each	Case of
25mL	Amber Glass	**C577-12**	285.73	- - - -

For preparing Chromic Sulfuric Acid Solution, mix 25mL into 2.5L concentrated H_2SO_4.
[1333-82-0]

ACID
ChemAlert® STORAGE white

▸**Chromic Acid** *see Chromium Trioxide, Certified ACS grade A100.*

▸**Chromic Acid Diammonium Salt** *see Ammonium Dichromate A644.*

▸**Chromic Acid Disodium Salt** *see Sodium Chromate Anhydrous S272 and Sodium Dichromate Dihydrate S235.*

▸**Chromic Anhydride** *see Chromium Trioxide, Certified ACS grade A100.*

Chromic Chloride Hexahydrate — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C325-500**	190.19	6/892.16

Chromium (III) Chloride Hexahydrate
$CrCl_3•6H_2O$
F.W. 266.45
[10060-12-5]

STORAGE gray

Product Specifications

Insoluble Matter	≤0.010%
Sulfate	≤0.020%
Alkalis and Earths	≤0.30%
Aluminum	≤0.020%
Ammonia	≤0.030%
Heavy Metals (as Pb)	≤0.002%
Iron	≤0.010%

Chromic Nitrate Nonahydrate — Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**C331-100**	39.01	6/182.98
500g	Amber Glass	**C331-500**	157.33	6/738.02

Chromium (III) Nitrate Nonahydrate
$Cr(NO_3)_3•9H_2O$
F.W. 400.15
[7789-02-8]

Product Specifications

Alkali Salts	≤0.1%
Chloride	≤0.002%
Iron	≤0.005%
Sulfate	≤0.005%

Chromic Oxide — Certified

Powder

Quantity	Packaging	Cat. No.	Each	Case
500g	Amber Glass	**C334-500**	120.90	6/560.3

Chrome Green, Chromic Sesquioxide, Chromium (III) Oxide
Cr_2O_3
F.W. 151.99
C.I. 77288
[1308-38-9]

Product Specifications

Chloride	≤0.008
Ammonia	≤0.05
Sulfate	≤0.1
Iron	≤0.03
Substances Not Precipitated by NH_4OH	≤0.50

Chromic Oxide — Technical

Powder

Quantity	Packaging	Cat. No.	Each	Case
3kg	Glass	**C333-3**	518.48	4/1594.3

Chromic Sesquioxide, Chromium (III) Oxide
Cr_2O_3
F.W. 151.99
C.I. 77288
[1308-38-9]

*Trademark. See Trademark Reference.

Chromic Potassium Sulfate Dodecahydrate Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C337-500**	242.75	6/1092.36

Potassium Chromium Alum, Chrome Alum
$CrK(SO_4)_2•12H_2O$
F.W. 499.40
[7788-99-0]

ChemAlert® STORAGE gray

roduct Specifications

ctual Lot Analysis is reported on label.

Assay	98.0-102.0%
Insoluble Matter	≤0.01%
Aluminum	≤0.02%
Ammonium	≤0.01%
Heavy Metals (as Pb)	≤0.01%
Iron	≤0.01%
Chloride	≤0.002%

Chromium (III) Sesquioxide *see Chromic Oxide, Certified grade C334.*

Chromium (VI) Oxide *see Chromium Trioxide, Certified ACS grade A100.*

Chromium Trioxide Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**A100-100**	75.83	6/340.37
500g	Amber Glass	**A100-500**	251.73	6/1180.82
2.5kg	Amber Glass	**A100-212**	976.57	4/3002.93

Chromium (VI) Oxide, Chromic Acid Anhydride
CrO_3
F.W. 99.99
[1333-82-0]

ChemAlert® STORAGE yellow

roduct Specifications

ctual Lot Analysis is reported on label.

Assay	≥98.0%
Insoluble Matter	≤0.01%
Chloride	≤0.005%
Nitrate	≤0.05%
Sulfate	≤0.005%
Sodium	≤0.2%
Aluminum	≤0.02%
Barium	≤0.01%
Iron	≤0.02%

Chromium Trioxide Technical

Flakes

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A98-500**	198.62	6/920.57
2.5kg	Amber Glass	**A98-212**	801.47	4/2476.49

Chromic Acid Anhydride
CrO_3
F.W. 99.99
[1333-82-0]

ChemAlert® STORAGE yellow

Chromotropic Acid Disodium Salt Dihydrate Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**C613-25**	219.59	6/1030.06

4,5-Dihydroxy-2,7-naphthalene Disulfonic Acid Disodium Salt
$C_{10}H_6Na_2O_8S_2·2H_2O$
F.W. 400.28
[5808-22-0]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Clarity of Solution	To pass test
Sensitivity to Nitrate	To pass test
Sensitivity to Formaldehyde	To pass test

Suitable for detecting the presence of Aldehyde, particularly in air pollution studies. Also for determining the presence of Formaldehyde and Nitrate.

Citric Acid Anhydrous USP

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**A95-3**	184.59	4/577.28
250 lb.	Fiber Drum	**A95-250LB**	1171.83	- - - -

$C_6H_6O_7$
F.W. 192.13
[77-92-9]

ChemAlert® STORAGE gray

Product Specifications

Assay	99.5-100.5%
Clarity of Solution	To pass test
Color of Solution	To pass test
Heavy Metals (as Pb)	≤0.001%
Oxalic Acid	≤0.036%
Residue on Ignition	≤0.1%
Readily Carbonizable Substances	To pass test
Sulfate	≤0.015%
Water	≤1.0%
Bacterial Endotoxin	Report

Citric Acid Anhydrous Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A940-500**	84.55	6/379.39
1kg	Poly Bottle	**A940-1**	124.70	6/577.95
250 lb.	Fiber Drum	**A940-250LB**	1215.97	- - - -

$HO_2CCH_2C(OH)(CO_2H)CH_2CO_2H$
$C_6H_8O_7$
F.W. 192.13
[77-92-9]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay (as $C_6H_8O_7$)	≥99.5%
Insoluble Matter	≤0.005%
Residue after Ignition	≤0.02%
Chloride	≤0.001%
Oxalate	To pass test (about 0.05%)
Phosphate	≤0.001%
Sulfate	≤0.002%
Lead	≤2ppm
Iron	≤3ppm
Substances Carbonizable by Hot H_2SO_4 (Tartrates, etc.)	To pass test

▸***Citric Acid Anhydrous*** *see also Fisher BioReagents* BP339.*

Citric Acid Monohydrate USP

Granular

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**A110-3**	332.06	4/996.17
10kg	Poly Pail	**A110-10**	533.92	- - - -
50kg	Fiber Drum	**A110-50**	1505.21	- - - -

$C_6H_8O_7·H_2O$
F.W. 210.14
[5949-29-1]

ChemAlert® STORAGE gray

Product Specifications

Assay (Anhydrous Basis)	99.5-100.5%
Clarity of Solution	To pass test
Color of Solution	To pass test
Heavy Metals (as Pb)	≤0.001%

Contd. on next page.

Contd. from perious page.

Oxalic Acid	≤0.036%
Residue on Ignition	≤0.1%
Readily Carbonizable Substances	To pass test
Sulfate	≤0.015%
Water	7.5-9.0%
Bacterial Endotoxin	Report

Citric Acid Monohydrate — Certified ACS

Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A104-500**	79.94	6/373.22
3kg	Poly Bottle	**A104-3**	289.60	4/905.69
10kg	Poly Pail	**A104-10**	505.25	- - - -
250 lb.	Fiber Drum	**A104-250LB**	1629.26	- - - -

$(HO_2CCH_2)_2C(OH)(CO_2H) \cdot H_2O$

$C_6H_8O_7 \cdot H_2O$

F.W. 210.14

[5949-29-1]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	99.0-102.0%
Insoluble Matter	≤0.005%
Residue after Ignition	≤0.02%
Chloride	≤0.001%
Oxalate	To pass test (about 0.05%)
Phosphate	≤0.001%
Sulfate	≤0.002%
Lead	≤2ppm
Iron	≤3ppm
Substances Carbonizable by Hot H_2SO_4 (Tartrates, etc.)	To pass test

Cleaning Solution

Chromic-Sulfuric Acid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SC88-500**	39.28	6/186.69
2.5L	Glass	**SC88-212**	384.20	- - - -
2.5L	Glass/Safe-Cote*	**SC88S-212**	422.07	- - - -

For cleaning glassware.

ACID

ChemAlert® STORAGE white

Cobaltous Acetate Tetrahydrate — Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**C364-100**	103.77	6/486.77
500g	Amber Glass	**C364-500**	433.88	6/2011.00

Acetic Acid Cobalt Salt

Cobalt (II) Acetate

$Co(CH_3COO)_2 \cdot 4H_2O$

$C_4H_6CoO_4 \cdot 4H_2O$

F.W. 249.08

[6147-53-1]

ChemAlert® STORAGE gray

Product Specifications

Insoluble Matter	≤0.01%
Chloride	≤0.003%
Nitrate	≤0.015%
Sulfate	≤0.01%
Alkalis and Earths	≤0.25%
Copper	≤0.005%
Iron	≤0.003%
Lead	≤0.003%
Nickel	≤0.15%
Zinc	≤0.03%

Cobaltous Chloride Hexahydrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**C371-100**	91.17	6/427.65
500g	Amber Glass	**C371-500**	318.56	6/1476.53

Cobalt (II) Chloride

$CoCl_2 \cdot 6H_2O$

F.W. 237.93

[7791-13-1]

ChemAlert® STORAGE blue

Product Specifications

Actual Lot Analysis is reported on label.

Assay	98.0-102.0%
Insoluble Matter	≤0.01%
Nitrate	≤0.01%
Sulfate	≤0.01%
Copper	≤0.002%
Iron	≤0.005%
Nickel	≤0.1%
Zinc	≤0.03%
Calcium	≤0.005%
Magnesium	≤0.005%
Potassium	≤0.01%
Sodium	≤0.05%

Cobaltous Chloride — USP/EP

Red Primary Colorimetric Solution

Clear, dark red liquid

1 mL = 59.5 mg $CoCl_2 \cdot 6H_2O$

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**22-10-4**	43.16	- - - -
500mL	Amber Glass	**2210-16**	75.01	- - - -
1L	Amber Glass	**22-10-32**	108.54	- - - -

[7791-13-1 (Cobalt(II) Chloride, Hexahydrate)]

[7647-01-0 (Hydrochloric Acid)]

[7732-18-5 (Water, Deionized)]

Cobaltous Nitrate Hexahydrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C378-500**	754.81	6/3498.51

Cobalt (II) Nitrate

$Co(NO_3)_3 \cdot 6H_2O$

F.W. 291.03

[10026-22-9]

ChemAlert® STORAGE yellow

Product Specifications

Actual Lot Analysis is reported on label.

Assay	98.0-102.0%
Insoluble Matter	≤0.01%
Chloride	≤0.002%
Sulfate	≤0.005%
Copper	≤0.002%
Iron	≤0.001%
Nickel	≤0.15%
Calcium	≤0.005%
Magnesium	≤0.005%
Potassium	≤0.01%
Sodium	≤0.05%
Lead	≤0.002%
Zinc	≤0.01%

Cobaltous Sulfate Heptahydrate — Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C386-500**	308.15	6/1428.24

Cobalt (II) Sulfate

$CoSO_4 \cdot 7H_2O$

F.W. 281.10

[10026-24-1]

ChemAlert® STORAGE gray

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*Trademark. See Trademark Reference.

Product Specifications

Assay	≥97.0%
Insoluble Matter	≤0.010%
Chloride	≤0.005%
Nitrate	≤0.015%
Magnesium	≤0.005%
Potassium	≤0.01%
Sodium	≤0.05%
Copper	≤0.002%
Iron	≤0.005%
Nickel	≤0.3%
Zinc	≤0.05%

Congo Red Test Paper

Quantity	Packaging	Cat. No.	Each	Case of
24x100 strips	Vials	**14-861**	57.85	- - - -

This paper is red in neutral or alkaline solutions and turns blue in acid solutions. It is not recommended for use with weak acids.

Contract Laboratory Program (CLP), Reference Standards *see Standards, Inorganic section; Standards, Organic section.*

Coomassie* Blue G-250 *see Brilliant Blue G-250, Fisher BioReagents* BP100.*

Coomassie* Blue R-250 *see Brilliant Blue R-250, Fisher BioReagents* BP101.*

Copper — Certified ACS
Shot

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**C430-500**	151.52	6/709.05

Cu
At. Wt. 63.54
C.I. 77400
[7440-50-8]

ChemAlert® STORAGE gray

Product Specifications

Assay	≥99.90%
Insoluble in Dilute HNO_3	≤0.020%
Antimony and Tin (as Sn)	≤0.01%
Arsenic	≤5ppm
Iron	≤0.005%
Lead	≤0.005%
Manganese	≤0.001%
Phosphorus	≤0.001%
Silver	≤20ppm

Copper — Laboratory
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C434-500**	137.74	6/644.60

Cu
At. Wt. 63.54
C.I. 77400
[7440-50-8]

ChemAlert® STORAGE red

Copper (II) Sulfate Pentahydrate *see also Fisher BioReagents* BP346.*

Copper Sulfate Solution
Specific Gravity 1.186
Clear, blue liquid

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**2348-32**	29.58	- - - -
4L	Poly Natural	**2348-1**	62.44	- - - -

Application: For UL Corrosion Test
[7758-99-8 (Copper Sulfate Pentahydrate)]
[7732-18-5 (Water, Deionized)]

Copper Sulfate Solution
Specific Gravity 1.053

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass	**2330-16**	18.61	- - - -
1L	Glass	**2330-32**	26.50	- - - -
4L	Glass	**2330-1**	55.27	- - - -
20L	Cubitainer*	**2330-5**	184.56	- - - -

Application: For hemoglobin screening in men and women. Suitable for blood bank use.

Copper (II) Sulfate–Sulfamic Acid Inhibitor Solution
APHA

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**SC171-4**	153.10	4/479.80

Cupric Sulfate–Sulfamic Acid Inhibitor Solution
For dissolved oxygen.

ChemAlert® STORAGE gray

Product Specifications

Specific Gravity at 25°C	1.040-1.060

Cupric Carbonate, Basic Hydrate — Certified
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C453-500**	222.72	6/1039.80

Mineral Green
Copper (II) Carbonate, Basic Hydrate
$CuCO_3Cu(OH)_2•XH_2O$
[12069-69-1]

ChemAlert® STORAGE gray

Product Specifications

Assay (as Cu)	≥55.0%
Nitrate	≤0.05%
Sulfate	≤0.01%
Chloride	≤0.001%
Iron	≤0.02%
Insoluble in Dilute HCl	≤0.010%
Calcium	≤0.02%
Potassium	≤0.05%
Sodium	≤0.4%

Cupric Chloride Dihydrate — Certified
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C455-500**	215.57	6/905.37

Copper (II) Chloride
$CuCl_2•2H_2O$
F.W. 170.48
[10125-13-0]

ChemAlert® STORAGE white

Product Specifications
Actual Lot Analysis is reported on label.

Insoluble Matter	≤0.010%
Nitrate	≤0.015%
Sulfate	≤0.005%
Arsenic	≤1ppm
Iron	≤0.015%
Nickel	≤0.01%
Sodium	≤0.02%
Potassium	≤0.01%
Calcium	≤0.005%

Cupric Chloride Dihydrate — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C454-500**	133.77	6/626.02
3kg	Glass	**C454-3**	442.86	4/1368.43

Copper (II) Chloride
$CuCl_2•2H_2O$
F.W. 170.48
[10125-13-0]

ChemAlert® STORAGE white

Cupric Nitrate Hemipentahydrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**C467-500**	190.20	6/890.10

Copper (II) Nitrate
$Cu(NO_3)_2 \cdot 2.5H_2O$
F.W. 232.59
[19004-19-4]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	98.0-102.0%
Insoluble Matter	≤0.01%
Chloride	≤0.002%
Sulfate	≤0.01%
Lead	≤0.001%
Iron	≤0.005%
Nickel	≤0.01%
Sodium	≤0.01%
Potassium	≤0.005%
Calcium	≤0.005%

Cupric Sulfate Anhydrous — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**C495-500**	294.53	6/1378.29

Copper (II) Sulfate Anhydrous
$CuSO_4$
F.W. 159.61
[7758-98-7]

ChemAlert® STORAGE blue

Product Specifications

Assay	≥97%
Insoluble Matter	≤0.01%
Chloride	≤0.002%
Iron	≤0.02%
Sodium	≤0.02%
Potassium	≤0.01%
Calcium	≤0.005%
Nickel	≤0.005%

Cupric Sulfate Pentahydrate — Certified ACS

Fine Crystals

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**C493-500**	114.03	6/528.02
3kg	Poly Bottle	**C493-3**	413.43	4/1277.52
10kg	Poly Pail	**C493-10**	658.43	- - - -

Vitriol, Blue, Cupric Sulfate
Copper (II) Sulfate Pentahydrate
$CuSO_4 \cdot 5H_2O$
F.W. 249.68
[7758-99-8]

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay ($CuSO_4 \cdot 5H_2O$)	98.0-102.0%
Insoluble Matter	≤0.005%
Chloride	≤0.001%
Nitrogen Compounds (as N)	≤0.002%
Iron	≤0.003%
Sodium	≤0.02%
Potassium	≤0.01%
Calcium	≤0.005%
Nickel	≤0.005%

Cupric Sulfate Pentahydrate — Technical

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**C489-500**	78.35	6/362.81
1kg	Poly Bottle	**C489-1**	137.72	6/642.94
10kg	Bag in Box	**C489-10**	568.74	- - - -

Copper (II) Sulfate
$CuSO_4 \cdot 5H_2O$
F.W. 249.68
[7758-99-8]

ChemAlert STORAGE blue

Cupric Sulfate Pentahydrate — Technical

Powder

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**C490-3**	316.79	4/985.97
10kg	Bag in Box	**C490-10**	580.51	- - - -

Copper (II) Sulfate Pentahydrate
$CuSO_4 \cdot 5H_2O$
F.W. 249.68
[7758-99-8]

ChemAlert STORAGE blue

Cupric Sulfate — USP/EP

Blue Primary Solution
Clear, blue liquid
1 mL = 62.4 mg $CuSO_4 \cdot 5H_2O$

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**2495-4**	35.24	- - - -
500mL	Amber Glass	**2495-16**	68.62	- - - -
1L	Amber Glass	**2495-32**	95.69	- - - -

[7758-99-8 (Copper Sulfate Pentahydrate)]
[7647-01-0 (Hydrochloric Acid)]
[7732-18-5 (Water, Deionized)]

Crystal Violet — Certified

Biological Stain

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**C581-25**	57.28	6/268.71
100g	Amber Glass	**C581-100**	114.39	6/511.35

Gentian Violet, Basic Violet 3
$C_{25}H_{30}ClN_3$
F.W. 408.00
For use in histology, cytology and bacteriology (staining).
C.I. 42555
[548-62-9]

ChemAlert STORAGE blue

▸**Cupric Sulfate Pentahydrate** *see Copper (II) Sulfate Pentahydrate, Fisher BioReagents* BP346.*

▸**Cyanocobalamin (Vitamin B_{12})** *see Fisher BioReagents* BP862.*

Cyclohexane — HPLC

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**C620-1**	102.39	6/435.25
1L	Glass/Safe-Cote*	**C620SK-1**	124.71	6/501.03
4L	Amber Glass	**C620-4**	356.71	4/1025.46
4L	Glass/Safe-Cote	**C620SK-4**	440.82	4/1196.91

Hexahydrobenzene
$CH_2(CH_2)_4CH_2$
F.W. 8416
[110-82-7]
Submicron Filtered

SOLVENT
STORAGE red

*Trademark. See Trademark Reference.

Prices subject to change.

Product Specifications

Assay	≥99.0%
Color (APHA)	≤10
Optical Absorbance:	
at 202nm	≤1.00
at 205nm	≤0.88
at 210nm	≤0.67
at 254nm	≤0.014
Fluorescence Background (as Quinine Sulfate)	To pass test
Refractive Index at 25°C	1.4235 to 1.4255
Residue after Evaporation	≤10ppm
Water	≤0.02%
Density at 25°C	0.772-0.776g/mL
Substances Darkened by H_2SO_4	To pass test

Cyclohexane **Pesticide**

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**C553-4**	190.03	4/539.04

Hexahydrobenzene
$CH_2(CH_2)_4CH_2$
C_6H_{12}
F.W. 84.16
[110-82-7]

SOLVENT
STORAGE red

Product Specifications

Color (APHA)	≤10
Suitability for Use in Pesticide Residue Analysis	To pass test

Cyclohexane **Spectranalyzed***

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**C555-1**	158.29	6/693.96
4L	Amber Glass	**C555-4**	424.91	4/1312.38

Hexahydrobenzene
$CH_2(CH_2)_4CH_2$
C_6H_{12}
F.W. 84.16
For use in the ultraviolet and infrared ranges.
[110-82-7]

SOLVENT
STORAGE red

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.0%
Color (APHA)	≤10
Density at 25°C	0.772-0.776g/mL
Residue after Evaporation	≤0.002%
Substances Darkened by H_2SO_4	To pass test
Water	≤0.02%
Optical Absorbance:	
at 210nm	≤1.00
at 220nm	≤0.50
at 230nm	≤0.20
at 240nm	≤0.08
at 250nm	≤0.03
at 260nm	≤0.02
at 300-400nm	≤0.01
IR Transmittance:	
at 2.5-3.35µm	≥70%
at 4.0-6.7µm	≥70%
at 8.2-9.5µm	≥70%
at 10.0-10.9µm	≥70%
at 11.9-15.3µm	≥70%

Transmittance measured in a 0.025mm KBr cell. Ultraviolet Absorbance Curves are run against distilled water set at zero absorbance. Curves available on request.

Cyclohexane **Certified ACS**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**C556-500**	80.43	6/359.47
1L	Amber Glass	**C556-1**	137.43	6/618.40
4L	Amber Glass	**C556-4**	192.69	4/570.75

Hexahydrobenzene
$CH_2(CH_2)_4CH_2$
C_6H_{12}
F.W. 84.16
[110-82-7]

SOLVENT
STORAGE red

Product Specifications

Assay	≥99.0%
Color (APHA)	≤10
Density at 25°C	0.772-0.776g/mL
Residue after Evaporation	≤0.002%
Substances Darkened by H_2SO_4	To pass test
Water	≤0.02%

Cyclohexane **Reagent**

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**02093-4**	220.53	4/632.96
20L	Steel Pail	**02093-20**	695.56	- - - -

Hexahydrobenzene
$CH_2(CH_2)_4CH$
C_6H_{12}
F.W. 84.16
[110-82-7]

SOLVENT
STORAGE red

Product Specifications

Color (APHA)	≤10
Boiling Range (one drop to dryness)	≤2.0°C
Boiling Point	80.7°C ± 0.1°C

Cyclohexanol **Reagent**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**C558-500**	76.44	6/341.61

Hexahydrophenol
Hexalin
$CH_2(CH_2)_4CHOH$
$C_6H_{12}O$
F.W. 100.16
[108-93-0]

STORAGE gray

Product Specifications

Boiling Range	160.0°-161.5°C
Specific Gravity at 25°C	0.946 to 0.948

Cyclohexanone **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**02109-1**	117.96	6/544.03
4L	Amber Glass	**02109-4**	201.91	4/617.85

Also available in recyclable FisherPak and NOWPak* containers.*
Ketohexamethylene, Pimelic Ketone
$C_6H_{10}O$
F.W. 98.15
Melting point: -31°C
Boiling point: 155°C
Density: 0.947g/mL
[108-94-1]

SOLVENT
STORAGE red

Product Specifications

Assay (by GC)	≥98%
Boiling Range	2°C incl. 155°C
Acid Content (as Formic Acid)	≤0.05%
Residue after Evaporation	≤0.05%

Cyclohexanone — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**C550-4**	208.87	4/649.89

Ketohexamethylene, Pimelic Ketone
$CH_2(CH_2)_4CO$
$C_6H_{10}O$
F.W. 98.15
[108-94-1]

STORAGE red

Cyclohexene — Reagent

Contains 0.01% tert-Butylcresol as an Inhibitor

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**02111-1**	101.25	6/454.88

1,2,3,4-Tetrahydrobenzene
$CHCH(CH_2)_3CH_2$
C_6H_{10}
F.W. 82.15
[110-83-8]

SOLVENT STORAGE red

Product Specifications

Assay (by GC)..............≥98%
Color (APHA)..............≤5
Boiling Range..............2°C incl. 83°C
Peroxide (as H_2O_2)..............≤0.005%

(1,2-Cyclohexylenedinitrilo)-tetraacetic Acid — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**02116-100**	287.81	6/1343.65

trans-1,2-Diaminocyclohexane-N,N,N',N'-tetraacetic Acid
$C_{14}H_{22}O_8N_2$
F.W. 364.35
[13291-61-7]

SOLVENT STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay..............97.5-100.5%
Heavy Metals (as Pb)..............≤0.001%
Iron..............≤0.005%
Residue after Ignition..............≤0.2%

L-(+)-Cysteine Hydrochloride Monohydrate — Reagent

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**C562-25**	62.73	6/285.42

Amino-β-thiolactic Acid
$HSCH_2CH(NH_2)COOH{\cdot}HCl{\cdot}H_2O$
$C_3H_7NO_2S{\cdot}HCl{\cdot}H_2O$
F.W. 175.64
[7048-04-6]

STORAGE gray

▸***Cytoscint* Scintillation Cocktail*** *see Fisher BioReagents* BP458.*

Deuterated Solvents

Solvent	Quantity	Cat. No.	Price
Acetone-d6, Packaged in 0.75mL Ampules 99.9 atom% D	7.5mL	**AC32062-0075**	27.30
Acetonitrile-d3, Packaged in 0.75mL Ampules 99.6 atom% D	7.5mL	**AC32066-0075**	37.10
Chloroform-d 99.8 atom% D	25mL	**AC16625-0250**	12.00
	50mL	**AC16625-0500**	18.00
	100mL	**AC16625-1000**	41.70
	250mL	**AC16625-2500**	93.90
	500mL	**AC16625-5000**	165.50
Chloroform-d 99.6+ atom% D	100mL	**AC17488-1000**	42.90
	500mL	**AC17488-5000**	180.70
Chloroform-d, Contains 0.03 v/v% TMS 99.8+ atom% D	25mL	**AC20956-0250**	28.10
	100mL	**AC20956-1000**	41.70
	500mL	**AC20956-5000**	176.60
Chloroform-d, Contains 1 v/v% TMS 99.8 atom% D	25mL	**AC16626-0250**	12.60
	50mL	**AC16626-0500**	18.80
	100mL	**AC16626-1000**	30.50
	250mL	**AC16626-2500**	66.60
Deuterium Oxide 100.0 atom% D	10mL	**AC16631-0100**	32.30
	50mL	**AC16631-0500**	99.30
	100mL	**AC16631-1000**	184.40
Deuterium Oxide 99.8 atom% D	10mL	**AC16630-0100**	28.70
	100mL	**AC16630-1000**	83.50
Methyl-d3 Alcohol-d 99.6+ atom% D	10mL	**AC32536-0100**	67.90
	50mL	**AC32536-0500**	263.50
Methyl-d3 Alcohol-d 99.5 atom% D	5mL	**AC16635-0050**	44.40
	10mL	**AC16635-0100**	75.10
	50mL	**AC16635-0500**	296.90
Methyl-d3 Alcohol-d, Packaged in 0.75mL ampules 99.8 atom% D	7.5mL	**AC32075-0075**	56.10
Methyl-d3 Alcohol-d, Packaged in 1mL Ampules 99.8 atom% D	10mL	**AC32535-0100**	151.70
(Methyl sulfoxide)-d6 99.9 atom% D	10mL	**AC16629-0100**	22.70
	50mL	**AC16629-0500**	101.20
	100mL	**AC16629-1000**	179.10

*Trademark. See Trademark Reference.

euterated Solvents, Contd.

ACROS ORGANICS Solvent	Quantity	Cat No.	Price
(Methyl sulfoxide)-d6, Packaged in 0.75mL amples 99.9 atom% D	7.5mL	**AC32077-0075**	20.00
(Methyl sulfoxide)-d6, Packaged in 1.00 mL ampules 99.9 atom% D	10mL	**AC21733-0100**	28.40
(Methyl sulfoxide)-d6, Packaged in 0.50 mL ampules 99.9 atom% D	5mL	**AC32537-0050**	29.00
(Methyl sulfoxide)-d6, Contains 1 v/v% TMS 99.9 atom% D	10mL	**AC18115-0100**	23.20
	25mL	**AC18115-0250**	52.90
	50mL	**AC18115-0500**	104.10
(Methyl sulfoxide)-d6 99+ atom% D	50mL	**AC17489-0500**	91.30
Tetrahydrofuran-d8 99.5 atom% D	1mL	**AC18013-0010**	38.70
	5mL	**AC18013-0050**	170.40
	10mL	**AC18013-0100**	279.80

Darco* G-60 Carbon *see Carbon, Darco* G-60, Activated, D127.*

DCM *see Methylene Chloride.*

▸**DCM** *see Methylene Chloride, Fisher BioReagents* BP1186-4.*

Decane **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**02128-500**	117.06	6/546.40

$CH_3(CH_2)_8CH_3$
$C_{10}H_{22}$
F.W. 142.29
[124-18-5]

SOLVENT

STORAGE red

roduct Specifications

Assay	≥99%
Color (APHA)	≤10
Boiling Range	173°-175°C

Denatured Alcohol *see Ethyl Alcohol Denatured A407.*

▸**Denhardt's Solution** *see Fisher BioReagents* BP515.*

▸**Deoxycholic Acid Sodium Salt** *see Deoxycholic Acid Sodium Salt, Fisher BioReagents* BP349.*

Deoxycholic Acid Sodium Salt *see Sodium Desoxycholate S285.*

Desiccants *see Calcium Sulfate Hemihydrate C138 Drierite AC21909 and Silica Gels table.*

Desoxycholic Acid Sodium Salt *see Sodium Desoxycholate S285.*

Detergent, FL-70*
Biodegradable

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SF105-1**	35.97	6/173.09
4L	Amber Glass	**SF105-4**	94.27	4/302.83

Fisher Scientific FL-70* Biodegradable Detergent is a concentrated cleaning compound. The low-foaming, low-alkalinity, all-purpose detergent works on hard-to-clean glassware, ceramics, etc. Also good for cleanup of radioactive spills, dried and precipitated blood, stopcock grease, glass-marking crayons, lipstick, etc. Contains no chromates or phosphates. pH of a 2% solution is 10.5.

ChemAlert® STORAGE gray

Detergents *see Cleaning Solution, Chromic–Sulfuric Acid SC88, and Detergent, FL-70*, Biodegradable SF105.*

▸**Dextran** *see Fisher BioReagents* BP1580*.*

▸**Dextran Sulfate Sodium Salt** *see Fisher BioReagents* BP1585.*

Dextrose Anhydrous **EP/BP/USP**
Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**D14-500**	83.24	6/363.01
2.5kg	Glass	**D14-212**	239.72	4/704.07
50kg	Fiber Drum	**D14-50**	1278.99	- - - -

D-Glucose, Blood Sugar, Grape Sugar, Corn Sugar
$CH_2OH(CHOH)_4CHO$
$C_6H_{12}O_6$
F.W. 180.16
[50-99-7]

ChemAlert® STORAGE gray

Product Specifications

Acidity or Alkalinity	To pass test
Clarity, Color, and Odor	To pass test
Specific Rotation $[\alpha]_D^{25}$	+52.5° to +53.2°
Arsenic	≤1ppm
Barium	To pass test
Calcium	≤200ppm
Lead in Sugars	≤0.5ppm
Chloride	≤25ppm
Sulfate	≤200ppm
Sulfite (as SO_2)	≤15ppm
Foreign Sugars, Soluble Starch, and Dextrin	To pass test
Sulfated Ash	≤0.1%
Water	≤0.5%
Residue on Ignition	≤0.1%
Heavy Metals	5 ppm
Dextrin	Pass Test
Soluble Starch Sulfites	Pass Test
Pyrogens	Pass test

Dextrose (D-Glucose) Anhydrous **Certified ACS**
Granular Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**D16-500**	57.62	6/270.31
1kg	Amber Glass	**D16-1**	99.81	6/449.14
3kg	Glass	**D16-3**	184.30	4/573.59
10kg	Poly Pail	**D16-10**	319.15	- - - -
50kg	Fiber Drum	**D16-50**	1109.98	- - - -

D-Glucose, Blood Sugar, Grape Sugar, Corn Sugar
$CH_2OH(CHOH)_4CHO$
$C_6H_{12}O_6$
F.W. 180.16
[50-99-7]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Specific Rotation at 25°C	+52.5° to +53.0°

Contd. on next page.

Contd. from previous page.

Insoluble Matter .... ≤0.005%
Loss on Drying at 105°C .... ≤0.2%
Residue after Ignition .... ≤0.02%
Titratable Acid .... ≤0.002mEq/g
Chloride .... ≤0.01%
Sulfate and Sulfite (as SO4) .... ≤0.005%
Starch .... To pass test
Heavy Metals (as Pb) .... ≤5ppm
Iron .... ≤5ppm

Dextrose Monohydrate USP

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**D15-500**	59.67	6/279.92
3kg	Poly Pail	**D15-3**	226.44	——
12kg	Poly Pail	**D15-12**	601.63	——

D-Glucose Monohydrate
$CH_2OH(CHOH)_3CHOH{\bullet}H_2O$
$C_6H_{12}O_6{\bullet}H_2O$
F.W. 198.18
[14431-43-7]

ChemAlert® STORAGE gray

Product Specifications

Arsenic .... ≤1ppm
Chloride .... ≤0.018%
Heavy Metals .... ≤5ppm
Residue on Ignition .... ≤0.1%
Specific Rotation .... +52.6° to +53.2°
Sulfate .... ≤0.025%
Water 7.5-9.5%
Acidity .... To pass test
Color of Solution .... To pass test
Dextrin .... To pass test
Soluble Starch, Sulfites .... To pass test

▸***Di-*** *see also Bi- or Bis-.*

▸***1,2-Diaminoethane*** *see Ethylenediamine Anhydrous E479.*

▸***Diammonium Hydrogen Phosphate*** *see Ammonium Phosphate Dibasic A686.*

▸***Diatomaceous Earth*** *see Celite* Analytical Filter Aid C211; 500 and Infusorial Earth I223, under sorbents.*

▸***3,3"-Dibromothymolsulfonephthalein*** *see Bromothymol Blue B388.*

Dibutylamine Reagent

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**02199-500**	47.33	6/220.89
1L	Amber Glass	**02199-1**	75.75	6/353.47

n-Butyl-1-butanamine
$[CH_3(CH_2)_3]_2NH$
$C_8H_{19}N$
F.W. 129.25
[111-92-2]

ChemAlert® STORAGE red

Product Specifications

Color (APHA) .... ≤10
Refractive Index at 20°C .... 1.4175 ± 0.001
Boiling Range .... 154.5°-162.0°C
Boiling Point .... 159.6°C

Di-tert-butyl Dicarbonate, 99%

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
10g	Glass Bottle	**AC19467-0100**	25.40	- - - -
25g	Glass Bottle	**AC19467-0250**	63.10	- - - -
50g	Glass Bottle	**AC19467-0500**	95.00	- - - -
100g	Glass Bottle	**AC19467-1000**	180.50	- - - -
500g	Glass Bottle	**AC19467-5000**	614.00	- - - -

Di-tert-butyl pyrocarbonate, DIBOC
$O[CO_2C(CH_3)_3]_2$
$C_{10}H_{18}O_5$
F.W. 218.25
Melting point: 22-24°C
Boiling point: 37°C (at 0.5mmHg)
Flash point: 37°C
Density: 1.02g/mL
n: 1.4075-1.4095
[24424-99-5]

▸***Dibutyl Phthalate*** *see n-Butyl Phthalate D30.*

o-Dichlorobenzene Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**02231-1**	115.28	6/538.02

1,2-Dichlorobenzene, ortho-Dichlorobenzene
$C_6H_4Cl_2$
F.W. 147.00
[95-50-1]

SOLVENT

ChemAlert® STORAGE blue

Product Specifications

Assay .... ≥98%
Density at 25°C .... 1.300g/mL ±0.001g/mL

1,2-Dichloroethane Spectranalyzed*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**E190-4**	169.97	4/504.30

Ethylene Dichloride, Ethylene Chloride
$C_2H_4Cl_2$
F.W. 98.96
Suitable for use in ultraviolet spectrophotometry.
[107-06-2]

SOLVENT

STORAGE red

Product Specifications
Actual Lot Analysis is reported on label.

Assay .... ≥99.0%
Color (APHA) .... ≤10
Density at 25°C 1.241-1.251g/mL
Residue after Evaporation .... ≤0.002%
Water .... ≤0.03%
Titratable Acid .... ≤0.0003mEq/g
Optical Absorbance:
at 226nm .... ≤1.00
at 230nm .... ≤0.50
at 235nm .... ≤0.20
at 240nm .... ≤0.10
at 245nm .... ≤0.05
at 250nm .... ≤0.02
at 255-400nm .... ≤0.01

Ultraviolet Absorbance Curves for each lot are run against distilled water set at zero absorbance. Curves available on request.

*Trademark. See Trademark Reference.

1,2-Dichloroethane, 99.8% Extra Dry

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC32684-1000**	28.40	6/144.82
1L	Septum Bottle	**AC32684-0010**	59.30	- - - -

EDC, Ethylene Dichloride
$ClCH_2CH_2Cl$
$C_2H_4Cl_2$
F.W. 98.96
Melting point: -35°C
Boiling point: 81-85°C (at 760mmHg)
Flash point: 13°C
Density: 1.25g/mL
n: 1.444-1.446
[107-06-2]

1,2-Dichloroethane Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**E175-500**	48.04	6/213.26
4L	Amber Glass	**E175-4**	165.33	4/489.99
20L	Steel Pail	**E175-20**	375.06	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*
Ethylene Dichloride, Ethylene Chloride
$C_2H_4Cl_2$
F.W. 98.96
[107-06-2]

SOLVENT

ChemAlert® STORAGE red

roduct Specifications

Assay	≥99.0%
Color (APHA)	≤10
Density at 25°C	1.241-1.251g/mL
Residue after Evaporation	≤0.002%
Water	≤0.03%
Titratable Acid	≤0.0003mEq/g

2,6-Dichloroindophenol Sodium Salt Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
5g	Amber Glass	**S286-5**	138.48	6/649.60

Sodium Benzenoneindophenol
Sodium 2,6-Dichlorobenzenenoneindophenol
Tillman's Reagent
2,6-Dichlorobenzenone Indophenol Sodium Salt
$NaOC_6H_4N{:}C_6H_2Cl_2{:}O$
$C_{12}H_6Cl_2NNaO_2 \cdot 2H_2O$
F.W. 290.08
For ascorbic acid determination.
[620-45-1]

ChemAlert® STORAGE gray

roduct Specifications
ctual Lot Analysis is reported on label.

Loss on Drying at 120°C	≤12.0%
Interfering Dyes	To pass test

Dichloromethane, 99.9% HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	- - - -	**AC610050040**	80.90	4/274.89

Methylene chloride
CH_2Cl_2
F.W. 84.93
Melting point: -97°C
Boiling point: 39-40°C (at 760mmHg)
Density: 1.325g/mL
[75-09-2]

Dichloromethane, 99.9% Extra Dry

Water <30ppm

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC32685-1000**	22.80	- - - -
250mL	Septum Bottle	**AC32685-2500**	40.20	- - - -
1L	Septum Bottle	**AC32685-0010**	36.20	- - - -

Methylene Chloride
CH_2Cl_2
F.W. 84.93
Melting point: -97°C
Boiling point: 39-40°C (at 760mmHg)
Density: 1.325g/mL
[75-09-2]

Dichloromethane, 99.8% Extra Dry, with Molecular Sieves

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC34846-1000**	23.70	- - - -
1L	Septum Bottle	**AC34846-0010**	37.70	- - - -
2.5L	Glass Bottle	**AC34846-0025**	87.60	- - - -

Methylene Chloride
CH_2Cl_2
F.W. 84.93
Melting point: -97°C
Boiling point: 39-40°C (at 760mmHg)
Density: 1.325g/mL
[75-09-2]

Dichloromethane Extra Dry

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AcroSeal*	**AC61093-1000**	23.10	6/117.32

Methylene chloride
CH_2Cl_2
F.W. 84.93
Melting point: -97°C
Boiling point: 39-40°C (at 760mmHg)
Density: 1.325g/mL
[75-09-2]

Dichloromethane

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AcroSeal*	**AC61030-1000**	22.50	6/114.60
1L	AcroSeal	**AC61030-0010**	35.90	6/182.94

Methylene chloride
CH_2Cl_2
F.W. 84.93
Melting point: -97°C
Boiling point: 39-40°C (at 760mmHg)
Density: 1.325g/mL
[75-09-2]

▸***Dichloromethane*** *see also Methylene Chloride.*

Diethanolamine Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**D45-500**	45.43	6/213.04

2,2'-Iminodiethanol, Diethylolamine,
Bis(hydroxyethyl)amine
$(HOCH_2CH_2)_2NH$
$C_4H_{11}NO_2$
F.W. 105.14
[111-42-2]

ChemAlert® STORAGE white

Diethylamine Reagent

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**D46-500**	97.41	6/437.45
1L	Amber Glass	**D46-1**	123.42	6/578.65

Also available in recyclable FisherPak and NOWPak* containers.*

N-Ethylethanamine
$(C_2H_5)_2NH$
$C_4H_{11}N$
F.W. 73.14
[109-89-7]

SOLVENT

STORAGE red

Product Specifications

Boiling Range.......55°-58°C

Diethylene Dioxide *see 1,4-Dioxane, Certified ACS grade D111.*

Diethylene Glycol Reagent

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**D49-1**	61.23	6/287.10

2,2'-Oxybis[ethanol], 2,2'-Oxydiethanol
β, β'-Dihydroxyethyl Ether, Glycol Ether
$(HOCH_2CH_2)_2O$
$C_4H_{10}O_3$
F.W. 106.12
[111-46-6]

ChemAlert® STORAGE gray

Product Specifications

Specific Gravity at 25°C.......1.112 to 1.117
Boiling Range.......240°- 250°C
Water.......≤0.5%

Diethylene Glycol Monobutyl Ether Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**D50-4**	180.61	4/557.91

2-(2-Butoxyethoxy)ethanol, Butyl Carbitol, Butyl Digol
$CH_3(CH_2)_3OCH_2CH_2OCH_2CH_2OH$
$C_8H_{18}O_3$
F.W. 162.23
[112-34-5]

ChemAlert® STORAGE gray

Diethylene Glycol Monoethyl Ether Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**D51-4**	145.22	4/448.67

Carbitol, 2-(2-Ethoxyethoxy)ethanol, Ethyl Digol
$C_2H_5OCH_2CH_2OCH_2CH_2OH$
$C_6H_{14}O_3$
F.W. 134.18
[111-90-0]

ChemAlert® STORAGE gray

Diethylene Oxide *see 1,4-Dioxane, Certified ACS grade D111.*

Diethyl Ether, Anhydrous ACS

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
500mL		**AC61508-5000**	32.00	- - - -
1L		**AC61508-0010**	49.50	- - - -
4L		**AC61508-0040**	120.50	4/409.43
20L		**AC61508-0200**	336.20	- - - -

Diethyl ether, Ethyl ether
$(CH_3CH_2)_2O$
$C_4H_{10}O$
F.W.74.12
Melting point: -116°C
Boiling point: 34.6°C (at 760mmHg)
Flash point: -45°C
Density: 0.714g/mL
n: 1.351-1.353
[60-29-7]

Diethyl Ether, 99.5% Extra Dry
Water <50ppm

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC32686-1000**	26.10	6/133.11

Ether, Ethyl Ether
$(CH_3CH_2)_2O$
$C_4H_{10}O$
F.W. 74.12
Melting point: -116°C
Boiling point: 34.6°C (at 760mmHg)
Flash point: -45°C
Density: 0.714g/mL
n: 1.351-1.353
[60-29-7]

Diethyl Ether *see Ethyl Ether Anhydrous E198.*

N,N-Diethyl-p-phenylenediamine Oxalate Reagent

Quantity	Packaging	Cat. No.	Each	Case o
25g	Amber Glass	**02358-25**	118.80	6/534.60

p-Amino-Diethylaniline Oxalate
$[(CH_3CH_2)_2NC_6H_4NH_2]_2(COOH)_2$
$C_{22}H_{34}N_4O_4$
F.W. 418.55
[62637-92-7]

Product Specifications

Assay (by titration).......≥85%

Digestion Reagent
With Copper Catalyst
Clear, light blue colored liquid

Quantity	Packaging	Cat. No.	Each	Case o
1L	Poly Natural	**2551-32**	47.20	- - -
4L	Poly Natural	**2551-1**	108.18	- - -

[7758-99-8 (Copper Sulfate Pentahydrate)]
[7664-93-9 (Sulfuric Acid)]
[7778-80-5 (Potassium Sulfate)]
[7732-18-5 (Water, Deionized)]

1,4-Dihydroxybenzene *see Hydroquinone H329.*

β, β'-Dihydroxyethyl Ether *see Diethylene Glycol D49.*

1,2-Dihydroxypropane *see Propylene Glycol P355.*

Diisopropylamine Certified

Quantity	Packaging	Cat. No.	Each	Case o
4L	Amber Glass	**02412-4**	152.51	4/452.2

N-(1-Methylethyl)-2-propanamine, DIPA
$C_6H_{15}N$
F.W. 101.19
[108-18-9]

SOLVENT

Product Specifications

Color (APHA).......≤1
Boiling Range.......2°C incl. 84°

*Trademark. See Trademark Reference.

Prices subject to change.

1,2-Dimethoxyethane Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**02430-1**	143.48	6/671.13
4L	Amber Glass	**02430-4**	398.55	4/1231.58

Ethylene Glycol Dimethyl Ether, Glyme

SOLVENT

ChemAlert® STORAGE red

$CH_3OCH_2CH_2OCH_3$

$C_4H_{10}O_2$

F.W. 90.12

[110-71-4]

Product Specifications

Assay	≥99%
Color (APHA)	≤10
Boiling Range	84.0°- 86.0°C

N,N-Dimethylacetamide Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**D135-500**	125.25	6/552.57

Acetyl Dimethylamine, Acetic Acid, Dimethylamide

ChemAlert® STORAGE blue

$CH_3CON(CH_3)_2$

C_4H_9NO

F.W. 87.12

[127-19-5]

Product Specifications

Color (APHA)	≤10
Boiling Range	165°-167°C
Conductivity of a 20% Aqueous Solution at 25°C	≤25µmhos
Water	≤0.05%
pH of a 20% Solution at 25°C	4.0 to 7.0

N,N-Dimethylacetamide Reagent

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**02434-4**	146.34	4/452.17

Acetyl Dimethylamine, Acetic Acid, Dimethylamine

ChemAlert® STORAGE blue

$CH_3CON(CH_3)_3$

C_4H_9NO

F.W. 87.12

[127-19-5]

roduct Specifications

ctual Lot Analysis is reported on label.

Color (APHA)	≤10
Boiling Range	165°- 167°C

p-Dimethylaminobenzaldehyde Certified ACS

Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**D71-25**	60.41	6/283.39
100g	Amber Glass	**D71-100**	156.83	6/732.16

Ehrlich's Reagent, 4-Dimethylaminobenzenecarbonal

ChemAlert® STORAGE gray

$(CH_3)_2NC_6H_4CHO$

$C_9H_{11}NO$

F.W. 149.19

Crystalline Powder

[100-10-7]

roduct Specifications

ctual Lot Analysis is reported on label.

Melting Range	73°-75°C
Residue after Ignition	≤0.1%
Solubility in Dilute HCl	To pass test
Color of HCl Solution	To pass test
Solubility in Alcohol (color)	To pass test
Color of Alcohol Solution (APHA)	≤60

1-(3-Dimethylaminopropyl)-3-ethylcarbodiimide hydrochloride, 98+%

Quantity	Packaging	Cat. No.	Each	Case of
1g	Glass Bottle	**AC17144-0010**	15.90	- - - -
10g	Glass Bottle	**AC17144-0100**	73.10	- - - -
50g	Glass Bottle	**AC17144-0500**	290.60	- - - -
100g	Glass Bottle	**AC17144-1000**	445.40	- - - -

EDCI

$(CH_3)_2NCH_2CH_2CH_2N{=}C{=}NCH_2CH_3$

$C_8H_{17}N_3{\bullet}HCl$

F.W. 191.7

Melting point: 111-116°C

[25952-53-8]

▸ ***Dimethyl Ethylcarbinol*** *see tert-Amyl Alcohol A730.*

▸ ***Dimethylarsinic Acid*** *see Cacodylic Acid, Fisher BioReagents* BP324.*

▸ ***Dimethylbenzene*** *see Xylenes.*

N,N-Dimethylformamide, 99.5% HPLC

Quantity	Packaging	Cat. No.	Each	Case of
1L	Glass Bottle	**AC27960-0010**	59.50	- - - -
2.5L	Glass Bottle	**AC27960-0025**	91.00	4/309.16
4L	Glass Bottle	**AC27960-0040**	185.30	4/629.76

DMF

$HCON(CH_3)_2$

C_3H_7NO

F.W. 73.09

Melting point: -61°C

Boiling point: 153°C (at 760mmHg)

Flash point: 58°C

Density: 0.945g/mL

n: 1.429 to 1.432

[68-12-2]

N,N-Dimethylformamide, 99.8% Extra Dry with Molecular Sieves

Water <50ppm

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC34843-1000**	31.80	- - - -
1L	Septum Bottle	**AC34843-0010**	60.20	- - - -
2.5L	Glass Bottle	**AC34843-0025**	128.90	- - - -

DMF

$HCON(CH_3)_2$

C_3H_7NO

F.W. 73.09

Melting point: -61°C

Boiling point: 1531°C (at 760mmHg)

Flash point: 58°C

Density: 0.945g/mL

n: 1.429 to 1.432

[68-12-2]

N,N-Dimethylformamide, 99.8% Anhydrous

Quadrant Cap Anhydrous

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AcroSeal*	**AC61094-1000**	29.60	6/150.68

DMF

C_3H_7NO

F.W. 73.09

Melting point: -61°C

Boiling point: 153°C (at 760mmHg)

Flash point: 58°C

Density: 0.945g/mL

n: 1.429 to 1.432

alpha: 0.94°

[68-12-2]

N,N-Dimethylformamide, 99.8%

Anhydrous

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AcroSeal*	**AC61032-1000**	29.60	6/150.68
1L	AcroSeal	**AC61032-0010**	58.00	6/295.55

DMF
C_3H_7NO
F.W. 73.09
Melting point: -61°C
Boiling point: 153°C (at 760mmHg)
Flash point: 58°C
Density: 0.945g/mL
n: 1.429 to 1.432
alpha: 94°
[68-12-2]

N,N-Dimethylformamide **Spectranalyzed***

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**D131-1**	143.61	6/637.24
4L	Amber Glass	**D131-4**	369.21	4/1151.35

Also available in recyclable FisherPak and NOWPak* containers.*
DMF
C_3H_7NO
F.W. 73.09
Melting point: -61°C
Boiling point: 153°C
Density: 0.94
For use in the ultraviolet and infrared ranges.
[68-12-2]

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.8%
Color (APHA)	≤15
Density at 25°C	0.942-0.946g/mL
Residue after Evaporation	≤0.005%
Titratable Base	≤0.003mEq/g
Titratable Acid	≤0.0005mEq/g
Water	≤0.15%
Optical Absorbance:	
at 270nm	≤1.00
at 275nm	≤0.30
at 295nm	≤0.10
at 310nm	≤0.05
at 340-400nm	≤0.01
IR Transmittance:	
at 2.5-3.2μm	≥70%
at 3.7-5.6μm	≥70%
at 10.3-11.5μm	≥70%
at 11.7-14.6μm	≥70%

Transmittance measured in a 0.015mm KBr cell. Ultraviolet Absorbance Curves are run against distilled water set at zero absorbance. Curves available on request.

N,N-Dimethylformamide **Certified ACS**

Quantity	Packaging	Cat. No.	Each	Case o
500mL	Amber Glass	**D119-500**	85.31	6/398.0
1L	Amber Glass	**D119-1**	153.15	6/689.1
4L	SafeTin*	**D119S-4**	440.66	4/1370.9
4L	Amber Glass	**D119-4**	368.64	4/1138.7
20L	Steel Pail	**D119-20**	829.71	- - -
200L	- - - -	**D119-200**	4273.11	- - -

Also available in recyclable FisherPak and NOWPak* containers.*
DMF
C_3H_7NO
F.W. 73.09
Melting point: -61°C
Boiling point: 153°C
Density: 0.94
[68-12-2]

Product Specifications

Assay	≥99.8
Color (APHA)	≤1
Density at 25°C	0.942-0.946g/m
Residue after Evaporation	≤0.005
Titratable Base	≤0.003mEq
Titratable Acid	≤0.0005mEq
Water	≤0.15

▸***Dimethyl Ketone*** *see Acetone.*

Dimethyl Phthalate **Laboratory**

Quantity	Packaging	Cat. No.	Each	Case
4L	Amber Glass	**D65-4**	210.36	4/646.7

Methyl Phthalate, DMP, Phthalic Acid Dimethyl Ester
1,2-Benzenedicarboxylic Acid Dimethyl Ester
$1,2\text{-}(CO_2CH_3)_2C_6H_4$
$C1_{10}H_{10}O_4$
F.W. 194.19
[131-11-3]

▸***1,1-Dimethyl-1-propanol*** *see tert-Amyl Alcohol A730.*

▸***1,1-Dimethyl Propyl Alcohol*** *see tert-Amyl Alcohol A730.*

Dimethyl Sulfoxide, 99.7% **Extra Dry over Molecular Sieves**

Water <50ppm

Quantity	Packaging	Cat. No.	Each	Case
100mL	Septum Bottle	**AC34844-1000**	34.70	- - -
1L	Septum Bottle	**AC34844-0010**	75.70	- - -
2.5L	Glass Bottle	**AC34844-0025**	162.20	- - -

Methyl Sulfoxide, DMSO
C_2H_6OS
F.W. 78.13
Melting point: 18.4°C
Boiling point: 189°C (at 760mmHg)
Flash point: 87°C
Density: 1.1g/mL
n: 1.477 to 1.48
[67-68-5]

*Trademark. See Trademark Reference.

Prices subject to change.

Methyl Sulfoxide, 99.7% — Extra Dry

Anahydrous

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AcroSeal*	**AC61042-1000**	34.00	6/172.95
1L	AcroSeal	**AC61042-0010**	72.50	6/369.50

Methyl Sulfoxide, DMSO
C_2H_6OS
F.W. 78.13
Melting point: 18.4°C
Boiling point: 189°C (at 760mmHg)
Flash point: 87°C
Density: 1.1g/mL
n: 1.477 to 1.48
[67-68-5]

Dimethyl Sulfoxide — Spectranalyzed*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**D136-12**	78.52	6/1290.48

Methyl Sulfoxide, DMSO
$(CH_3)_2SO$
C_2H_6OS
F.W. 78.13

ChemAlert® STORAGE gray

NOTE: Sold for nonmedical use only. Not to be used or sold as a drug for humans or animals.
[67-68-5]

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.9%
Residue after Evaporation	≤0.01%
Water	≤0.1%
Titratable Acid	≤0.001mEq/g
Optical Absorbance:	
at 270nm	≤0.40
at 290nm	≤0.18
at 310nm	≤0.06
at 330nm	≤0.02
at 350-400nm	≤0.01

Dimethyl Sulfoxide — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**D128-500**	137.72	6/619.70
1L	Amber Glass	**D128-1**	221.57	6/995.99
4L	Amber Glass	**D128-4**	501.29	4/1540.88

Also available in recyclable FisherPak and NOWPak* containers.*
Methyl Sulfoxide, DMSO
$(CH_3)_2SO$
C_2H_6OS
F.W. 78.13

ChemAlert® STORAGE gray

NOTE: Sold for nonmedical use only. Not to be used or sold as a drug for humans or animals.
[67-68-5]

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.9%
Residue after Evaporation	≤0.01%
Titratable Acid	≤0.001mEq/g
Water	≤0.1%

F ▸***Dimethyl Sulfoxide*** *see also Fisher BioReagents* BP231.*

▸***Dioctyl Sodium Sulfosuccinate*** *see Aerosol* OT, Solid A349.*

1,4-Dioxane, 99.5% — Extra Dry over Molealar Sieves

Water <50ppm, Stabilized

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC36434-1000**	30.60	- - - -
1L	Septum Bottle	**AC36434-0010**	62.70	- - - -

Diox
$C_4H_8O_2$
F.W. 88.11
Melting point: 12°C
Boiling point: 101°C (at 760mmHg)
Flash point: 12°C
Density: 1.03g/mL
n: 1.4205 to 1.422
[123-91-1]

1,4-Dioxane, 99.0% — Extra Dry

Anhydrous

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Acroseal*	**AC61033-1000**	29.10	6/147.96

Dioxane, Diethylene ether, Diethylene dioxide, Diox
p-Dioxane
$C_4H_8O_2$
F.W. 88.11
Melting point: 12°C
Boiling point: 101°C (760mmHg)
Flash point: 12°C
Density: 1.03
n: 1.4205 to 1.422
[123-91-1]

1,4-Dioxane — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**D111-500**	98.68	6/433.56
4L	Amber Glass	**D111-4**	298.90	4/939.57

1,4-Diethylene Dioxide
$C_4H_8O_2$
F.W. 88.10
[123-91-1]

SOLVENT
ChemAlert® STORAGE red

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Color (APHA)	≤10
Peroxide (as H_2O_2)	≤0.003%
Freezing Point	≥11.0°C
Residue after Evaporation	≤0.004%
Water	≤0.02%
Carbonyl (as HCHO)	≤0.01%
Titratable Acid	≤0.0016mEq/g

1,5-Diphenylcarbazide — Certified ACS

Powder

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**D85-25**	152.26	6/714.27

sym-Diphenylcarbazide, 1,5-Diphenylcarbohydrazide
$C_6H_5NHNHCONHNHC_6H_5$
$C_{13}H_{14}N_4O$
F.W. 242.28
[140-22-7]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Sensitivity to Chromate	To pass test
Solubility in Aqueous Acetone	To pass test
Melting Point	173°-176°C
Residue after Ignition	0.05%

1,5-Diphenylcarbazone Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
10g	Amber Glass	**D86-10**	123.36	6/551.51

s-Diphenylcarbazone
$C_6H_5N{:}NCONHNHC_6H_5$
$C_{13}H_{12}N_4O$
F.W. 240.27
[538-62-5]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Sensitivity to Mercury........To pass test
Solubility in Acetone........To pass test
Residue after Ignition........≤0.1%

▸**1,5-Diphenylcarbohydrazide** *see 1,5-Diphenylcarbazide D85.*

▸**Diphenyl Ketone** *see Benzophenone B270.*

▸**2,5-Diphenyloxazole** *see PPO D144.*

▸**Dipotassium Hydrogen Phosphate** *see Potassium Phosphate Dibasic Anhydrous P288 and P290.*

▸**Dipotassium Peroxydisulfate** *see Potassium Persulfate P281.*

▸**Disodium EDTA** *see Ethylenediamine Tetraacetic Acid, Disodium Salt Dihydrate S311.*

▸**Disodium Hydrogen Phosphate** *see Sodium Phosphate Dibasic Anhydrous S374 and S375; and Sodium Phosphate Dibasic Heptahydrate S373.*

▸**Disposable Spill Control Kits** *see Spill Cleanup Kits 18-061A, 18-061B, 18-061C, and 18-016E.*

DL-1,4-Dithiothreitol 99%

Quantity	Packaging	Cat. No.	Each	Case of
1g	Glass Bottle	**AC16568-0010**	26.90	- - - -
5g	Glass Bottle	**AC16568-0050**	73.50	- - - -
25g	Glass Bottle	**AC16568-0250**	314.10	- - - -

Cleland's reagent, DTT, threo-1,4-Dimercapto-2,3-butanediol
$HSCH_2CH(OH)CH(OH)CH_2SH$
$C_4H_{10}O_2S_2$
F.W. 154.24
Melting point: 38-43°C
Boiling point: 125-130°C (2mmHg)
[3483-12-3]

▸**DMSO** *see Dimethyl Sulfoxide; see also Fisher BioReagents* BP231 and Opti-Freeze* DMSO Cryopreservation Medium, BP2652-50.*

Doctor Solution
Sodium Plumbite
Clear, colorless. May have slight orange sediment.
pH > 12

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**2650-32**	30.40	- - - -
4L	Poly Natural	**2650-1**	69.29	- - - -
10L	Cubitainer*	**26502-5**	118.65	- - - -
20L	Ropak*	**2650-5HP**	281.36	- - - -
20L	Cubitainer	**2650-5**	210.55	- - - -

[1317-36-8 (Lead Monoxide)]
[1310-73-2 (Sodium Hydroxide)]
[7732-18-5 (Water, Deionized)]

Dodecane Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**02666-500**	138.13	6/647.79

$CH_3(CH_2)_{10}CH_3$
$C_{12}H_{26}$
F.W. 170.34
[112-40-3]

ChemAlert® STORAGE gray

Dodecyl Sulfate Sodium Salt, 99%

Quantity	Packaging	Cat. No.	Each	Case of
100g	Plastic Bottle	**AC230421000**	54.10	- - - -
500g	Plastic Bottle	**AC230425000**	204.90	- - - -

Dodecyl Sodium Sulfate, SDS, Sodium lauryl sulfate
$CH_3(CH_2)_{11}OSO_3Na$
$C_{12}H_{25}NaO_4S$
F.W. 288.38
Melting point: 206°C
[151-21-3]

▸**Dodecylsulfuric Acid Sodium Salt** *see Sodium Dodecyl Sulfate O2674 and Sodium Lauryyl Sulfate S529.*

▸**Dowex** *see Ion Exchange Resins table.*

DPD Indicator Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**2655-16**	40.59	- - - -
1L	Amber Glass	**2655-32**	64.88	- - - -
4L	Amber Glass	**2655-1**	193.52	- - - -

Recommended storage: Refrigerate (2°C - 8°C)

Drierite* with Indicator
8 Mesh

Quantity	Packaging	Cat. No.	Each	Case of
500g	Glass Bottle	**AC21909-5000**	37.00	- - - -
2kg	Glass Bottle	**AC21909-0020**	111.50	- - - -

CaO_4S
F.W. 136.14
Melting point: 1450°C
[7778-18-9]

▸**Dyes** *see alphabetic listing as Aniline Blue, Brilliant Green, etc.*

▸**EDTA** *see Ethylenediamine Tetraacetic Acid E478.*

EDTA Titrant, 0.0100M
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**2700-16**	12.37	- - - -
1L	Poly Natural	**2700-32**	16.93	- - - -
4L	Poly Natural	**2700-1**	33.81	- - - -
10L	Cubitainer*	**2700-25**	60.75	- - - -
20L	Cubitainer	**2700-5**	90.91	- - - -

EDTA Titrant, 0.0500M
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**2705-16**	20.64	- - - -
1L	Poly Natural	**2705-32**	25.25	- - - -
4L	Poly Natural	**270-51**	54.45	- - - -
10L	Cubitainer*	**2705-25**	101.07	- - - -
20L	Cubitainer	**2705-5**	149.43	- - - -

*Trademark. See Trademark Reference.

EDTA Titrant, 0.0575M

Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**2710-32**	28.87	- - - -
4L	Poly Natural	**2710-1**	56.12	- - - -
10L	Cubitainer*	**2710-25**	110.12	- - - -
20L	Cubitainer	**2710-5**	156.30	- - - -

EDTA Titrant, 0.100M

Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**2730-16**	21.52	- - - -
1L	Poly Natural	**2730-32**	32.37	- - - -
4L	Poly Natural	**2730-1**	80.56	- - - -
10L	Cubitainer*	**2730-25**	119.40	- - - -
20L	Cubitainer	**2730-5**	161.03	- - - -

▸***EDTA Disodium Salt*** *see Ethylenediamine Tetraacetic Acid, Disodium Salt Dihydrate S311; and S312.*

▸***EDTA Tetrasodium Salt*** *see Ethylenediamine Tetraacetic Acid, Tetrasodium Salt Dihydarte S657.*

▸***EGTA*** *see [Ethylenebis-(oxyethylenenitrilo)]tetraacetic Acid O2783.*

Electrode Cleaning Solution

Pale yellow liquid

Quantity	Packaging	Cat. No.	Each	Case of
20 × 20mL	Pack	**2794-20**	75.76	——
500mL	Poly Natural	**2794-16**	31.14	——
1L	Poly Natural	**2794-32**	46.76	——
4L	Poly Natural	**2794-1**	116.93	——
20L	Cubitainer*	**2794-5**	365.92	——

Application: For removal of membrane/junction protein deposits
[7647-01-0 (Hydrochloric Acid)]
[9001-75-6 (Pepsin)]
[7732-18-5 (Water, Deionized)]

Electrode Storage Solution

Quantity	Packaging	Cat. No.	Each	Case of
1 liter	Poly Bottle	**SE40-1**	42.96	6/204.63

For use in storage of pH electrodes.

ChemAlert® STORAGE gray

Product Specifications

Potassium Chloride	6.2 ± 0.3g/L
Residue after Evaporation	1.65 ± 0.08%
pH at 25°C	3.9 ± 0.1

Electrode Storage Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**2795-16**	20.86	- - - -
1L	Poly Natural	**2795-32**	29.54	- - - -
4L	Poly Natural	**2795-1**	80.20	- - - -
20L	Cubitainer*	**2795-5**	212.24	- - - -

Application: For Storing Glass and Combination pH Electrodes

Embedding Media, TissuePrep*

Quantity	Packaging	Cat. No.	Each	Case of
5lb (2.3kg)	Carton	**T5801**	18.85	- - - -

[64742-43-4]
[8002-74-2]

ChemAlert® STORAGE gray

Product Specifications

Color	≤30
Melting point	57.5-58.5°C
Viscosity	7-14 Centipoises
Cracking Test	pass test
Maximum Compression	pass test
Slicing Test	pass test
Solubility in Xylene	pass test
Flocculation Grading	pass test

▸***Environmental Standards*** *see Standards, Inorganic Standards, Organic (EPA Methods, Multi-Component) Standards, Organic (EPA Methods, Single Component).*

Eosin Y

Certified Biological Stain

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**E511-25**	65.97	6/312.90
100g	Amber Glass	**E511-100**	136.20	6/651.28

D&C Red No. 22
Acid Red 87
$C_{20}H_6Br_4Na_2O_5$
F.W. 691.91
For use in histology and compounding of blood stains.
Acid Red 87
C.I. 45380
[17372-87-1]

ChemAlert® STORAGE gray

Product Specifications

Assay (anhydrous dye)	≥88%
Certification as Biological Stain	To pass test

Eosin Y, Alcoholic Solution, 0.25%

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SE22-500D**	81.57	6/446.93

Acid Red 87
For use in histology stains.
Contains Eosin Y in a mixture of Ethanol, Methanol and Isopropanol.
[548-26-5]

ChemAlert® STORAGE red

Product Specifications

Dye Concentration	To pass test
Specific Gravity at 25°C	0.855 ± 0.015
Use Test (counterstain)	To pass test

▸***EPA Reference Standards*** *see Standards, Organic (EPA Methods, Single Component) and Standards, Organic (EPA Methods, Multi- Component).*

▸***1,2-Epoxypropane*** *see Propylene Oxide O4332.*

Eriochrome* Black T — Certified

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**E512-25**	46.82	6/222.19

Superchrome Black TS, Mordant Black 11
$C_{20}H_{12}N_3NaO_7S$
F.W.461.38
Indicator for EDTA titrations; biologic stain.
C.I.14645
[1787-61-7]

Product Specifications

Sensitivity ....To pass test

Eriochrome* Black T Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SE32-500**	73.23	6/349.46

Indicator for water hardness.
C.I.14645
[1787-61-7 (Eriochrome* Black T)]
[67-56-1 (Methanol)]

STORAGE red

Product Specifications

Sensitivity as Indicator ....To pass test

Ethanol, Anhydrous — Histological

Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
1 gal.	Poly Bottle	**A405F-1GAL**	95.35	4/298.15
4L	Poly Bottle	**A405P-4**	93.99	4/292.50
20L	Steel Pail	**A405-20**	218.52	- - - -

Ethyl Alcohol Denatured
Composed of: Ethyl Alcohol, 95.27%, CAS Reg. 64-17-5; Methyl Isobutyl Ketone, 1.0%, CAS Reg. 108-10-1; Ethyl Acetate, 1.0%, CAS Reg. 141-78-6; Hydrocarbon, 1.0%, CAS Reg. 64742-89-8.

STORAGE red

Product Specifications

Specific Gravity at 25°C ....0.785 to 0.792
Water ....≤0.5%
Denaturants ....Pass Test

Ethanol, CDA 19 — Histological

Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
1 gal.	Poly Bottle	**A406F-1GAL**	105.40	4/385.11
4L	Poly Bottle	**A406P-4**	99.10	4/309.80
20L	Steel Pail	**A406-20**	231.10	- - - -

Ethyl Alcohol Denatured
Composed of: Ethyl Alcohol, 95.2%, CAS Reg. 64-17-5; Methyl Isobutyl Ketone, 3.8%, CAS Reg. 108-10-1; Kerosene, 1.0%, CAS Reg. 8008-20-6.
Nonvolatile matter, ≤0.003%.

STORAGE red

Product Specifications

Color (APHA)...≤15
Denaturants ....Pass Test
Nonvolatile Matter...≤0.003%

▸***Ethanol*** *see Ethyl Alcohol, and Alcohol, HPLC grade A995.*

Ethanolamine — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**M251-1**	102.33	6/479.86
4L	Amber Glass	**M251-4**	193.86	4/616.08

Monoethanolamine, 2-Aminoethanol, 2-Hydroxyethylamine
$HOCH_2CH_2NH_2$
C_2H_7NO
F.W. 61.08
[141-43-5]

ChemAlert® STORAGE white

▸***Ethanolamine, Di-*** *see Diethanolamine D45.*

▸***Ethanolamine, Tri-*** *see Triethanolamine T407.*

▸***Ethanol, Denatured*** *see Ethyl Alcohol Denatured A407.*

▸***Ethanoyl Chloride*** *see Acetyl Chloride, Certified grade A27.*

▸***Ether*** *see Ethyl Ether beginning with E198.*

▸***Ethers*** *see alphabetic listings for Ethyl Ether, Petroleum Ether, etc.*

▸***2-Ethoxyethanol*** *see Ethylene Glycol Monoethyl Ether E180.*

▸***2-(2-Ethoxyethoxy)ethanol*** *see Diethylene Glycol Monoethyl Ether D51.*

Ethyl Acetate — Optima*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**E196-4**	135.00	4/384.64

Also available in recyclable FisherPak and NOWPak* containers.*
Acetic Acid Ethyl Ester
[141-78-6]
Packaged under Nitrogen. Submicron Filtered

Product Specifications

Assay (by GC) ....
≥99.9%
Color (APHA)...≤5
Pesticide Residue Analysis (as Heptachlor Epoxide).................10ng/L
Optical Absorbance:
  at 255nm ....≤1.00
  at 260nm ....≤0.12
  at 270nm ....≤0.015
Fluorescence Background (as Quinine Sulfate)..........................≤1ppb
Water ....≤0.02%
Residue after Evaporation ....≤1ppm
Refractive Index at 25°C...1.3680-1.3710
Density at 25°C 0.893-0.895g/mL
Titratable Acid ....≤0.0009mEq/g
Substances Darkened by H_2SO_4...To pass test

Ethyl Acetate — HPLC

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**E195-1**	65.53	6/280.49
1L	Glass/Safe-Cote*	**E195SK-1**	90.88	6/384.60
4L	Amber Glass	**E195-4**	124.82	4/356.29
4L	Glass/Safe-Cote	**E195SK-4**	148.30	4/418.81
19L	NOWPak* (Plastic Exterior)	**E195N1-19**	497.47	- - - -

*Also available in recyclable FisherPak**
Acetic Acid Ethyl Ester
$CH_3CO_2C_2H_5$
$C_4H_8O_2$
F.W. 88.10
[141-78-6]
Submicron Filtered

*Trademark. See Trademark Reference.

Prices subject to change.

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.9%
Color (APHA)	≤10
Optical Absorbance at 255nm	≤1.00
at 260nm	≤0.15
at 270nm	≤0.025
Fluorescence Background (as Quinine Sulfate)	To pass test
Refractive Index at 25°C	1.3680 to 1.3710
Residue after Evaporation	≤0.001%
Substances Darkened by H_2SO_4	To pass test
Water	≤0.02%
Titratable Acid	≤0.0009mEq/g
Density at 25°C	0.893-0.895g/mL

Ethyl Acetate, 99.9% — HPLC

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
4L	- - - -	**AC61006-0040**	88.20	4/299.64

Acetic acid ethyl ester

$CH_3CO_2C_2H_5$

$C_4H_8O_2$

F.W. 88.11

Melting point: -83.5°C

Boiling point: 75-77.5°C (at 760mmHg)

Flash point: -4°C

Density: 0.902g/mL

n: 1.371-1.374

[141-78-6]

Ethyl Acetate — Pesticide

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**E191-41**	51.93	4/380.40

Acetic Acid Ethyl Ester

$CH_3CO_2C_2H_5$

$C_4H_8O_2$

F.W. 88.10

[141-78-6]

SOLVENT · STORAGE red

Product Specifications

Suitability for Pesticide Residue Analysis	To pass test

Ethyl Acetate — NF

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**E124-4**	200.39	4/623.36
20L	Steel Pail	**E124-20**	468.42	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

Acetic Acid Ethyl Ester

$CH_3COOC_2H_5$

$C_4H_8O_2$

F.W. 88.10

[141-78-6]

SOLVENT · STORAGE red

roduct Specifications

Assay	99.0-100.5%
Chromatographic Purity	≥99.5%
Acidity	To pass test
Methyl Compounds	To pass test
Nonvolatile Residues	≤0.02%
Readily Carbonizable Substances	To pass test
Specific Gravity	0.894-0.898
Organic Volatile Impurities	To pass test

Ethyl Acetate — Spectranalyzed*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**E189-4**	243.05	4/729.16

Acetic Acid Ethyl Ester

$CH_3COOC_2H_5$

$C_4H_8O_2$

F.W. 88.10

For use in the ultraviolet and infrared ranges.

[141-78-6]

SOLVENT · STORAGE red

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.5%
Color (APHA)	≤10
Density at 25°C	0.893-0.895g/mL
Residue after Evaporation	≤0.003%
Water	≤0.1%
Substances Darkened by H_2SO_4	To pass test
Titratable Acid	≤0.0009mEq/g
Optical Absorbance:	
at 255nm	≤1.00
at 257nm	≤0.50
at 263nm	≤0.10
at 275nm	≤0.05
at 330-400nm	≤0.01
IR Transmittance:	
at 2.5-3.2µm	≥70%
at 3.5-5.5µm	≥70%
at 6.2-6.6µm	≥70%
at 10.3-10.5µm	≥70%
at 11.1-11.6µm	≥70%
at 12.0-12.5µm	≥70%
at 13.0-14.7µm	≥70%

Transmittance measured in a 0.025mm KBr cell. Ultraviolet Absorbance Curves are run against distilled water set at zero absorbance. Curves available on request.

Ethyl Acetate — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**E145-500**	46.47	6/215.13
1L	Amber Glass	**E145-1**	98.75	6/444.37
4L	Amber Glass	**E145-4**	219.30	4/657.91
4L	Glass/Safe-Cote*	**E145SK-4**	229.76	4/702.84
4L	SafeTin*	**E145S-4**	266.65	4/799.94
20L	Steel Pail	**E145-20**	489.18	- - - -
200L	Steel Drum	**E145-200**	2625.71	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

Acetic Acid Ethyl Ester

$C_4H_8O_2$

F.W. 88.10

Melting point: -83°C

Boiling point: 77.5°C

Density: 0.902

[141-78-6]

STORAGE red

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.5%
Color (APHA)	≤10
Density at 25°C	0.893-0.895g/mL
Residue after Evaporation	≤0.003%
Water	≤0.1%
Titratable Acid	≤0.0009mEq/g
Substances Darkened by H_2SO_4	To pass test

Ethanol, 200 Proof (99.5%) ACS

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
2L	- - - -	**AC61509-0020**	74.80	- - - -
4L	- - - -	**AC61509-0040**	121.60	4/413.41

Flash point: 11°C
[64-17-5]

Ethanol, 200 Proof (100%) USP

Decon Labs, Inc.

Quantity	Packaging	Cat. No.	Each	Case of
24 x 1pt.	Plastic Bottle	**04-355-222**	76.10	- - - -
4 x 1 gal.	Plastic Bottle	**04-355-223**	76.10	- - - -
5 gal.	Drum	**04-355-224**	95.00	- - - -

Application: Used for research, healthcare, industrial, or production aplications as a sanitizer, solvent or reagent.
May require a federal tax exempt certificate.
[64-17-5 (ethanol)]

NEW

Ethanol, 190 Proof (95%) ACS

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
1L	- - - -	**AC61511-0010**	47.80	- - - -
4L	- - - -	**AC61511-0040**	132.50	4/450.19

Flash point: 11°C
[64-17-5]

Ethanol, 190 Proof (95%) USP

Decon Labs, Inc.

Quantity	Packaging	Cat. No.	Each	Case of
24 × 1pt.	Plastic Bottle	**04-355-225**	75.15	- - - -
4 × 1gal.	Plastic Bottle	**04-355-226**	75.15	- - - -
5 gal.	Drum	**04-355-221**	94.94	- - - -

Application: Used for research, healthcare, industrial, or production aplications as a sanitizer, solvent or reagent.
May require a federal tax exempt certificate.
[64-17-5 (ethanol)]
[7732-18-5 (purified water)]

NEW

*▸**Ethyl Acetate** see also Fisher BioReagents* BP1125.*

Ethyl Alcohol Denatured

Proprietary Solvent

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A407-500**	29.74	6/138.86
1L	Amber Glass	**A407-1**	41.26	6/192.63
4L	Amber Glass	**A407-4**	104.45	4/339.21
4L	Poly Bottle	**A407P-4**	99.10	4/367.90
4L	Glass/Safe-Cote*	**A407SK-4**	109.95	4/338.06
4L	SafeTin*	**A407S-4**	137.41	4/422.61
20L	Steel Pail	**A407-20**	232.39	- - - -
200L	Steel Drum	**A407-200**	1167.44	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*
Methyl Hydrate , Ethanol, Denatured

SOLVENT

STORAGE red

Formulation:

Ethyl Alcohol	100 parts
Ethyl Acetate	1 part
Methyl iso-Butyl Ketone	1 part
Aviation Gasoline	1 part

Ethyl Alcohol, Denatured

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
4L	- - - -	**AC61105-0040**	77.50	4/263.43

Ethanol
C_2H_5OH
Flash point: 11°C
[64-17-5]

*▸**Ethyl Alcohol** see Ethanol and Alcohol, HPLC grade A995.*

*▸**Ethyl Carbonic Acid** see Propionic Acid A258.*

[Ethylenebis-(oxyethylenenitrilo)]- tetraacetic Acid Certified

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**02783-100**	250.08	6/1173.09

EGTA
Ethyleneglycol Bis(aminoethylether) Tetraacetic Acid
$(HOOCCH_2)_2N(CH_2CH_2O)_2CH_2CH_2N(CH_2COOH)_2$
$C_{14}H_{24}N_2O_{10}$
F.W. 380.35
[67-42-5]

ChemAlert® STORAGE gray

Product Specifications

Assay	≥98.0%
Melting Point	241°- 244°C

*▸**Ethylene Chloride** see 1,2-Dichloroethane, Spectranalyzed* grade E190.*

Ethylenediamine Anhydrous Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Tin Can	**E479-500**	73.92	6/330.31
4L	Tin Can	**E479-4**	352.86	4/1098.21

1,2-Diaminoethane, 1,2-Ethanediamine
$NH_2CH_2CH_2NH_2$
$C_2H_8N_2$
F.W. 60.10
[107-15-3]

STORAGE red

Product Specifications

Assay	98-101%
Water	≤2.0%

Ethylenediamine Tetraacetic Acid Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**E478-500**	232.11	6/1088.86
1kg	Amber Glass	**E478-1**	329.90	6/1547.58

EDTA
(Ethylenedinitrilo)tetraacetic Acid
$(HOOCCH_2)_2NCH_2CH_2N(CH_2COOH)_2$
$C_{10}H_{16}N_2O_8$
F.W. 292.25
[60-00-4]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.4-100.6%
Insoluble in Dilute NH_4OH	≤0.005%
Residue after Ignition	≤0.2%
Nitrilotriacetic Acid [$(HOOCCH_2)_3N$]	≤0.1%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.005%
Calcium	≤0.001%
Magnesium	≤5ppm

Ethylenediamine Tetraacetic Acid, Disodium Salt Dihydrate — USP/FCC

White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S312-500**	227.54	6/1067.36
2.5kg	Poly Bottle	**S312-212**	735.18	4/2205.51
12kg	Poly Pail	**S312-12**	1511.06	- - - -
125 lb.	Fiber Drum	**S312-125LB**	3344.58	- - - -

EDTA Disodium Salt
Sodium (Di) Ethylenediamine Tetracetate Dihydrate
$(HO_2CCH_2)_2NCH_2CH_2N(CH_2CO_2Na)_2 \bullet 2H_2O$
$C_{10}H_{14}N_2Na_2O_8 \bullet 2H_2O$
F.W. 372.24
[6381-92-6]

ChemAlert® STORAGE gray

Product Specifications

USP Requirements:

Identification	To pass test
pH of 1 in 20 solution	4.0-6.0
Loss on Drying at 150°C	8.7 to 11.4
Calcium	To pass test
Nitrilotriacetic Acid	0.1% Maximum
Assay (dried basis)	99.0-101.0%
Heavy Metals	0.005% Maximum
USP Protocol Required	To pass test

FCC Requirements:

Identification	To pass test
Lead	≤10ppm Maximum
Nitrilotriacetic Acid	0.1%Maximum
Calcium	Negative
pH of a 1:100 Solution	4.3 to 4.7
Assay	99.0-101.0%

Ethylenediamine Tetraacetic Acid, Disodium Salt Dihydrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**S311-100**	59.95	6/281.25
500g	Amber Glass	**S311-500**	202.92	6/951.90
3kg	Poly Bottle	**S311-3**	673.98	4/2097.73
10kg	Poly Pail	**S311-10**	1425.56	- - - -
50kg	Fiber Drum	**S311-50KG**	1708.70	- - - -

Sodium (Di) Ethylenediamine Tetraacetate Dihydrate
EDTA Disodium Salt
(Ethylenedinitrilo)tetraacetic Acid Disodium Salt Dihydrate
$(HO_2CCH_2)_2NCH_2CH_2N(CH_2CO_2Na)_2 \bullet 2H_2O$
$C_{10}H_{14}N_2Na_2O_8 \bullet 2H_2O$
F.W. 372.24
[6381-92-6]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	99.0-101.0%
Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	4.0 to 6.0
Nitrilotriacetic Acid [$(HOOCCH_2)_3N$]	≤0.1%
Heavy Metals (as Pb)	≤0.005%
Iron	≤0.01%

Ethylenediamine Tetraacetic Acid, Disodium Salt Dihydrate — Reagent

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**02793-500**	82.82	6/371.95

EDTA, Disodium Salt
$(HO_2CCH_2)_2NCH_2CH_2N(CH_2CO_2Na)_2 \bullet 2H_2O$
$C_{10}H_{14}N_2Na_2O_8 \bullet 2H_2O$
F.W.372.24
[6381-92-6]

ChemAlert® STORAGE gray

Product Specifications

Assay (by titration)	≥95%

Ethylenediamine Tetraacetic Acid, Tetrasodium Salt Dihydrate — Technical

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S657-500**	144.23	6/676.61
3kg	Bag in Box	**S657-3**	663.11	- - - -

Sodium (Tetra) Ethylenediamine Tetraacetate Dihydrate
EDTA Tetrasodium Salt
(Ethylenedinitrilo)tetraacetic Acid, Tetrasodium Salt
$(NaO_2CCH_2)_2NCH_2CH_2N(CH_2CO_2Na)_2 \bullet 2H_2O$
$C_{10}H_{12}N_2O_8Na_4O_{10} \bullet 2H_2O$
F.W. 416.20
[64-02-8]

ChemAlert® STORAGE gray

Product Specifications

Chelating Capacity for $CaCO_3$	240 - 250mg/g
pH of a 1% w/w Solution at 25°C	10.0 to 11.0

▸***Ethylene Dicarboxylic Acid*** *see Succinic Acid A294.*

▸***Ethylene Dichloride*** *see 1,2-Dichloroethane, Spectranalyzed* grade E190.*

Ethylene Glycol — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**E178-500**	73.57	6/331.06
1L	Amber Glass	**E178-1**	120.39	6/563.09
4L	Amber Glass	**E178-4**	236.91	4/696.28
200L	Steel Drum	**E178-200**	2498.31	- - - -

1,2-Ethanediol
$HOCH_2CH_2OH$
$C_2H_6O_2$
F.W. 62.07
[107-21-1]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Color (APHA)	≤15
Acidity (as Acetic Acid)	≤0.010%
Water	≤0.2%
Boiling Range	196°- 199°C
Specific Gravity at 25°C	1.112 to 1.115

Ethylene Glycol — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**E177-4**	182.11	4/567.89
20L	Steel Pail	**E177-20**	543.04	- - - -

1,2-Ethanediol
$HOCH_2CH_2OH$
$C_2H_6O_2$
F.W. 62.07
[107-21-1]

ChemAlert® STORAGE gray

*▸**Ethylene Glycol** see also Fisher BioReagents* BP230.*

*▸**Ethylene Glycol Dimethyl Ether** see 1,2-Dimethoxyethane O2430.*

Ethylene Glycol Monobutyl Ether — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**E179-4**	151.21	4/467.24

2-Butoxyethanol, Butyl Cellosolve

$HOCH_2CH_2O(CH_2)_3CH_3$

$C_6H_{14}O_2$

F.W. 118.18

[111-76-2]

ChemAlert STORAGE blue

Product Specifications

Boiling Range	170-173°C
Refractive Index	1.418 to 1.420

Ethylene Glycol Monoethyl Ether — Laboratory

Suitable for histologic use

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**E180-1**	45.40	6/212.91
4L	Amber Glass	**E180-4**	127.88	4/398.26
20L	Steel Pail	**E180-20**	457.86	- - - -

2-Ethoxyethanol, Oxitol

$HOCH_2CH_2O(CH_2)_3CH_3$

$C_4H_{10}O_2$

F.W. 90.12

[110-80-5]

SOLVENT ChemAlert STORAGE red

Ethylene Glycol Monomethyl Ether — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**E182-500**	61.02	6/274.55
4L	Amber Glass	**E182-4**	218.99	4/684.47
20L	Steel Pail	**E182-20**	559.52	- - - -

2-Methoxyethanol, Methyl Cellosolve

$HOCH_2CH_2OCH_3$

$C_3H_8O_2$

F.W. 76.10

Suitable for use in amino acid analysis.

[109-86-4]

ChemAlert STORAGE red

Product Specifications

Color (APHA)	≤10
Solubility in H_2O (10mL/100mL)	Clear
Water	≤0.5%
Acidity (as Acetic Acid)	≤0.02%
Peroxide (as Peroxide Oxygen)	≤3ppm
Boiling Range	123.5°-125.5°C
Suitability for Amino Acid Determinations	To pass test

Ethyl Ether Anhydrous — HPLC

Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
4L	Tin Can	**E198-4**	245.85	4/696.60

Also available in recyclable FisherPak and NOWPak* containers.*

Diethyl Ether, Ethyl Oxide

$C_2H_5OC_2H_5$

$C_4H_{10}O$

F.W. 74.12

[60-29-7]

SOLVENT ChemAlert STORAGE red

Product Specifications

Assay	≥99.0%
Color (APHA)	≤10
Ethanol Preservative	1.5-2.5%
Peroxide (as H_2O_2)	≤5ppm
Residue after Evaporation	≤5ppm
Water	≤0.01%
Titratable Acid	≤0.0002mEq/g
Density at 25°C	0.708-0.710g/mL
Carbonyl (as Formaldehyde)	≤0.001%
Substances Darkened by H_2SO_4	To pass test
Refractive Index at 25°C	1.3490-1.3520
Optical Absorbance:	
at 218nm	≤1.00
at 254nm	≤0.07
at 280nm	≤0.02
at 350nm	≤0.01

Ethyl Ether — Pesticide

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**E199-4**	141.25	4/396.97

Ethyl Oxide, Diethyl Ether

$C_2H_5OC_2H_5$

$C_4H_{10}O$

F.W. 74.12

[60-29-7]

SOLVENT ChemAlert STORAGE red

Product Specifications

Assay (excluding preservative)	≥99.5%
Color (APHA)	≤10
Peroxide	≤5ppm
Pesticide Residue Analysis (as Heptachlor Epoxide)	10pg/mL
Preservative (Ethanol)	1.5-2.5%
Residue after Evaporation	≤3ppm
Water	≤0.08%
Optical Absorbance:	
at 218nm	≤1.00
at 250nm	≤0.08
at 270nm	≤0.02
at 300nm	≤0.01
at 350nm	≤0.01

Ethyl Ether — Spectranalyzed*

Quantity	Packaging	Cat. No.	Each	Case of
1L	Tin Can	**E197-1**	123.51	6/547.67
4L	Tin Can	**E197-4**	334.22	4/1032.30

Ethyl Oxide, Diethyl Ether

$C_2H_5OC_2H_5$

$C_4H_{10}O$

F.W.74.12

For use in the ultraviolet range.

[60-29-7]

SOLVENT ChemAlert STORAGE red

Product Specifications

Assay (excluding preservative)	≥99.0%
Color (APHA)	≤10
Copper	≤0.1ppm
Heavy Metals (as Pb)	≤1ppm
Nickel	≤0.1ppm
Density at 25°C	0.708-0.710g/mL
Water	≤0.01%
Substances Darkened by H_2SO_4	To pass tes
Alcohol (Ethanol) Preservative	1.5-2.5%
Residue after Evaporation	≤0.001%
Acidity (as Acetic Acid)	≤5ppm
Peroxide (as H_2O_2)	≤5ppm
Carbonyl (as Formaldehyde)	≤0.001%
Optical Absorbance:	
at 220nm	≤1.0
at 221nm	≤0.8
at 224nm	≤0.6

at 231nm	≤0.40
at 242nm	≤0.20
at 254nm	≤0.10
at 270nm	≤0.03
at 400nm	≤0.01

Ultraviolet Absorbance Curves are run against distilled water set at zero absorbance. Curves available on request.

Ethyl Ether Anhydrous — Certified ACS

BHT Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Aluminum Can	**E138-500**	71.71	6/330.01
1L	Aluminum Can	**E138-1**	118.51	6/549.17
4L	Tin Can	**E138-4**	279.65	4/838.96
20L	Steel Pail	**E138-20**	467.03	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

SOLVENT ChemAlert® STORAGE red

Ethyl Oxide, Diethyl Ether
$C_2H_5OC_2H_5$
$C_4H_{10}O$
F.W. 74.12
[60-29-7]

Product Specifications
Actual Lot Analysis is reported on label.

Assay (excluding preservative)	≥99.0%
Color (APHA)	≤10
Density at 25°C	≤0.7079g/mL
Copper	≤0.1ppm
Nickel	≤0.1ppm
Heavy Metals (as Pb)	≤1ppm
Water	≤0.01%
Substances Darkened by H_2SO_4	To pass test
Alcohol (Ethanol)	To pass test
Residue after Evaporation	≤0.001%
Peroxide (as H_2O_2)	1ppm
Carbonyl (as Formaldehyde)	≤0.001%
Titratable Acid	≤0.0002mEq/g
Preservative (BHT)	6.0 to 9.0ppm

Ethyl Ether — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
1L	Aluminum Can	**E134-1**	81.25	6/380.06
4L	Tin Can	**E134-4**	271.89	4/815.66
20L	Steel Pail	**E134-20**	414.46	- - - -

SOLVENT ChemAlert® STORAGE red

Ethyl Oxide
$C_2H_5OC_2H_5$
$C_4H_{10}O$
F.W. 74.12
[60-29-7]

Ethyl Ether — Laboratory

For fat extraction

Quantity	Packaging	Cat. No.	Each	Case of
4L	Can	**E492-4**	257.66	4/800.53
20L	Steel Pail	**E492-20**	398.71	- - - -

SOLVENT ChemAlert® STORAGE red

Ethyl Oxide, Diethyl Ether
$C_2H_5OC_2H_5$
$C_4H_{10}O$
F.W. 74.12
[60-29-7]

Ethyl Green *see Brilliant Green B422.*

Ethyl Orthosilicate *see Tetraethyl Orthosilicate O4617.*

Ethyl Silicate, Ortho- *see Tetraethyl Orthosilicate O4617.*

Everitt's Salt *see Potassium Ferricyanide P232.*

Fehling's Alkaline Solution

Fehling Solution B
Clear, colorless liquid
pH > 12

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**3000-16**	17.72	- - - -
1L	Poly Bottle	**3000-32**	32.66	- - - -
4L	Poly Bottle	**3000-1**	73.63	- - - -
10L	Cubitainer*	**3000-25**	147.75	- - - -
20L	Cubitainer	**3000-5**	190.85	- - - -

Boiling point: Approx. 101°C
Application: Determination of Reducing Sugars
[1310-73-2 (Sodium Hydroxide)]
[6381-59-5 (Sodium Potassium Tartrate Tetrahydrate)]
[7732-18-5 (Water, Deionized)]

Fehling's Copper Solution

Fehling Solution A
Clear, blue liquid
pH Approx. 4 (0.2 Molar)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**3010-16**	12.33	- - - -
1L	Poly Natural	**3010-32**	19.76	- - - -
4L	Poly Natural	**3010-1**	43.48	- - - -
10L	Cubitainer*	**3010-25**	92.59	- - - -
20L	Cubitainer	**3010-5**	126.65	- - - -

Application: Determination of Reducing Sugars
[7758-99-8 (Copper Sulfate Pentahydrate)]
[7732-18-5 (Water, Deionized)]

Ferric Ammonium Sulfate Dodecahydrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**I75-500**	144.10	6/675.97
3kg	Glass	**I75-3**	581.48	4/1809.80

Iron Alum, Iron (III) Ammonium Sulfate Dodecahydrate
Ferric Alum
$FeNH_4(SO_4)_2 \cdot 12H_2O$
F.W. 482.20
[7783-83-7]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.0-101.0%
Insoluble Matter	≤0.01%
Calcium	≤0.01%
Chloride	≤0.001%
Magnesium	≤0.005%
Nitrate	≤0.01%
Potassium	≤0.005%
Sodium	≤0.02%
Copper	≤0.003%
Ferrous Iron	To pass test (about 0.001%)
pH of a 5% Solution at 25°C	1.5 to 2.5
Substances not Precipitated by NH_4OH	≤0.05%
Zinc	≤0.003%

Ferric Chloride Anhydrous — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**I89-500**	64.88	6/304.36

Iron (III) Chloride
$FeCl_3$
F.W. 162.20
[7705-08-0]

ChemAlert® STORAGE white

Ferric Chloride Hexahydrate Certified ACS

Lumps

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**I88-100**	55.23	6/259.10
500g	Poly Bottle	**I88-500**	117.05	6/523.25

Iron (III) Chloride
$FeCl_3 \cdot 6H_2O$
F.W. 270.30
[10025-77-1]

ChemAlert® STORAGE white

Product Specifications
Actual Lot Analysis is reported on label.

Assay	97.0-102.0%
Insoluble Matter	≤0.01%
Nitrate	≤0.01%
Phosphorus Compounds (as PO_4)	≤0.01%
Sulfate	≤0.01%
Copper	≤0.003%
Ferrous Iron	≤0.002%
Zinc	≤0.003%
Calcium (Ca)	≤0.01%
Magnesium (Mg)	≤0.005%
Potassium (K)	≤0.005%
Sodium (Na)	≤0.05%

Ferric Chloride Hexahydrate Technical

Lumps

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**I86-3**	246.81	4/758.93
10kg	Bag in Box	**I86-10**	596.42	- - - -

Iron (III) Chloride
[10025-77-1]

ChemAlert® STORAGE white

Ferric Chloride Solution, 10% (w/v)

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**3120-4**	8.54	- - - -
500mL	Poly Natural	**3120-16**	20.86	- - - -
1L	Poly Natural	**3120-32**	33.23	- - - -
4L	Poly Natural	**3120-1**	78.34	- - - -

Aqueous Solution

Ferric Chloride Solution, 0.025% (w/v)

APHA

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SF97-1**	61.22	6/293.99

Iron (III) Chloride Solution, 0.025% w/v
For Biochemical Oxygen Demand.
[7705-08-0]

ChemAlert® STORAGE gray

Product Specifications

Concentration ($FeCl_3 \cdot 6H_2O$)	0.02-0.035%

Ferric Chloride Solution USP/EP

Yellow Primary Solution, Colorimetric Solution
Clear light to dark amber colored liquid
Acidic
1 mL = 45.0mg $FeCl_3 \cdot 6H_2O$

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**3110-4**	36.30	- - - -
500mL	Amber Glass	**3110-16**	70.64	- - - -
1L	Amber Glass	**3110-32**	98.04	- - - -

[10025-77-1 (Ferric Chloride Hexahydrate)]
[7647-01-0 (Hydrochloric Acid)]
[7732-18-5 (Water, Deionized)]

Ferric Nitrate Nonahydrate Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**I110-100**	41.66	6/195.43
500g	Amber Glass	**I110-500**	109.66	6/493.48
3kg	Glass	**I110-3**	436.84	4/1359.64

Iron (III) Nitrate
$Fe(NO_3)_3 \cdot 9H_2O$
F.W. 404.00
[7782-61-8]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	98.0-101.0%
Insoluble Matter	≤0.005%
Calcium	≤0.01%
Chloride	≤5ppm
Magnesium	≤0.005%
Potassium	≤0.005%
Sodium	≤0.05%
Sulfate	≤0.01%

Ferric Oxide Anhydrous Certified

Red Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**I116-500**	76.39	6/356.65
3kg	Glass	**I116-3**	263.50	- - - -

Rouge, Iron (III) Oxide, Iron (III) Oxide Anhydrous
Fe_2O_3
F.W. 159.69
[1309-37-1]

ChemAlert® STORAGE gray

Product Specifications

Nitrate	≤0.01%
Phosphate	≤0.02%
Sulfate	≤0.20%
Arsenic	To pass test (about 0.002%)
Copper	≤0.02%
Manganese	≤0.05%
Substances not Precipitated by NH_4OH	≤0.20%
Zinc	≤0.01%

Ferrous Ammonium Sulfate Hexahydrate Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**I77-500**	175.96	6/825.42
2.5kg	Poly Bottle	**I77-212**	676.70	4/2080.84

Mohr Salt, Iron (II) Ammonium Sulfate Hexahydrate
$Fe(NH_4)_2(SO_4)_2 \cdot 6H_2O$
F.W. 392.14
[7783-85-9]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	98.5-101.5%
Insoluble Matter	≤0.01%
Phosphate	≤0.003%
Copper	≤0.003%
Ferric Iron	≤0.01%
Manganese	≤0.01%
Zinc	≤0.003%
pH of a 5% Solution at 25°C	3.0 to 5.
Calcium (Ca)	≤0.005%
Magnesium (Mg)	≤0.002%
Potassium (K)	≤0.002%
Sodium (Na)	≤0.02%

Ferrous Ammonium Sulfate Solution, 0.00282N

Clear, light green liquid
1 mL = 0.1mg Cl_2

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**3144-16**	19.81	- - - -
1L	Amber Glass	**3144-32**	29.14	- - - -
4L	Amber Glass	**3144-1**	123.09	- - - -

Ferrous Chloride Tetrahydrate

Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**I90-500**	203.87	6/956.32

Iron (III) Chloride Tetrahydrate, Ferrous Protochloride
$FeCl_4 \cdot 4H_2O$
F.W. 198.81
[13478-10-9]

ChemAlert® STORAGE **white**

roduct Specifications

Assay	99-102%
Insoluble Matter	≤0.010%
Sulfate	≤0.010%
Heavy Metals (as Cu)	≤0.005%
Solubility	To pass test
Arsenic	≤0.001%
Alkalis and Earths	≤0.10%
Zinc	≤0.005%

Ferrous Sulfate Heptahydrate

Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**I146-500**	105.53	6/495.03
3kg	Poly Bottle	**I146-3**	390.93	4/1216.74
10kg	Poly Pail	**I146-10**	864.89	- - - -

Iron (II) Sulfate
$FeSO_4 \cdot 7H_2O$
F.W. 278.01
[7782-63-0]

ChemAlert® STORAGE **gray**

roduct Specifications
ctual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.01%
Chloride	≤0.001%
Phosphate	≤0.001%
Copper	≤0.005%
Ferric Iron	≤0.1%
Manganese	≤0.05%
Zinc	≤0.005%
pH of a 5% Solution at 25°C	3.0 to 5.0
Calcium (Ca)	≤0.005%
Magnesium (Mg)	≤0.002%
Potassium (K)	≤0.002%
Sodium (Na)	≤0.02%

▸***Ficoll* 400*** *see Fisher BioReagents* BP525.*

Fir, Balsam *see Canada Balsam B10.*

Fischer Reagent *see Karl Fischer Reagents.*

FisherTab* Kjeldahl Tablets *see Kjeldahl section.*

FL-70* Concentrate *see Detergent, FL-70*, Biodegradable SF105.*

Flammable Solvent Spill Cleanup Kit *see Spill Cleanup Kit, Flammable Solvent 18-061B.*

Florisil *see Sorbents table.*

Fluorescamine

Quantity	Packaging	Cat. No.	Each	Case of
25mg	Glass Bottle	**AC19167-0250**	13.00	- - - -
100mg	Glass Bottle	**AC19167-1000**	30.30	- - - -
500mg	Glass Bottle	**AC19167-5000**	129.30	- - - -

$C_{17}H_{10}O_4$
F.W. 278.26
Melting point: 155-157°C
[38183-12-9]

▸***Fluorescein*** *see Uranine A833.*

▸***Fluorescein Sodium Salt*** *see Uranine A833.*

Fluoroboric Acid, 50%

Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**A188-500**	118.88	12/869.18

Tetrafluoroboric Acid, Hydrogen Tetrafluoroborate
Fluoboric Acid, HBF_4
F.W. 87.81
[16872-11-0]

ChemAlert® STORAGE **white**

Product Specifications

Assay	48-50%
Free Boric Acid	≤3.0%
Free HF	None

Fluorolube* Grease, GR-290

Quantity	Packaging	Cat. No.	Each	Case of
25g	Glass	**F16-25**	67.15	6/318.47

Fluorolube* Grease, GR-362

Quantity	Packaging	Cat. No.	Each	Case of
25g	Glass	**F20-25**	74.67	6/353.20

[9002-83-9]

ChemAlert® STORAGE **gray**

▸***Formal*** *see Methylal M222.*

Formalde-Fresh Solution

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**SF94-4**	73.72	4/234.34
20L	PolyPac*	**SF94-20**	308.35	- - - -

Specially filtered for use in tissue processors.
Low-odor 10% Formalin.

ChemAlert® STORAGE **blue**

Product Specifications

Assay	3.5-4.5%

Formalde-Fresh Solution, Buffered

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**SF93-4**	68.70	4/214.79
20L	PolyPac*	**SF93-20**	201.31	- - - -

Specially filtered for use in tissue processors.

STORAGE blue

Low-odor 10% Formalin contains 4% (w/v) Formaldehyde and 0.075M Sodium Phosphate Buffer. Stabilized with 1.5% (w/v) Methanol. For use in the same tissue fixation techniques as 10% Formalin.

Product Specifications

Assay (Formaldehyde)....................4.0-4.5% w/v
pH at 25°C....................6.9 to 7.1

Formaldehyde, 40% (v/v) USP

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**F77P-4**	126.78	4/379.51
20L	Rigid Poly Bottle/ Corrugated Box	**F77-20**	292.44	- - - -
20L	PolyPac*	**F77P-20**	301.14	- - - -
200L	Steel Drum/ Poly Liner	**F77-200**	1476.00	- - - -

Methanal, Methylene Oxide, Oxymethane,
Formic Aldehyde, Methylaldehyde
HCHO
CH$_2$O
F.W. 30.03
Suitable for histologic use.
Stabilized with 10-15% (v/v) Methanol.
[50-00-0]

STORAGE red

Product Specifications

Assay (Small Container)....................≥36.5%
Assay (Bulk Container)....................≥37.0%
Acidity....................To pass test

Formaldehyde, 37% (w/w) Certified ACS
With Preservative

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**F79-500**	49.74	6/242.20
1L	Amber Glass	**F79-1**	82.75	6/401.08
4L	Amber Glass	**F79-4**	140.48	4/450.15
4L	Poly Bottle	**F79P-4**	140.48	4/450.15
20L	Rigid Poly Bottle/ Corrugated Box	**F79-20**	322.76	- - - -
20L	PolyPac*	**F79P-20**	379.07	- - - -
200L	Poly Drum	**F79-200**	1747.99	- - - -

Methanal, Methylene Oxide, Oxymethane, Formic Aldehyde, Methylaldehyde
HCHO
CH$_2$O
F.W. 30.03
Stabilized with 10-15% Methanol.
[50-00-0]

STORAGE red

Product Specifications
Actual Lot Analysis is reported on label.

Assay....................36.5-38.0%
Color (APHA)....................≤10
Residue after Ignition....................≤0.005%
Chloride....................≤5ppm
Sulfate....................≤0.002%
Heavy Metals (as Pb)....................≤5ppm
Iron....................≤2ppm
Titratable Acid....................≤0.006mEq/g
Methanol....................10-15%

Formaldehyde, 37% (w/w) Histological

Quantity	Packaging	Cat. No.	Each	Case of
1 gal.	Poly Bottle	**F75F-1GAL**	111.56	4/348.71
1 gal.	Poly Bottle	**F75P-1GAL**	129.74	4/405.77
20L	PolyPac*	**F75P-20**	222.12	- - - -

Methanal, Methylene Oxide, Oxymethane
Formic Aldehyde, Methylaldehyde
HCHO
CH$_2$O
F.W. 30.03
Stabilized with 10-15% (v/v) Methanol.
[50-00-0]

Product Specifications

Assay....................36.5-38.0%
Color (APHA)....................≤1

Formaldehyde, 10% (v/v)
Histological Fixative
Buffered, pH 7.0

Quantity	Packaging	Cat. No.	Each	Case of
250mL	Glass Amber	**3190-8**	9.40	- - - -
1L	Plastic	**3190-32**	18.99	- - - -
4L	Plastic	**3190-1**	33.04	- - - -
10L	Cubitainer*	**3190-25**	72.79	- - - -
20L	Cubitainer	**3190-5**	88.04	- - - -

Solvent/Matrix: Aqueous Phosphate Buffer

▸**Formaldehyde** *see also Fisher BioReagents* BP531.*

Formaldehyde, Para Certified

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**04042-500**	69.90	6/312.39

Polyoxymethylene, Paraform, Formagene
(CH$_2$O)$_n$
[30525-89-4]

STORAGE red

Product Specifications

Assay (by titration)....................≥95%

Formaldehyde, Para Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**T353-500**	67.80	6/318.03

Polyoxymethylene, Paraform, Formagene
(CH$_2$O)$_n$
[30525-89-4]

STORAGE red

Product Specifications

Identification....................Pass test

▸**Formalin** *see Formaldehyde, Histology grade F75P; F77 and Certified ACS grade F79.*

Formalin, Buffered, 10% Certified
Acetate Buffer

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**SF99-4**	67.71	4/211.65
20L	PolyPac*	**SF99-20**	176.04	- - - -

Specially filtered for use in tissue processors.
Buffered with Sodium Acetate in accordance with A.F.I.P. Manual of Histology.

STORAGE blue

Product Specifications

Assay (Formaldehyde)....................4-5% w/
Color (APHA)....................≤1
pH at 25°C....................6.9 to 7.

*Trademark. See Trademark Reference.

Formalin, Buffered, 10% — Certified
Phosphate Buffer

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**SF100-4**	60.76	4/189.08
20L	PolyPac*	**SF100-20**	155.03	- - - -
200L	Poly Drum	**SF100-200**	1232.02	- - - -

Specially filtered for use in tissue processors.
Buffered with Phosphate in accordance with A.F.I.P. Manual of Histology.

ChemAlert® STORAGE blue

Product Specifications

Assay (Formaldehyde)	4-5% w/w
Color (APHA)	≤10
pH at 25°C	6.9 to 7.1

Formalin Solution, 10% — Histological

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**SF98-4**	86.41	4/270.12
20L	PolyPac*	**SF98-20**	256.00	- - - -

Specially filtered for use in tissue processors.
4% Formaldehyde Solution

ChemAlert® STORAGE blue

Product Specifications

Assay (Formaldehyde)	3.5-4.5% w/w
Color (APHA)	≤10

▸***Formalin Solution, Low-Odor*** *Formalde-Fresh* Solution SF94, and Formalde-Fresh* Solution, Buffered SF93.*

Formamide — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**F84-12**	14.09	6/951.34

Methanamide
$HCONH_2$
CH_3NO
F.W. 45.04, [75-12-7]

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.5%
Freezing Point	2.0°-3.0°C
Color (APHA)	≤10
Density at 25°C	1.128-1.132g/mL
Water	≤0.25%
Optical Absorbance (Neat, 1.0cm cell at 420nm vs. H_2O)	≤0.015

Formamide — OmniPur*
Deionized

EMD

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass Bottle	**M4650**	110.28	- - - -

Methanamide
$HCONH_2$
CH_3NO
F.W. 45.04, [75-12-7]

Product Specifications

Appearance	Colorless, slighlty vicous liquid
Assay	≥99.0%
Optical Absorbance of a 0.5M Solution:	
at 260nm	≤0.03
at 270nm	≤0.05
at 280nm	≤0.08
Conductivity	≤100μmhos
Heavy Metals (as Pb)	≤0.0001%
Identification	to pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected
Phosphatase	Not detected

Formic Acid, 88% — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**A118P-100**	30.64	6/171.68
500mL	Poly Bottle	**A118P-500**	100.59	6/355.88
4L	Poly Bottle	**A118P-4**	307.81	4/742.26

Methanoic Acid
HCOOH
CH_2O_2
F.W. 46.03
Density: about 1.29g/mL
[64-18-6]
Recommended storage: Store separately from sulfuric acid and caustics.

ACID ChemAlert® STORAGE white

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥88.0%
Color (APHA)	≤15
Dilution Test	To pass test
Residue after Evaporation	≤0.002%
Acetic Acid	≤0.4%
Ammonium	≤0.005%
Chloride	≤0.001%
Sulfate	≤0.002%
Sulfite	To pass test
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm

Formic Acid, 88% — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**A119P-500**	89.11	6/501.63
1L	Poly Bottle	**A119P-1**	112.57	6/411.14
4L	Poly Bottle	**A119P-4**	214.19	4/513.54

HCOOH
CH_2O_2
F.W. 46.03
[64-18-6]
Recommended storage: Store separately from sulfuric acid and caustics.

ACID ChemAlert® STORAGE white

Product Specifications

Color (APHA)	≤20
Specific Gravity at 25°C	≥1.198

▸***Formic Acid Ammonium Salt*** *see Ammonium Formate A666.*

▸***Formic Aldehyde Solution*** *see Formaldehyde, Histology grade F75P; F77 and Certified ACS grade F79.*

▸***Formin*** *see Hexamethylenetetramine, Certified ACS grade H288.*

▸***Formol*** *see Formaldehyde, Histology grade F75P; F77, p; and Certified ACS grade F79.*

▸***Formol*** *see also Formaldehyde, Fisher BioReagents* BP531.*

▸***Fossil Flour*** *see Infusorial Earth under sorbents I22.*

▸***Freon**** *see 1,1,2-Trichloro-1,2,2-trifluoroethane T178.*

D-Fructose USP
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**L96-500**	102.08	6/456.26
2.5kg	Poly Bottle	**L96-212**	316.68	4/950.03
12kg	Poly Pail	**L96-12**	860.41	- - - -
100 lb.	Fiber Drum	**L96-100LB**	582.94	- - - -

Levulose, Fruit Sugar, β-D-Fructose
$C_6H_{12}O_6$
F.W. 180.16
[57-48-7]

ChemAlert® STORAGE gray

Product Specifications

Assay (dried basis)	98.0-102.0%
Acidity	To pass test
Arsenic	≤1ppm
Calcium and Magnesium (as Calcium)	≤0.005%
Chloride	≤0.018%
Color of Solution	To pass test
Heavy Metals	≤5ppm
Hydroxymethyl Furfural	To pass test
Loss on Drying	≤0.5%
Residue on Ignition	≤0.5%
Sulfate	≤0.025%

D-Fructose Certified
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**L95-500**	98.78	6/441.62

Levulose, Fruit Sugar, β-D-Fructose
$C_6H_{12}O_6$
F.W. 180.16
[57-48-7]

ChemAlert® STORAGE gray

Product Specifications

Melting Point	≥103°C
Specific Rotation at 20°C	-89° to -93°

▸ ***Fruit Sugar*** *see D-Fructose L95 and L96.*

Fuchsin Acid Certified Biological Stain

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**F97-25**	142.99	6/691.05

Acid Rubin, Acid Magenta, Acid Violet 19
$C_{20}H_{17}N_3Na_2O_9S_3$
F.W. 585.54
For use in histology and in Andrade Indicator.
Optical Density is 1.10-1.26.
C.I. 42685
[3244-88-0]

ChemAlert® STORAGE gray

Fuchsin Basic Certified Biological Stain

Quantity	Packaging	Cat. No.	Each	Case of
10g	Amber Glass	**F98-10**	67.36	6/315.97

Magenta, Pararosaniline
For use in histology, Feulgen reactions, and bacteriology (staining and in media).
C.I. 42510
[632-99-5]

ChemAlert® STORAGE gray

▸ ***Furaldehyde*** *see Furfural F94,.*

Furfural Reagent

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**F94-500**	75.02	6/350.17

Ant Oil, Pyromucic Aldehyde, 2-Furanaldehyde, 2-Furancarboxaldehyde, Furol
OCH:CHCH:CCHO
$C_5H_4O_2$
F.W. 96.09
[98-01-1]

STORAGE red

Product Specifications

Boiling Range	161°-164°C

▸ ***Furfuryl Aldehyde*** *see Furfural F94.*

▸ ***Furol*** *see Furfural F94.*

▸ ***Fusel Oil*** *see Isoamyl Alcohol A393.*

Gallic Acid Anhydrous Certified
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A122-500**	256.22	6/1201.93

3,4,5-Trihydroxybenzoic Acid
3,4,5-$(HO)_3C_6H_2COOH$
$C_7H_6O_5$
F.W. 170.04
[149-91-7]

ChemAlert® STORAGE gray

Product Specifications

Solubility in H_2O (2g/40mL)	Complete
Residue after Ignition	≤0.05%
Sulfate	≤0.020%
Water	≤10%

▸ ***Gallotannic Acid*** *see Tannic Acid A310.*

▸ ***Gas Chromatographic Solvents, GC Resolv**** *see Acetone A928, n-Hexane, 85% H307, Methanol A457, Methanol, Purge and Trap A453, Methylene Chloride D154.*

Gelatin Type A Laboratory
Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Glass	**G8-500**	103.71	6/463.49

275 Bloom
[9000-70-8]

ChemAlert® STORAGE gray

Gelatin Type B Laboratory
Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Glass	**G7-500**	78.54	6/352.83
3kg	Bag in Box	**G7-3**	314.27	- - - -

100 Bloom, Gelfoam
[9000-70-8]

ChemAlert® STORAGE gray

▸ ***Gill Method Hematoxylin Stains*** *see Hematoxylin Stains, Gill Method CS400, CS401, and CS402.*

▸ ***D-Glucitol*** *see D-Sorbitol S459.*

▸ ***D-Glusose*** *see Dextrose Anhydrous D14 and D16.*

*Trademark. See Trademark Reference.

Glucose-Glutamic Acid Solution

Standard Check Solution for Biochemical Oxygen Demand (BOD)
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**3255-4**	17.56	- - - -
144mL	Glass vial	**3255-246**	- - - -	24/45.43
288mL	Glass vial	**3255-486**	- - - -	48/89.53
500mL	Amber Glass	**3255-16**	42.36	- - - -
1L	Amber Glass	**3255-32**	53.54	- - - -

[56-86-0 (L-Glutamic Acid)]
[50-99-7 (D-Glucose (Dextrose))]
[7732-18-5 (Water, Deionized)]

L-(+)-Glutamic Acid — Certified

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**A125-100**	42.23	6/198.10

alpha-Aminoglutaric Acid, Glutaminol, Glutaton
$HOOCCHNH_2CH_2CH_2COOH$
$C_5H_9NO_4$
F.W. 147.13
[56-86-0]

ChemAlert® STORAGE **gray**

Product Specifications

Assay	≥99%

Glutaraldehyde Solution, 50% — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**G151-1**	124.43	6/548.95

1,5-Pentanedial, Glutarol, Glutaricdialdehyde, Cidex
$HC(O)(CH_2)_3CHO$
$C_5H_8O_2$
F.W. 100.12
[111-30-8]
Recommended storage: Refrigerate

ChemAlert® STORAGE **white**

Product Specifications

Assay	49.0-52.0%
Color (APHA)	≤125
Clarity of Solution	To pass test
pH at 25°C	3.7 to 4.5
Specific Gravity at 20°C	1.125 to 1.135

Glutaraldehyde Solution, 25% — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**02957-1**	104.03	6/465.02
4L	Amber Glass	**02957-4**	300.84	4/902.50

1,5-Pentanedial, Glutarol, Cidex, Glutaricdialdehyde
$HC(O)(CH_2)_3CHO$
$C_5H_8O_2$
F.W. 100.12
[111-30-8]

ChemAlert® STORAGE **blue**

Product Specifications

Assay	24.0-26.5%
Color (APHA)	≤20

Glycerol — USP/FCC/EP/BP/JP

Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**G37-4**	921.07	4/2632.71
20L	PolyPac*	**G37-20**	1847.51	- - - -
200L	Steel Drum	**G37-200**	14654.39	- - - -

Glycerin, 1,2,3-Propanetriol
$CH_2OHCHOHCH_2OH$
$C_3H_8O_3$
F.W. 92.05
[56-81-5]

ChemAlert® STORAGE **gray**

Product Specifications

Meets USP Chemical Specifications

Assay (Anhydrous Basis)	99.0-101.0%
Color	To pass test
Chloride	≤0.001%
Fatty Acids and Esters	To pass test
Heavy Metals (as Pb)	≤5ppm
Specific Gravity	≥1.249
Sulfate	≤0.002%
Water	≤5.0%
Organic Volatile Impurities	Meets requirements
Chromatographic Purity:	
Individual Purity	≤0.1%
Total Impurity	≤1.0%
Chlorinated Compounds (as Cl)	≤0.003%
Residue on Ignition	≤0.01%
Bacterial Endotoxins	Report

Meets FCC Chemical Specifications

Assay	95.0-100.5%
Chlorinated Compounds (as Cl)	≤0.003%
Color	To pass test
Fatty Acids and Esters	To pass test
Lead (Pb)	≤1mg/kg
Readily Carbonizable Substances	To pass test
Residue on Ignition	≤0.01%
Specific Gravity	≥1.249

Meets EP and BP Chemical Specifications

Assay (Dried Basis)	98.0-101.0%
Appearance of Solution	Clear and colorless
Acidity or Alkalinity	To pass test
Refractive Index	1.470 to 1.475
Aldehydes	≤10ppm
Esters	To pass test
Sugars	To pass test
Chlorides	≤10ppm
Heavy Metals (as Pb)	≤5ppm
Water	≤2.0%
Impurity A and Related Substances	0.1% Maximum
Sulfated Ash	≤0.01%
Halogenated Compounds (BP)	≤35ppm
Bacterial Endotoxins	Report
Other Impurities (RT< Glycerol)	0.1% Maximum
Total of All Impurites (RT> Glycerol)	0.5% Maximum

Meets JP Chemical Specifications

Assay (Anhydrous Basis)	98.0-101.0%
Refractive Index at 20°C	≥1.470
Specific Gravity at 20°C	≥1.258
Color	To pass test
Acidity or Alkalinity	To pass test
Chloride	≤0.001%
Sulfate	≤0.002%
Ammonium	To pass test
Heavy Metals	≤5ppm
Calcium	To pass test
Arsenic	≤2ppm
Acrolein, Glucose, or Other Reducing Substances	To pass test
Fatty Acids and Esters	To pass test
Readily Carbonizable Substances	To pass test
Residue on Ignition	≤0.01%
Water	≤2.0%

Glycerol USP/FCC/EP/BP

Clear, Colorless

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**G30-4**	590.97	4/1729.74
20L	Rigid Poly Bottle/ Corrugated Box	**G30-20**	1345.77	----
200L	Steel Drum	**G30-200**	4096.61	----

Glycerin, 1,2,3-Propanetriol

$CH_2OHCHOHCH_2OH$

$C_3H_8O_3$

F.W. 92.10

[56-81-5]

ChemAlert® STORAGE **gray**

Product Specifications

Meets USP Chemical Specifications

Color	To pass test
Assay (Anhydrous Basis)	99.0-101.0%
Chlorinated Compounds	≤0.003%
Chloride	≤0.001%
Fatty Acids and Esters	To pass test
Heavy Metals	≤5ppm
Specific Gravity	≥1.249
Sulfate	≤0.002%
Water	≤5.0%
Organic Volatile Impurities	Meets requirements
Chromatographic Purity:	
Individual Impurity excluding Diethylene Glycol	≤0.1%
Total Impurity including Diethylene Glycol	≤1.0%
Residue on Ignition	≤0.01%
Bacterial Endotoxins	Report

Meets FCC Chemical Specifications

Assay	95.0-100.5%
Chlorinated Compounds (as Cl)	≤0.003%
Color	To pass test
Fatty Acids and Esters	To pass test (limit ~0.1% as butyric)
Heavy Metals (as Pb)	≤5mg/kg
Readily Carbonizable Substances	To pass test
Specific Gravity	≥1.249
Residue on Ignition	≤0.01%

Meets EP and BP Chemical Specifications

Assay (Anhydrous Basis)	98.0-101.0%
Halogenated Compounds (as Cl)	≤35ppm
Chlorides	≤10ppm
Heavy Metals	≤5ppm
Impurity A and Related Substances	To pass test
Appearance of Solution	Clear and colorless
Sulfated Ash	≤0.01%
Acidity or Alkalinity	To pass test
Esters	To pass test
Refractive Index	1.470-1.475
Aldehydes	To pass test
Sugars	To pass test
Water	≤2.0%
Bacterial Endotoxins	Report
Other Impurities (RT< Glycerol)	0.1% Maximum
Total of All Impurites (RT> Glycerol)	0.5% Maximum

Glycerol USP/FCC

Clear, Colorless

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**G31-500**	131.62	6/591.55
1L	Amber Glass	**G31-1**	191.63	6/861.13
4L	Amber Glass	**G31-4**	490.99	4/1472.97
20L	Rigid Poly Bottle	**G31-20**	1159.31	----
200L	Poly Drum	**G31-200**	6880.58	----

Glycerin, 1,2,3-Propanetriol

$HOCH_2CH(OH)CH_2OH$, $C_3H_8O_3$

F.W. 92.09

[56-81-5]

ChemAlert® STORAGE **gray**

Product Specifications

Meets USP Chemical Specifications

Color	To pass test
Assay (Anhydrous Basis)	99.0-101.0%
Chlorinated Compounds (as Cl)	≤0.003%
Chloride	≤0.001%
Fatty Acids and Ester	To pass test
Heavy Metals	≤5ppm
Specific Gravity	≥1.249
Sulfate	≤0.002%
Water	5.0%
Organic Volatile Impurities	Meets requirements
Diethylene Glycol and Related Compounds:	
Individual Purity excluding Diethylene Glycol	≤0.1%
Total Impurity including Diethylene Glycol	≤1.0%
Residue on Ignition	≤0.01%

Meets FCC Chemical Specifications

Assay	95.0-100.5%
Chlorinated Compounds (as Cl)	≤0.003%
Color	To pass test
Fatty Acids and Esters	To pass test (limit ~0.1% as butyric acid)
Lead (Pb)	≤1mg/kg
Readily Carbonizable Substances	To pass test
Specific Gravity	≤1.249
Residue on Ignition	≤0.01%

Glycerol Spectranalyzed*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**G153-1**	213.66	6/960.38
4L	Amber Glass	**G153-4**	525.21	4/1575.62

Glycerin, 1,2,3-Propanetriol

$HOCH_2CH(OH)CH_2OH$

$C_3H_8O_3$

F.W. 92.10

For use in the ultraviolet range.

[56-81-5]

ChemAlert® STORAGE **gray**

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.5%
Color (APHA)	≤10
Residue after Ignition	≤0.005%
Neutrality	To pass test
Chlorinated Compounds	≤0.003%
Sulfate	≤0.001%
Fatty Acid Esters (as Butyric Acid)	≤0.05%
Substances Darkened by H_2SO_4	To pass test
Heavy Metals (as Pb)	≤2ppm
Acrolein, Glucose, and Ammonium Compounds	To pass test
Water	≤0.5%
Optical Absorbance:	
at 206nm	≤1.00
at 210nm	≤0.70
at 225nm	≤0.25
at 280nm	≤0.05
at 320nm	≤0.02
at 400nm	≤0.01

Ultraviolet Absorbance Curves are run against distilled water set at zero absorbance. Curves available on request.

*Trademark. See Trademark Reference.

Glycerol

Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**G33-500**	97.82	6/490.91
1L	Amber Glass	**G33-1**	157.22	6/707.47
4L	Amber Glass	**G33-4**	461.29	4/1432.17
20L	Rigid Poly Bottle/ Corrugated Box	**G33-20**	1108.24	- - - -
200L	Steel Drum	**G33-200**	4726.96	- - - -

Glycerin, 1,2,3-Propanetriol
$HOCH_2CH(OH)CH_2OH$
$C_3H_8O_3$
F.W.92.10
[56-81-5]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Acrolein and Glucose	To pass test
Assay (by volume)	$\geq$99.5%
Color (APHA)	$\leq$10
Residue after Ignition	$\leq$0.005%
Neutrality	To pass test
Chlorinated Compounds	$\leq$0.003%
Sulfate	$\leq$0.001%
Fatty Acid Esters (as Butyric Acid)	$\leq$0.05%
Substances Darkened by H_2SO_4	To pass test
Heavy Metals (as Pb)	$\leq$2ppm
Water	$\leq$0.5%

Glycine

USP/EP/BP/JP

Crystalline Granules or Powder

Quantity	Packaging	Cat. No.	Each	Case of
2.5kg	Poly Bottle	**G45-212**	337.27	- - - -
12kg	Poly Pail	**G45-12**	1493.88	- - - -

Aminoacetic Acid, Aminoethanoic Acid, Gyn-Hydralin
$CH_2(NH_2)(COOH)$
$C_2H_5NO_2$
F.W. 75.07
[56-40-6]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
USP Specifications	
Assay (Dried Basis)	98.5-101.5%
Chloride	$\leq$0.007%
Heavy Metals	$\leq$0.002%
Hydrolyzable Substances	To pass test
Loss on Drying	$\leq$0.2%
Organic Volatile Substances	Meets requirements
Residue on Ignition	$\leq$0.1%
Sulfate	$\leq$0.0065%
Bacterial Endotoxins	Report
Meets EP and BP Chemical Specifications	
Assay (Dried Basis)	98.5-101.0%
Appearance of Solution	To pass test
pH (5% Water)	5.9-6.4
Chlorides	$\leq$75ppm
Heavy Metals (as Pb)	$\leq$10ppm
Loss on Drying at 10°C	$\leq$0.5%
Ninhydrin-positive Substances	$\leq$0.5%
Sulfated Ash	$\leq$0.1%
Bacterial Endotoxins	Report
Meets JP Chemical Specifications	
Assay (Dried Basis)	$\geq$98.5%
pH	5.6-6.6
Clarity and Color of Solution	To pass test
Chloride	$\leq$0.021%
Sulfate	$\leq$0.028%
Ammonium	$\leq$0.02%
Heavy Metals	$\leq$20ppm
Arsenic	$\leq$2ppm
Other Amino Acids	To pass test
Loss on Drying	$\leq$0.30%
Residue on Ignition	$\leq$0.10%

Glycine

USP

Crystalline Granules or Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**G48-500**	119.94	6/536.12
2.5kg	Poly Bottle	**G48-212**	318.45	4/995.93
12kg	Poly Pail	**G48-12**	1353.52	- - - -

Aminoacetic Acid, Aminoethanoic Acid, Gyn-Hydralin
$CH_2(NH_2)(COOH)$
$C_2H_5NO_2$
F.W. 75.07
[56-40-6]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Assay (Dried Basis)	98.5-101.5%
Chloride	$\leq$0.007%
Heavy Metals	$\leq$0.002%
Hydroyzlable Substances	To pass test
Loss on Drying	$\leq$0.2%
Organic Volatile Substances	Meets requirements
Residue on Ignition	$\leq$0.1%
Sulfate	$\leq$0.0065%

Glycine

Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**G46-500**	88.57	6/397.57
1kg	Amber Glass	**G46-1**	129.02	6/605.23

Aminoacetic Acid, Aminoethanoic Acid, Gyn-Hydralin
NH_2CH_2COOH
$C_2H_5NO_2$
F.W. 75.07
For amino acid nitrogen standards.
[56-40-6]

ChemAlert® STORAGE gray

Product Specifications

Melting Point	Decomposes at about 245°C

▸***Glycol*** *see Ethylene Glycol, Certified ACS grade E178.*

▸***Glycol Ether*** *see Diethylene Glycol D49.*

▸***Glyme*** *see 1,2-Dimethoxyethane O2430.*

▸***Glymol for Babcock Test*** *see Mineral Oil, Light O121.*

Gold Chloride, 19% (w/v)

Clear, yellow liquid
100mL = 1g $HAuCl\cdot 3H_2O$; 1mL = 5mg Au
Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**3295-4**	321.76	- - - -
500mL	Amber Glass	**3295-16**	506.07	- - - -

Toner for Gomori Methenamine Silver Nitrate Stain

Product Specifications

Actual Lot Analysis is reported on label.

Assay (Au) .... ≥49.0%
Insoluble in Ether .... ≤0.1%
Alkalis and Other Metals (as SO_4) .... ≤0.2%

▸***Green Vitriol*** *see Ferris Sulfate Heptahydrate, Certified ACS grade I146.*

Guanidine Hydrochloride — Reagent

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	02983-500	250.88	6/1176.84

$NH_2C(NH)NH_2 \cdot HCl$
$CH_5N_3 \cdot HCl$
F.W. 95.53
[50-01-1]

ChemAlert® STORAGE blue

Product Specifications

Assay .... ≥98%

▸***Gum Arabic*** *see Acacia G85.*

Fisher Scientific* High-Purity and HF Bottle-Top Acid Dispensers

Combine the convenience of traditional pump dispensers with the chemical compatibility and high purity of TFM* PTFE

BT-BL with optional base (BT-BASE), Acid not included

The Baseline* model can be used with high-purity concentrated acids, including hydrofluoric acid.

- All wetted parts are constructed of PFA and high-purity TFM* PTFE (a chemically modified PTFE), including check valves and seals
- Volumes can be adjusted from 0.5 to 5.0mL in 0.5mL increments using the dial at the top of the handle
- Design permits one-handed operation
- Comes with 38–430 cap adjuster; additionally with the Baseline model is a 0.2µm air filter
- Accuracy, ±0.02mL; precision, ± 3% at 3mL
- Optional base (Cat. No. BT-BASE) provides stability

Baseline Bottle-Top Dispenser (BT-BL)

- All wetted parts have been extensively acid precleaned
- Precleaned parts are assembled under Class 100 or better cleanroom conditions
- Calibrated and mechanically tested to ensure it meets required volume, precision and accuracy requirements
- Unit is filled with high-purity Nitric Acid for further cleaning and mechanical testing
- Rinsed thoroughly with high purity water to remove residual acid
- Packaged under Class 100 or better cleanroom conditions

HF Acid Bottle-Top Dispenser (BT-HF)

- For applications that require the chemical resistance of PTFE, such as ASC or Technical-Grade acids (including hydrofluoric acid)
- Calibrated and mechanically tested to ensure required volume, precision and accuracy requirements

Description	Cat. No.	Each
Baseline Dispenser	BT-BL	1499.58
HF Acid Dispenser	BT-HF	1120.07

Fisher Scientific* High-Purity and HF Bottle-top Dispenser Base

Accommodates 250 to 2000mL bottles and stabilizes the dispenser

Description	Cat. No.	Each
Dispenser Base	BT-BASE	59.90

▸***Hanus Solution*** *see Iodine Solution, Hanus S198.*

▸***Harris Modified Method Hematoxylin Stains*** *see Histology Section SH26 and SH30.*

▸***Helianthin*** *see Methyl Orange M216.*

Hematoxylin — Certified Biological Stain

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	H345-25	190.39	6/899.59
100g	Amber Glass	H345-100	597.10	6/2886.32

Natural Black 1, Hydroxybrasilin
$C_{16}H_{14}O_6$
F.W. 302.29
For use in histology and cytology.
C.I. 75290
[517-28-2]

ChemAlert® STORAGE gray

Hematoxylin Stain 1, Gill Method

Quantity	Packaging	Cat. No.	Each	Case of
1L	- - - -	CS400-1D	53.88	6/255.83
4L	- - - -	CS400-4D	146.28	- - - -

Regular strength. Stains only nuclei; ideal for routine cytological staining. Takes one to two minutes.

Solution stable for one year. One 500mL batch stains up to 5000 slides.

Hematoxylin Stain 2, Gill Method

Quantity	Packaging	Cat. No.	Each	Case of
1L	- - - -	CS401-1D	53.88	6/255.83
4L	- - - -	CS401-4D	143.02	- - - -

Double strength. For routine cytological and histological staining. Solution stable for one year. One 500mL batch stains up to 5000 slides.

Hematoxylin Stain 3, Gill Method

Quantity	Packaging	Cat. No.	Each	Case of
1L	- - - -	CS402-1D	70.72	6/335.76
4L	- - - -	CS402-4D	146.28	- - - -

Triple strength. For routine cytological and histological staining. Solution stable for one year. One 500mL batch stains up to 5000 slides.

Heparin Sodium — Laboratory

Blood anticoagulant

Quantity	Packaging	Cat. No.	Each	Case of
100,000 units	Amber Glass	H19	235.76	6/1108.66

The actual potency of this material will be listed on each label in USP units. 140,000 units is approximately 1g.
[9041-08-1]

ChemAlert® STORAGE gray

Product Specifications

Potency .... >140,000units/g

Heptane HPLC

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**H350-1**	98.21	6/420.26
1L	Glass/Safe-Cote*	**H350SK-1**	100.18	6/417.61
4L	Amber Glass	**H350-4**	187.45	4/531.77
4L	Glass/Safe-Cote	**H350SK-4**	213.20	4/596.36

Also available in recyclable FisherPak and NOWPak* containers.*

$CH_3(CH_2)5CH_6$

C_7H_{16}

F.W. 100.20

[142-82-5]

[108-87-2 (Methylcyclohexane, 0.2%)]

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥96%
Color (APHA)	≤10
Fluorescence Background (as Quinine Sulfate)	To pass test
Refractive Index at 25°C	1.3845-1.3865
Residue after Evaporation	≤5ppm
Water	≤0.02%
Optical Absorbance:	
at 200nm	≤0.75
at 215nm	≤0.20
at 254nm	≤0.014

Heptane Spectranalyzed*

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**H340-4**	280.20	4/839.65

$CH_3(CH_2)_5CH_3$

C_7H_{16}

F.W. 100.20

For use in the ultraviolet and infrared ranges.

[142-82-5]

[108-87-2 (Methylcyclohexane, 0.2%)]

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Actual Lot Analysis is reported on label.

Optical Absorbance:	
at 210nm	≤1.00
at 220nm	≤0.20
at 230nm	≤0.05
at 280nm	≤0.01
at 340nm	≤0.005
IR Transmittance:	
at 2-2.25µm	≥70%
at 2.5-3.1µm	≥70%
at 3.9-6.5µm	≥70%

Transmittance measured in a 0.025mm KBr cell. Ultraviolet Absorbance Curves are run against distilled water set at zero absorbance. Curves available on request.

Heptane Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**03008-1**	140.38	6/628.70
4L	Amber Glass	**03008-4**	238.47	4/702.64

Also available in recyclable FisherPak and NOWPak* containers.*

$CH_3(CH_2)_5CH_3$

C_7H_{16}

F.W. 100.20

[142-82-5 (Heptane, 99.4%)]

[108-87-2 (Methylcyclohexane, 0.2%)]

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Boiling Range	2°C incl. 98°C

Heptane Technical

Quantity	Packaging	Cat. No.	Each	Case of
20L	Steel Pail	**H20-20**	511.91	- - - -
200L	Steel Pail	**H20-200**	2983.49	- - - -

C_7H_{16}

F.W. 100.20

Boiling point: 98–99°C

Density: 0.68

[142-82-5]

SOLVENT

ChemAlert® STORAGE red

1-Heptanesulfonic Acid Sodium Salt HPLC

White Powder

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**03013-25**	137.89	6/643.77

$CH_3(CH_2)_6SO_3Na$

$C_7H_{15}O_3SNa$

F.W. 202.24

[22767-50-6]

ChemAlert® STORAGE gray

Product Specifications

Assay (by Sulfated Sodium Ash)	≥98%
Solubility (1g/25mL H_2O)	To pass test
Optical Absorbance:	
at 220nm	≤0.025
at 254nm	≤0.015
at 300nm	≤0.010

Ultraviolet Absorbance Curves are for a 1g/100mL aqueous solution run against distilled water set at zero absorbance.

1-Heptanesulfonic Acid Sodium Salt, 98%

Quantity	Packaging	Cat. No.	Each	Case of
5g	Glass Bottle	**AC20613-0050**	27.20	- - - -
25g	Glass Bottle	**AC20613-0250**	94.80	- - - -
100g	Glass Bottle	**AC20613-1000**	292.40	- - - -

$CH_3(CH_2)_6SO_3Na$

$C_7H_{15}NaO_3S$

F.W. 202.24

Melting point: 300°C

[22767-50-6]

NEW

1-Heptanesulfonic Acid Sodium Salt Monohydrate HPLC

Quantity	Packaging	Cat. No.	Each	Case of
5g	Glass Bottle	**AC41127-0050**	25.00	- - - -
25g	Glass Bottle	**AC41127-0250**	121.30	- - - -
100g	Glass Bottle	**AC41127-1000**	291.30	- - - -

$CH_3(CH_2)_6SO_3Na{\bullet}H_2O$

$C_7H_{15}NaO_3S{\bullet}H_2O$

F.W. 220.26

Melting point: 300°C

[207300-90-1]

NEW

Hexadecane Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**03035-500**	176.24	6/816.76

$CH_3(CH_2)_{14}CH_3$

$C_{16}H_{34}$

F.W. 226.45

[544-76-3]

ChemAlert® STORAGE gray

Product Specifications

Assay	≥98%
Color (APHA)	≤10
Melting Point	17.0°-18.0°C

Hexadecyltrimethylammonium Bromide — Technical

White Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**03042-500**	173.89	6/813.77

CETAB, Cetyltrimethylammonium Bromide
Cetrimonium Bromide
$CH_3(CH_2)_{15}N(CH_3)_3Br$
$C_{19}H_{42}BrN$
F.W. 364.46
[57-09-0]

STORAGE blue

1,1,1,3,3,3-Hexafluoro-2-propanol, 99.5+%

Quantity	Packaging	Cat. No.	Each	Case of
5g	Glass Bottle	**AC14754-0050**	33.00	- - - -
25g	Glass Bottle	**AC14754-0250**	93.20	- - - -
100g	Glass Bottle	**AC147541000**	407.00	- - - -

1,1,1,3,3,3-Hexafluoroisopropanol, HFIP
$(CF_3)_2CHOH$
$C_3H_2F_6O$
F.W. 168.04
[920-66-1]

▸***Hexahydrophenol (Hexalin)*** *see Cyclohexanol C558.*

▸***Hexalin*** *see Cyclohexanol C558.*

Hexamethylenetetramine — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**H288-500**	102.53	6/458.43

Methenamine, Formin, HMT (HMTA), Hexamine, Aminoform, Hexamethylenamine
$C_6H_{12}N_4$
F.W. 140.19
[100-97-0]

STORAGE red

Product Specifications
Actual Lot Analysis is reported on label.

Assay (Dried Basis)	≥99.0%
Loss on Drying	≤2.0%
Residue after Ignition	≤0.1%
Heavy Metals (as Pb)	≤0.001%

Hexanes — Optima*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**H303-1**	71.92	6/301.53
4L	Amber Glass	**H303-4**	128.66	4/361.20

Also available in recyclable FisherPak and NOWPak* containers.*
C_6H_{14}
F.W. 86.17
Submicron filtered.
Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.
[110-54-3]

SOLVENT STORAGE red

Product Specifications

Assay (Hexanes)	≥99.9%
Assay (n-Hexane)	60-66%
Color (APHA)	≤5
Suitability for GC/MS	To pass test
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤10ng/L
Fluorescence Background (as Quinine Sulfate)	≤1ppb
Water	≤0.01%
Residue after Evaporation	≤1ppm
Refractive Index at 25°C	1.3740 to1.3780
Density at 25°C	0.653-0.673g/mL
Water-soluble Titratable Acid	≤0.0003mEq/g
Sulfur Compounds (as S)	≤0.005%
Thiophene	To pass test
Optical Absorbance:	
at 195nm	≤1.00
at 210nm	≤0.25
at 220nm	≤0.07
at 254nm	≤0.005

Hexanes — HPLC

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**H302-1**	61.89	6/263.89
1L	Glass/Safe-Cote*	**H302SK-1**	87.90	6/352.97
4L	Amber Glass	**H302-4**	121.79	4/345.54
4L	Glass/Safe-Cote	**H302SK-4**	137.59	4/386.20
19L	NOWPak* (Plastic Exterior)	**H302N1-19**	424.27	- - - -

*Also available in recyclable FisherPak**
C_6H_{14}
F.W. 86.17
Submicron filtered.
[110-54-3]

Product Specifications
Actual Lot Analysis is reported on label.

Assay (5 Isomers total Hexanes plus Methylcyclopentane)	≥98.5%
Color (APHA)	≤10
Fluorescence Background (as Quinine Sulfate)	To pass test
Refractive Index at 25°C	1.3740 to 1.3780
Residue after Evaporation	≤3ppm
Water	≤0.02%
Water-soluble Titratable Acid	≤0.0003mEq/g
Density at 25°C	0.653-0.673g/mL
Sulfur Compounds (as S)	≤0.005%
Thiophene	To pass test
Optical Absorbance:	
at 195nm	≤1.00
at 210nm	≤0.25
at 220nm	≤0.08
at 254nm	≤0.014

Submicron filtered.

Hexanes, 98.5% — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	- - - -	**AC61007-0040**	96.20	4/327.01

Hex
C_6H_{14}
F.W. 86.18
Melting point: -95°C
Boiling point: 69°C (at 760mmHg)
Flash point: -22°C
Density: 0.659g/mL
n: 1.3748-1.381
[92112-69-1]

Hexanes **Pesticide**

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**H300-4**	132.10	4/374.71

Also available in recyclable FisherPak and NOWPak* containers.*

C_6H_{14}

F.W. 86.17

Various Methylpentanes, 4.2%

[110-54-3]

Product Specifications

Actual Lot Analysis is reported on label.

Color (APHA)	≤10
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤20ng/L

Hexanes **Spectranalyzed***

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**H334-1**	186.05	6/800.84
4L	Amber Glass	**H334-4**	449.04	4/1313.70

Naphtha Solvent

C_6H_{14}

F.W. 86.17

For use in ultraviolet and infrared spectroscopy.

[110-54-3]

Product Specifications

Actual Lot Analysis is reported on label.

Assay (5 Isomers total Hexanes plus Methylcyclopentane)	≥98.5%
Color (APHA)	≤10
Water-soluble Titratable Acid	≤0.0003 mEq/g
Density at 25°C	0.653-0.673g/mL
Residue after Evaporation	≤0.001%
Sulfur Compounds (as S)	≤0.005%
Thiophene	To pass test
Optical Absorbance:	
at 210nm	≤1.00
at 220nm	≤0.20
at 230nm	≤0.10
at 240nm	≤0.04
at 250nm	≤0.02
at 280-400nm	≤0.01
IR Transmittance:	
at 2.5-3.1µm	≥70%
at 3.9-6.5µm	≥70%

Transmittance measured in a 0.025mm KBr cell. Ultraviolet Absorbance Curves are run against distilled water set at zero absorbance. Curves available on request.

Hexanes **Certified ACS**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**H292-500**	52.02	6/242.80
1L	Amber Glass	**H292-1**	83.09	6/380.43
4L	Amber Glass	**H292-4**	130.91	4/398.56
4L	Glass/Safe-Cote*	**H292SK-4**	179.51	4/538.52
20L	Steel Pail	**H292-20**	350.61	- - - -
200L	Steel Drum	**H292-200**	1521.37	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

C_6H_{14}

F.W. 86.17

Various Methylpentanes, 4.2%

[110-54-3]

Product Specifications

Actual Lot Analysis is reported on label.

Assay (5 Isomers total Hexanes plus Methylcyclopentane)	≥98.5%
Color (APHA)	≤10
Density at 25°C	0.653-0.673g/mL
Residue after Evaporation	≤0.001%
Water-soluble Titratable Acid	≤0.0003 mEq/g
Sulfur Compounds (as S)	≤0.005%
Thiophene	To pass test

Hexanes **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**H291-500**	50.94	6/223.64
4L	Amber Glass	**H291-4**	142.76	4/438.85
4L	SafeTin*	**H291S-4**	172.75	4/500.91
20L	Steel Pail	**H291-20**	360.40	- - - -
200L	Steel Drum	**H291-200**	1679.09	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

Naphtha Solvent

Petroleum Naphtha Solvent

C_6H_{14}

F.W.86.17

[110-54-3 (n-Hexane, 55%)]

[110-82-7 (Cyclohexane, 3%)]

[64742-49-0 (Naphtha [Petroleum] Hydrotreated Light, >1%)]

Product Specifications

Actual Lot Analysis is reported on label.

Color (APHA)	≤10
Density at 25°C	0.653-0.673g/mL
Boiling Range	4.0°C incl. 68.7°C
Residue after Evaporation	≤0.001%
Water-soluble Titratable Acid	≤0.0003mEq/g
Sulfur Compounds (as S)	≤0.005%
Thiophene	To pass ACS test

Hexanes **Technical**

Quantity	Packaging	Cat. No.	Each	Case of
4L	SafeTin*	**N3S-4**	87.76	4/289.23
20L	Steel Pail	**N3-20**	276.01	- - - -
200L	Steel Drum	**N3-200**	4010.27	- - - -

Naphtha Solvent

[110-54-3 (n-Hexane, 55%)]

[110-82-7 (Cyclohexane, 3%)]

[64742-49-0 (Naphtha [Petroleum] Hydrotreated Light, >1%)]

Product Specifications

Boiling Range	60°-90°C

n-Hexane ***GC Resolv****

For High-resolution Gas Chromatography
Suitable for Organic Residue Analysis

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**H307-4**	163.62	4/459.59

C_6H_{14}

F.W. 86.17

Packaged under Nitrogen.

Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.

[110-54-3]

Product Specifications

Assay (n-Hexane)	60-66%
Color	<5
ECD-responsive Substances (as Heptachlor Epoxide)†	5ppt maximum peak or 50ppt total
FID-responsive Substances (as Decane)†	1ppb maximum peak or 10ppb total
Residue after Evaporation	≤1ppm
Titratable Acid	≤0.0002mEq/g
Total Aliphatic Hydrocarbons $\leq C_8$	≥99.9%
Water	≤0.01%

†After 2× retention time of Toluene.

n-Hexane, 95% Optima*

Also meets ACS specifications
Suitable for EPA Method 1664

Quantity	Packaging	Cat. No.	Each	Case of
1L	- - - -	**H306-1**	80.76	6/359.81
4L	- - - -	**H306-4**	143.78	4/429.14
4L	Safe-Cote*	**H306-SK4**	149.27	4/477.68

C_6H_{14}
F.W. 86.17

NEW

Application: HPLC, spectrophotometry, and gas chromatography
[110-54-3 (n-Hexane, 95%)]
[107-83-5 (2-Methylpentane, 2.3%)]
[96-14-0 (3-Methylpentane, 1.0%)]

Product Specifications

Assay (n-Hexane)	≥95%
Assay (Hexanes)	≥99.0%
Color (APHA)	≤5
Suitability for GC/MS	To pass test
Fluorescence Background (as Quinine Sulfate)	≤1ppb
Water	≤0.01%
Residue after Evaporation	≤1ppm
Refractive Index at 25°C	1.3710-1.3750
Density at 25°C	0.653-0.673g/mL
Water-Soluble Titratable Acid	≤0.0003mEq/g
Sulfur Compounds (as S)	≤0.005%
Thiophene	To pass test
Optical Absorbance:	
at 195nm	≤1.00
at 210nm	≤0.25
at 220nm	≤0.07
at 254nm	≤0.005
at 280nm	≤0.005

1-Hexanesulfonic Acid Sodium Salt HPLC

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**03072-25**	165.44	6/772.37

Sodium Hexanesulfonate
$CH_3(CH_2)_5SO_3Na$
$C_6H_{13}O_3SNa$
F.W. 188.22
[2832-45-3]

ChemAlert® STORAGE gray

Product Specifications

Assay (by Sulfated Sodium Ash)	≥98%
Solubility (1g/25mL H_2O)	To pass test
Optical Absorbance:	
at 220nm	≤0.1
at 254nm	≤0.015
at 300nm	≤0.010

Ultraviolet Absorbance Curves are measured using a 1g/100mL solution run against distilled water set at zero absorbance.

1-Hexanesulfonic Acid, Sodium Salt Hydrate

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
5g	Glass Bottle	**AC41160-0050**	55.30	- - - -
25g	Glass Bottle	**AC41160-0250**	147.80	- - - -
100g	Glass Bottle	**AC41160-1000**	407.70	- - - -

$CH_3(CH_2)_5SO_3Na$
$C_6H_{13}NaO_3S \cdot xH_2O$
Melting point: 300°C
[2832-45-3]

▸***Hexone*** *see Methyl iso-Butyl Ketone M213.*

HistoPrep* Frozen Tissue Embedding Media

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Glass Bottle	**SH75-125D**	24.95	6/120.24

A special formulation of water-soluble glycols and resins used as a medium for frozen sectioning. Provides a solid bond with object holder to reduce tissue dislodging by knife pressure.

HistoPrep* Mold Release

Quantity	Packaging	Cat. No.	Each	Case of
250mL	Glass Bottle	**SH70-250D**	32.32	6/153.56

Liquid parting agent for use with base molds. With convenient pump spray.

▸***Homberg's Salt*** *see Boric Acid, Certified ACS grade A73.*

Hydrazine Sulfate Certified ACS

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**H320-500**	155.11	6/727.63

$NH_2NH_2 \cdot H_2SO_4$
$H_6N_2O_4S$
F.W. 130.12
[10034-93-2]

ChemAlert® STORAGE white

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.005%
Residue after Ignition	≤0.05%
Chloride	≤0.005%
Heavy Metals (as Pb)	≤0.002%
Iron	≤0.001%

Hydrobromic Acid, 44-50% Optima*

Quantity	Packaging	Cat. No.	Each	Case of
250mL	PTFE	**A471-250**	309.34	- - - -
500mL	PTFE	**A471-500**	458.82	- - - -
1L	PTFE	**A471-1**	744.52	- - - -
2L	PTFE	**A471-2**	1123.33	- - - -

Hydrogen Bromide
HBr
F.W. 80.9
[10035-10-6 (Hydrogen Bromide)]
[7732-18-5 (Water)]

Product Specifications and Typical Values

	Max. Spec.	Typical Value
Assay (HBr)	44–49%	49%
Aluminum	100ppt	< 100ppt
Barium	100ppt	<1ppt
Beryllium	100ppt	<5ppt
Bismuth	100ppt	<0.1ppt
Cadmium	100ppt	<1ppt
Calcium	100ppt	<50ppt
Cerium	10ppt	<0.05ppt
Cesium	10ppt	<0.05ppt
Chromium	100ppt	<10ppt
Cobalt	100ppt	<1ppt
Copper	100ppt	<5ppt
Dysprosium	10ppt	<0.01ppt
Erbium	10ppt	<0.01ppt
Europium	10ppt	<0.01ppt
Gadolinium	10ppt	<0.01ppt

Gallium	100ppt	<10ppt
Gold	100ppt	<1ppt
Hafnium	10ppt	<0.05ppt
Holmium	10ppt	<0.01ppt
Indium	10ppt	<1ppt
Iron	100ppt	<100ppt
Lanthanum	10ppt	<0.05ppt
Lead	1ppt	<1ppt
Lithium	100ppt	<1ppt
Lutetium	10ppt	<0.01ppt
Magnesium	100ppt	<5ppt
Manganese	100ppt	<2ppt
Molybdenum	100ppt	<10ppt
Neodymium	10ppt	<0.05ppt
Nickel	100ppt	<10ppt
Niobium	10ppt	<1ppt
Palladium	100ppt	<10ppt
Platinum	100ppt	<1ppt
Potassium	100ppt	<20ppt
Praseodymium	10ppt	<0.05ppt
Rhenium	100ppt	<5ppt
Rhodium	100ppt	<1ppt
Rubidium	100ppt	<1ppt
Ruthenium	100ppt	<10ppt
Samarium	10ppt	<0.01ppt
Scandium	100ppt	<1ppt
Silver	100ppt	<2ppt
Sodium	100ppt	<30ppt
Strontium	100ppt	<1ppt
Tellurium	10ppt	<10ppt
Terbium	10ppt	<0.01ppt
Thallium	10ppt	<0.1ppt
Thorium	1ppt	<0.05ppt
Thulium	10ppt	<0.01ppt
Tin	100ppt	<20ppt
Titanium	100ppt	<10ppt
Tungsten	100ppt	<10ppt
Uranium	1ppt	<0.01ppt
Vanadium	100ppt	<1ppt
Ytterbium	10ppt	<0.01ppt
Yttrium	10ppt	<1ppt
Zinc	100ppt	<5ppt
Zirconium	10ppt	<1ppt

Hydrobromic Acid, 47-49% — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**A140-100**	60.37	6/216.73
500mL	Amber Glass	**A140-500**	162.40	6/587.30

HBr

F.W. 80.91

NOTE: This reagent may darken on standing.

[10035-10-6]

ACID

ChemAlert® STORAGE white

Product Specifications

Assay	47.0-49.0%
Chloride	≤0.05%
Heavy Metals	≤5ppm
Iodide	≤0.003%
Iron	≤1ppm
Phosphate	≤0.001%
Residue after Ignition	≤0.002%
Selenium	≤0.01ppm
Sulfate and Sulfite	≤0.003%

Hydrochloric Acid — Optima*

Quantity	Packaging	Cat. No.	Each	Case of
250mL	PTFE	**A466-250**	213.17	- - - -
500mL	PTFE	**A466-500**	328.65	- - - -
1L	PTFE	**A466-1**	619.89	- - - -
2L	PTFE	**A466-2**	956.20	- - - -

Muriatic Acid, HCl

F.W. 36.46

Certificate of Lot Analysis included with each bottle.

[7647-01-0]

ACID

ChemAlert® STORAGE white

Product Specifications and Typical Values

	Max. Spec.	Typical Value
Assay (HCl)	32–35%	34%
Aluminum	20ppt	<20ppt
Antimony	20ppt	<20ppt
Arsenic	50ppt	<20ppt
Barium	10ppt	<1ppt
Beryllium	10ppt	<5ppt
Bismuth	10ppt	<0.05ppt
Boron	100ppt	<20ppt
Cadmium	10ppt	<0.1ppt
Calcium	20ppt	<20ppt
Cerium	10ppt	<0.05ppt
Cesium	10ppt	<0.05ppt
Chromium	20ppt	<10ppt
Cobalt	10ppt	<3ppt
Copper	20ppt	<5ppt
Dysprosium	1ppt	<0.01ppt
Erbium	1ppt	<0.01ppt
Europium	1ppt	<0.01ppt
Gadolinium	1ppt	<0.01ppt
Gallium	10ppt	<1ppt
Gold	100ppt	<10ppt
Hafnium	10ppt	<0.05ppt
Holmium	1ppt	<0.01ppt
Indium	1ppt	<0.1ppt
Iron	20ppt	<20ppt
Lanthanum	1ppt	<0.05ppt
Lead	10ppt	<1ppt
Lithium	10ppt	<1ppt
Lutetium	10ppt	<0.01ppt
Magnesium	10ppt	<5ppt
Manganese	10ppt	<2ppt
Mercury	100ppt	<100ppt
Molybdenum	10ppt	<10ppt
Neodymium	1ppt	<0.05ppt
Nickel	50ppt	<10ppt
Niobium	1ppt	<1ppt
Potassium	10ppt	<10ppt
Praseodymium	1ppt	<0.05ppt
Rhenium	10ppt	<0.1ppt
Rhodium	10ppt	<1ppt
Rubidium	10ppt	<1ppt
Ruthenium	10ppt	<10ppt
Samarium	1ppt	<0.01ppt
Scandium	10ppt	<1ppt
Silver	10ppt	<5ppt
Sodium	10ppt	<10ppt
Strontium	10ppt	<1ppt
Tellurium	1ppt	<1ppt
Terbium	1ppt	<0.01ppt
Thallium	10ppt	<0.1ppt
Thorium	1ppt	<0.05ppt
Thulium	1ppt	<0.01ppt
Tin	20ppt	<20ppt
Titanium	20ppt	<10ppt
Tungsten	10ppt	<10ppt
Uranium	1ppt	<0.01ppt
Vanadium	10ppt	<1ppt
Ytterbium	1ppt	<0.01ppt
Yttrium	1ppt	<0.1ppt
Zinc	20ppt	<5ppt
Zirconium	10ppt	<1ppt

Hydrochloric Acid NF/FCC/EP/BP

Quantity	Packaging	Cat. No.	Each	Case of
2.5L	Glass	**A485-212**	84.77	- - - -

Muriatic Acid, HCl
F.W. 36.46
[7647-01-0]

ACID

ChemAlert® STORAGE white

Product Specifications

Identification	To pass test

Meets NF Chemical Specifications

Assay	36.5-38.0%
Residue on Ignition	≤0.008%
Bromide or Iodide	To pass test
Free Bromine or Chlorine	To pass test
Sulfate	To pass test
Sulfite	To pass test
Heavy Metals	≤5ppm

Meets FCC Chemical Specifications

Assay	35.4-38.4%
Color	To pass test
Baumé Degrees	To pass test
Lead (Pb)	≤1mg/kg
Iron	≤5mg/kg
Nonvolatile Residue	≤0.5%

Organic Compounds

Total Organic Compounds (non-fluorine containing)	≤5mg/kg
Benzene	≤0.05mg/kg
Fluorinated Organic Compounds (total)	≤25mg/kg
Oxidizing Substances (as Cl_2)	≤0.003%
Reducing Substances (as SO_3)	≤0.007%
Specific Gravity	To pass test
Sulfate	≤0.5%

Meets EP and BP Chemical Specifications

Assay	35.0-39.0%
Appearance of Solution	Clear and colorless
Free Chlorine	≤4ppm
Sulfates	≤20ppm
Heavy Metals	≤2ppm
Residue on Evaporation	≤0.01%

Hydrochloric Acid NF/FCC

Quantity	Packaging	Cat. No.	Each	Case of
2.5L	Glass Bottle	**A481-212**	86.66	- - - -

Muriatic Acid, HCl
F.W. 36.46
[7647-01-0]

ACID

ChemAlert® STORAGE white

Product Specifications

Identification	To pass test

Meets NF Chemical Specifications

Assay	36.5-38.0%
Residue on Ignition	≤0.008%
Bromide or Iodide	To pass test
Free Bromine or Chlorine	To pass test
Sulfate	To pass test
Sulfite	To pass test
Heavy Metals	≤5ppm
NF Protocol Required	To pass test

Meets FCC Chemical Specifications

Assay	35.4-38.4%
Baumé Degrees	To pass test
Color	To pass test
Lead (Pb)	≤1mg/kg
Iron	≤5mg/kg
Nonvolatile Residue	≤0.5%

Organic Compounds

Total Organic Compounds (non-fluorine containing)	≤5mg/kg
Benzene	≤0.05mg/kg
Fluorinated Organic Compounds	≤25mg/kg
Oxidizing Substances (as Cl_2)	≤0.003%
Reducing Substances (as SO_3)	≤0.007%
Specific Gravity	To pass test
Sulfate	≤0.5%

Hydrochloric Acid TraceMetal

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass	**A508-500**	56.16	6/223.21
2.5L	Glass	**A508-212**	96.02	6/381.84
2.5L	Glass/Safe-Cote*	**A508SK-212**	97.34	6/386.96
4L	Poly Bottle	**A508-4**	119.75	4/317.10

Muriatic Acid, HCl
F.W. 36.46
Certificate of Lot Analysis included with each shipment.
[7647-01-0]

ACID

ChemAlert® STORAGE white

Product Specifications and Typical Values

	Max. Spec.	Typical Value
Assay (HCl)	34–37%	35%
Color (APHA)	10	<10ppb
Aluminum	1ppb	<0.5ppb
Antimony	1ppb	<0.1ppb
Arsenic	1ppb	<0.1ppb
Barium	1ppb	<0.1ppb
Beryllium	1ppb	<0.1ppb
Bismuth	1ppb	<0.1ppb
Boron	1ppb	<0.5ppb
Cadmium	1ppb	<0.1ppb
Calcium	1ppb	<0.5ppb
Cerium	0.5ppb	<0.1ppb
Cesium	0.5ppb	<0.1ppb
Chromium	1ppb	<0.1ppb
Cobalt	1ppb	<0.1ppb
Copper	1ppb	<0.1ppb
Dysprosium	0.5ppb	<0.1ppb
Erbium	0.5ppb	<0.1ppb
Europium	0.5ppb	<0.1ppb
Gadolinium	0.5ppb	<0.1ppb
Gallium	0.5ppb	<0.1ppb
Gold	0.5ppb	<0.1ppb
Hafnium	0.5ppb	<0.1ppb
Holmium	0.5ppb	<0.1ppb
Indium	0.5ppb	<0.1ppb
Iron	1ppb	<0.5ppb
Lanthanum	0.5ppb	<0.1ppb
Lead	1ppb	<0.1ppb
Lithium	1ppb	<0.1ppb
Lutetium	0.5ppb	<0.1ppb
Magnesium	1ppb	<0.5ppb
Manganese	1ppb	<0.1ppb
Mercury	1ppb	<0.2ppb
Molybdenum	1ppb	<0.1ppb
Neodymium	0.5ppb	<0.1ppb
Nickel	1ppb	<0.1ppb
Niobium	0.5ppb	<0.1ppb
Potassium	1ppb	<0.1ppb
Praseodymium	0.5ppb	<0.1ppb
Rhenium	0.5ppb	<0.1ppb
Rhodium	0.5ppb	<0.1ppb
Rubidium	0.5ppb	<0.1ppb
Ruthenium	0.5ppb	<0.1ppb
Samarium	0.5ppb	<0.1ppb
Scandium	0.5ppb	<0.1ppb
Selenium	1ppb	<0.1ppb
Silver	1ppb	<0.1ppb
Sodium	1ppb	<0.5ppb
Strontium	1ppb	<0.1ppb
Tellurium	0.5ppb	<0.1ppb
Terbium	0.5ppb	<0.1ppb
Thallium	0.5ppb	<0.1ppb
Thorium	1ppb	<0.1ppb
Thulium	0.5ppb	<0.1ppb
Tin	1ppb	<0.1ppb

*Trademark. See Trademark Reference.

Titanium	1ppb	<0.1ppb
Tungsten	0.5ppb	<0.1ppb
Uranium	1ppb	<0.1ppb
Vanadium	1ppb	<0.1ppb
Ytterbium	0.5ppb	<0.1ppb
Yttrium	0.5ppb	<0.1ppb
Zinc	1ppb	<0.5ppb
Zirconium	1ppb	<0.1ppb

Element concentrations are at the point of bottling.

Hydrochloric Acid — Certified ACS Plus

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass	**A144-500**	46.27	6/166.60
500mL	Glass/Safe-Cote*	**A144S-500**	53.92	6/194.12
2.5L	Glass	**A144-212**	65.51	- - - -
2.5L	Glass	**A144C-212**	- - - -	6/227.91
2.5L	Glass/Safe-Cote	**A144S-212**	- - - -	6/268.82
2.5L	Glass/Safe-Cote Individual	**A144SI-212**	78.23	- - - -
19L	- - - -	**A144-P19**	195.12	- - - -
6.5 gal.	Glass Carboy	**A144-612GAL**	419.51	- - - -
500 lb.	Poly Drum	**A144-500LB**	1117.04	- - - -

Muriatic Acid
[7647-01-0]

ACID

Product Specifications
Actual Lot Analysis is reported on label.

Assay	36.5-38.0%
Color (APHA)	≤10
Residue after Ignition	≤4ppm
Bromide	≤0.005%
Sulfate	≤0.5ppm
Sulfite	≤0.8ppm
Extractable Organic Substances	To pass test(about 5ppm)
Free Chlorine	To pass test(about 0.4ppm)
Ammonium	≤3ppm
Arsenic and Antimony(as Arsenic)	≤0.005ppm
Heavy Metals (as Pb)	≤0.1ppm
Phosphate	≤0.05ppm
Aluminum	≤0.3ppm
Boron	≤0.1ppm
Calcium	≤0.3ppm
Chromium	≤0.2ppm
Copper	≤0.1ppm
Gold	≤0.3ppm
Iron	≤0.1ppm
Lead	≤0.1ppm
Magnesium	≤0.3ppm
Manganese	≤0.3ppm
Nickel	≤0.1ppm
Potassium	≤0.3ppm
Sodium	≤0.3ppm
Tin	≤0.3ppm
Titanium	≤0.3ppm
Zinc	≤0.3ppm

Hydrochloric Acid — Technical

Quantity	Packaging	Cat. No.	Each	Case of
2.5L	Glass	**A142-212**	44.18	6/161.58

Muriatic Acid, HCl
F.W. 36.46
[7647-01-0]

ACID

ChemAlert® STORAGE white

Product Specifications

Specific Gravity at 60°C	1.178 to 1.188

Hydrochloric Acid, 50% (v/v)

Clear, colorless to slight greenish yellow
Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**3580-32**	31.56	- - - -
2.5L	Glass, Safety Coated	**3580-5PT**	45.71	- - - -
4L	Poly Natural	**3580-1**	71.96	- - - -
10L	Cubitainer*	**3580-25**	134.24	- - - -
20L	Cubitainer	**3580-5**	246.25	- - - -

[7647-01-0 (Hydrochloric Acid)]
[7732-18-5 (Water, Deionized)]

Hydrochloric Acid, 33.33% (v/v)

With 0.0005% (w/v) Methyl Orange Indicator
Clear, orange colored liquid
Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Natural	**3582-1**	54.60	- - - -

[7647-01-0 (Hydrochloric Acid)]
[547-58-0 (Methyl Orange, Sodium Salt)]

Hydrochloric Acid, 10% (v/v)

Clear, colorless liquid
Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**3570-16**	13.61	- - - -
1L	Poly Natural	**3570-32**	19.65	- - - -
4L	Poly Natural	**3570-1**	38.64	- - - -
10L	Cubitainer*	**3570-25**	116.26	- - - -
20L	Cubitainer	**3570-5**	76.61	- - - -

[7647-01-0 (Hydrochloric Acid)]

Hydrochloric Acid Concentrate, 10N — Certified

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**SA49**	44.39	6/213.11

Each bottle contains exact amount of 10N concentrate required to make 1 liter of 1N or 10 liters of 0.1N (N/10) solution.
[7647-01-0]

ACID

ChemAlert® STORAGE white

Product Specifications

Normality when Diluted to 1L	0.990 to 1.010
Color (APHA)	≤15

Hydrochloric Acid, 6N — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SA56-500**	59.31	6/323.83
1L	Amber Glass	**SA56-1**	66.86	6/365.09
4L	Amber Glass	**SA56-4**	121.29	4/441.00
200L	Poly Drum	**SA56-200**	1549.43	- - - -

Muriatic Acid
Standardized at 25°C to pH 8.2 against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.
Traceable to NIST.
[7647-01-0]

ACID

ChemAlert® STORAGE white

Product Specifications

Normality	5.95 to 6.05
Color (APHA)	≤10

Hydrochloric Acid, 6.00N

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**37501-32**	25.58	- - - -
2.5L	Glass	**37501-5PT**	46.52	- - - -

Muriatic Acid, HCl
F.W. 36.46

Hydrochloric Acid, 6.00N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**3750-16**	13.95	- - - -
1L	Poly Bottle	**3750-32**	31.60	- - - -
4L	Poly Natural	**3750-1**	67.09	- - - -
10L	Cubitainer*	**3750-25**	131.55	- - - -
20L	Cubitainer	**3750-5**	222.83	- - - -

[7647-01-0 (Hydrochloric Acid)]
[7732-18-5 (Water, Deionized)]

Hydrochloric Acid, 2N Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SA431-500**	43.70	6/207.59

Muriatic Acid
Standardized at 25°C to pH 8.2 against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.
[7647-01-0]

Product Specifications
Normality..........1.995 to 2.005
Color (APHA)..........≤10

Hydrochloric Acid, 2N
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**3710-16**	10.09	- - - -
1L	Poly Natural	**3710-32**	21.95	- - - -
4L	Poly Natural	**3710-1**	60.04	- - - -
10L	Cubitainer*	**3710-25**	98.83	- - - -
20L	Cubitainer	**3710-5**	148.52	- - - -

Muriatic Acid, HCl
[7647-01-0 (Hydrochloric Acid)]

Hydrochloric Acid, 1N Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SA48-500**	34.35	6/165.32
1L	Poly Bottle	**SA48-1**	47.38	6/227.96
4L	Poly Bottle	**SA48-4**	85.25	4/275.72
20L	PolyPac*	**SA48-20**	232.77	- - - -

Muriatic Acid
Standardized at 25°C to pH 8.2 against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.
[7647-01-0]

Product Specifications
Normality..........0.995 to 1.005
Color (APHA)..........≤10

Hydrochloric Acid, 1.00N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Plastic	**3700-16**	9.22	- - - -
1L	Plastic	**3700-32**	29.61	- - - -
4L	Plastic	**3700-1**	34.76	- - - -
4L	Cubitainer*	**3700-1CT**	49.55	- - - -
10L	Cubitainer	**3700-25**	63.43	- - - -
20L	Cubitainer	**3700-5**	89.90	- - - -

Muriatic Acid,
HCl
[7647-01-0]

Hydrochloric Acid, 0.5N Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SA50-1**	54.10	6/262.29
4L	Poly Bottle	**SA50-4**	110.59	4/351.46
20L	PolyPac*	**SA50-20**	285.42	- - - -

Muriatic Acid
Standardized at 25°C to pH 8.2 against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.
[7647-01-0]

Product Specifications
Normality..........0.498 to 0.502
Color (APHA)..........≤10

Hydrochloric Acid, 0.500N
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
1L	Plastic	**3650-32**	15.60	- - - -
4L	Plastic	**3650-1**	34.55	- - - -
10L	Cubitainer*	**3650-25**	84.80	- - - -
20L	Cubitainer	**3650-5**	87.17	- - - -
55 gal.	Drum	**13622-602**	526.26	- - - -

HCl
[7647-01-0 (Hydrochloric Acid)]

Hydrochloric Acid Concentrate Certified
Diluted to Make 1L 0.1N Solution

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**SA55**	45.70	6/217.06

Muriatic Acid
Each bottle contains exact amount of 1N concentrate required to make 1L of 0.1N (N/10) solution.
[7647-01-0]

Product Specifications
Normality when Diluted to 1L..........0.0990 to 0.1010
Color (APHA)..........≤10

Hydrochloric Acid, 0.2N Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SA52-500**	34.29	6/164.76
20L	PolyPac*	**SA52-20**	265.55	- - - -

Standardized at 25°C to pH 8.2 against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.
[7647-01-0]

Product Specifications
Normality..........0.1990 to 0.2010
Color (APHA)..........≤10

*Trademark. See Trademark Reference.

Hydrochloric Acid, 0.1N **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SA54-1**	40.91	6/198.30
4L	Poly Bottle	**SA54-4**	78.08	4/250.76
10L	PolyPac*	**SA54-10**	177.63	- - - -
20L	PolyPac	**SA54-20**	211.38	- - - -

Standardized at 25°C to pH 8.2 against Sodium Hydroxide that has been standardized against NIST Potassium , Acid Phthalate
[7647-01-0]

ACID

ChemAlert® STORAGE white

Product Specifications

Normality	0.0995 to 0.1005
Color (APHA)	≤10

Hydrochloric Acid, 0.100N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**3600-16**	8.71	- - - -
1L	Poly Natural	**3600-32**	15.45	- - - -
4L	Poly Natural	**3600-1**	32.75	- - - -
4L	Cubitainer*	**36001CT**	40.25	- - - -
10L	Cubitainer	**3600-25**	62.50	- - -
20L	Cubitainer	**3600-5**	88.70	- - - -

Muriatic Acid, HCl
[7647-01-0]

NEW

Hydrochloric Acid, 0.1N **Certified**
In Isopropanol

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**ST111-500**	51.17	6/243.45

For use as a titration standard.
[7647-01-0 (Hydrogen Chloride)]
[67-63-0 (Isopropyl Alcohol)]

ACID

STORAGE red

Product Specifications

Normality	0.0995 to 0.1005
Color (APHA)	≤10

Hydrochloric Acid, 0.100N
In Isopropanol
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**3800-32**	32.30	- - - -
4L	Poly Natural	**3800-1**	80.56	- - - -

Melting point: Approx. -88°C
Boiling point: Approx. 82°C
[7647-01-0 (Hydrochloric Acid)]
[67-63-0 (isopropyl alcohol)]

Hydrochloric Acid, 0.02N **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SA60-1**	40.26	6/193.37

Muriatic Acid
Standardized at 25°C to pH 8.2 against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.
[7647-01-0]

ChemAlert® STORAGE gray

Product Specifications

Normality	0.0198 to 0.0202
Color (APHA)	≤10

Hydrochloric Acid, 0.01N **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SA62-1**	40.19	6/194.77

Standardized at 25°C to pH 8.2 against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.
[7647-01-0]

ACID

ChemAlert® STORAGE gray

Product Specifications

Normality	0.0099 to 0.0101
Color (APHA)	≤10

Hydrochloric Acid, 0.0100N

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**3590-32**	15.69	- - - -
4L	Poly Natural	**3590-1**	39.21	- - - -
20L	Cubitainer*	**3590-5**	111.13	- - - -

Muriatic Acid, HCl

▸***Hydrochloric Acid Solutions*** *in various concentrations and sizes, which are not listed, are available. Prices on request.*

Hydrofluoric Acid **Optima***

Quantity	Packaging	Cat. No.	Each	Case of
250mL	PTFE	**A463-250**	538.86	- - - -
500mL	PTFE	**A463-500**	852.70	- - - -
1L	PTFE	**A463-1**	1537.04	- - - -
2L	PTFE	**A463-2**	2256.62	- - - -

HF
F.W. 20.01
Certificate of Lot included with each bottle.
[7664-39-3]

ACID

ChemAlert® STORAGE white

Product Specifications and Typical Values

	Max. Spec.	Typical Value
Assay (HF)	47–51%	49%
Aluminum	20ppt	<20ppt
Antimony	20ppt	<10ppt
Arsenic	50ppt	<10ppt
Barium	10ppt	<5ppt
Beryllium	10ppt	<5ppt
Bismuth	10ppt	<0.1ppt
Boron	100ppt	<20ppt
Cadmium	10ppt	<0.1ppt
Calcium	20ppt	<20ppt
Cerium	10ppt	<0.1ppt
Cesium	10ppt	<0.5ppt
Chromium	20ppt	<10ppt
Cobalt	10ppt	<1ppt
Copper	20ppt	<5ppt
Dysprosium	1ppt	<0.1ppt
Erbium	1ppt	<0.1ppt
Europium	1ppt	<0.1ppt
Gadolinium	1ppt	<0.1ppt
Gallium	10ppt	<1ppt
Germanium	10ppt	<1ppt
Gold	20ppt	<10ppt
Hafnium	10ppt	<1ppt
Holmium	1ppt	<0.1ppt
Indium	1ppt	<0.1ppt
Iron	20ppt	<20ppt
Lanthanum	10ppt	<0.1ppt
Lead	10ppt	<1ppt
Lithium	10ppt	<1ppt
Lutetium	1ppt	<0.1ppt
Magnesium	10ppt	<5ppt
Manganese	10ppt	<1ppt

Contd. on next page.

Mercury	100ppt	<100ppt
Molybdenum	10ppt	<5ppt
Neodymium	1ppt	<0.1ppt
Nickel	50ppt	<10ppt
Niobium	10ppt	<5ppt
Palladium	20ppt	<10ppt
Platinum	20ppt	<10ppt
Potassium	10ppt	<10ppt
Praseodymium	1ppt	<0.1ppt
Rhenium	10ppt	<0.1ppt
Rhodium	20ppt	<1ppt
Rubidium	20ppt	<1ppt
Ruthenium	20ppt	<1ppt
Samarium	1ppt	<0.1ppt
Scandium	10ppt	<1ppt
Silver	10ppt	<1ppt
Sodium	10ppt	<10ppt
Strontium	10ppt	<1ppt
Tellurium	1ppt	<1ppt
Terbium	1ppt	<0.1ppt
Thallium	10ppt	<0.1ppt
Thorium	1ppt	<0.1ppt
Thulium	1ppt	<0.1ppt
Tin	20ppt	<10ppt
Titanium	50ppt	<30ppt
Tungsten	20ppt	<20ppt
Uranium	1ppt	<0.1ppt
Vanadium	10ppt	<1ppt
Ytterbium	1ppt	<0.1ppt
Yttrium	1ppt	P0.5ppt
Zinc	20ppt	P5ppt
Zirconium	10ppt	<10ppt

Hydrofluoric Acid — TraceMetal

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**A513-500**	124.70	6/496.22
4L	Poly Bottle	**A513-4**	1512.96	- - - -

HF

F.W. 20.01

Certificate of Lot Analysis included with each shipment.

[7664-39-3]

ACID

ChemAlert® STORAGE white

Product Specifications and Typical Values

	Max. Spec.	Typical Value
Assay (HF)	47–51%	49%
Color (APHA)	10	P10
Aluminum	1ppb	<0.5ppb
Antimony	1ppb	<0.1ppb
Arsenic	1ppb	<0.1ppb
Barium	1ppb	<0.1ppb
Beryllium	1ppb	<0.1ppb
Bismuth	1ppb	<0.1ppb
Boron	1ppb	<0.5ppb
Cadmium	1ppb	<0.1ppb
Calcium	1ppb	<0.5ppb
Cerium	0.5ppb	<0.1ppb
Cesium	0.5ppb	<0.1ppb
Chromium	1ppb	<0.1ppb
Cobalt	1ppb	<0.1ppb
Copper	1ppb	<0.1ppb
Dysprosium	0.5ppb	<0.1ppb
Erbium	0.5ppb	<0.1ppb
Europium	0.5ppb	<0.1ppb
Gadolinium	0.5ppb	<0.1ppb
Gallium	0.5ppb	<0.1ppb
Germanium	0.5ppb	<0.1ppb
Gold	0.5ppb	<0.1ppb
Hafnium	0.5ppb	<0.1ppb
Holmium	0.5ppb	<0.1ppb
Indium	0.5ppb	<0.1ppb
Iron	1ppb	<0.5ppb
Lanthanum	0.5ppb	<0.1ppb
Lead	1ppb	<0.1ppb
Lithium	1ppb	<0.1ppb
Lutetium	0.5ppb	<0.1ppb
Magnesium	1ppb	<0.2ppb
Manganese	1ppb	<0.2ppb
Mercury	10ppb	<0.5ppb
Molybdenum	1ppb	<0.2ppb
Neodymium	0.5ppb	<0.1ppb
Nickel	1ppb	<0.1ppb
Niobium	0.5ppb	<0.1ppb
Palladium	0.5ppb	<0.1ppb
Platinum	0.5ppb	<0.1ppb
Potassium	1ppb	<0.2ppb
Praseodymium	0.5ppb	<0.1ppb
Rhenium	0.5ppb	<0.1ppb
Rhodium	0.5ppb	<0.1ppb
Rubidium	0.5ppb	<0.1ppb
Ruthenium	0.5ppb	<0.1ppb
Samarium	0.5ppb	<0.1ppb
Scandium	0.5ppb	<0.1ppb
Selenium	1ppb	<0.1ppb
Silver	1ppb	<0.1ppb
Sodium	1ppb	<0.5ppb
Strontium	1ppb	<0.1ppb
Tellurium	0.5ppb	<0.1ppb
Terbium	0.5ppb	<0.1ppb
Thallium	0.5ppb	<0.1ppb
Thorium	1ppb	<0.1ppb
Thulium	0.5ppb	<0.1ppb
Tin	1ppb	<0.1ppb
Titanium	1ppb	<0.5ppb
Tungsten	0.5ppb	<0.1ppb
Uranium	1ppb	<0.1ppb
Vanadium	1ppb	<0.1ppb
Ytterbium	0.5ppb	<0.1ppb
Yttrium	0.5ppb	<0.1ppb
Zinc	1ppb	<0.1ppb
Zirconium	1ppb	<0.1ppb

Element concentrations are at the point of bottling.

Hydrofluoric Acid — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
1 lb.	Poly Bottle	**A147-1LB**	89.17	6/327.75
10 lb.	Poly Bottle	**A147-10LB**	286.11	4/689.98

Fluohydric Acid, Hydrogen Fluoride, HF

F.W. 20.01

[7664-39-3]

ACID

ChemAlert® STORAGE white

Product Specifications

Assay	48.0-51.0%
Fluosilicic Acid	≤0.01%
Residue after Ignition	≤5ppm
Chloride	≤5ppm
Phosphate	≤1ppm
Coppe	≤0.1ppm
Heavy Metals (as Pb)	≤0.5ppm
Iron	≤1ppm
Arsenic	≤0.05ppm
Nickel	≤0.1ppm
Lead	≤0.1ppm
Sulfate and Sulfite (as SO_4)	≤5ppm

Hydrofluoric Acid, 48-50% — Technical

Quantity	Packaging	Cat. No.	Each	Case of
1 lb.	Poly Bottle/HF	**A146-1LB**	64.72	6/236.87
10 lb.	Poly Bottle	**A146-10LB**	249.65	4/608.51

HF

F.W. 20.01

[7664-39-3]

ACID

ChemAlert® STORAGE white

Product Specifications

Assay	48-50%

*Trademark. See Trademark Reference.

Prices subject to change.

▸*Hydrogen Dioxidem see Hydrogen Peroxide beginning with P170.*

Hydrogen Peroxide **Optima***

Quantity	Packaging	Cat. No.	Each	Case of
500mL	- - - -	**P170-500**	437.99	- - - -

[7722-84-1]

Product Specifications

	Max. Spec.
Assay (H_2O_2 w/w)	30–32%
Aluminum	50ppt
Antimony	10ppt
Arsenic	100ppt
Barium	10ppt
Beryllium	10ppt
Bismuth	10ppt
Cadmium	10ppt
Calcium	100ppt
Cerium	1ppt
Cesium	1ppt
Chromium	10ppt
Cobalt	10ppt
Copper	10ppt
Dysprosium	1ppt
Erbium	1ppt
Europium	1ppt
Gadolinium	1ppt
Gallium	10ppt
Germanium	10ppt
Gold	10ppt
Hafnium	1ppt
Holmium	1ppt
Indium	1ppt
Iron	50ppt
Lanthanum	1ppt
Lead	10ppt
Lithium	10ppt
Lutetium	1ppt
Magnesium	50ppt
Manganese	10ppt
Mercury	100ppt
Molybdenum	10ppt
Neodymium	1ppt
Nickel	50ppt
Niobium	10ppt
Palladium	10ppt
Potassium	50ppt
Praseodymium	1ppt
Rhenium	10ppt
Rhodium	10ppt
Rubidium	10ppt
Ruthenium	10ppt
Samarium	1ppt
Scandium	10ppt
Selenium	100ppt
Silver	10ppt
Sodium	50ppt
Strontium	10ppt
Tantalum	10ppt
Tellurium	1ppt
Terbium	1ppt
Thallium	1ppt
Thorium	1ppt
Thulium	1ppt
Tin	50ppt
Titanium	50ppt
Tungsten	50ppt
Uranium	1ppt
Vanadium	10ppt
Ytterbium	1ppt
Yttrium	1ppt
Zinc	50ppt
Zirconium	10ppt

Hydrogen Peroxide, 50% **Certified**

Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**H341-500**	133.25	6/622.34

Hydrogen Dioxide, Hyperoxide
H_2O_2
F.W. 34.01
[7722-84-1]

ChemAlert® STORAGE yellow

Product Specifications

Assay	48.0-51.0%
Ash	≤0.01%
Tin	≤0.004%
Phosphate	≤0.005%
Ammonium	≤0.002%
Nitrate	≤0.005%
Chloride	≤0.001%
Sulfate	≤5ppm
Iron	≤0.5ppm
Heavy Metals (as Pb)	≤1ppm

Hydrogen Peroxide, 34-37% **Technical**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**H327-500**	117.01	6/559.86

Hydrogen Dioxide, Hyperoxide
H_2O_2
F.W. 34.01
[7722-84-1]

ChemAlert® STORAGE yellow

Product Specifications

Assay	34-37%

Hydrogen Peroxide, 30% **Certified ACS**

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**H325-100**	55.49	6/267.15
500mL	Poly Bottle	**H325-500**	120.08	6/567.83
4L	Poly Bottle	**H325-4**	512.35	4/1446.48
30 gal.	Poly Drum	**H325-30GAL**	572.07	- - - -

Hyperoxide
[7722-84-1]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	30.0-32.0%
Color (APHA)	≤10
Residue after Evaporation	≤0.002%
Titratable Acid	≤0.0006mEq/g
Chloride	≤3ppm
Nitrate	≤2ppm
Phosphate	≤2ppm
Sulfate	≤5ppm
Ammonium	≤5ppm
Heavy Metals (as Pb)	≤1ppm
Iron	≤0.5ppm
Copper	≤0.1ppm
Nickel	≤0.1ppm

Hydrogen Peroxide, 30% — Certified

Stabilized with Sodium Stannate

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**H323-500**	132.72	6/634.52

Hydrogen Dioxide, Hyperoxide
H_2O_2
F.W. 34.01
[7722-84-1]

ChemAlert® STORAGE yellow

Product Specifications

Assay	29-36.0%
Free Acid	≤0.005%
Phosphate	≤0.005%
Nitrogen Compounds (as N)	≤0.001%
Residue after Evaporation	≤0.02%
Chloride	≤0.001%
Sulfate	≤0.010%
Copper	≤0.1ppm
Iron	≤0.5ppm
Nickel	≤0.1ppm
Heavy Metals (as Pb)	≤1ppm

Hydrogen Peroxide, 3% — USP

Topical Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**H312-500**	62.38	6/300.24
4L	Amber Glass	**H312-4**	244.77	4/757.01
4L	Amber Poly	**H312P-4**	213.37	4/683.91

Hydrogen Dioxide, Hyperoxide
H_2O_2
F.W. 34.01
[7722-84-1]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Assay	3.0-3.5%
Acidity	To pass test
Barium	To pass test
Heavy Metals (as Pb)	≤5ppm
Preservative	≤0.05%
Nonvolatile Residue	≤0.15%

Hydrogen Peroxide, 3% — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**H324-500**	58.08	6/278.86

Hydrogen Dioxide, Hyperoxide
H_2O_2
F.W. 34.01
[7722-84-1]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	3.0-3.5%
Residue after Evaporation	≤0.040%
Chloride	≤5ppm
Free Acid	≤0.4%
Nitrogen Compounds (as N)	≤0.005%
Heavy Metals (as Pb)	≤1ppm
Sulfate	≤0.005%
Arsenic	≤0.1ppm
Iron	≤0.5ppm
Phosphate	≤0.035%

Hydrogen Peroxide, 3% — Reagent Grade Stabilized

Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Poly	**3819-16**	19.98	----
1L	Amber Poly	**3819-32**	34.24	----
4L	Amber Poly	**3819-1**	73.44	----

Solvent/Matrix: Aqueous Solution
[7722-84-1 (Hydrogen Peroxide)]
[103-84-4 (Acetanilide)]
[7732-18-5 (Water, Deionized)]

▸**Hydrogen Tetrafluoroborate** *see Fluoroboric Acid A188.*

Hydroquinone — Laboratory

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**H329-500**	72.07	6/338.07

1,4-Benzenediol, Hydroquinol, p-Dihydroxybenzene
$1,4\text{-}HOC_6H_4OH$
$C_6H_6O_2$
F.W. 110.11
[123-31-9]

ChemAlert® STORAGE blue

▸**2-Hydroxybenzaldehyde** *see Salicylaldehyde A281.*

▸**Hydroxybenzene** *see Phenol beginning with A92.*

▸**2-Hydroxybenzoic Acid** *see Salicylic Acid A275 and A277.*

▸**2-Hydroxybenzoic Acid Sodium Salt** *see Sodium Salicylate S395 and S396.*

1-Hydroxybenzotriazole, 98%

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
5g	----	**AC16916-0050**	19.50	----
25g	----	**AC16916-0250**	37.80	----
100g	----	**AC16916-1000**	150.30	----

HOBT
$C_6H_5N_3O$
F.W. 135.12
Melting point: 156-159°C
[2592-95-2]

▸***α-Hydroxy-α,α-bis(5-hydroxycarvacryl)-p-toluenesulfonic Acid*** *see Thymol Blue T416.*

▸***α-Hydroxy-α,α-bis(p-hydroxyphenol)-o-toluenesulfonic Acid*** *see Phenol Red, Free Acid P74.*

▸***α-Hydroxy-α,α-bis(p-hydroxyphenol)-o-toluenesulfonic Acid Sodium Salt*** *see Phenol Red, Sodium Salt P391.*

▸**2-Hydroxyethanethiol** *see 2-Mercaptoethanol O3446I.*

▸**Hydroxyethyltrimethylammonium Chloride** *see Choline Chloride O1972.*

*Trademark. See Trademark Reference.

Prices subject to change.

Hydroxylamine Hydrochloride **Certified ACS**

Suitable for Mercury Determination

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**H330-100**	73.45	6/344.55
500g	Poly Bottle	**H330-500**	267.89	6/1250.69
1kg	Glass	**H330-1**	348.63	6/1615.91

Oxammonium Hydrochloride
$NH_2OH\cdot HCl$
$H_3NO\cdot HCl$
F.W. 69.49
[5470-11-1]

ChemAlert® STORAGE white

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥96.0%
Clarity of Alcohol Solution (1g/25mL)	To pass test
Titratable Free Acid	≤0.25mEq/g
Ammonium	To pass test
Sulfur Compounds (as SO_4)	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Residue after Ignition	≤0.05%
Mercury	≤0.05ppm

Hydroxylamine Sulfate **Certified**

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**H331-100**	64.63	6/303.17
500g	Amber Glass	**H331-500**	124.15	6/555.06

Oxammonium Sulfate
$(NH_2OH)_2\cdot H_2SO_4$
$H_6N_2O_2\cdot H_2SO_4$
F.W.164.14
[10039-54-0]

ChemAlert® STORAGE white

Product Specifications

Assay	≥99%

▸***4-Hydroxy-3-methoxybenzaldehyde*** *se Vanillin V10.*

Hydroxynaphthol Blue **Certified ACS**

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**H346-100**	244.35	6/1140.74

1-(2-Naphtholazo-3,6-disulfonic Acid)-2-naphthol-4-sulfonic Acid Disodium Salt
Used as an indicator for EDTA titrimetric determination of Calcium. Color changes from reddish pink to blue.
[165660-27-5]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Suitability for Calcium Determination	To pass test

▸***1-(1-Hydroxy-2-naphthylazo)-6-nitro-2-naphthol-4-sulfonic Acid Sodium Salt*** *see Eriochrome* Black T E512.*

▸***2-Hydroxypropanoic Acid*** *see Lactic Acid, Certified ACS grade A162.*

8-Hydroxyquinoline **Certified ACS**

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**O261-100**	133.52	6/626.30
500g	Amber Glass	**O261-500**	363.93	6/1699.08

Oxine, Oxyquinoline, 8-Quinolinol, Oxychinolin, Hydroxybenzopyridine
$HOC_6H_3N{:}CHCH{:}CH$
C_9H_7NO
F.W. 145.16
[148-24-3]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Melting Point	72.5°-74.0°C
Insoluble in Alcohol	≤0.05%
Residue after Ignition	≤0.05%
Sulfate	To pass test (about 0.02%)
Suitability for Magnesium Determination	To pass test

Ion Exchange Resins

ACROS ORGANICS

Description	Quantity	Cat. No.	Each
Amberlite* CG-50 - type 1 ion-exchange resin	500g	**AC20211-5000**	236.40
Amberlite XAD-4	500g	**AC20223-5000**	119.50
Amberlyst* 15 (dry) ion-exchange resin	500g	**AC20214-5000**	126.70
Amberlyst 15 (wet) ion-exchange resin	500g	**AC20215-5000**	121.90
Dowex* 50WX8-200 ion-exchange resin	500g	**AC33534-5000**	207.40
Dowex 1X2-100 ion-exchange resin	1kg	**AC20295-0010**	446.50
Dowex 1X8-100 ion-exchange resin	500g	**AC20299-5000**	248.20
Dowex 1X8-200 ion-exchange resin	500g	**AC20300-5000**	222.00
Dowex 1X8-400 ion-exchange resin	500g	**AC20301-5000**	243.90
Dowex 50WX8-100 ion-exchange resin	500g	**AC33533-5000**	204.10
Dowex 50X2-100 ion-exchange resin	100g	**AC20302-1000**	46.80
	500g	**AC20302-5000**	163.90
Dowex 50X4-400 ion-exchange resin	500g	**AC20305-5000**	187.60
Dowex HCR-W2 ion-exchange resin	500mL	**AC30463-5000**	223.40
Rexyn* 101 (H) Beads (Analytical Grade/Certified)	500g	**R231-500**	75.98
Rexyn 101 (H) Beads (Research Grade/Certified)	500g	**R203-500**	144.20
Rexyn I-300 (H-OH) Beads (Analytical Grade/Certified)	500g	**R276-500**	158.14
Rexyn I-300 (H-OH) Beads (Research Grade/Certified)	500g	**R208-500**	222.39

▸***Hyperoxide*** *see Hydrogen Peroxide beginning with P170.*

▸***Hypnone*** *see Acetophenone A22,.*

▸***Hypo*** *see Sodium Thiosulfate Pentahydrate S445.*

▸***Hypochlorous Acid Calcium Salt*** *see Calcium Hypochlorite C100.*

Imidazole — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**03196-500**	220.85	6/1036.00

Glyoxaline, 1,3-Diazole
NHCH:NCH:CH
$C_3H_4N_2$
F.W. 68.08
[288-32-4]

ChemAlert® STORAGE white

Product Specifications

Assay .... ≥99%
Melting Point .... 87.5°-91°C

▸***Imidazole*** *see also Fisher BioReagents* BP305.*

▸***2,2'-Iminodiethanol*** *see Diethanolamine D45.*

▸***1,2,3-Indantrione*** *see Ninhydrin T349.*

Indicator Solution Color Chart

Quantity	Packaging	Cat. No.	Each	Case of
1 Chart	- - - -	**I-180**	41.10	- - - -

pH 4.0 to 10.0

ChemAlert® STORAGE gray

Indicator Solution, Universal

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SI60-500**	73.20	6/349.96
1L	Amber Glass	**SI60-1**	93.21	6/446.05

For rapid pH determinations within the range of pH 4.0 to 10.0: The approximate pH of a solution is determined by the color produced upon addition of 0.5mL of indicator to 10mL of the liquid.
With free Color Chart.

ChemAlert® STORAGE red

▸***Infusorial Earth*** *see Sorbents table*

▸***Iodic Acid*** *see also Periodic Acid A223.*

Iodine — USP

Resublimed Crystals

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**I35-100**	130.84	6/613.78
500g	Amber Glass	**I35-500**	316.95	6/1486.86

I_2
F.W. 253.81
At. Wt. 126.90
[7553-56-2]

ChemAlert® STORAGE white

Product Specifications

Assay 99.8-100.5%
Nonvolatile Residue .... ≤0.05%
Chloride or Bromide (as Cl) .... ≤0.028%

Iodine — Certified ACS

Flakes

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**I37-100**	147.17	6/671.25
500g	Amber Glass	**I37-500**	358.47	6/1631.18

I_2
F.W. 253.81
At. Wt. 126.90
[7553-56-2]

ChemAlert® STORAGE white

Product Specifications

Actual Lot Analysis is reported on label.

Assay .... ≥99.8%
Nonvolatile Matter .... ≤0.01%
Chlorine and Bromine (as Cl) .... ≤0.005%

Iodine Solution, 1N — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SI78-500**	93.26	6/439.46

Standardized volumetrically at 25°C against NIST Arsenous Acid.
[7553-56-2]

ChemAlert® STORAGE gray

Product Specifications

Normality .... 0.995 to 1.005

Iodine Solution, 0.1N — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SI86-1**	49.70	6/239.18

Standardized volumetrically at 25°C against NIST Arsenous Acid.
[7553-56-2]

ChemAlert® STORAGE gray

Product Specifications

Normality .... 0.0995 to 0.1005

Iodine (Iodine-Iodide) Solution, 0.100N

Iodine-Iodide
Dark brown liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**4000-16**	17.46	- - - -
1L	Amber Glass	**4000-32**	23.94	- - - -
4L	Amber Glass	**4000-1**	98.02	- - - -

[7553-56-2 (Iodine)]
[7681-11-0 (Potassium Iodide)]
[7732-18-5 (Water, Deionized)]

Iodine (Iodine-Iodide) Solution, 0.0473N

For iodine Adsorbption Number of Carbon Black

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**3990-1**	86.42	- - - -

Iodine Solution, 0.02N — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SI92-1**	78.00	6/375.41

[7553-56-2]

Product Specifications

Normality .... 0.0195 to 0.0205

Iodine Solution, Hanus

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**S198-500**	62.83	6/298.40

Iodobromide Test Solution
Used for Iodine Number determination.
[7553-56-2]

ChemAlert® STORAGE white

Product Specifications

Normality	0.210 to 0.230
Iodine Value of Cottonseed Oil	109 to 120

Iodine Solution, Lugol's USP
Concentrated, Weigert Formulation

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**4440-4**	11.08	- - - -
500mL	Amber Glass	**4440-16**	22.05	- - - -
1L	Amber Glass	**4440-32**	42.86	- - - -

Strong iodine solution

Iodine Solution, Wijs

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SI106-500**	60.55	6/288.33
1L	Amber Glass	**SI106-1**	96.33	6/459.25
4L	Amber Glass	**SI106-4**	335.31	4/1063.23

For determination of Iodine Absorption Number in fats.
Approximately 0.22N solution in Glacial Acetic Acid.
[7553-56-2]

ChemAlert® STORAGE white

Product Specifications

Normality	0.215 to 0.225
Halogen Ratio	1.00 to 1.20

Iodine-Bromine Solution, Hanus
Dark brown colored liquid
For Iodine Absorption Number of Fats and Oils

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**4100-4**	18.50	- - - -
500mL	Amber Glass	**4100-16**	34.25	- - - -
1L	Amber Glass	**4100-32**	61.50	- - - -

Melting point: Approx. 16.6°C
Boiling point: Approx. 118°C
[7553-56-2 (Iodine)]
[7726-95-6 (Bromine)]
[64-19-7 (Acetic Acid)]

Iodine Monochloride Solution, Wijs

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**4110-16**	26.68	- - - -
1L	Amber Glass	**4110-32**	46.56	- - - -
2.5L	Safety Coated Glass	**4110-5PT**	110.48	- - - -
4L	Amber Glass	**4110-1**	138.35	- - - -
4L	Safety Coated Amber Glass	**1362-260**	3106.72	- - - -

Iodochloride TS
[7790-99-0 (Iodine monochloride)]
[64-19-7 (Acetic acid)]

NEW

Iodomethane, 99%
Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
5g	Glass Bottle	**AC12237-0050**	17.20	- - - -
100g	Glass Bottle	**AC12237-1000**	28.90	- - - -
500g	Glass Bottle	**AC12237-5000**	88.20	- - - -

Methyl Iodide
CH_3I
F.W. 141.94
Melting point: -66°C
Boiling point: 42.5°C (at 760mmHg)
Density: 2.28g/mL
n: 1.529-1.531
[74-88-4]

Ionic Strength Adjustor
pH Indicating and Adjusting, for use with Ammonia Selective Electrode

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**4128-16**	20.83	- - - -
1L	Poly Natural	**4128-32**	34.87	- - - -

[125-20-2 (Thymolphthalein)]
[1310-73-2 (Sodium Hydroxide)]
[6381-92-6 (EDTA)]
[67-56-1 (Methanol)]

Ionic Strength Adjustor
For use with Sodium Ion Selective Electrode
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**4130-16**	16.70	- - - -
1L	Poly Natural	**4130-32**	32.35	- - - -

[12125-02-9 (Ammonium Chloride)]
[1336-21-6 (Ammonium Hydroxide)]
[7732-18-5 (Water, Deionized)]

Iron
Electrolytic Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**I60-500**	127.99	6/572.19
3kg	Amber Glass	**I60-3**	442.52	4/1380.63

Fe
At. Wt. 55.85
[7439-89-6]

ChemAlert® STORAGE red

Product Specifications

Assay (Total Iron)	≥99%
Mesh Size	Finer than 100 mesh

Iron
Filings, Degreased

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**I57-500**	106.63	6/476.63

Fe
At. Wt. 55.85
[7439-89-6]

ChemAlert® STORAGE red

Product Specifications

Mesh Size	50 to 70 mesh

▸**Iron** *for Iron II see Ferrous for Iron III see Ferric.*

▸**Iron Alum** *see Ferric Ammonium Sulfate Dodecahydrate I75.*

Isoamyl Alcohol — Certified

Clear, Colorless

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A393-500**	98.78	6/437.87
4L	Amber Glass	**A393-4**	344.75	4/1077.73

Isopentyl Alcohol, 3-Methyl-1-butanol
Isobutyl Carbinol
$(CH_3)_2CHCH_2CH_2OH$
$C_5H_{12}O$
F.W. 88.15
[123-51-3]

Product Specifications

Color (APHA)	≤20
Acidity (as Acetic Acid)	≤0.01%
Residue after Evaporation	≤0.003%
Carbonyl (as C=O)	≤0.1%
Water	≤0.5%

Isobutyl Alcohol — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A397-1**	68.08	6/304.26
4L	Amber Glass	**A397-4**	175.33	4/548.01

2-Methyl-1-Propanol, Isopropylcarbinol
1-Hydroxymethylpropane
$(CH_3)_2CHCH_2OH$
$C_4H_{10}O$
F.W. 7 4.12
Suitable for fluorometric analysis.
[78-83-1]

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Color (APHA)	≤10
Residue after Evaporation	≤0.001%
Solubility in H_2O	To pass test
Titratable Acid	≤0.0005mEq/g
Water	≤0.1%
Fluorescent Impurities (as Quinine Sulfate)	To pass test (0.02µg/mL)
Butyraldehyde	≤0.01%
2-Butanone	≤0.02%

▸***Isobutyl Methyl Ketone*** *see Methyl iso-Butyl Ketone M213.*

Isooctane — Optima*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**O301-4**	225.76	4/631.40

Also available in recyclable FisherPak and NOWPak* containers.*
2,2,4-Trimethylpentane, Isobutyltrimethylmethane
$(CH_3)_3CCH_2CH(CH_3)_2$
C_8H_{18}
F.W.114.23
Packaged under Nitrogen. Submicron Filtered.
Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.
[540-84-1]

Product Specifications

Assay (by GC)	≥99.0%
Color (APHA)	≤10
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤10ng/L
Optical Absorbance:	
at 205nm	≤1.00
at 225nm	≤0.10
at 254nm	≤0.01
Fluorescence Background (as Quinine Sulfate)	≤1ppb
Water	≤0.01%
Residue after Evaporation	≤1ppm
Refractive Index at 25°C	1.3885 to 1.3905
Density at 25°C	≤0.690g/mL
Water-soluble Titratable Acid	≤0.0003mEq/g
Sulfur Compounds (as S)	≤0.005%

Isooctane — HPLC

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**O296-1**	94.14	6/400.24
1L	Glass/Safe-Cote*	**O296SK-1**	96.64	6/403.75
4L	Amber Glass	**O296-4**	149.64	4/420.19
4L	Glass/Safe-Cote	**O296SK-4**	180.34	4/506.58

Also available in recyclable FisherPak and NOWPak* containers.*
2,2,4-Trimethylpentane
C_8H_{18}
F.W. 114.23
Melting point: -107°C
Boiling point: 99°C
Density: 0.69
Submicron Filtered.
[540-84-1]

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Color (APHA)	≤10
Optical Absorbance:	
at 205nm	≤1.00
at 225nm	≤0.10
at 254nm	≤0.014
Fluorescence Background (as Quinine Sulfate)	To pass test
Refractive Index at 25°C	1.3885-1.3905
Residue after Evaporation	≤4ppm
Water	≤0.02%
Water-soluble Titratable Acid	≤0.0003mEq/g
Density at 25°C	≤0.690g/mL
Sulfur Compounds (as S)	≤0.005%

Isooctane — Pesticide

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**O297-4**	155.23	4/443.00

2,2,4-Trimethylpentane
$(CH_3)_3CCH_2CH(CH_3)_2$
C_8H_{18}
F.W. 114.23
Packaged under Nitrogen.
[540-84-1]

Product Specifications

Color (APHA)	≤10
Pesticide Residue Analysis (as Heptachlor Epoxide)	To pass test

*Trademark. See Trademark Reference.

Isooctane — Spectranalyzed*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**0300-1**	144.90	6/651.03
4L	Amber Glass	**0300-4**	320.66	4/1042.59

2,2,4-Trimethylpentane, Isobutyltrimethylmethane

$(CH_3)_3CCH_2CH(CH_3)_2$

C_8H_{18}

F.W. 114.23

For use in the ultraviolet and infrared ranges.

[540-84-1]

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.0%
Color (APHA)	≤10
Density at 25°C	≤0.690g/mL
Residue after Evaporation	≤0.001%
Water-soluble Titratable Acid	≤0.0003mEq/g
Sulfur Compounds (as S)	≤0.005%
Optical Absorbance:	
at 210nm	≤1.00
at 220nm	≤0.20
at 230nm	≤0.10
at 240nm	≤0.04
at 250-400nm	≤0.01
IR Transmittance:	
at 2.5-3.3µm	≥70%
at 3.6-6.7µm	≥70%
at 8.6-10.15µm	≥70%
at 10.3-15.0µm	≥70%

Transmittance measured in a 0.025mm KBr cell. Ultraviolet Absorbance Curves are run against distilled water set at zero absorbance. Curves available on request.

Isooctane — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**0299-1**	184.04	6/817.32
4L	Amber Glass	**0299-4**	364.39	4/1109.44

Also available in recyclable FisherPak and NOWPak* containers.*

2,2,4-Trimethylpentane

$(CH_3)_3CCH_2CH(CH_3)_2$

C_8H_{18}

F.W. 114.23

[540-84-1]

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.0%
Color (APHA)	≤10
Density at 25°C	≤0.690g/mL
Residue after Evaporation	≤0.001%
Sulfur Compounds (as S)	≤0.005%
Water-soluble Titratable Acid	≤0.0003mEq/g

▸***Isopentyl Alcohol*** *see Isoamyl Alcohol A393.*

▸***Isopropanol*** *see also 2-Propanol.*

Isopropanol, 99.9% — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	- - - -	**AC61008-0040**	87.60	4/297.80

2-Propanol, IPA, Isopropyl alcohol

$(CH_3)_2CHOH$

C_3H_8O

F.W. 60.1

Melting point: -89.5°C

Boiling point: 81-83°C (at 760mmHg)

Flash point: 12°C

Density: 0.785g/mL

n: 1.376-1.378

[67-63-0]

Isopropanol, 99.6% — ACS Reagent

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass Bottle	**AC42383-5000**	15.90	6/80.74
1L	Glass Bottle	**AC42383-0010**	26.20	- - - -
4L	Glass Bottle	**AC42383-0040**	73.30	4/248.96
20L	Glass Bottle	**AC42383-0200**	242.70	- - - -

2-Propanol, IPA, Isopropyl alcohol

$CH_3CHOHCH_3$

C_3H_8O

F.W. 60.1

Melting point: -89.5°C

Boiling point: 81-83°C (at 760mmHg)

Flash point: 12°C

Density: 0.785g/mL

n: 1.376-1.378

[67-63-0]

Isopropanol

Anhydrous

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AcroSeal*	**AC61043-1000**	22.70	6/115.31

2-Propanol, IPA, Isopropyl Alcohol

C_3H_8O

F.W. 60.1

Melting point: -89.5°C

Boiling point: 81-83°C (at 760mmHg)

Flash point: 12°C

Density: 0.785g/mL

n: 1.376-1.378

[67-63-0]

Isopropanol, 70% (v/v)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**A459-500**	35.72	6/167.48
1L	Poly Bottle	**A459-1**	52.31	6/245.33
4L	Poly Bottle	**A459-4**	76.10	4/240.36
20L	PolyPac*	**A459-20**	217.67	- - - -

$(CH_3)_2CHOH$

C_3H_8O

F.W. 60.10

[67-63-0]

STORAGE red

Product Specifications

Assay (2-Propanol) .... 68.0-72.0% v/v

Color (APHA) .... ≤10

Density at 25°C 0.8628-0.8730g/mL

Refractive Index at 25°C .... 1.3706 to 1.3722

Isopropanol, 70% (v/v)

Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**4210-32**	22.43	- - - -
4L	Poly Natural	**4210-1**	80.29	- - - -
10L	Cubitainer*	**4210-25**	105.75	- - - -
20L	Cubitainer	**4210-5**	169.53	- - - -
20L	Hard-Pak*	**4210-5HP**	134.12	- - - -
55-gal.	Drum	**4210-55**	569.63	- - - -

2-Propanol

Isopropanol, 50% (v/v)

Aqueous Solution

Laboratory Cleaning and Disinfecting

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Natural	**42075-1**	110.00	- - - -
20L	Cubitainer*	**42075-5**	111.92	- - - -
20L	Ropak*	**42075-5HP**	119.22	- - - -

Not for medicinal use.

The 20L hard-pack size (42075HP) contains no cardboard and is suitable for use in particle-free environments.

[67-63-0]

▸***Isopropyl*** *see also Propanol, under P.*

▸***Isopropyl Alcohol*** *see also 2-Propanol.*

Isopropyl Ether **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**E141-500**	70.80	6/331.94
4L	Amber Glass	**E141-4**	295.20	4/852.27

2-Isopropoxypropane, Diisopropyl Ether

DIPE

$[(CH_3)_2CH]_2O$

$C_6H_{14}O$

F.W. 102.18

Low in alcohol and water.

[108-20-3]

SOLVENT STORAGE red

Product Specifications

Color (APHA) .... ≤15

Boiling Range .... 67°- 69°C

Alcohol .... ≤0.2%

Water .... ≤0.2%

Isopropyl Peroxide .... ≤0.05%

Residue after Evaporation .... ≤0.01%

Specific Gravity at 25°C .... 0.720 to 0.723

Isopropyl-β-D-thiogalactopyranoside, 99%

Dioxane -Free

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
1g	Glass Bottle	**AC30279-0010**	68.50	- - - -
10g	Glass Bottle	**AC30279-0100**	223.10	- - - -

IPTG, Isopropyl-β-D-thiogalactoside

$C_9H_{18}O_5S$

F.W. 238.3

Melting point: 105°C

alpha: -31 (c=1, water)

[367-93-1]

▸***Kalkspar*** *see Calcium Carbonate, Certified ACS grade C64.*

▸***Kanamycin Sulfate*** *see Fisher BioReagents* BP906.*

Kaolin **USP**

Acid Washed Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**K2-500**	69.91	4/216.03

Aluminum Silicate (Hydrated), Bolus Alba

$H_2Al_2Si_2O_8 \cdot H_2O$

F.W. 258.20

[1332-58-7]

ChemAlert STORAGE gray

Product Specifications

Loss on Ignition .... ≤15.0%

Acid-soluble Substances .... ≤2.0%

Carbonate .... To pass test

Iron .... To pass test

Lead .... ≤0.001%

Microbial Limit (*E. coli*) .... Negative

Organic Volatile Impurities .... Meets requirements

Karl Fischer Reagents, Aqualine*

Description	Quantity	Packaging	Cat. No.	Each	Case of
Aqualine Complete 1, Single-Component Reagent. Water equivalent: 1mg H_2O/mL. Pyridine free.	1L	Amber Glass	**AL1900-1**	136.26	4/454.97
	2.5L		**AL1900-212**	273.04	4/911.73
Aqualine Complete 2, Single-Component Reagent. Water equivalent: 2mg H_2O/mL. Pyridine free.	1L	Amber Glass	**AL1950-1**	89.92	4/299.68
	2.5L	Amber Glass	**AL1950-212**	187.75	4/631.27
	4L	----	**AL1950-4**	249.93	----
Aqualine Complete 5, Single-Component Reagent. Water equivalent: 5mg H_2O/mL. Pyridine free.	1L	Amber Glass	**AL2000-1**	79.43	4/264.40
	2.5L	Amber Glass	**AL2000-212**	164.03	4/571.20
	4L	----	**AL2000-4**	246.14	----
Single-component reagent. Water equivalent: 5mg H_2O/mL. For aldehyde and ketone analysis.	1L	Amber Glass	**AL2250R-1**	109.83	4/373.14
	4L	----	**AL2250-4**	472.71	----
Aqualine Matrix K. For aldehyde and ketone analysis.	1L	Amber Glass	**AL2300R-1**	81.30	4/274.90
	4L	----	**AL2300-4**	296.84	----
Aqualine Buffer. For use with acidic samples.	500mL	Amber Glass	**AL2350-500**	48.38	4/170.08
Aqualine Solvent. For two-component system. Water capacity: 8mg H_2O/mL. Pyridine free.	1L	Amber Glass	**AL2100-1**	66.90	4/229.29
	2.5L		**AL2100-212**	135.11	4/461.11
Aqualine Solvent CM. For high hydrocarbon content. Pyridine free.	1L	Amber Glass	**AL2110-1**	79.07	4/271.32
	2.5L		**AL2110-212**	155.15	4/529.93
Aqualine Titrant 5. For two-component system. Water capacity: 5mg H_2O/mL. Pyridine free.	1L	Amber Glass	**AL2200-1**	96.50	4/329.50
	2.5L		**AL2200-212**	150.73	4/514.77
Aqualine Standard 1.0. For Karl Fischer titration; 1.0mg H_2O/mL.	10 × 4mL	Amber Glass Ampule	**AL2710-40**	86.67	6/428.06
Aqualine Standard 5.0. For Karl Fischer titration; 5.0mg H_2O/mL.	500mL	Amber Glass	**AL2730-500**	49.96	4/175.72
Aqualine Standard 10.0. For Karl Fischer titration; 10.0mg H_2O/mL.	10 × 8mL	Amber Glass Ampule	**AL2720-80**	84.28	6/415.96
Aqualine Water Standard KF Oven. Standard for use in Karl Fischer oven techniques.	10g	Poly Bottle	**AL2760-10**	58.69	6/309.58
Aqualine Sodium Tartrate Dihydrate Water Standard. Solid standard for Karl Fischer titration.	100g	Poly Bottle	**AL2770-100**	47.79	6/238.84
Aqualine Water in Methanol Standard 5.0. For Karl Fischer titration; 1mL = 5.0mg H_2O.	1L	Amber Glass	**AL9000-1**	67.83	4/233.01
Aqualine Electrolyte A. Anolyte solution for general use in conventional cells with a diaphragm.	500mL	Amber Glass	**AL2500-500**	83.33	4/282.75
Aqualine Electrolyte ADG. Electrolyte solution for use in cells without a diaphragm.	500mL	Amber Glass	**AL2515-500**	83.79	4/282.85
Aqualine Electrolyte AG. Nonhalogenated anolyte solution for general use in conventional cells with a diaphragm.	500mL	Amber Glass	**AL2520-500**	85.59	4/295.90
Aqualine Electrolyte C. Catholyte solution for general use in conventional cells with a diaphragm.	25mL	Amber Glass with Septum Seal	**AL2550-25**	44.96	4/149.98
Aqualine Electrolyte CG. Nonhalogenated catholyte solution for general use in conventional cells with a diaphragm.	25mL	Amber Glass with Septum Seal	**AL2560-25**	44.96	4/153.18
Karl Fischer Reagent, Stabilized. Ready to use for moisture determination by electrometric titration. Minimum 6.0mg H_2O/mL; for lower titer, dilute with SK5 Karl Fischer Diluent.	500mL	Amber Glass	**SK3-500**	141.74	6/684.73
	1L		**SK3-1**	232.42	6/1104.41
	4L		**SK3-4**	529.92	4/1680.66
Karl Fischer Reagent Diluent. For SK3 stabilized Karl Fischer Reagent.	1L	Amber Glass	**SK5-1**	288.14	6/1378.63
	4L		**SK5-4**	606.11	4/1935.21

Karl Fischer Reagents, AquaStar*

EMD

Description	Qty.	Packaging	Cat. No.	Each	Case of
Coulomat A (original formulation). Pyridine free.	500mL	Poly-coated Amber Glass	**MAX1697A-1**	92.78	4/315.76
	4L		**MAX1697A-30**	357.64	- - - -
Coulomat AN (safer formulation). Pyridine and chloroform free.	500mL	Poly-coated Amber Glass	**MAX1697AN-1**	98.59	4/352.96
	4L		**MAX1697AN-30**	301.26	- - - -
Coulomat AK (original formulation). For moisture analysis in aldehydes and ketones. Pyridine free.	500mL	PVC-coated Amber Glass	**MAX1697E-1**	211.88	4/642.52
	4L		**MAX1697E-30**	490.03	- - - -
Coulomat C (original formulation). Pyridine free.	25mL	Amber Glass	**MAX1697C-1**	42.88	6/243.36
Coulomat CN (safer formulation). Pyridine and carbon tetrachloride free.	10 × 5mL	Ampule	**MAX1697CN-3**	99.47	- - - -
	25mL	Amber Glass	**23-794090**	54.75	6/243.36
	2L	Amber Glass	**MAX1697CN-30**	940.02	- - - -
Coulomat CK (original formulation). For moisture analysis in aldehydes and ketones. Pyridine free.	5mL	Ampule	**MAX1697F-3**	225.14	- - - -
	25mL	Amber Glass	**MAX1697F-1**	99.32	6/479.04
	1L	Amber Glass	**MAX1697F-31**	964.82	- - - -
Coulomat Single Solution. Universal reagent for anode and cathode chambers. Pyridine and chloroform free.	500mL	Poly-coated Amber Glass	**M9255-1**	89.90	4/323.64
Composite 1 (safer formulation). Pyridine and 2-methoxyethanol free.	1L	Poly-coated Amber Glass	**MAX1698FN-1**	99.04	6/545.57
Composite 2 (original formulation). Pyridine free.	1L	Poly-coated Amber Glass	**MAX1698B-6**	132.26	6/600.00
	2L		**MAX1698B-3**	205.11	- - - -
	4L		**MAX1698B-5**	331.13	4/1023.00
Composite 2 (safer formulation). Pyridine and 2-methoxyethanol free.	1L	Poly-coated Amber Glass	**MAX1698BN-1**	132.25	6/600.00
	2L		**MAX1698BN-3**	205.11	4/620.00
	4L		**MAX1698BN-5**	331.13	4/1023.00
Composite 2K (original formulation). For moisture analysis in aldehydes and ketones. Pyridine free. Use with Solvent KN.	1L	Poly-coated Amber Glass	**MAX1698E-6**	152.14	- - - -
	4L		**MAX1698E-5**	209.48	4/716.16
Composite 2KN (safer formulation). For moisture analysis in aldehydes and ketones. Pyridine and 2-methoxyethanol free. Use with Solvent KN.	1L	Poly-coated Amber Glass	**MAX1698EN-6**	152.14	6/690.00
Composite 5 (original formulation). Pyridine free. Use with Solvent S.	1L	Poly-coated Amber Glass	**MAX1698A-6**	132.19	6/600.00
	2L		**MAX1698A-3**	205.05	4/620.00
	4L		**MAX1698A-5**	327.91	4/1079.38
Composite 5 (safer formulation). Pyridine and 2-methoxyethanol free. Use with Solvent S.	1L	Poly-coated Amber Glass	**MAX1698AN-1**	132.16	6/600.00
	2L		**MAX1698AN-3**	205.05	4/620.00
	4L		**MAX1698AN-5**	327.98	4/1079.38
Composite 5K (original formulation). For moisture analysis in aldehydes and ketones. Use with Solvent KN.	1L	Poly-coated Amber Glass	**MAX1698D-6**	171.75	6/780.00
	4L		**MAX1698D-5**	495.91	- - - -
Composite 5K (safer formulation). For moisture analysis in aldehydes and ketones. Pyridine and 2-methoxyethanol free. Use with Solvent KN.	1L	Poly-coated Amber Glass	**MAX1698DN-6**	191.46	6/870.00
	4L		**MAX1698DN-5**	528.82	4/1600.00
Solvent KC	1L	Amber Glass	**MAX1699KC-6**	86.12	6/423.36
	4L		**MAX1699KC-5**	330.83	4/1000.00
Solvent KN. For moisture analysis in aldehydes and ketones. Chloroform free Use with Composite 2K and 5K.	1L	Amber Glass	**MAX1699EN-6**	145.58	6/660.00
	4L		**MAX1699EN-5**	357.18	4/1080.00
Solvent MC	1L	Glass Bottle	**MAX1699MC-1**	66.15	- - - -
	4L		**MAX1699MC-5**	145.32	4/440.00
Anhydrous Methanol. General-purpose volumetric Karl Fischer solvent.	1L	Amber Glass	**MAX1699M-6**	59.57	- - - -
	4L		**MAX1699M-3**	92.68	4/280.00

*Trademark. See Trademark Reference.

Karl Fischer Reagents, AquaStar* Contd.

Description	Quantity	Packaging	Cat. No.	Each	Case of
Solvent S. Use with Titrant 5.	1L	Poly-coated Amber Glass	**MAX1699B-6**	79.35	6/360.00
	2L		**MAX1699B-3**	152.08	4/460.00
	4L		**MAX1699B-5**	231.74	4/703.64
Titrant 5	1L	Amber Glass	**MAX1698C-6**	132.22	6/600.00
	2L	Amber Glass	**MAX1698C-3**	165.22	4/500.00
	4L	Poly Coated Amber Glass	**MAX1698C-5**	258.01	----
Buffer. Stabilizes pH of Karl Fischer titration solvent.	500mL	Poly-coated Amber Glass	**MAX1699D-1**	118.87	----
	2L		**MAX1699D-3**	330.34	4/1000.00
Water Check Standard—1.00%. Certificate of Lot Analysis with each bottle. For volumetric Karl Fischer titrations.	8mL	Ampule	**MAX1697T-1**	87.50	6/436.72
Water Check Standard—1000ppm. Certificate of Lot Analysis with each bottle. For coulometric Karl Fischer titrations.	4mL	Ampule	**MAX1697S-1**	90.10	6/445.22
Water Check Standard—100ppm. Certificate of Lot Analysis with each bottle. For coulometric Karl Fischer titrations.	8mL	Ampule	**MAX1697U-1**	90.71	----
Water/Methanol Standard. For batch titration and standardization of Volumetric Karl Fischer titrations.	1L	Amber Glass	**MAX1699A-6**	92.55	6/420.53
Sodium Tartrate Dihydrate Standard, Guaranteed Reagent (GR). Primary standard for volumetric Karl Fischer titrations.	100g	Poly Bottle	**M6664-2**	92.40	6/443.53
Karl Fischer Volumetric Reagent. For titrimetric moisture determination. Titer ≈ 5mg H_2O/mL. Contains pyridine and 2-methoxyethanol.	450mL	Poly-coated Amber Glass	**MKX0010-7**	132.24	4/400.50
	1L		**MKX0010-6**	205.31	6/947.22

Kauri Gum Solution
In Butanol

Quantity	Packaging	Cat. No.	Each	Case of
1 quart	Metal Can	**SK7-1QT**	404.56	12/3845.05

[77465-88-4 (Kauri Gum)]
[71-36-3 (N-Butyl Alcohol)]

ChemAlert® STORAGE red

Kerosene
Odorless

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**K10-4**	119.39	4/357.73
200L	Steel Drum	**K10-200**	1226.03	----

[8008-20-6]

SOLVENT

ChemAlert® STORAGE red

▸***Ketohexamethylene** see Cyclohexanone, Certified grade O2109.*

▸***Kieselguhr** see Celite* Analytical Filter Aid C211 and Infusorial Earth I22 under sorbents.*

▸***Kjeldahl Equipment** see Digestion Section.*

▸***Kjeldahl Reagents** see also Sodium Hydroxide Solutions SS410, SS411 and SS255. See also Sodium Sulfate Anhydrous (Low Nitrogen) S420. All suitable for Kjeldahl analysis.*

Kjel-Sorb* Solution

Certified

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**SK15-4**	54.39	4/202.93
20L	PolyPac*	**SK15-20**	136.86	----

Saturated Boric Acid Solution with indicator for use in Kjeldahl determinations.

ChemAlert® STORAGE gray

Product Specifications

% Boric Acid (H_3BO_3) at 25°C .... 3.8 to 4.2
Optical Absorbance .... Pass test
Visual Transition .... Pass test

Kjeltab* Catalysts

Quantity	Packaging	Cat. No.	Each	Case of
300 tablets	Amber Glass	**K20I-300**	305.39	----

[7778-80-5 (Potassium Sulfate)]
[21908-53-2 (Mercuric Oxide)]

ChemAlert® STORAGE blue

Product Specifications

Potassium Sulfate .... 3.5 ± 0.2g/tablet
Mercuric Oxide .... 0.175 ± 0.02g/tablet
Average Weight of Tablet .... 3.675 ± 0.4g

▸***Koppescharr's Solution** see Bromine Concentrate SB83.*

▸***Laboratory Performance Check and Fortifying Solutions** see Standards, Inorganic Mixed Multi-Element.*

▸***Lac Sulfur** see Sulfur, Precipitated S595.*

Lactic Acid USP/FCC

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A159-500**	125.18	6/586.94

2-Hydroxypropanoic Acid
$CH_3CH(OH)CO_2H$
$C_3H_6O_3$
F.W. 90.08
[50-21-5]

ChemAlert® STORAGE white

Product Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Specific Rotation	-0.05° to +0.05°
Readily Carbonizable Substances	To pass test
Residue on Ignition	≤0.05%
Sugars	To pass test
Chloride (Cl)	To pass test
Sulfate (SO_4)	To pass test
Heavy Metals (as Pb)	≤0.001%
Citric, Oxalic, Phosphoric, or Tartaric Acid	To pass test
Assay	88.0-92.0%
Meets FCC Chemical Specifications	
Assay	95.0-105.0% of the labeled value
Chloride (Cl)	≤0.1%
Citric, Oxalic, Phosphoric, or Tartaric Acid	To pass test
Cyanide (CN)	≤5mg/kg
Heavy Metals (as Pb)	≤10mg/kg
Iron (Fe)	≤10mg/kg
Lead	≤0.5mg/kg
Residue on Ignition	≤0.1%
Sugars	To pass test
Sulfate (SO_4)	≤0.25%

Lactic Acid, 85% (w/w) Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A162-500**	115.78	6/555.49
1L	Amber Glass	**A162-1**	183.15	6/848.78

2-Hydroxypropanoic Acid
$CH_3CH(OH)COOH$
$C_3H_6O_3$
[50-21-5]

ChemAlert® STORAGE white

Product Specifications
Actual Lot Analysis is reported on label.

Assay ($C_3H_6O_3$)	85.0-90.0%
Residue after Ignition	≤0.020%
Chloride	≤0.001%
Substances Darkened by H_2SO_4	To pass test
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Sulfate	≤0.002%

The reagent generally available is a mixture of Lactic Acid ($CH_3CHOHCOOH$) and Lactic Anhydride ($(CH_3CHOHCO)_2O$).

▸***Lactic Acid Sodium Salt*** *see Sodium Lactate, Syrup S326.*

α-D-(+)-Lactose Monohydrate Certified ACS

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**L5-500**	56.63	6/265.67

Milk Sugar
$C_{12}H_{22}O_{11}{\bullet}H_2O$
F.W. 360.32
[64044-51-5]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Insoluble Matter	≤0.005%
Residue after Ignition	≤0.03%
Dextrose (Glucose)	To pass test
Sucrose	To pass test
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Water	≤4.0-6.0%

Lanthanum Chloride Heptahydrate Certified

Lumps

Quantity	Packaging	Cat. No.	Each	Case of
50g	Poly Bottle	**L9-50**	108.42	6/508.60
250g	Poly Bottle	**L9-250**	385.70	6/1787.69

$LaCl_3{\bullet}7H_2O$
F.W. 371.37
Suitable for Atomic Absorption analysis of alkaline earths.
[10025-84-0]

ChemAlert® STORAGE gray

Product Specifications

Calcium	≤0.001%
Magnesium	≤1ppm

Lanthanum Oxide Reagent

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**03357-250**	185.98	6/872.46

La_2O_3
F.W. 325.81
[1312-81-8]

ChemAlert® STORAGE gray

Product Specifications

Assay (by titration)	≥99%

▸***LB Agar, Miller*** *see Fisher BioReagents* BP1425.*

▸***LB Broth, Lennox*** *see Fisher BioReagents* BP1427.*

▸***LB Broth, Miller*** *see Fisher BioReagents* BP1426.*

Lead Acetate Trihydrate Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**L33-250**	74.48	6/341.21
500g	Amber Glass	**L33-500**	130.47	6/604.71

Lead Sugar, Lead (II) Acetate Trihydrate
$Pb(C_2H_3O_2)_2{\bullet}3H_2O$
$C_4H_6O_4Pb{\bullet}3H_2O$
F.W. 379.3
[6080-56-4]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.0-103.0%
Insoluble Matter	≤0.01%
Chloride	≤5ppm
Nitrate and Nitrite (as NO_3)	≤0.005%

*Trademark. See Trademark Reference.

Copper	≤0.002%
Iron	≤0.001%
Sodium	≤0.01%
Potassium	≤0.005%
Calcium	≤0.005%

Lead Acetate Test Paper

Quantity	Packaging	Cat. No.	Each	Case of
24x100 strips	Vial	**14-862**	21.86	- - - -

Turns black in presence of inorganic sulfides.

Lead Nitrate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**L62-100**	54.43	6/252.05
500g	Amber Glass	**L62-500**	158.67	6/742.54

Lead (II) Nitrate
$Pb(NO_3)_2$
F.W. 331.21
[10099-74-8]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Chloride	≤0.001%
Copper	≤0.002%
Iron	≤0.001%
Insoluble Matter	≤0.005%
Sodium	≤0.02%
Potassium	≤0.005%
Calcium	≤0.005%

Lecithin — Laboratory
Vegetable

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**03376-250**	76.84	6/360.44

Phosphatidylcholine
[8002-43-5]
Recommended storage: Refrigerate

ChemAlert® STORAGE gray

Lecithin
Source: Soybean
Granular

Quantity	Packaging	Cat. No.	Each	Case of
1kg	Glass Bottle	**AC41310-0010**	105.80	- - - -
250g	Glass Bottle	**AC41310-2500**	49.80	- - - -

[8002-43-5]

▸***Leucoline*** *see Quinoline Q35.*

▸***D-Levulose*** *see D-Fructose and USP grade L96.*

▸***Light Green N*** *see Malachite Green Oxalate M290.*

Light Green SF, Yellowish — Certified Biological Stain

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**03382-25**	128.37	6/603.93

Acid Green 5
$C_{37}H_{34}N_2Na_2O_9S_3$
F.W. 792.85
Certified for use in histology and cytology.
C.I. 42095
[5141-20-8]

ChemAlert® STORAGE gray

▸***Light Liquid Petrolatum*** *see Mineral Oil, Light O121.*

Ligroine, Heptane, 100% — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**03387-4**	165.64	4/464.99

Petroleum Ether
[142-82-5 (Heptane, 100%)]

SOLVENT ChemAlert® STORAGE red

Product Specifications

Boiling Range	90°-110°C

▸***Ligroine, B.P. 35°–60°C*** *see Petroleum Ether.*

▸***Lime*** *see Calcium Oxide, Certified grade C117.*

▸***Lime, Burnt*** *see Calcium Oxide, Certified grade C117.*

▸***Lime, Chlorinated*** *see Calcium Hypochlorite C100.*

▸***Lime, Quick*** *see Calcium Oxide, Certified grade C117.*

▸***Lime, Slaked*** *see Calcium Hydroxide, Certified grade C97.*

▸***Lime, Unslaked*** *see Calcium Oxide, Certified grade C117.*

(+)-Limonene, 97%
Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
5mL	Glass Bottle	**AC17939-0050**	17.80	- - - -
500mL	Glass Bottle	**AC17939-5000**	43.20	- - - -

D-Limonene
$C_{10}H_{16}$
F.W. 136.24
Melting point: -74°C
Boiling point: 175.4-176°C (at 760mmHg)
Flash point: 48°C
Density: 0.8405g/mL
n: 1.47-1.474
alpha: +106 (c=1, CH_3OH)
[5989-27-5]

Linear Alkybenzene Sulfonate (LAS) Solution
1 mL = 1 mg LAS

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**4350-4**	27.69	- - - -

1000 ppm LAS

Liquid Scintillation Cocktails *Fisher Scientific offers eleven premium liquid scintillation cocktails that are nonflammable, nontoxic and biodegradable. They allow reduction in the amount of cocktail required for counting, while also provide high counting efficiency, outstanding quench resistance and high sample holding capacity. For ordering information and recommended usages for the high-performance PXE (Phenylxylylethane)-based cocktails—ScintiSafe* Plus 50%, ScintiSafe* 30% and ScintiSafe* Gel—or the economical LAB (Linear Alkylbenzene)-based cocktails—ScintiSafe* Econo F, ScintiSafe* Econo 1 and ScintiSafe* Econo 2, Scintirerse* I, II, BD,E and LC see Scintillaton Cocktails.*

Lithium Aluminium Hydride, 95%

In Resealable Tin Cans

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
10g	Tin Can	**AC33210-0100**	34.00	- - - -
100g	Tin Can	**AC33210-1000**	148.20	- - - -

LAH, Lithium Tetrahydridoaluminate

$LiAlH_4$

H_4AlLi

F.W. 37.95

Flash point: -17°C

Density: 0.9g/mL

[16853-85-3]

Lithium Bromide — Laboratory

Fine Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**L117-500**	156.12	6/728.86

LiBr

F.W. 86.85

[7550-35-8]

ChemAlert® STORAGE gray

Lithium Carbonate — Certified ACS

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**L119-500**	185.26	6/869.05

Carbonic Acid Lithium Salt

Li_2CO_3

F.W. 73.89

Melting point: 618°C

[554-13-2]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble in Dilute HCl	≤0.01%
Chloride	≤0.005%
Nitrate	≤5ppm
Sulfur Compounds (as SO_4)	≤0.2%
Heavy Metals (as Pb)	≤0.002%
Iron	≤0.002%
Calcium	≤0.01%
Potassium	≤0.01%
Sodium	≤0.1%

Lithium Chloride — Certified

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**L121-100**	75.39	6/338.67
500g	Poly Bottle	**L121-500**	169.99	6/773.16

LiCl

F.W. 42.39

[7447-41-8]

ChemAlert® STORAGE gray

Product Specifications

Assay	≥98.5%
Insoluble in Dilute HCl	≤0.01%
Iron	≤0.001%
Calcium	≤0.02%
Sodium	≤0.20%
Water	≤1%
Alkalinity (as Li_2CO_3)	≤0.03%
Sulfate(SO_4)	≤0.01%

Lithium Chloride — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**L120-500**	149.25	6/700.11

LiCl

F.W. 42.39

[7447-41-8]

ChemAlert® STORAGE gray

Lithium Dodecyl Sulfate *see Fisher BioReagents* BP1309.*

Lithium Hydroxide Anhydrous — Laboratory

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**L128-500**	173.12	6/812.11

LiOH

F.W. 23.95

[1310-65-2]

ChemAlert® STORAGE white

Lithium Hydroxide Monohydrate — Laboratory

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**L127-500**	89.02	6/412.59

$LiOH{\bullet}H_2O$

F.W. 41.96

[1310-66-3]

ChemAlert® STORAGE white

Lithium Metaborate, Fusion Flux

Crystalline

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
1kg	Poly Bottle	**FF-0610**	159.13	- - - -
1kg	Poly Bottle	**FF-0611**	216.24	- - - -

For Sample Preparation

Manufactured for SPEX CertiPrep* by Claisse*.

With Certificate of Analysis.

Product Specifications

Grade	Cat. No
Pure	FF-0610
Ultrapure	FF-0611

Lithium Nitrate — Certified

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**L132-500**	191.68	6/862.55

$LiNO_3$

F.W. 68.95

[7790-69-4]

ChemAlert® STORAGE yellow

Product Specifications

Insoluble Matter	≤0.010%
Water	≤4.0%
Acidity (as HNO_3)	≤0.01%
Alkalinity (as Li_2CO_3)	≤0.05%
Chloride	≤0.002%
Phosphate	≤0.001%
Sulfate	≤0.06%
Ammonia	≤0.005%

*Trademark. See Trademark Reference.

Prices subject to change.

Barium	≤0.005%
Other Alkalis	≤0.5%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%
Magnesium	≤0.010%
Calcium	≤0.030%

Lithium Tetraborate, Fusion Flux
Crystalline

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
1kg	Poly Bottle	**FF-0600**	99.65	- - - -
1kg	Poly Bottle	**FF-0601**	186.80	- - - -

For sample preparation
Manufactured for SPEX CertiPrep* by Claisse*.
With Certificate of Analysis.

Product Specifications

Grade	**Cat. No.**
Pure	FF-0600
Ultrapure	FF-0601

Litmus Test Paper, Blue
Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
24x100 strips	Vial	**14-844**	40.65	- - - -

[1393-92-6]

ChemAlert® STORAGE **gray**

Product Specifications

Ash, per 3 sq. cm	≤0.4mg
Phosphate (color)	To pass test
Rosin Acids (color)	To pass test
Sensitivity	To pass test

Litmus Test Paper, Neutral
Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
24x100 strips	Vial	**14-850**	41.81	- - - -

[1393-92-6]

ChemAlert® STORAGE **gray**

Product Specifications

Ash, per 3 sq. cm	≤0.4mg
Phosphate (color)	To pass test
Sensitivity	To pass test

Litmus Test Paper, Red
Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
24x100 strips	Vial	**14-845**	42.92	- - - -

[1393-92-6]

ChemAlert® STORAGE **gray**

Product Specifications

Ash, per 3 sq. cm	≤0.4mg
Phosphate (color)	To pass test
Sensitivity	To pass test

▸***Lye*** *see Potassium Hydroxide P250; P251 and Sodium Hydroxide S318.*

▸***Magenta*** *see Fuchsin Basic F98.*

▸***Magnesia*** *see Magnesium Oxide, Certified ACS grade M51.*

▸***Magnesia, Calcined, USP*** *see Magnesium Oxide, Light Powder, USP/FCC grade M3494.*

Magnesium
0.006" Thick Ribbon

Quantity	Packaging	Cat. No.	Each	Case of
1 oz.	Envelope	**M8-1OZ**	112.82	6/507.69

Mg
At. Wt. 24.31
(0.015cm) thick
[7439-95-4]

ChemAlert® STORAGE **red**

Magnesium
Turnings for Grignard Reaction

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**M11-500**	183.12	6/854.89

Mg
At. Wt. 24.31
[7439-95-4]

ChemAlert® STORAGE **red**

Magnesium Acetate Tetrahydrate
Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**M13-500**	175.04	6/821.10

Acetic Acid Magnesium Salt
$Mg(CH_3CO_2)_2 \cdot 4H_2O$
$C_4H_6O_4Mg \cdot 4H_2O$
F.W. 214.45
[16674-78-5]

ChemAlert® STORAGE **gray**

Product Specifications
Actual Lot Analysis is reported on label.

Assay	98.0-102.0%
Insoluble Matter	≤0.005%
Chloride	≤0.001%
pH of a 5% solution at 25°C	6.5-8.5
Sulfate	≤0.005%
Barium	≤0.001%
Calcium	≤0.01%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Manganese	≤0.001%
Potassium	≤0.005%
Sodium	≤0.005%
Strontium	≤0.005%

▸***Magnesium Acetate Tetrahydrate*** *see also Fisher BioReagents* BP215.*

Magnesium Carbonate
USP/FCC
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**M27-500**	113.22	4/397.41
2.5kg	Poly Bottle	**M27-212**	323.01	4/969.01

$MgCO_3$
F.W. 84.31
[546-93-0]

ChemAlert® STORAGE **gray**

Product Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Microbial Limit (E. coli)	Negative
Soluble Salts	≤1.0%
Acid Insoluble Substances	≤0.05%
Arsenic	≤4ppm
Calcium	≤0.45%
Heavy Metals	≤0.003%
Iron	≤0.02%
Assay (as MgO)	40.0-43.5%
Meets FCC Chemical Specifications	
Assay (as MgO)	40.0-43.5%
Acid Insoluble Substances	≤0.05%

Calcium Oxide	≤0.6%
Lead (Pb) (APDC Extraction Method)	≤2mg/kg
Soluble Salts	≤1%

Magnesium Carbonate Basic Hydrate

Certified

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**M29-100**	102.17	6/442.66
500g	Amber Glass	**M29-500**	360.42	4/1121.79

$MgCO_3 \cdot Mg(OH)_2 \cdot nH_2O$
[39409-82-0]

ChemAlert® STORAGE gray

Product Specifications

Insoluble in Dilute HCl	≤0.015%
Chloride	≤0.010%
Nitrate	≤0.003%
Alkali Carbonate	To pass test
Barium	≤0.005%
Calcium	≤0.20%
Heavy Metals (as Pb)	≤0.002%
Iron	≤0.005%
Water-soluble Substances	≤0.40%
Zinc	≤0.010%
Sulfur Compounds (as SO_4)	≤0.020%

Magnesium Chloride Hexahydrate

USP/FCC

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**M35-500**	107.87	6/506.00
2.5kg	Poly Bottle	**M35-212**	373.89	4/1155.27
12kg	Poly Pail	**M35-12**	902.16	- - - -

$MgCl_2 \cdot 6H_2O$
F.W. 203.30
[7791-18-6]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test

Meets USP Chemical Specifications

Assay ($MgCl_2 \cdot 6H_2O$)	98.0-101.0%
Barium	To pass test
Calcium	≤0.01%
Heavy Metals (as Pb)	≤0.001%
Insoluble Matter	≤0.005%
Organic Volatile Impurities	Meets requirements
pH (1 in 20 Solution) at 25°C	4.5-7.0
Potassium	To pass test
Sulfate	≤0.005%
Bacterial Endotoxins	Report

Meets FCC Chemical Specifications

Assay ($MgCl_2 \cdot 6H_2O$)	99.0-105.0%
Ammonium	≤0.005%
Lead	≤4mg/kg
Sulfate	≤0.03%

Magnesium Chloride Hexahydrate

Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**M33-500**	101.67	6/471.24
3kg	Poly Pail	**M33-3**	396.03	- - - -

$MgCl_2 \cdot 6H_2O$
F.W. 203.30
[7791-18-6]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	99.0-102.0%
Insoluble Matter	≤0.005%
Nitrate	≤0.001%
Phosphate	≤5ppm
Sulfate	≤0.002%
Ammonium	≤0.002%
Barium	≤0.005%
Calcium	≤0.01%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Manganese	≤5ppm
Potassium	≤0.005%
Sodium	≤0.005%
Strontium	≤0.005%

Magnesium Chloride Solution, 51% (v/v)

Aqueous Solution
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**4470-16**	47.87	- - - -
1L	Poly Natural	**4470-32**	71.93	- - - -
4L	Poly Natural	**4470-1**	93.48	- - - -

[7791-18-6 (Magnesium Chloride Hexahydrate)]
[7732-18-5 (Water, Deionized)]

Magnesium Hydroxide

USP/FCC

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**M342-500**	145.08	6/648.59

Milk of Magnesia
$Mg(OH)_2$
F.W. 58.32
[1309-42-8]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test

Meets USP Chemical Specifications

Microbial Limits (E. coli)	Negative
Loss on Drying	≤2.0%
Loss on Ignition	30-33%
Soluble Salts	To pass test
Carbonate	To pass test
Calcium (Ca)	≤1.5%
Heavy Metals (as Pb)	≤20µg/g
Lead (Pb)	≤0.001%
Assay (Dried Basis)	95.0-100.5%

Meets FCC Chemical Specifications

Assay (Dried Basis)	95.0-100.5%
Alkalies (Free) and Soluble Salts	To pass test
Calcium Oxide	≤1%
Lead (Pb) (APDC Extraction Method)	≤2mg/kg
Loss on Drying	≤2.0%
Loss on Ignition	30-33%

Magnesium Nitrate Hexahydrate

Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**M46-500**	76.50	6/343.65
2.5kg	Glass	**M46-212**	310.61	4/971.40

$Mg(NO_3)_2 \cdot 6H_2O$
F.W. 256.41
[13446-18-9]

ChemAlert® STORAGE yellow

Product Specifications

Actual Lot Analysis is reported on label.

Assay	98.0-102.0%
Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	5.0 to 8.2
Chloride	≤0.001%
Phosphate	≤5ppm
Sulfate	≤0.005%
Ammonium	≤0.003%
Barium	≤0.005%
Calcium	≤0.01%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Manganese	≤5ppm

Potassium	≤0.005%
Sodium	≤0.005%
Strontium	≤0.005%

Magnesium Oxide — USP/FCC
Heavy Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**M68-500**	141.17	4/388.72
3kg	Poly Pail	**M68-3**	223.06	----

MgO
F.W. 40.30
[1309-48-4]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Bulk Density	(to be reported)
Loss on Ignition	≤10.0%
Free Alkali and Soluble Salts	≤2.0%
Acid-insoluble Substances	≤0.1%
Calcium (Ca)	≤1.1%
Heavy Metals (as Pb)	≤20µg/g
Iron (Fe)	≤0.05%
Assay (After Ignition)	96.0-100.5%
Meets FCC Chemical Specifications	
Assay (After Ignition)	96.0-100.5%
Acid-insoluble Substances	≤0.1%
Alkalies (Free) and Soluble Salts	To pass test
Arsenic (As)	≤3mg/kg
Calcium Oxide	≤1.5%
Lead (Pb)	≤4mg/kg
Loss on Ignition	≤10.0%

Magnesium Oxide — USP/FCC
Light Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Glass	**M3494-500**	163.18	4/502.64

Magnesia, Calcined
MgO
F.W.40.30
[1309-48-4]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Bulk Density	(to be reported)
Meets USP Chemical Specifications	
Loss on Ignition	≤10.0%
Free Alkali and Soluble Salts	≤2.0%
Acid-insoluble Substances	≤0.1%
Calcium (Ca)	≤1.1%
Heavy Metals (as Pb)	≤20µg/g
Iron (Fe)	≤0.05%
Assay (After Ignition)	96.0-100.5%
Meets FCC Chemical Specifications	
Assay (After Ignition)	96.0-100.5%
Acid-insoluble Substances	≤0.1%
Alkalies (Free) and Soluble Salts	To pass test
Arsenic (As)	≤3mg/kg
Calcium Oxide	≤1.5%
Lead (Pb)	≤4mg/kg
Loss on Ignition	≤10.0%

Magnesium Oxide — Electronic
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**M300-500**	168.38	6/780.42

MgO
F.W.40.30
[1309-48-4]

ChemAlert® STORAGE gray

Magnesium Oxide — Certified ACS
Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**M51-100**	161.47	6/757.46
500g	Amber Glass	**M51-500**	697.78	6/2826.76

Magnesia
MgO
F.W. 40.30
[1309-48-4]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥95.0%
Insoluble in Dilute HCl	≤0.02%
Soluble in H_2O	≤0.4%
Loss on Ignition	≤2.0%
Chloride	≤0.01%
Nitrate	≤0.005%
Sulfate and Sulfite (as SO_4)	≤0.02%
Barium	≤0.005%
Calcium	≤0.05%
Heavy Metals (as Pb)	≤0.003%
Iron	≤0.01%
Manganese	≤5ppm
Potassium	≤0.005%
Sodium	≤0.5%
Strontium	≤0.005%

Magnesium Perchlorate Anhydrous — Certified

Quantity	Packaging	Cat. No.	Each	Case of
2.5kg	Poly Bottle	**M54-212**	637.92	4/2368.53

Perchloric Acid Magnesium Salt, Desiccant
$Mg(ClO_4)_2$
F.W. 223.21
[10034-81-8]

ChemAlert® STORAGE yellow

Product Specifications

Suitability for Moisture Absorption	To pass test

▸**Magnesium Silicate** *see Florisil* Adsorbent, 60–100 Mesh F100, under Sorbents.*

Magnesium Sulfate Anhydrous — Certified
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**M65-500**	107.46	6/501.69
3kg	Poly Bottle	**M65-3**	428.59	4/1333.94
100 lb.	Fiber Drum	**M65-100LB**	1120.28	----

Bitter Salt
$MgSO_4$
F.W. 120.37
[7487-88-9]

ChemAlert® STORAGE gray

Product Specifications

Chloride	≤0.005%
Nitrate	≤0.005%
Ammonia	≤0.005%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%
Manganese	≤0.001%
Water	≤2.0%
Calcium	≤0.04%

Magnesium Sulfate Heptahydrate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**M63-500**	116.71	6/521.66
3kg	Poly Bottle	**M63-3**	438.99	4/1372.92
50kg	Fiber Drum	**M63-50**	2776.42	- - - -

$MgSO_4 \cdot 7H_2O$
F.W. 246.47
[10034-99-8]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	98.0-102.0%
Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	5.0 to 8.2
Chloride	≤5ppm
Nitrate	≤0.002%
Ammonium	≤0.002%
Calcium	≤0.02%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Manganese	≤5ppm
Potassium	≤0.005%
Sodium	≤0.005%
Strontium	≤0.005%

▸***Magnesium Sulfate Heptahydrate*** *see Fisher BioReagents* BP213.*

Magnesium Sulfate Heptahydrate 2.25% — APHA

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SM109-1**	47.81	6/229.67

For Biochemical Oxygen Demand.
[10034-99-8]

ChemAlert® STORAGE gray

Product Specifications

Concentration	2.2-2.3%
Color (APHA)	≤5

Malachite Green Oxalate — Certified Biological Stain

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**M290-25**	69.78	6/327.40

Basic Green 4
$C_{46}H_{50}N_4 \cdot 2HC_2O_4 \cdot C_2H_2O_4$
F.W. 927.03
For use in histology, bacteriology (staining).
C.I. 42000
[2437-29-8]

ChemAlert® STORAGE blue

Maleic Acid — Reagent

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**03417-500**	97.19	6/434.37

cis-2-Butenedioic Acid
$HO_2CCH \cdot CHCO_2H$
$C_4H_4O_4$
F.W. 116.07
[110-16-7]

ChemAlert® STORAGE white

Product Specifications

Melting Point	134°-139°C

Malonic Acid — Reagent
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**A170-100**	200.62	6/941.11

Methanedicarboxylic Acid, 1,3-Propanedioic Acid
$HOOCCH_2COOH$
$C_3H_4O_4$
F.W. 104.06
[141-82-2]

ChemAlert® STORAGE gray

Product Specifications

Melting Point	133°-137°C

▸***D-(+)-Maltose Monohydrate*** *see also Fisher BioReagents* BP684.*

Manganese Chloride Tetrahydrate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**M87-100**	42.86	6/201.07
500g	Amber Glass	**M87-500**	155.30	6/728.48

Manganese (II) Chloride
$MnCl_2 \cdot 4H_2O$
F.W. 197.91
[13446-34-9]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	98.0-101.0%
Insoluble Matter	≤0.005%
Sulfate	≤0.005%
Zinc	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Calcium	≤0.005%
Magnesium	≤0.005%
Potassium	≤0.01%
Sodium	≤0.05%
pH of a 5% Solution at 25°C	3.5 to 6.0

Manganese Sulfate Monohydrate — USP/FCC
Granular Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**M114-500**	172.09	6/807.27
2.5kg	Poly Bottle	**M114-212**	522.17	- - - -
12kg	Poly Pail	**M114-12**	1086.80	- - - -

Manganese (IV) Sulfate Monohydrate
$MnSO_4 \cdot H_2O$
F.W. 169.02
[10034-96-5]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Sieve Test No 20 U.S. Std.	5% Max. retained

Meets USP Chemical Specifications

Loss on Ignition	10.0-13.0%
Substances Not Precipitated by $(NH_4)S$	≤0.5%
Organic Volatile Impurities	Meets requirements
Assay ($MnSO_4 \cdot H_2O$)	98.0-102.0%

Meets FCC Chemical Specifications

Assay ($MnSO_4 \cdot H_2O$)	98.0-102.0%
Lead (Pb)	≤4mg/kg
Loss on Heating	10.0-13.0%
Selenium	≤0.003%

Manganese Sulfate Monohydrate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**M113-500**	176.90	6/829.85
3kg	Poly Bottle	**M113-3**	734.80	4/2298.01

Manganous Sulfate, Manganese (II) Sulfate Monohydrate
$MnSO_4{\cdot}H_2O$
F.W. 169.02
[10034-96-5]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	98.0-101.0%
Insoluble Matter	≤0.01%
Loss on Ignition	10.0-12.0%
Chloride	≤0.005%
Heavy Metals (as Pb)	≤0.002%
Iron	≤0.002%
Nickel	≤0.02%
Zinc	≤0.005%
Calcium	≤0.005%
Magnesium	≤0.005%
Potassium	≤0.01%
Sodium	≤0.05%
Substances Reducing Permanganate	To pass test
pH of a 5% Solution at 25°C	2.0 to 4.0

Manganese (II) Sulfate Solution — APHA

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SM20-500**	50.07	6/250.07
1L	Amber Glass	**SM20-1**	103.89	6/477.34

For determination of dissolved oxygen.
[7785-87-7]

ChemAlert® STORAGE gray

Product Specifications

Specific Gravity at 25°C	1.26 to 1.28

Manganous Sulfate Solution, 364 g/L
Clear, pink liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**4620-16**	28.75	- - - -
1L	Poly Natural	**4620-32**	44.67	- - - -
4L	Poly Natural	**4620-1**	122.01	- - - -

Manganese (II) Sulfate solution
[10034-96-5 (Manganous Sulfate Monohydrate)]
[7732-18-5 (Water, Deionized)]

▸**Manganous Sulfate** *see Manganese Sulfate Monohydrate M114.*

▸**Manna Sugar** *see D-Mannitol M120 and M124.*

▸**Mannite** *see D-Mannitol M120 and M124.*

D-Mannitol — USP
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**M124-500**	165.06	6/731.77
2.5kg	Poly Bottle	**M124-212**	371.19	- - - -
12kg	Fiber Drum	**M124-12**	962.80	- - - -
50kg	- - - -	**M124-50**	2273.89	- - - -

Mannite, Manna Sugar
$C_6H_{14}O_6$
F.W. 182.17
[69-65-8]

Product Specifications

Assay (dried basis)	96.0-101.5%
Acidity	To pass test
Arsenic	≤1ppm
Chloride	≤0.007%
Loss on Drying	≤0.3%
Melting Range	164°-169°C
Reducing Sugars	To pass test
Specific Rotation	+137°-+145°
Sulfate	≤0.01%

D-Mannitol — Certified ACS
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**M120-500**	132.63	6/614.74
3kg	Poly Pail	**M120-3**	358.06	- - - -
60kg	Fiber Drum	**M120-60**	1280.93	- - - -

Mannite, Manna Sugar
$C_6H_{14}O_6$
F.W. 182.17
[69-65-8]

Product Specifications
Actual Lot Analysis is reported on label.

Specific Rotation $[\alpha]_D^{25}$	+23.3° to +24.3°
Insoluble Matter	≤0.010%
Loss on Drying at 105°C	≤0.050%
Residue after Ignition	≤0.010%
Reducing Sugars	To pass test
Heavy Metals (as Pb)	≤5ppm
Titratable Acid	≤0.0008mEq/g

Marble Chips

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Amber Glass	**M123-3**	118.32	4/372.12

Calcium Carbonate
For Kipp generator.
[471-34-1]

ChemAlert® STORAGE gray

2-Mercaptoethanol — Reagent

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Glass/Poison Pack	**03446I-100**	64.57	- - - -

2-Hydroxyethanethiol, β-Mercaptoethanol, Thioglycol
$HSCH_2CH_2OH$
C_2H_6OS
F.W. 78.13
[60-24-2]

ChemAlert® STORAGE blue

Product Specifications

Assay	≥98%

Mercuric Acetate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
50g	Glass/ Poison Pk	**M143I-50**	116.74	- - - -
100g	Glass/ Poison Pk	**M143I-100**	159.38	- - - -

Acetic Acid Mercury Salt, Mercury (II) Acetate
$(CH_3COO)_2Hg$
$C_4H_6HgO_4$
F.W. 318.68
[1600-27-7]

ChemAlert® STORAGE blue

Hg

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥98.0
Insoluble Matter	≤0.01%
Residue after Reduction	≤0.02%
Chloride	≤0.005%
Nitrate	≤0.005%
Sulfate	≤0.005%
Other Heavy Metals (as Pb)	≤0.002%
Iron	≤0.001%
Mercurous Mercury (as Hg)	≤0.4%

Mercuric Chloride

Certified ACS

Crystalline or Powder

Quantity	Packaging	Cat. No.	Each	Case of
50g	Poly Bottle/Poison Pack	**M155I-50**	105.75	- - - -
100g	Poly Bottle/Poison Pk	**M155I-100**	169.15	- - - -
500g	Poly Bottle/Poison Pk	**M155I-500**	506.47	- - - -
3kg	Bag in Box/Poison Pk	**M155I-3**	2140.77	- - - -

Mercury Bichloride, Mercury (II) Chloride
$HgCl_2$
F.W. 271.50
[7487-94-7]

ChemAlert® STORAGE blue

Hg

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.5%
Residue after Reduction	≤0.02%
Solution in Ethyl Ether (2g/60mL)	To pass test
Iron	≤0.002%

Mercuric Iodide

Certified ACS

Red

Quantity	Packaging	Cat. No.	Each	Case of
50g	Amber Glass/Poison Pack	**M166I-50**	81.00	- - - -
100g	Amber Glass/Poison Pack	**M166I-100**	117.73	- - - -
500g	Amber Glass/Poison Pack	**M166I-500**	496.17	- - - -

Mercury (II) Biniodide, Red Mercury (II) Iodide
HgI_2
F.W. 454.40
[7774-29-0]

ChemAlert® STORAGE blue

Hg

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Solubility in Potassium Iodide Solution	To pass test
Mercurous Mercury (as Hg)	≤0.1%
Soluble Mercury Salts (as Hg)	≤0.05%

Mercuric Nitrate Monohydrate

Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**M168-100**	194.40	6/874.78
500g	Amber Glass	**M168-500**	383.45	6/1798.83

Mercury (II) Nitrate Monohydrate
$Hg(NO_3)_2\bullet H_2O$
F.W. 342.62
[7783-34-8]

ChemAlert® STORAGE yellow

Hg

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥98.0%
Residue after Reduction	≤0.01%
Chloride	≤0.002%
Sulfate	≤0.002%
Iron	≤0.001%

Mercuric Nitrate, 0.141N

APHA/EPA for Chloride
1mL = 5mg Cl

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass	**4740-16**	31.40	- - - -
1L	Glass	**4740-32**	51.97	- - - -
4L	Glass	**4740-1**	114.78	- - - -

[7783-34-8]
[7732-18-5]

Hg

Mercuric Oxide, Red

Certified ACS

Powder

Quantity	Packaging	Cat. No.	Each	Case of
50g	Amber Glass/Poison Pack	**M174I-50**	122.73	- - - -
100g	Amber Glass/Poison Pack	**M174I-100**	172.32	- - - -
500g	Amber Glass/Poison Pack	**M174I-500**	543.75	- - - -

Red Precipitate, Mercury (II) Oxide
HgO
F.W. 216.59
C.I. 77760
[21908-53-2]

ChemAlert® STORAGE blue

Hg

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble in Dilute HCl	≤0.03%
Residue after Reduction	≤0.025%
Chloride	≤0.025%
Sulfate	≤0.015%
Nitrogen Compounds (as N)	≤0.005%
Iron	≤0.005%

Mercuric Sulfate

Certified ACS

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass/Poison Pack	**M190I-100**	180.75	- - - -
500g	Amber Glass/Poison Pack	**M190I-500**	632.94	- - - -

Mercury Bisulfate, Mercury (II) Sulfate
$HgSO_4$
F.W. 296.65
[7783-35-9]

ChemAlert® STORAGE blue

Hg

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥98.0%
Chloride	≤0.003%
Nitrate	To pass test (about 0.005%)
Iron	≤0.005%
Mercurous Mercury (as Hg)	≤0.15%
Residue after Reduction	≤0.02%

Mercurous Nitrate Dihydrate

Certified ACS

Crystalline or Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**M169-500**	464.25	6/2151.78

Mercury Subnitrate, Mercury (I) Nitrate
$Hg_2(NO_3)_2\bullet 2H_2O$
F.W. 561.22
[14836-60-3]

ChemAlert® STORAGE yellow

Hg

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥97.0%
Insoluble Matter	≤0.005%
Residue after Reduction	≤0.01%
Sulfate	≤0.005%
Chloride	≤0.005%
Iron	≤0.001%
Mercuric Mercury (as Hg)	≤1.0%

Mercury
Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
1 lb.	Poly Bottle	**M141-1LB**	410.02	6/1891.26
6 lb.	Poly Bottle	**M141-6LB**	1362.24	4/4188.87

Quicksilver
Hg
At. Wt. 200.59
[7439-97-6]

ChemAlert® STORAGE white
Hg

Product Specifications

Appearance	To pass test
Nonvolatile Matter	≤5ppm

Mercury
Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
0.25 lb.	Poly Bottle	**M140-14LB**	122.35	6/571.20
1 lb.	Poly Bottle	**M140-1LB**	395.32	6/1804.09
5 lb.	Poly Bottle	**M140-5LB**	1190.20	4/3669.37

Hg
At. Wt. 200.59
[7439-97-6]

ChemAlert® STORAGE white
Hg

Mercury
Technical

Quantity	Packaging	Cat. No.	Each	Case of
1 lb.	Poly Bottle	**M139-1LB**	359.64	6/1666.92
5 lb.	Poly Bottle	**M139-5LB**	1122.49	4/3493.65

Hg
At. Wt. 200.59
[7439-97-6]

ChemAlert® STORAGE white
Hg

▸***Mercury(I) Compounds*** *see also Mercurous.*

▸***Mercury(II) Compounds*** *see also Mercuric.*

▸***Mercury Bichloride*** *see Mercuric Chloride M155I.*

▸***Mercury (II) Biniodide, Red*** *see Mercuric Iodide, Red M166I.*

▸***Mercury Bisulfate*** *see Mercuric Sulfate M190I.*

▸***Mercury Subnitrate*** *see Mercurous Nitrate Dihydrate M169.*

Metab* Indicator Tablets
Certified

Quantity	Packaging	Cat. No.	Each	Case of
100 tablets	Amber Glass	**M293**	65.47	6/317.05

A convenient tablet form of Methyl Thymol Blue, used for EDTA titrimetric procedures. Color change is from deep blue to light gray.

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Suitability as a Chelometric Indicator	To pass test
Dye Content	To pass test

▸***Metaphosphoric Acid*** *see m-Phosphoric Acid A280.*

▸***Methanal*** *see Formaldehyde, Histology grade F75P USP grade F77 and Certified ACS grade F79.*

▸***Methanamide*** *see Formamide F84.*

▸***Methanecarboxylic Acid*** *see Acetic Acid.*

Methanedicarboxylic Acid *see Malonic Acid A170.*

▸***Methanoic Acid*** *see Formic Acid, 88% A118P.*

Methanol
GC Resolv*
For High-resolution Gas Chromatography
Suitable for Organic Residue Analysis

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A457-4**	180.25	4/505.09

Methyl Alcohol
CH_3OH
CH_4O
F.W. 32.04
Packaged under Nitrogen.
Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.
[67-56-1]

SOLVENT
ChemAlert® STORAGE red

Product Specifications

Assay	≥99.9%
Color (APHA)	≤5
ECD-responsive Substances (as Heptachlor Epoxide)†	
5ppt maximum peak or 50ppt total	
FID-responsive Substances (as Decane)†	
1ppb maximum peak or 10ppb total	
Formaldehyde	≤1ppm
Residue after Evaporation	≤1ppm
Titratable Acid	≤0.0002mEq/g
Water	≤0.05%

†After retention time of Toluene.

Methanol, 99.9% Min.
Optima* LC/MS
Also Meets ACS Specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A456-1**	69.79	6/332.50
4L	Amber Glass	**A456-4**	112.01	4/355.50

Methyl Alcohol
CH_3OH
CH_4O
F.W. 32.04
Suitable for LC/MS applications in Bio-Pharmaceutical, Drug Discovery, Peptide, and Protein analysis.
0.2 micron filtered.
Actual Lot Analysis reported on label; Certificate of Actual Lot Analysis available on request
[67-56-1]

Product Specifications

Assay (by GC)	≥99.9%
Water	≤0.02%
Residue after Evaporation	≤1ppm
Titratable acid, mEq/g	≤0.0003
Titratable acid, mEq/g	≤0.0002
LCMS Gradient Suitability	Passes Test
LCMS Positive Mode as Reserpine	≤50ppb
LCMS Negative Mode as Aldicarb	≤50ppb
Optical Absorbance (au):	
at 210nm	≤0.50
at 214nm	≤0.40
at 220nm	≤0.20
at 230nm	≤0.10
at 254nm	≤0.01
at 260nm	≤0.005
at 280nm	≤0.005
Trace Ionic Impurities	
Aluminum (Al)	≤10ppb
Barium (Ba)	≤10ppb
Cadmium (Cd)	≤10ppb
Calcium (Ca)	≤20ppb
Chromium (Cr)	≤10ppb
Cobalt (Co)	≤10ppb
Copper (Cu)	≤10ppb
Iron (Fe)	≤10ppb

Contd. on next page.

Contd. from previous page.

Lead (Pb)	≤10ppb
Magnesium (Mg)	≤10ppb
Manganese (Mn)	≤10ppb
Nickel (Ni)	≤10ppb
Potassium (K)	≤10ppb
Silver (Ag)	≤10ppb
Sodium (Na)	≤50ppb
Tin (Sn)	≤10ppb
Zinc (Zn)	≤10ppb

Methanol — Optima*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A454-1**	70.61	6/297.92
4L	Amber Glass	**A454-4**	108.97	4/302.81

Also available in recyclable FisherPak and NOWPak* containers.*

SOLVENT

STORAGE red

Methyl Alcohol

CH_3OH

CH_4O

F.W. 32.04

0.2 micron filtered.

Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.

[67-56-1]

Product Specifications

Assay (by GC)	≥99.9%
Color (APHA)	≤5
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤10ng/L
Fluorescence Background (as Quinine Sulfate)	≤1ppb
Water	≤0.07%
Residue after Evaporation	≤1ppm
LC Gradient Suitability at 214 and 254nm	To pass test
Refractive Index at 25°C	1.3260 to 1.3300
Titratable Acid	≤0.0003mEq/g
Titratable Base	≤0.0002mEq/g
Solubility in H_2O	To pass test
Substances Darkened by H_2SO_4	To pass test
Substances Reducing Permanganate	To pass test
Carbonyl Compounds (each of Acetone, Formaldehyde and Acetaldehyde)	≤0.001%
Optical Absorbance:	
at 205nm	≤1.00
at 220nm	≤0.23
at 230nm	≤0.11
at 254nm	≤0.01

Packaged under Nitrogen. Submicron Filtered.

Methanol — HPLC

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A452-1**	50.30	6/215.20
1L	Glass/Safe-Cote*	**A452SK-1**	65.76	6/281.56
4L	Amber Glass	**A452-4**	103.51	4/262.36
4L	Glass/Safe-Cote	**A452SK-4**	104.82	4/299.07
19L	NOWPak* (Plastic Exterior)	**A452N1-19**	335.94	- - - -

Also available in recyclable FisherPak containers.*

SOLVENT

STORAGE red

Methyl Alcohol

CH_3OH

CH_4O

F.W. 32.04

0.2 micron filtered.

[67-56-1]

Maximum Limits of Impurities

Assay	≥99.9%
Color (APHA)	≤5
Refractive Index at 25°C	1.3260-1.3300
Residue after Evaporation	≤3ppm
Solubility in H_2O	To pass test
Substances Darkened by H_2SO_4	To pass test
Substances Reducing Permanganate	To pass test
Water	≤0.1%
Titratable Acid	≤0.0003mEq/g
Titratable Base	≤0.0002mEq/g
LC Gradient Suitability	To pass test
Carbonyl Compounds (each of Acetone, Formaldehyde and Acetaldehyde)	≤0.001%
Optical Absorbance:	
at 205nm	≤1.00
at 220nm	≤0.30
at 230nm	≤0.15
at 254nm	≤0.025

Methanol, 99.9% — Extra Dry

Water <50 ppm

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC32695-1000**	19.80	- - - -
250mL	Septum Bottle	**AC32695-2500**	35.52	- - - -
1L	Septum Bottle	**AC32695-0010**	34.40	- - - -

Methyl Alcohol

NEW

CH_3OH

CH_4O

F.W. 32.04

Melting point: -98°C

Boiling point: 64.7°C (at 760mmHg)

Flash point: 12°C

Density: 0.791g/mL

n: 1.328-1.33

[67-56-1]

Methanol, 99.8% — Extra Dry with Molecular Sieves

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC36439-1000**	20.50	- - - -
1L	Septum Bottle	**AC36439-0010**	34.90	- - - -

Methyl Alcohol

NEW

CH_3OH

CH_4O

F.W.32.04

Melting point: -98°C

Boiling point: 64.7°C (at 760mmHg)

Flash point: 12°C

Density: 0.791g/mL

n: 1.328-1.33

[67-56-1]

Methanol, 99.8%

Anhydrous

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AcroSeal*	**AC61040-1000**	19.50	6/99.07
1L	AcroSeal	**AC61040-0010**	33.30	6/169.58

Methyl Alcohol

NEW

CH_4O

F.W. 32.04

Melting point: -98°C

Boiling point: 64.7°C (at 760mmHg)

Flash point: 12°C

Density: 0.791g/mL

n: 1.328-1.33

[67-56-1]

Methanol — Pesticide

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A450-4**	124.23	4/328.04

Methyl Alcohol
CH_3OH
CH_4O
F.W. 32.04
[67-56-1]

SOLVENT red

Maximum Limits of Impurities

Color (APHA)	≤5
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤20ng/L

Methanol
Purge and Trap Suitable for Volatile Organic Residue Analysis

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A453-500**	54.02	6/230.02
1L	Amber Glass	**A453-1**	86.55	6/366.81

Methyl Alcohol
CH_3OH
CH_4O
F.W. 32.04

SOLVENT red

Packaged under Nitrogen. Submicron Filtered.
Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.
[67-56-1]

Product Specifications

Assay (by GC)	≥99.9%
Residue after Evaporation	≤1ppm
Water	≤0.1%
Other Volatile Impurities	≤10ppb
Titratable Acid	≤0.0003mEq/g
Titratable Base	≤0.0002mEq/g

Methanol — NF

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A413-500**	25.58	6/115.12
4L	Amber Glass	**A413-4**	112.98	4/423.25
20L	Steel Pail	**A413-20**	230.94	- - - -
200L	Steel Drum	**A413-200**	1447.93	- - - -

Methyl Alcohol
CH_3OH
CH_4O
F.W.32.04
[67-56-1]

SOLVENT red

Product Specifications

Identification	To pass test
Assay (CH_3OH)	≥99.8%
Acetone and Aldehydes (as Acetone)	≤0.003%
Color (APHA)	≤5
Organic Volatile Impurities	To pass test
Nonvolatile Residue	≤0.001% w/w
Solubility in Water	To pass test
Readily Carbonizable Substances	To pass test
Readily Oxidizable Substances	To pass test
Acidity	To pass test
Alkalinity (as Ammonia)	≤3ppm
Water(H_2O)	≤0.1%
NF Protocol Required	To pass test

Methanol — Spectranalyzed*
Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A408-1**	66.42	6/281.63
4L	Amber Glass	**A408-4**	133.83	4/424.82
4L	Glass/Safe-Cote*	**A408SK-4**	151.09	4/479.82

Methyl Alcohol
CH_3OH
CH_4O
F.W. 32.04
For use in the ultraviolet range.
[67-56-1]

SOLVENT red

Product Specifications
Actual Lot Analysis is reported on label.

Assay (by GC)	≥99.8%
Color (APHA)	≤5
Water	≤0.1%
Residue after Evaporation	≤5ppm
Solubility in H_2O	To pass test
Carbonyl Compounds (each of Acetone, Formaldehyde and Acetaldehyde)	≤0.001%
Titratable Acid	≤0.0003mEq/g
Titratable Base	≤0.0002mEq/g
Substances Darkened by H_2SO_4	To pass test
Substances Reducing Permanganate	To pass test
Optical Absorbance:	
at 205nm	≤1.00
at 210nm	≤0.80
at 220nm	≤0.35
at 230nm	≤0.20
at 240nm	≤0.10
at 260nm	≤0.04
at 270nm	≤0.02
at 280-400nm	≤0.01

Ultraviolet Absorbance Curves are run against distilled water set at zero absorbance. Curves available on request.

Methanol — Electronic/Certified

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**TIA947-4**	91.63	4/285.52
200L	Plastic Drum	**TIA947P-200L**	587.99	- - - -

Methyl Alcohol
CH_3OH
CH_4O
F.W. 32.04
[67-56-1]

SOLVENT red

Product Specifications

Color (APHA)	≤5
Meets ACS Secification	Pass Test
Silver	≤10ppb
Aluminum	≤10ppb
Arsenic	≤10ppb
Gold	≤10ppb
Boron	≤10ppb
Barium	≤10ppb
Beryllium	≤10ppb
Bismuth	≤10ppb
Calcium	≤20ppb
Cadmium	≤10ppb
Cobalt	≤10ppb
Chromium	≤10ppb
Copper	≤10ppb
Iron	≤10ppb
Gallium	≤10ppb
Germanium	≤10ppb
Potassium	≤10ppb
Lithium	≤10ppb
Magnesium	≤10ppb
Manganese	≤10ppb

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Molybdenum	≤10ppb
Sodium	≤20ppb
Niobium	≤10ppb
Nickel	≤10ppb
Lead	≤10ppb
Tin	≤10ppb
Antimony	≤10ppb
Strontium	≤10ppb
Tantalum	≤10ppb
Titanium	≤10ppb
Thallium	≤10ppb
Vanadium	≤10ppb
Zinc	≤10ppb
Zirconium	≤10ppb
Assay (CH_3OH)	≥99.85%
Acetone (W/W)	≤0.003%
Permanganate Time	≥50 min.
Water (W/W)	≤0.05%

Methanol — Electronic

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**A947-4**	98.65	4/295.93

Also available in recyclable FisherPak and NOWPak* containers.*

SOLVENT

STORAGE red

Methyl Alcohol
CH_3OH
CH_4O
F.W. 32.04
[67-56-1]

Maximum Limits of Impurities

Assay	≥99.8%
Color (APHA)	≤5
Conductivity at 25°C	≤4.0µmhos/cm
Residue after Evaporation	≤0.001%
Solubility in Water	To pass test
Substances Reducing Permanganate	To pass test
Titratable Acid	≤0.0003mEq/g
Titratable Base	≤0.0002mEq/g
Water	≤0.1%
Aluminum	≤0.1ppm
Antimony	≤0.1ppm
Arsenic	≤0.1ppm
Boron	≤0.1ppm
Copper	≤0.1ppm
Gold	≤0.1ppm
Heavy Metals (as Pb)	≤1ppm
Iron	≤0.1ppm
Lead	≤0.1ppm
Nickel	≤0.1ppm
Silver	≤0.1ppm
Substances Darkened by H_2SO_4	Pass Test
Carbonyl Compounds (each of Acetone, Formaldehyde and Acetaldehyde)	≤0.001%

Methanol — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A412-500**	21.98	6/104.64
1L	Amber Glass	**A412-1**	32.04	6/149.83
4L	Amber Glass	**A412-4**	91.41	4/274.22
4L	Poly Bottle	**A412P-4**	90.46	4/271.39
4L	Glass/Safe-Cote*	**A412SK-4**	105.82	4/317.45
20L	Unichrome Steel Pail	**A434-20**	212.76	- - - -
20L	Unlined Steel Pail	**A412-20**	197.62	- - - -
200L	Steel Drum	**A412-200**	940.40	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

Methyl Alcohol
CH_4O
F.W. 32.04
Melting point: -98°C
Boiling point: 64.7 °C
Density: 0.791
[67-56-1]

Product Specifications

Actual Lot Analysis is reported on label.

Assay (by GC)	≥99.8%
Boiling Range:1mL to 95mL	≤1.0°C, including 64.6°C
95mL to dry point	≤1.0°C (To pass test)
Color (APHA)	≤5
Water	≤0.1%
Residue after Evaporation	≤10ppm
Solubility in H_2O	To pass test
Carbonyl Compounds (each of Acetone, Formaldehyde and Acetaldehyde)	≤0.001%
Titratable Acid	≤0.0003mEq/g
Titratable Base	≤0.0002mEq/g
Substances Darkened by H_2SO_4	To pass test
Substances Reducing Permanganate	To pass test

Methanol — Histological

Quantity	Packaging	Cat. No.	Each	Case of
1 gal.	Poly Bottle	**A433F-1GAL**	62.06	4/197.23
1 gal.	Poly Bottle	**A433P-1GAL**	55.50	4/178.20
4L	Poly Bottle	**A433P-4**	58.82	4/186.93
4L	SafeTin*	**A433S-4**	78.32	4/224.29
20L	Steel Pail	**A433S-20**	156.83	- - - -
200L	Steel Drum	**A433S-200**	734.23	- - - -

Methyl Alcohol
CH_3OH
CH_4O
F.W. 32.04
[67-56-1]

SOLVENT

STORAGE red

Methanol — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A411-4**	109.76	4/329.27
20L	Steel Pail	**A411-20**	249.36	- - - -

Methyl Alcohol
CH_3OH
CH_4O
F.W. 32.04
[67-56-1]

SOLVENT

STORAGE red

Methanol — Low Water

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A935-4**	118.77	4/356.31

Also available in recyclable FisherPak and NOWPak* containers.*

SOLVENT

STORAGE red

Wood Alcohol, Methyl Alcohol
CH_3OH
CH_4O
F.W. 32.04
[67-56-1]

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.8%
Color (APHA)	≤5
Water	≤0.008%
Residue after Evaporation	≤5ppm
Solubility in H_2O	To pass test
Carbonyl Compounds (each of Acetone, Formaldehyde and Acetaldehyde)	≤0.001%
Titratable Acid	≤0.0003mEq/g
Titratable Base	≤0.0002mEq/g
Substances Darkened by H_2SO_4	To pass test
Substances Reducing Permanganate	To pass test

Methanol, 90%

Aqueous Solution
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**4823-32**	33.70	- - - -
4L	Poly Natural	**4823-1**	79.33	- - - -

[67-56-1 (Methanol (Methyl Alcohol))]
[7732-18-5 (Water, Deionized)]

Methanol, 50%

Aqueous Solution
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**4820-16**	24.26	- - - -
1L	Poly Natural	**4820-32**	31.84	- - - -
4L	Plastic	**4820-1**	48.62	- - - -
20L	Cubitainer*	**4820-5**	90.60	- - - -

Methyl Alcohol
[67-56-1 (Methanol (Methyl Alcohol))]
[7732-18-5 (Water, Deionized)]

▸***Methanol*** *see also Fisher BioReagents* BP1105.*

▸***2-Methoxyethanol*** *see Ethylene Glycol Monomethyl Ether E182.*

▸***3-Methoxy-4-hydroxybenzaldehyde*** *see Vanillin V10.*

Methyl Acetate — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**M203-500**	117.08	6/523.33
4L	Amber Glass	**M203-4**	617.54	4/1930.76

SOLVENT

STORAGE red

Acetic Acid Methyl Ester
CH_3COOCH_3
$C_3H_6O_2$
F.W. 74.08
[79-20-9]

Product Specifications

Color (APHA)	≤15
Boiling Range	56.5°-57.5°C
Residue after Evaporation	≤0.002%
Specific Gravity at 20°C	0.933-0.938
Water	≤0.20%

▸***Methyl Acetic Acid*** *see Propionic Acid A258.*

Methanol, 99.9% — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4 × 4L	AcroSeal*	**AC610090040**	76.00	4/258.08

Methanol
CH_3OH
CH_4O
F.W. 32.04
Melting point: -98°C
Boiling point: 64.7°C (at 760mmHg)
Flash point: 12°C
Density: 0.791g/mL
n: 1.328-1.33
[67-56-1]

Methanol, 99.8%

Anhydrous

Quantity	Packaging	Cat. No.	Each	Case of
100mL	- - - -	**AC61098-1000**	20.40	6/103.62

Methanol
CH_4O
F.W. 32.04
Melting point: -98°C
Boiling point: 64.7°C (at 760mmHg)
Flash point: 12°C
Density: 0.791g/mL
n: 1.328-1.33
[67-56-1]

▸***Methyl Alcohol*** *see Methanol.*

▸***Methylbenzene*** *see Toluene.*

2-Methylbutane — Certified

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**03551-4**	123.90	4/387.29

SOLVENT

STORAGE red

Isopentane, 1,1,2-Trimethylethane
1-Pentane
$(CH_3)_2CHCH_2CH_3$
C_5H_{12}
F.W. 72.15
[78-78-4]

Product Specifications

Assay (by GC)	≥95%
Color (APHA)	≤10

▸***2-Methyl-2-butanol*** *see tert-Amyl Alcohol A730.*

▸***3-Methyl-1-butanol*** *see Isoamyl Alcohol A393.*

Methyl tert-Butyl Ether — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**E127-4**	192.32	4/534.69

Also available in recyclable FisherPak and NOWPak* containers.*

MTBE, tert-Butyl Methyl Ether
$C_5H_{12}O$
F.W. 88.14
[1634-04-4]

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Assay	≥99%
Color (APHA)	≤10
Refractive Index at 25°C	1.3650-1.3670
Fluorescence Background (as Quinine Sulfate)	To pass test
Density at 20°C	0.740-0.742g/mL
Peroxides (as H_2O_2)	≤1ppm
Water	≤0.05%
Residue after Evaporation	≤10ppm
Optical Absorbance:	
at 210nm	≤0.80
at 225nm	≤0.50
at 254nm	≤0.10
at 300nm	≤0.014

Submicron Filtered.

Methyl iso-Butyl Ketone — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**M213-1**	121.43	6/545.85
4L	Amber Glass	**M213-4**	249.87	4/748.74
20L	Steel Pail	**M213-20**	420.25	- - - -
200L	- - - -	**M213-200**	3441.20	- - - -

Hexone, Isobutyl Methyl Ketone, Isopropylacetone
4-Methyl-2-Pentanone
$C_6H_{12}O$
F.W. 100.16
[108-10-1]

ChemAlert® STORAGE red

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥98.5%
Color (APHA)	≤15
Density at 25°C	0.794-0.798g/mL
Residue after Evaporation	≤0.005%
Titratable Acid	0.002mEq/g
Water	≤0.1%

Methyl Cellulose — USP/FCC

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**M352-500**	188.60	6/840.14

Cellulose Methyl Ether
4000 centipoise
[9004-67-5]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Meets USP Chemical Specifications:	
Assay (Dried Basis) [as (OCH_3) groups]	27.5-31.5%
Apparent Viscosity	3000-5600 cps
Loss on Drying at 105°C	≤5.0%
Residue on Ignition	≤1.5%
Heavy Metals (as Pb)	≤0.001%
Organic Volatile Impurities	Meets requirements
USP Protocol Required	To pass test
Meets FCC Chemical Specifications:	
Assay (Dried Basis) [as (OCH_3) groups]	27.5-31.5%
Viscosity	3000-5600 cps
Loss on Drying at 105°C	≤5.0%
Residue on Ignition	≤1.5%
Lead	≤3mg/kg

Methylene Blue — Certified Biological Stain

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**M291-25**	64.42	6/302.20
100g	Amber Glass	**M291-100**	161.46	6/748.37

Basic Blue 9
$C_{16}H_{18}ClN_3S$
F.W. 319.90

ChemAlert® STORAGE gray

For use in histology, bacteriology (staining), compounding of blood stains.

C.I. 52015
[61-73-4]

Methylene Blue Pure — Certified

Quantity	Packaging	Cat. No.	Each	Case of
25g	Glass Bottle	**AC41424-0250**	21.70	- - - -

Basic Blue 9
$C_{16}H_{18}ClN_3S$
F.W. 319.85
Melting point: 190°C
[61-73-4]

NEW

Methylene Blue Trihydrate — USP

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**M235-100**	130.89	6/606.65

Basic Blue 9 Trihydrate
$C_{16}H_{18}ClN_3S \cdot 3H_2O$
F.W. 373.90
[7220-79-3]

ChemAlert® STORAGE gray

Product Specifications

Assay (Dried Basis)	98.0-103.0%
Loss on Drying	8.0-18.0%
Residue on Ignition	≤1.2%
Arsenic	≤8ppm
Zinc	To pass test
Copper	≤0.02%
Chromatographic Purity	To pass test
Organic Volatile Impurities	To pass test

▸ ***Methylene Blue*** *see also Fisher BioReagents* BP117*

Methylene Blue Reagent

For Surfactant Analysis

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**4900-16**	29.20	- - - -
1L	Poly Natural	**4900-32**	44.48	- - - -

[7220-79-3 (Methylene Blue)]
[7664-93-9 (Sulfuric Acid)]
[10049-21-5 (Sodium phosphate, monobasic monohydrate)]
[7732-18-5 (Water, Deionized)]

Methylene Chloride — GC Resolv*

For High-resolution Gas Chromatography
Suitable for Organic Residue Analysis

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**D154-4**	163.21	4/423.84

Dichloromethane, DCM
CH_2Cl_2
F.W. 84.93

SOLVENT

ChemAlert® STORAGE blue

Packaged under Nitrogen.

Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.

[75-09-2]

Product Specifications

Assay (by GC)	≥99.9%
Color (APHA)	≤5
Certified for EPA Method 1625	To pass test
ECD-responsive Substances (as Heptachlor Epoxide)†	5ppt maximum peak or 50ppt total
FID-responsive Substances (as Decane)†	1ppb maximum peak or 10ppb total
Free Halogens	≤1ppm
Preservative (Amylene)	15-200ppm maximum
Residue after Evaporation	≤1ppm
Titratable Acid	≤0.0002mEq/g
Water	≤0.01%

†After retention time of Toluene.

Methylene Chloride — Optima*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**D151-1**	82.08	6/306.05
4L	Amber Glass	**D151-4**	153.98	4/373.73

Also available in recyclable FisherPak and NOWPak* containers.*

Dichloromethane, DCM

CH_2Cl_2

F.W. 84.93

Melting point: -95°C

Boiling point: 39–40°C

Density: 1.32

Packaged under Nitrogen. Submicron Filtered.

Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.

[75-09-2]

SOLVENT — ChemAlert® STORAGE blue

Product Specifications

Assay (by GC)	≥99.9%
Color (APHA)	≤5
Certified for EPA Test #1625	To pass test
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤10ng/L
Optical Absorbance:	
at 233nm	≤1.00
at 240nm	≤0.12
at 254nm	≤0.005
Fluorescence Background (as Quinine Sulfate)	≤1ppb
Preservative (Amylene)	15-200ppm
Water	≤0.01%
Residue after Evaporation	≤1ppm
Refractive Index at 25°C	1.4200-1.4230
Density at 25°C	1.315-1.321g/mL
Titratable Acid	≤0.0002mEq/g
Free Halogens	To pass test

Methylene Chloride — HPLC

Also suitable for GC/MS
Not Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**D150-1**	68.09	6/255.66
1L	Amber Glass/Safe-Cote*	**D150SK-1**	78.74	6/455.70
4L	Amber Glass	**D150-4**	128.92	4/322.40
4L	Amber Glass/Safe-Cote	**D150SK-4**	132.07	4/356.29

Dichloromethane
DCM

CH_2Cl_2

F.W. 84.93

Submicron Filtered.

[75-09-2]

SOLVENT — ChemAlert® STORAGE blue

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.9%
Color (APHA)	≤10
Optical Absorbance:	
at 232nm	≤1.00
at 235nm	≤0.70
at 240nm	≤0.20
at 254nm	≤0.01
Fluorescence Background (as Quinine Sulfate)	To pass test
Refractive Index at 25°C	1.4200-1.4230
Acidity (as HCl)	≤5ppm
Free Halogens	To pass test
Residue after Evaporation	≤4ppm
Water	≤0.02%
Suitability for GC/MS	To pass test

Methylene Chloride — HPLC

Also meets ACS specifications
Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber GlassD	**143-1**	57.70	6/245.74
1L	Amber Glass/Safe-Cote*	**D143SK-1**	83.66	6/355.65
4L	Amber Glass	**D143-4**	114.96	4/320.19
4L	Amber Glass/Safe-Cote	**D143SK-4**	128.78	4/361.51

Also available in recyclable FisherPak and NOWPak* containers.*

Dichloromethane, DCM

CH_2Cl_2

F.W. 84.93

Submicron Filtered.

[75-09-2]

SOLVENT — ChemAlert® STORAGE blue

Product Specifications

Actual Lot Analysis is reported on label.

Assay (including preservative)	≥99.9%
Color (APHA)	≤10
Optical Absorbance:	
at 235nm	≤1.00
at 240nm	≤0.20
at 254nm	≤0.014
Fluorescence Background (as Quinine Sulfate)	To pass test
Refractive Index at 25°C	1.4200-1.4230
Free Halogens	To pass test
Residue after Evaporation	≤2ppm
Preservative: Amylene	15-200ppm
or Cyclohexene	40-100ppm
Water	≤0.02%
Titratable Acid	≤0.0003mEq/g
Density at 25°C	1.315-1.321g/mL

Methylene Chloride — HPLC

Also meets ACS specifications
With Cyclohexene Preservative

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**D138-1**	67.39	6/261.41
4L	Amber Glass	**D138-4**	124.46	4/321.78
4L	Amber Glass/Safe-Cote*	**D138SK-4**	147.18	4/382.39

Dichloromethane

CH_2Cl_2

F.W. 84.93

Submicron Filtered.

[8032-32-4]

SOLVENT — ChemAlert® STORAGE blue

Product Specifications

Actual Lot Analysis is reported on label.

Assay (including preservative)	≥99.9%
Color (APHA)	≤10
Density at 25°C	1.315-1.321g/mL
Fluorescence Background (as Quinine Sulfate)	To pass test
Free Halogens	To pass test

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Optical Absorbance:

at 235nm	≤1.00
at 240nm	≤0.20
at 254nm	≤0.014Preservative (Cyclohexene)

40-100ppm

Refractive Index at 25°C	1.4200-1.4230
Residue after Evaporation	≤2ppm
Titratable Acid	≤0.0003mEq/g
Water	≤0.02%

Methylene Chloride — Pesticide

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**D142-4**	121.34	4/344.25

Also available in recyclable FisherPak and NOWPak* containers.*

Dichloromethane, DCM

CH_2Cl_2

F.W.84.93

Melting point:-98°C

Boiling point:39–40°C

Density:1.32

[75-09-2]

Product Specifications

Color (APHA)	≤10
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤20ng/L
Preservative (Amylene)	15-200ppm

Methylene Chloride — Spectranalyzed*

Also meets ACS specifications

Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**D35-1**	126.24	6/562.31
4L	Amber Glass	**D35-4**	244.03	4/761.00

Dichloromethane, DCM

CH_2Cl_2

F.W. 84.93

For use in the ultraviolet and infrared ranges.

[75-09-2]

Product Specifications

Actual Lot Analysis is reported on label.

Assay (including preservative)	≥99.5%
Color (APHA)	≤10
Titratable Acid	≤0.0003mEq/g
Density at 25°C	1.315-1.321g/mL
Free Halogens	To pass test
Residue after Evaporation	≤0.002%
Water	≤0.02%
Optical Absorbance:	
at 235nm	≤1.00
at 240nm	≤0.35
at 250nm	≤0.10
at 260nm	≤0.04
at 340-400nm	≤0.01
IR Transmittance:	
at 4.4-6.8µm	≥70%
at 8.7-10.9µm	≥70%
at 11.4-12.2µm	≥70%

Transmittance measured in a 0.025mm KBr cell. Ultraviolet Absorbance Curves are run against distilled water set at zero absorbance. Curves available on request.

Methylene Chloride — Certified ACS

Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**D37-500**	45.15	6/203.17
1L	Amber Glass	**D37-1**	101.86	6/476.44
4L	Amber Glass	**D37-4**	207.98	4/648.57
4L	Amber Glass/Safe-Cote*	**D37SK-4**	229.27	4/687.00
20L	Steel Pail	**D37-20**	417.63	- - - -
200L	- - - -	**D37FB-200**	2323.93	- - - -
200L	Steel Drum	**D37-200**	2395.76	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

Dichloromethane, DCM

CH_2Cl_2

F.W. 84.93

Melting point: -98°C

Boiling point: 39–40°C

Density: 1.32

[75-09-2]

Product Specifications

Actual Lot Analysis is reported on label.

Assay (including preservative)	≥99.5%
Color (APHA)	≤10
Density at 25°C	1.315-1.321g/mL
Residue after Evaporation	≤0.002%
Titratable Acid	≤0.0003mEq/g
Water	≤0.02%
Free Halogens	To pass test

▸**Methylene Chloride** *see also Fisher BioReagents* BP1186.*

▸**Methylene Oxide** *see Formaldehyde, Histology grade F75P, USP grade F77 and Certified ACS grade F79.*

▸**Methylene Oxide** *see also Formaldehyde, Fisher BioReagents* BP531.*

Methyl Ethyl Ketone — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**M209-500**	50.35	6/233.32
1L	Amber Glass	**M209-1**	98.30	6/440.03
4L	Amber Glass	**M209-4**	173.65	4/520.37
4L	SafeTin*	**M209S-4**	203.50	4/646.58
20L	Steel Pail	**M209-20**	363.42	- - - -
200L	Steel Drum	**M209-200**	2171.81	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

Ethyl Methyl Ketone, 2-Butanone

C_4H_8O

F.W. 72.11

[78-93-3]

Product Specifications

Actual Lot Analysis is reported on label.

Assay (by GC)	≥99.0%
Color (APHA)	≤15
Density at 25°C	0.799-0.801g/mL
Residue after Evaporation	≤0.0025%
Titratable Acid	≤0.0005mEq/g
Water	≤0.1%

Methyl Ethyl Ketone

Technical

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**M208-1**	68.44	6/317.11
4L	Amber Glass	**M208-4**	165.53	4/495.98
20L	Steel Pail	**M208-20**	373.44	- - - -

2-Butanone, Ethyl Methyl Ketone
$CH_3COC_2H_5$
C_4H_8O
F.W. 72.11
[78-93-3]

SOLVENT

ChemAlert® STORAGE red

▸Methyl Hydrate *see Ethyl Alcohol Denatured A407.*

Methyl p-Hydroxybenzoate

Powder

NF/FCC

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**M245-100**	44.59	6/209.17

Nipagin, Methyl Paraben
4-Hydroxybenzoic Acid Methyl Ester
$HOC_6H_4COOCH_3$
$C_8H_8O_3$
F.W.152.15
[99-76-3]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Meets NF Chemical Specifications	
Assay (Dried Basis)	98.0-102.0%
Color of Solution	To pass test
Acidity	To pass test
Related Substances	≤0.5% Maximum
Range	125-128°C
Organic Volatile Impurities	To pass test
NF Protocol Required	To pass test
Meets FCC Chemical Specifications	
Assay (Dried Basis)	99.0-100.5%
Acidity	To pass test
Lead (Pb)	≤2mg/kg
Loss on Drying	≤0.5%
Melting Range	125°-128°C
Residue on Ignition	≤0.05%

▸Methyl Isobutyl Ketone *see Methyl iso-Butyl Ketone M213.*

▸5-Methyl-2-isopropylphenol *see Thymol T185.*

Methyl Methacrylate

Stabilized

Certified

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**03629-4**	127.45	4/398.38

$CH_2{:}C(CH_3)COOCH_3$
$C_5H_8O_2$
F.W. 100.12
[80-62-6]

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Assay	≥98%
Color (APHA)	≤10
Stabilizer (Hydroquinone)	25ppm ± 5ppm

Methyl Orange

Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**M216-25**	35.34	6/167.67
500g	Amber Glass	**M216-500**	308.61	6/1388.73

Sodium p-Dimethylaminoazobenzenesulfonate
Helianthin
4-$NaOSO_2C_6H_4N{:}NC_6H_4$-4-$N(CH_3)_2$
$C_{14}H_{14}N_3O_3SNa$
F.W. 327.34
C.I. 13025
[547-58-0]

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Clarity of Solution (0.1g/100mL)	To pass test
Visual Transition Interval	Pink or Red (pH 3.2) to Yellow (pH 4.4)

Methyl Orange Solution, 0.1% (w/v)

Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SM54-500**	32.13	6/152.65

Acid Orange 52
Benzenesulfonic Acid Sodium Salt
C.I. 13025
[547-58-0]

ChemAlert® STORAGE gray

Product Specifications

Concentration	0.05-0.15%
pH at 25°C	5.0 to 6.5
Visual Transition Interval	Pass test

Methyl Orange Indicator, 0.1% (w/v)

Clear, orange colored liquid
Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**5000-4**	9.59	- - - -
500mL	Poly Natural	**5000-16**	14.31	- - - -
1L	Poly Natural	**5000-32**	19.03	- - - -
4L	Poly Natural	**5000-1**	47.42	- - - -

[547-58-0 (Methyl Orange, Sodium Salt)]
[7732-18-5 (Water, Deionized)]

Methyl Orange Indicator, 0.05% (w/v)

Clear, orange colored liquid
Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Plastic	**4980-4**	11.64	- - - -
500mL	Plastic	**4980-16**	14.31	- - - -
1L	Poly Natural	**4980-32**	21.61	- - - -
4L	Poly Natural	**4980-1**	48.73	- - - -

Application: Indicator for Acid-Base Titrations
[547-58-0 (Methyl Orange, Sodium Salt)]
[7732-18-5 (Water, Deionized)]

▸Methyl Paraben *see Methyl p-Hydroxybenzoate M245.*

▸Methyl Phenyl Ketone *see Acetophenone A22.*

▸Methyl Phthalate *see Dimethyl Phthalate D65.*

▸2-Methyl-1-propanol *see Isobutyl Alcohol A397.*

▸2-Methyl-2-propanol *see tert-Butanol A401.*

▸Methyl Protocatechuic Aldehyde *see Vanillin V10.*

Methyl Purple Solution

Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SI9-500**	34.12	6/162.10
1L	Amber Glass	**SI9-1**	56.11	6/268.25

[1340-02-9]

STORAGE red

Product Specifications

Visual Transition Interval .... Pass test
Dye Content .... Pass test

Methyl Purple Indicator Solution

Dark green liquid
pH 4.8 (purple) - 5.4 (green)

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**5040-4**	9.59	----
500mL	Amber Glass	**5040-16**	14.31	----
1L	Amber Glass	**5040-32**	21.40	----

Application: For acid-base titrations
[845-10-3 (Methyl Red, Sodium Salt)]
[7732-18-5 (Water, Deionized)]

1-Methyl-2-pyrrolidinone, 99.5%

Anhydrous

Extra Dry

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Acroseal*	**AC61041-1000**	37.80	6/192.78

NEW

N-Methylpyrrolidone, NMP
C_5H_9NO
F.W. 99.13
Melting point: -24°C
Boiling point: 202°C (at 760mmHg)
Flash point: 91°C
Density: 1.03g/mL
n: 1.469-1.471
[872-50-4]

1-Methyl-2-pyrrolidinone

Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**03688-4**	161.37	4/498.58

1-Methylpyrrolidone, N-Methyl-α-Pyrrolidinone
NMP
C_5H_9NO
F.W. 99.13
[872-50-4]

ChemAlert® STORAGE gray

Product Specifications

Color (APHA) .... ≤50

Methyl Red, Sodium Salt

Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
10g	Amber Glass	**M301-10**	129.83	6/609.01

Acid Red 2, Sodium Salt
$4\text{-}(CH_3)_2NC_6H_4\text{-}N{:}N\text{-}2\text{-}(CO_2Na)C_6H_4$
$C_{15}H_{14}N_3O_2Na$
[845-10-3]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Clarity of Alcohol Solution (0.1g/100mL) .... To pass test
Clarity of Aqueous Solution (0.1g/100mL) .... To pass test
Visual Transition Interval .... To pass test

Methyl Red Indicator, 1% (w/v)

pink (pH 4.2) - yellow (pH 6.2)
Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Bottle	**5070-4**	14.55	----
500mL	Poly Bottle	**5070-16**	37.10	----
1L	Poly Bottle	**5070-32**	47.41	----

Application: For Acid-Base Titrations
[7732-18-5 (Water, Deionized)]
[845-10-3 (Methyl Red, Sodium Salt)]

Methyl Red, 0.1% (w/v)

Test Solution
Clear, red colored liquid
pink (pH 4.2) - yellow (pH 6.2)
Alcoholic Solution

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**5045-4**	12.77	----
500mL	Plastic	**5045-16**	24.97	----

Application: Indicator for Acid-Base Titrations
[63451-28-5 (Methyl Red Hydrochloride)]
[64-17-5 (Ethyl Alcohol (Ethanol)]

Methyl Red Solution, 0.02% (w/v)

In Methanol

Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SI16-500**	43.08	6/207.99

ChemAlert® STORAGE gray

Product Specifications

Visual Transition Interval .... Pink (pH 4.2) to Yellow (pH 6.2)

Methyl Salicylate

Reagent

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**03695-500**	101.15	6/452.11

Wintergreen Oil
2-Hydroxybenzoic Acid Methyl Ester
$2\text{-}(CO_2CH_3)C_6H_4OH$
$C_8H_8O_3$
F.W.152.15
[119-36-8]

ChemAlert® STORAGE gray

Product Specifications

Assay .... ≥99%
Color (APHA) .... ≤30

Methyl sulfoxide, 99.7%

Anhydrous

Extra Dry

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AcroSeal*	**AC61097-1000**	34.00	6/172.95

Dimethyl sulfoxide, DMSO
C_2H_6OS
F.W. 78.13
Melting point: 18.4°C
Boiling point: 189°C (at 760mmHg)
Flash point: 87°C
Density: 1.1g/mL
n: 1.477-1.48
[67-68-5]

*Trademark. See Trademark Reference.

Methyl Sulfoxide *see also Dimethyl Sulfoxide, Certified grade D128.*

Methyl Thionine Hydrochloride *see Methylene Blue M291.*

Microcosmic Salt *see Sodium Ammonium Phosphate Tetrahydrate S218.*

Milk of Magnesia *see Magnesium Hydroxide M342.*

Milk Sugar *see α-D-(+)-Lactose Monohydrate L5.*

Mineral Oil, Heavy USP/FCC

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**0122-1**	58.54	6/270.98
4L	Amber Glass	**0122-4**	129.92	4/387.19

Paraffin - Liquid, Paraffin Oil, Heavy, Liquid Petrolatum
Saybolt viscosity: 162 minimum
[8042-47-5]

ChemAlert® STORAGE gray

roduct Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Specific Gravity at 25°C	0.845-0.905
Viscosity at 40.0°C	≥34.5cs
Neutrality	To pass test
Readily Carbonizable Substances	To pass test
Polynuclear Compounds (UV Absorbance)	To pass test
Solid Paraffin	To pass test
USP Protocol Required	To pass test
Meets FCC Chemical Requirements	
Lead	≤1mg/kg
Readily Carbonizable Substances	To pass test
Specific Gravity at 25°C	0.845-0.905
Ultraviolet Absorbance (Polynuclear Hydrocarbon)	To pass test
Viscosity at 100°C	≥3cs

Mineral Oil, Light NF/FCC

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**0121-1**	51.71	6/239.39
4L	Amber Glass	**0121-4**	135.26	4/403.15
20L	Steel Pail	**0121-20**	425.37	- - - -

Paraffin - Liquid, Glymol for Babcock Test, Paraffin Oil, Light, Light Liquid Petrolatum
Saybolt viscosity: 158 maximum
[8042-47-5]

ChemAlert® STORAGE gray

roduct Specifications

Lead	≤1mg/kg
Specific Gravity at 25°C	0.818-0.880
Viscosity at 100°C	≤3s
Neutrality	To pass test
Readily Carbonizable Substances	To pass test
Polynuclear Compounds (UV absorbance)	To pass test
Solid Paraffin	To pass test
Ultraviolet Absorbance	To pass test

Mirbane Oil *see Nitrobenzene N91.*

Mixed Calibration Standards for Environmental Analysis *ee Standards, Inorganic Mixed Multi-Elements.*

▸**Mohr Salt** *see Ferrous Ammonium Sulfate Hexahydrate I77.*

▸**Moisture Determination Reagents, Karl Fischer** *see Karl Fischer Reagents.*

▸**Molecular Sieves** *see Sorbents.*

Molybdic Acid, 85% Certified ACS
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A173-500**	832.23	6/3885.34

Ammonium Molybdate
This reagent consists largely of Ammonium Molybdate.
[7782-91-4]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay (MoO_3)	≥85.0%
Insoluble in Dilute NH_4OH	≤0.01%
Chloride	≤0.002%
Arsenate, Phosphate, Silicate (as SiO_2)	≤0.001%
Sulfate	≤0.2%
Heavy Metals (as Pb)	≤0.003%
Phosphate	≤5ppm

▸**Molybdophosphoric Acid** *see Phosphomolybdic Acid Hydrate A237.*

▸**Mononitrobenzene** *see Nitrobenzene N91I.*

▸**Monosodium Orthophosphate** *see Sodium Phosphate Monobasic beginning with S397.*

▸**Monosodium Phosphate** *see Sodium Phosphate Monobasic beginning with S397.*

Morpholine Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**M263-1**	119.36	6/533.59

Diethylene Oximide
Tetrahydro-2H-1,4-Oxazine
$NH(CH_2)_2OCH_2CH_2$
C_4H_9NO
F.W. 87.12
[110-91-8]

SOLVENT

STORAGE red

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Color (APHA)	≤15
Density at 25°C	0.994-0.997g/mL
Boiling Range	126.0°-130.0°C

▸**Mounting Media** *see Canada Balsam B10, and Permount* Mounting Media SP15.*

▸**MTBE** *see Methyl tert-Butyl Ether E127.*

▸**Multicomponent Inorganic Standards** *see Standards, Inorganic Mixed Multi-Element.*

▸**Multicomponent Organic Standards** *see Standards, Organic EPA Methods (Multicomponent).*

Murexide
Powder

Quantity	Packaging	Cat. No.	Each	Case of
5g	Amber Glass	**M274-5**	91.32	6/428.37

Ammonium Purpurate Acid
$C_8H_8N_6O_6$
F.W. 284.19
[3051-09-0]

ChemAlert® STORAGE gray

Product Specifications

Sensitivity	Pass Test

Murexide
Indicator Tablets

Quantity	Packaging	Cat. No.	Each	Case of
100 tablets	Amber Glass	**M273-100**	61.46	6/304.17
1000 tablets	Amber Glass	**M273-1000**	449.08	6/2139.87

Ammonium Purpurate Acid
$C_8H_8N_6O_6$
F.W. 284.19
[3051-09-0]

ChemAlert® STORAGE gray

Murexide Indicator, 0.2% (w/w)
APHA/EPA for Calcium

Quantity	Packaging	Cat. No.	Each	Case of
100g	Glass	**5220100**	34.91	- - - -
500g	Glass	**5220500**	117.69	- - - -

Dry mixture in Sodium Chloride

▸***Muriatic Acid*** *see Hydrochloric Acid.*

▸***Naphtha*** *see Benzine B264.*

▸***Naphtha Solvent*** *see Hexanes, Certified grade H291.*

▸***Naphtha Solvent from Coal Tar*** *see Xylenes, Laboratory grade X4.*

p-Naphtholbenzein Indicator Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SN1-500**	177.35	6/848.74

ASTM D 974-58T
[108-88-3 (Toluene)]
[67-63-0 (Isopropanol)]

ChemAlert® STORAGE red

Product Specifications

Sensitivity	Pass test

Nessler's Reagent Solution APHA

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass/ Poison Pk	**SN16I-500**	110.16	- - - -

Mercuric and Potassium Iodide Solution
For determination of Ammonia, Urea Nitrogen and Nonprotein Nitrogen.

ChemAlert® STORAGE white

Hg

Product Specifications

Suitability for Nitrogen Determination	Pass Test

Nessler Reagent
Clear, light yellow liquid

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Poly	**5250-4**	14.45	- - - -
500mL	Amber Poly	**5250-16**	41.50	- - - -
1L	Amber Poly	**5250-32**	61.37	- - - -
4L	Amber Poly	**5250-1**	153.57	- - - -

Application: Ammonia Nitrogen Determination
[7681-11-0 (Potassium Iodide)]
[7774-29-0 (Mercuric Iodide)]
[1310-73-2 (Sodium Hydroxide)]
[7732-18-5 (Water, Deionized)]

Hg

New Methylene Blue "N"

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**5285-4**	17.34	- - - -
500mL	Poly Natural	**5285-16**	54.81	- - - -

Application: For reticulocyte count

Nickel Acetate Tetrahydrate Certified
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**N46-500**	439.70	6/2038.00

Acetic Acid Nickel Salt, Nickel (II) Acetate Tetrahydrate
$Ni(C_2H_3O_2)_2{\bullet}4H_2O$
$C_4H_6O_4Ni{\bullet}4H_2O$
F.W. 248.84
[6018-89-9]

ChemAlert® STORAGE blue

Product Specifications

Assay	98.0-102.0%
Chloride	≤0.003%
Sulfate	≤0.005%
Nitrate	≤0.008%
Cobalt	≤0.5%
Lead	≤0.005%
Iron	≤0.005%
Zinc	≤0.02%
Insoluble Matter	≤0.005%
Calcium	≤0.01%
Potassium	≤0.02%
Sodium	≤0.1%

Nickel Chloride Hexahydrate Certified
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**N54-250**	146.01	6/683.31
500g	Amber Glass	**N54-500**	216.90	6/878.69
3kg	Glass	**N54-3**	922.48	4/2871.13
10kg	Poly Pail	**N54-10**	1971.84	- - - -

Nickel (II) Chloride Hexahydrate
$NiCl_2{\bullet}6H_2O$
F.W. 237.69
[7791-20-0]

ChemAlert® STORAGE blue

Product Specifications

Assay	≥97%
Insoluble Matter	≤0.005%
Sulfate	≤0.005%
Cobalt	≤0.1%
Copper	≤0.002%
Iron	≤0.002%
Zinc	≤0.01%
Lead	≤0.005%
Nitrogen Compounds (as N)	≤0.005%
Calcium	≤0.01%
Magnesium	≤0.01%
Potassium	≤0.01%
Sodium	≤0.05%

Nickel Chloride Hexahydrate — Technical

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**N53-500**	94.27	6/424.21

Nickel (II) Chloride Hexahydrate
$NiCl_2\cdot 6H_2O$
F.W. 237.69
[7791-20-0]

ChemAlert® STORAGE blue

Nickel Nitrate Hexahydrate — Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**N62-500**	188.10	6/871.82

Nickel (II) Nitrate Hexahydrate
$Ni(NO_3)_2\cdot 6H_2O$
F.W. 290.81
[13478-00-7]

ChemAlert® STORAGE yellow

Product Specifications

Insoluble Matter	≤0.005%
Sulfate	≤0.002%
Cobalt	≤0.1%
Copper	≤5ppm
Iron	≤0.001%
Lead	≤0.005%
Zinc	≤0.01%
Chloride	≤0.002%
Calcium	≤0.01%
Magnesium	≤0.01%
Potassium	≤0.01%
Sodium	≤0.05%

Nickel Sulfate Hexahydrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**N73-100**	74.30	6/332.10
500g	Poly Bottle	**N73-500**	242.08	6/1116.54

Nickel (II) Sulfate
$NiSO_4\cdot 6H_2O$
F.W. 262.85
[10101-97-0]

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay	98.0-102.0%
Insoluble Matter	≤0.005%
Chloride	≤0.001%
Nitrogen Compounds (as N)	≤0.002%
Calcium	≤0.005%
Cobalt	≤0.002%
Copper	≤0.005%
Iron	≤0.001%
Magnesium	≤0.005%
Manganese	≤0.002%
Potassium	≤0.01%
Sodium	≤0.05%

Ninhydrin — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
10g	Amber Glass	**T349-10**	98.05	6/438.38

C_6H_4-1,2-$(CO)_2CO\cdot H_2O$
F.W. 178.15
[485-47-2]

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Sensitivity to Amino Acids	To pass test
Solubility in H_2O	To pass test

Ninhydrin

Ozone Friendly Ready-to-use Spray for TLC

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
240mL	- - - -	**AC32702-2400**	56.60	- - - -

Density: 0.81g/mL
[485-47-2]

NEW

▸ ***Nipagin*** *see Methyl p-Hydroxybenzoate M245.*

▸ ***Niter*** *see Potassium Nitrate, Certified ACS grade P263.*

▸ ***Niter Cake*** *see Sodium Bisulfate Monhydrate S240.*

Nitric Acid, Fuming — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass	**A202-500**	167.79	- - - -
2.5L	Glass	**A202-212**	315.97	- - - -

HNO_3
F.W. 63.01
[7697-37-2]

ACID

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay (HNO_3) w/w	≥90.0%
Dilution Test (clarity)	To pass test
Residue after Ignition	≤0.002%
Dissolved Oxides (as N_2O_3)	≤0.1%
Chloride	≤0.7ppm
Sulfate	≤5ppm
Arsenic	≤0.3ppm
Heavy Metals (as Pb)	≤5ppm
Iron	≤2ppm

Nitric Acid — Optima*

Quantity	Packaging	Cat. No.	Each	Case of
250mL	PTFE	**A467-250**	216.56	- - - -
500mL	PTFE	**A467-500**	332.25	- - - -
1L	PTFE	**A467-1**	624.15	- - - -
2L	PTFE	**A467-2**	998.58	- - - -

HNO_3
F.W. 63.01
Packaged in specially manufactured, precleaned PTFE bottle to protect product integrity.
Certificate of Lot Analysis is included with each bottle.
[7697-37-2]

ACID

ChemAlert® STORAGE yellow

Product Specifications and Typical Values

	Max. Spec.	Typical Value
Assay (HNO_3)	67–70%	69%
Aluminum	20ppt	<10ppt

Contd. on next page.

Antimony	10ppt	<10ppt
Arsenic	20ppt	<10ppt
Barium	10ppt	<1ppt
Beryllium	10ppt	<5ppt
Bismuth	10ppt	<0.1ppt
Boron	20ppt	<20ppt
Cadmium	10ppt	<1ppt
Calcium	20ppt	<20ppt
Cerium	10ppt	<0.05ppt
Cesium	10ppt	<0.05ppt
Chromium	20ppt	<10ppt
Cobalt	10ppt	<1ppt
Copper	20ppt	<3ppt
Dysprosium	1ppt	<0.01ppt
Erbium	1ppt	<0.01ppt
Europium	1ppt	<0.01ppt
Gadolinium	1ppt	<0.01ppt
Gallium	10ppt	<1ppt
Germanium	10ppt	<1ppt
Gold	20ppt	<10ppt
Hafnium	10ppt	<0.05ppt
Holmium	1ppt	<0.01ppt
Indium	1ppt	<1ppt
Iron	20ppt	<20ppt
Lanthanum	1ppt	<0.05ppt
Lead	10ppt	<1ppt
Lithium	10ppt	<1ppt
Lutetium	1ppt	<0.01ppt
Magnesium	10ppt	<5ppt
Manganese	10ppt	<2ppt
Mercury	100ppt	<100ppt
Molybdenum	10ppt	<1ppt
Neodymium	1ppt	<0.05ppt
Nickel	50ppt	<10ppt
Niobium	1ppt	<1ppt
Palladium	20ppt	<10ppt
Platinum	20ppt	<1ppt
Potassium	10ppt	<10ppt
Praseodymium	1ppt	<0.05ppt
Rhenium	10ppt	<1ppt
Rhodium	10ppt	<1ppt
Rubidium	10ppt	<1ppt
Ruthenium	20ppt	<10ppt
Samarium	1ppt	<0.01ppt
Scandium	10ppt	<1ppt
Silver	10ppt	<2ppt
Sodium	10ppt	<10ppt
Strontium	10ppt	<1ppt
Tellurium	1ppt	<1ppt
Terbium	1ppt	<0.01ppt
Thallium	10ppt	<0.1ppt
Thorium	1ppt	<0.05ppt
Thulium	1ppt	<0.01ppt
Tin	20ppt	<20ppt
Titanium	10ppt	<10ppt
Tungsten	10ppt	<10ppt
Uranium	1ppt	<0.01ppt
Vanadium	10ppt	<1ppt
Ytterbium	1ppt	<0.01ppt
Yttrium	1ppt	<1ppt
Zinc	20ppt	<20ppt
Zirconium	10ppt	<1ppt

Nitric Acid NF

Quantity	Packaging	Cat. No.	Each	Case of
2.5L	Glass Bottle	**A483-212**	102.16	6/457.47

HNO_3
F.W. 63.01
[7697-37-2]

ACID

ChemAlert® STORAGE yellow

Product Specifications

Assay	69.0-70.0%
Clarity and Color	To pass test
Residue on Ignition	≤5ppm
Chloride	≤0.5ppm
Sulfate	≤1ppm
Heavy Metals	≤0.2ppm
Iron	≤0.2ppm

Nitric Acid TraceMetal

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass	**A509-500**	73.58	6/314.41
2.5L	Glass	**A509-212**	110.21	6/472.42
2.5L	Glass/Safe-Cote*	**A509SK212**	111.62	6/446.24

HNO_3
F.W. 63.01
Certificate of Lot Analysis included with each shipment.
[7697-37-2]

ChemAlert® STORAGE yellow

Product Specifications and Typical Values

	Min. Spec.	Typical Value
Assay (HNO_3)	67–70%	70%
Color (APHA)	10ppb	<10ppb
Aluminum	1ppb	<0.5ppb
Antimony	1ppb	<0.1ppb
Arsenic	1ppb	<0.1ppb
Barium	1ppb	<0.1ppb
Beryllium	1ppb	<0.1ppb
Bismuth	1ppb	<0.1ppb
Boron	1ppb	<0.5ppb
Cadmium	1ppb	<0.1ppb
Calcium	1ppb	<0.5ppb
Cerium	0.5ppb	<0.1ppb
Cesium	0.5ppb	<0.1ppb
Chromium	1ppb	<0.2ppb
Cobalt	1ppb	<0.1ppb
Copper	1ppb	<0.1ppb
Dysprosium	0.5ppb	<0.1ppb
Erbium	0.5ppb	<0.1ppb
Europium	0.5ppb	<0.1ppb
Gadolinium	0.5ppb	<0.1ppb
Gallium	0.5ppb	<0.1ppb
Germanium	0.5ppb	<0.1ppb
Gold	0.5ppb	<0.1ppb
Hafnium	0.5ppb	<0.1ppb
Holmium	0.5ppb	<0.1ppb
Indium	0.5ppb	<0.1ppb
Iron	1ppb	<0.5ppb
Lanthanum	0.5ppb	<0.1ppb
Lead	1ppb	<0.1ppb
Lithium	1ppb	<0.1ppb
Lutetium	0.5ppb	<0.1ppb
Magnesium	1ppb	<0.2ppb
Manganese	1ppb	<0.1ppb
Mercury	1ppb	<0.2ppb
Molybdenum	1ppb	<0.1ppb
Neodymium	0.5ppb	<0.1ppb
Nickel	1ppb	<0.1ppb
Niobium	0.5ppb	<0.1ppb
Palladium	0.5ppb	<0.1ppb
Platinum	0.5ppb	<0.1ppb
Potassium	1ppb	<0.2ppb
Praseodymium	0.5ppb	<0.1ppb
Rhenium	0.5ppb	<0.1ppb
Rhodium	0.5ppb	<0.1ppb
Rubidium	0.5ppb	<0.1ppb
Ruthenium	0.5ppb	<0.1ppb
Samarium	0.5ppb	<0.1ppb
Scandium	0.5ppb	<0.1ppb
Selenium	1ppb	<0.1ppb
Silver	1ppb	<0.1ppb
Sodium	1ppb	<0.2ppb
Strontium	1ppb	<0.1ppb
Tellurium	0.5ppb	<0.1ppb
Terbium	0.5ppb	<0.1ppb
Thallium	0.5ppb	<0.1ppb
Thorium	1ppb	<0.1ppb
Thulium	0.5ppb	<0.1ppb

*Trademark. See Trademark Reference.

Tin	1ppb	<0.1ppb
Titanium	1ppb	<0.1ppb
Tungsten	0.5ppb	<0.1ppb
Uranium	1ppb	<0.1ppb
Vanadium	1ppb	<0.1ppb
Ytterbium	0.5ppb	<0.1ppb
Yttrium	0.5ppb	<0.1ppb
Zinc	1ppb	<0.2ppb
Zirconium	1ppb	<0.1ppb

Element concentrations are at the point of bottling.

Nitric Acid — Certified ACS Plus

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass	**A200-500**	63.65	6/229.37
500mL	Glass/Safe-Cote*	**A200S-500**	70.98	6/260.80
2.5L	Glass	**A200-212**	81.21	- - - -
6x2.5L	Glass	**A200C-212**	306.43	- - - -
6x2.5L	Glass/Safe-Cote	**A200S-212**	397.08	- - - -
2.5L	Glass/Safe-Cote Individual	**A200SI-212**	89.89	- - - -
6.5 gal.	Glass Carboy	**A200-612GAL**	331.26	- - - -

HNO_3

F.W. 63.01

Density: about 1.42g/mL

ACID

ChemAlert® STORAGE yellow

Nitric Acid material may darken during storage due to photochemical reaction.

[7697-37-2]

Product Specifications

Actual Lot Analysis is reported on label.

Assay (HNO_3) w/v	68.0-70.0%
Color (APHA)	≤10
Residue after Ignition	≤2ppm
Chloride	≤0.08ppm
Sulfate	≤0.5ppm
Arsenic	≤0.004ppm
Heavy Metals (as Pb)	≤0.2ppm
Iron	≤0.2ppm
Phosphate	≤0.2ppm
Aluminum	≤0.2ppm
Boron	≤0.1ppm
Calcium	≤0.2ppm
Chromium	≤0.1ppm
Copper	≤0.05ppm
Gold	≤0.3ppm
Lead	≤0.1ppm
Magnesium	≤0.3ppm
Nickel	≤0.05ppm
Potassium	≤0.3ppm
Sodium	≤0.3ppm
Tin	≤0.3ppm
Titanium	≤0.3ppm
Zinc	≤0.3ppm

Nitric Acid — Technical

42° Bé

Quantity	Packaging	Cat. No.	Each	Case of
2.5L	Glass	**A198C-21**	2175.86	- - - -

HNO_3

F.W. 63.01

[7697-37-2]

ACID

ChemAlert® STORAGE yellow

Product Specifications

Assay	65.0-70.0%
Color (APHA)	≤20

Nitric Acid, 65% (w/w) — Certified

Quantity	Packaging	Cat. No.	Each	Case of
2.5L	- - - -	**A206C-212**	591.10	- - - -

Hydrogen Nitrate

HNO_3

F.W. 63.01

[7697-37-2]

ChemAlert® STORAGE yellow

Product Specifications

Color	≤10
Assay	64.8-65.2%
Arsenic	≤0.005ppm
Chloride	≤0.05ppm
Heavy Metals (as Pb)	≤0.1ppm
Iron	≤0.1ppm
Phosphate	≤0.2ppm
Residue After Ignition	≤2ppm
Sulfate	≤0.5ppm

Nitric Acid, 50% (v/v)

Clear, colorless to pale yellow liquid

Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass Coated	**535016**	29.64	- - - -
1L	Amber Glass Coated	**535032**	47.03	- - - -
2.50L	Glass Coated	**53505PT**	58.22	- - - -

[7697-37-2 (Nitric Acid)]

[7732-18-5 (Water, Deionized)]

Nitric Acid Concentrate, 1N — Certified

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**SA95**	60.58	6/290.23

A volumetric standard solution, titrated at 25°C to pH 8.2 (phenolphthalein endpoint) against Sodium Hydroxide, which has been standardized against NIST Potassium Acid Phthalate.

Each bottle contains exact amount of 1N Concentrate required to make 1 liter of N/10 (0.1N) Solution.

[7697-37-2]

ACID

ChemAlert® STORAGE white

Product Specifications

Normality when Diluted to 1 Liter	0.0990 to 0.1010
Color (APHA)	≤10

Nitric Acid, 0.1N — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SA94-1**	72.58	6/342.70

A volumetric standard solution, titrated at 25°C to pH 8.2 (phenolphthalein endpoint) against Sodium Hydroxide, which has been standardized against NIST Potassium Acid Phthalate.

[7697-37-2]

ACID

ChemAlert® STORAGE gray

Product Specifications

Normality	0.0995 to 0.1005
Color (APHA)	≤5

Nitric Acid, 0.100N

Clear, colorless to very pale yellow liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**5400-16**	13.17	- - - -
1L	Poly Natural	**5400-32**	16.50	- - - -
2.50L	Glass Safety Coated	**5400-5PT**	56.71	- - - -
20L	Cubitainer*	**5400-5**	147.21	- - - -

[7697-37-2 (Nitric Acid)]
[7732-18-5 (Water, Deionized)]

▸**Nitric Acid Aluminum Salt** *see Aluminum Nitrate Nonahydrate A586.*

▸**Nitric Acid Barium Salt** *see Barium Nitrate B53.*

▸**Nitric Acid, Sodium Salt** *see Sodium Nitrate S343.*

Nitrobenzene — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass/Poison Pack	**N91I-500**	116.32	- - - -
4L	Amber Glass/Poison Pack	**N91I-4**	361.89	- - - -

Mirbane Oil, Mononitrobenzene, Nitrobenzol
$C_6H_5NO_2$
F.W. 123.11
[98-95-3]

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Density at 25°C	1.196-1.199g/mL
Freezing Point	5.0°-6.0°C
Residue after Evaporation	≤0.005%
Chloride	≤5ppm
Water-soluble Titratable Acid	≤0.0005mEq/g

Nitromethane — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**N98-500**	85.78	6/380.26

Nitrocarbol
CH_3NO_2
F.W. 61.04
[75-52-5]

SOLVENT

ChemAlert® STORAGE red

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥95%
Color (APHA)	≤10
Water	≤0.05%
Acidity (as Acetic Acid)	≤0.10%
Residue after Evaporation	≤0.002%

▸**Nitrosonitric Acid** *see Nitric Acid, Fuming A202.*

▸**Normal Solutions** *see alphabetic listings as Acetic Acid, Hydrochloric Acid, Sodium Hydroxide, Sulfuric Acid, etc.*

▸**Octadecanoic Acid** *see Stearic Acid A292.*

▸**Octadecanoic Acid Calcium Salt** *see Calcium Stearate C136.*

▸**cis-9-Octadecenoic Acid** *see Oleic Acid, NF/FCC grade A195.*

Octane — Reagent

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**03980-1**	300.69	6/1322.26

$CH_3(CH_2)_6CH_3$
C_8H_{18}
F.W. 114.23
[111-65-9]

SOLVENT

STORAGE red

Product Specifications

Assay (by GC)	≥95%
Color (APHA)	≤10
Boiling Range	124°-126°C

1-Octanesulfonic Acid, Sodium Salt Monohydrate — HPLC

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
5g	- - - -	**AC41636-0050**	53.80	- - - -
25g	- - - -	**AC41636-0250**	219.20	- - - -
100g	- - - -	**AC41636-1000**	421.70	- - - -

$CH_3(CH_2)_7SO_3Na•H_2O$
$C_8H_{17}NaO_3S•H_2O$
F.W. 216.27
Melting point: 300°C
[5324-84-5]

NEW

1-Octanol — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A402-500**	129.01	6/576.47
4L	Amber Glass	**A402-4**	454.40	4/1362.82

Octyl Alcohol, Caprylic Alcohol
$CH_3(CH_2)_6CH_2OH$
$C_8H_{18}O$
F.W. 130.23
[111-87-5]

ChemAlert® STORAGE gray

Product Specifications

Boiling Range	194°-196°C
Residue after Evaporation	≤0.02%
Free Acid (as Octanoic Acid)	≤0.05%

2-Octanol — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**0269-500**	61.24	6/283.76

Secondary Caprylic Alcohol, Methyl Hexyl Carbinol
$CH_3CHOH(CH_2)_5CH_3$
$C_8H_{18}O$
F.W. 130.23
[123-96-6]

SOLVENT

ChemAlert® STORAGE gray

Oil

Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
20L	Steel Pail	**02-20**	429.31	- - - -

Flash point:≥182°C (360°F)
For use in oil baths and melting-point apparatus.
Working temperature range -6.7° to +176.7°C (20° to 350°F)
[8042-47-5]

ChemAlert® STORAGE gray

Oil Black *(Lampblack) see Carbon, Lampblack C198.*

Oil of Vitriol *see Sulfuric Acid.*

Oleic Acid NF/FCC

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A195-500**	78.81	6/353.94

cis-9-Octadecenoic Acid
$CH_3(CH_2)_7CH{:}CH(CH_2)_7CO_2H$
$C_{18}H_{34}O_2$
[112-80-1]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Meets NF Chemical Specifications	
Specific gravity at 25°C	0.889-0.895
Congealing Temperature	Between 3°C and 10°C
Acid Value	196-204
Iodine Value	85-95
Residue on ignition from 10mL portion	≤1mg (about 0.01%)
Mineral Acids	To pass test
Neutral Fat or Mineral Oil	To pass test
Organic Volatile Impurities	Meets requirements
NF Protocol Required	To pass test
Meets FCC Chemical Specifications	
Acid Value	196-204
Iodine Value	83-103
Lead	≤0.1mg/kg
Residue on Ignition	≤0.01%
Saponification Value	Between 196 and 206
Titer (Solidification Point)	Not above 10°C
Unsaponifiable Matter	≤2.0%
Water	≤0.4%

Organic Standards (Multicomponent) *see Standards, Organic EPA Methods (Multicomponent).*

Orthoboric Acid *see Boric Acid, Certified ACS grade A73.*

Orthophosphoric Acid *see o-Phosphoric Acid, Certified ACS grade A242.*

Oxalic Acid Dihydrate Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
250g	Poly Bottle	**A219-250**	76.04	6/370.86
500g	Poly Bottle	**A219-500**	156.08	6/732.20
3kg	Poly Bottle	**A219-3**	669.24	4/2067.93
50kg	Poly Drum	**A219-50**	5795.86	- - - -

Ethanedioic Acid
$HO_2CCO_2H{\cdot}2H_2O$
$C_2H_2O_4{\cdot}2H_2O$
F.W. 126.07
[6153-56-6]

ChemAlert® STORAGE white

Product Specifications

Actual Lot Analysis is reported on label.

Assay	99.5-102.5%
Insoluble Matter	≤0.005%
Residue after Ignition	≤0.01%
Chloride	≤0.002%
Sulfate	≤0.005%
Calcium	≤0.001%
Nitrogen Compounds (as N)	≤0.001%
Heavy Metals (as Pb)	≤5ppm
Iron	≤2ppm
Substances Darkened by Hot H_2SO_4	To pass test

Oxalic Acid Dihydrate Technical

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A218-500**	107.85	6/482.08
3kg	Poly Bottle	**A218-3**	455.30	4/1400.02

$HO_2CCO_2H{\cdot}2H_2O$
$C_2H_2O_4{\cdot}2H_2O$
F.W. 126.07
[6153-56-6]

ChemAlert® STORAGE white

Oxalic Acid Diammonium Salt *see Ammonium Oxalate Monohydrate A679.*

Oxalic Acid Potassium Salt *see Potassium Oxalate Monohydrate P273.*

Oxalyl Chloride, 98%

Quantity	Packaging	Cat. No.	Each	Case of
25g	Glass Bottle	**AC12961-0250**	16.60	- - - -
100g	Glass Bottle	**AC12961-1000**	42.70	6/217.54
1kg	Glass Bottle	**AC12961-0010**	304.50	- - - -

Ethanedioyl dichloride
ClCOCOCl
$C_2Cl_2O_2$
F.W. 126.93
Density: 1.335g/mL
[79-37-8]

NEW

Oxine *see 8-Hydroxyquinoline O261.*

2,2'-Oxybis[ethanol] *see Diethylene Glycol D49.*

2,2'-Oxydiethanol *see Diethylene Glycol D49.*

Oxyquinoline *see 8-Hydroxyquinoline O261.*

Paraffin

Granules

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P31-500**	42.69	6/193.32

[8002-74-2]

ChemAlert® STORAGE gray

Product Specifications

Melting Point	53°-57°C

Paraffin for Embedding *see TissuePrep* Embedding Media T565 and TissuePrep* 2 Embedding Media T555.*

Paraffin Liquid *see Mineral Oil, Light O121 and Mineral Oil, Heavy O122.*

Paraffin Oil *see Mineral Oil, Light O121 and Mineral Oil, Heavy O122.*

Paraformaldehyde *see Formaldehyde, Para O4042 and T353.*

Parosaniline *see Fuchsin Basic F98.*

▸***Pearl Ash*** *see Potassium Carbonate Anhydrous P208.*

▸***PEG 8000*** *see Polyethylene Glycol 8000, Fisher BioReagents* BP233.*

Pentane — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**P399-1**	69.69	6/297.02
1L	Amber Glass/Safe-Cote*	**P399SK-1**	78.70	6/332.87
4L	Amber Glass	**P399-4**	167.56	4/470.66
4L	Amber Glass/Safe-Cote	**P399SK-4**	169.45	4/482.63

Also available in recyclable FisherPak and NOWPak* containers.*

SOLVENT

ChemAlert STORAGE red

$CH_3(CH_2)_3CH_3$
C_5H_{12}
F.W. 72.15
Submicron Filtered.
[109-66-0]

Product Specifications
Actual Lot Analysis is reported on label.

Assay ≥99%
Color (APHA) ≤5
Fluorescence Background (as Quinine Sulfate)
To pass testRefractive Index at 25°C 1.3540-1.3570
Residue after Evaporation ≤5ppm
Water ≤0.02%
Optical Absorbance:
- at 190nm ≤1.00
- at 200nm ≤0.30
- at 210nm ≤0.10
- at 254nm ≤0.014

Pentane — Pesticide

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**P400-4**	198.20	4/562.21

$CH_3(CH_2)_3CH_3$
C_5H_{12}
F.W. 72.15
[109-66-0]

SOLVENT

ChemAlert STORAGE red

Product Specifications
Actual Lot Analysis is reported on label.

Color (APHA) ≤5
Pesticide Residue Analysis (as Heptachlor Epoxide) To pass test

Pentane — Spectranalyzed*

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**P393-1**	128.12	6/572.69

$CH_3(CH_2)_3CH_3$
C_5H_{12}
F.W. 72.15
Suitable for use in infrared spectroscopy.
[109-66-0]

SOLVENT

ChemAlert STORAGE red

Product Specifications

IR Transmittance:
- at 2.5-3.2µm ≥70%
- at 3.6-6.7µm ≥70%
- at 7.4-10.3µm ≥70%
- at 11.1-11.5µm ≥70%
- at 11.7-13.5µm ≥70%
- at 14.0-15.0µm ≥70%

Transmittance measured in a 0.025mm KBr cell. Curves available on request.

Pentane — Certified

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**04062-4**	121.53	4/364.51
20L	Steel Pail	**04062-20**	419.13	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

$CH_3(CH_2)_3CH_3$
C_5H_{12}
F.W. 72.15
[109-66-0]

SOLVENT

ChemAlert STORAGE red

Product Specifications

Assay (by GC) ≥98%
Color (APHA) ≤10
Boiling Range 2°C incl. 36°C

▸***iso-Pentane*** *see 2-Methylbutane O3551.*

▸***1,5-Pentanedial*** *see Glutaraldehyde Solution, 50% G151.*

▸***2,4-Pentanedione*** *see Acetyl Acetone A25.*

1-Pentanesulfonic Acid Sodium Salt Anhydrous — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**04068-100**	562.98	6/2628.36

Also available in recyclable FisherPak and NOWPak* containers.*

ChemAlert STORAGE gray

$CH_3(CH_2)_4SO_3Na$
$C_5H_{11}O_3SNa$
F.W. 174.20
[207605-40-1]

Product Specifications

Solubility (1g/25mL H_2O) To pass test
Sodium Content (by gravimetric method) approx. 13.2%
Optical Absorbance (1g/100mL H_2O):
- at 220nm ≤0.03
- at 254nm ≤0.01
- at 300nm ≤0.01

1-Pentanesulfonic Acid Sodium Salt Monohydrate — HPLC

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
25g	Glass Bottle	**AC42320-0250**	148.50	- - - -
100g	Glass Bottle	**AC42320-1000**	410.80	- - - -

n-Amylsulfonic acid, sodium salt
$CH_3(CH_2)_4SO_3Na{\bullet}H_2O$
$C_5H_{11}NaO_3S{\bullet}H_2O$
F.W. 192.21
Melting point: 300°C
[207605-40-1]

▸***1-Pentanol*** *see n-Amyl Alcohol A394.*

▸***Pentasodium Triphosphate*** *see Sodium Triphosphate S645.*

▸***Pentyl Acetate*** *see Amyl Acetate A718.*

▸***1-Pentyl Alcohol*** *see n-Amyl Alcohol A394.*

▸***tert-Pentyl Alcohol*** *see tert-Amyl Alcohol A730.*

Pepsin — Laboratory

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**P53-100**	79.77	6/358.31
500g	Amber Glass	**P53-500**	283.21	6/1274.43

[9001-75-6]

ChemAlert STORAGE blue

Perchloric Acid Optima*

Quantity	Packaging	Cat. No.	Each	Case of
250mL	PTFE	**A469-250**	349.40	----
500mL	PTFE	**A469-500**	572.33	----
1L	PTFE	**A469-1**	1107.13	----

$HClO_4$

F.W. 100.46

Packaged in specially manufactured, precleaned PTFE bottle to protect product integrity.

Certificate of Lot Analysis included with each bottle.

[7601-90-3]

ACID

ChemAlert® STORAGE yellow

roduct Specifications and Typical Values

	Max. Spec.	Typical Value
Assay ($HClO_4$)	65–71%	70%
Aluminum	100ppt	<100ppt
Antimony	100ppt	<50ppt
Arsenic	100ppt	<100ppt
Barium	100ppt	<20ppt
Beryllium	100ppt	<5ppt
Bismuth	10ppt	<2ppt
Cadmium	10ppt	<1ppt
Calcium	100ppt	<100ppt
Cerium	10ppt	<1ppt
Cesium	10ppt	<1ppt
Cobalt	100ppt	<5ppt
Copper	100ppt	<20ppt
Dysprosium	10ppt	<1ppt
Erbium	10ppt	<1ppt
Europium	10ppt	<1ppt
Gadolinium	10ppt	<1ppt
Gallium	10ppt	<5ppt
Holmium	10ppt	<1ppt
Indium	10ppt	<1ppt
Iron	100ppt	<70ppt
Lanthanum	10ppt	<1ppt
Lead	10ppt	<2ppt
Lithium	100ppt	<1ppt
Lutetium	10ppt	<1ppt
Magnesium	100ppt	<20ppt
Manganese	100ppt	<5ppt
Molybdenum	100ppt	<10ppt
Neodymium	10ppt	<1ppt
Nickel	100ppt	<30ppt
Palladium	10ppt	<10ppt
Platinum	100ppt	<1ppt
Potassium	100ppt	<20ppt
Praseodymium	10ppt	<1ppt
Rhodium	10ppt	<5ppt
Rubidium	10ppt	<10ppt
Samarium	10ppt	<1ppt
Scandium	100ppt	<20ppt
Silver	100ppt	<5ppt
Sodium	100ppt	<50ppt
Strontium	100ppt	<1ppt
Tellurium	10ppt	<10ppt
Terbium	10ppt	<1ppt
Thallium	100ppt	<1ppt
Thorium	10ppt	<0.1ppt
Thulium	10ppt	<1ppt
Tin	100ppt	<20ppt
Titanium	100ppt	<20ppt
Uranium	10ppt	<0.1ppt
Vanadium	100ppt	<20ppt
Ytterbium	10ppt	<1ppt
Yttrium	10ppt	<1ppt
Zinc	100ppt	<20ppt
Zirconium	100ppt	<3ppt

Perchloric Acid TraceMetal

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass	**A511-500**	231.62	6/921.44
2.5L	Glass	**A511-212**	759.49	4/2015.33
2.5L	Glass/Safe-Cote*	**A511SK212**	2024.05	----

$HClO_4$

F.W. 100.46

Certificate of Lot Analysis included with each shipment.

[7601-90-3]

ACID

ChemAlert® STORAGE yellow

Product Specifications and Typical Values

	Max. Spec.	Typical Value
Assay ($HClO_4$)	67–71%	70%
Color (APHA)	10	<10
Aluminum	1ppb	<0.5ppb
Antimony	1ppb	<0.1ppb
Arsenic	0.5ppb	<0.1ppb
Barium	1ppb	<0.1ppb
Beryllium	1ppb	<0.1ppb
Bismuth	1ppb	<0.1ppb
Cadmium	1ppb	<0.1ppb
Calcium	1ppb	<0.5ppb
Cerium	0.5ppb	<0.1ppb
Cesium	0.5ppb	<0.1ppb
Cobalt	1ppb	<0.1ppb
Copper	1ppb	<0.5ppb
Dysprosium	0.5ppb	<0.1ppb
Erbium	0.5ppb	<0.1ppb
Europium	0.5ppb	<0.1ppb
Gadolinium	0.5ppb	<0.1ppb
Gallium	0.5ppb	<0.1ppb
Holmium	0.5ppb	<0.1ppb
Indium	0.5ppb	<0.1ppb
Iron	1ppb	<0.5ppb
Lanthanum	0.5ppb	<0.1ppb
Lead	1ppb	<0.1ppb
Lithium	1ppb	<0.1ppb
Lutetium	0.5ppb	<0.1ppb
Magnesium	1ppb	<0.5ppb
Manganese	1ppb	<0.1ppb
Molybdenum	1ppb	<0.1ppb
Neodymium	0.5ppb	<0.1ppb
Nickel	1ppb	<0.1ppb
Palladium	0.5ppb	<0.1ppb
Platinum	0.5ppb	<0.1ppb
Potassium	1ppb	<0.5ppb
Praseodymium	0.5ppb	<0.1ppb
Rhodium	0.5ppb	<0.1ppb
Rubidium	0.5ppb	<0.1ppb
Samarium	0.5ppb	<0.1ppb
Scandium	0.5ppb	<0.1ppb
Silver	1ppb	<0.1ppb
Sodium	1ppb	<0.5ppb
Strontium	1ppb	<0.1ppb
Tellurium	0.5ppb	<0.1ppb
Terbium	0.5ppb	<0.1ppb
Thallium	0.5ppb	<0.1ppb
Thorium	1ppb	<0.1ppb
Thulium	0.5ppb	<0.1ppb
Tin	1ppb	<0.1ppb
Titanium	1ppb	<0.1ppb
Uranium	1ppb	<0.1ppb
Vanadium	1ppb	<0.5ppb
Ytterbium	0.5ppb	<0.1ppb
Yttrium	0.5ppb	<0.1ppb
Zinc	1ppb	<0.5ppb
Zirconium	1ppb	<0.1ppb

Element concentrations are at the point of bottling.

Perchloric Acid, 70% Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
1 lb.	Safe-Cote*	**A2296-1LB**	144.64	6/522.59
8 lb.	Glass	**A229-8LB**	287.51	4/693.39
8 lb.	Glass/Safe-Cote	**A229S-8LB**	844.98	- - - -

$HClO_4$
F.W. 100.46
Density: 1.67g/mL
[7601-90-3]

ACID

ChemAlert® STORAGE yellow

Product Specifications

Assay	69.0-72.0%
Color (APHA)	≤10
Residue after Ignition	≤0.003%
Silicate and Phosphate (as SiO_2)	≤5ppm
Chloride	≤0.001%
Nitrogen Compounds (as N)	≤0.001%
Sulfate	≤0.001%
Heavy Metals (as Pb)	≤1ppm
Iron	≤1ppm

Perchloric Acid, 60% Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
1 lb.	Glass	**A2286-1LB**	104.24	6/374.33
7 lb.	Glass	**A228-7LB**	271.66	4/651.38
7 lb.	Glass/Safe-Cote*	**A228S-7LB**	681.01	- - - -

$HClO_4$
F.W. 100.46
Density: 1.54g/mL
[7601-90-3]

ACID

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	60.0-62.0%
Color (APHA)	≤10
Residue after Ignition	≤0.003%
Silicate and Phosphate (as SiO_2)	≤5ppm
Chloride	≤0.001%
Nitrogen Compounds (as N)	≤0.001%
Sulfate	≤0.001%
Heavy Metals (as Pb)	≤1ppm
Iron	≤1ppm

Perchloric Acid Solution, 0.1N Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SP339-500**	114.73	6/546.42

For nonaqueous titrations.
In Glacial Acetic Acid
Reference Standard: NIST Potassium Acid Phthalate
[64-19-7 (Acetic Acid)]
[7601-90-3 (Perchloric Acid)]

ACID

STORAGE red

Product Specifications

Normality	0.0995 to 0.1005

Perchloric Acid, 0.100N

Clear, colorless to light-yellow liquid
In Glacial Acetic Acid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass Amber	**5515-16**	28.22	- - - -
1L	Glass Amber	**5515-32**	51.97	- - - -
2.50L	Glass Safety Coated	**5515-5PT**	104.70	- - - -
4L	Glass Amber	**5515-1**	116.60	- - - -
20L	Cubitainer*	**5515-5**	589.70	- - - -

Melting point: Approx. 16.6
Boiling point: Approx. 118
[7601-90-3 (Perchloric Acid)]
[108-24-7 (Acetic Anhydride)]
[64-19-7 (Acetic Acid)]

▸***Perchloric Acid Magnesium Salt*** *see Magnesium Perchlorate Anhydrous M54.*

▸***Perchloroethylene*** *see Tetrachloroethylene O4586.*

▸***Perhydrol*** *see Hydrogen Peroxide, 30% H325.*

Periodic Acid Certified

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**A223-25**	74.22	6/348.17
100g	Amber Glass	**A223-100**	183.60	6/811.30

Iodic Acid
H_5IO_6
F.W. 227.96
[10450-60-9]

ACID

ChemAlert® STORAGE yellow

Product Specifications

Assay	99.0-101.0%

Permount* Mounting Media

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**SP15-100**	20.71	6/117.42
500mL	Amber Glass	**SP15-500**	42.30	6/236.39

A permanent adhesive for cementing cover glasses to microscope slides.

STORAGE red

Petrolatum Laboratory

White

Quantity	Packaging	Cat. No.	Each	Case of
1 lb.	Plastic Jar	**P66-1LB**	47.67	6/218.37
7 lb.	Plastic Jar	**P66-7LB**	185.97	4/581.58

Petroleum Jelly
[8009-03-8]

ChemAlert® STORAGE gray

▸***Petrolatum Liquid*** *see Mineral Oil, Light O and Mineral Oil, Heavy O122.*

Petroleum Ether Optima*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**E120-4**	107.49	4/303.48

Also available in recyclable FisherPak and NOWPak* containers.*
Ligroine, B.P. 35°-60° C
Packaged under Nitrogen. Submicron Filtered.
Keep tightly closed in a cool place.
Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.
[8032-32-4]

SOLVEN

STORAGE red

Product Specifications

Color (APHA)	≤5
Acidity	To pass test
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤10ng/L
Water	≤0.01%
Residue after Evaporation	≤1ppm
Boiling Range (1 drop to dryness)	35°-60°C
Refractive Index at 25°C	≤1.3560-1.3660

*Trademark. See Trademark Reference.

Prices subject to change.

Petroleum Ether

Pesticide

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**P480-4**	102.87	4/288.06

Also available in recyclable FisherPak and NOWPak* containers.*

Ligroine, B.P. 35°C to 60°C

[8032-32-4]

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Actual Lot Analysis is reported on label.

Color (APHA)	≤10
Boiling Range	35°-60°C
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤10ng/L

Petroleum Ether

Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**E139-500**	44.17	6/207.61
1L	Amber Glass	**E139-1**	68.79	6/315.70
4L	Amber Glass	**E139-4**	103.35	4/321.22
4L	SafeTin*	**E139S-4**	117.05	4/365.62
4L	Amber Glass/Safe-Cote*	**E139SK-4**	116.45	4/359.67
20L	Steel Pail	**E139-20**	250.12	- - - -
200L	Steel Drum	**E139-200**	1294.27	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

Ligroine, B.P.35°C-60°C

Benzine

Also meets specifications of the American Oil Chemists Society and the National Cottonseed Producers Association.

[8032-32-4]

SOLVENT

ChemAlert® STORAGE red

roduct Specifications

Actual Lot Analysis is reported on label.

Color (APHA)	≤10
Boiling Range	36°-60°C
Initial Boiling Temperature	36°-39°C
Dry Flask End Point Temperature	52°-60°C
Fraction Distills under 54°C	≥95%
Fraction Distills under 40°C	≥60%
Distillation Residue	To pass test
Residue after Evaporation	≤0.001%
Acidity	To pass test
Heavy Oils and Fats	To pass test
Doctor Test	Sweet
Copper Strip Corrosion Test	To pass test
Stearin Evaporation Residue	≤0.003g
Saponification Value	≤0.015mg KOH/g
Specific Gravity at 15.5°C	0.630-0.660
Unsaturated Compounds	Trace (≤0.5%)

Petroleum Jelly *see Petrolatum, White P66.*

Petroleum Naphtha *see Benzine B264.*

Petroleum Naphtha Solvent *see Hexanes H291.*

pH Testing *see Alkacid* products.*

o-Phenanthroline *see 1,10-Phenanthroline Monohydrate P70.*

1,10-Phenanthroline Monohydrate

Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
5g	Amber Glass	**P70-5**	111.84	6/499.94
10g	Amber Glass	**P70-10**	163.24	6/765.77

o-Phenanthroline

$C_{12}H_8N_2 \cdot H_2O$

F.W. 198.23

[5144-89-8]

ChemAlert® STORAGE blue

Product Specifications

Actual Lot Analysis is reported on label.

Suitability for Determining Iron	To pass test
Suitability as a Redox Indicator	To pass test

Phenol

Laboratory

Fused Crystals

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass/Poison Pack	**A91I-500**	79.97	- - - -
2.5kg	Amber Glass/Poison Pack	**A91I-212**	289.04	- - - -

Carbolic Acid, Phenyl Hydroxide, Hydroxybenzene

C_6H_5OH

C_6H_6O

F.W. 94.11

[108-95-2]

ChemAlert® STORAGE white

Phenol

Certified ACS

Crystals

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass/Poison Pack	**A92-100**	76.83	- - - -
500g	Amber GlassPoison Pack	**A92-500**	143.51	- - - -
1.5kg	Amber Glass/Poison Pack	**A92-112**	351.63	- - - -

Carbolic Acid, Phenyl Hydroxide, Hydroxybenzene

C_6H_5OH

C_6H_6O

F.W. 94.11

[108-95-2]

ChemAlert® STORAGE white

Actual Lot Analysis is reported on label.

Assay	≥99.0%
Water	≤0.5%
Clarity of Solution (5g/100mL)	To pass test
Residue after Evaporation	≤0.05%
Freezing Point (dry basis)	≥40.5°C
Preservative (H_3PO_2)	0.15%

Phenol

USP

Liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass/Poison Pack	**A88I-500**	72.93	- - - -

Carbolic Acid

[108-95-2]

ChemAlert® STORAGE white

Product Specifications

Assay	≥89%
Clarity of Solution (1mL/15mL)	To pass test
Distilling Range	≤182.5°C
Nonvolatile Residue	≤0.05%
Organic Volatile Impurities	Meets the requirements

Phenol

Certified

Liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass/Poison Pack	**A931I-500**	118.25	- - - -
1L	Amber Glass/Poison Pack	**A931I-1**	198.89	- - - -
4L	Amber Glass/Poison Pack	**A931I-4**	554.03	- - - -
200L	Steel Drum	**A931I-200**	3799.47	- - - -

Carbolic Acid, Phenyl Hydroxide, Hydroxybenzene

[108-95-2]

ChemAlert® STORAGE white

Contd. on next page.

Contd. from previous page.

Product Specifications

Assay	≥89%
Residue after Evaporation	≤0.05%
Water	≤11%

▸Phenol/Chloroform/Isoamyl Alcohol Mixtures *see Fisher BioReagents* BP1754, BP1753, and BP1752.*

Phenolphthalein **Certified ACS**

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**P79-100**	63.74	6/295.16
500g	Amber Glass	**P79-500**	264.01	6/1235.48

3,3-Bis(p-hydroxyphenyl)-1(3H)-isobenzofuranone

3,3-Bis(p-hydroxyphenyl) Phthallide

$C_6H_4COOC(C_6H_4\text{-}4\text{-}OH)_2$

$C_{20}H_{14}O_4$

F.W. 318.33

[77-09-8]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Clarity of Alcohol Solution	To pass test
Visual Transition Interval	To pass test

Phenolphthalein Solution, Alcoholic, 1.0%

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SP62-500**	50.55	6/240.65
1L	Amber Glass	**SP62-1**	73.48	6/340.53

Volumetric indicator.

[77-09-8]

ChemAlert® STORAGE red

Product Specifications

Color (APHA)	≤5
Concentration	0.7-1.3%
Visual Transition Interval	Pass test

Phenolphthalein Indicator **ASTM E 200 Reagent**

1% (w/v) in 95% (v/v) Alcohol

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**5620-4**	10.38	- - - -
500mL	Poly Natural	**5620-16**	14.16	- - - -
1L	Poly Natural	**5620-32**	22.18	- - - -
4L	Poly Natural	**5620-1**	60.15	- - - -

Application: For Acid-Base Titrations

Phenolphthalein Solution, Alcoholic, 0.5%

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SP50-1**	65.91	6/312.62

[77-09-8]

ChemAlert® STORAGE red

Product Specifications

Color (APHA)	≤5
Concentration	0.45-0.55%
Visual Transition Interval	Pass test

Phenolphthalein Indicator

0.5% (w/v) in 50% (v/v) Alcohol

Clear, colorless to slight pink liquid

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**5600-4**	9.51	- - - -
500mL	Poly Natural	**5600-16**	13.45	- - - -
1L	Poly Natural	**5600-32**	20.97	- - - -
4L	Poly Natural	**5600-1**	46.94	- - - -

Phenol Red, Free Acid **Certified ACS**

Quantity	Packaging	Cat. No.	Each	Case of
10g	Amber Glass	**P74-10**	167.09	6/781.93

Phenosulfohephthalein

4,4'-(3H-2,1-Benzoxathiol-3-yildene)bisphenol S, S-Dioxide

$C_6H_4SO_2OC(C_6H_4\text{-}4\text{-}OH)_2$

$C_{19}H_{14}O_5S$

F.W. 354.39

pH indicator.

[143-74-8]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Clarity of Solution	To pass test
Visual Transition Interval	To pass test

Phenol Red, Sodium Salt **Certified ACS**

Quantity	Packaging	Cat. No.	Each	Case of
10g	Amber Glass	**P391-10**	169.02	6/790.94

Phenolsulfonephthalein Sodium Salt

$C_6H_4SO_2OC(C_6H_4\text{-}4\text{-}OH)(C_6H_4\text{-}4\text{-}ONa)$

$C_{19}H_{13}NaO_5S$

F.W. 376.37

pH indicator.

[34487-61-1]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Clarity of Solution	To pass test
Visual Transition Interval	Yellow (pH 6.8) to Red (pH 8.2)

Phenol Red Solution, 0.02% **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SI24-500**	40.72	6/192.32

For colorimetric pH determinations.

[34487-61-1]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

pH at 25°C	7.4 to 8.0
Concentration	To pass test
Visual Transition Interval	Yellow (pH 6.8) to Red (pH 8.4)

▸Phenol, Saturated *see Fisher BioReagents* BP1750I.*

▸Phenolsulfonephthalein Dry Indicator *see Phenol Red, Free Acid P74.*

▸Phenolsulfonephthalein Sodium Salt *see Phenol Red, Sodium Salt P391.*

▸Phenylamine *see Aniline A740I.*

Phenylarsine Oxide Solution, 0.025N **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SP65-1**	81.71	6/406.92

ChemAlert® STORAGE gray

Product Specifications

Normality	0.024 to 0.026
pH at 25°C	6.0 to 7.0

Phenylarsine Oxide Solution, 0.00564N

Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SP68-1**	64.51	6/305.14
4L	Amber Glass	**SP68-4**	213.27	4/680.23

0.00564NDesigned for use with the Fisher Scientific Chlorine, Titrimeter* System.

ChemAlert® STORAGE gray

Product Specifications

Normality	0.00559-0.00569
pH at 25°C	6 to 7

Phenylarsine Oxide (PAO) Titrant, 0.00564N

Clear to hazy, colorless to light tan liquid
1 mL = 0.2 mg Cl_2
Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**5750-16**	49.91	- - - -
1L	Amber Glass	**5750-32**	62.69	- - - -
4L	Amber Glass	**5750-1**	136.27	- - - -

[637-03-6 (Phenylarsine Oxide)]
[1310-73-2 (Sodium Hydroxide)]
[7647-01-0 (Hydrochloric Acid)]
[7732-18-5 (Water, Deionized)]

Phenylic Acid *see Phenol A92.*

Phenyl Methyl Ketone *see Acetophenone.*

N-Phenylsulfanilic Acid Barium Salt *see Barium Diphenylamine Sulfonate B38.*

Phosphate Buffer Solutions *see Buffer Solutions.*

Phosphomolybdic Acid Hydrate

Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**A237-100**	549.33	6/2576.97

Molybdophosphoric Acid Hydrate
$H_3Mo_{12}O_{40}P\cdot xH_2O$
F.W. 1825.25 + x18.02
[51429-74-4]
Recommended storage: Refrigerate

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Insoluble Matter	≤0.01%
Chloride	≤0.02%
Sulfate	≤0.025%
Ammonium	≤0.01%
Calcium	≤0.02%
Heavy Metals (as Pb)	≤0.005%
Iron	≤0.005%

m-Phosphoric Acid

Certified ACS

Crystalline or Flakes

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**A280-100**	160.37	6/576.67
500g	Amber Glass	**A280-500**	424.73	6/1573.74
3kg	Amber Glass	**A280-3**	2132.26	4/5176.82

Metaphosphoric Acid, Glacial Phosphoric Acid
Mixture of meta-Phosphoric Acid and Sodium Metaphosphate.
[37267-86-0]

ACID

ChemAlert® STORAGE white

Product Specifications
Actual Lot Analysis is reported on label.

Assay (HPO_3)	33.5-36.5%
Stabilizer ($NaPO_3$)	57-63%
Chloride	≤0.001%
Nitrate	≤0.001%
Sulfate	≤0.005%
Heavy Metals (as Pb)	≤0.005%
Arsenic	≤1ppm
Iron	≤0.005%
Substances Reducing Permanganate (as H_3PO_3)	≤0.02%

o-Phosphoric Acid

NF/FCC

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A365-1**	121.49	6/544.37
4L	Amber Glass	**A365-4**	208.98	4/624.18

H_3PO_4
F.W. 98.00
[7664-38-2]

ACID

ChemAlert® STORAGE white

Product Specifications

Identification	To pass test

Meets NF Chemical Specifications

Assay	85.0-88.0%
Sulfate	To pass test
Heavy Metals	≤0.001%
Alkali Phosphates	To pass test
Nitrate	To pass test
Phosphorous or Hypophosphorous Acid	To pass test
NF Protocol Required	To pass test

Meets FCC Chemical Specifications

Assay	85.0-88.0%
Arsenic (as As)	≤3ppm
Cadmium	≤3mg/kg
Heavy Metals	≤10mg/kg
Fluoride	≤10mg/kg
Lead	≤3mg/kg

o-Phosphoric Acid, 85%

HPLC

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A260-500**	91.79	6/412.01

H_3PO_4
F.W. 98.00
[7664-38-2

ACID

ChemAlert® STORAGE white

Product Specifications

Assay	≥85.0%
Color (APHA)	≤10
Insoluble Matter	≤0.001%
Reaction with H_2SO_4	To pass test
Reducing Substances	To pass test
Volatile Acids (as Acetic Acid)	≤0.001%
Arsenic	≤0.5ppm
Chloride	≤3ppm
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.003%
Manganese	≤0.5ppm
Magnesium	≤0.002%
Nitrate	≤5ppm
Phosphorous and Hypophosphorous Acid	To pass test
Potassium	≤0.005%
Sodium	≤0.025%
Sulfate	≤0.001%
Antimony	≤0.002%
Optical Absorbance of a 1M Solution:	
at 220nm	≤0.05
at 254nm	≤0.04
at 300nm	≤0.02

o-Phosphoric Acid, 85% Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A242-500**	81.09	6/298.18
1L	Amber Glass	**A242-1**	96.76	6/353.48
2.5L	Glass	**A242-212**	110.11	6/394.43
2.5L	Glass/Safe-Cote*	**A242SK-212**	118.88	6/425.85
4L	Amber Glass	**A242-4**	179.48	4/444.90

Also available in recyclable FisherPak and NOWPak* containers.*

ACID

ChemAlert® STORAGE white

Orthophosphoric Acid

H_3PO_4

F.W. 98.00

Density: 1.70g/mL

[7664-38-2]

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥85.0%
Color (APHA)	≤10
Calcium	≤0.002%
Magnesium	≤0.002%
Chloride	≤3ppm
Nitrate	≤5ppm
Sulfate	≤0.001%
Volatile Acids	≤0.001%
Arsenic	≤0.5ppm
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.003%
Manganese	≤0.5ppm
Potassium	≤0.005%
Sodium	≤0.025%
Reducing Substances	To pass test
Reaction with H_2SO_4	To pass test
Phosphorous and Hypophosphorous Acid	To pass test
Antimony	≤0.002%
Insoluble Matter	≤0.001%

Phosphoric Acid, 10% (v/v)

Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**5850-16**	18.32	- - - -
1L	Poly Natural	**5850-32**	29.79	- - - -
4L	Poly Natural	**5850-1**	71.78	- - - -
20L	Cubitainer*	**5850-5**	269.71	- - - -

▸**Phosphoric Acid Diammonium Salt** *see Ammonium Phosphate Dibasic A686.*

▸**Phosphoric Acid Monoammonium Salt** *see Ammonium Phosphate Monobasic, HPLC grade A685.*

▸**Phosphoric Acid Trisodium Salt** *see Sodium Phosphate Tribasic Dodecahydrate, Certified ACS grade S377.*

▸**Phosphoric Anhydride** *see Phosphorus Pentoxide A245.*

Phosphorus Oxychloride, 99%

Quantity	Packaging	Cat. No.	Each	Case of
5g	Glass Bottle	**AC19129-0050**	19.60	- - - -
250g	Glass Bottle	**AC19129-2500**	20.30	- - - -
1kg	Glass Bottle	**AC19129-0010**	54.40	- - - -

NEW

Phosphoryl Chloride

$POCl_3$

Cl_3OP

F.W. 153.33

Melting point: 1.2°C

Boiling point: 107°C (at 760mmHg)

Density: 1.645g/mL

n: 1.46-1.462

[10025-87-3]

Phosphorus Pentoxide Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**A245-100**	59.38	6/278.55
500g	Amber Glass	**A245-500**	100.41	6/448.86

Phosphoric Anhydride

P_2O_5

F.W. 141.94

[1314-56-3]

ChemAlert® STORAGE white

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.01%
Phosphorus Trioxide	To pass test (about 0.02%)
Ammonium	≤0.005%
Heavy Metals (as Pb)	≤0.005%

Phosphorus Pentoxide Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A244-500**	87.23	6/391.80

Phosphoric Anhydride

P_2O_5

F.W. 141.94

[1314-56-3]

ChemAlert® STORAGE white

▸**Phosphorus Salt** *see Sodium Ammonium Phosphate, Tetrahydrate S218.*

Phosphotungstic Acid Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**A248-25**	75.28	6/353.15
100g	Amber Glass	**A248-100**	204.95	6/961.46
500g	Amber Glass	**A248-500**	757.93	6/3538.49

Tungstophosphoric Acid

Deliquescent

[12067-99-1]

Recommended storage: Refrigerate

ChemAlert® STORAGE white

Product Specifications

Insoluble Matter	≤0.020%
Chloride	≤0.03%
Nitrate	≤0.01%
Sulfate	≤0.02%
Ammonia	≤0.02%
Heavy Metals (as Pb)	≤0.005%
Iron	≤0.002%

*Trademark. See Trademark Reference.

Phthalaldehyde Certified

Quantity	Packaging	Cat. No.	Each	Case of
5g	Amber Glass	**04241-5**	179.56	6/842.31

1,2-Phthalic Dicarboxaldehyde
C_6H_4-1,2-$(CHO)_2$
$C_8H_6O_2$
F.W. 134.13
Suitable for fluorometric determination of proteins and for HPLC.
[643-79-8]

ChemAlert® STORAGE **gray**

roduct Specifications

Melting Range	2°C incl. 56°C
Suitability for Fluorometric Determination of Proteins	To pass test

Phthalic Acid Potassium Salt *see Potassium Hydrogen Phthalate, Primary Standard P243.*

Phthalic Anhydride Reagent ACS

Quantity	Packaging	Cat. No.	Each	Case of
25g	Glass Bottle	**AC42332-0250**	19.90	- - - -
500g	Glass Bottle	**AC42332-5000**	30.90	6/157.36
2kg	Glass Bottle	**AC42332-0020**	77.30	- - - -

1,3-Isobenzofurandione
$C_8H_4O_3$
F.W. 148.12
Melting point: 129-132°C
Boiling point: 284°C (at 760mmHg)
Flash point: 152°C
[85-44-9]

Picric Acid, Saturated, 1.2% Approx. (w/v)
Clear, yellow liquid
pH 1.5 - 2.0
Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**58-60-16**	29.97	- - - -
32 oz.	Poly Natural	**58-60-32**	40.94	- - - -
4L	Poly Natural	**5860-1**	56.28	- - - -

[88-89-1 (Picric Acid (2,4,6-Trinitrophenol))]
[7732-18-5 (Water, Deionized)]

Plasma Standards (Multicomponent) *see Standards, norganic, AA/ICP-AES Single Elements.*

Platinum (IV) Chloride *see Chloroplatinic Acid Hydrate P154.*

Platinum (IV) Chloride Solution, 10% (w/v)

Quantity	Packaging	Cat. No.	Each	Case of
25mL	Amber Glass	**SP119-25**	618.75	6/2977.50

Platinic Chloride Solution
[16941-12-1]

ChemAlert® STORAGE **white**

roduct Specifications

Assay (as Pt)	3.6-4.0%

Polyethylene Glycol *see Carbowax* products.*

▸***Polyethylene Glycol 8000 (P.E.G.)*** *see Fisher BioReagents* BP233.*

▸***Ponceau S*** *see Fisher BioReagents* BP103.*

▸***Potash, Caustic*** *see Potassium Hydroxide P250 and P251.*

▸***Potash Lye*** *see Potassium Hydroxide Technical grade P246.*

Potassium Acetate USP
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**P178-3**	432.72	4/1346.76

Acetic Acid, Potassium Salt
CH3COOK
$C_2H_3O_2K$
F.W. 98.14
[127-08-2]

ChemAlert® STORAGE **gray**

Product Specifications

Identification	To pass test
Assay (Dried Basis)	99.0-100.5%
pH (of 1 in 20 solution)	7.5 to 8.5
Loss on Drying at 150°C	≤1.0%
Heavy Metals	≤0.002%
Sodium	≤0.03%

Potassium Acetate Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P171-500**	99.73	6/467.82
3kg	Poly Pail	**P171I-3**	471.45	- - - -

Acetic Acid Potassium Salt
CH_3COOK
$C_2H_3O_2K$
F.W. 98.14
[127-08-2]

ChemAlert® STORAGE **gray**

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	6.5 to 9.0
Chloride	≤0.003%
Phosphate	≤0.001%
Sulfate	≤0.002%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Sodium	≤0.03%
Magnesium	≤0.002%

▸***Potassium Acid Carbonate*** *see Potassium Bicarbonate P235.*

▸***Potassium Acid Phosphate*** *see Potassium Phosphate Monobasic beginning with P286 and P380.*

▸***Potassium Acid Phthalate*** *see Potassium Hydrogen Phthalate, Primary Standard P243.*

Potassium Bicarbonate USP/FCC

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P235-500**	72.13	6/322.38
2.5kg	Poly Bottle	**P235-212**	212.48	4/624.05
12kg	Poly Pail	**P235-12**	640.81	- - - -

Potassium Acid Carbonate, Potassium Hydrogen Carbonate

$KHCO_3$

F.W. 100.12

[298-14-6]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Assay (Dried Basis)	99.5-101.5%
Loss on Drying	≤0.3%
Normal Carbonate	≤2.5%
Heavy Metals	≤0.001%
Organic Volatile Impurities	Meets requirements
Meets FCC Chemical Specifications	
Assay (Dried Basis)	99.0-101.5%
Normal Carbonate	To pass test
Lead (Pb)	≤2mg/kg
Loss on Drying	≤0.25%

Potassium Bicarbonate Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**P184-500**	62.38	6/292.61

Potassium Acid Carbonate, Potassium Hydrogen Carbonate

$KHCO_3$

F.W. 100.12

[298-14-6]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	99.7-100.5%
Insoluble Matter	≤0.01%
Chloride	≤0.001%
Phosphate	≤5ppm
Sulfur Compounds (as SO_4)	≤0.003%
Ammonium	≤5ppm
Calcium	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Sodium	≤0.03%
Magnesium	≤0.001%

▸***Potassium Bichromate*** *see Potassium Dichromate, Certified ACS grade P188.*

Potassium Biiodate Solution, 0.025N Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SP340-1**	85.92	6/406.76

For determination of dissolved oxygen.

[13455-24-8]

ChemAlert® STORAGE gray

Product Specifications

Normality	0.0248 to 0.0252
Color (APHA)	≤5

▸***Potassium Biphosphate*** *see Potassium Phosphate Monobasic beginning with P286.*

▸***Potassium Biphthalate*** *see Potassium Hydrogen Phthalate, Primary Standard P243.*

Potassium Bisulfate Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**P193-500**	122.56	6/574.90
500 tablets	Flint Glass	**P193-NHL**	402.00	- - - - -

Potassium Sulfate Acid

Potassium Hydrogen Sulfate

$KHSO_4$

F.W. 136.17

[7646-93-7]

ChemAlert® STORAGE white

Product Specifications

Acidity (as H_2SO_4)	35-37%
Insoluble Matter and NH_4OH Precipitate	≤0.01%
Chloride	≤0.001%
Nitrate	≤0.005%
Phosphate	≤0.001%
Calcium and Magnesium Precipitate	≤0.010%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.002%
Sodium	≤0.02%
Arsenic	≤5ppm
Bulk Density	≥1.17g/cc

▸***Potassium Bisulfate, Fused Powder*** *see Potassium Hydrogen Sulfate P195.*

Potassium Bromate Certified

With Magnesium Carbonate

Granular

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**P207-250**	45.24	6/212.21
500g	Amber Glass	**P207-500**	78.15	6/364.83

$KBrO_3$

F.W. 167.00

Contains anticaking agent.

[7758-01-2]

ChemAlert® STORAGE yellow

Product Specifications

Assay	≥98.5%
Loss on Drying at 105°C	≤0.5%
Bromide	≤0.3%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.002%
Magnesium Carbonate	0.25-1%
Sulfate	≤0.005%

Potassium Bromide Infrared

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**P227-25**	142.60	6/668.93

KBr

F.W. 119.00

[7758-02-3]

ChemAlert® STORAGE gray

Product Specifications

IR Scan	To pass test

Potassium Bromide, 99+%

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100g	Plastic Bottle	**AC206391000**	101.90	- - - -

KBr

F.W. 119

Melting point: 734°C

Boiling point: 1435°C (at 760mmHg)

[7758-02-3]

Potassium Bromide — Certified ACS

Beads or Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P205-500**	120.12	6/560.80
3kg	Poly Bottle	**P205-3**	592.25	4/1830.02

KBr
F.W. 119.00
[7758-02-3]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	5.0 to 8.8
Bromate	≤0.001%
Chloride	≤0.2%
Sulfate	≤0.005%
Barium	≤0.002%
Calcium	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Sodium	≤0.02%
Iodide	≤0.001%
Iodate	≤0.001%
Magnesium	≤0.001%

Potassium Carbonate Anhydrous — Certified ACS

Granular Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**P208-500**	102.49	6/458.19
3kg	Amber Glass	**P208-3**	527.79	4/1642.73
250 lb.	Fiber Drum	**P208-250LB**	1956.26	- - - -

Salt of Tartar, Pearl Ash, Carbonic Acid Potassium Salt
K_2CO_3
F.W. 138.21
[584-08-7]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.01%
Chloride	≤0.003%
Phosphate	≤0.001%
Silica	≤0.005%
Sulfur Compounds (as SO_4)	≤0.004%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Sodium	≤0.02%
Magnesium	≤0.002%

▸***Potassium Carbonate/Potassium Tetraborate/Potassium Hydroxide** see Buffer Solution, pH 10.00, Color-coded Blue SB115 and Buffer Solution, pH 10.00 SB116.*

Potassium Chlorate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**P212-100**	49.16	6/230.63
500g	Amber Glass	**P212-500**	114.42	6/530.31

Berthollet's Salt
$KClO_3$
F.W. 122.55
[3811-04-9]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.005%
Bromate	≤0.015%
Chloride	≤0.001%
Sulfate	To pass test (about 0.002%)
Calcium	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Iron	≤3ppm
Sodium	≤0.01%
Magnesium	≤0.002%

Potassium Chloride — EP/BP/USP/FCC

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P333-500**	70.28	6/314.13
3kg	Poly Bottle	**P333-3**	242.39	4/711.87
250 lb.	Fiber Drum	**P333-250LB**	783.98	- - - -

KCl
F.W. 74.55
[7447-40-7]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Acidity or Alkalinity	To pass test
Loss on Drying at 105°C	≤1.0%
Iodide or Bromide	≤0.005% Iodide/0.1% Bromide
Calcium and Magnesium	To pass test
Sodium	To pass test
Heavy Metals (as Pb)	≤0.001%
Organic Volatile Impurities	Meets requirements
Assay (Dried Basis)	99.0%-100.5%
Meets FCC Chemical Specifications	
Assay (After Drying)	≥99.0%
Acidity or Alkalinity	To pass test
Heavy Metals (as Pb)	≤5mg/kg
Iodide and/or Bromide	To pass test
Loss on Drying	≤1.0%
Sodium	To pass test
Meets EP Chemical Specifications	
Appearance of Solution	To pass test
Acidity or Alkalinity	To pass test
Bromides	≤0.1%
Iodides	To pass test
Sulfates	≤300ppm
Barium	To pass test
Heavy Metals	≤10ppm
Iron	≤20ppm
Magnesium and Alkaline Earth Metals (as Ca)	≤200ppm
Loss on Drying	≤1.0%
Assay (Dried Basis)	99.0-100.5
Meets BP Chemical Specifications	
Acidity or Alkalinity	To pass test
Appearance of Solution	To pass test
Bromides	≤0.1%
Iodide	To pass test
Sulfates	≤300ppm
Barium	To pass test
Heavy Metals	≤10ppm
Iron	≤20ppm
Magnesium and Alkaline Earth Metals (as Ca)	≤200ppm
Loss on Drying (Dried Basis)	≤1.0%
Assay (Dried Basis)	99.0-100.5%

Potassium Chloride USP/FCC
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P330-500**	65.07	6/305.26
3kg	Poly Bottle	**P330-3**	216.22	4/635.12
250 lb.	Fiber Drum	**P330-250LB**	829.95	- - - -

KCl
F.W. 74.55
[7447-40-7]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Assay	99.0-100.5%
Acidity or Alkalinity	To pass test
Loss on Drying at 105°C	≤1.0%
Iodide or Bromide	≤0.005% Iodide; ≤0.1% Bromide
Calcium and Magnesium	To pass test
Sodium	To pass test
Heavy Metals (as Pb)	≤0.001%
Organic Volatile Impurities	Meets requirements
Meets FCC Chemical Specifications	
Assay (after drying)	≥99.0%
Acidity or Alkalinity	To pass test
Heavy Metals (as Pb)	≤5mg/kg
Iodide and/or Bromide	To pass test
Loss on Drying	≤1.0%
Sodium	To pass test

Potassium Chloride Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P217-500**	60.42	6/283.41
3kg	Poly Bottle	**P217-3**	183.57	4/574.09
10kg	Poly Pail	**P217-10**	335.81	- - - -
250 lb.	Fiber Drum	**P217-250LB**	3041.26	- - - -

KCl
F.W. 74.56
Potassium chloride for calomel cells.
[7447-40-7]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.0-100.5%
Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	5.4 to 8.6
Iodide	≤0.002%
Bromide	≤0.01%
Chlorate and Nitrate (as NO_3)	≤0.003%
Phosphate	≤5ppm
Sulfate	≤0.001%
Barium	To pass test (about 0.001%)
Calcium and R_2O_3 Precipitate	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Iron	≤2ppm
Sodium	≤0.005%
Magnesium	≤0.001%

Potassium Chloride Solution
Saturated at 20°C

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SP138-500**	37.24	6/176.80

KCl
F.W. 74.55
For refilling calomel reference electrodes.
[7447-40-7]

ChemAlert® STORAGE gray

Product Specifications

Assay (KCl)	3.8 to 4.2M
Color (APHA)	≤5

Potassium Chloride Conductivity Standard
Clear, colorless liquid
500µS/cm (500µmho/cm) at 25°C

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**58875-32**	26.89	- - - -

[7447-40-7 (Potassium Chloride)]
[7732-18-5 (Water, Deionized)]

NEW

▸***Potassium Chloride for Calomel Cells*** *see Potassium Chloride, Certified ACS grade P217 and Potassium Chloride Solution, Saturated at 20°C SP138.*

Potassium Chromate Certified ACS
Granular

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**P220-100**	57.87	6/271.47
500g	Poly Bottle	**P220-500**	128.54	6/602.99
3kg	Poly Bottle	**P220-3**	564.54	4/1744.40

K_2CrO_4
F.W. 194.19
[7789-00-6]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.5-100.5%
Insoluble Matter	≤0.005%
Chloride	≤0.005%
pH of a 5% Solution at 25°C	8.6 to 9.8
Sulfate	≤0.03%
Calcium	≤0.005%
Sodium	≤0.02%

Potassium Chromate Solution, 5% (w/v) APHA

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SP152-500**	31.77	6/150.88

Neutral Potassium Chromate
K_2CrO_4
F.W. 194.19
Indicator for volumetric chloride determination.
[7789-00-6]

ChemAlert® STORAGE gray

Product Specifications

Assay	4.5-5.5%

▸***Potassium Chromium Alum*** *see Chromic Potassium Sulfate Dodecahydrate C337.*

▸***Potassium Chromium Sulfate*** *see Chromic Potassium Sulfate Dodecahydrate C337.*

Potassium Citrate Monohydrate USP/FCC

Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P218-500**	81.01	6/359.75
2.5kg	Poly Bottle	**P218-212**	203.86	4/605.40
12kg	Poly Pail	**P218-12**	474.06	- - - -
200 lb.	Fiber Drum	**P218-200LB**	2220.28	- - - -

Citric Acid Tripotassium Salt
$KO_2CCH_2C(OH)(CO_2K)CH_2CO_2K{\cdot}H_2O$
$C_6H_5K_3O_7{\bullet}H_2O$
F.W. 324.42
[6100-05-6]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Assay (dried basis)	99.0-100.5%
Alkalinity	To pass test
Heavy Metals (as Pb)	≤0.001%
Loss on Drying	3.0-6.0%
Tartrate	To pass test
Organic Volatile Impurities	Meets the requirements
Meets FCC Chemical Specifications	
Assay (dried basis)	99.0-100.5%
Alkalinity	To pass test
Lead (Pb)	≤2mg/kg
Loss on Drying	3.0-6.0%

Potassium Citrate Monohydrate Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**P222-500**	81.76	6/365.41

Citric Acid Tripotassium Salt
$KO_2CCH_2C(OH)(CO_2K)CH_2CO_2K{\cdot}H_2O$
$C_6H_5K_3O_7{\bullet}H_2O$
F.W. 324.42
[6100-05-6]

ChemAlert® STORAGE gray

Product Specifications

Insoluble Matter	≤0.01%
Free Acid (as Citric Acid)	≤0.15%
Free Alkali	To pass test
Chloride	≤0.003%
Phosphate	≤0.002%
Sulfate	≤0.010%
Ammonia	≤0.003%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%
Sodium	≤0.1%

Potassium Cyanide Certified

Granular

Quantity	Packaging	Cat. No.	Each	Case of
100g	Glass/ Poison Pk.	**P223I-100**	63.59	- - - -
500g	Glass/ Poison Pk.	**P223I-500**	100.97	- - - -

KCN
F.W. 65.12
[151-50-8]

ChemAlert® STORAGE blue

Product Specifications

Assay	≥98%
Chloride	≤0.5%
Phosphate	≤0.02%
Sulfate	≤0.04%
Sulfide	≤0.002%
Thiocyanate	To pass test (about 0.02%)
Iron, Total (as Fe)	≤0.03%
Lead	≤2ppm
Sodium	≤1.0%

Potassium Dichromate Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**P188-100**	69.63	6/326.62
500g	Amber Glass	**P188-500**	172.88	6/810.98
3kg	Amber Glass	**P188-3**	861.81	4/2650.06

Potassium Bichromate
$K_2Cr_2O_7$
F.W. 294.18
[7778-50-9]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.005%
Loss on Drying at 105°C	≤0.05%
Chloride	≤0.001%
Sulfate	≤0.005%
Calcium	≤0.003%
Sodium	≤0.02%
Iron	≤0.001%

Potassium Dichromate Technical

Fine Granules

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**P186-500**	116.79	6/545.23
3kg	Amber Glass	**P186-3**	268.69	4/830.24

$K_2Cr_2O_7$
F.W. 294.18
[7778-50-9]

ChemAlert® STORAGE yellow

Potassium Dichromate Solution, 0.1N Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SP170-1**	49.04	6/232.82

[7778-50-9]

ChemAlert® STORAGE blue

Product Specifications

Normality	0.0995 to 0.1005

Potassium Dichromate, 0.100N, 0.0167M

Clear, orange liquid
ACS/EP/USP Volumetric Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**6060-16**	12.21	- - - -
1L	Poly Natural	**6060-32**	21.40	- - - -
4L	Poly Natural	**6060-1**	47.60	- - - -
10L	Cubitainer*	**6060-25**	126.24	- - - -
20L	Cubitainer	**6060-5**	169.83	- - - -

[7778-50-9 (Potassium Dichromate)]
[7732-18-5 (Water, Deionized)]

NEW

▸***Potassium Dihydrogen Phosphate*** *see Potassium Phosphate Monobasic beginning with P286.*

Potassium Ferricyanide Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P232-500**	152.27	6/714.29

Potassium Prussiate, Red, Prussiate of Potash, Red
Everitt's Salt
$K_3Fe(CN)_6$
F.W. 329.25
[13746-66-2]

ChemAlert® STORAGE gray

Potassium Ferrocyanide Trihydrate **Certified ACS**
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**P236-500**	142.21	6/667.09

Potassium Prussiate, Yellow, Prussiate of Potash, Yellow
$K_4Fe(CN)_6 \cdot 3H_2O$
F.W. 422.39
[14459-95-1]

ChemAlert® STORAGE **gray**

Product Specifications
Actual Lot Analysis is reported on label.

Assay	98.5 -102.0%
Insoluble Matter	≤0.005%
Chloride	≤0.01%
Sulfate	To pass test (about 0.01%)

Potassium Fluoride, Anhydrous **Certified**
White Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**06113-500**	596.61	6/2835.25
1kg	Poly Bottle	**06113-1**	1034.62	4/3235.82

KF
F.W. 58.10
[7789-23-3]

ChemAlert® STORAGE **blue**

Product Specifications

Assay	≥99.0%
Chloride	≤0.05%
Iron	≤0.005%
Heavy Metals (as Pb)	≤0.003%
Sulfate	≤0.05%
Free Acid (as HF)	≤0.2%
Free Alkali (as K_2CO_3)	≤0.2%
Potassium Fluorosilicate	≤0.25%

Potassium Fluoride Solution, 50% (w/w)

Quantity	Packaging	Cat. No.	Each	Case of
20L	Poly Drum	**SP354-20**	1539.10	- - - -

[13455-21-5]

ChemAlert® STORAGE **blue**

Product Specifications

Specific Gravity at 25°C	1.28 to 1.33
pH of a 1:6 Dilution at 25°C	8.0 to 8.2

▸**Potassium Hydrogen Carbonate** *see Potassium Bicarbonate P184 and P235.*

▸**Potassium Hydrogen Diiodate Solution** *see Potassium Biiodate Solution SP340.*

Potassium Hydrogen Phthalate **Primary Standard**
Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**P243-100**	99.36	6/444.25
500g	Amber Glass	**P243-500**	184.71	6/866.47

Phthalic Acid Potassium Salt, Potassium Acid Phthalate Potassium Biphthalate
1-(HO_2C)–2–(CO_2K)-C_6H_4
$C_8H_5O_4K$
F.W. 204.23
NOTE: This reagent is satisfactory for use as a pH standard. For use as an acidimetric standard, this material should be lightly crushed and dried for 2 hours at 120°C to remove any absorbed moisture.
[877-24-7]

ChemAlert® STORAGE **gray**

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.95 -100.05%
Insoluble Matter	≤0.005%
pH of a 0.05M Solution at 25°C ± 0.2°C	4.01 ± 0.01
Chlorine Compounds (as Cl)	≤0.003%
Sulfur Compounds (as S)	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Sodium	≤0.005%

▸**Potassium Hydrogen Phthalate** *see Buffer Solution, pH 4.00, Color-coded Red SB101.*

Potassium Hydrogen Sulfate **Certified ACS**
Fused Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**P195-500**	173.98	6/806.40
3kg	Glass	**P195-3**	733.48	4/2255.45

Potassium Pyrosulfate Potassium Bisulfate
This product is a mixture of Potassium Pyrosulfate ($K_2S_2O_7$) and Potassium Hydrogen Sulfate ($KHSO_4$).
[7790-62-7]

ChemAlert® STORAGE **white**

Product Specifications
Actual Lot Analysis is reported on label.

Acidity (as H_2SO_4)	37.5 - 38.6%
Water	≤2.5%
Chloride	≤0.002%
Phosphate	≤0.001%
Calcium	≤0.002%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.002%
Sodium	≤0.01%
Magnesium	≤0.001%
Insoluble Matter	≤0.01%

▸**Potassium Hydrogen Sulfate** *see also Potassium Bisulfate P19*

Potassium Hydroxide **NF/FCC**
Pellets

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P251-500**	70.83	6/316.74
3kg	Poly Bottle	**P251-3**	208.76	4/613.22
50kg	Fiber Drum	**P251-50**	1425.58	- - - -

Lye, Caustic Potash, Potassium Hydrate
KOH
F.W. 56.11
[1310-58-3]

ChemAlert® STORAGE **white**

Product Specifications

Identification	To pass test
Meets NF Chemical Specifications	
Assay (total Alkali, as KOH)	≥85.0%
Potassium Carbonate	≤3.5%
Insoluble Substances	To pass test
Heavy Metals (as Pb)	≤0.003%
Meets FCC Chemical Specifications	
Assay (total Alkali, as KOH)	85.0-100.5%
Carbonate (as K_2CO_3)	≤3.5%
Insoluble Substances	To pass test
Lead (Pb)	≤2mg/kg
Mercury (Hg)	≤0.1mg/kg

Potassium Hydroxide **Certified ACS**

Pellets

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P250-500**	61.55	6/288.73
1kg	Poly Bottle	**P250-1**	89.72	6/418.86
3kg	Poly Bottle	**P250-3**	168.47	4/520.56
10kg	Poly Pail	**P250-10**	312.54	- - - -
50kg	Fiber Drum	**P250-50**	1099.20	- - - -

Caustic Potash, Potassium Hydrate
KOH
F.W. 56.11
[1310-58-3]

ChemAlert® STORAGE white

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥85.0%
Potassium Carbonate	≤2.0%
Chloride	≤0.01%
Nitrogen Compounds (as N)	≤0.001%
Phosphate	≤5ppm
Sulfate	≤0.003%
Heavy Metals (as Ag)	≤0.001%
Iron	≤0.001%
Nickel	≤0.001%
Sodium	≤0.05%
Calcium (Ca)	≤0.005%
Magnesium (Mg)	≤0.002%

Potassium Hydroxide **Technical**

Flakes

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**P246-3**	101.20	4/316.49

Caustic Potash, Potassium Hydrate
KOH
F.W. 56.11
[1310-58-3]

ChemAlert® STORAGE white

Potassium Hydroxide Solution, 50% (w/v)

Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**6160-16**	21.19	- - - -
1L	Poly Natural	**6160-32**	32.03	- - - -
4L	Poly Natural	**6160-1**	85.37	- - - -

Aqueous Solution

Potassium Hydroxide Solution, 45% (w/w) **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SP236-500**	54.25	6/264.28
4L	Poly Bottle	**SP236-4**	195.67	4/619.88
20L	PolyPac*	**SP236P-20**	601.69	- - - -
20L	Poly Drum	**SP236-20**	518.28	- - - -
200L	- - - -	**SP236-200**	2125.86	- - - -

KOH
F.W. 56.11
[1310-58-3]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Assay	45-47%
Color (APHA)	≤10
Potassium Carbonate	≤0.90%
Chloride	≤0.005%
Nitrogen Compounds (as N)	≤0.001%
Phosphate	≤5ppm
Sulfate	≤0.002%
Ammonium Hydroxide Precipitate	≤0.01%
Heavy Metals (as Ag)	≤0.002%
Iron	≤7ppm
Sodium	≤0.03%

Potassium Hydroxide, 45% (w/w) **Analytical Reagent Grade**

Clear, colorless liquid
pH > 12
Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**6190-16**	19.76	- - - -
1L	Poly Natural	**6190-32**	28.44	- - - -
4L	Poly Natural	**6190-1**	61.96	- - - -
10L	Cubitainer*	**6190-25**	195.83	- - - -
20L	Cubitainer	**6190-5**	291.06	- - - -
20L	Ropack*	**6190-5HP**	233.64	- - - -

[1310-58-3 (Potassium Hydroxide)]
[7732-18-5 (Water, Deionized)]

NEW

Potassium Hydroxide, 10% (w/v)

Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**6130-4**	8.16	- - - -
500mL	Poly Natural	**6130-16**	16.32	- - - -
1L	Poly Natural	**6130-32**	24.27	- - - -
4L	Poly Natural	**6130-1**	48.20	- - - -
10L	Cubitainer*	**6130-25**	94.18	- - - -
20L	Cubitainer	**6130-5**	157.21	- - - -

Potassium Hydroxide, 10.0N

Clear, colorless liquid
pH > 12

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**625290-32**	18.14	- - - -
4L	Poly Natural	**625290-1**	76.09	- - - -

[1310-58-3 (Potassium Hydroxide)]
[7732-18-5 (Water, Deionized)]

NEW

Potassium Hydroxide Solution, 1N **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SP208-500**	36.88	6/177.23

KOH
F.W. 56.11
Titrated at 25°C to pH 8.6 (phenolphthalein endpoint) against NIST Potassium Acid Phthalate.
[1310-58-3]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Normality	0.995 to 1.005
Color (APHA)	≤5
Carbonate	To pass test

Potassium Hydroxide, 1.00N

Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**6250-16**	15.59	- - - -
1L	Poly Natural	**6250-32**	21.19	- - - -
4L	Poly Natural	**6250-1**	50.78	- - - -
10L	Cubitainer*	**6250-25**	120.68	- - - -
20L	Cubitainer	**6250-5**	143.82	- - - -

[1310-58-3 (Potassium Hydroxide)]
[7732-18-5 (Water, Deionized)]

Potassium Hydroxide Solution, 1N — Certified

In Methanol

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SP220-1**	73.70	6/351.71

KOH

F.W. 56.11

Titrated at 25°C to pH 8.2 (phenolphthalein endpoint) against standardized HCl.

[67-56-1 (Methanol)]

[1310-58-3 (Potassium Hydroxide)]

CAUSTIC

ChemAlert® STORAGE red

Product Specifications

Normality..........0.995-1.005

Color (APHA)..........≤5

Potassium Hydroxide, 1.00N

In Methanol

Quantity	Packaging	Cat. No.	Each	Case of
20L	Cubitainer*	**6262-5**	207.06	- - - -

Potassium Hydroxide, 0.500N

Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**6230-16**	12.98	- - - -
1L	Poly Natural	**6230-32**	17.67	- - - -
4L	Poly Natural	**6230-1**	50.31	- - - -
20L	Cubitainer*	**6230-5**	135.64	- - - -

[1310-58-3 (Potassium Hydroxide)]

[7732-18-5 (Water, Deionized)]

Potassium Hydroxide, 0.500N

Clear, colorless liquid

In Denatured Alcohol

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**6265-32**	54.30	- - - -
4L	Poly Natural	**6265-1**	74.43	- - - -
10L	Cubitainer*	**6265-25**	157.15	- - - -
20L	Cubitainer	**6265-5**	217.07	- - - -

Melting point: Approx. -110

Boiling point: Approx. 77

[1310-58-3 (Potassium Hydroxide)]

[67-56-1 (Methanol (Methyl Alcohol))]

[64-17-5 (Ethyl Alcohol (Ethanol))]

Potassium Hydroxide Solution, 0.5N — Certified

In Methanol

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SP222-1**	53.26	6/263.61
20L	PolyPac*	**SP222-20**	288.14	- - - -

KOH

F.W. 56.11

Titrated at 25°C to pH 8.2 (phenolphthalein endpoint) against standardized HCl.

[67-56-1 (Methanol)]

[1310-58-3 (Potassium Hydroxide)]

CAUSTIC

ChemAlert® STORAGE red

Product Specifications

Normality..........0.497 to 0.503

Color (APHA)..........≤5

Potassium Hydroxide Solution, 0.1N — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SP214-1**	54.96	6/260.88

KOH

F.W. 56.11

Titrated at 25°C to pH 8.6 (phenolphthalein endpoint) against NIST Potassium Acid Phthalate.

[1310-58-3]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Normality..........0.0995 to 0.1005

Color (APHA)..........≤5

Potassium Hydroxide, 0.100N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**6200-16**	12.19	- - - -
1L	Poly Natural	**6200-32**	14.50	- - - -
4L	Poly Natural	**6200-1**	48.62	- - - -
10L	Cubitainer*	**6200-25**	73.09	- - - -
20L	Cubitainer	**6200-5**	122.98	- - - -

[1310-58-3 (Potassium Hydroxide)]

[7732-18-5 (Water, Deionized)]

NEW

Potassium Hydroxide Solution, 0.1N — Certified

In Isopropanol

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**ST110-500**	50.71	6/242.83

For use as a titration standard.

[67-63-0 (Isopropanol)]

[1310-58-3 (Potassium Hydroxide)]

CAUSTIC

ChemAlert® STORAGE red

Product Specifications

Normality..........0.0995 to 0.1005

Color (APHA)..........≤10

Potassium Hydroxide Solution, 0.1N — Certified

In Methanol

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SP224-1**	61.31	6/298.58
4L	Poly Bottle	**SP224-P4**	218.42	4/682.61

KOH

F.W. 56.11

Titrated at 25°C to pH 8.2 (phenolphthalein endpoint) against standardized HCl.

Components: Methyl Alcohol (92.5-99.0%), Potassium Hydroxide (0.75-7.5%), and Water (0.6-6.0%)

[67-56-1 (Methyl Alcohol)]

[1310-58-3 (Potassium Hydroxide)]

CAUSTIC

ChemAlert® STORAGE red

Product Specifications

Normality..........0.0995 to 0.1005

Color (APHA)..........≤5

Potassium Hydroxide Solution — Certified

CO_2 Absorbent

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SP226-1**	69.37	6/326.71

Caustic Potash Solution

KOH

F.W. 56.11

For determination of Carbon Dioxide in gas analysis.

[1310-58-3]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Assay..........36-42%

Color (APHA)..........≤15

Suitability for Carbon Dioxide Absorption..........To pass test

Potassium Hydroxide, 0.100N
Clear to hazy, colorless liquid
n Isopropyl Alcohol

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**6257-32**	32.74	- - - -
4L	Poly Natural	**6257-1**	67.02	- - - -
10L	Cubitainer*	**6257-25**	138.33	- - - -
20L	Cubitainer	**6257-5**	175.96	- - - -

Melting point: Approx. -88
Boiling point: Approx. 82
[1310-58-3 (Potassium Hydroxide)]
[67-63-0 (Isopropyl Alcohol)]

Potassium Hydroxide, 0.100N
Clear, colorless liquid
n Methanol

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**6260-32**	20.64	- - - -
4L	Poly Natural	**6260-1**	56.82	- - - -
10L	Cubitainer*	**6260-25**	103.83	- - - -
20L	Cubitainer	**6260-5**	217.50	- - - -

Melting point: Approx. -98
Boiling point: Approx. 64.5
[1310-58-3 (Potassium Hydroxide)]
[67-56-1 (Methanol (Methyl Alcohol))]

Potassium Hydroxide Solutions *in various concentrations and sizes, which are not listed, are available. Prices on request.*

Potassium Iodate — Certified ACS
Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**P253-100**	134.53	6/631.04
500g	Poly Bottle	**P253-500**	349.68	6/1640.45

KIO_3
F.W. 214.00
[7758-05-6]

ChemAlert® STORAGE **yellow**

roduct Specifications
ctual Lot Analysis is reported on label.

Assay	99.4 -100.4%
Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	5.0 to 8.0
Chloride and Bromide (as Cl)	≤0.01%
Iodide	≤0.001%
Nitrogen Compounds (as N)	≤0.005%
Sulfate	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%
Sodium	≤0.005%

Potassium Iodate Concentrate — Certified

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**SP23-3**	52.47	6/254.19

Each bottle contains exact amount of 1N concentrate required to make 1L of 0.1N (N/10) solution.

ChemAlert® STORAGE **gray**

roduct Specifications

Normality when Diluted to 1L	0.0990 to 0.1010
Color (APHA)	≤10

Potassium Iodate Solution, 0.1N — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SP232-1**	90.92	6/430.60

Oxidimetric standard.

ChemAlert® STORAGE **gray**

Product Specifications

Normality	0.0995 to 0.1005
Color (APHA)	≤5

Potassium Iodate, 0.100N, 0.01667M
Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**6275-16**	17.15	- - - -
1L	Amber Glass	**6275-32**	32.08	- - - -
4L	Amber Glass	**6275-1**	62.45	- - - -

[7758-05-6 (Potassium Iodate)]
[7732-18-5 (Water, Deionized)]

▸***Potassium Iodate, Acid Solution*** *see Potassium Biiodate Solution SP340.*

Potassium Iodide — USP/FCC
Granular, Free Flowing

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P412-500**	229.86	6/1065.40
3kg	Poly Bottle	**P412-3**	1028.61	4/3162.97
10kg	Poly Pail	**P412-10**	2389.35	- - - -

KI
F.W.166.00
[7681-11-0]

ChemAlert® STORAGE **gray**

Product Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Assay (Dried Basis)	99.0-101.5%
Alkalinity	To pass test
Loss on Drying	≤1.0%
Iodate (IO_3)	≤4ppm
Nitrate, Nitrite, and Ammonia	To pass test
Thiosulfate and Barium	To pass test
Heavy Metals (as Pb)	≤0.001%
Organic Volatile Impurities	Meets requirements
Meets FCC Chemical Specifications	
Assay (after drying)	99.0-101.5%
Lead	≤4mg/kg
Iodate	≤4mg/kg
Loss on Drying	≤1%
Nitrate, Nitrite, and Ammonia	To pass test
Thiosulfate and Barium	To pass test

Potassium Iodide — Certified ACS
Granular, Free Flowing

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**P410-100**	90.90	6/426.40
500g	Poly Bottle	**P410-500**	228.82	6/1055.40
3kg	Poly Bottle	**P410-3**	1029.70	4/3166.35
10kg	Poly Pail	**P410-10**	1906.47	- - - -

KI
F.W.166.01
[7681-11-0]

ChemAlert® STORAGE **gray**

Product Specifications

Assay	≥99.0%
Insoluble Matter	≤0.005%
Loss on Drying at 150°C	≤0.2%
pH of a 5% Solution at 25°C	6.0 to 9.2
Chloride and Bromide (as Cl)	≤0.01%

Iodate	≤3ppm
Phosphate	≤0.001%
Sulfate	≤0.005%
Barium	≤0.002%
Calcium	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Iron	≤3ppm
Sodium	≤0.005%
Magnesium	≤0.001%

Potassium Iodide — Reagent

Granular

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
500g	Glass Bottle	**AC41826-5000**	76.10	- - - -

KI

IK

F.W.166

Melting point:680°C

Boiling point:1330°C (at 760mmHg)

Density: 3.13g/mL

[7681-11-0]

Potassium Iodide Solution, 10% (w/v)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SP242-500**	46.07	6/218.08
1L	Amber Glass	**SP242-1**	65.94	6/321.95
4L	Amber Glass	**SP242-4**	209.20	4/763.37

[7681-11-0]

ChemAlert® STORAGE gray

Product Specifications

Assay	9.0-11.0%

Potassium Iodide, 10% (w/v)

Clear, colorless Liquid

Aqueous Solution, Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Poly	**6300-16**	20.62	- - - -
1L	Amber Poly	**6300-32**	32.42	- - - -
4L	Amber Poly	**6300-1**	88.13	- - - -
10L	Cubitainer*	**6300-25**	208.58	- - - -
20L	Cubitainer	**6300-5**	412.59	- - - -

[7681-11-0 (Potassium Iodide)]

[7732-18-5 (Water, Deionized)]

Potassium Iodide Solution, 5% (w/v) — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SP241-1**	42.61	6/204.63

For use with the Fisher Chloride Titrimeter* System.

[7681-11-0]

ChemAlert® STORAGE gray

Product Specifications

Assay	4-6%

Potassium Iodide, 1.0N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SP821-500**	61.64	6/345.35
1L	Amber Glass	**SP821-1**	74.67	6/418.62
4L	Amber Glass	**SP821-4**	152.00	4/561.06

Traceable to NIST.

[7681-11-0]

ChemAlert® STORAGE gray

Product Specifications

Normality	0.995 to 1.005
pH at 25°C	11.2 to 11.4

Potassium Iodide–Starch Test Paper

Strips

Quantity	Packaging	Cat. No.	Each	Case of
24x100 strips	Vials	**14-860**	19.60	- - - -

▸*Potassium Monohydrogen Phosphate see Potassium Phosphate Dibasic Anhydrous P288 and P290.*

Potassium Nitrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**P263-100**	57.28	6/279.38
500g	Poly Bottle	**P263-500**	123.11	6/550.08
3kg	Poly Bottle	**P263-3**	433.39	4/1348.91
50kg	Fiber Drum	**P263-50**	3053.32	- - - -

Saltpeter

KNO_3

F.W. 101.10

[7757-79-1]

ChemAlert® STORAGE yellow

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.005%
Chloride	≤0.002%
Iodate	≤5ppm
Phosphate	≤5ppm
Sulfate	≤0.003%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤3ppm
Sodium	≤0.005%
pH of a 5% Solution at 25°C	4.5 to 8.5
Magnesium	≤0.002%
Nitrite	≤0.001%

Potassium Nitrate — Certified

Primary Nitrogen Standard

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**P383-100**	69.67	6/311.46
500g	Poly Bottle	**P383-500**	132.75	6/622.71

KNO_3

F.W. 101.10

[7757-79-1]

ChemAlert® STORAGE yellow

Product Specifications

Total Nitrogen Content (as N)	13.76-13.96%
Neutrality	To pass test
Sodium	≤0.005%

Potassium Nitrate — Laboratory

Granular

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Glass	**P261-3**	173.65	4/543.06

KNO_3

F.W. 101.10

[7757-79-1]

ChemAlert® STORAGE yellow

Product Specifications

Mesh Size	>20 mesh

Potassium Nitrite — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**P267-250**	159.13	6/773.29
500g	Amber Glass	**P267-500**	326.84	6/1529.55

KNO$_2$
F.W. 85.10
[7758-09-0]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥96.0%
Insoluble Matter	≤0.01%
Chloride	≤0.03%
Sulfate	≤0.01%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%
Sodium	≤0.5%
Magnesium	≤0.002%

▸**Potassium Orthophosphate** *see Potassium Phosphate Tribasic P289.*

Potassium Oxalate Monohydrate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**P273-250**	81.64	6/364.94
500g	Amber Glass	**P273-500**	144.34	6/673.84

Oxalic Acid Potassium Salt
$K_2C_2O_4 \cdot H_2O$
F.W. 184.24
[6487-48-5]

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay	98.5-101.0%
Insoluble Matter	≤0.01%
Neutrality	To pass test
Chloride	≤0.002%
Sulfate	≤0.01%
Ammonium	≤0.002%
Heavy Metals (as Pb)	≤0.002%
Iron	≤0.001%
Sodium	≤0.02%
Substances Darkened by Hot H_2SO_4	To pass test

Potassium meta-Periodate — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**P277-100**	145.15	6/653.17

Potassium Periodate
KIO$_4$
F.W. 230.00
Suitable for determination of Manganese.
[7790-21-8]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.8-100.3%
Other Halogens (as Cl)	≤0.01%
Manganese	≤1ppm

▸**Potassium Periodate** *see Potassium meta-Periodate P277.*

Potassium Permanganate — USP
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**P287-500**	92.65	6/416.18
2.5kg	Glass	**P287-212**	282.29	4/829.04

KMnO$_4$
F.W. 158.03
C.I. 77755
[7722-64-7]

ChemAlert® STORAGE yellow

Product Specifications

Assay	99.0-100.5%
Insoluble Substances	≤0.2%
Loss on Drying	≤0.5%

Potassium Permanganate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**P279-500**	101.30	6/452.84
2.5kg	Amber Glass	**P279-212**	295.94	4/925.49

KMnO$_4$
F.W. 158.03
Suitable for determination of Mercury.
C.I. 77755
[7722-64-7]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.2%
Chloride and Chlorate (as Cl)	≤0.005%
Sulfate	≤0.02%
Mercury (as Hg)	≤0.05ppm

Potassium Permanganate Solution, 1N — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SP282-1**	68.57	6/326.73
4L	Amber Glass	**SP282-4**	89.83	4/334.13

Traceable to NIST.
[7722-64-7]

ChemAlert® STORAGE yellow

Product Specifications

Normality	0.995 to 1.005

Potassium Permanganate, 1.00N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**6420-16**	15.45	- - - -
1L	Amber Glass	**6420-32**	24.92	- - - -
4L	Amber Glass	**6420-1**	81.56	- - - -

[7722-64-7 (Potassium Permanganate)]
[7732-18-5 (Water, Deionized)]

Potassium Permanganate Solution, 0.1N — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SP288-1**	52.24	6/254.50
4L	Amber Glass	**SP288-4**	104.09	4/328.19

Titrated at 25°C against NIST Sodium Oxalate.
[7722-64-7]

ChemAlert® STORAGE gray

Product Specifications

Normality	0.0995 to 0.1005

Potassium Permanganate, 0.100N ACS, ASTM E 200, AOAC

EPA, USP Volumetric Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**6400-16**	13.38	- - - -
1L	Amber Glass	**6400-32**	15.62	- - - -
4L	Amber Glass	**6400-1**	51.11	- - - -
4L	Safety Coated/Glass	**6400-1SC**	57.79	- - - -
10L	Cubitainer*	**6400-25**	84.27	- - - -
20L	Cubitainer	**6400-5**	113.94	- - - -

0.0200M

Shelf life: The 10L (640025) and 20L (64005) sizes have six-month expiration (others, 18 months) due to package type.

[7722-64-7 (Potassium Permanganate)]

[7732-18-5 (Water, Deionized)]

Potassium Persulfate Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**P282-100**	45.33	6/212.63
500g	Poly Bottle	**P282-500**	178.75	6/838.49

Dipotassium Peroxydisulfate

$K_2S_2O_8$

F.W. 270.32

Suitable for determination of Mercury.

[7727-21-1]

ChemAlert® STORAGE **yellow**

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.005%
Chlorine Compounds (as Cl)	≤0.001%
Manganese	≤2ppm
Heavy Metals (as Pb)	≤0.001%
Iron	≤5ppm
Mercury (as Hg)	≤0.05ppm

Potassium Persulfate Certified

Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P281-500**	90.41	6/406.11

Dipotassium Peroxydisulfate

$K_2S_2O_8$

F.W. 270.32

[7727-21-1]

ChemAlert® STORAGE **yellow**

Product Specifications

Assay	≥99.5%
Insoluble Matter	≤0.005%
Nitrogen Compounds (as N)	≤0.050%
Chloride	≤0.001%
Manganese	≤2ppm
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm

Potassium Phosphate Monobasic HPLC

Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
1kg	Amber Glass	**P286-1**	139.44	6/654.12

Potassium Dihydrogen Phosphate

KH_2PO_4

F.W. 136.09

[7778-77-0]

ChemAlert® STORAGE **gray**

Product Specifications

Assay (K_2PO_4)	≥99.0%
Chloride	≤0.001%
Heavy Metals (as Pb)	≤0.001%
Insoluble Matter	≤0.01%
Iron	≤0.002%
Loss on Drying at 105°C	≤0.2%
pH of a 5% Solution at 25°C	4.1 to 4.5
Sodium	≤0.005%
Sulfate	≤0.003%
Optical Absorbance of a 1M Solution at 254nm	≤0.04

Potassium Phosphate Monobasic NF/FCC

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P380-500**	92.87	6/417.19
2.5kg	Poly Bottle	**P380-212**	288.58	4/934.43
12kg	Poly Pail	**P380-12**	699.70	- - - -
250 lb.	Fiber Drum	**P380-250LB**	2825.51	- - - -

Potassium Acid Phosphate, Potassium Biphosphate

Potassium Dihydrogen Phosphate

KH_2PO_4

F.W. 136.09

[7778-77-0]

ChemAlert® STORAGE **gray**

Product Specifications

Identification	To pass test
Meets NF Chemical Specifications	
Assay (Dried Basis)	98.0 to 100.5%
Loss on Drying	≤1.0%
Insoluble Substance	≤0.2%
Arsenic	≤3ppm
Heavy Metals	≤0.002%
Lead	≤5ppm
Fluoride	≤0.001%
Organic Volatile Impurities	Meets requirements
Meets FCC Chemical Specifications	
Assay (Dried Basis)	≥98.0%
Arsenic	≤3mg/kg
Fluoride	≤10mg/kg
Insoluble Substances	≤0.2%
Lead	≤2mg/kg
Loss on Drying	≤1%

Potassium Phosphate Monobasic Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P285-500**	82.60	6/387.48
3kg	Poly Bottle	**P285-3**	254.70	4/792.74
10kg	Poly Pail	**P285-10**	615.85	- - - -
50kg	Fiber Drum	**P285-50**	2217.98	- - - -
250 lb.	Fiber Drum	**P285-250LB**	2685.09	- - - -

Potassium Dihydrogen Phosphate

KH_2PO_4

F.W. 136.09

[7778-77-0]

ChemAlert® STORAGE **gray**

Product Specifications

Actual Lot Analysis is reported on label.

Assay (K_2PO_4)	≥99.0%
Insoluble Matter	≤0.01%
Loss on Drying at 105°C	≤0.2%
pH of a 5% Solution at 25°C	4.1 to 4.5
Chloride	≤0.001%
Sulfate	≤0.003%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.002%
Sodium	≤0.005%

*Trademark. See Trademark Reference.

Potassium Phosphate Monobasic — Primary Standard

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**P382-500**	96.29	6/432.63

Potassium Dihydrogen Phosphate
KH_2PO_4
F.W. 136.09
[7778-77-0]

ChemAlert® STORAGE gray

Product Specifications

Assay	99.5 -100.5%
pH of a 0.2M Solution at 25°C	4.30 to 4.40
Sodium	≤0.005%

Potassium Phosphate Monobasic — Laboratory

Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**P284-500**	51.50	6/241.57

Potassium Acid Phosphate, Potassium Biphosphate
Potassium Dihydrogen Phosphate
KH_2PO_4
F.W. 136.09
[7778-77-0]

ChemAlert® STORAGE gray

▸***Potassium Phosphate Monobasic/Sodium Hydroxide*** *see Buffer Solution, pH 7.00, Color-coded Yellow SB101 and Buffer Solution, pH 7.00 SB108.*

Potassium Phosphate Dibasic Anhydrous — USP

Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P290-500**	154.66	6/725.50
2.5kg	Poly Bottle	**P290-212**	422.46	4/1321.15
12kg	Poly Pail	**P290-12**	1423.48	- - - -
250 lb.	Fiber Drum	**P290-250LB**	2435.74	- - - -

Potassium Monohydrogen Phosphate, Dipotassium Hydrogen Phosphate
K_2HPO_4
F.W. 174.18
[7758-11-4]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Assay (K_2HPO_4)	98.0 - 100.5%
pH of a 5% Solution at 25°C	8.5 to 9.6
Loss on Drying at 105°C	≤1.0%
Insoluble Substances	≤0.2%
Carbonate	To pass test
Chloride	≤0.03%
Sulfate	≤0.1%
Arsenic	≤3ppm
Iron	≤0.003%
Sodium	To pass test
Heavy Metals	≤0.001%
Fluoride	≤0.001%
Monobasic or Tribasic Salt	To pass test
USP Protocol Required	To pass test

Potassium Phosphate Dibasic Anhydrous — Certified ACS

Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**P288-100**	43.19	6/202.62
500g	Amber Glass	**P288-500**	146.91	6/689.16
3kg	Glass	**P288-3**	477.87	4/1494.50
50kg	Fiber Drum	**P288-50**	2187.68	- - - -
200 lb.	Fiber Drum	**P288-200LB**	2264.35	- - - -

Potassium Monohydrogen Phosphate
Dipotassium Hydrogen Phosphate
K_2HPO_4
F.W. 174.18
[7758-11-4]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥98.0%
Insoluble Matter	≤0.010%
Loss on Drying at 105°C	≤1.0%
pH of a 5% Solution at 25°C	8.5 to 9.6
Chloride	≤0.003%
Nitrogen Compounds (as N)	≤0.001%
Sulfate	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%
Sodium	≤0.05%

Potassium Phosphate Tribasic — Certified

Granular Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**P289-500**	188.83	6/885.80

Tripotassium Phosphate
Potassium Orthophosphate
$K_3PO_4 \cdot nH_2O$
[7778-53-2]

ChemAlert® STORAGE gray

Product Specifications

Assay (K_3PO_4)	≥95%
Arsenic	≤1ppm
Sulfate	≤0.01%
Chloride	≤0.005%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.002%
Alkali (as KOH)	≤1%

▸***Potassium Prussiate, Red*** *see Potassium Ferricyanide P232.*

▸***Potassium Prussiate, Yellow*** *see Potassium Ferrocyanide Trihydrate P236.*

▸***Potassium Pyrosulfate*** *see Potassium Hydrogen Sulfate P195.*

▸***Potassium Rhodanate*** *see Potassium Thiocyanate P317.*

▸***Potassium Sodium Tartrate*** *see Sodium Potassium Tartrate Tetrahydrate S387.*

Potassium Sulfate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**P304-500**	72.77	6/326.56
3kg	Poly Bottle	**P304-3**	328.43	4/1022.24
10kg	Poly Pail	**P304-10**	933.68	- - - -

K_2SO_4
F.W. 174.26
Suitable for determination of Nitrogen.
[7778-80-5]

ChemAlert® STORAGE gray

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Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.010%
pH of a 5% Solution at 25°C	5.5 to 8.5
Chloride	≤0.001%
Nitrogen Compounds (as N)	≤5ppm
Calcium	≤0.01%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Sodium	≤0.02%
Magnesium	≤0.005%

Potassium Sulfate — Certified ACS

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**P305-500**	126.64	6/565.98

K_2SO_4

F.W. 174.26

Suitable for determination of Nitrogen.

[7778-80-5]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.010%
pH of a 5% Solution at 25°C	5.5 to 8.5
Chloride	≤0.001%
Nitrogen Compounds (as N)	≤5ppm
Calcium	≤0.01%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Sodium	≤0.02%
Magnesium	≤0.005%

▸***Potassium Sulfate, Acid*** *see Potassium Bisulfate P193.*

▸***Potassium Sulfocyanate*** *see Potassium Thiocyanate P317.*

▸***Potassium Sulfocyanide*** *see Potassium Thiocyanate P317.*

Potassium Tartrate Hemihydrate — Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**P313-500**	147.15	6/686.97

Tartar Soluble, Tartaric Acid Potassium Salt

$KOOC(CHOH)_2COOK \cdot 0.5H_2O$

$C_4H_4K_2O_6 \cdot 0.5H_2O$

F.W. 235.28

[6100-19-2]

ChemAlert® STORAGE gray

Product Specifications

Insoluble Matter	≤0.010%
Free Acid (as Potassium Bitartrate)	≤0.10%
Free Alkali (as Potassium Carbonate)	≤0.03%
Chloride	≤0.002%
Phosphate	≤0.002%
Sulfate	≤0.010%
Ammonia	≤0.003%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%

Potassium Thiocyanate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**P317-100**	55.40	6/259.90
500g	Amber Glass	**P317-500**	165.04	6/774.19

Potassium Rhodanate, Potassium Sulfocyanate

Potassium Sulfocyanide, Potassium Isothiocyanate

KSCN

F.W. 97.18

[333-20-0]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥98.5%
Insoluble in H_2O	≤0.005%
pH of a 5% Solution at 25°C	5.3 to 8.7
Chloride	≤0.005%
Sulfate	≤0.005%
Ammonium	≤0.003%
Heavy Metals (as Pb)	≤5ppm
Iron	≤2ppm
Sodium	≤0.005%
Iodine-consuming Substances	To pass test (≤0.2mL of 0.1N Iodine solution/g)

Potassium Thiocyanate, 0.100N — ACS Volumetric Solution

Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**6580-16**	18.43	- - - -
1L	Poly Natural	**6580-32**	25.86	- - - -
4L	Poly Natural	**6580-1**	57.14	- - - -
10L	Cubitainer*	**6580-25**	130.87	- - - -
20L	Cubitainer	**6580-5**	213.36	- - - -

[333-20-0 (Potassium Thiocyanate)]

[7732-18-5 (Water, Deionized)]

▸***Potassium Thiocyanate Solutions*** *see also Thiocyanate Standard Solution ST18.*

PPO — Scintanalyzed*

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**D144-100**	282.72	6/1336.41

2,5-Diphenyloxazole

$OC(C_6H_5):CHN:C(C_6H_5)$

$C_{15}H_{11}NO$

F.W. 221.25

[92-71-7]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

LSC Analysis:

^3H Background	≤50cpm
^3H Efficiency	≥50%
^{14}C Background	≤50cpm
^{14}C Efficiency	≥85%
Solubility and Debris	To pass test

PrepSep* and PrepSep-R* Columns

Packing Type	Reservoir Capacity	Packing Quantity	Cat. No.	Price
Alumina	14mL	1g	**P477**	Pk. of 30 Ea./149.29
Florisil	14mL	1g	**P476**	Pk. of 30 Ea./140.32
Si (Silica Gel)	14mL	1g	**P478**	Pk. of 30 Ea./148.31
Empty	12mL	300mg	**P446**	Pk. of 50 Ea./131.04
Empty	12mL	300mg	**P448R**	Pk. of 200 Ea./280.29
Florisil	14mL	1000mg	**P466R**	Pk. of 120 Ea./495.20
Empty	14mL	1000mg	**P449R**	Pk. of 120 Ea./224.11

*Trademark. See Trademark Reference.

1,3-Propanedioic Acid *see Malonic Acid A170.*

1,2-Propanediol *see Propylene Glycol P355.*

1,2,3-Propanetriol *see Glycerol G33.*

Propanoic Acid *see Propionic Acid A258.*

1-Propanol
Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A414-500**	43.56	6/196.00
1L	Amber Glass	**A414-1**	75.29	6/348.53
4L	Amber Glass	**A414-4**	179.74	4/560.48
4L	SafeTin*	**A414S-4**	211.10	4/609.42
20L	Steel Pail	**A414-20**	468.62	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

n-Propyl Alcohol

$CH_3CH_2CH_2OH$

C_3H_8O

F.W. 60.09

[71-23-8]

SOLVENT

STORAGE red

roduct Specifications

ctual Lot Analysis is reported on label.

Color (APHA)	≤20
Boiling Range	96°- 98°C
Specific Gravity at 25°C	0.801 to 0.803
Residue after Evaporation	≤0.01%
Acidity (as Acetic Acid)	≤0.02%

2-Propanol
Optima*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A464-4**	109.13	4/311.47

Also available in recyclable FisherPak and NOWPak* containers.*

Isopropanol, Isopropyl Alcohol

$(CH_3)_2CHOH$

C_3H_8O

F.W. 60.10

Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.

Packaged under Nitrogen. 0.2 micron filtered.

[67-63-0]

SOLVENT

STORAGE red

roduct Specifications

Assay (by GC)	≥99.9%
Color (APHA)	≤5
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤10ng/L
Fluorescence Background (as Quinine Sulfate)	≤1ppb
Residue after Evaporation	≤1ppm
Refractive Index at 25°C	1.3740 to 1.3760
Water	≤0.05%
Solubility in H_2O	To pass test
Titratable Acid or Base	≤0.0001mEq/g
Substances Reducing Permanganate	To pass test
Optical Absorbance:	
at 205nm	≤1.00
at 220nm	≤0.20
at 230nm	≤0.10
at 254nm	≤0.015
Carbonyl Compounds:	
Acetone	≤0.002%
Propionaldehyde	≤0.002%

2-Propanol
HPLC

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A451-1**	62.33	6/266.67
1L	Glass/Safe-Cote*	**A451SK-1**	76.97	6/330.44
4L	Amber Glass	**A451-4**	107.94	4/303.71
4L	Glass/Safe-Cote	**A451SK-4**	120.31	4/343.33
50L	- - - -	**A451-CU50**	407.50	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

Isopropanol, Isopropyl Alcohol

C_3H_8O

F.W. 60.10

Melting point: -89.5°C

Boiling point: 81–83°C

Density: 0.785

Submicron Filtered.

[67-63-0]

SOLVENT

STORAGE red

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.9%
Color (APHA)	≤10
Fluorescence Background (as Quinine Sulfate)	To pass test
Refractive Index at 25°C	1.3740 to 1.3760
Residue after Evaporation	≤2ppm
Solubility in H_2O	To pass test
Water	≤0.10%
Titratable Acid or Base	≤0.0001mEq/g
Density at 25°C	0.781-0.783g/mL
Optical Absorbance:	
at 205nm	≤1.00
at 220nm	≤0.25
at 230nm	≤0.13
at 254nm	≤0.025
Carbonyl Compounds:	
Acetone	≤0.002%
Propionaldehyde	≤0.002%

2-Propanol
Pesticide

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A519-4**	137.29	4/386.14

Isopropanol, Isopropyl Alcohol

$(CH_3)_2CHOH$

C_3H_8O

F.W. 60.10

[67-63-0]

SOLVENT

STORAGE red

Product Specifications

Actual Lot Analysis is reported on label.

Color (APHA)	≤10
Suitability for Pesticide Residue Analysis	To pass test

2-Propanol USP/EP/BP/JP

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A522-4**	217.78	- - - -
20L	Steel Pail	**A522-20**	471.57	- - - -

Isopropanol, Isopropyl Alcohol
$(CH_3)_2CHOH$
C_3H_8O
F.W. 60.10
[67-63-0]

Product Specifications

Identification .... To pass test

Meets USP Chemical Specifications

Assay	≥99.0%
Acidity	To pass test
Specific Gravity	0.783 to 0.787
Refractive Index	1.376 to 1.378
Nonvolatile Residue	≤0.005%

Meets EP and BP Chemical Specifications

Absorbance	To pass test
Appearance	Clear and Colorless
Acidity or Alkalinity	To pass test
Benzene and Related Substances:	
Benzene	≤2ppm
Related Substances	≤0.3%
Peroxides	To pass test
Nonvolatile Substances	≤20ppm
Water	≤0.5%

Meets JP Chemical Specifications

Specific Gravity	0.785-0.788
Clarity of Solution	Clear
Acid	To pass test
Residue on Evaporation	≤0.005%
Water (w/v)	≤0.75%
Distilling Range (distilling between 81-83°C)	≥94.0% (v/v)

2-Propanol USP

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A516-500**	51.64	6/261.44
4L	Amber Glass	**A516-4**	144.69	4/423.50
20L	Steel Pail	**A516-20**	290.15	- - - -
200L	Steel Drum	**A516-200**	1424.35	- - - -

Isopropanol, Isopropyl Alcohol
$(CH_3)_2CHOH$
C_3H_8O
F.W. 60.10
[67-63-0]

Product Specifications

Assay	≥99.0%
Acidity	To pass test
Specific Gravity at 25°C	0.783 to 0.787
Refractive Index at 20°C	1.376-1.378
Nonvolatile Residue	≤0.005%

2-Propanol Spectranalyzed*

Also meets ACS specifications

For use in the ultraviolet and infrared ranges

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A419-1**	80.11	6/370.66
4L	Amber Glass	**A419-4**	132.69	4/407.86

Also available in recyclable FisherPak and NOWPak* containers.*
Isopropanol, Isopropyl Alcohol
C_3H_8O
F.W. 60.10
Boiling point: 81–83°C
Density: 0.785
For use in the ultraviolet and infrared ranges.
[67-63-0]

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.5%
Color (APHA)	≤10
Residue after Evaporation	≤0.001%
Solubility in H_2O	To pass test
Water	≤0.2%
Titratable Acid or Base	≤0.0001mEq/g
Optical Absorbance:	
at 210nm	≤1.00
at 220nm	≤0.40
at 230nm	≤0.20
at 245nm	≤0.08
at 260nm	≤0.04
at 275nm	≤0.03
at 300nm	≤0.02
at 330 to 400nm	≤0.01
IR Transmittance:	
at 3.6-6.6µm	≥70%
at 9.5-10.0µm	≥70%
at 11.1-12.0µm	≥70%

Transmittance measured in a 0.015mm KBr cell. Ultraviolet Absorbance Curves are run against distilled water set at zero absorbance. Curves available on request.

2-Propanol Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A416-500**	32.66	6/147.70
1L	Amber Glass	**A416-1**	56.84	6/255.78
4L	Amber Glass	**A416-4**	145.09	4/436.79
4L	Poly Bottle	**A416P-4**	142.29	4/435.31
4L	SafeTin*	**A416S-4**	173.13	4/545.59
4L	Glass/Safe-Cote*	**A416SK-4**	155.13	4/472.31
20L	Steel Pail	**A416-20**	280.92	- - - -
200L	Steel Drum	**A416-200**	1494.43	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*
Isopropanol, Isopropyl Alcohol
$(CH_3)_2CHOH$
C_3H_8O
F.W. 60.10
[67-63-0]

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.5%
Color (APHA)	≤10
Residue after Evaporation	≤0.001%
Solubility in H_2O (10mL/40mL)	To pass test
Water	≤0.2%

*Trademark. See Trademark Reference.

Prices subject to change.

Titratable Acid or Base	≤0.0001mEq/g
Heavy Metals (as Pb)	≤1ppm
Copper	≤0.1ppm
Iron	≤0.1ppm
Nickel	≤0.1ppm
Carbonyl Compounds:	
Acetone	≤0.002%
Propionaldehyde	≤0.002%

2-Propanol Low Water

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A520-4**	145.55	4/449.60

Also available in recyclable FisherPak and NOWPak* containers.*

Isopropanol, Isopropyl Alcohol
C_3H_8O
F.W. 60.09
Boiling point: 81–83°C
Density: 0.785
[67-63-0]

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.5%
Color (APHA)	≤10
Residue after Evaporation	≤0.001%
Solubility in H_2O	To pass test
Water	≤0.015%
Titratable Acid or Base	≤0.0001mEq/g
Heavy Metals (as Pb)	≤1ppm
Copper	≤0.1ppm
Iron	≤0.1ppm
Nickel	≤0.1ppm
Carbonyl Compounds:	
Acetone	≤0.002%
Propionaldehyde	≤0.002%

2-Propanol Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A417-1**	50.56	6/234.05
4L	Amber Glass	**A417-4**	128.41	4/399.53

Isopropanol, Isopropyl Alcohol
$(CH_3)_2CHOH$
C_3H_8O
F.W. 60.10
Suitable for use in cholesterol and triglycerides determinations in regular and "N" methods.
[67-63-0]

Product Specifications

Color (APHA)	≤10
Triglycerides Use Test	To pass test

2-Propanol Histological

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**A426P-4**	68.58	4/225.56
4L	SafeTin*	**A426S-4**	86.90	4/279.05
1 gal.	Poly Bottle	**A426F-1GAL**	72.18	4/238.02
1 gal.	Poly Bottle	**A426P-1GAL**	67.00	4/218.03
20L	Steel Pail	**A426S-20**	215.38	- - - -
200L	Steel Drum	**A426S-200**	1273.32	- - - -

Isopropanol, Isopropyl Alcohol, IPA
$(CH_3)_2CHOH$
C_3H_8O
F.W. 60.0
Specially filtered for use in tissue processors.
[67-63-0]

2-Propanol Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**A415-4**	92.78	4/288.61
20L	Steel Pail	**A415-20**	239.11	- - - -

Isopropanol
Isopropyl Alcohol
$(CH_3)_2CHOH$
C_3H_8O
F.W. 60.10
[67-63-0]

▸***Propanone*** *see Acetone beginning with A928.*

▸***Propenyl Alcohol*** *see Glycerol G33.*

Propionic Acid Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A258-500**	43.89	6/158.04

Methyl Acetic Acid, Propanoic Acid, Ethylformic Acid
CH_3CH_2COOH
$C_3H_6O_2$
F.W. 74.08
[79-09-4]

Product Specifications

Color (APHA)	≤15
Boiling Range	139°-142°C
Density at 25°C	0.986-0.990g/mL
Residue after Evaporation	≤0.01%
Water	≤0.25%

Propionic Acid, 99%

Quantity	Packaging	Cat. No.	Each	Case of
5mL	Glass Bottle	**AC14930-0050**	18.60	- - - -
1L	Glass Bottle	**AC14930-0010**	18.70	- - - -
2.5L	Glass Bottle	**AC14930-0025**	29.00	4/98.58

$C_2H_5CO_2H$
$C_3H_6O_2$
F.W. 74.08
Melting point: -22°C
Boiling point: 141°C (at 760mmHg)
Flash point: 51°C
Density: 0.99g/mL
n: 1.385-1.387
[79-09-4]

▸***n-Propyl Alcohol*** *see 1-Propanol A414.*

▸***iso-Propyl Carbinol*** *see Isobutyl Alcohol A397.*

▸***n-Propyl Carbinol*** *see 1-Butanol beginning with A383.*

▸***p-Propyl m-Cresol*** *see Thymol T185.*

Propylene Glycol USP/FCC

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**P355-1**	131.48	6/591.00
4L	Amber Glass	**P355-4**	335.24	4/1030.61
20L	Steel Pail	**P355-20**	862.32	- - - -
200L	Steel Drum	**P355-200**	3637.88	- - - -

1,2-Propanediol, 1,2-Dihydroxypropane, Methyl Glycol
$CH_3CHOHCH_2OH$
$C_3H_8O_2$
F.W. 76.10
[57-55-6]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Assay	≥99.5%
Specific Gravity at 25°C	Between 1.035 and 1.037
Acidity	To pass test
Water	≤0.2%
Residue on Ignition	3.5mg (0.007%)
Chloride (Cl)	≤0.007%
Sulfate	≤0.006%
Heavy Metals (as Pb)	≤5ppm
Organic Volatile Impurities	Meets requirements
Meets FCC Chemical Specifications	
Assay	≥99.5%
Acidity	To pass test
Distillation Range	Between 185 and 189°C
Lead	≤1mg/kg
Residue on Ignition	≤0.007%
Specific Gravity	1.035 to 1.037
Water	≤0.2%

Propylene Oxide Reagent

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**04332-1**	115.73	6/517.28

1,2-Epoxypropane, Methyloxirane, Propene Oxide
CH_3CHCH_2O
C_3H_6O
F.W. 58.08
[75-56-9]

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Assay	≥98%
Color (APHA)	≤10

▸***Prussiate of Potash, Red*** *see Potassium Ferricyanide P232.*

▸***Prussiate of Potash, Yellow*** *see Potassium Ferrocyanide Trihydrate P236.*

Pyridine, 99.5% Extra Dry

Water <50ppm

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC33942-1000**	41.10	- - - -
1L	Septum Bottle	**AC33942-0010**	107.80	- - - -

Pyr
C_5H_5N
F.W. 79.1
Melting point: -42°C
Boiling point: 115-116°C (at 760mmHg)
Flash point: 17°C
Density: 0.978g/mL
n: 1.5085-1.5105
[110-86-1]

NEW

Pyridine, 99.5% Extra Dry over Molecular Sieves

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC36442-1000**	42.40	- - - -
1L	Septum Bottle	**AC36442-0010**	111.10	- - - -

Pyr
C_5H_5N
F.W. 79.1
Melting point: -42°C
Boiling point: 115-116°C (at 760mmHg)
Flash point: 17°C
Density: 0.978g/mL
n: 1.5085-1.5105
[110-86-1]

NEW

Pyridine, 99.0%

Anhydrous

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Acroseal*	**AC61044-1000**	39.80	6/202.84
1L	Acroseal	**AC61044-0010**	104.60	6/533.05

Pyr
C_5H_5N
F.W. 79.1
Melting point: -42°C
Boiling point: 115-116°C (at 760mmHg)
Flash point: 17°C
Density: 0.978g/mL
n: 1.5085-1.5105
[110-86-1]

NEW

Pyridine Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**P368-500**	112.34	6/526.71
1L	Amber Glass	**P368-1**	222.11	6/998.14
4L	Amber Glass	**P368-4**	615.45	4/1846.36
4L	SafeTin*	**P368S-4**	752.15	4/2255.70

N:CHCH:CHCH:CH
C_5H_5N
F.W. 79.10
Suitable for Karl Fischer Reagent.
[110-86-1]

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.0%
Solubility in H_2O (10mL/90mL)	To pass test
Residue after Evaporation	≤0.002%
Water	≤0.10%
Chloride	≤0.001%
Sulfate	≤0.001%
Ammonia	≤0.002%
Copper	To pass test (about 5ppm)
Reducing Substances	To pass test

Pyridine Technical

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**P369-4**	573.16	4/1719.14

N:CHCH:CHCH:CH
C_5H_5N
F.W. 79.10
[110-86-1]

SOLVENT

ChemAlert® STORAGE red

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*Trademark. See Trademark Reference.

Pyridine-Barbituric Acid Reagent — ASTM, APHA

Clear, golden colored liquid
For cyanide determination

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber glass	**6584-16**	57.74	----
1L	Amber glass	**6584-32**	94.21	----

Shelf life: 6 month shelf life, refrigerated
[110-86-1 (Pyridine)]
[67-52-7 (Barbituric Acid)]
[7647-01-0 (Hydrochloric Acid)]
[7732-18-5 (Water, Deionized)]

▸**Pyrimidine Trione** *see Barbituric Acid O1308.*

▸**Pyroacetic Ether** *see Acetone beginning with A928.*

▸**Pyrocatechin Violet, Indicator** *see Xylenol Orange Tetrasodium Salt X15.*

▸**Pyrogallic Acid** *see Pyrogallol A263.*

Pyrogallol — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**A263-100**	178.25	6/836.13
500g	Amber Glass	**A263-500**	607.33	6/2849.03

1,2,3-Benzenetriol, 1,2,3-Trihydroxybenzene
Pyrogallic Acid
C_6H_3-1,2,3-$(OH)_3$
$C_6H_6O_3$
F.W. 126.11
C.I. 76515
[87-66-1]

ChemAlert® STORAGE **blue**

Product Specifications
Actual Lot Analysis is reported on label.

Melting Point	≤2°C within 131.0°-135.0°C
Residue after Ignition	≤0.005%
Chloride	≤0.001%
Sulfate	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%

▸**Pyromucic Aldehyde** *see Furfural F94.*

Pyrrole, 99%

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
25g	Glass Bottle	**AC15771-0250**	18.00	----
100g	Glass Bottle	**AC15771-1000**	48.30	6/246.03
500g	Glass Bottle	**AC15771-5000**	167.80	6/855.71

Flash point: 33°C
Density: 0.967g/mL
[109-97-7]

Pyruvic Acid Sodium Salt — Reagent

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**04376-100**	208.65	6/978.76

Sodium Pyruvate
CH_3COONa
$C_3H_3O_3Na$
F.W. 110.04
[113-24-6]

ChemAlert® STORAGE **gray**

Product Specifications

Assay (by titration)	≥97%

▸**Quality Control Standards** *see Standards, Inorganic, Quality Control/Proficiency Samples.*

▸**Quicklime** *see Calcium Oxide C117.*

▸**Quicksilver** *see Mercury, Certified ACS grade M141.*

Quinhydrone, 98%

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100g	Glass Bottle	**AC41877-1000**	70.10	----
500g	Glass Bottle	**AC41877-5000**	286.00	----

$C_{12}H_{10}O_4$
F.W. 218.21
Melting point: 168-172°C
[106-34-3]

NEW

▸**Quinol** *see Hydroquinone H329.*

Quinoline — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**Q35-500**	93.74	6/426.65

1-Benzazine, Leucoline, Benzo[b]Pyridine
$C_6H_4N:CHCH:CH$
C_9H_7N
F.W. 129.16
[91-22-5]

ChemAlert® STORAGE **blue**

Product Specifications

Boiling Range	236°- 238°C

▸**8-Quinolinol** *see 8-Hydroxyquinoline O261.*

D(+)-Raffinose Pentahydrats, 99+%

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
25g	Glass Bottle	**AC19567-0250**	45.00	----
100g	Glass Bottle	**AC19567-1000**	127.00	----

$C_{18}H_{32}O_{16}\cdot 5H_2O$
F.W. 594.52
Melting point: 78-80.5°C
alpha: +105 (c=10,water,dry basis)
[17629-30-0]

NEW

▸**Reagent Alcohol** *see Alcohol, Reagent, Histological grade A962; Alcohol, Reagent, ACS grade 659; Alcohol, Reagent, Denatured 70% 25467; and alcohol, Reagent 50%, 25465.*

▸**Red Precipitate** *see Mercuric Oxide, Red M174I.*

▸**Reference Standards, Contract Laboratory Program** *see Standards, Inorganic, Contract Laboratory Program; Standards, Organic, EPA Methods; and Standards Organic, Contract Laboratory Program.*

▸*Ricinus Oil see Castor Oil O46.*

Ridox* Oxygen Scavenger

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**R31-500**	212.25	6/995.68
3kg	Glass	**R31-3**	1213.62	- - - -

Aluminum Oxide
Reagent for gas purification.
High-efficiency oxygen removal.
[1344-28-1]

ChemAlert STORAGE gray

FisherChemical* and Acros Organics* Silica Gels

Description	Particle Size	pH	Quantity	Packaging	Cat. No.	Each	Case of
Silica Gel (Davisil) Sorbent, 230-400 Mesh, Grade 633	35–70µm	6.5	1kg	Amber Glass	**S733-1**	254.72	4/787.08
	35–70µm	6.5	25kg	Fiber Drum	**S733-25**	2463.13	- - - -
Davisil Grade 634 60A	75–150µm	6.5	1kg	Amber Glass	**S734-1**	274.57	4/876.29
Silica Gel (Davisil) Sorbent, 60-100 Mesh, Grade 635	150–250µm	6.5	1kg	Amber Glass	**S735-1**	300.69	4/902.08
Silica Gel (Davisil) Sorbent, 170-400 Mesh, Grade 1740	150–250µm	6.5	1kg	Poly Bottle	**S732-1**	196.63	4/614.93
	150–250µm	6.5	25kg	Fiber Drum	**S732-25**	2085.39	- - - -
Silica Gel (Davisil) Sorbent, 35-60 Mesh, Grade 636	250–500µm	6.5	1kg	Amber Glass	**S736-1**	244.06	4/763.24
Silica Gel (Davisil) Sorbent, 200-425 Mesh, Grade 643	35–70µm	7.0	1kg	Amber Glass	**S743-1**	303.38	4/1001.01
Silica Gel (Davisil) Sorbent, 100-200 Mesh, Grade 644	75–150µm	7.0	1kg	Amber Glass	**S744-1**	293.69	4/918.47
Silica Gel (Davisil) Sorbent, 60-100 Mesh, Grade 645	150–250µm	7.0	1kg	Amber Glass	**S745-1**	312.57	4/972.85
Silica Gel (Davisil) Sorbent, 35-60 Mesh, Grade 646	250–500µm	7.0	1kg	Amber Glass	**S746-1**	264.60	4/830.77
Silica Gel (Davisil) Sorbent, 100-200 Mesh, Grade 923, Acid Washed	75–150µm	- - - -	1kg	Amber Glass	**S817-1**	435.42	4/1361.76
Silica Gel (Davisil) Sorbent, 60-200 Mesh, Grade 62	75–250µm	- - - -	1kg	Amber Glass	**S818-1**	221.29	4/663.87
Silica Gel, For Column Chromatography, 0.060-0.200mm, pore diameter ca 6nm	- - - -	- - - -	1kg	- - - -	**AC24037-0010**	133.80	- - - -
Silica, Floated, About 240 Mesh	- - - -	- - - -	3kg	- - - -	**S153-3**	73.28	4/229.18
Silica, Fine Granules	- - - -	- - - -	3kg	- - - -	**S150-3**	70.83	4/221.49
Silica, Fine Granules, 40-100 Mesh	- - - -	- - - -	10kg	- - - -	**S151-10**	93.14	- - - -
Silica Gel Desiccant, 3-8 Mesh, Certified ACS	- - - -	- - - -	500g	- - - -	**S162-500**	45.11	6/211.61
Silica Gel Desiccant, 6-12 Mesh, Grade 40, Certified ACS	- - - -	- - - -	2.5kg	- - - -	**S684-212**	81.52	4/254.95
	- - - -	- - - -	10kg	- - - -	**S684-10**	253.84	- - - -
Silica Gel Desiccant, 12-28 Mesh, Grade 408, Certified ACS	- - - -	- - - -	2.5kg	- - - -	**S156-212**	289.01	4/903.84
	- - - -	- - - -	10kg	- - - -	**S156-10**	748.26	- - - -
Silica Gel Desiccant, 8 Mesh, Grade 03, Certified ACS	- - - -	- - - -	2.5kg	- - - -	**S692-212**	199.56	4/598.67
	- - - -	- - - -	200 lb.	- - - -	**S692-200LB**	1433.42	- - - -
Silica Gel Desiccant, 28-200 Mesh, Grade 12, Certified ACS	- - - -	- - - -	2.5kg	- - - -	**S157-212**	159.33	4/498.26
Silica Gel Desiccant, 60-200 Mesh, Grade 62, Chromatographic Grade	- - - -	- - - -	10kg	- - - -	**S704-10**	826.87	- - - -
	- - - -	- - - -	25kg	- - - -	**S704-25**	1717.32	- - - -
Silica Gel Desiccant, 100-200 Mesh, Chromatographic Grade	- - - -	- - - -	2.5kg	- - - -	**S679-212**	589.34	- - - -
	- - - -	- - - -	500g	- - - -	**S679-500**	176.95	6/856.65
	- - - -	- - - -	25kg	- - - -	**S679-25**	4077.64	- - - -
Silica Gel Desiccant, Nontoxic Grade, 2-5mm	- - - -	- - - -	5kg	- - - -	**AC35740-0050**	144.10	- - - -
Silica Gel 60, 350-600 Mesh	15–40µm	- - - -	1kg	Amber Glass	**S824-1**	249.26	4/779.52
Silica Gel, Grade 60, 230-400 Mesh	40–63µm	- - - -	1kg	Amber Glass	**S825-1**	244.09	4/754.22
	40–63µm	- - - -	2.5kg	Poly Bottle	**S825-212**	455.10	- - - -
	40–63µm	- - - -	12kg	Poly Pail	**S825-12**	1054.84	- - - -
	40–63µm	- - - -	25kg	Fiber Drum	**S825-25**	1734.78	- - - -
Silica Gel Sorbent, 70-230 Mesh, Flash Chromatography	63–200µm	- - - -	1kg	Amber Glass	**S826-1**	170.00	4/560.91
	63–200µm	- - - -	2.5kg	Poly Bottle	**S826-212**	347.39	- - - -
	63–200µm	- - - -	12kg	Poly Pail	**S826-12**	818.61	- - - -
	63–200µm	- - - -	25kg	Fiber Drum	**S826-25**	1626.05	- - - -
Silica Gel Desiccant, 3-8 Mesh, Certified ACS	- - - -	- - - -	2.5kg	- - - -	**S162-212**	146.89	4/453.87
Silica Gel Sorbent, 70-230 Mesh, Extra Pure	63–230µm	- - - -	500g	Amber Glass	**S827-500**	222.01	6/1041.44
	63–230µm	- - - -	1kg	Amber Glass	**S827-1**	373.87	4/1163.67
Silica Gel Tel-Tale Desiccant, Indicating, 10-18 Mesh	- - - -	- - - -	500g	Amber Glass	**S161-500**	41.98	6/196.92
	- - - -	- - - -	2.5kg	- - - -	**S161-212**	183.05	4/565.63
	- - - -	- - - -	10kg	Poly Pail	**S161-10**	548.23	- - - -

*Trademark. See Trademark Reference.

Rochelle Salt *see Sodium Potassium Tartrate S386 and S837.*

Rouge *see Ferric Oxide Anhydrous I116.*

Rubin S *see Fuchsin Acid F97.*

Rubidium Chloride

Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
10g	Amber Glass	**R317-10**	223.25	6/1047.24

RbCl
F.W. 120.92
[7791-11-9]

ChemAlert® STORAGE **gray**

EMD Chemicals* Silica Gels

EMD

Description	Particle Size	pH	Quantity	Packaging	Cat. No.	Each
Geduran Silica Gel 60, 230-400 Mesh, 40-63µm	40–63µm	7.0 ± 0.5	1kg	Poly Bottle	**M11567-3**	150.95
	40–63µm	7.0 ± 0.5	2kg	Poly Bottle	**M11567-6**	238.37
	40–63µm	7.0 ± 0.5	5kg	Poly Bottle	**M11567-5**	424.71
	40–63µm	7.0 ± 0.5	25kg	Poly Drum	**M11567-1**	1549.42
Silica Gel 40 Adsorbent, 230-400 Mesh, 63-200µm	63–200µm	5.5 ± 0.5	1kg	- - - -	**M10180-3**	210.11
Silica Gel 60 RP-18, 230-400 Mesh, 40-63µm	40–63µm	- - - -	100g	- - - -	**M10167-3**	230.97
Silica Gel RP-18, 230-400 Mesh, 40-63µm	40–63µm	- - - -	1kg	- - - -	**M110167-4**	1755.70
Silica Gel 60 Extra Pure Adsorbent, 70-230 Mesh, 63-200µm	63–200µm	6.5 ± 0.5	1kg	- - - -	**M7754-3**	428.29
Silica Gel 60 Adsorbent, 350-600 Mesh, 15-40µm	15–40µm	7.0 ± 0.5	1kg	- - - -	**M15111-3**	290.16
	15–40µm	7.0 ± 0.5	25kg	- - - -	**M15111-9**	2408.41
Silica Gel 60 Adsorbent, 230-400 Mesh, 40-6µ3m	40–63µm	7.0 ± 0.5	1kg	- - - -	**M9385-3**	293.07
	40–63µm	7.0 ± 0.5	2.5kg	- - - -	**M9385-4**	499.42
	40–63µm	7.0 ± 0.5	5kg	- - - -	**M9385-5**	733.99
	40–63µm	7.0 ± 0.5	25kg	- - - -	**M9385-9**	2247.21
Silica Gel 60 Adsorbent, 70-230 Mesh, 63-200µm	63–200µm	7.0 ± 0.5	1kg	- - - -	**M7734-3**	195.52
	63–200µm	7.0 ± 0.5	2.5kg	- - - -	**M7734-4**	412.98
	63–200µm	7.0 ± 0.5	25kg	Poly Bottle	**M7734-7**	1801.33
Silica Gel 60 Adsorbent, 35-70 Mesh, 200-500µm	200–500µm	7.0 ± 0.5	500g	Poly Bottle	**M7733-1**	151.25
	200–500µm	7.0 ± 0.5	1kg	Poly Bottle	**M7733-3**	210.11
	200–500µm	7.0 ± 0.5	5kg	Poly Bottle	**M7733-5**	790.40
Silica Gel 100 Adsorbent, 70-230 Mesh, 63-200µm	63–200µm	6.5	5kg	Poly Bottle	**M10184-5**	790.40

Acros Organics* Silica Gels, Functionalized

ACROS ORGANICS

Description	Quantity	Cat. No.	Each
Silica Gel, Functionalized, Amino-3, ca 1.4mmmol/g, Particle Size: 40-63µm	10g	**AC36018-0100**	54.20
	25g	**AC36018-0250**	133.80
Silica Gel, C18-Reversed Phase, 16%C	50g	**AC36012-0500**	233.10
Silica Gel, C18-Reversed Phase, 24%C	50g	**AC36011-0500**	241.60
Silica Gel, Functionalized, Sulfonic Acid-2AR, ca 1mmol/g, Particle Size: 40-63µm	5g	**AC36022-0050**	83.20

Safranin O

Certified Biological Stain

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**S670-25**	132.66	6/622.40
100g	Amber Glass	**S670-100**	382.36	6/1859.59

Basic Red 2
$C_{20}H_{19}ClN_4$
F.W. 350.85
For use in histology, cytology, bacteriology (staining).
C.I. 50240
[477-73-6]

ChemAlert® STORAGE **gray**

Sal Ammoniac *see Ammonium Chloride A661.*

Salicylaldehyde

Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A281-500**	393.36	6/1845.10

2-Hydroxybenzaldehyde, Salicylic Aldehyde
$2\text{-}HOC_6H_4CHO$
$C_7H_6O_2$
F.W. 122.12
[90-02-8]

ChemAlert® STORAGE **red**

Product Specifications

Freezing Point .... 1°-2°C

Salicylic Acid USP
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A275-500**	96.49	6/430.58
2.5kg	Poly Pail	**A275-212**	270.16	- - - -
12kg	Fiber Drum	**A275-12**	728.48	- - - -
250 lb.	- - - -	**A275-250LB**	2159.89	- - - -

2-Hydroxybenzoic Acid
2-HOC_6H_4COOH
$C_7H_6O_3$
F.W. 138.12
[69-72-7]

ChemAlert® STORAGE **gray**

Product Specifications

Assay	99.5 to 101.0%
Chloride	≤0.014%
Heavy Metals (as Pb)	≤20ppm
Loss on Drying	≤0.5%
Melting Range	158° to 161°C
Related Compounds	≤0.2%
Residue on Ignition	≤0.05%
Sulfate	≤0.02%

Salicylic Acid Certified ACS
Crystalline or Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A277-500**	105.08	6/469.78

2-Hydroxybenzoic Acid
2-HOC_6H_4COOH
$C_7H_6O_3$
F.W. 138.12
[69-72-7]

ChemAlert® STORAGE **gray**

Product Specifications

Assay	≥99.0%
Melting Point	158.0°-161.0°C
Residue on Ignition	≤0.010%
Chloride	≤0.001%
Substances Darkened by H_2SO_4	To pass test
Sulfate	≤0.003%
Heavy Metals (as Pb)	≤5 ppm
Iron	≤2ppm

▸**Salicylic Acid Sodium Salt** *see Sodium Salicylate S395 and S396.*

▸**Saline-Sodium Citrate Buffer** *see Fisher BioReagents* BP1325.*

▸**Saline-Sodium Phosphate-EDTA Buffer** *see Fisher BioReagents* BP1328.*

▸**Salt Cake** *see Sodium Bisulfate Monohydrate S240.*

▸**Salt of Tartar** *see Potassium Carbonate Anhydrous P208.*

▸**Salt of Vitriol** *see Zinc Sulfate Heptahydrate Z68.*

▸**Saltpeter** *see Potassium Nitrate P263.*

Sand, Ottawa
For Cement Testing

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**S23-3**	95.74	4/302.59
50kg	Fiber Drum	**S23-50**	600.78	- - - -

ASTM C 190 and AASHTO Method T-132
[14808-60-7]

ChemAlert® STORAGE **gray**

Product Specifications

Mesh Size	20 to 30

Sand, Sea
Washed

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S25-500**	46.21	6/220.14
3kg	Poly Bottle	**S25-3**	107.74	4/338.92
10kg	Bag in Box	**S25-10**	157.58	- - - -

[14808-60-7]

ChemAlert® STORAGE **gray**

▸**Sarkosyl** *see Fisher BioReagents* BP234.*

Schiff Reagent Solution
Modified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SS32-500**	66.47	6/363.03

For detection of aldehydes.
[7647-01-0 (Hydrogen Chloride)]

ChemAlert® STORAGE **white**

Product Specifications

Sensitivity to Formaldehyde	To pass test
Sulfur Dioxide (excesses)	To pass test
Stability	To pass test
Use Test	To pass test

▸**Scintanalyzed* Reagents** *see PPO, Crystalline, Scintanalyzed* D144; ScintiSafe* Plus 50% Cocktail, Scintanalyzed* SX25; ScintiSafe* 30% Cocktail, Scintanalyzed* SX23; ScintiSafe* Gel Cocktail, Scintanalyzed* SX24; ScintiSafe* Econo F Cocktail, Scintanalyzed* SX22; ScintiSafe* Econo 1 Cocktail, Scintanalyzed* SX20; ScintiSafe* Econo 2 Cocktail, Scintanalyzed* SX2; ScintiVerse* I Cocktail, Scintanalyzed*, SX1;ScintiVerse* II Cocktail, Scintanalyzed* SX12; ScintiVerse* BD Cocktail, Scintanalyzed* SX18; ScintiVerse* E Cocktail, Scintanalyzed* SX16; ScintiVerse* LC Cocktail, Scintanalyzed* SX17;Toluene, Scintanalyzed* T313; Xylenes, Scintanalyzed*, X16.*

ScintiSafe* 30% Cocktail

Scintanalyzed*

Quantity	Packaging	Cat. No.	Each	Case of
5L	Black Poly Bottle	**SX23-5**	124.03	2/227.28

PXE-based (Phenylxylylethane)
Nonflammable†, biodegradable, nontoxic.
Efficiency for tritium: 55%
Load capacity: 30%
Recommended usage: Swipe tests (high efficiency needed to detect low-level contamination); dilute salt and buffer solutions; solubilizers; tritium counting.
†Will burn under incinerator conditions.
[6196-95-8]

ChemAlert® STORAGE gray

ScintiSafe* Econo 1 Cocktail

Scintanalyzed*

Quantity	Packaging	Cat. No.	Each	Case of
5L	Black Poly Bottle	**SX20-5**	89.74	2/164.42

LAB-based (Linear Alkylbenzene)
Nonflammable†, biodegradable, nontoxic.
Efficiency for tritium: 45%
Load capacity: 10-15%
†Will burn under incinerator conditions.

ChemAlert® STORAGE gray

ScintiSafe* Econo 2 Cocktail

Scintanalyzed*

Quantity	Packaging	Cat. No.	Each	Case of
5L	Black Poly Bottle	**SX21-5**	113.66	2/208.34

LAB-based (Linear Alkylbenzene)
Nonflammable†, biodegradable, nontoxic.
Efficiency for tritium: 46%
Load capacity: 20-25%
†Will burn under incinerator conditions.

ChemAlert® STORAGE gray

ScintiSafe* Econo F Cocktail

Scintanalyzed*

Quantity	Packaging	Cat. No.	Each	Case of
5L	Black Poly Bottle	**SX22-5**	89.74	2/164.42

LAB-based (Linear Alkylbenzene)
Nonflammable†, biodegradable, nontoxic.
Efficiency for tritium: 52%
Load capacity: 50% organic sample
†Will burn under incinerator conditions.

ChemAlert® STORAGE gray

ScintiSafe* Gel Cocktail

Scintanalyzed*

Quantity	Packaging	Cat. No.	Each	Case of
5L	Black Poly Bottle	**SX24-5**	139.81	2/256.06

PXE-based (Phenylxylylethane)
Nonflammable†, biodegradable, nontoxic.
Efficiency for tritium: 49%
Load capacity: 50%
†Will burn under incinerator conditions.

ChemAlert® STORAGE gray

ScintiSafe* Plus 50% Cocktail

PXE-based (Phenylxylylethane)

Scintanalyzed*

Quantity	Packaging	Cat. No.	Each	Case of
5L	Black Poly Bottle	**SX25-5**	179.51	2/328.90

Recommended usage: Large volumes of aqueous sample; miniaturization (reduce cocktail consumption per sample); strong alkaline samples (sodium hydroxide in sample); polyacrylamide gel slices with solubilizer; tissue solubilizers; when chemiluminescence is a problem; wet filter counting for receptor binding assays.
Efficiency for tritium: 49%
Load capacity: Up to 50%

ChemAlert® STORAGE gray

ScintiVerse* I Cocktail

Scintanalyzed*

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**SX1-4**	219.58	4/658.73

Universal LSC Cocktail for aqueous, nonaqueous and emulsion counting systems.
[1330-20-7 (Xylene)]
[9036-19-5 (Polyoxyethylated Nonylphenol)]

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Specific Gravity @ 25°C	0.926 to 0.937
Water	≤0.7%
LSC Analysis:	
Background	≤50cpm
^{3}H Efficiency Ratio	≥0.65
Quenched Efficiency Ratio, 0.5mL H_2O	≥0.55
Quenched Efficiency Ratio, 1.0mL H_2O	≥0.50
Quenched Efficiency Ratio, 2.0mL H_2O	≥0.45
Quenched Efficiency Ratio, 3.0mL H_2O	≥0.40

ScintiVerse* II Cocktail

Scintanalyzed*

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**SX12-4**	183.97	4/568.39

General-purpose LSC Cocktail for aqueous, nonaqueous and emulsion counting systems. Pseudocumene base. Higher aqueous counting efficiencies than ScintiVerse* I Cocktail.
[1330-20-7 (Xylene)]
[9036-19-5 (Polyoxyethylated Nonylphenol)]

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Specific Gravity @ 25°C	0.928 to 0.934
Water	≤0.10%
LSC Analysis:	
Background	≤50cpm
^{3}H Efficiency Ratio	≥0.70
Quenched Efficiency Ratio, 0.5mL H_2O	≥0.60
Quenched Efficiency Ratio, 1.0mL H_2O	≥0.55
Quenched Efficiency Ratio, 2.0mL H_2O	≥0.50
Quenched Efficiency Ratio, 3.0mL H_2O	≥0.35

ScintiVerse* BD Cocktail

Scintanalyzed*

Quantity	Packaging	Cat. No.	Each	Case of
250mL	Amber Glass	**SX18-250**	31.10	6/147.09
4L	Amber Glass	**SX18-4**	146.05	4/454.52

Universal LSC Cocktail for aqueous, nonaqueous and emulsion counting systems. Contains biodegradable linear alkyl aromatic solvent, which can be classified as a nonhazardous liquid by local sewerage regulations.
[67774-74-7]

ChemAlert® STORAGE gray

Product Specifications

Specific Gravity @ 25°C	0.90 ± 0.01 (0.89-0.91)
Water	≤0.70%
Flash Point	≥137°C (279°F)
LSC Analysis:	
Background	≤50cpm
^{3}H Efficiency	≥0.60
Quenched Efficiency Ratio, 0.5mL H_2O	≥0.56
Quenched Efficiency Ratio, 1.0mL H_2O	≥0.55
Quenched Efficiency Ratio, 2.0mL H_2O	≥0.35
Quenched Efficiency Ratio, 3.0mL H_2O	≥0.20

ScintiVerse* E Cocktail **Scintanalyzed***

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**SX16-4**	134.94	4/404.81

Economical Universal LSC Cocktail for aqueous, nonaqueous and emulsion counting systems.
[1330-20-7]

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Water	≤0.7%
LSC Analysis:	
Background	≤50cpm
^3H Efficiency	≥0.65
Quenched Efficiency Ratio, 0.5mL H_2O	≥0.55
Quenched Efficiency Ratio, 1.0mL H_2O	≥0.50
Quenched Efficiency Ratio, 2.0mL H_2O	≥0.45
Quenched Efficiency Ratio, 3.0mL H_2O	≥0.40

ScintiVerse* LC Cocktail **Scintanalyzed***

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**SX17-4**	180.73	4/562.34

Special-purpose Scintillation Cocktail for measuring radio-tagged analytes in HPLC eluants containing organic solvents.
[95-63-6]

ChemAlert® STORAGE red

Product Specifications

PPO Concentration	5.0g/L ± 5% of absorbance value
POPOP Concentration	0.5g/L ± 5% of absorbance value
Specific Gravity @ 25°C	0.880 to 0.900
LSC Analysis:	
^3H Background	≤50cpm
Quenched Efficiency Ratio, 30% CH_3CN	≥0.38
Quenched Efficiency Ratio, 50% CH_3CN	≥0.38
Quenched Efficiency Ratio, 90% CH_3CN	≥0.38
Quenched Efficiency Ratio, 30% IPA	≥0.38
Quenched Efficiency Ratio, 50% IPA	≥0.38
Quenched Efficiency Ratio, 90% IPA	≥0.38

▸***SDS*** *see Sodium Dodecyl Sulfate O2674 Sodium Lauryl Sulfate S529.*

▸***Sea Sand*** *see Sand, Sea S25.*

▸***Seignette Salt*** *see Sodium Potassium Tartrate S386 and S387.*

L(+)-Selenomethionine, 99+% e.e.

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
250mg	Glass Bottle	**AC25996-2500**	78.70	- - - -
1g	Glass Bottle	**AC25996-0010**	99.40	- - - -
2.5g	Glass Bottle	**AC25996-0025**	224.50	- - - -

(S)-(+)-2-Amino-4-(methylseleno)butanoic acid
$CH_3SeCH_2CH_2CH(NH_2)COOH$
$C_5H_{11}NO_2Se$
F.W. 196.11
Melting point: 265°C
alpha: +18 (c=1, 1N HCl)
[3211-76-5]

▸***Silex*** *see Silica S153 under Sorbents and Silica Gels.*

▸***Silica, fine granules*** *see Sorbents and Silica Gels.*

▸***Silica, floated*** *see Sorbents and Silica Gels.*

Silicic Acid **Certified**

Precipitated Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A288-500**	312.05	4/995.73

Silica Acid
[1343-98-2]

ChemAlert® STORAGE gray

Product Specifications

Nonvolatile with HF	≤0.40%
Chloride	≤0.01%
Sulfate	≤0.020%
Heavy Metals (as Pb)	≤0.010%
Iron	≤0.005%

▸***Silicon Carbide*** *see Carborundum C192.*

▸***Silicon Dioxide*** *see Silica S150, S151, and S153 under Sorbents and Silica Gels.*

Silicone Oil

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**S159-500**	58.87	6/280.64

For use as a heating bath oil in melting point apparatus. Will not smoke to about 200°C (392°F).
[63148-62-9]

ChemAlert® STORAGE gray

Silicone Oil

High Temperature

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100g	Glass Bottle	**AC17466-1000**	49.80	- - - -
500g	Glass Bottle	**AC17466-5000**	145.90	- - - -

Density: 1.05g/mL
n: 1.494-1.498
[63148-58-3]

Silicotungstic Acid Hydrate **Certified**

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**A289-100**	388.19	6/1821.05

Tungstosilicic Acid
Dissolves in its own water of hydration when stored at room temperature.
[12520-88-6]
Recommended storage: Refrigerate

ChemAlert® STORAGE gray

Product Specifications

Insoluble Matter	≤0.005%
Chloride	≤0.005%
Sulfate	≤0.010%
Nitrate	≤0.010%

Silver Acetate **Laboratory**

Crystalline or Powder

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**S170-25**	201.32	6/942.14

Acetic Acid Silver Salt
CH_3COOAg
$C_2H_3AgO_2$
F.W. 166.91
[563-63-3]

ChemAlert® STORAGE gray

Silver Chloride **Certified**

Granular

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**S174-100**	702.30	6/3255.10

$AgCl$
F.W. 143.32
[7783-90-6]

ChemAlert® STORAGE **gray**

Product Specifications

Copper	≤0.001%
Iron	≤0.001%
Heavy Metals (as Pb)	≤0.005%
Nitrate	To pass test (about 0.001%)

Silver Diethyldithiocarbamate **Certified ACS**

Powder

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**S666-25**	430.16	6/2013.12

Diethyldithiocarbamic Acid Silver Salt
$AgS{:}C(N(CH_2CH_3)_2)S$
$C_5H_{10}NS_2Ag$
[1470-61-7]
Recommended storage: Refrigerate

ChemAlert® STORAGE **gray**

Product Specifications
Actual Lot Analysis is reported on label.

Suitability for Determination of Arsenic	To pass test
Solubility in Pyridine (1g/200mL)	To pass test

Silver Nitrate **USP**

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**S486-100**	294.42	6/1377.82
500g	Amber Glass	**S486-500**	1134.42	6/5283.50

$AgNO_3$
F.W. 169.87
[7761-88-8]

ChemAlert® STORAGE **yellow**

Product Specifications

Identification	To pass test
Assay (dried basis)	99.8-100.5%
Clarity and Color of Solution	To pass test
Copper (Cu)	To pass test

Silver Nitrate **Certified ACS**

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**S181-25**	164.54	6/770.02
100g	Amber Glass	**S181-100**	362.59	6/1696.91
500g	Amber Glass	**S181-500**	1794.22	6/8275.88

$AgNO_3$
F.W. 169.87
[7761-88-8]

ChemAlert® STORAGE **yellow**

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.7%
Chloride	≤5ppm
Free Acid	To pass test
Clarity of Solution	To pass test
Substances not Precipitated by HCl	≤0.01%
Sulfate	≤0.002%
Copper	≤2ppm
Iron	≤2ppm
Lead	≤0.001%

Silver Nitrate Concentrate **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**SS73**	168.06	6/771.92

$AgNO_3$
F.W. 169.87
Each bottle contains exact amount of 1N concentrate required to make 1 liter of 0.1N solution.
[7761-88-8]

ChemAlert® STORAGE **yellow**

Product Specifications

Normality (when diluted to 1 liter)	0.0990 to 0.1010
Color (APHA)	≤10

Silver Nitrate Solution, 1N **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SS68-500**	544.34	6/2619.81

Standardized at 25°C against NIST Potassium Chloride.
[7761-88-8]

ChemAlert® STORAGE **yellow**

Product Specifications
Actual Lot Analysis is reported on label.

Normality	0.995 to 1.005
Color (APHA)	≤5

Silver Nitrate Solution, 1.00N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Poly	**7025-16**	165.61	- - - -
1L	Amber Poly	**7025-32**	326.18	- - - -
4L	Amber Poly	**7025-1**	699.28	- - - -

Silver Nitrate Solution, 0.500N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Plastic	**7020-16**	114.85	- - - -
1L	Amber Plastic	**7020-32**	205.73	- - - -
4L	Amber Plastic	**7020-1**	595.61	- - - -
20L	Cubitainer*	**136226-14**	1448.12	- - - -

NEW

Silver Nitrate Solution, 0.282N

1mL = 10mg Cl⁻
For Chloride Titrations

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Poly	**7011-16**	67.44	- - - -
1L	Amber Poly	**7011-32**	113.36	- - - -
4L	Amber Poly	**7011-1**	399.57	- - - -
20L	Cubitainer*	**7011-5**	1250.23	- - - -

Silver Nitrate Solution, 0.171N

1mL = 10mg NaCl
For Chloride Titrations

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Poly	**7003-16**	55.81	- - - -
1L	Amber Poly	**7003-32**	81.19	- - - -
4L	Amber Poly	**7003-1**	249.74	- - - -
10L	Cubitainer*	**7003-25**	554.74	- - - -
20L	Cubitainer	**7003-5**	912.39	- - - -

Silver Nitrate Solution, 0.141N

ASTM for Chloride
1mL = 5mg Cl^-

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Poly	**7002-16**	38.26	- - - -
1L	Amber Poly	**7002-32**	61.76	- - - -
4L	Amber Poly	**7002-1**	200.20	- - - -
10L	Cubitainer*	**7002-25**	304.17	- - - -
20L	Cubitainer	**7002-5**	630.96	- - - -

[7761-88-8 (Silver Nitrate)]
[7732-18-5 (Water, Deionized)]

Silver Nitrate Solution, 0.1N

Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SS72-500**	87.47	6/400.79
1L	Amber Glass	**SS72-1**	138.69	6/643.12
4L	Amber Glass	**SS72-4**	396.22	4/1213.29
20L	PolyPac*	**SS72-20**	1339.01	- - - -

Standardized at 25°C against NIST Potassium Chloride.
[7761-88-8]

ChemAlert® STORAGE yellow

Product Specifications

Actual Lot Analysis is reported on label.

Normality .... 0.0995 to 0.1005
Color (APHA) .... ≤5

Silver Nitrate Solution, 0.100N

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Plastic	**7000-4**	11.54	- - - -
500mL	Amber Plastic	**7000-16**	29.47	- - - -
1L	Amber Plastic	**7000-32**	40.65	- - - -
4L	Amber Plastic	**7000-1**	143.96	- - - -
10L	Cubitainer*	**7000-25**	278.47	- - - -
20L	Cubitainer	**7000-5**	544.23	- - - -

[7761-88-8 (Silver Nitrate)]
[7732-18-5 (Water, Deionized)]

Silver Nitrate Solution, 0.0855N

1mL = 5mg NaCl

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Plastic	**6980-32**	38.73	- - - -
4L	Amber Plastic	**6980-1**	151.37	- - - -
20L	Cubitainer*	**6980-5**	282.00	- - - -

Application: For Chloride Titrations

Silver Nitrate Solution, 0.0500N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Poly	**6970-16**	24.94	- - - -
1L	Amber Poly	**6970-32**	37.54	- - - -
4L	Amber Poly	**6970-1**	113.16	- - - -
10L	Cubitainer*	**6970-25**	195.84	- - - -
20L	Cubitainer	**6970-5**	354.79	- - - -

[7761-88-8 (Silver Nitrate)]
[7732-18-5 (Water, Deionized)]

Silver Nitrate Solution, 0.014N

Certified APHA

1mL=0.5mg Cl

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SS82-1**	45.59	6/207.86

Nitric Acid Silver (1+) Salt
For Chloride determination in Water analysis.
0.0141N
Standardized at 25°C.
[7761-88-8]

ChemAlert® STORAGE yellow

Product Specifications

Actual Lot Analysis is reported on label.

Color (APHA) .... ≤5
Equivalence (Cl) .... 0.495 to 0.505mg/mL

Silver Nitrate Solution, 0.014N

Clear, colorless liquid
APHA for Chloride
1 mL = 0.5 mg Cl

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Poly	**6860-16**	14.28	- - - -
1L	Amber Poly	**6860-32**	18.26	- - - -
4L	Amber Plastic	**6860-1**	44.17	- - - -
10L	Cubitainer*	**6860-25**	96.36	- - - -
20L	Cubitainer	**6860-5**	178.37	- - - -

[7761-88-8 (Silver Nitrate)]
[7732-18-5 (Water, Deionized)]

▸***Silver Nitrate Solutions** in various concentrations and sizes, which are not listed, are available. Prices on request.*

Silver Oxide

Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**S184-100**	383.73	6/1778.61

Ag_2O
F.W. 231.74
[20667-12-3]

ChemAlert® STORAGE yellow

Silver Sulfate

Certified ACS

Powder

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**S190-25**	158.15	6/733.00
100g	Amber Glass	**S190-100**	520.78	6/2437.21
500g	Amber Glass	**S190-500**	2653.83	6/11942.74

Ag_2SO_4
F.W. 311.80
[10294-26-5]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay .... ≥98.0%
Insoluble Matter and AgCl .... ≤0.02%
Nitrate .... ≤0.001%
Substances not Precipitated by HCl .... ≤0.03%
Iron .... ≤0.001%

▸***Slaked Lime** see Calcium Hydroxide C97.*

▸***Soapstone** see Talc T4.*

▸***Soda Ash** see Sodium Carbonate beginning with S495.*

▸***Soda Crystals** see Sodium Carbonate Monohydrate S636 and S262.*

▸***Soda Lye** see Sodium Hydroxide beginning with S392.*

*Trademark. See Trademark Reference.

Sodium

Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
1 lb.	Metal Can	**S135-1LB**	206.34	6/928.54

Na
At. Wt. 22.99
[7440-23-5]

ChemAlert® STORAGE red

Product Specifications
Actual Lot Analysis is reported on label.

Chloride	≤0.002%
Phosphate	≤5ppm
Sulfate	To pass test (about 0.002%)
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%
Nitrate(NO_3)	≤0.003%

Sodium Acetate Anhydrous

Fused Crystals

Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S210-500**	115.81	6/517.73
2kg	Glass	**S210-2**	350.73	4/1091.60

CH_3COONa
$C_2H_3O_2Na$
F.W. 82.03
[127-09-3]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
pH of a 5% Solution at 25°C	7.0 to 9.2
Chloride	≤0.002%
Phosphate	≤0.001%
Sulfate	≤0.003%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%
Loss on Drying at 120°C	≤1.0%
Insoluble Matter	≤0.01%
Magnesium	≤0.002%

▸***Sodium Acetate Anhydrous*** *see also Fisher BioReagents* BP333.*

Sodium Acetate Trihydrate

Also meets ACS specifications

HPLC

Quantity	Packaging	Cat. No.	Each	Case of
1kg	Amber Glass	**S220-1**	111.19	6/497.08

$CH_3COONa \cdot 3H_2O$
$C_2H_3O_2Na \cdot 3H_2O$
F.W. 136.08
[6131-90-4]

ChemAlert® STORAGE gray

Product Specifications

Assay	99.0-101.0%
Optical Absorbance of a 1M Solution at 254nm	≤0.02
Substances Reducing Permanganate	To pass test
pH of a 5% Solution at 25°C	7.5 to 9.2
Insoluble Matter	≤0.005%
Chloride	≤0.001%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Phosphate	≤5ppm
Sulfate	≤0.002%
Potassium	≤0.005%
Magnesium	≤0.002%

Sodium Acetate Trihydrate

Granular

USP/FCC/EP/BP/JP

Quantity	Packaging	Cat. No.	Each	Case of
12kg	Poly Pail	**S609-12**	1187.66	- - - -
2.5kg	Poly Bottle	**S609-212**	324.76	- - - -
500g	Poly Bottle	**S609-500**	91.96	- - - -

$C_2H_3NaO_2 \cdot 3H_2O$
F.W. 136.08
[6131-90-4]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test

Meets USP Chemical Specifications

Assay (dried basis)	99.0-101.0%
Calcium and Magnesium	To pass test
Chloride	≤0.035%
Heavy Metals (as Pb)	≤0.001%
Insoluble Matter	≤0.05%
Loss on Drying at 120°C	38.0-41.0%
Potassium	To pass test
pH of a 5% Solution at 25°C	7.5 to 9.2
Sulfate	≤0.005%
Organic Volatile Impurity	Meets requirements
Bacterial Endotoxins	Report

Meets FCC Chemical Specifications

Assay (dried basis)	99.0-101.0%
Alkalinity (as Na_2CO_3)	≤0.05%
Lead	≤2mg/kg
Loss on Drying	36.0-41.0%
Potassium Compounds	To pass test

Meets EP and BP Chemical Specifications

Assay (dried basis)	99.0-101.0%
Appearance of Solution	To pass test
pH of a 5% Solution	7.5 to 9.0
Reducing Substances	To pass test
Chlorides	≤200ppm
Sulfates	≤200ppm
Arsenic	≤2ppm
Calcium and Magnesium (as Ca)	≤50ppm
Heavy Metals	≤10ppm
Iron	≤10ppm
Loss on Drying	39.0-40.5%
Bacterial Endotoxins	Report

Meets JP Chemical Specifications

Assay (after drying)	≥99.5%
Clarity or Color of Solution	Clear and colorless
Acid or Alkali	To pass test
Chloride	≤0.011%
Sulfate	≤0.017%
Heavy Metals	≤10ppm
Calcium and Magnesium	To pass test
Arsenic	≤2ppm
Potassium Permanganate-Reducing Substances	To pass test
Loss on Drying	39.0-40.5%

Sodium Acetate Trihydrate

Granular

USP/FCC

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S608-500**	69.55	6/308.81
3kg	Poly Bottle	**S608-3**	261.80	4/768.99
12kg	Poly Pail	**S608-12**	517.34	- - - -
50kg	Fiber Drum	**S608-50**	652.34	- - - -

$CH_3COONa \cdot 3H_2O$
$C_2H_3O_2Na \cdot 3H_2O$
F.W. 136.08
[6131-90-4]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Assay (dried basis)	99.0-101.0%
pH of a 5% Solution	7.5 to 9.2

Contd. from previous page.

Loss on Drying	38.0-41.0%
Insoluble Matter	≤0.05%
Chloride	≤0.035%
Sulfate	≤0.005%
Calcium and Magnesium	To pass test
Potassium	To pass test
Heavy Metals	≤0.001%
Organic Volatile Impurities	Meets requirements
Meets FCC Chemical Specifications	
Assay (dried basis)	99.0-101.0%
Alkalinity (as Na_2CO_3)	≤0.05%
Lead	≤2mg/kg
Loss on Drying	36.0-41.0%
Potassium Compounds	To pass test

Sodium Acetate Trihydrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S209-500**	65.19	6/305.81
3kg	Poly Bottle	**S209-3**	236.02	4/738.11
10kg	Poly Pail	**S209-10**	446.34	----
50kg	Fiber Drum	**S209-50**	694.40	----

$CH_3COONa{\bullet}3H_2O$
$C_2H_3O_2Na{\bullet}3H_2O$
F.W. 136.08
[6131-90-4]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	99.0-101.0%
Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	7.5 to 9.2
Chloride	≤0.001%
Phosphate	≤5ppm
Sulfate	≤0.002%
Calcium	≤0.005%
Magnesium	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Substances Reducing Permanganate	To pass test
Potassium	≤0.005%

▸***Sodium Acetate Trihydrate*** *see also Fisher BioReagents* BP334.*

▸***Sodium Acid Carbonate*** *see Sodium Bicarbonate S233, S631 and S637.*

▸***Sodium Acid Phosphate*** *see Sodium Phosphate Monobasic beginning with S397.*

▸***Sodium Acid Sulfate*** *see Sodium Bisulfate Monohydrate S240.*

Sodium Ammonium Phosphate Tetrahydrate — Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S218-500**	76.52	6/358.95

Salt of Phosphorus Microcosmic Salt
$NaNH_4HPO_4{\bullet}4H_2O$
F.W. 209.07
[7783-13-3]

ChemAlert® STORAGE gray

Product Specifications

Insoluble Matter, Calcium and NH_4OH Precipitate	≤0.005%
Chloride	≤0.002%
Nitrate	≤0.002%
Sulfate	≤0.020%
Arsenic	≤1ppm
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%

Sodium Arsenite — Certified

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass/Poison Pack	**S225I-100**	171.59	----
500g	Amber Glass/Poison Pack	**S225I-500**	982.99	----

Arsenic Sodium Oxide, Sodium meta-Arsenite
$NaAsO_2$
F.W. 129.91
[7784-46-5]

ChemAlert® STORAGE blue

Product Specifications

Chloride	≤0.01%
Sulfate	≤0.02%
Iron	≤0.02%
Heavy Metals (as Pb)	≤0.005%
Sulfide	≤5ppm

Sodium Azide — Laboratory

Granular

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass/Poison Pack	**S227I-25**	57.32	----
100g	Amber Glass/Poison Pack	**S227I-100**	90.07	----
500g	Amber Glass/Poison Pack	**S227I-500**	180.71	----
1kg	Poly Bottle	**S227I-1**	233.68	----

Sodium Trinitride
NaN_3
F.W.65.01
[26628-22-8]

ChemAlert® STORAGE blue

Product Specifications

Assay (NaN_3)	≥99%

▸***Sodium Benzenoneindophenol*** *see 2,6-Dichloroindophenol Sodium Salt S286.*

Sodium Benzoate — NF/FCC

Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S224-500**	87.87	6/407.25

Benzoic Acid Sodium Salt
$C_6H_5CO_2Na$
$C_7H_5O_2Na$
F.W.144.11
[532-32-1]

ChemAlert® STORAGE gray

Product Specifications

Meets NF Chemical Specifications	
Alkalinity	To pass test
Water	≤1.5%
Heavy Metals	≤0.001%
Organic Volatile Impurities	Meets requirements
Assay (Anhydrous Basis)	99.0-100.5%
NF Protocol Required	To pass test
Meets FCC Chemical Specifications	
Assay (Anhydrous Basis)	99.0-100.5%
Alkalinity (as NaOH)	≤0.04%
Lead	≤2mg/kg
Water	≤1.5%

***Sodium Biborate** see Sodium Tetraborate Decahydrate NF grade S246 and ACS grade S248 and S249.*

Sodium Bicarbonate USP/FCC/EP/BP/JP

Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
2.5kg	Poly Bottle	**S637-212**	155.37	- - - -
12kg	Poly Pail	**S637-12**	512.28	- - - -
50kg	Poly Drum	**S637-50**	1675.43	- - - -

$NaHCO_3$
F.W. 84.01
[144-55-8]

Product Specifications

Identification	To pass test

Meets USP Chemical Specifications

Assay (dried basis)	99.0-100.5%
Limit of Ammonia	≤0.002%
Arsenic	≤2ppm
Chloride	≤0.015%
Heavy Metals	≤5ppm
Loss on Drying	≤0.25%
Insoluble Substances	To pass test
Normal Carbonate	To pass test
Limit of Sulfur Compounds	≤0.015%
Organic Volatile Impurities	Meets requirements
Bacterial Endotoxins	Report

Meets FCC Chemical Specifications

Assay (dried basis)	99.0-100.5%
Ammonia	To pass test
Lead	≤2mg/kg
Insoluble Substances	To pass test
Loss on Drying	≤0.25%

Meets EP and BP Chemical Specifications

Assay	99.0-101.0%
Appearance of Solution	To pass test
Chlorides	≤150ppm
Sulfates	≤150ppm
Ammonium	≤20ppm
Arsenic	≤2ppm
Calcium	≤100ppm
Heavy Metals	≤10ppm
Iron	≤20ppm
Bacterial Endotoxins	Report

Meets JP Chemical Specifications

Assay (dried basis)	≥99.0%
pH	7.9 to 8.4
Clarity and Color of Solution	Clear and colorless
Carbonate	To pass test
Chloride	≤0.040%
Ammonium	To pass test
Heavy Metals	≤5ppm
Arsenic	≤2ppm

Sodium Bicarbonate USP/FCC

Powder

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**S631-3**	113.19	4/353.97
10kg	Poly Pail	**S631-10**	173.57	- - - -
50kg	Fiber Drum	**S631-50**	533.70	- - - -

Sodium Acid Carbonate, Sodium Hydrogen Carbonate
$NaHCO_3$
F.W. 84.01
[144-55-8]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test

Meets USP Chemical Specifications

Assay (dried basis)	99.0-100.5%
Loss on Drying	≤0.25%
Insoluble Substances	To pass test
Normal Carbonate	To pass test
Chloride	≤0.015%
Sulfur Compounds	≤0.015%
Arsenic (As)	≤2µg/g
Heavy Metals	≤5µg/g
Ammonia	To pass test
Organic Volatile Impurities	Meets requirements
Microbial Limit	≤100micro-organisms/g

Meets FCC Chemical Specifications

Assay (after drying)	99.0-100.5%
Ammonia	≤0.002%
Lead	≤2mg/kg
Insoluble Substances	To pass test
Loss on Drying	≤0.25%

Sodium Bicarbonate Certified ACS

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S233-500**	42.16	6/197.77
3kg	Poly Bottle	**S233-3**	105.67	4/330.48
10kg	Poly Pail	**S233-10**	164.67	- - - -
50kg	Fiber Drum	**S233-50**	541.90	- - - -
300 lb.	Fiber Drum	**S233-300LB**	721.34	- - - -

Sodium Acid Carbonate, Carbonic Acid Monosodium Salt, Sodium Hydrogen Carbonate
$NaHCO_3$
F.W. 84.01
[144-55-8]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay (dried basis)	99.7-100.3%
Insoluble Matter	≤0.015%
Chloride	≤0.003%
Phosphate	≤0.001%
Sulfur Compounds (as SO_4)	≤0.003%
Ammonium	≤5ppm
Calcium	≤0.02%
Magnesium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%
Potassium	≤0.005%

***Sodium Bichromate** see Sodium Dichromate S235 and S234.*

***Sodium Biphosphate** see Sodium Phosphate Monobasic beginning with S369.*

Sodium Bisulfate Monohydrate Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S240-500**	170.15	6/798.16
3kg	Poly Bottle	**S240-3**	476.42	4/1482.83

Salt Cake, Sodium Acid Sulfate, Sodium Hydrogen Carbonate, Niter Cake
$NaHSO_4 \cdot H_2O$
F.W. 138.08
[10034-88-5]

ChemAlert® STORAGE white

Product Specifications

Acidity (as H_2SO_4)	35-36.5%
Insoluble Matter and NH_4OH Precipitate	≤0.010%
Chloride	≤0.002%
Nitrate	≤0.005%
Phosphate	≤0.002%
Arsenic	≤1ppm
Calcium and Magnesium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%

Sodium Bisulfite — Certified ACS
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S654-500**	60.00	6/281.45
3kg	Poly Bottle	**S654-3**	231.77	4/721.34

Sodium Hydrogen Sulfite
Mixture of $NaHSO_3$ and $Na_2S_2O_5$
[7631-90-5 (Sodium Bisulfite)]
[7681-57-4 (Sodium Metabisulfite)]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay (as SO_2)	≥58.5%
Insoluble Matter	≤0.005%
Chloride	≤0.02%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.002%

Sodium Bitartrate Monohydrate — Certified
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Glass	**S245-500**	137.88	6/643.70

Tartaric Acid Monosodium Salt, Sodium Hydrogen Tartrate
$NaHC_4H_4O_6 \cdot H_2O$
F.W. 190.09
[526-94-3]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Insoluble in Dilute NH_4OH	≤0.010%
Chloride	≤0.005%
Phosphate	≤0.002%
Sulfate	≤0.005%
Ammonia	≤0.2%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%

Sodium Borohydride, 99%
Powder

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100g	Glass Bottle	**AC20005-1000**	133.20	- - - -

SBH, Sodium Tetrahydroborate
$NaBH_4$
H_4BNa
F.W. 37.83
Melting point: 400°C
Flash point: 69°C
Density: 1.07g/mL
[16940-66-2]

NEW

Sodium Borohydride, 98+%
Powder

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
5g	Glass Bottle	**AC18930-0050**	25.70	- - - -
10g	Glass Bottle	**AC18930-0100**	28.00	- - - -
100g	Glass Bottle	**AC18930-1000**	50.10	- - - -
500g	Glass Bottle	**AC18930-5000**	153.50	- - - -

SBH, Sodium Tetrahydroborate
$NaBH_4$
H_4BNa
F.W. 37.83
Melting point: 400°C
Flash point: 69°C
Density: 1.07g/mL
[16940-66-2]

Sodium Borohydride
Powder

Quantity	Packaging	Cat. No.	Each	Case of
10g	Poly Bottle	**S678-10**	64.76	6/303.79
25g	Poly Bottle	**S678-25**	104.42	6/466.79

$NaBH_4$
F.W. 37.83
[16940-66-2]

ChemAlert® STORAGE red

Sodium Bromate — Certified

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**S253-250**	74.51	6/331.37
500g	Amber Glass	**S253-500**	106.93	6/475.56

$NaBrO_3$
F.W. 150.89
[7789-38-0]

ChemAlert® STORAGE yellow

Product Specifications

Assay	99.7-100.3%
Bromide	Pass test (limit about 0.05%)
Heavy Metals (as Pb)	≤5ppm
Insoluble Matter	≤0.010%
Sulfate	≤0.015%
Iron	≤0.002%

Sodium Bromide — Certified ACS
Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S255-500**	88.93	6/399.04
3kg	Amber Glass	**S255-3**	363.76	4/1132.20

NaBr
F.W. 102.89
[7647-15-6]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Barium	≤0.002%
Bromate	≤0.001%
Calcium	≤0.002%
Magnesium	≤0.001%
Chloride	≤0.2%
Heavy Metals (as Pb)	≤5ppm
Insoluble Matter	≤0.005%
Iron	≤5ppm
pH of a 5% Solution at 25°C	5.5 to 8.8
Potassium	≤0.1%
Sulfate	≤0.002%

*Trademark. See Trademark Reference.

Sodium Carbonate Anhydrous HPLC

Also meets ACS specifications
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S495-500**	86.08	6/386.78

Carbonic Acid Disodium Salt, Soda Ash
Na_2CO_3
F.W. 105.99
[497-19-8]

ChemAlert® STORAGE gray

Product Specifications

Assay (dried basis)	≥99.5%
Insoluble Matter	≤0.01%
Loss on Heating at 285°C	≤1.0%
Calcium	≤0.03%
Magnesium	≤0.005%
Chloride	≤0.001%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Phosphate	≤0.001%
Potassium	≤0.005%
Silica	≤0.005%
Sulfur Compounds (as SO_4)	≤0.003%
Optical Absorbance:	
at 254nm	≤0.10
at 280nm	≤0.08
at 350nm	≤0.04

Sodium Carbonate Anhydrous Certified ACS

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S263-500**	77.55	6/363.78
1kg	Poly Bottle	**S263-1**	136.61	6/640.86
3kg	Poly Bottle	**S263-3**	245.29	4/763.46
10kg	Poly Pail	**S263-10**	332.89	- - - -
50kg	Fiber Drum	**S263-50**	645.77	- - - -

Soda Ash
Na_2CO_3
F.W. 105.99
[497-19-8]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay (dried basis)	≥99.5%
Insoluble Matter	≤0.01%
Loss on Heating at 285°C	≤1.0%
Chloride	≤0.001%
Phosphate	≤0.001%
Silica	≤0.005%
Sulfur Compounds (as SO_4)	≤0.003%
Calcium	≤0.03%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Potassium	≤0.005%
Magnesium	≤0.005%

Sodium Carbonate Monohydrate NF/FCC

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
10kg	Poly Pail	**S636-10**	192.44	——

Soda Crystals
$Na_2CO_3 \cdot H_2O$
F.W. 124.00
[5968-11-6]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Meets NF Chemical Specifications	
Assay (Anhydrous Basis)	99.5-100.5%
Water	12.0-15.0%
Heavy Metals	≤0.001%
Organic Volatile Impurities	Meets requirements
Meets FCC Chemical Specifications	
Assay (After Drying)	99.5-100.5%
Lead	≤4mg/kg
Loss on Drying	12.0-15.0%

Sodium Carbonate Monohydrate Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**S262-3**	207.88	4/642.33

$Na_2CO_3 \bullet H_2O$
F.W. 124.00
[5968-11-6]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.5%
Insoluble Matter	≤0.01%
Loss on Drying at 150°C	13.0-15.0%
Chloride	≤0.001%
Phosphate	≤5ppm
Silica	≤0.005%
Sulfur Compounds (as SO_4)	≤0.002%
Calcium	≤0.03%
Magnesium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Potassium	≤0.005%

Sodium Carbonate Solution, 10% (w/v)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**7160-16**	14.57	- - - -
1L	Poly Natural	**7160-32**	20.63	- - - -
4L	Poly Natural	**7160-1**	42.77	- - - -
10L	Cubitainer*	**7160-25**	96.87	- - - -

Solvent/Matrix: Aqueous Solution

Sodium Carbonate Solution, 1N Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS148-1**	57.68	6/278.17

A volumetric Standard Solution, titrated at 25°C to pH 4.1 (Methyl Orange endpoint) against NIST Potassium Acid Phthalate.
a[5968-11-6]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Normality	0.995 to 1.005
Color (APHA)	≤5

Sodium Chlorate Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S268-500**	111.45	6/495.83

$NaClO_3$
F.W. 106.44
[7775-09-9]

ChemAlert® STORAGE yellow

Contd. on next page.

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Product Specifications

Actual Lot Analysis is reported on label.

Insoluble Matter	≤0.010%
Bromate	≤0.07%
Chloride	≤0.005%
Nitrogen Compounds (as N)	≤0.001%
Sulfate	To pass test (about 0.003%)
Calcium, Magnesium and NH_4OH Precipitate	≤0.01%
Heavy Metals (as Pb)	≤0.001%
Iron	≤5ppm

Sodium Chloride USP/FCC/EP/BP/JP

Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S642-500**	58.39	- - - -
2.5kg	Poly Bottle	**S642-212**	195.88	- - - -
12kg	Poly Pail	**S642-12**	635.11	- - - -
350 lb.	Poly Drum	**S642-350LB**	5650.61	- - - -

NaCl
F.W. 58.44
[7647-15-5]

Product Specifications

Meets USP Chemical Specifications

Assay (dried basis)	99.0-100.5%
Appearance of Solution	To pass test
Acidity or Alkalinity	To pass test
Arsenic	≤1µg/g
Barium	To pass test
Magnesium and Alkaline Earth Metals (as Ca)	≤0.01%
Heavy Metals (as Pb)	≤5ppm
Iodides	To pass test
Bromides	≤0.01%
Iron	≤2µg/g
Loss on Drying at 105°C	≤0.5%
Ferrocyanide	To pass test
Sulfate	≤0.020%
Nitrites	To pass test
Limit of Phosphates	≤0.0025%

Meets FCC Chemical Specifications

Assay (after drying at 625°C)	99.0-100.5%
Arsenic	≤1mg/kg
Calcium and Magnesium	≤0.35%
Heavy Metals (as Pb)	≤2mg/kg
Loss on Drying at 110°C	≤0.5%

Meets EP and BP Chemical Specifications

Assay (dried basis)	99.0-100.5%
Appearance of Solution	To pass test
Acidity and Alkalinity	To pass test
Bromides	≤100ppm
Ferrocyanides	To pass test
Iodides	To pass test
Nitrites	To pass test
Phosphates	≤25ppm
Sulfates	≤200ppm
Arsenic	≤1ppm
Barium	To pass test
Heavy Metals	≤5ppm
Iron	≤2ppm
Magnesium and Alkaline Earth Metals (as Ca)	≤100ppm
Loss on Drying at 105°C	≤0.5%

Meets JP Chemical Specifications

Assay (dried basis)	≥99.5%
pH	4.5 to 7.0
Clarity and Color of Solution	Clear and colorless
Bromide	To pass test
Iodide	To pass test
Heavy Metals	≤3ppm
Barium	To pass test
Calcium or Magnesium	To pass test
Arsenic	≤2ppm
Loss on Drying	≤0.5%

Sodium Chloride USP/FCC/EP/BP

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S641-500**	49.15	6/217.33
2.5kg	Poly Bottle	**S641-212**	126.41	4/371.24
350 lb.	Fiber Drum	**S641-350LB**	528.66	- - - -
350 lb.	Poly Drum	**S641-P350LB**	830.15	- - - -

Salt
NaCl
F.W. 58.44
[7647-14-5]

ChemAlert®
STORAGE
gray

Product Specifications

Identification	To pass test

Meets USP Chemical Specifications

Assay	99.0-100.5%
Appearance of Solution	To pass test
Acidity or Alkalinity	To pass test
Loss on Drying at 105°C	≤0.5%
Limit of Bromides	≤0.01%
Iodides	To pass test
Magnesium and Alkaline Earth Metals (as Ca)	≤0.01%
Arsenic	≤1ppm
Iron	≤2ppm
Barium	To pass test
Ferrocyanides	To pass test
Sulfate	≤0.020%
Nitrites	To pass test
Limit of Phosphates	≤0.0025%
Heavy Metals (as Pb)	≤5ppm

Meets FCC Chemical Specifications

Assay (after drying at 625°C)	99.0%-100.5%
Arsenic	≤1mg/kg
Calcium and Magnesium	≤0.35%
Heavy Metals (as Pb)	≤2mg/kg
Loss on Drying at 110°C	≤0.5%

Meets EP Chemical Specifications

Assay (Dried Basis)	99.0-100.5%
Appearance of Solution	To pass test
Acidity or Alkalinity	To pass test
Bromides	≤100ppm
Ferrocyanides	To pass test
Iodides	To pass test
Nitrites	To pass test
Phosphates	≤25ppm
Sulfates	≤200ppm
Arsenic	≤1ppm
Barium	To pass test
Heavy Metals (as Pb)	≤5ppm
Iron	≤2ppm
Magnesium and Alkaline Earth Metals (as Ca)	≤100ppm
Loss on Drying at 105°C	≤0.5%

Meets BP Chemical Specifications

Assay (Dried Basis)	99.0-100.5%
Appearance of Solution	To pass test
Acidity or Alkalinity	To pass test
Bromide	≤100ppm
Ferrocyanide	To pass test
Iodide	To pass test
Nitrites	To pass test
Phosphate	≤25ppm
Sulfate	≤200ppm
Arsenic	≤1ppm
Barium	To pass test
Heavy Metals (as Pb)	≤5ppm
Iron	≤2ppm
Magnesium and Alkaline Earth Metals (as Ca)	≤100ppm
Loss on Drying at 105°C	≤0.5%

Sodium Chloride USP/FCC

Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S640-500**	44.00	6/206.39
3kg	Poly Bottle	**S640-3**	117.61	4/363.41
10kg	Poly Pail	**S640-10**	135.67	- - - -
50kg	Fiber Drum	**S640-50**	328.18	- - - -
350 lb.	Fiber Drum	**S640-350LB**	513.90	- - - -

Salt
NaCl
F.W. 58.44
[7647-14-5]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Assay (Dried Basis)	99.0-100.5%
Appearance of Solution	To pass test
Acidity or Alkalinity	To pass test
Loss on Drying at 105°C	≤0.5%
Bromides	≤0.010%
Iodides	To pass test
Magnesium and Alkaline Earth Metals (as Ca)	≤0.01%
Arsenic	≤1ppm
Iron	≤2ppm
Barium	To pass test
Ferrocyanides	To pass test
Sulfate	≤0.020%
Nitrites	To pass test
Phosphates	≤0.0025%
Heavy Metals (as Pb)	≤5ppm
Meets FCC Chemical Specifications	
Assay (After Drying at 625°C)	99.0-100.5%
Arsenic	≤1mg/kg
Calcium and Magnesium	≤0.35%
Heavy Metals (as Pb)	≤2mg/kg
Loss on Drying at 110°C	≤0.5%

Sodium Chloride Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S271-500**	39.62	6/192.53
1kg	Poly Bottle	**S271-1**	49.71	6/232.10
3kg	Poly Bottle	**S271-3**	121.75	4/376.22
10kg	Poly Pail	**S271-10**	167.18	- - - -
50kg	Fiber Drum	**S271-50**	320.35	- - - -
350 lb.	Fiber Drum	**S271-350LB**	557.53	- - - -

Salt
NaCl
F.W. 58.43
[7647-14-5]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	5.0 to 9.0
Iodide	≤0.002%
Bromide	≤0.01%
Chlorate and Nitrate	≤0.003%
Phosphate	≤5ppm
Sulfate	≤0.004%
Barium	To pass test
Calcium	≤0.002%
Magnesium	≤0.001%
Heavy Metals (as Pb)	≤5ppm
Iron	≤2ppm
Potassium	≤0.005%

Sodium Chloride Biological, Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S671-500**	39.77	6/192.39
3kg	Poly Bottle	**S671-3**	138.52	4/433.21
10kg	Poly Pail	**S671-10**	358.90	- - - -

Salt
NaCl
F.W. 58.44
[7647-14-5]

ChemAlert® STORAGE gray

Product Specifications

Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	5.0 to 9.0
Free Alkali (as NaOH)	None
Iodide	≤0.002%
Phosphate	≤5ppm
Barium	To pass test
Heavy Metals (as Pb)	≤5ppm
Iron	≤2ppm
Chlorate & Nitrate (as NO_3)	≤0.003%
Free Acid (as HCl)	≤0.002%
Bromide	≤0.01%
Sulfate	≤0.004%
Calcium	≤0.002%
Magnesium	≤0.001%
Potassium	≤0.005%
Assay (NaCl)	≥99.0%

Sodium Chloride Standard, 1.00% (w/v)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**7213-16**	40.60	- - - -

Solvent/Matrix: Aqueous Solution
[7647-14-5 (Sodium Chloride)]
[7732-18-5 (Water, Deionized)]

Sodium Chloride, 0.9% (w/v)

Isotonic Saline

Nonsterile

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**7210-16**	11.64	- - - -
1L	Poly Natural	**7210-32**	15.40	- - - -
4L	Poly Natural	**7210-1**	24.45	- - - -
10L	Cubitainer*	**7210-25**	56.12	- - - -
20L	Cubitainer	**7210-5**	82.60	- - - -

Application: Suitable for use as blood bank saline.
Solvent/Matrix: Aqueous

Sodium Chloride, 0.85% (w/v)

Normal Saline

Nonsterile

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Plastic	**7200-16**	11.57	- - - -
1L	Plastic	**7200-32**	15.10	- - - -
4L	Plastic	**7200-1**	24.30	- - - -
10L	Cubitainer*	**7200-25**	55.41	- - - -
20L	Cubitainer	**7200-5**	68.71	- - - -

Application: Suitable for use as blood bank saline.
Submicron filtered, low particle count
Solvent/Matrix: Aqueous

Sodium Chlorite, 80%

Unstabilized

Granular

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
5g	Glass Bottle	AC22323-0050	21.60	- - - -
500g	Glass Bottle	AC22323-5000	35.40	- - - -

$NaClO_2$

$ClNaO_2$

F.W. 90.44

Melting point: 180-200°C

[7758-19-2]

NEW

Sodium Chromate Anhydrous — Certified

Powder

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**S272-250**	106.75	6/500.74
500g	Amber Glass	**S272-500**	172.77	6/810.45

Chromic Acid Disodium Salt

Na_2CrO_4

F.W. 161.97

[7775-11-3]

ChemAlert® STORAGE yellow

Product Specifications

Sulfate	≤0.01%
Loss on Drying at 105°C	≤1.0%
Chloride	≤0.010%
Aluminum	To pass test
Calcium	≤0.005%

Sodium Citrate Dihydrate — USP/FCC/EP/BP/JP

Granular

Quantity	Packaging	Cat. No.	Each	Case of
2.5kg	Poly Bottle	**S470-212**	341.42	- - - -
12kg	Poly Pail	**S470-12**	1006.68	- - - -

Citric Acid Trisodium Salt Dihydrate

$NaO_2CCH_2C(OH)(CO_2Na)CH_2CO_2Na\cdot 2H_2O$

$C_6H_5O_7Na_3\cdot 2H_2O$

F.W. 294.10

[6132-04-3]

ChemAlert® STORAGE gray

Product Specifications

Meets USP Chemical Specifications

Assay (Anhydrous Basis)	99.0 to 100.5
Alkalinity	To pass test
Heavy Metals (as Pb)	≤0.001%
Tartrate	To pass test
Water	10.0-13.0%

Meets FCC Chemical Specifications

Assay (Anhydrous Basis)	99.0-100.5%
Alkalinity	To pass test
Lead	≤2mg/kg
Water	10.0 to 13.0%

Meets EP and BP Chemical Specifications

Assay (Dried Basis)	99.0-101.0%
Appearance of Solution	Clear and colorless
Acidity or Alkalinity	To pass test
Readily Carbonizable Substances	To pass test
Chlorides	≤50ppm
Oxalates	≤300ppm
Sulfates	≤150ppm
Heavy Metals	≤10ppm
Water	11.0-13.0%
Bacterial Endotoxins	Report

Meets JP Chemical Specifications

Assay (Dried Basis)	≥99.0%
pH	7.5 to 8.5
Clarity and Color of Solution	Clear and colorless
Chloride	≤0.015%
Sulfate	≤0.048%
Heavy Metals	≤10ppm
Arsenic	≤2ppm
Tartrate	To pass test
Oxalate	To pass test
Readily Carbonizable Substances	To pass test
Loss on Drying	10.0-13.0%

Sodium Citrate Dihydrate — USP/FCC

Granular

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**S466-3**	264.82	4/828.16

Citric Acid Trisodium Salt Dihydrate

$NaO_2CCH_2C(OH)(CO_2Na)CH_2CO_2Na\cdot 2H_2O$

$C_6H_5O_7Na_3\cdot 2H_2O$

F.W. 294.10

[6132-04-3]

ChemAlert® STORAGE gray

Product Specifications

Assay (Anhydrous Basis)	99.0-100.5%
Alkalinity	To pass test
Water	10.0-13.0%
Tartrate	To pass test
Heavy Metals (as Pb)	≤0.001%

Meets FCC Chemical Specifications

Assay (Anhydrous Basis)	99.0-100.5%
Alkalinity	To pass test
Lead	≤2mg/kg
Water	10.0-13.0%

Sodium Citrate Dihydrate — Certified

Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S279-500**	62.78	6/294.50
3kg	Poly Bottle	**S279-3**	223.70	4/699.56
10kg	Poly Pail	**S279-10**	442.11	- - - -
50kg	Fiber Drum	**S279-50**	1089.81	- - - -
275 lb.	Fiber Drum	**S279-275LB**	1328.89	- - - -

Citric Acid Trisodium Salt Dihydrate

$C_6H_5Na_3O_7\cdot 2H_2O$

F.W. 294.09

[6132-04-3]

Product Specifications

Insoluble Matter	≤0.005%
Free Acid (as Citric Acid)	≤0.15%
Free Alkali	None
Chloride	≤0.003%
Sulfate	≤0.005%
Ammonia	≤0.003%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%

Sodium Cyanide — Certified ACS

Granular

Quantity	Packaging	Cat. No.	Each	Case of
100g	Glass/ Poison Pk	**S284I-100**	45.31	4/155.66
500g	Glass/ Poison Pk	**S284I-500**	107.64	- - - -

$NaCN$

F.W. 49.01

[143-33-9]

ChemAlert® STORAGE blue

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥95.0%
Chloride	≤0.15%
Phosphate	≤0.02%
Sulfate	≤0.05%
Sulfide	≤0.005%
Thiocyanate	≤0.02%
Iron, Total (as Fe)	≤0.005%
Lead	≤5ppm

Sodium Cyanoborohydride, 95%

Quantity	Packaging	Cat. No.	Each	Case of
10g	Glass Bottle	**AC16855-0100**	34.70	- - - -
50g	Glass Bottle	**AC16855-0500**	116.40	- - - -

Sodium Cyanotrihydroborate
$NaBH_3CN$
CH_3BNNa
F.W. 62.84
Melting point: 242°C
[25895-60-7]

NEW

Sodium Deoxycholate *see Deoxycholic Acid Sodium Salt, Fisher BioReagents* BP349.*

Sodium Desoxycholate — Laboratory
Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**S285-100**	315.58	6/1480.41

Deoxycholic Acid Sodium Salt
[302-95-4]

ChemAlert® STORAGE gray

Sodium 2,6-Dichlorobenzenenoneindophenol *see 2,6-Dichloroindophenol Sodium Salt S286.*

Sodium Dichromate Dihydrate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**S235-100**	99.66	6/467.50
500g	Poly Bottle	**S235-500**	227.16	6/1065.62
3kg	Poly Bottle	**S235-3**	2819.72	- - - -

Sodium Bichromate
Chromic Acid Disodium Salt
$Na_2Cr_2O_7{\bullet}2H_2O$
F.W. 298.00
[7789-12-0]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	9.5%-100.5%
Chloride	≤0.005%
Sulfate	≤0.01%
Aluminum	≤0.002%
Calcium	≤0.003%
Magnesium	≤0.005%
Potassium	≤0.01%
Insoluble Matter	≤0.005%

Sodium Dichromate Dihydrate — Technical
Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S234-500**	173.36	6/803.48
3kg	Poly Bottle	**S234-3**	731.24	4/2259.48
10kg	Bag in Box	**S234-10**	1494.12	- - - -

$Na_2Cr_2O_7{\bullet}2H_2O$
F.W. 298.00
[7789-12-0]

ChemAlert® STORAGE yellow

Sodium Diethyldithiocarbamate Trihydrate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**S287-100**	114.78	6/513.00

Diethyldithiocarbamic Acid Sodium Salt
$(CH_3CH_2)_2NCSSNa{\bullet}3H_2O$
$C_5H_{10}NNaS_2{\bullet}3H_2O$
F.W. 225.31

ChemAlert® STORAGE gray

Due to an inherent reactivity, this reagent will form insoluble oxidation products upon exposure to oxygen. After storage for some time, the reagent may fail to meet the specification for solubility in water.
[20624-25-3]

Product Specifications
Actual Lot Analysis is reported on label.

Solubility in H_2O(1g/50mL)	To pass test
Sodium (as Na_2SO_4)	30.5-32.5%
Sensitivity	To pass test

Sodium Dihydrogen Phosphate *seeSodium Phosphate Monobasic Anhydrous S397, Sodium Phosphate Monobasic Monohydrate (crystalline) S369, Sodium Phosphate Monobasic Monohydrate (granular) S468, Sodium Phosphate Monobasic Dihydrate S381.*

Sodium p-Dimethylaminoazobenzenesulfonate *see Methyl Orange M216.*

Sodium Dithionite *see Sodium Hydrosulfite S310.*

Sodium Dodecyl Sulfate — Certified

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**02674-25**	80.79	6/362.95

Sodium Lauryl Sulfate, SDS, Sulfuric Acid Monododecylester Sodium Salt, Irium
$CH_3(CH_2)_{11}OSO_3Na$
$C_{12}H_{25}O_4SNa$
F.W. 288.38
Suitable for use in electrophoresis and HPLC.
[151-21-3]

ChemAlert® STORAGE red

Product Specifications

Assay (by Sulfated Sodium Ash)	95-105%
Optical Absorbance	To pass test
Solubility in H_2O (1g/liter)	To pass test
Suitability as a Reagent in Gel Electrophoresis	To pass test

Sodium Dodecyl Sulfate *see also Sodium Lauryl Sulfate S529 and SDS.*

Sodium Fluorescein *see Uranine A833.*

Sodium Fluoride — Certified ACS

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**S299-100**	89.16	6/418.22
500g	Poly Bottle	**S299-500**	188.95	6/875.76
3kg	Poly Bottle	**S299-3**	699.30	4/2150.33

NaF

F.W. 41.99

[7681-49-4]

ChemAlert® STORAGE blue

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99%
Insoluble Matter	≤0.02%
Loss on Drying at 150°C	≤0.3%
Chloride	≤0.005%
Titratable Acid	≤0.03mEq/g
Titratable Base	≤0.01mEq/g
Sodium Fluosilicate (as Na_2SiF_6)	≤0.1%
Sulfate	≤0.03%
Sulfite	≤0.005%
Heavy Metals (as Pb)	≤0.003%
Iron	≤0.003%
Potassium	≤0.02%

Sodium Formate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S648-500**	110.31	6/493.02

HCOONa

CHO_2Na

F.W. 68.01

[141-53-7]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay (HCOONa)	≥99.0%
Insoluble Matter	≤0.005%
Chloride	≤0.001%
Sulfate	≤0.001%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm

▸**Sodium Hydrogen Carbonate** *see Sodium Bicarbonate S637, S631 and S233.*

▸**Sodium Hydrogen Sulfate** *see Sodium Bisulfate Monohydrate S240.*

▸**Sodium Hydrogen Sulfite** *see Sodium Bisulfite S654.*

▸**Sodium Hydrogen Tartrate** *see Sodium Bitartrate, Monohydrate S245.*

Sodium Hydrosulfite — Laboratory

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**S310-100**	34.01	6/159.54
500g	Amber Glass	**S310-500**	59.48	6/278.99

Sodium Dithionite

$Na_2S_2O_4$

F.W. 174.11

[7775-14-6]

ChemAlert® STORAGE red

Sodium Hydroxide — NF/FCC/ED/BP/JP

Granular

Quantity	Packaging	Cat. No.	Each	Case of
2.5kg	Poly Bottle	**S392-212**	210.12	- - - -
12kg	Poly Pail	**S392-12**	604.18	- - - -
50kg	Poly Drum	**S392-50**	1356.99	- - - -

Lye, Caustic Soda

NaOH

F.W. 40.00

[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Identification	To pass test

Meets NF Chemical Specifications

Assay (as NaOH)	95.0-100.5%
Heavy Metals	≤0.003%
Insoluble Substances and Organic Matter	To pass test
Potassium	To pass test
Sodium Carbonate	≤3.0%
Bacterial Endotoxins	Report

Meets FCC Chemical Specifications

Assay	95.0-100.5%
Arsenic	≤3mg/kg
Carbonate (as Na_2CO_3)	≤3.0%
Insoluble Substances and Organic Matter	To pass test
Lead	≤2mg/kg
Mercury	≤0.1mg/kg

Meets EP and BP Chemical Specifications

Assay	97.0-100.5%
Appearance of Solution	To pass test
Carbonates (as Na_2CO_3)	≤2.0%
Chlorides	≤50ppm
Sulfates	≤50ppm
Heavy Metals	≤20ppm
Iron	≤10ppm
Bacterial Endotoxins	Report

Meets JP Chemical Specifications

Assay	≥95.0%
Clarity and Color of Solution	Clear and colorless
Chloride	≤0.050%
Heavy Metals	≤30ppm
Potassium	To pass test
Sodium Carbonate	≤2.0%
Mercury	To pass test

Sodium Hydroxide — NF/EP/BP/FCC

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S399-500**	72.53	6/315.85
1kg	Poly Bottle	**S399-1**	98.61	- - - -
2.5kg	Poly Bottle	**S399-212**	178.94	4/520.64
50kg	Fiber Drum	**S399-50**	579.60	- - - -

[1310-73-2]

CAUSTIC

Product Specifications

Meets NF Specifications

Assay (total alkali, as NaOH)	95.0-100.5%
Insoluble Substances and Organic Matter	To pass test
Potassium	To pass test
Sodium Carbonate	≤3.0%
Heavy Metals (as Pb)	≤0.003%
Bacterial Endotoxins	Report

Meets FCC Requirements

Identifications	Pass test
Assay (Total Alkali, as NaOH)	95-100.5%
Arsenic	≤3mg/kg
Carbonate (as Na_2CO_3)	≤3.0%
Insoluble Substances & Organic Matter	Pass test
Lead	≤2mg/kg
Mercury	≤0.1mg/kg

Meets EP/BP Requirements

Identification	Pass test
Appearance of Solution	Pass test

Carbonates (as Na_2CO_3)	≤2.0%
Chlorides	≤50ppm
Sulfates	≤50ppm
Heavy Metals	≤20ppm
Iron	≤10ppm
Bacterial Endotoxins	Report
Assay (Total Alkali, as NaOH)	97.100.5%

Sodium Hydroxide **NF/FCC**

Pellets

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S320-500**	68.15	6/318.17
1kg	Poly Bottle	**S320-1**	101.46	6/475.93
3kg	Poly Bottle	**S320-3**	192.56	4/577.30
10kg	Poly Pail	**S320-10**	314.01	- - - -
50kg	Fiber Drum	**S320-50**	697.08	- - - -

Caustic Soda
NaOH
F.W. 40.00
[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Identification	To pass test
Meets NF Chemical Specifications	
Assay (Total Alkali, as NaOH)	95.0-100.5%
Insoluble Substances and Organic Matter	To pass test
Potassium	To pass test
Heavy Metals (as Pb)	≤0.003%
Sodium Carbonate	≤3.0%
Meets FCC Chemical Specifications	
Assay (Total Alkali, as NaOH)	95.0-100.5%
Arsenic	≤3mg/kg
Carbonate (as Na_2CO_3)	≤3.0%
Insoluble Substances and Organic Matter	To pass test
Lead	≤2mg/kg
Mercury	≤0.1mg/kg

Sodium Hydroxide **Certified ACS**

Pellets

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**S318-100**	33.86	6/158.82
500g	Poly Bottle	**S318-500**	63.25	6/296.73
1kg	Poly Bottle	**S318-1**	96.42	6/452.31
3kg	Poly Bottle	**S318-3**	160.65	4/500.02
5kg	Poly Pail	**S318-5**	240.00	- - - -
10kg	Poly Pail	**S318-10**	280.64	- - - -
50kg	Fiber Drum	**S318-50**	618.35	- - - -

Caustic Soda
NaOH
F.W. 40.00
[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥97.0%
Sodium Carbonate	≤1.0%
Chloride	≤0.005%
Nitrogen Compounds (as N)	≤0.001%
Phosphate	≤0.001%
Sulfate	≤0.003%
Ammonium Hydroxide Precipitate	≤0.020%
Heavy Metals (as Ag)	≤0.002%
Iron	≤0.001%
Nickel	≤0.001%
Potassium	≤0.02%
Mercury	≤0.1ppm

Sodium Hydroxide

Beads

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**S612-3**	145.92	4/456.35
50kg	Fiber Drum	**S612-50**	728.16	- - - -

Caustic Soda
NaOH
F.W. 40.00
[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Sodium Hydroxide

Beads
For Nitrogen determinations

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**S613-3**	158.07	4/494.33
10kg	Poly Pail	**S613-10**	220.65	- - - -
50kg	Fiber Drum	**S613-50**	810.63	- - - -

Caustic Soda
NaOH
F.W. 40.00
[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Sodium Hydroxide Solution, 50% (w/w) **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SS254-500**	79.54	6/376.45
1L	Poly Bottle	**SS254-1**	93.80	6/449.25
4L	Poly Bottle	**SS254-4**	164.78	4/528.22
20L	Poly Pail	**SS254-20**	432.97	- - - -
200L	Poly Drum	**SS254-200**	1402.98	- - - -

Caustic Soda Solution
[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications
Actual Lot Analysis is reported on label.

Assay	50-52%
Sodium Carbonate	≤0.10%
Ammonium Hydroxide Precipitate	≤0.010%
Iron	≤5ppm
Silica	≤0.01%
Nitrogen Compounds (as N)	≤5ppm
Phosphate	≤5ppm
Chloride	≤0.005%
Sulfate	≤0.002%
Heavy Metals (as Ag)	≤0.001%
Potassium	≤0.025%

Sodium Hydroxide Solution, 50% (w/w)

For Kjeldahl Nitrogen determinations

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**SS410-4**	112.55	4/354.84
20L	Poly Drum	**SS410-20**	283.18	- - - -

Caustic Soda Solution
Suitable for AOAC.
[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Assay	50-52%
Nitrogen Compounds (as N)	≤5ppm

Sodium Hydroxide Solution, 50% (w/w) Purified Grade

Nitrogen Free

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Natural	**7290-1**	74.47	- - - -
10L	Cubitainer*	**7290-25**	157.00	- - -
20L	Cubitainer	**7290-5**	110.24	- - - -
20L	Hard-Pack	**7290-5HP**	112.89	- - - -

Aqueous Solution (760 g/L)
Suitable for Kieldahl Nitrogen Analysis

Sodium Hydroxide Solution, 50% (w/w) Analytical Reagent Grade

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**7291-16**	22.27	- - - -
1L	Poly Natural	**7291-32**	42.17	- - - -
4L	Poly Natural	**7291-1**	71.13	- - - -
10L	Cubitainer*	**7291-25**	157.15	- - - -
20L	Cubitainer	**7291-5**	298.05	- - - -

Aqueous Solution, 760g/L

Sodium Hydroxide Solution, 40% (w/w)

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**SS411-4**	101.31	4/323.46
10L	PolyPac*	**SS411-10**	132.54	- - - -

Caustic Soda Solution
For Kjeldahl Nitrogen determinations.
[1310-73-2]

CAUSTIC

ChemAlert® STORAGE **white**

Product Specifications

Assay 0-42%
Nitrogen Compounds (as N) .... ≤5ppm

Sodium Hydroxide Solution, 40% (w/v)

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Natural	**7280-1**	30.87	- - - -
20L	Cubitainer*	**7280-5**	97.02	- - - -

Solvent/Matrix: Aqueous Solution
Suitable for Kieldahl Nitrogen Analysis

Sodium Hydroxide Solution, 30% (w/v)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**7274-16**	23.38	- - - -
1L	Poly Natural	**7274-32**	36.34	- - - -
4L	Poly Natural	**7274-1**	52.59	- - - -
20L	Cubitainer*	**7274-5**	118.80	- - - -

Solvent/Matrix: Aqueous Solution
[1310-73-2 (Sodium Hydroxide)]
[7732-18-5 (Water, Deionized)]

Sodium Hydroxide Solution, 25% (w/v)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**7273-16**	14.99	- - - -
1L	Poly Natural	**7273-32**	23.31	- - - -
4L	Poly Natural	**7273-1**	59.08	- - - -
20L	Cubitainer*	**7273-5**	247.46	- - - -

Aqueous Solution (250 g/L)

Sodium Hydroxide Solution, 20% (w/w)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**7270-16**	16.03	- - - -
1L	Poly Natural	**7270-32**	22.70	- - - -
4L	Poly Natural	**7270-1**	47.03	- - - -
20L	Cubitainer*	**13622-616**	174.80	- - - -
20L	Hard pack	**13622-617**	149.21	- - - -

Aqueous Solution (200g/L)
[1310-73-2 (Sodium Hydroxide)]
[7732-18-5 (Water, Deionized)]

NEW

Sodium Hydroxide Solution, 10% (w/w)

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**7260-4**	8.36	- - - -
500mL	Poly Natural	**7260-16**	12.77	- - - -
1L	Poly Natural	**7260-32**	17.30	- - - -
4L	Poly Natural	**7260-1**	39.01	- - - -
10L	Cubitainer*	**7260-25**	89.79	- - - -
20L	Cubitainer	**7260-5**	119.62	- - - -

Aqueous Solution (100g/L)
[(Sodium Hydroxide) 1310-73-2]
[(Water, Deionized) 7732-18-5]

Sodium Hydroxide Solution, 1% (w/v)

pH > 12

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**7243-16**	12.08	- - - -
1L	Poly Natural	**7243-32**	18.51	- - - -
4L	Poly Natural	**7243-1**	40.51	- - - -
10L	Cubitainer*	**7243-25**	65.21	- - - -
20L	Cubitainer	**7243-5**	91.86	- - - -

Solvent/Matrix: Aqueous Solution
[1310-73-2 (Sodium Hydroxide)]
[7732-18-5 (Water, Deionized)]

Sodium Hydroxide 1N Concentrate Certified

For dilution to 1N or 0.1N

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SS267**	50.18	6/241.15

Caustic Soda Solution
A volumetric Standard Solution, titrated at 25°C to pH 8.6 (phenolphthalein endpoint) against NIST Potassium Acid Phthalate.

Each bottle contains exact amount of 10N concentrate required to make 1L of 1N or 10 liters of 0.1N (N/10) solution.
[1310-73-2]

CAUSTIC

ChemAlert® STORAGE **white**

Product Specifications

Normality when Diluted to 1L .... 0.990 to 1.010
Color (APHA) .... ≤10

*Trademark. See Trademark Reference.

Sodium Hydroxide Solution, 10N — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS255-1**	54.80	6/266.88
4L	Poly Bottle	**SS255-4**	74.36	4/270.00
20L	Poly Pail	**SS255-20**	175.33	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

Caustic Soda Solution

For Kjeldahl Nitrogen determinations.

A volumetric Standard Solution, titrated at 25°C to pH 8.6 (phenolphthalein endpoint) against NIST Potassium Acid Phthalate.

[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Normality	9.95 to 10.05
Nitrogen Compounds (as N)	≤3ppm

Sodium Hydroxide Solution, 10.0N

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**7470-32**	28.00	- - - -
4L	Poly Natural	**7470-1**	57.17	- - - -
10L	Ropack	**7470-25HP**	66.06	- - - -
20L	Cubitainer*	**7470-5**	172.87	- - - -
20L	Ropack	**13622-61**	5149.21	- - - -

[1310-73-2 (Sodium Hydroxide)]

[7732-18-5 (Water, deionized)]

NEW

Sodium Hydroxide Solution, 6.25N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SS263-500**	54.71	6/262.04

Caustic Soda Solution

[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Normality	6.22 to 6.28
Color (APHA)	≤10
Carbonate	To pass test

Sodium Hydroxide Solution, 6.00N

Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**7466-16**	19.09	- - - -
1L	Poly Natural	**7466-32**	25.86	- - - -
4L	Poly Natural	**7466-1**	60.15	- - - -
20L	Cubitainer*	**7466-5**	120.40	- - - -

[1310-73-2 (Sodium Hydroxide)]

[7732-18-5 (Water, Deionized)]

Sodium Hydroxide Solution, 5N — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SS256-500**	36.88	6/177.21

Caustic Soda Solution

A volumetric Standard Solution, titrated at 25°C to pH 8.6 (phenolphthalein endpoint) against NIST Potassium Acid Phthalate.

[1310-73-2]

ChemAlert® STORAGE white

CAUSTIC

Product Specifications

Normality	4.95 to 5.05
Color (APHA)	≤5

Sodium Hydroxide Solution, 5.00N

Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**7465-16**	15.48	- - - -
1L	Poly Natural	**7465-32**	24.92	- - - -
4L	Poly Natural	**7465-1**	55.03	- - - -
10L	Cubitainer*	**7465-25**	112.29	- - - -
20L	Cubitainer	**7465-5**	200.08	- - - -

[1310-73-2 (Sodium Hydroxide)]

[7732-18-5 (Water, Deionized)]

Sodium Hydroxide Solution, 2N — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS264-1**	48.60	6/231.27

Caustic Soda Solution

A volumetric Standard Solution, titrated at 25°C to pH 8.6 (phenolphthalein endpoint) against NIST Potassium Acid Phthalate.

[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Normality	1.98 to 2.02
Color (APHA)	≤5

Sodium Hydroxide 1N Concentrate — Certified

For dilution to 0.1N

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SS277**	48.28	6/233.97

Caustic Soda Solution

A volumetric Standard Solution, titrated at 25°C to pH 8.6 (phenolphthalein endpoint) against NIST Potassium Acid Phthalate.

Each bottle contains exact amount of 1N concentrate required to make 1L of 0.1N (N/10) solution.

[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Normality when Diluted to 1L	0.0990 to 0.1010
Color (APHA)	≤5

Sodium Hydroxide Solution, 1.00N — ACS/USP

Volumetric Solution

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**7450-4**	9.08	- - - -
500mL	Poly Natural	**7450-16**	12.18	- - - -
1L	Poly Natural	**7450-32**	15.44	- - - -
4L	Poly Natural	**7450-1**	59.79	- - - -
4L	Cubitainer*	**7450-1CT**	38.89	- - - -
10L	Cubitainer	**7450-25**	68.86	- - - -
20L	Cubitainer	**7450-5**	89.91	- - - -

[1310-73-2 (Sodium hydroxide)]

[7732-18-5 (Deionized water)]

NEW

Sodium Hydroxide Solution, 1N Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS266-1**	33.71	6/162.23
4L	Poly Bottle	**SS266-4**	65.23	4/209.27
20L	PolyPac*	**SS266-20**	147.44	- - - -

Caustic Soda Solution

A volumetric Standard Solution, titrated at 25°C to pH 8.6 (phenolphthalein endpoint) against NIST Potassium Acid Phthalate.

[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Normality....0.995 to 1.005

Color (APHA)....≤10

Sodium Hydroxide Solution, 0.5N Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS270-1**	38.30	6/184.57
4L	Poly Bottle	**SS270-4**	75.17	4/242.55
20L	PolyPac*	**SS270-20**	162.68	- - - -

Caustic Soda Solution

A volumetric Standard Solution, titrated at 25°C to pH 8.6 (phenolphthalein endpoint) against NIST Potassium Acid Phthalate.

[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Normality....0.498 to 0.502

Color (APHA)....≤5

Carbonate....To pass test

Sodium Hydroxide Solution, 0.500N

Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**7400-16**	12.29	- - - -
1L	Poly Natural	**7400-32**	15.59	- - - -
4L	Poly Natural	**7400-1**	34.69	- - - -
10L	Cubitainer*	**7400-25**	50.90	- - - -
20L	Cubitainer	**7400-5**	93.39	- - - -

[1310-73-2 (Sodium Hydroxide)]

[7732-18-5 (Water, Deionized)]

Sodium Hydroxide Solution, 0.313N

Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**7375-32**	13.08	- - - -
4L	Poly Natural	**7375-1**	37.81	- - - -
10L	Cubitainer*	**7375-25**	90.27	- - - -
20L	Cubitainer	**7375-5**	93.39	- - - -

Application: Suitable For Crude Fiber Analysis of Food and Feed

[1310-73-2 (Sodium Hydroxide)]

[7732-18-5 (Water, Deionized)]

Sodium Hydroxide Solution, 0.3125N

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Natural	**7374-1**	33.70	- - - -
20L	Cubitainer*	**7374-5**	93.39	- - - -

[1310-73-2 (Sodium Hydroxide)]

[7732-18-5 (Water, deionized)]

Sodium Hydroxide Solution, 0.25N Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS272-1**	44.36	6/214.00
20L	PolyPac*	**SS272-20**	199.67	- - - -

Caustic Soda Solution

A volumetric Standard Solution, titrated at 25°C to pH 8.6 (phenolphthalein endpoint) against NIST Potassium Acid Phthalate.

[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Normality....0.2490 to 0.2510

Color (APHA)....≤5

Sodium Hydroxide Solution, 0.250N

Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**7370-16**	12.18	- - - -
1L	Poly Natural	**7370-32**	15.44	- - - -
4L	Poly Natural	**7370-1**	34.14	- - - -
10L	Cubitainer*	**7370-25**	78.57	- - -
20L	Cubitainer*	**7370-5**	92.04	- - - -

[1310-73-2 (Sodium Hydroxide)]

[7732-18-5 (Water, Deionized)]

Sodium Hydroxide Solution, 0.2N Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS274-1**	44.02	6/211.58
4L	Poly Bottle	**SS274-4**	87.40	4/278.90

Caustic Soda Solution

A volumetric Standard Solution, titrated at 25°C to pH 8.6 (phenolphthalein endpoint) against NIST Potassium Acid Phthalate.

[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Normality....0.199 to 0.201

Color (APHA)....≤5

Sodium Hydroxide Solution, 0.1N Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS276-1**	32.20	6/153.10
4L	Poly Bottle	**SS276-4**	61.95	4/198.88
20L	PolyPac*	**SS276-20**	146.74	- - - -

Caustic Soda Solution

A volumetric Standard Solution, titrated at 25°C to pH 8.6 (phenolphthalein endpoint) against NIST Potassium Acid Phthalate.

[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Normality....0.0995 to 0.1005

Color (APHA)....≤10

*Trademark. See Trademark Reference.

Sodium Hydroxide Solution, 0.100N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**7350-16**	13.62	- - - -
1L	Poly Natural	**7350-32**	15.35	- - - -
4L	Poly Natural	**7350-1**	32.65	- - - -
4L	Cubitainer*	**7359-1CT**	36.56	- - - -
10L	Cubitainer	**7350-25**	75.29	- - - -
20L	Cubitainer	**7350-5**	87.63	- - - -

NEW

Sodium Hydroxide Solution, 0.05N Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS278-1**	35.97	6/173.49

Caustic Soda Solution

A volumetric Standard Solution, titrated at 25°C to pH 8.6 (phenolphthalein endpoint) against NIST Potassium Acid Phthalate.

[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Normality	0.0498 to 0.0502
Color (APHA)	≤5

Sodium Hydroxide Solution, 0.0500N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**7330-16**	10.40	- - - -
1L	Poly Natural	**7330-32**	15.44	- - - -
4L	Poly Natural	**7330-1**	33.07	- - - -
10L	Cubitainer*	**7330-25**	76.30	- - - -
20L	Cubitainer	**7330-5**	92.04	- - - -

[1310-73-2 (Sodium Hydroxide)]
[7732-18-5 (Water, Deionized)]

Sodium Hydroxide Solution, 0.02N Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS282-1**	40.23	6/193.23
4L	Poly Bottle	**SS282-4**	81.99	4/264.81

Caustic Soda Solution

A volumetric Standard Solution, titrated at 25°C to pH 8.6 (phenolphthalein endpoint) against NIST Potassium Acid Phthalate.

[1310-73-2]

CAUSTIC

ChemAlert® STORAGE white

Product Specifications

Normality	0.0198 to 0.0202
Color (APHA)	≤5

Sodium Hydroxide Solution, 0.01N Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS284-1**	53.02	6/250.52
4L	Poly Bottle	**SS284-4**	76.08	4/282.94

Caustic Soda Solution

A volumetric standard solution, titrated at 25°C to pH 8.6 (phenolphthalein endpoint) against NIST Potassium Acid Phthalate.

[1310-73-2]

SOLVENT

ChemAlert® STORAGE white

Product Specifications

Normality	0.0099 to 0.0101
Color (APHA)	≤5

▸***Sodium Hydroxide Solutions*** *in various concentrations and sizes, which are not listed, are available. Prices on request.*

Sodium Hydroxide-Thiosulfate Solution

50% (w/v) Sodium Hydroxide - 2.5% (w/v) Sodium Thiosulfate

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly natural	**7495-16**	12.42	- - - -
1L	Poly natural	**7495-32**	25.91	- - - -
4L	Poly natural	**7495-1**	37.54	- - - -
10L	Cubitainer*	**7495-25**	70.50	- - - -
20L	Cubitainer	**7495-5**	127.68	- - - -

Solvent/Matrix: Aqueous Solution
[10102-17-7 (Sodium Thiosulfate Pentahydrate)]
[1310-73-2 (Sodium Hydroxide)]
[7732-18-5 (Water, Deionized)]

NEW

Sodium Hydroxide-Thiosulfate Solution

For Kjeldahl Nitrogen using Mercury-based catalysts
40% (w/v) Sodium Hydroxide - 2.5% (w/v) Sodium Thiosulfate

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Natural	**7490-1**	33.78	- - - -
10L	Cubitainer*	**7490-25**	69.28	- - - -
20L	Cubitainer	**7490-5**	117.13	- - - -

Sodium Hypochlorite Solution, 5.65 -6% Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS290-1**	53.39	6/254.42
4L	Poly Bottle	**SS290-4**	117.60	4/368.02

NaOCl
F.W. 74.44
[7681-52-9]

ChemAlert® STORAGE white

Product Specifications

Actual Lot Analysis is reported on label.

Assay	4-6%
Iron	≤ 0.4ppm

▸***Sodium Hyposulfite*** *see Sodium Thiosulfate Anhydrous S446.*

Sodium Iodate Certified

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**S322-100**	80.84	6/361.33

$NaIO_3$
F.W. 197.89
[7681-55-2]

ChemAlert® STORAGE yellow

Product Specifications

Insoluble Matter	≤0.005%
Loss on Drying	≤0.30%
Iodide	≤0.01%
Sulfate	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%

Sodium Iodide USP
Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S473-500**	330.65	6/1487.92

NaI
F.W. 149.89
[7681-82-5]

ChemAlert® STORAGE gray

Product Specifications

Assay (anhydrous basis)	99.0-101.5%
Alkalinity	To pass test
Heavy Metals (as Pb)	≤0.001%
Iodate	≤4ppm
Nitrate, Nitrite and Ammonia (as NH_3)	To pass test
Potassium	To pass test
Thiosulfate and Barium (as SO_4)	To pass test
Water	≤2.0%
Organic Volatile Impurities	Meets the requirements

Sodium Iodide Certified
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**S324-100**	69.85	6/327.66
500g	Amber Glass	**S324-500**	306.69	6/1438.70

NaI
F.W. 149.89
[7681-82-5]

ChemAlert® STORAGE gray

Product Specifications

Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	6 to 9
Chloride and Bromide (as Cl)	≤0.01%
Nitrogen Compounds (as N)	≤0.001%
Iodate	≤0.003%
Phosphate	≤0.001%
Sulfate	≤0.005%
Barium	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Iron	≤3ppm
Copper	≤3ppm

▸***Sodium Isothiocyanate*** *see Sodium Thiocyanate S441.*

Sodium Lactate, 60% (w/w)
Syrup

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**S326-500**	115.09	6/514.51

Lactic Acid Sodium Salt
$CH_3CH(OH)COONa$
$C_3H_5NaO_3$
F.W. 112.06
[72-17-3]
Recommended storage: Refrigerate

ChemAlert® STORAGE gray

Sodium Lauryl Sulfate NF/FCC
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S529-500**	97.07	6/436.82
3kg	Poly Pail	**S529-3**	364.03	- - - -

Sodium Dodecyl Sulfate, SDS, Dodecylsulfuric Acid Sodium Salt, Duponol C Dry*
$CH_3(CH_2)_{10}CH_2OSO_3Na$
$C_{12}H_{25}O_4SNa$
[151-21-3]

ChemAlert® STORAGE red

Product Specifications

Identification	To pass test
Meets NF Chemical Specifications	
Alkalinity	To pass test
Heavy Metals (as Pb)	≤0.002%
Sodium Chloride and Sodium Sulfate	≤8.0% total
Unsulfated Alcohols	≤4.0%
Total Alcohol	≥59.0%
Organic Volatile Impurities	Meets requirements
Meets FCC Chemical Specifications	
Assay (Total Alcohol)	≥59.0%
Alkalinity (as NaOH)	To pass test (about 0.25%)
Combine Sodium Chloride and Sodium Sulfate	≤8.0%
Lead	≤2mg/kg
Unsulfated Alcohols	≤4.0%

▸***Sodium Lauryl Sulfate*** *see also Sodium Dodecyl Sulfate O2674 and SDS.*

Sodium Metabisulfite NF/FCC
Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S242-500**	68.57	6/321.66
2.5kg	Poly Bottle	**S242-212**	160.60	4/471.67
12kg	Poly Pail	**S242-12**	521.79	- - - -
400 lb.	Fiber Drum	**S242-400LB**	1777.61	- - - -

Disodium Pyrosulfite
NaO_3SSO_2Na
F.W. 190.11
[7681-57-4]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Assay (as SO_2)	65.0-67.4%
Chloride	≤0.05%
Heavy Metals	≤0.002%
Iron	≤0.002%
Thiosulfate	≤0.05%
Meets FCC Chemical Specifications	
Assay ($Na_2S_2O_5$)	90.0-100.0%
Lead	≤2mg/kg
Iron	≤10mg/kg
Selenium	≤5mg/kg

Sodium Metabisulfite Certified ACS
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S244-500**	63.08	6/295.91
3kg	Amber Glass	**S244-3**	176.54	4/545.48

Sodium Pyrosulfite, Disodium Disulfite
$Na_2S_2O_5$
F.W. 190.11
[7681-57-4]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥97.0%
Insoluble Matter	≤0.005%
Chloride	≤0.05%
Thiosulfate	≤0.05%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.002%

*Trademark. See Trademark Reference.

Sodium Methoxide — Laboratory

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**S335-100**	58.69	6/273.98

Sodium Methylate
CH_3ONa
F.W. 54.01
[124-41-4]

ChemAlert® STORAGE red

Sodium Molybdate Dihydrate — Certified ACS

Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S336-500**	400.34	6/1878.06
3kg	Amber Glass	**S336-3**	991.00	4/3037.06

$Na_2MoO_4 \cdot 2H_2O$
F.W. 241.95
[10102-40-6]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.5-103.0%
Insoluble Matter	≤0.005%
Chloride	≤0.005%
Phosphate	≤5ppm
Sulfate	≤0.015%
Ammonium	≤0.001%
Heavy Metals (as Pb)	≤5ppm
pH of a 5% Solution at 25°C	7.0 to 10.5
Iron	≤0.001%

▸***Sodium Monohydrogen Phosphate*** *see Sodium Phosphate Dibasic beginning with S379.*

▸***Sodium Monosulfide*** *see Sodium Sulfide Nonahydrate S425.*

Sodium Nitrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S343-500**	134.26	6/629.80
3kg	Poly Bottle	**S343-3**	514.36	4/1600.93

Chili Saltpeter, Soda Niter, Nitric Acid Sodium Salt
$NaNO_3$
F.W. 84.99
[7631-99-4]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	5.5 to 8.3
Chloride	≤0.001%
Iodate	≤5ppm
Iodate	≤5ppm
Phosphate	≤5ppm
Sulfate	≤0.003%
Calcium	≤0.005%
Magnesium	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Iron	≤3ppm
Nitrite	≤0.001%

Sodium Nitrate — Laboratory

Granular

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Amber Glass	**S342-3**	196.13	4/613.34

$NaNO_3$
F.W. 84.99
[7631-99-4]

ChemAlert® STORAGE yellow

Sodium Nitrite — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
250g	Poly Bottle	**S347-250**	70.41	6/314.79
500g	Poly Bottle	**S347-500**	102.81	6/459.58
3kg	Poly Bottle	**S347-3**	468.31	4/1324.55
10kg	Poly Pail	**S347-10**	791.95	- - - -

$NaNO_2$
F.W. 69.00
[7632-00-0]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥97.0%
Insoluble Matter	≤0.01%
Chloride	≤0.005%
Sulfate	≤0.01%
Calcium	≤0.01%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%
Potassium	≤0.005%

Sodium Nitroferricyanide Dihydrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**S350-100**	142.55	6/637.20

Sodium Nitroprusside Dihydrate
$Na2Fe(CN)_5(NO) \cdot 2H_2O$
F.W. 297.95
[13755-38-9]

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.0-102.0%
Insoluble Matter	≤0.01%
Chloride	≤0.02%
Sulfate	To pass test (about 0.01%)

Sodium Oxalate — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S487-500**	191.13	6/896.59

Ethanedioic Acid Disodium Salt
NaO_2CCO_2Na
$C_2O_4Na_2$
F.W. 134.00
[62-76-0]

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.5%
Loss on Drying at 105°C	≤0.01%
Insoluble Matter	≤0.005%
Chloride	≤0.002%
Sulfate	≤0.002%
Neutrality	To pass test
Iron	≤0.001%
Potassium	≤0.005%
Substances Darkened by Hot H_2SO_4	To pass test
Ammonium	≤0.002%
Heavy Metals (as Pb)	≤0.002%

Sodium Perchlorate Monohydrate — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**S490-100**	52.42	6/245.91
500g	Amber Glass	**S490-500**	118.84	6/531.20

$NaClO_4 \cdot H_2O$
F.W. 140.46
[7791-07-3]

ChemAlert® STORAGE yellow

Product Specifications

Optical Absorbance of a 1M Solution:

at 220nm	≤0.08
at 254nm	≤0.02
at 300nm	≤0.01

Sodium Perchlorate Monohydrate — Laboratory
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S360-500**	95.81	6/444.04
2.5kg	Amber Glass	**S360-212**	359.15	4/1123.21

$NaClO_4 \cdot H_2O$
F.W. 140.46
[7791-07-3]

ChemAlert® STORAGE yellow

▸***Sodium Periodate*** *see Sodium meta-Periodate S398.*

Sodium meta-Periodate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
50g	Poly Bottle	**S398-50**	145.33	6/681.74
100g	Poly Bottle	**S398-100**	219.44	6/1029.36

Sodium Periodate
$NaIO_4$
F.W. 213.89
[7790-28-5]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.8-100.3%
Other Halogens (as Cl)	≤0.02%
Manganese	≤3ppm
Insoluble in Dilute HNO_3	≤0.010%

Sodium Peroxide — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500g	Tin Can	**S363-500**	393.47	6/1814.93

Na_2O_2
F.W. 77.98
Suitable for use in calorimetry.
[1313-60-6]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥93.0%
Chloride	≤0.002%
Phosphate	≤5ppm
Sulfate	≤0.001%
Heavy Metals (as Pb)	≤0.002%
Iron	≤0.005%

Sodium Persulfate — Certified
White Crystalline Solid

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**06114-500**	133.03	6/628.56
1kg	Poly Bottle	**06114-1**	170.17	6/821.19

Sodium Peroxydisulfate
$Na_2S_2O_8$
F.W. 238.10
[7775-27-1]

ChemAlert® STORAGE yellow

Product Specifications

Assay	≥98.0%
Water	≥0.01%
Heavy Metals	≥20ppm
Total Nitrogen Compound	≥0.2%
Iron	≥10ppm

Sodium Phosphate Monobasic Anhydrous — USP
Colorless to White Crystals

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S397-500**	121.85	6/571.58

Sodium Dihydrogen Phosphate
NaH_2PO_4
F.W. 119.96
[7558-80-7]

ChemAlert® STORAGE gray

Product Specifications

Assay	98.0-103.0%
Aluminum, Calcium and Related Elements	To pass test
Arsenic	≤8ppm
Chloride	≤0.014%
pH of a 5% Solution at 25°C	4.1 to 4.5
Heavy Metals (as Pb)	≤0.002%
Insoluble Substance	≤0.2%
Sulfate	≤0.15%
Water	≤2.0%
Organic Volatile Impurities	Meets the requirements

Sodium Phosphate Monobasic Monohydrate USP/FCC
Crystalline or Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S468-500**	110.70	6/519.32
250 lb.	Fiber Drum	**S468-250LB**	3268.31	- - - -

Monosodium Orthophosphate, Sodium Acid Phosphate, Sodium Biphosphate, Sodium Dihydrogen Phosphate

ChemAlert® STORAGE gray

$NaH_2PO_4 \cdot H_2O$

F.W. 137.99

[10049-21-5]

Product Specifications

Identification....................To pass test

Meets USP Chemical Specifications

Assay (Anhydrous Basis)....................98.0-103.0%

Aluminum, Calcium, and Related Elements....................To pass test

Arsenic (As)....................≤8ppm

Chloride (Cl)....................≤0.014%

pH of a 5% Solution at 25°C....................4.1 to 4.5

Heavy Metals (as Pb)....................≤0.002%

Insoluble Substances....................≤0.2%

Sulfate (SO_4)....................≤0.15%

Water....................10.0-15.0%

Organic Volatile Impurities....................Meets requirements

Meets FCC Chemical Specifications

Assay (after drying) NaH_2PO_4....................98.0-103.0%

Arsenic....................≤3mg/kg

Fluoride....................≤0.005%

Lead....................≤4mg/kg

Insoluble Substances....................≤0.2%

Loss on Drying....................10.0-15.0%

Sodium Phosphate Monobasic Monohydrate Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S369-500**	119.59	6/561.03
1kg	Poly Bottle	**S369-1**	180.76	6/847.94
3kg	Poly Bottle	**S369-3**	471.04	4/1466.10
50kg	Fiber Drum	**S369-50**	3868.65	- - - -
250 lb.	Fiber Drum	**S369-250LB**	3023.34	- - - -

Monosodium Orthophosphate, Monosodium Phosphate, Sodium Acid Phosphate, Sodium Biphosphate, Sodium Dihydrogen Phosphate

ChemAlert® STORAGE gray

$NaH_2PO_4 \cdot H_2O$

F.W. 137.99

[10049-21-5]

roduct Specifications

ctual Lot Analysis is reported on label.

Assay....................98.0-102.0%

Insoluble Matter....................≤0.010%

Calcium (Ca)....................≤0.005%

Potassium (K)....................≤0.01%

pH of a 5% Solution at 25°C....................4.1 to 4.5

Chloride....................≤5ppm

Sulfate....................≤0.003%

Heavy Metals (as Pb)....................≤0.001%

Iron....................≤0.001%

Sodium Phosphate Monobasic Dihydrate Certified
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S381-500**	121.87	6/571.70
3kg	Poly Bottle	**S381-3**	561.38	4/1755.64

Monosodium Orthophosphate, Monosodium Phosphate Sodium Acid Phosphate, Sodium Biphosphate, Sodium Dihydrogen Phosphate

ChemAlert® STORAGE gray

$NaH_2PO_4 \cdot 2H_2O$

F.W. 156.01

[13472-35-0]

Product Specifications

Assay (anhydrous basis)....................≥99.0%

Loss on Drying at 105°C....................21-25%

Arsenic....................≤0.5ppm

Chloride....................≤5ppm

Heavy Metals (as Pb)....................≤0.001%

Insoluble Matter, Calcium and NH_4OH Precipitate....................≤0.01%

Iron....................≤0.001%

Nitrogen Compounds (as N)....................≤0.001%

pH of a 5% Solution at 25°C....................4.1 to 4.5

Sulfate....................≤0.003%

Sodium Phosphate Dibasic Anhydrous USP/FCC/EP

Quantity	Packaging	Cat. No.	Each	Case of
2.5kg	Poly Bottle	**S379-212**	398.54	- - - -
12kg	Poly Pail	**S379-12**	1114.30	- - - -

Monohydrogen Sodium Phosphate, Disodium Hydrogen Phosphate

ChemAlert® STORAGE gray

Na_2HPO_4

F.W. 141.96

[7558-79-4]

Product Specifications

Identification....................To pass test

Meets USP Chemical Specifications

Assay (Dried Basis)....................98.0 to 100.5%

Chloride....................≤0.06%

Heavy Metals (as Pb)....................≤0.002%

Loss on Drying....................≤5.0%

Sulfate....................≤0.2%

Arsenic....................≤16ppm

Insoluble Substances....................≤0.4%

Bacterial Endotoxins....................Report

Meets FCC Chemical Specifications

Assay (Dried Basis)....................≥98.0%

Arsenic (as As)....................≤3mg/kg

Fluoride....................≤0.005%

Lead....................≤4mg/kg

Insoluble Substances....................≤0.2%

Loss on Drying....................≤5.0%

Meets EP Chemical Specifications

Assay....................98.0-101%

Appearance of Solution....................Clear and colorless

Reducing Substances....................To pass test

Monosodium Phosphate....................To pass test

Chlorides....................≤200ppm

Sulfates....................≤500ppm

Arsenic....................≤2ppm

Iron....................≤20ppm

Heavy Metals....................≤10ppm

Loss on Drying....................≤1.0%

Bacterial Endotoxins....................Report

Sodium Phosphate Dibasic Anhydrous USP

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S375-500**	90.50	6/424.52
2.5kg	Poly Bottle	**S375-212**	311.73	4/935.20
12kg	Poly Pail	**S375-12**	656.34	- - - -
250 lb.	Fiber Drum	**S375-250LB**	3087.52	- - - -

Monohydrogen Sodium Phosphate, Disodium Hydrogen Phosphate
Na_2HPO_4
F.W. 141.96
[7558-79-4]

ChemAlert® STORAGE gray

Product Specifications

Assay (Na_2HPO_4)	98.0 to 100.5%
Chloride	≤0.06%
Heavy Metals (as Pb)	≤0.002%
Loss on Drying	≤5.0%
Sulfate	≤0.2%
Arsenic	≤16ppm
Insoluble Substances	≤0.4%

Sodium Phosphate Dibasic Anhydrous Certified ACS

Granular or Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S374-500**	86.47	6/388.46
1kg	Amber Glass	**S374-1**	139.34	6/653.66
3kg	Glass	**S374-3**	328.51	4/1022.47
50kg	Fiber Drum	**S374-50**	2373.62	- - - -
250 lb.	Fiber Drum	**S374-250LB**	2535.05	- - - -

Monohydrogen Sodium Phosphate, Disodium Hydrogen Phosphate
Na_2HPO_4
F.W. 141.96
[7558-79-4]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.01%
Loss on Drying at 105°C	≤0.2%
pH of a 5% Solution at 25°C	8.7 to 9.3
Chloride	≤0.002%
Sulfate	≤0.005%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.002%

Sodium Phosphate Dibasic Anhydrous Laboratory

Powder

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Glass	**S393-3**	161.12	4/503.86

Monohydrogen Sodium Phosphate, Disodium Hydrogen Phosphate
Na_2HPO_4
F.W. 141.96
[7558-79-4]

ChemAlert® STORAGE gray

Product Specifications

Loss on Drying at 105°C	≤5%

Sodium Phosphate Dibasic Dihydrate USP/FCC/EP/BP

White Crystals or Granules

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S472-500**	108.36	6/471.72
2.5kg	Poly Bottle	**S472-212**	364.13	4/1065.67

$Na_2HPO_4{\bullet}2H_2O$
F.W. 178.0
[10140-65-5]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Assay (Dried Basis)	98.0-100.5%
Loss on Drying	18.5-21.5%
Insoluble Substances	≤0.4%
Chloride	≤0.06%
Sulfate	≤0.2%
Arsenic	≤16ppm
Heavy Metals	≤0.002%
Bacterial Endotoxins	Report
Meets FCC Chemical Specifications	
Assay (Dried Basis)	≥98.0%
Arsenic	≤3mg/kg
Fluoride	≤0.005%
Lead	≤4mg/kg
Insoluble Substances	≤0.2%
Loss on Drying	18.0-22.0%
Meets EP and BP Chemical Specifications	
Appearance of Solution	Clear and colorless
Reducing Substances	To pass test
Monosodium Phosphate	To pass test
Chlorides	≤400ppm
Sulfates	≤0.1%
Arsenic	≤4ppm
Iron	≤40ppm
Heavy Metals	≤20ppm
Loss on Drying	19.5-21.0%%
Assay	98.0-101.0%
Bacterial Endotoxins	Report

Sodium Phosphate Dibasic Heptahydrate USP

Granular

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**S471-3**	389.07	4/1175.75
300 lb.	Fiber Drum	**S471-300LB**	2148.16	- - - -

Monohydrogen Sodium Phosphate, Disodium Hydrogen Phosphate
$Na_2HPO_4{\bullet}7H_2O$
F.W. 268.07
[7782-85-6]

ChemAlert® STORAGE gray

Product Specifications

Assay (dried basis)	98.0-100.5%
Loss on Drying	43.0-50.0%
Arsenic	≤16ppm
Chloride	≤0.06%
Heavy Metals (as Pb)	≤0.002%
Insoluble Substances	≤0.4%
Sulfate	≤0.2%

Sodium Phosphate Dibasic Heptahydrate Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S373-500**	77.94	6/349.74
3kg	Poly Bottle	**S373-3**	345.36	4/1080.10
50kg	Fiber Drum	**S373-50**	1846.15	- - - -
250 lb.	Fiber Drum	**S373-250LB**	2691.15	- - - -

Monohydrogen Sodium Phosphate, Disodium Hydrogen Phosphate

$Na_2HPO_4 \cdot 7H_2O$

F.W. 268.07

[7782-85-6]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	98.0-102.0%
Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	8.7 to 9.3
Chloride	≤0.001%
Sulfate	≤0.005%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%

Sodium Phosphate Tribasic Dodecahydrate Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S377-500**	88.70	6/416.07
3kg	Poly Bottle	**S377-3**	367.59	4/1149.62
50kg	Fiber Drum	**S377-50**	2126.50	- - - -

Phosporic Acid Trisodium Salt, Trisodium Phosphate

$Na_3PO_4 \cdot 12H_2O$

F.W. 380.12

This salt may lose some water of crystallization, which will result in an assay of more than 100% $Na_3PO_4 \cdot 12H_2O$.

This loss does not affect the determination of the relative amount of free alkali present.

[10101-89-0]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	98.0-102.0%
Excess Alkali (as NaOH)	≤2.5%
Insoluble Matter	≤0.01%
Chloride	≤0.001%
Sulfate	≤0.01%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%

Sodium Phosphate Tribasic Dodecahydrate Technical

Granular

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Glass	**S376-3**	199.03	4/622.44
50kg	Fiber Drum	**S376-50**	978.98	- - - -

Trisodium Phosphate

$Na_3PO_4 \cdot 12H_2O$

F.W. 380.12

[10101-89-0]

ChemAlert® STORAGE gray

Sodium Potassium Tartrate USP

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S386-500**	182.05	6/853.96
2.5kg	Poly Bottle	**S386-212**	525.82	4/1644.44
12kg	Poly Pail	**S386-12**	1124.76	- - - -

Seignette Salt, Sodium Potassium Tartrate Tetrahydrate, Tartaric Acid Sodium Potassium Salt

$NaKC_4H_4O_6 \cdot 4H_2O$

F.W. 282.22

[6381-59-5]

ChemAlert® STORAGE gray

Product Specifications

Assay (anhydrous basis)	99.0-102.0%
Alkalinity	To pass test
Ammonia	≤0.002%
Heavy Metals (as Pb)	≤0.001%
Water	21.0-27.0%

Sodium Potassium Tartrate Tetrahydrate Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S387-500**	170.88	6/815.70
3kg	Poly Bottle	**S387-3**	627.51	4/1939.00
10kg	Poly Pail	**S387-10**	898.54	- - - -

Seignette Salt, Tartaric Acid Sodium Potassium Salt, Rochelle Salt

$NaKC_4H_4O_6 \cdot 4H_2O$

F.W. 282.23

[6381-59-5]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	99.0-102.0%
Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	6.0 to 8.5
Chloride	≤0.001%
Phosphate	≤0.002%
Sulfate	≤0.003%
Ammonium	≤0.002%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%

▸***Sodium Pyroborates*** *see Sodium Tetraborate Decahydrate, Powder or Granular, NF, S246 and Sodium Tetraborate Decahydrate, Crystalline, Certified ACS, S246, S248 and S249.*

Sodium Pyrophosphate Decahydrate — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S390-500**	83.68	6/390.68
3kg	Poly Bottle	**S390-3**	347.24	4/1067.78
10kg	Poly Pail	**S390-10**	648.01	- - - -

Tetrasodium Pyrophosphate
$Na_4P_2O_7 \cdot 10H_2O$
F.W. 446.06
[13472-36-1]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.0-103.0%
Insoluble Matter	≤0.01%
Chloride	≤0.002%
Nitrogen Compounds (as N)	≤0.001%
Orthophosphate	To pass test (about 0.2%)
Sulfate	≤0.005%
Iron	≤0.001%
pH of a 5% Solution at 25°C	9.5 to 10.5
Heavy Metals (as Pb)	≤0.001%

▸**Sodium Pyrosulfite** *see Sodium Metabisulfite S242 and S244.*

▸**Sodium Pyruvate** *see Pyruvic Acid Sodium Salt O4376.*

▸**Sodium Rhodanate** *see Sodium Thiocyanate S441.*

Sodium Salicylate — USP
Small Crystals, Free Flowing

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S396-500**	107.87	4/337.36
2.5kg	Poly Bottle	**S396-212**	253.87	- - - -
12kg	Poly Pail	**S396-12**	797.13	- - - -

Salicylic Acid Sodium Salt, 2-Hydroxybenzoic Acid Sodium Salt
$2\text{-}HOC_6H_4COONa$
$C_7H_5NaO_3$
F.W. 160.11
[54-21-7]

ChemAlert® STORAGE gray

Product Specifications

Assay (dried basis)	99.5-100.5%
Heavy Metals (as Pb)	≤0.002%
Sulfite or Thiosulfite	To pass test
Water	≤0.5%
Organic Volatile Impurities	Meets the requirements

Sodium Salicylate — Certified
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S395-500**	108.77	6/486.20

Salicylic Acid Sodium Salt, 2-Hydroxybenzoic Acid, Sodium Salt
$2\text{-}HOC_6H_4COONa$
$C_7H_5NaO_3$
F.W. 160.11
[54-21-7]

ChemAlert® STORAGE gray

Product Specifications

Assay	≥99.5%
Insoluble Matter	≤0.005%
Chloride	≤0.01%
Heavy Metals (as Pb)	≤0.002%
Sulfite or Thiosulfate	To pass test
Water	≤0.5%

▸**Sodium Silicate, Meta** *see Sodium meta-Silicate Nonahydrate S408.*

Sodium meta-Silicate Pentahydrate — Technical
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Glass	**S407-3**	84.17	4/263.22

Sodium Silicate
$Na_2SiO_3 \cdot 5H_2O$
F.W. 212.15
[10213-79-3]

ChemAlert® STORAGE white

Sodium meta-Silicate Nonahydrate — Certified
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S408-500**	126.40	6/592.94
3kg	Poly Bottle	**S408-3**	598.89	4/1850.54

Sodium Silicate
$Na_2SiO_3 \cdot 9H_2O$
F.W. 284.20
[13517-24-3]

ChemAlert® STORAGE white

Product Specifications

Chloride	≤0.020%
Sulfate	≤0.010%
Iron	≤0.005%
Heavy Metals (as Pb)	≤0.001%

Sodium Silicate Solution — Technical
40°-42° Bé

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SS338-1**	67.90	6/325.34
4L	Amber Glass	**SS338-4**	131.30	4/418.81

Soda Water Glass, Soluble Glass
[7631-86-9]

ChemAlert® STORAGE white

Product Specifications

Specific Gravity at 25°C	1.38 to 1.42

Sodium Sulfate Anhydrous — USP/FCC
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S429-500**	58.38	6/273.85
2.5kg	Poly Bottle	**S429-212**	171.07	4/513.20
12kg	Poly Pail	**S429-1**	2425.16	- - - -
250 lb.	Fiber Drum	**S429-250LB**	2111.05	- - - -

Na_2SO_4
F.W. 142.04
[7757-82-6]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Assay (dried basis)	≥99.0%
Acidity or Alkalinity	To pass test
Loss on Drying	≤0.5%
Chloride	≤0.02%
Heavy Metals	≤0.001%
Meets FCC Chemical Specifications	
Assay (dried basis)	99.0-100.5%
Lead	≤2mg/kg
Loss on Drying	≤1%
Selenium	≤0.003%

Sodium Sulfate Anhydrous — Certified ACS

Suitable for Pesticide Residue Analysis

Granular, 10-60 Mesh

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S415-500**	49.10	6/230.35
1kg	Amber Glass	**S415-1**	68.79	6/321.17
2.5kg	Amber Glass	**S415-212**	155.37	4/477.77
10kg	Bag in Box	**S415-10S**	310.14	- - - -
200 lb.	Fiber Drum	**S415-200LB**	981.15	- - - -

Na_2SO_4
F.W. 142.04
[7757-82-6]

ChemAlert® STORAGE **gray**

roduct Specifications
ctual Lot Analysis is reported on label.

Assay	≥99.0%
Suitability for Use in EPA Method 608	To pass test
Insoluble Matter	≤0.01%
Loss on Ignition	≤0.5%
pH of a 5% Solution at 25°C	5.2 to 9.2
Chloride	≤0.001%
Nitrogen Compounds	≤5ppm
Calcium	≤0.01%
Potassium	≤0.01%
Magnesium	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%
Phosphate	≤0.001%
Mesh Size	10-60 Mesh

Sodium Sulfate Anhydrous — Certified ACS

Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S421-500**	52.05	6/242.98
1kg	Amber Glass	**S421-1**	65.80	6/308.65
3kg	Amber Glass	**S421-3**	168.09	4/523.16
10kg	Bag in Box	**S421-10**	346.85	- - - -
50kg	Fiber Drum	**S421-50**	977.47	- - - -
300 lb.	Fiber Drum	**S421-300LB**	1699.86	- - - -

Na_2SO_4
F.W. 142.04
[7757-82-6]

ChemAlert® STORAGE **gray**

roduct Specifications
ctual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.01%
Loss on Ignition	≤0.5%
pH of a 5% Solution at 25°C	5.2 to 9.2
Chloride	≤0.001%
Nitrogen Compounds (as N)	≤5ppm
Calcium	≤0.01%
Magnesium	≤0.005%
Potassium	≤0.01%
Phosphate	≤0.001%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.001%

Sodium Sulfate Anhydrous — Low Nitrogen

Quantity	Packaging	Cat. No.	Each	Case of
3kg	- - - -	**S420-3**	92.17	4/288.26
10kg	Poly Pail	**S420-10**	188.13	- - - -

Na_2SO_4
F.W.142.04
Suitable for Kjeldahl analysis.
[7757-82-6]

ChemAlert® STORAGE **gray**

Sodium Sulfate Decahydrate — USP

Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S414-500**	62.60	6/279.94
2.5kg	Poly Bottle	**S414-212**	194.07	4/576.15
12kg	Poly Pail	**S414-12**	569.71	- - - -

$Na_2SO_4 \cdot 10H_2O$
F.W. 322.20
[7727-73-3]

ChemAlert® STORAGE **gray**

Product Specifications

Assay (dried basis)	≥99.0%
Acidity or Alkalinity	To pass test
Chloride	≤0.02%
Heavy Metals (as Pb)	≤0.001%
Loss on Drying	51.0- 57.0%

Sodium Sulfate Decahydrate — Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S419-500**	58.68	6/275.24

$Na_2SO_4 \cdot 10H_2O$
F.W. 322.19
This chemical is deliquescent.
Keep refrigerated or store in a cool place.
[7727-73-3]

ChemAlert® STORAGE **gray**

Product Specifications
Actual Lot Analysis is reported on label.

Insoluble Matter	≤0.005%
Free Acid (as H_2SO_4)	≤0.005%
Free Alkali	None
Chloride	≤0.001%
Nitrogen Compounds (as N)	≤5ppm
Phosphate	≤0.0015%
Calcium, Magnesium and NH_4OH Precipitate	≤0.010%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm

Sodium Sulfide — Technical

Flakes

Quantity	Packaging	Cat. No.	Each	Case of
2.5kg	Amber Glass	**S426-212**	147.10	4/460.02

Na_2S
F.W. 78.04
[1313-82-2]

ChemAlert® STORAGE **white**

Sodium Sulfide Nonahydrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S425-500**	85.45	6/383.85
2.5kg	Amber Glass	**S425-212**	321.00	4/991.88

Sodium Monosulfide
$Na_2S \cdot 9H_2O$
F.W. 240.18
This chemical is deliquescent.
[1313-84-4]

ChemAlert® STORAGE **gray**

Product Specifications

Ammonium	≤0.01%
Sulfite and Thiosulfate (as SO_2)	≤0.1%
Iron	To pass test
Assay	≥98.0%

Sodium Sulfite Anhydrous — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S430-500**	47.26	6/221.72
3kg	Amber Glass	**S430-3**	168.82	4/527.94
10kg	Poly Pail	**S430-10**	257.38	- - - -

Na_2SO_3
F.W. 126.04
[7757-83-7]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥98.0%
Insoluble Matter	≤0.005%
Free Acid	To pass test
Titratable Free Base	≤0.03mEq/g
Chloride	≤0.02%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%

Sodium Sulfite Anhydrous — Low Phosphate

Also meets ACS specifications
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S447-500**	48.96	6/229.68
3kg	Amber Glass	**S447-3**	186.47	4/559.41

Na_2SO_3
F.W. 126.04
[7757-83-7]

ChemAlert® STORAGE gray

Product Specifications

Assay	≥98.0%
Insoluble Matter	≤0.005%
Free Acid	To pass test
Titratable Free Base	≤0.03mEq/g
Chloride	≤0.02%
Phosphate	≤5ppm
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%

▸***Sodium Sulfoncyanate*** *see Sodium Thiocyanate S441.*

Sodium L-(+)-Tartrate Dihydrate — Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**S433-100**	77.50	6/348.07
500g	Amber Glass	**S433-500**	137.24	6/640.72

Tartaric Acid Disodium Salt
$Na_2C_4H_4O_6 \cdot 2H_2O$
F.W. 230.08
[868-18-8]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay (dried basis)	≥99.0%
pH of a 5% Solution at 25°C	7 to 9
Loss on Drying at 150°C	14-17%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤3ppm
Oxalate	To pass test

Sodium Tetraborate Decahydrate — NF

Powder or Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S246-500**	62.37	6/286.29
2.5kg	Poly Pail	**S246-212**	202.69	- - - -
12kg	Fiber Drum	**S246-12**	507.78	- - - -
250 lb.	Fiber Drum	**S246-250LB**	2518.75	- - - -

Sodium Biborate, Sodium Pyroborate, Borax
$Na_2B_4O_7 \cdot 10H_2O$
F.W. 381.37
[1303-96-4]

ChemAlert® STORAGE gray

Product Specifications

Assay	99.0 - 105.0%
Heavy Metals (as Pb)	≤20ppm
Carbonate and Bicarbonate	To pass test
Organic Volatile Impurities	Meets the requirements

Sodium Tetraborate Decahydrate — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S248-500**	57.01	6/278.09
3kg	Glass	**S248-3**	238.15	4/744.79
10kg	Poly Pail	**S248-10**	422.05	- - - -

Sodium Biborate, Sodium Pyroborate, Borax
$Na_2B_4O_7 \cdot 10H_2O$
F.W. 381.37
[1303-96-4]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.5-105.0%
Insoluble Matter	≤0.005%
pH of a 0.01M Solution at 25°C	9.15 to 9.20
Chloride	≤0.001%
Phosphate	≤0.001%
Sulfate	≤0.005%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤0.001%
Iron	≤5ppm

Sodium Tetraborate Decahydrate — Certified ACS

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Glass	**S249-500**	71.13	6/317.86

Sodium Biborate, Sodium Pyroborate, Borax
$Na_2B_4O_7 \cdot 10H_2O$
F.W. 381.37
[1303-96-4]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.5-105.0%
Insoluble Matter	≤0.005%
pH of a 0.01M Solution at 25°C	9.15 to 9.20
Chloride	≤0.001%
Phosphate	≤0.001%
Sulfate	≤0.005%
Calcium	≤0.005%
Heavy Metals (as Pb)	≤0.001%
Iron	≤5ppm

Sodium Tetraphenyl Boron Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**S652-25**	301.62	6/1408.13
100g	Amber Glass	**S652-100**	1082.39	6/5016.79

Sodium Tetraphenylborate
$NaB(C_6H_5)_4$
$C_{24}H_{20}BNa$
F.W. 342.23
[143-66-8]

ChemAlert® STORAGE gray

roduct Specifications
ctual Lot Analysis is reported on label.

Assay	≥99.5%
Loss on Drying at 105°C	≤0.5%
Clarity of Solution	To pass test

Sodium Thiocyanate Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S441-500**	149.61	6/701.80

Sodium Rhodanate, Sodium Sulfocyanate, Thiocyanic Acid Sodium Salt, Sodium Isothiocyanate
NaSCN
F.W. 81.07
[540-72-7]

ChemAlert® STORAGE gray

roduct Specifications
ctual Lot Analysis is reported on label.

Assay	≥98.0%
Insoluble Matter	≤0.005%
Carbonate	≤0.2%
Chloride	≤0.01%
Sulfate	≤0.01%
Sulfide	≤0.001%
Ammonium	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Iron	≤2ppm

Sodium Thiosulfate USP/FCC

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S474-500**	75.90	6/341.05
3kg	Poly Bottle	**S474-3**	179.97	4/531.59
12kg	Poly Pail	**S474-12**	638.45	- - - -

$Na_2S_2O_3 \cdot 5H_2O$
F.W. 248.18
Suitable for photographic use.
[10102-17-7]

ChemAlert® STORAGE gray

roduct Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Assay (Anhydrous Basis)	99.0-100.5%
Water	32.0-37.0%
Calcium	To pass test
Heavy Metals (as Pb)	≤0.002%
Meets FCC Chemical Specifications	
Assay (After Drying)	99.0-100.5%
Lead	≤2mg/kg
Selenium	≤0.003%
Water	32.0-37.0%

Sodium Thiosulfate Anhydrous Certified

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S446-500**	80.92	6/363.53
3kg	Poly Bottle	**S446-3**	310.30	4/965.79

Sodium Hyposulfite
$Na_2S_2O_3$
F.W. 158.11
[7772-98-7]

ChemAlert® STORAGE gray

Product Specifications

Assay	≥98.0%
Insoluble Matter	≤0.010%
Sulfide	≤1ppm
Water	≤1.0%

Sodium Thiosulfate Pentahydrate Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S445-500**	59.56	6/279.42
3kg	Poly Bottle	**S445-3**	230.63	4/721.24
10kg	Poly Pail	**S445-10**	256.47	——
50kg	Fiber Drum	**S445-50**	1020.97	——

$Na_2S_2O3 \cdot 5H_2O$
F.W. 248.19
[10102-17-7]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.5-101.0%
Insoluble Matter	≤0.005%
pH of a 5% Solution at 25°C	6.0 to 8.4
Nitrogen Compounds (as N)	≤0.002%
Sulfate and Sulfite (as SO_4)	≤0.1%
Sulfide	To pass test (about 1ppm)

Sodium Thiosulfate Solution, 1N Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SS364-1**	59.66	6/286.50
4L	Amber Glass	**SS364-4**	100.13	4/363.94
20L	PolyPac*	**SS364-20**	210.34	- - - -

Standardized at 25&deg;C against NIST Potassium Dichromate.
Traceable to NIST.
[7772-98-7]

ChemAlert® STORAGE gray

Product Specifications

Normality	0.995 to 1.005
Color (APHA)	≤10
pH at 25°C	≥7

FisherChemical* and Acros Organics* Sorbents

ACROS ORGANICS

Description	Quantity	Packaging	Cat. No.	Each	Case of
Alumina, Adsorption, 80-200 Mesh	500g	Glass	**A540-500**	88.18	6/413.64
Alumina, Adsorption, 80-200 Mesh	3kg	Glass	**A540-3**	306.75	4/947.86
Alumina, Activated, 8-14 Mesh	2.5kg	Glass	**A505-212**	139.58	4/418.74
Alumina, Acid, Brockman Activity I, 60-325 Mesh, pH 4 to 5, Certified	500g	Glass	**A948-500**	212.05	6/982.82
Alumina, Basic, Brockman Activity I, 60-325 Mesh, pH 9.2 to 9.8, Certified	500g	Glass	**A941-500**	114.74	6/538.24
Aluminum Oxide, Activated, Basic, For Column Chromatography, 500-200μm	1kg	- - - -	**AC18999-0010**	48.50	- - - -
Alumina, Neutral, Brockman Activity I, 60-325 Mesh, pH 7 to 8, Certified	500g	Glass	**A950-500**	171.68	6/795.73
Aluminum Oxide, Activated, Neutral, For Column Chromatography, 500-200μm	1kg	- - - -	**AC19041-0010**	51.70	- - - -
Celite* Analytical Filter Aid	500g	Poly Bottle	**C211-500**	512.71	4/1579.12
Celite 521	250g	- - - -	**AC20635-2500**	25.30	- - - -
Celite 521	1kg	- - - -	**AC20635-0010**	51.50	- - - -
Celite 545 Filter Aid, Powder	500g	Poly Bottle	**C212-500**	51.32	4/160.48
Celite 545 Filter Aid, Powder	25 lb.	Fiber Drum	**C212-25LB**	262.10	- - - -
Celite 545 Filter Aid, Powder	50 lb.	Fiber Drum	**C212-50LB**	458.57	- - - -
Florisil* Adsorbant, 60-100 Mesh	500g	Glass	**F100-500**	116.37	6/539.38
Florisil Adsorbant, 60-100 Mesh	3kg	Poly Pail	**F100-3**	535.03	- - - -
Florisil Adsorbant, 100-200 Mesh	500g	Amber Glass	**F101-500**	143.69	6/674.02
Florisil Adsorbant, 100-200 Mesh	3kg	Poly Pail	**F101-3**	694.23	- - - -
Infusorial Earth, White, Calcined Powder	3kg	Bag in Box	**I22-3**	112.29	- - - -
Molecular Sieves, Grade 521, Type 5A, 4-8 Mesh Beads	500g	Amber Glass	**M521-500**	120.78	6/537.26
Molecular Sieves, Grade 562, Type 3A, 4-8 Mesh Beads	500g	Amber Glass	**M562-500**	121.40	6/539.99
Molecular Sieves	5 lb.	Metal Can	**M513-5LB**	240.13	4/760.38
Molecular Sieves, Grade 542, Type 13X, 4-8 Mesh Beads	5 lb.	Metal Can	**M542-5LB**	231.20	4/723.04
Molecular Sieves, Grade 514, Type 4A, 8-12 Mesh Beads	500g	Amber Glass	**M514-500**	106.01	6/491.34
Molecular Sieves, Grade 564, Type 3A, 8-12 Mesh Beads	500g	Amber Glass	**M564-500**	120.19	6/537.15
Molecular Sieves, Grade 522, Type 5A, 8-12 Mesh Beads	5 lb.	Metal Can	**M522-5LB**	210.72	4/655.83
Molecular Sieves, Grade 564, Type 3A, 8-12 Mesh Beads	5 lb.	Metal Can	**M564-5LB**	241.31	4/723.94
Molecular Sieves, 3Å, 8-12 Mesh Beads	500g	- - - -	**AC19725-5000**	39.90	- - - -
Molecular Sieves, 4Å, 8-12 Mesh Beads	500g	- - - -	**AC19727-5000**	43.40	- - - -
Silica, Floated, About 240 Mesh	3kg	- - - -	**S153-3**	73.28	4/229.18
Silica, Fine Granules	3kg	- - - -	**S150-3**	70.83	4/221.49
Silica, Fine Granules, 40-100 Mesh	10kg	- - - -	**S151-10**	93.14	- - - -
Silica Gel Desiccant, 3-8 Mesh, Certified ACS	500g	- - - -	**S162-500**	45.11	6/211.61
Silica Gel Desiccant, 3-8 Mesh, Certified ACS	2.5kg	- - - -	**S162-212**	146.89	4/453.87

Sodium Thiosulfate Solution, 0.1N

Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS368-1**	47.54	6/228.89
4L	Poly Bottle	**SS368-4**	60.58	4/195.83
20L	PolyPac*	**SS368-20**	144.21	- - - -

Standardized at 25°C against NIST Potassium Dichromate.
[7772-98-7]

ChemAlert® STORAGE gray

Product Specifications

Normality....0.0995 to 0.1005
Color (APHA)....≤10
pH at 25°C....≥7

Sodium Thiosulfate Solution, 0.100N

ACS, ASTM E 200

USP Volumetric Solution

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**7950-4**	10.19	- - - -
500mL	Poly Natural	**7950-16**	11.86	- - - -
1L	Poly Natural	**7950-32**	15.35	- - - -
4L	Poly Natural	**7950-1**	43.69	- - - -
10L	Cubitainer*	**7950-25**	56.13	- - - -
20L	Cubitainer	**7950-5**	90.26	- - - -

Sodium Thiosulfate Solution, 0.0394N

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Natural	**7930-1**	50.25	- - - -
20L	Cubitainer*	**7930-5**	110.71	- - - -

Application: For Iodine Adsorption Number of Carbon Black

*Trademark. See Trademark Reference.

Prices subject to change.

Sodium Thiosulfate Solution, 0.0375N — Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS371-1**	62.88	6/297.02

Standardized at 25°C against NIST Potassium Dichromate.
[7772-98-7]

ChemAlert® STORAGE gray

roduct Specifications

Color (APHA)	≤5
Normality	0.037 to 0.038
pH at 25°C	≥7

Sodium Trinitride *see Sodium Azide S227I.*

Soluble Blue *see Aniline Blue A967.*

Soluble Glass *see Sodium Silicate Solution SS338.*

Solvent (Flammable) Spill Cleanup Kit *see Spill Cleanup Kit, Flammable Solvent 18-061B.*

D-Sorbitol — Laboratory

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S459-500**	71.40	6/319.23

D-Glucitol
$CH_2OH(CHOH)_4CH_2OH$
$C_6H_{14}O_6$
F.W. 182.17
[50-70-4]

ChemAlert® STORAGE gray

Spill Cleanup Kit, Acid

Quantity	Packaging	Cat. No.	Each	Case of
1 kit	Carton	**18-061A**	321.26	- - - -

Neutralizes and absorbs up to 1L of glacial acetic, hydrochloric, sulfuric, phosphoric, perchloric, hydrofluoric and most other laboratory acids. Neutralizing absorbent changes from red to blue when the acid has been neutralized. "Caution—Spill" sign on back of kit warns co-workers of spill cleanup in progress.

ChemAlert® STORAGE gray

Ordering Information: Acid Spill Cleanup Kit includes two containers of neutralizing absorbent; protective gloves, goggles, apron and shoe covers; dustpan, broom and spatula; zipper-lock plastic disposal bag with write-on labels; sealing labels for used spill kit box; and step-by-step instructions.
Dimensions: 7½L × 19W × 11"H (19 × 48 × 28cm)

Spill Cleanup Kit, Caustic

Quantity	Packaging	Cat. No.	Each	Case of
1 kit	Carton	**18-061C**	350.01	- - - -

Neutralizes and absorbs up to 1L of caustic potash (potassium hydroxide, 45%); caustic soda (sodium hydroxide, 50%); aqueous ammonia (ammonium hydroxide, 28%); and weaker alkali hydroxides. Color indicator changes from blue to red when the caustic has been neutralized. "Caution—Spill" sign on back of kit warns co-workers of spill cleanup in progress.

ChemAlert® STORAGE gray

Ordering Information: Caustic Spill Cleanup Kit includes one container of absorbent; one container of neutralizer; protective gloves, goggles, apron and shoe covers; dustpan, broom and spatula; zipper-lock plastic disposal bag with write-on labels; sealing labels for used spill kit box; and step-by-step instructions.
Dimensions: 7½L × 19W × 11"H (19 × 48 × 28cm)

Spill Cleanup Kit, Flammable Solvent

Quantity	Packaging	Cat. No.	Each	Case of
1 kit	Carton	**18-061B**	350.04	- - - -

Absorbs up to four liters of flammable solvents. "Caution—Spill" sign on back of kit warns co-workers of spill cleanup in progress.

ChemAlert® STORAGE gray

Ordering Information: Solvent Spill Cleanup Kit includes two containers of absorbent; protective gloves, goggles, apron and shoe covers; dustpan, broom and spatula; zipper-lock plastic disposal bag with write-on labels; sealing labels for used spill kit box; and step-by-step instructions.
Dimensions: 7½L × 19W × 11"H (19 × 48 × 28cm).

Spill Cleanup Kits, Multisystem

Quantity	Packaging	Cat. No.	Each	Case of
3 kits	Cartons	**18-061E**	593.05	- - - -

Includes one each of Acid Spill Kit (18-061A), Caustic Spill Kit (18-061C) and Flammable Solvent Spill Kit (18-061B).

▸**Spirit Blue** *see Aniline Blue A967.*

▸**SSC Buffer** *see Saline–Sodium Citrate, Fisher BioReagents* BP1325.*

▸**SSPE Buffer** *see Saline–Sodium Phosphate–EDTA, Fisher BioReagents* BP1328.*

▸**Stable Starch Solution** *see Starch Solution, Stabilized SS408.*

Stannic Chloride Pentahydrate — Laboratory

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**T137-100**	58.66	6/268.73
500g	Amber Glass	**T137-500**	261.32	6/1211.16

Tin (IV) Chloride
$SnCl_4 \cdot 5H_2O$
F.W. 350.60
[10026-06-9]

ChemAlert® STORAGE white

Stannous Chloride Dihydrate — Certified ACS

Suitable for Mercury Determination
Crystalin

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**T142-100**	80.31	6/367.73
500g	Poly Bottle	**T142-500**	294.88	6/1360.10
3kg	Poly Bottle	**T142-3**	1369.53	4/4211.33

Tin (II) Chloride, Stannous Chloride
$SnCl_2 \cdot 2H_2O$
F.W. 225.65
[10025-69-1]

ChemAlert® STORAGE white

Stannous Chloride Anhydrous — Technical

Crystalline Powder or Flakes

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**T141-100**	106.26	6/476.95
500g	Amber Glass	**T141-500**	268.83	6/1245.97

Stannous Chloride
$SnCl_2$
F.W. 189.62
[7772-99-8]

ChemAlert® STORAGE white

Contd. on next page.

Contd. from previous page.

Product Specifications
Actual Lot Analysis is reported on label.

Assay	98.0-103.0%
Solubility in HCl	Complete
Sulfate	To pass test (about 0.003%)
Sodium	≤0.01%
Potassium	≤0.005%
Calcium	≤0.005%
Lead	≤0.01%
Iron	≤0.003%
Mercury (Hg)	≤0.05ppm

Stannous Chloride Dihydrate — Technical

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
250g	Poly Bottle	**T163-250**	168.31	6/787.64
500g	Poly Bottle	**T163-500**	263.53	6/1209.58

Tin (II) Chloride
$SnC_{12}\bullet_{2}2H_2O$
F.W. 225.65
[10025-69-1]

ChemAlert® STORAGE white

▸***Stannous Protochloride*** *see Stannous Chloride Dihydrate, Certified ACS grade T142.*

Stannous Sulfate — Laboratory

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**T154-500**	191.49	6/896.11

$SnSO_4$
F.W. 214.77
Tin (II) Sulfate
[7488-55-3]

ChemAlert® STORAGE gray

Starch, Soluble — Certified ACS

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**S516-100**	44.97	6/210.96
500g	Amber Glass	**S516-500**	121.79	6/571.31

$(C_6H_{10}O_5)_n$
For iodometry.
[9005-25-8]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Solubility	To pass test
Sensitivity (color)	To pass test
pH of a 2% Solution at 25°C	5.0 to 7.0
Residue after Ignition	≤0.4%

Starch Solution

Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS408-1**	40.91	6/194.13
4L	Poly Bottle	**SS408-4**	107.05	4/333.44

$(C_6H_{10}O_5)_n$
For iodometry.
[9005-25-8]

Product Specifications

Color (APHA)	≤10
Sensitivity to Iodine	To pass test
Substances Oxidizing Potassium Iodide	To pass test

▸***Starch, Soluble*** *see also Thyodene* Indicator T138.*

▸***Starch, Soluble, Solution*** *see Starch Solution SS408.*

▸***Starch, Sugar*** *see Dextrose (D-Glucose) Anhydrous D14 and D16.*

Starch Indicator, 1% (w/v)

Translucent liquid
Mercury Free

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**8050-16**	14.03	----
1L	Poly Natural	**8050-32**	17.50	----
4L	Poly Natural	**8050-1**	39.34	----
10L	Cubitainer*	**8050-25**	93.03	----
20L	Cubitainer	**8050-5**	148.53	----

Application: Iodometric Titrations
Solvent/Matrix: Aqueous Solution
[9005-84-9 (Starch, soluble)]
[69-72-7 (Salicylic acid)]
[7732-18-5 (Water, Deionized)]

Starch Indicator, 0.5% (w/v)

Translucent liquid
Mercury Free

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**8000-16**	13.81	----
1L	Poly Natural	**8000-32**	17.40	----
4L	Poly Natural	**8000-1**	40.77	----
10L	Cubitainer*	**8000-25**	89.26	----
20L	Cubitainer	**8000-5**	125.40	----

Application: Iodometric Titrations
Solvent/Matrix: Aqueous Solution
[9005-84-9 (Starch, soluble)]
[69-72-7 (Salicylic acid)]
[7732-18-5 (Water, Deionized)]

Stearic Acid — Laboratory

Prill

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A292-500**	52.70	6/247.22

Octadecanoic Acid
$CH_3(CH_2)_{16}COOH$
$C_{18}H_{36}O_2$
F.W. 284.49
[57-11-4]

ChemAlert® STORAGE gray

▸***Stearic Acid Calcium Salt*** *see Calcium Stearate C136.*

▸***Stearic Acid Zinc Salt*** *see Zinc Stearate Z784.*

Stoddard Solvent

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**S457-4**	99.44	4/365.61
200L	Amber Glass	**S457-200**	1760.85	----

A petroleum distillate used for dry cleaning.
[64742-88-7]

ChemAlert® STORAGE red

Product Specifications

Acidity	To pass test
Boiling Range:	
under 176°C	50%
under 190°C	90%
under 210°C	100%

▸***Strong Ammonia Solution*** *see Ammonium Hydroxide, NF/FCC grade A667.*

*Trademark. See Trademark Reference.

Strontium Nitrate Anhydrous — Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**S549-100**	35.40	6/171.25
500g	Amber Glass	**S549-500**	220.72	6/993.28

$Sr(NO_3)_2$
F.W. 211.63
[10042-76-9]

ChemAlert® STORAGE yellow

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble Matter	≤0.01%
Loss on Drying at 105°C	≤0.1%
pH of a 5% Solution at 25°C	5.0 to 7.0
Chloride	≤0.002%
Sulfate	≤0.005%
Barium	≤0.05%
Calcium	≤0.05%
Magnesium	≤0.10%
Sodium	≤0.10%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Sulfate	≤0.005%

Succinic Acid — Certified
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A294-500**	117.24	6/527.57

Butanedioic Acid, Ethylene Dicarboxylic Acid, Amber Acid
$HOOCCH_2CH_2COOH$
$C_4H_6O_4$
F.W. 118.09
[110-15-6]

ChemAlert® STORAGE gray

Product Specifications

Assay	99.0-100.3%
Melting Range	185°-187°C
Insoluble Matter	≤0.010%
Residue after Ignition	≤0.020%
Chloride	≤0.002%
Phosphate	≤0.001%
Sulfate	≤0.005%
Ammonia	≤0.001%
Heavy Metals (as Pb)	≤5ppm
Iron	≤0.002%

Sucrose — NF/EP/BP/JP
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S6-500**	109.81	- - - -
2.5kg	Poly Bottle	**S6-212**	434.40	- - - -
12kg	Poly Pail	**S6-12**	1390.54	- - - -
50kg	Poly Drum	**S6-50**	4488.16	- - - -

Cane Sugar, Saccharose, Sugar
$C_{12}H_{22}O_{11}$
F.W. 342.30
[57-50-1]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.
Meets NF Chemical Specifications

Specific Rotation at 25°C	≥ +65.9°
Residue on Ignition	≤0.05%
Chloride	≤0.0035%
Sulfate	≤0.006%
Calcium	To pass test
Heavy Metals	≤5ppm
Invert Sugar	≤112mg
Organic Volatile Impurities	Meets requirements
Bacterial Endotoxins	Report

Meets EP and BP Chemical Specifications

Appearance of Solution	To pass test
Acidity or Alkalinity	To pass test
Color Value	≤45
Conductivity	≤35μScm^{-1}
Reducing Sugar	To pass test
Specific Optical Rotation at 20°C	+66.3° to +67.0°
Dextrins	To pass test
Sulfites	≤10ppm
Lead (Graphite Furnace AA)	≤0.5ppm
Loss on Drying	≤0.1%
Bacterial Endotoxins	<0.25EU/mg

Meets JP Chemical Specifications

Specific Optical Rotation at 20°C	+66.3° to +67.0°
Clarity and Color of Solution	To pass test
Acid or Alkali	To pass test
Sulfite	≤15ppm
Lead	≤0.5ppm
Invert Sugar	≤0.04%
Conductivity	≤35μScm^{-1}
Loss on Drying at 105°C	≤0.1%
Dextrins	To pass test
Endotoxins	≤0.25EU/mg

Sucrose — EP/BP/NF
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S2-500GM**	43.61	6/244.57
2.5kg	Poly Bottle	**S2-212**	225.91	4/650.07
12kg	Poly Pail	**S2-12**	622.29	- - - -
50kg	Fiber Drum	**S2-50**	1007.12	- - - -

Cane Sugar, Saccharose, Sugar
$C_{12}H_{22}O_{11}$
F.W.342.30
[57-50-1]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.
Meets NF Chemical Specifications

Calcium	To pass test
Chloride	≤0.0035%
Heavy Metals	≤5ppm
Invert Sugar	≤112mg Cu_2O
Organic Volatile Impurities	Meets requirements
Residue on Ignition	≤0.05%
Specific Rotation at 25°C	≥+65.9°
Sulfate	≤0.006%

Meets EP Chemical Specifications

Acidity or Alkalinity	To pass test
Conductivity	≤35μS cm^{-1}
Specific Optical Rotation at 20°C	+66.3° to +67.0°
Dextrins	To pass test
Reducing Sugars	To pass test
Sulfites	≤10ppm
Lead	≤0.5ppm
Loss on Drying at 105°C	≤0.1%
Color Value	≤45
Bacterial Endotoxins	≤0.25 IU/mg

Meets BP Chemical Specifications

Acidity or Alkalinity	To pass test
Conductivity	≤35μS cm^{-1}
Specific Optical Rotation at 20°C	+66.3° to +67.0°
Dextrins	To pass test
Reducing Sugar	To pass test
Sulfites	≤10ppm
Lead	≤0.5ppm
Loss on Drying at 105°C	≤0.1%
Color Value	≤45
Bacterial Endotoxins	≤ 0.25 IU/mg

Sucrose **NF**
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S3-500**	81.74	6/356.54
2.5kg	Poly Bottle	**S3-212**	241.86	4/710.32
12kg	Poly Pail	**S3-12**	683.01	- - - -

Cane Sugar, Saccharose, Sugar
$C_{12}H_{22}O_{11}$
F.W. 342.30
[57-50-1]

ChemAlert® STORAGE **gray**

Product Specifications

Calcium	To pass test
Chloride	≤0.0035%
Heavy Metals (as Pb)	<5ppm
Invert Sugar	≤112mg
Residue on Ignition	≤0.05%
Specific Rotation $[\alpha]_D^{25}$	≥+65.9°
Sulfate	≤0.006%
Organic Volatile Impurities	Meets the requirements

Sucrose **Certified ACS**
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**S5-500**	74.21	6/333.12
3kg	Poly Bottle	**S5-3**	201.98	4/628.62
12kg	Poly Pail	**S5-12**	538.50	- - - -

Cane Sugar
Saccharose
Sugar
$C_{12}H_{22}O_{11}$
F.W. 342.30
[57-50-1]

ChemAlert® STORAGE **gray**

Product Specifications

Actual Lot Analysis is reported on label.

Specific Rotation $[\alpha]_D^{25}$	+66.3° to +66.8°
Insoluble Matter	≤0.005%
Loss on Drying at 105°C	≤0.03%
Residue after Ignition	≤0.01%
Titratable Acid	≤0.0008mEq/g
Chloride	≤0.005%
Sulfate and Sulfite (as SO_4)	≤0.005%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Invert Sugar	≤0.05%

▸**Sugar, Cane** *see Sucrose S2, S3, S5 and S6.*

▸**Sugar, Corn** *see Dextrose D14 and D16.*

▸**Sugar, Fruit** *see D-Fructose L95 and L96.*

▸**Sugar, Lead** *see Lead Acetate Trihydrate L33.*

▸**Sugar, Manna** *see D-Mannitol M120 and M124.*

▸**Sugar, Milk** *see alpha-D-(+)-Lactose L5.*

▸**Sugar Starch** *see Dextrose D14 and D16.*

Sulfamic Acid **Certified ACS**
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**A295-100**	62.81	6/294.66
500g	Amber Glass	**A295-500**	172.36	6/798.89

Amidosulfonic Acid
NH_2SO_3H
H_3NO_3S
F.W. 97.09
[5329-14-6]

ChemAlert® STORAGE **white**

Product Specifications

Actual Lot Analysis is reported on label.

Assay (dried basis)	99.3-100.3%
Insoluble Matter	≤0.01%
Residue after Ignition	≤0.01%
Heavy Metals (as Pb)	≤0.001%
Chloride	≤0.001%
Sulfate	≤0.05%
Iron	≤5ppm

Sulfanilamide **Certified**
Granular

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**04525-100**	63.97	6/289.87

4-Aminobenzenesulfonamide
p-Anilinesulfonamide
$4\text{-}NH_2C_6H_4SO_2NH_2$
$C_6H_8N_2O_2S$
F.W. 172.21
[63-74-1]

ChemAlert® STORAGE **gray**

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥98%
Melting Point	164°-166°C

Sulfanilic Acid Anhydrous **Certified ACS**
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A296-500**	269.39	6/1257.65

Aniline p-Sulfonic Acid, 4-Aminobenzenesulfonic Acid
$4\text{-}NH_2C_6H_4SO_3H$
$C_6H_7NO_3S$
F.W. 173.20
[121-57-3]

ChemAlert® STORAGE **gray**

Product Specifications

Actual Lot Analysis is reported on label.

Assay	98.0-102.0%
Residue after Ignition	≤0.01%
Insoluble in Na_2CO_3 Solution	≤0.02%
Chloride	≤0.002%
Nitrite	≤0.5ppm
Sulfate	≤0.01%

5-Sulfosalicylic Acid Dihydrate **Certified ACS**
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**A297-100**	74.69	6/333.88
500g	Amber Glass	**A297-500**	275.58	6/1292.73
3kg	Poly Bottle	**A297-3**	1391.79	4/4331.82

2-Hydroxy-5-sulfobenzoic Acid
$1\text{-}(OH)\text{-}2\text{-}(COOH)\text{-}4\text{-}SO_3H\text{-}C_6H_3{\bullet}2H_2O$
$C_7H_6O_6S{\bullet}2H_2O$
F.W. 254.22
[5965-83-3]

ChemAlert® STORAGE **white**

Product Specifications

Actual Lot Analysis is reported on label.

Assay	99.0-101.0%
Insoluble Matter	≤0.02%
Salicylic Acid	≤0.04%
Chloride	≤0.001%
Sulfate	≤0.02%
Heavy Metals (as Pb)	≤0.002%
Iron	≤0.001%
Residue after Ignition	≤0.1%

Sulfosalicylic Acid Solution, 10% (w/v)

Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**8125-16**	20.25	- - - -
1L	Amber Glass	**8125-32**	35.12	- - - -
4L	Amber Glass	**8125-1**	121.68	- - - -

[5965-83-3 (5-Sulfosalicylic Acid Dihydrate)]
[7732-18-5 (Water, Deionized)]

Sulfosalicylic Acid Solution, 5% (w/v)

Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**8120-16**	19.79	- - - -
1L	Amber Glass	**8120-32**	29.47	- - - -
4L	Amber Glass	**8120-1**	86.40	- - - -

[5965-83-3 (5-Sulfosalicylic Acid Dihydrate)]
[7732-18-5 (Water, Deionized)]

Sulfosalicylic Acid Solution, 3% (w/v)

Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**8115-16**	18.71	- - - -
1L	Amber Glass	**8115-32**	27.50	- - - -
4L	Amber Glass	**8115-1**	73.84	- - - -

Sulfur, Precipitated USP

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S595-500**	72.89	6/325.76

Lac Sulfur
F.W. 32.07
At. Wt. 32.06
[7704-34-9]

ChemAlert® STORAGE red

roduct Specifications

Assay (anhydrous basis)	99.5-100.5%
Other Forms of Sulfur	To pass test
Reaction	To pass test
Residue on Ignition	≤0.3%
Water	≤0.5%

Sulfur, Sublimed USP

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**S594-500**	45.24	6/212.21

Flowers of Sulfur
F.W. 32.07
At. Wt. 32.06
[7704-34-9]

ChemAlert® STORAGE red

roduct Specifications

Assay (dried basis)	99.5-100.5%
Arsenic	≤4ppm
Residue on Ignition	≤0.5%
Solubility in Carbon Disulfide	To pass test

Sulfuric Acid Optima*

Quantity	Packaging	Cat. No.	Each	Case of
250mL	PTFE	**A468-250**	238.84	- - - -
500mL	PTFE	**A468-500**	362.00	- - - -
1L	PTFE	**A468-1**	692.84	- - - -
2L	PTFE	**A468-2**	1017.83	- - - -

Oil of Vitriol
H_2SO_4
F.W. 98.08
Packaged in specially manufactured, precleaned PTFE bottle to protect product integrity.
Certificate of Lot Analysis included with each bottle.
[7664-93-9]

ACID

ChemAlert® STORAGE white

Product Specifications and Typical Values

	Max. Spec.	Typical Value
Assay (H_2SO_4)	93–98%	96%
Aluminum	50ppt	<20ppt
Antimony	50ppt	<10ppt
Arsenic	500ppt	<500ppt
Barium	10ppt	<10ppt
Beryllium	10ppt	<5ppt
Bismuth	10ppt	<1ppt
Cadmium	10ppt	<1ppt
Calcium	100ppt	<50ppt
Cerium	10ppt	<0.1ppt
Cesium	10ppt	<1ppt
Chromium	10ppt	<10ppt
Cobalt	10ppt	<1ppt
Copper	10ppt	<5ppt
Dysprosium	10ppt	<0.1ppt
Erbium	10ppt	<0.1ppt
Europium	10ppt	<0.1ppt
Gadolinium	10ppt	<0.1ppt
Gallium	10ppt	<1ppt
Germanium	100ppt	<100ppt
Hafnium	10ppt	<0.1ppt
Holmium	10ppt	<0.1ppt
Indium	10ppt	<1ppt
Iron	50ppt	<50ppt
Lanthanum	10ppt	<1ppt
Lead	10ppt	<5ppt
Lithium	10ppt	<5ppt
Lutetium	10ppt	<0.1ppt
Magnesium	50ppt	<10ppt
Manganese	10ppt	<1ppt
Mercury	100ppt	<100ppt
Molybdenum	10ppt	<10ppt
Neodymium	10ppt	<0.1ppt
Nickel	50ppt	<20ppt
Niobium	10ppt	<1ppt
Potassium	50ppt	<50ppt
Praseodymium	10ppt	<0.1ppt
Rhodium	50ppt	<1ppt
Rubidium	10ppt	<1ppt
Samarium	10ppt	<0.1ppt
Scandium	10ppt	<5ppt
Selenium	500ppt	<500ppt
Silver	50ppt	<2ppt
Sodium	50ppt	<50ppt
Strontium	10ppt	<1ppt
Tellurium	100ppt	<10ppt
Terbium	10ppt	<0.1ppt
Thallium	10ppt	<1ppt
Thorium	10ppt	<0.1ppt
Thulium	10ppt	<0.1ppt
Tin	50ppt	<50ppt
Titanium	50ppt	<50ppt
Tungsten	10ppt	<5ppt
Uranium	10ppt	<0.1ppt
Vanadium	10ppt	<5ppt
Ytterbium	10ppt	<0.1ppt
Yttrium	10ppt	<1ppt
Zinc	50ppt	<20ppt
Zirconium	10ppt	<5ppt

Sulfuric Acid NF/FCC

Quantity	Packaging	Cat. No.	Each	Case of
2.5L	Glass	**A484-212**	98.31	6/440.24

Oil of Vitriol
H_2SO_4
F.W. 98.08
[7664-93-9]

ACID

ChemAlert®
STORAGE
white

Product Specifications

Assay	95.0-98.0%
Residue on Ignition	≤0.005%
Reducing Substances	To pass test
Arsenic	≤1ppm
Chloride	≤0.005%
Iron	≤0.02%
Lead	≤5ppm
Nitrate	≤10ppm
Selenium	≤0.002%
Heavy Metals	≤5ppm

Sulfuric Acid TraceMetal

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass	**A510-500**	55.93	6/222.55
2.5L	Glass	**A510-212**	115.62	6/460.12
2.5L	Glass/Safe-Cote*	**A510SK212**	116.17	6/462.30

Oil of Vitriol
H_2SO_4
F.W. 98.08
Certificate of Lot Analysis included with each shipment.
[7664-93-9]

ACID

ChemAlert®
STORAGE
white

Product Specifications and Typical Values

	Max. Spec.	Typical Value
Assay (H_2SO_4)	94–98%	97%
Color (APHA)	10	<10
Aluminum	1ppb	<0.5ppb
Antimony	1ppb	<0.1ppb
Arsenic	1ppb	<0.5ppb
Barium	1ppb	<0.1ppb
Beryllium	1ppb	<0.1ppb
Bismuth	1ppb	<0.1ppb
Cadmium	1ppb	<0.1ppb
Calcium	1ppb	<0.5ppb
Cerium	0.5ppb	<0.1ppb
Cesium	0.5ppb	<0.1ppb
Chromium	1ppb	<0.1ppb
Cobalt	1ppb	<0.1ppb
Copper	1ppb	<0.1ppb
Dysprosium	0.5ppb	<0.1ppb
Erbium	0.5ppb	<0.1ppb
Europium	0.5ppb	<0.1ppb
Gadolinium	0.5ppb	<0.1ppb
Gallium	1ppb	<0.1ppb
Germanium	1ppb	<0.1ppb
Hafnium	0.5ppb	<0.1ppb
Holmium	0.5ppb	<0.1ppb
Indium	0.5ppb	<0.1ppb
Iron	1ppb	<0.5ppb
Lanthanum	0.5ppb	<0.1ppb
Lead	1ppb	<0.1ppb
Lithium	1ppb	<0.1ppb
Lutetium	0.5ppb	<0.1ppb
Magnesium	1ppb	<0.5ppb
Manganese	1ppb	<0.1ppb
Mercury	1ppb	<0.5ppb
Molybdenum	1ppb	<0.1ppb
Neodymium	0.5ppb	<0.1ppb
Nickel	1ppb	<0.1ppb
Niobium	0.5ppb	<0.1ppb
Potassium	1ppb	<0.5ppb
Praseodymium	0.5ppb	<0.1ppb
Rhodium	0.5ppb	<0.1ppb
Rubidium	0.5ppb	<0.1ppb
Samarium	0.5ppb	<0.1ppb
Scandium	0.5ppb	<0.1ppb
Selenium	10ppb	<5ppb
Silver	1ppb	<0.1ppb
Sodium	1ppb	<0.5ppb
Strontium	1ppb	<0.1ppb
Tellurium	0.5ppb	<0.1ppb
Terbium	0.5ppb	<0.1ppb
Thallium	0.5ppb	<0.1ppb
Thorium	1ppb	<0.1ppb
Thulium	0.5ppb	<0.1ppb
Tin	1ppb	<0.1ppb
Titanium	1ppb	<0.5ppb
Tungsten	0.5ppb	<0.1ppb
Uranium	1ppb	<0.1ppb
Vanadium	1ppb	<0.1ppb
Ytterbium	0.5	<0.1ppb
Yttrium	0.5ppb	<0.1ppb
Zinc	1ppb	<0.2ppb
Zirconium	1ppb	<0.1ppb

Element concentrations are at the point of bottling.

Sulfuric Acid Certified ACS Plus

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass	**A300-500**	53.95	6/194.24
500mL	Glass/Safe-Cote*	**A300S-500**	58.93	6/212.19
2.5L	Glass	**A300-212**	79.43	- - - -
2.5L	Glass	**A300C-212**	271.42	- - - -
2.5L	Glass/Safe-Cote Individual	**A300SI-212**	89.25	- - - -
6 × 2.5L	Flint Glass/Safe-Cote	**A300-S212**	296.37	- - - -
6.5 gal.	Glass Carboy	**A300-612GAL**	399.44	- - - -
225 lb.	Poly Drum	**A300-225LB**	648.44	- - - -
700 lb.	Poly Drum	**A300-700LB**	1622.47	- - - -

H_2SO_4
F.W. 98.08
Density: about 1.84g/mL
Suitable for cholesterol determination in regular and "N" methods.
[7664-93-9]

ACID

ChemAlert®
STORAGE
white

Product Specifications

Actual Lot Analysis is reported on label.

Assay	95.0-98.0%
Color (APHA)	≤10
Residue after Ignition	≤3ppm
Chloride	≤0.1ppm
Nitrate	≤0.2ppm
Ammonium	≤1ppm
Substances Reducing Permanganate (as SO_2)	To pass test (about 2ppm)
Heavy Metals	≤0.8ppm
Phosphate	≤0.5ppm
Aluminum	≤0.2ppm
Arsenic	≤0.004ppm
Boron	≤0.01ppm
Calcium	≤0.3ppm
Chromium	≤0.2ppm
Copper	≤0.1ppm
Gold	≤0.3ppm
Iron	≤0.2ppm
Lead	≤0.3ppm
Magnesium	≤0.3ppm
Manganese	≤0.2ppm
Mercury	≤5ppb
Nickel	≤0.1ppm
Potassium	≤0.3ppm
Sodium	≤0.3ppm
Tin	≤0.2ppm
Titanium	≤0.3ppm
Zinc	≤0.2ppm

*Trademark. See Trademark Reference.

Sulfuric Acid, 37N
Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SA196-500**	232.30	6/844.92

Oil of Vitriol
Standardized to pH 4.4 at 25°C against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.
[7664-93-9]

ACID

ChemAlert® STORAGE **white**

roduct Specifications

Normality	36.5 to 37.15

Sulfuric Acid
Technical

Quantity	Packaging	Cat. No.	Each	Case of
2.5L	Glass	**A298-212**	53.29	6/191.84

Oil of Vitriol
H_2SO_4
F.W. 98.08
Density: 1.84g/mL
[7664-93-9]

ACID

ChemAlert® STORAGE **white**

roduct Specifications

Assay	93.0 - 98.0%
Color (APHA)	≤20

Sulfuric Acid
For Babcock Milk Test

Quantity	Packaging	Cat. No.	Each	Case of
2.5L	Glass	**SA174-212**	99.19	6/354.92
4L	Poly Bottle	**SA174-4**	97.32	4/238.58

Oil of Vitriol
H_2SO_4
F.W.98.08
[7664-93-9]

ACID

ChemAlert® STORAGE **white**

roduct Specifications

Assay (as H_2SO_4)	90.5- 93.0%
Color (APHA)	≤15
Specific Gravity at 20°C	1.82-1.83

Sulfuric Acid
Gerber

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**SA176-4**	110.94	4/264.43

Oil of Vitriol
[7664-93-9]

ACID

ChemAlert® STORAGE **white**

roduct Specifications

Assay (as H_2SO_4)	91.0 - 92.25%
Color (APHA)	≤15
Specific Gravity at 20°C	1.82-1.825

ulfuric Acid, 70%
Textile

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**SA170-4**	58.98	4/141.55

H_2SO_4
F.W. 98.08
[7664-93-9]

ACID

ChemAlert® STORAGE **white**

oduct Specifications

Assay	69.0 - 71.0%
Color (APHA)	≤15

Sulfuric Acid, 50% (v/v)
Aqueous Solution, Approximately 18N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**8180-16**	18.43	- - - -
1L	Poly Natural	**8180-32**	30.48	- - - -
4L	Poly Natural	**8180-1**	84.55	- - - -
2.5L	Safety Coated Glass	**81-805-PT**	69.33	- - - -
20L	Cubitainer*	**81805**	207.98	- - - -
20L	Ropak*	**81805HP**	246.28	- - - -

H_2SO_4
[7664-93-9 (Sulfuric Acid)]
[7732-18-5 (Water, Deionized)]
Recommended storage: 15-30°C

Sulfuric Acid, 20% (v/v)
Reagent Grade

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**8165-16**	14.11	- - - -
1L	Poly Natural	**8165-32**	26.02	- - - -
4L	Poly Natural	**8165-1**	60.70	- - - -
20L	Cubitainer*	**8165-5**	235.00	- - - -
20L	Hard Pack	**8165-5**	365.40	- - - -

Solvent/Matrix: Aqueous Solution
[7664-93-9 (Sulfuric Acid)]
[7732-18-5 (Water, Deionized)]

NEW

Sulfuric Acid, 10% (v/v)
Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**8150-32**	24.74	- - - -
4L	Poly Natural	**8150-1**	46.73	- - - -
10L	Cubitainer*	**1362-261**	967.78	- - - -
20L	Cubitainer	**1362-261**	8111.48	- - - -

[7664-93-9 (Sulfuric Acid)]
[7732-18-5 (Water, Deionized)]

NEW

Sulfuric Acid, 10N
Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SA200-1**	64.72	6/303.78

Oil of Vitriol
Standardized to pH 4.4 at 25°C against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.
[7664-93-9]

ACID

ChemAlert® STORAGE **white**

Product Specifications

Normality	9.95 to 10.05

Sulfuric Acid Concentrate
Certified

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**SA213**	50.18	6/241.15

Oil of Vitriol
Each bottle contains exact amount of 10N concentrate required to make 1 liter of 1N or 10 liters of 0.1N (N/10) solution.
[7664-93-9]

ACID

ChemAlert® STORAGE **white**

Product Specifications

Normality when Diluted to 1 Liter	0.990 to 1.010
Color (APHA)	≤10

Sulfuric Acid, 6.00N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**8330-16**	19.98	- - - -
1L	Poly Natural	**8330-32**	29.86	- - - -
4L	Poly Natural	**8330-1**	61.65	- - - -
20L	Cubitainer*	**8330-5**	163.78	- - - -

[7664-93-9 (Sulfuric Acid)]
[7732-18-5 (Water, Deionized)]

Sulfuric Acid, 4N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**SA818-500**	46.08	6/259.58
1L	Poly Bottle	**SA818-1**	49.48	6/293.77
4L	Poly Bottle	**SA818-4**	70.05	4/260.23
20L	PolyPac*	**SA818-20**	170.16	- - - -

Standardized to pH 4.4 at 25°C against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.

Traceable to NIST.

[7664-93-9]

ACID

ChemAlert® STORAGE white

Product Specifications

Normality............3.95 to 4.05
Color (APHA)............≤5

Sulfuric Acid, 4.00N

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Natural	**8322-1**	43.47	- - - -
20L	Cubitainer*	**8322-5**	144.48	- - - -

4.00N

Sulfuric Acid, 2.5N **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**SA208-1**	78.43	6/372.02

Oil of Vitriol

Standardized to pH 4.4 at 25°C against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.

[7664-93-9]

ACID

ChemAlert® STORAGE white

Product Specifications

Normality............2.488 to 2.512
Color (APHA)............≤5

Sulfuric Acid, 2.50N

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**8315-32**	22.61	- - - -

[7664-93-9 (Sulfuric Acid)]
[7732-18-5 (Water, Deionized)]

Sulfuric Acid, 1N **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SA212-1**	39.46	6/188.07
4L	Poly Bottle	**SA212-4**	88.97	4/283.87
20L	PolyPac*	**SA212-20**	176.68	- - - -

Standardized to pH 4.4 at 25°C against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.

[7664-93-9]

ACID

ChemAlert® STORAGE white

Product Specifications

Normality............0.995 to 1.005
Color (APHA)............≤10

Sulfuric Acid, 1.00N

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**8300-4**	8.89	- - - -
500mL	Poly Natural	**8300-16**	10.80	- - - -
1L	Poly Natural	**8300-32**	15.44	- - - -
4L	Poly Natural	**8300-1**	36.10	- - - -
10L	Cubitainer*	**8300-25**	59.39	- - - -
20L	Cubitainer	**8300-5**	94.76	- - - -

[7664-93-9 (Sulfuric Acid)]
[7732-18-5 (Water, Deionized)]

Sulfuric Acid, 0.5N **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SA215-1**	39.51	6/188.97
4L	Poly Bottle	**SA215-4**	83.97	4/268.06

Standardized to pH 4.4 at 25°C against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.

[7664-93-9]

ACID

ChemAlert® STORAGE white

Product Specifications

Normality............0.498 to 0.502
Color (APHA)............≤10

Sulfuric Acid, 0.255N

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**8272-32**	14.97	- - - -
4L	Poly Natural	**8272-1**	37.61	- - - -
10L	Cubitainer*	**8272-25**	80.44	- - - -
20L	Cubitainer	**8272-5**	90.06	- - - -

H_2SO_4
(12.5g/L)
[7664-93-9 (Sulfuric Acid)]
[7732-18-5 (Water, Deionized)]

Sulfuric Acid, 0.250N

Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**8270-32**	15.59	- - - -
4L	Poly Natural	**8270-1**	37.33	- - - -
10L	Cubitainer*	**8270-25**	75.83	- - - -
20L	Cubitainer	**8270-5**	91.40	- - - -

[7664-93-9 (Sulfuric Acid)]
[7732-18-5 (Water, Deionized)]

Sulfuric Acid, 0.2N **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SA218-1**	44.89	6/212.18

Standardized to pH 4.4 at 25°C against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.

[7664-93-9]

ACID

ChemAlert® STORAGE white

Product Specifications

Normality............0.1990 to 0.2010
Color (APHA)............≤5

Sulfuric Acid, 0.1N
Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SA220-1**	38.30	6/185.74
4L	Poly Bottle	**SA220-4**	79.56	4/257.02
20L	PolyPac*	**SA220-20**	176.42	- - - -

Standardized to pH 4.4 at 25°C against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.
[7664-93-9]

ACID

ChemAlert® STORAGE white

Product Specifications

Normality	0.0995 to 0.1005
Color (APHA)	≤10

Sulfuric Acid, 0.100N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**8250-16**	12.73	- - - -
1L	Poly Natural	**8250-32**	15.78	- - - -
4L	Poly Natural	**8250-1**	31.91	- - - -
10L	Cubitainer*	**8250-25**	58.41	- - - -
20L	Cubitainer	**8250-5**	92.04	- - - -

[7664-93-9 (Sulfuric Acid)]
[7732-18-5 (Water, Deionized)]

Sulfuric Acid, 0.02N
Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SA226-1**	33.28	6/159.41
4L	Poly Bottle	**SA226-4**	72.88	4/236.35
20L	PolyPac*	**SA226-20**	155.83	- - - -

Standardized to pH 4.4 at 25°C against Sodium Hydroxide that has been standardized against NIST Potassium Acid Phthalate.
[7664-93-9]

ACID

ChemAlert® STORAGE white

roduct Specifications

Normality	0.0198 to 0.0202
Color (APHA)	≤5

Sulfuric Acid, 0.0200N

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**8200-16**	12.97	- - - -
1L	Poly Natural	**8200-32**	15.78	- - - -
4L	Poly Natural	**8200-1**	34.05	- - - -
10L	Cubitainer*	**8200-25**	57.56	- - - -
20L	Cubitainer	**8200-5**	92.04	- - - -

__Sulfuric Acid Solutions__ in various concentrations and sizes, which are not listed, are available. Prices on request.

Sulfurous Acid
Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**A307-1**	101.74	6/356.09

Sulfur Dioxide Solution
[7782-99-2]

ACID

ChemAlert® STORAGE white

Product Specifications
Actual Lot Analysis is reported on label.

Assay (as SO_2) w/w	≥6.0%
Residue after Ignition	≤0.005%
Chloride	≤5ppm
Heavy Metals (as Pb)	≤2ppm
Iron	≤5ppm

▸***Superchrome Black TS** see Eriochrome* Black T E512.*

▸***Superoxol** see Hydrogen Peroxide, 30% H323.*

Talc
Powder
Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**T4-500**	44.01	6/206.46
10kg	Bag in Box	**T4-10**	318.19	- - - -

Soapstone, Talcum

ChemAlert® STORAGE gray

Tannic Acid
Powder
Certified

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A310-500**	210.20	6/945.88

Tannin, Gallotannic Acid
$C_{76}H_{52}O_{46}$
F.W. 1701.18
[1401-55-4]

ChemAlert® STORAGE gray

Product Specifications

Residue after Ignition	≤0.10%
Sugar, Dextrin	No reaction
Water	≤12%
Heavy Metals (as Pb)	≤0.002%

L-(+)-Tartaric Acid
Granular
Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**A314-500**	122.64	6/548.20
3kg	Poly Bottle	**A314-3**	534.88	4/1672.76

2,3-Dihydroxybutanedioic Acid, Dioxysuccinic Acid, Dextrotartaric Acid
$HOOC(CHOH)_2COOH$
$C_4H_6O_6$
F.W. 150.09
[87-69-4]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Chloride	≤0.001%
Heavy Metals (as Pb)	≤5ppm
Insoluble Matter	≤0.005%
Iron	≤5ppm
Oxalate	To pass test (about 0.1%)
Phosphate	≤0.001%
Residue after Ignition	≤0.02%
Sulfur Compounds (as S)	≤0.002%
Assay	≥99.0%

▸**Tartaric Acid Disodium Salt** *see Sodium L-(+)-Tartrate Dihydrate S433.*

▸**Tartaric Acid Monosodium Salt** *see Sodium Bitartrate Monohydrate S245.*

▸**Tartaric Acid Potassium Salt** *see Potassium Tartrate Hemihydrate P313.*

▸**Tartaric Acid Sodium Potassium Salt** *see Sodium Potassium Tartrate S386 and S387.*

▸**Tartar Soluble** *see Potassium Tartrate Hemihydrate P313.*

▸**TCA** *see Trichloroacetic Acid, Certified ACS grade A322; Certified grade A324 and SA433.*

TCLP Extraction Fluid 1 — Certified

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**ST100-41**	44.19	4/459.94
20L	PolyPac*	**ST100-20**	285.44	- - - -

Mixture of Acetic Acid, Sodium Hydroxide and ASTM Type 2 water.
[64-19-7 (Acetic Acid)]
[1310-73-2 (Sodium Hydroxide)]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

pH at 25°C	4.88 to 4.98
Volatile Background†	To pass test
Semivolatile Background†	To pass test
Aluminum	Reported
Arsenic	≤2ppm
Barium	≤5ppm
Boron	Reported
Cadmium	≤1ppm
Calcium	Reported
Chromium	≤0.5ppm
Copper	Reported
Iron	Reported
Lead	≤0.1ppm
Magnesium	Reported
Manganese	Reported
Mercury	≤0.01ppm
Nickel	Reported
Selenium	≤0.1ppm
Silver	≤0.1ppm
Titanium	Reported
Zinc	Reported

†Methods are according to EPA testing procedures.

TCLP Extraction Fluid 1

For use in EPA 1311 Toxicity Characteristic Leaching Procedure
pH 4.9 ± 0.05 at 25°C

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Natural	**83771-1**	37.64	- - - -
20L	Cubitainer*	**83775-5**	111.87	- - - -

TCLP Extraction Fluid 2

EPA 1311 Toxicity Characteristic Leaching Procedure
pH 2.88 ± 0.05 at 25°C

Quantity	Packaging	Cat. No.	Each	Case of
20L	Cubitainer*	**8378-5**	107.07	- - - -

[64-19-7 (Acetic Acid)]
[7732-18-5 (Water, Deionized)]

▸**TEA** *see Triethylamine O4884.*

α-Terpineol — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**T31-1**	143.10	6/667.91

p-Menth-1-en-8-ol
$CH_3C{:}CHCH_2CH[C(CH_3)_2OH]CH_2CH_2$
$C_{10}H_{18}O$
F.W. 154.25
[98-55-5]

ChemAlert® STORAGE gray

▸**Terra Silica** *see Infusorial Earth I22 under Sorbents.*

▸**Test Papers** *see alphabetic listings as Alkacid* Test Paper, Congo Red Test Paper, Litmus Test Paper, etc.*

1,1,2,2-Tetrabromoethane — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**A33-500**	131.06	6/586.18
4L	Amber Glass	**A33-4**	822.39	- - - -

Acetylene Tetrabromide, Muthmann Liquid, sym-Tetrabromoethane
$CHBr_2CHBr_2$
$C_2H_2Br_4$
F.W. 345.67
[79-27-6]

ChemAlert® STORAGE blue

Tetrabutylammonium Hydrogen Sulfate, 99% — HPLC

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
10g	Glass Bottle	**AC42010-0100**	91.30	- - - -
50g	Glass Bottle	**AC42010-0500**	286.80	- - - -
500g	- - - -	**AC42010-5000**	442.80	- - - -

TBAHS
$(CH_3(CH_2)_3)_4NHSO_4$
$C_{16}H_{35}N.H_2SO_4$
F.W. 339.53
Melting point: 168-172°C
[32503-27-8]

NEW

Tetrabutylammonium Hydroxide Solution, 1M — Certified

In Methanol

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**O4576-100**	199.40	6/950.91

$C_{16}H_{37}NO$
F.W. 259.48
Packaged under Nitrogen.
[2052-49-5]
Recommended storage: Refrigerate

ChemAlert® STORAGE red

Product Specifications

Concentration	1.00 to 1.08M
Appearance	Colorless to slight yellow liquid
Solubility	To pass test

Tetrabutylammonium Hydroxide Solution, 0.4M Certified

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**04575-100**	83.50	6/389.94

[2052-49-5]

ChemAlert® STORAGE white

Product Specifications

Concentration	0.40 ± 0.02M

Tetrabutylammonium Phosphate HPLC

White to off-white Powder

Quantity	Packaging	Cat. No.	Each	Case of
5g	Poly Bottle	**06117-5**	598.17	- - - -
25g	Poly Bottle	**06117-25**	2694.63	6/13182.36

$(CH_3CH_2CH_2CH_2)_4NH_2PO_4$

$C_{16}H_{38}NPO_4$

F.W. 339.46

[5574-97-0]

ChemAlert® STORAGE gray

Product Specifications

Assay	≥99.0%
Optical Absorbance:	
at 200nm	≤0.2
at 210nm	≤0.1
at 214nm	≤0.02

▸***Tetrachloroethene*** *see Tetrachloroethylene, Reagent grade 04586 and Technical grade C182.*

Tetrachloroauric Acid Trihydrate Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
1g	Glass Vial	**G54-1**	235.87	6/1193.15
5g	Amber Glass	**G54-5**	935.76	- - - -

Chloroauric Acid

$HAuCl_4 \cdot 3H_2O$

F.W. 393.83

[16961-25-4]

Recommended storage: Refrigerate

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay (Au)	≥49.0%
Insoluble in Ether	≤0.1%
Alkalis and Other Metals (as SO_4)	≤0.2%

Tetrachloroethylene Reagent

Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**04586-4**	140.25	4/431.21

Tetrachloroethene, Perchloroethylene, Ethylene Tetrachloride

$C_2Cl_2{:}CCl_2$

C_2Cl_4

F.W. 165.83

[127-18-4]

ChemAlert® STORAGE blue

Product Specifications

Color (APHA)	≤15
Boiling Range	2°C incl. 121°C
Stabilizer (Ethanol)	0.5%

Tetrachloroethylene Technical

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**C182-4**	152.53	4/457.48
20L	Steel Pail	**C182-20**	456.17	- - - -

Carbon Dichloride, Tetrachloroethene Perchloroethylene, Ethylene Tetrachloride

$C_2Cl_2{:}CCl_2$

C_2Cl_4

F.W. 165.83

[127-18-4]

ChemAlert® STORAGE blue

Tetradecane Reagent

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**04595-500**	130.63	6/605.27

$CH_3(CH_2)_{12}CH_3$

$C_{14}H_{30}$

F.W. 198.39

[629-59-4]

ChemAlert® STORAGE gray

Product Specifications

Assay (by GC)	≥98%
Melting Range	2°C incl. 6°C
Color (APHA)	≤10

▸***Tetraethoxysilane*** *see Tetraethyl Orthosilicate O4617.*

Tetraethylammonium Bromide Certified

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**04602-500**	171.32	6/794.02

TEAB, N,N,N-Triethylethanaminium Bromide

$(C_2H_5)_4NBr$

$C_8H_{20}BrN$

F.W. 210.16

[71-91-0]

ChemAlert® STORAGE gray

Product Specifications

Assay	≥98%

Tetraethyl Orthosilicate Reagent

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**04617-4**	945.28	4/2941.49

Tetraethoxysilane, Ethyl Orthosilicate, Silicic Acid Tetraethyl Ester

$(C_2H_5O)_4Si$

$C_8H_{20}O_4Si$

F.W. 208.33

[78-10-4]

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Color (APHA)	≤10

▸***Tetrafluoroboric Acid*** *see Fluoroboric Acid A188.*

▸***1,2,3,4-Tetrahydrobenzene*** *see Cyclohexene O2111.*

Tetrahydrofuran Optima*

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**T427-1**	99.48	6/415.68
4L	Amber Glass	**T427-4**	227.90	4/637.40

Also available in recyclable FisherPak and NOWPak* containers.*

SOLVENT

STORAGE red

THF
Diethylene Oxide
C_4H_8O
F.W. 72.11
Melting point: -108°C
Boiling point: 66°C
Density: 0.89
Contains no preservatives.

Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.

[109-99-9]

Product Specifications

Assay (by GC)	≥99.9%
Color (APHA)	≤10
Refractive Index at 25°C	1.4040 to 1.4070
Residue after Evaporation by Steam Bath	≤5ppm
Water	≤0.02%
Fluorescence Background (as Quinine Sulfate)	≤1ppb
Peroxides (as THF Peroxide)	≤0.015%
Optical Absorbance:	
at 210nm	≤1.00
at 215nm	≤0.60
at 230nm	≤0.30
at 254nm	≤0.10

Tetrahydrofuran HPLC

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**T425-1**	96.57	6/409.26
1L	Glass/Safe-Cote*	**T425SK-1**	105.81	6/442.20
4L	Amber Glass	**T425-4**	220.57	4/625.55
4L	Glass/Safe-Cote	**T425SK-4**	220.94	4/626.81

Also available in recyclable FisherPak and NOWPak* containers.*

SOLVENT

STORAGE red

THF
$CH_2(CH_2)_2CH_2O$
C_4H_8O
F.W. 72.11
Contains no preservatives.
[109-99-9]

Product Specifications
Actual Lot Analysis is reported on label.

Assay (by GC)	≥99.9%
Color (APHA)	≤10
Refractive Index at 25°C	1.4040 to 1.4070
Residue after Evaporation by Steam Bath	≤5ppm
Water	≤0.02%
Fluorescence Background (as Quinine Sulfate)	To pass test
Peroxides (as THF Peroxide)	≤0.015%
Optical Absorbance:	
at 210nm	≤1.00
at 215nm	≤0.60
at 230nm	≤0.30
at 254nm	≤0.10

Tetrahydrofuran, 99.9% Extra Dry
Unstabilized

Quantity	Packaging	Cat. No.	Each	Case of
4L	- - - -	**AC610100040**	147.30	4/500.65

THF
C_4H_8O
F.W. 72.11
Melting point: -108.4°C
Boiling point: 66 (at 760mmHg)
Flash point: -21°C
Density: 0.88g/mL
n:1.407
[109-99-9]

Tetrahydrofuran, 99.85% Extra Dry
Stabilized, water <50ppm

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC32697-1000**	28.40	- - - -
250mL	Septum Bottle	**AC32697-2500**	51.77	- - - -
1L	Septum Bottle	**AC32697-0010**	60.10	- - - -

NEW

THF
C_4H_8O
F.W. 72.11
Melting point: -108.4°C
Boiling point: 66°C (at 760mmHg)
Flash point: -21°C
Density: 0.88g/mL
n: 1.407
[109-99-9]

Tetrahydrofuran, 99.5% Extra Dry over molecular sieves
Water <50ppm

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC34845-1000**	29.90	- - - -
1L	Septum Bottle	**AC34845-0010**	57.30	- - - -
2.5L	Glass Bottle	**AC34845-0025**	136.30	- - - -

NEW

THF
C_4H_8O
F.W. 72.11
Melting point: -108.4°C
Boiling point: 66°C (at 760mmHg)
Flash point: -21°C
Density: 0.88g/mL
n: 1.407
[109-99-9]

Tetrahydrofuran, 99.9% Extra Dry
Anhydrous

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AcroSeal*	**AC61045-1000**	29.90	6/152.13
1L	AcroSeal	**AC61045-0010**	62.70	6/319.77

NEW

THF
C_4H_8O
F.W. 72.11
Melting point: -108.4°C
Boiling point: 66°C (at 760mmHg)
Flash point: -21°C
Density: 0.88g/mL
n: 1.407
[109-99-9]

Tetrahydrofuran, 99.9%
Anhydrous

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AcroSeal*	**AC61092-1000**	29.90	6/152.13

THF

C_4H_8O

F.W. 72.11

Melting point: -108.4°C

Boiling point: 66°C (at 760mmHg)

Flash point: -21°C

Density: 0.88g/mL

n: 1.407

[109-99-9]

Tetrahydrofuran, 99.9%
Stabilized
Anhydrous

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AcroSeal*	**AC61091-1000**	27.30	6/139.05

THF

C_4H_8O

F.W. 72.11

Melting point: -108.4°C

Boiling point: 66°C (at 760mmHg)

Flash point: -21°C

Density: 0.88g/mL

n: 1.407

[109-99-9]

Tetrahydrofuran, 99.9% — Extra Dry
Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AcroSeal*	**AC61090-1000**	27.30	6/139.05
1L	AcroSeal	**AC61090-0010**	58.20	6/296.51

THF

C_4H_8O

NEW

F.W. 72.11

Melting point: -108.4°C

Boiling point: 66°C (at 760mmHg)

Flash point: -21°C

Density: 0.88g/mL

n: 1.407

[109-99-9]

Tetrahydrofuran — Spectranalyzed*

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**T424-4**	418.59	4/1293.25

THF

$CH_2(CH_2)_2CH_2O$

C_4H_8O

F.W. 72.11

Contains no preservatives.

[109-99-9]

SOLVENT

ChemAlert® STORAGE red

roduct Specifications

ctual Lot Analysis is reported on label.

Color (APHA)	≤10
Boiling Range	65°-67°C
Peroxides (as THF Peroxide)	≤0.015%
Optical Absorbance:	
at 210nm	≤1.00
at 215nm	≤0.70
at 230nm	≤0.45
at 240nm	≤0.25
at 260nm	≤0.07
at 280nm	≤0.02
at 290-400nm	≤0.01

Tetrahydrofuran — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**T397-500**	90.30	6/405.65
1L	Amber Glass	**T397-1**	108.26	6/484.71
4L	Amber Glass	**T397-4**	295.61	4/904.38
4L	Glass/Safe-Cote*	**T397SK-4**	322.06	4/985.48
20L	Steel Pail	**T397-20**	654.08	- - - -
200L	Steel Drum	**T397-200**	5526.79	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

Contains about 0.025% Butylated Hydroxytoluene as a preservative.

[109-99-9]

SOLVENT

Product Specifications

Actual Lot Analysis is reported on label.

Color (APHA)	≤10
Boiling Range	65°-67°C
Specific Gravity at 25°C	0.884-0.887
Peroxides (as THF Peroxide)	≤0.015%
Water	≤0.02%
Inhibitor (BHT)	75-400ppm

Tetrahydrofuran — Histological

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**T400-500**	39.74	6/181.13
4L	Amber Glass	**T400-4**	174.37	4/536.31
20L	Steel Pail	**T400-20**	434.90	- - - -

THF

$CH_2(CH_2)_2CH_2O$

C_4H_8O

F.W. 72.11

Contains about 0.025% Butylated Hydroxytoluene as a preservative.

[109-99-9]

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Water	≤1%
Residue after Evaporation	To pass test
Dilution Test	To pass test

1,2,3,4-Tetrahydronaphthalene — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**T72-4**	332.38	4/1027.10

$C_6H_4CH_2CH_2CH_2CH_2$

$C_{10}H_{12}$

F.W. 132.21

Density at 25°C = 0.966 ± 0.003g/mL

Refractive Index at 25°C = 1.5390 ± 0.001

[119-64-2]

ChemAlert® STORAGE gray

Tetrakis(triphenylphosphine)palladium(0), 99%

Quantity	Packaging	Cat. No.	Each	Case of
1g	Glass Bottle	**AC20238-0010**	34.80	- - - -
5g	Glass Bottle	**AC20238-0050**	115.90	- - - -

$[(C_6H_5)_3P]_4Pd$

$C_{72}H_{60}P_4Pd$

F.W. 1155.58

Melting point: 103-107°C

[14221-01-3]

Tetramethylammonium Hydroxide Solution, 25% Certified

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**04643-100**	205.81	6/961.05

$(CH_3)_4NOH$
$C_4H_{13}NO$
F.W. 91.15
[75-59-2]

ChemAlert® STORAGE white

Product Specifications

Concentration (w/w in water) ....25% ± 1%

N,N,N',N'-Tetramethylethylenediamine, 99%

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
50mL	Glass Bottle	**AC13845-0500**	12.20	- - - -
500mL	Glass Bottle	**AC13845-5000**	50.90	- - - -

1,2-Di(dimethylamino)ethane, TEMED, TMEDA
$(CH_3)_2NCH_2CH_2N(CH_3)_2$
$C_6H_{16}N_2$
F.W. 116.21
Melting point: -55°C
Boiling point: 120-122°C (at 760mmHg)
Flash point: 21°C
Density: 0.77g/mL
n: 1.4169-1.4189
[110-18-9]

NEW

▸***Tetrasodium Pyrophosphate*** *see Sodium Pyrophosphate Decahydrate S390.*

▸***Tetrazolium Chloride*** *see 2,3,5-Triphenyltetrazolium Chloride T413.*

▸***TFA*** *see Trifluoroacetic Acid O4901 and O4902.*

▸***THAM**** *see Tris (Tromethamine) T393 and Tris(hydroxymethyl)aminomethane T395.*

▸***THAM**** *see Tris Base, Fisher BioReagents* BP152 and BP154.*

▸***THF*** *see Tetrahydrofuran beginning with T427.*

Thioacetamide Certified ACS
Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**T102-100**	214.83	6/1007.72
500g	Amber Glass	**T102-500**	698.07	6/3274.68

Ethanethioamide
CH_3CSNH_2
C_2H_5NS
F.W. 75.13
[62-55-5]

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay ....≥99.0%
Melting Range........111°-114°C
Residue after Ignition........≤0.05%
Clarity of a 2% Solution........To pass test

▸***Thiocarbamide*** *see Thiourea T101.*

▸***Thiocyanate Standard Solutions*** *in concentrations and sizes that are not listed, are available. Prices on request.*

Thionyl Chloride, 99.5+%

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
25g	Glass Bottle	**AC16949-0250**	23.30	- - - -
100g	Glass Bottle	**AC16949-1000**	28.50	- - - -
500g	Glass Bottle	**AC16949-5000**	53.20	- - - -
1kg	Glass Bottle	**AC16949-0010**	132.60	6/676.06

$SOCl_2$
Cl_2OS
F.W. 118.97
Melting point: -105°C
Boiling point: 76°C (760mmHg)
Density: 1.64
n: 1.519-1.521
[7719-09-7]

NEW

Thiourea Certified ACS
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**T101-100**	57.43	6/269.38
500g	Poly Bottle	**T101-500**	116.93	6/545.90
2.5kg	Poly Bottle	**T101-212**	426.44	4/1327.30

Thiocarbamide
NH_2CSNH_2
CH_4N_2S
F.W. 76.12
[62-56-6]

ChemAlert® STORAGE blue

Product Specifications
Actual Lot Analysis is reported on label.

Assay ....≥99.0%
Melting Range........174°-177°C
Residue after Ignition........≤0.10%
Solubility in H_2O ....To pass test
Loss on Drying at 105°C ....≤0.5%

▸***Thymic Acid*** *see Thymol T185.*

Thymol NF
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**T185-100**	123.72	6/553.01

5-Methyl-2-isopropylphenol, Thyme Camphor, Thymic Acid, p-Propyl m-Creosol, p-Cymen-3-ol
$1\text{-}(CH(CH_3)CH_3)\text{-}2\text{-}(OH)\text{-}4\text{-}(CH_3)\text{-}C_6H_3$
$C_{10}H_{14}O$
F.W. 150.22
[89-83-8]

ChemAlert® STORAGE white

Product Specifications

Assay 99.0-101.0%
Melting Range........48°-51°C
Nonvolatile Residue ....≤0.05%
Organic Volatile Impurities........Meets requirements

*Trademark. See Trademark Reference.

Thymol Blue — Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
5g	Amber Glass	**T416-5**	152.99	6/717.66

Thymolsulfonephthalein
$C_{27}H_{30}O_5S$
F.W. 466.60
pH Indicator.
[76-61-9]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Clarity of Solution	To pass test
Visual Transition Interval (acid)	Pink (pH 1.2) to Yellow (pH 2.8)
Visual Transition Interval (alkaline)	Yellow (pH 8.0) to Blue (pH 9.2)

Thymol Blue Solution, 0.04% — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SI6-500**	44.05	6/210.63

Solution of Thymol Blue Sodium Salt for colorimetric determinations.
[62625-21-2]

ChemAlert® STORAGE gray

Product Specifications

Concentration	To pass test
pH at 25°C	5.2 to 5.8
Visual Transition Interval (acid)	Red (pH 1.2) to Yellow (pH 2.8)
Visual Transition Interval (alkaline)	Yellow (pH 8.0) to Blue (pH 9.2)

Thymol Blue Indicator Solution

Clear, dark green colored liquid
Red (pH<1.2) - Yellow (pH2.8-pH8.0) - Blue (pH>9.2)

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**8400-4**	9.28	- - - -
500mL	Poly Natural	**8400-16**	14.53	- - - -

Solvent/Matrix: Aqueous Solution
[62625-21-2 (Thymol Blue, Sodium Salt)]
[7732-18-5 (Water, Deionized)]

▸***Thymolsulfonephthalein*** *see Thymol Blue T416.*

Thyodene* Indicator

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**T138-100**	54.32	6/254.80
500g	Amber Glass	**T138-500**	226.63	6/1063.15

Starch, Soluble
A stable, soluble indicator for iodometry.
[9005-84-9]

ChemAlert® STORAGE gray

Product Specifications

Sensitivity	To pass test
Solubility in H_2O	To pass test

Thymolphthalein Indicator Solution

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**8450-4**	15.33	- - - -
500mL	Poly Natural	**8450-16**	19.65	- - - -

Solvent/Matrix: 90% (v/v) Alcohol
[125-20-2 (Thymolphthalein)]
[64-17-5 (Ethyl Alcohol (Ethanol))]
[67-56-1 (Methanol (Methyl Alcohol))]
[7732-18-5 (Water, Deionized)]

▸***Tillman's Reagent*** *see 2,6-Dichloroindophenol Sodium Salt S286.*

Tin — Certified

Mossy

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**T123-500**	308.17	6/1438.71

Sn
At. Wt. 118.69
[7440-31-5]

ChemAlert® STORAGE gray

Product Specifications

Arsenic	≤2ppm
Copper	≤0.002%
Iron	≤0.005%
Lead	≤0.020%
Total Foreign Metals (as oxides)	≤0.05%

▸***TISAB Buffer*** *see Buffer Solution, TISAB SB175.*

TissuePrep* Embedding Media — Certified

Quantity	Packaging	Cat. No.	Each	Case of
5 lb. (2.3kg)	Carton	**T56-5**	115.78	- - - -

Paraffin Wax
[8002-74-2]

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)	≤30
Melting Point	56°-57°C
Viscosity	7-14 centipoises
Cracking Test	To pass test
Maximum Compression	To pass test
Slicing Test	To pass test
Solubility in Xylene	To pass test
Flocculation Grading	To pass test

TissuePrep* 2 Micron — Certified

Quantity	Packaging	Cat. No.	Each	Case of
4½ lb. (2kg)	Carton	**T555-212**	5.43	- - - -

A superior embedding compound for 2µm sectioning.
[8002-74-2]

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)	≤30
Melting Point	56.0° ± 1.0°C
Viscosity	4-6 centipoises
Cracking Test	To pass test
Maximum Compression	To pass test
Slicing Test	To pass test
Solubility in Xylene	To pass test
Flocculation Grading	To pass test

Titanium (III) Chloride Solution, 20% — Certified

Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**ST43-500**	260.51	6/1240.36

Titanous Chloride
Contains Hydrochloric Acid
[7705-07-9]

ChemAlert® STORAGE white

Product Specifications

Assay	19-23%

Titanium (IV) Chloride, 99.90%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Glass Bottle	**AC19723-1000**	34.80	- - - -
250mL	Glass Bottle	**AC19723-2500**	63.80	- - - -

Titanium Tetrachloride
$TiCl_4$
F.W. 189.69
Flash point: 8°C
Density: 0.964
[7550-45-0]

NEW

Titanium (IV) Oxide Anhydrous — Certified

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**T315-500**	69.06	6/310.75

Titanium Dioxide
TiO_2
F.W. 79.87
[13463-67-7]

ChemAlert® STORAGE gray

Product Specifications

Water-soluble Salts	≤0.15%
Arsenic	≤2ppm
Lead	≤0.008%
Zinc	≤0.01%
Iron	≤0.01%

▸***Titration Reagents*** *see Aqualine* and AquaStar* Karl Fischer Reagents.*

Titration Solvent

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**ST93-4**	127.67	4/402.47

Isopropanol:Toluene 1:1
Meets ASTM D 664, D 974

ChemAlert® STORAGE red

Product Specifications

Color (APHA)	≤10
Boiling Range at 20 drops	80.0°-81.0°C
50mL	82.5°-83.5°C
85mL	109.9°-110.9°C
95mL	110.1°-111.1°C
Acid Value Blank	≤0.15mL

Titration Solvent

ASTM D 664, D 974, and D 3242 for Neutralization Number

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**8620-1**	183.55	- - - -

Note: May not be shipped via UPS Air Services.

o-Tolidine Dihydrochloride Solution, 0.1% (w/v)

APHA

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SO14-500**	30.17	6/145.49
1L	Amber Glass	**SO14-1**	41.83	6/201.77

For determination of Chlorine in water.
[7647-01-0 (Hydrogen Chloride)]
[612-82-8 (o-Tolidine)]

ChemAlert® STORAGE white

Product Specifications

Normality	1.70 to 1.80
Sensitivity to Chlorine	To pass test

o-Tolidine Reagent

Clear, colorless to slightly yellow-green liquid
APHA for Chlorine

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass Amber	**8640-16**	17.50	- - - -
1L	Glass Amber	**8640-32**	26.64	- - - -
4L	Glass Amber	**8640-1**	62.96	- - - -
20L	Cubitainer*	**8640-5**	208.42	- - - -

Solvent/Matrix: 15% (v/v) Hydrochloric Acid
[612-82-8 (o-Tolidine Dihydrochloride)]
[7647-01-0 (Hydrochloric Acid)]
[7732-18-5 (Water, Deionized)]

Toluene — Optima*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**T291-4**	127.98	4/359.67

Also available in recyclable FisherPak and NOWPak* containers.*
Methylbenzene, Toluol, Phenyl Methane
$C_6H_5CH_3$
C_7H_8
F.W. 92.14
Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.
[108-88-3]

SOLVENT

ChemAlert® STORAGE red

Product Specifications

Assay (by GC)	≥99.8%
Color (APHA)	≤10
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤10ng/L
Optical Absorbance:	
at 285nm	≤1.00
at 300nm	≤0.10
at 325nm	≤0.02
at 350nm	≤0.005
Water	≤0.02%
Residue after Evaporation	≤1ppm
Benzene	≤0.05%
Refractive Index at 25°C	1.4930 to 1.4950
Substances Darkened by H_2SO_4	To pass test
Sulfur Compounds (as S)	≤0.003%

Packaged under Nitrogen. Submicron filtered.

Toluene — HPLC

Also meets ACs specifications

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**T290-1**	60.18	6/253.93
1L	Glass/Safe-Cote*	**T290SK-1**	69.32	6/296.76
4L	Amber Glass	**T290-4**	115.83	4/325.87
4L	Glass/Safe-Cote	**T290SK-4**	142.53	4/400.97

Also available in recyclable FisherPak and NOWPak* containers.*
Methylbenzene, Toluol, Phenyl Methane
[108-88-3]

SOLVENT

ChemAlert® STORAGE red

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.8%
Color (APHA)	≤10
Optical Absorbance at 286nm	≤1.00
Refractive Index at 25°C	1.4930 to 1.4950
Residue after Evaporation	≤10ppm
Substances Darkened by H_2SO_4	To pass test
Water	≤0.02%
Sulfur Compounds (as S)	≤0.003%

Submicron filtered.

Toluene, 99.85% Extra Dry

Water <30ppm

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Septum Bottle	**AC32698-1000**	21.10	6/107.41
250mL	Septum Bottle	**AC32698-2500**	35.02	----
1L	Septum Bottle	**AC32698-0010**	30.80	----

Methylbenzene, Tol
$C_6H_5CH_3$
C_7H_8
F.W. 92.14
Melting point: -95°C
Boiling point: 111°C (at 760mmHg)
Flash point:4°C
Density: 0.866g/mL
n: 1.4968
[108-88-3]

NEW

Toluene, 99.89% Extra Dry

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
100mL	AcroSeal*	**AC61046-1000**	19.50	6/99.32
1L	AcroSeal	**AC61046-0010**	30.50	6/155.33

Methylbenzene, Tol
C_7H_8
F.W. 92.14
Melting point: -95°C
Boiling point: 111°C (at 760mmHg)
Flash point: 4°C
Density: 0.866g/mL
n: 1.4968
[108-88-3]

NEW

Toluene Scintanalyzed*

Also meets ACS specifications

For use in the ultraviolet and infrared ranges

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**T330-4**	204.28	4/631.14

Methylbenzene, Toluol
$C_6H_5CH_3$
C_7H_8
F.W. 92.14
[108-88-3]

SOLVENT

ChemAlert STORAGE red

roduct Specifications
ctual Lot Analysis is reported on label.

Assay	≥99.5%
Color (APHA)	≤10
Residue after Evaporation	≤0.001%
Substances Darkened by H_2SO_4	To pass test
Sulfur Compounds (as S)	≤0.003%
Water	≤0.03%
Heavy Metals (as Pb)	≤0.1ppm
Iron	≤0.1ppm
Copper	≤0.1ppm
Nickel	≤0.1ppm
Optical Absorbance:	
at 286nm	≤1.00
at 288nm	≤0.50
at 293nm	≤0.20
at 300nm	≤0.10
at 310nm	≤0.05
at 335nm	≤0.02
at 350-400nm	≤0.01
IR Transmittance:	
at 2.5-3.2μm	≥70%
at 3.6-5.1μm	≥70%
at 7.4-8.4μm	≥70%
at 9.8-11.1μm	≥70%
at 11.3-13.2μm	≥70%

Transmittance measured in a 0.025mm KBr cell. Ultraviolet Absorbance Curves are run against distilled water set at zero absorbance. Curves available on request.

Toluene Scintanalyzed*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**T313-4**	144.34	4/445.80
4L	Glass/Safe-Cote*	**T313SK-4**	157.70	4/482.51

Methylbenzene, Toluol, Phenyl Methane
$C_6H_5CH_3$
C_7H_8
F.W. 92.14
[108-88-3]

SOLVENT

ChemAlert STORAGE red

Product Specifications

Assay	≥99.5%
Color (APHA)	≤10
Optical Absorbance at 335-450nm	≤0.01
LSC Analysis:	
^3H Background	≤50cpm
^3H Efficiency	≥0.90
^{14}C Background	≤50cpm
^{14}C Efficiency	≥0.90
Substances Darkened by H_2SO_4	To pass test
Residue after Evaporation	≤0.001%
Sulfur Compounds (as S)	≤0.003%
Water	≤0.03%

Toluene Certified ACS

Also meets ASTM specifications

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**T324-500**	36.59	6/168.71
1L	Amber Glass	**T324-1**	76.38	6/343.72
4L	Amber Glass	**T324-4**	133.80	4/413.29
4L	SafeTin*	**T324S-4**	170.39	4/521.27
4L	Glass/Safe-Cote*	**T324SK-4**	151.05	4/462.09
20L	Steel Pail	**T324-20**	270.96	----
200L	Steel Drum	**T324-200**	1497.44	----

Also available in recyclable FisherPak and NOWPak* containers.*

Methylbenzene, Toluol, Phenyl Methane
C_7H_8
F.W. 92.14
Melting point: -95°C
Boiling point: 110.6°C
Density: 0.87
[108-88-3]

SOLVENT

ChemAlert STORAGE red

Product Specifications
Actual Lot Analysis is reported on label.

Assay (by GC)	≥99.5%
Color (APHA)	≤10
Residue after Evaporation	≤0.001%
Substances Darkened by H_2SO_4	To pass test
Sulfur Compounds (as S)	≤0.003%
Water	≤0.03%
Heavy Metals (as Pb)	≤0.1ppm
Iron	≤0.1ppm
Copper	≤0.1ppm
Nickel	≤0.1ppm

Toluene — Histological

Quantity	Packaging	Cat. No.	Each	Case of
1 gal.	Poly Bottle	**T326F-1GAL**	118.67	4/423.70
4L	Poly Bottle	**T326P-4**	114.37	4/381.31
20L	Steel Pail	**T326S-20**	226.36	- - - -

Methylbenzene, Toluol
$C_6H_5CH_3$
C_7H_8
F.W. 92.14
[108-88-3]

SOLVENT
ChemAlert® STORAGE red

Product Specifications

Assay	≥99.5%
Color (APHA)	≤10

Toluene — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**T323-4**	112.13	4/346.41
20L	Steel Pail	**T323-20**	247.13	- - - -

Methylbenzene, Toluol
$C_6H_5CH_3$
C_7H_8
F.W. 92.14
[108-88-3]

SOLVENT
ChemAlert® STORAGE red

p-Toluenesulfonic Acid Monohydrate — Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A320-500**	208.15	6/976.43

$CH_3C_6H_4SO_3H{\bullet}H_2O$
$C_7H_8O_3S{\bullet}H_2O$
F.W.190.22
[6192-52-5]

ChemAlert® STORAGE white

Product Specifications

Melting Point	104° to 106°C
Free Sulfate	≤0.010%

Toluidine Blue O — Certified Biological Stain

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**T161-25**	215.11	6/1016.44

Basic Blue 17, Tolonium Chloride
$C_{15}H_{16}ClN_3S$
F.W. 305.83
For use in histology.
C.I. 52040
[92-31-9]

ChemAlert® STORAGE gray

Toluidine Blue Stain Solution, 1% (w/v)

Clear, bluish-purple liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	8654-16	46.97	- - - -
1L	Amber Glass	8654-32	74.95	- - - -
4L	Amber Glass	8654-1	268.43	- - - -

Solvent/Matrix: Aqueous Solution
[92-31-9 (Toluidine Blue O)]
[7732-18-5 (Water, Deionized)]

▸***Toluol*** *see Toluene beginning with T291.*

▸***Trace Metals, Groundwater and Wastewater Pollution Check Standards*** *see Standards, Inorganic Mixed Multi-Element and Standards, Inorganic, Quality Control/Profeciency Samples.*

▸***Tri-n-butyl Phosphate*** *see n-Butyl Phosphate B404.*

Trichloroacetic Acid — Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**A322-100**	51.76	6/239.90
500g	Amber Glass	**A322-500**	182.52	6/852.10
3kg	Glass	**A322-3**	780.76	4/2412.52

TCA
CCl_3COOH
$C_2HCl_3O_2$
F.W. 163.39
[76-03-9]

ChemAlert® STORAGE white

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.0%
Residue after Ignition	≤0.03%
Chloride	≤0.002%
Nitrate	≤0.002%
Phosphate	≤5ppm
Sulfate	≤0.02%
Heavy Metals (as Pb)	≤0.002%
Iron	≤0.001%
Clarity of Solution	Pass Test
Insoluble Matter	≤0.01%
Substances Darkened by H_2SO_4	To pass test

Trichloroacetic Acid — Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**A324-500**	134.38	6/665.05
3kg	Glass	**A324-3**	628.31	4/1955.56

TCA
CCl_3COOH
$C_2HCl_3O_2$
F.W. 163.39
[76-03-9]

ChemAlert® STORAGE white

Product Specifications

Assay	99.0%
Residue on Ignition	≤0.05%
Chloride	≤0.035%
Sulfate	≤0.080%

Trichloroacetic Acid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SA433-500**	378.98	6/1838.27

$C_2HCl_3O_2$
F.W. 163.40
[76-03-9]

ChemAlert® STORAGE white

Product Specifications

Assay (CCl_3COOH)	99.5-101.0%
Color (APHA)	≤40

*Trademark. See Trademark Reference.

Trichloroacetic Acid Solution, 20% (w/v)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SA254-500**	148.16	6/708.75

[76-03-9]

ChemAlert® STORAGE white

Product Specifications

Assay 20.0-21.0%

Color (APHA) ....≤10

Trichloroacetic Acid Solution, 10% (w/v)

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**8685-4**	13.39	- - - -
500mL	Amber Glass	**8685-16**	28.75	- - - -
1L	Amber Glass	**8685-32**	38.96	- - - -
4L	Amber Glass	**8685-1**	94.68	- - - -

Solvent/Matrix: Aqueous Solution

[76-03-9 (Trichloroacetic acid)]

[7732-18-5 (Water, Deionized)]

Trichloroacetic Acid Solution, 5% (w/v)

Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**8680-4**	10.13	- - - -
500mL	Amber Glass	**8680-16**	23.82	- - - -
1L	Amber Glass	**8680-32**	33.92	- - - -

Trichloroacetic Acid Solution, 3% (w/v)

Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**8675-4**	8.74	- - - -
500mL	Amber Glass	**8675-16**	21.40	- - - -
1L	Amber Glass	**8675-32**	26.58	- - - -

1,2,4-Trichlorobenzene HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**04846-4**	284.35	4/852.03

1,2,4-$Cl_3C_6H_3$

F.W. 181.45

Filtered through 0.2µm filter.

[120-82-1]

ChemAlert® STORAGE blue

Product Specifications

Actual Lot Analysis is reported on label.

Assay (by GC) ....≥96%

Melting Range ....2°C incl. 16°C

Optical Absorbance:

at 310nm ....≤0.35

at 325nm ....≤0.07

at 350nm ....≤0.1

at 375nm ....≤0.03

at 385nm ....≤0.01

at 400nm ....≤0.01

Trichloroethylene Electronic

Also meets ACS Specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**T403-4**	231.47	4/693.61

Trichloroethene

$CHCl{:}CCl_2$

C_2HCl_3

F.W.131.39

ChemAlert® STORAGE blue

Product Specifications

Maximum Limits of Impurities

Assay ....≥99.5%

Color (APHA) ....≤10

Residue after Evaporation ....≤5ppm

Conductivity at 25°C ....≤0.15µmhos/cm

Aluminum ....≤0.1ppm

Antimony ....≤0.1ppm

Arsenic ....≤0.1ppm

Boron ....≤0.1ppm

Copper ....≤0.1ppm

Gold ....≤0.1ppm

Heavy Metals (as Pb) ....≤0.1ppm

Iron ....≤0.1ppm

Lead ....≤0.1ppm

Nickel ....≤0.1ppm

Silver ....≤0.1ppm

Meets ACS Specifications

Free Halogens ....To pass test

Titratable Acid ....≤0.0001mEq/g

Titratable Base ....≤0.0003mEq/g

Water ....≤0.02%

Trichloroethylene Certified ACS

Stabilized

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**T341-500**	46.20	6/207.91
4L	Amber Glass	**T341-4**	222.80	4/667.63
20L	Steel Pail	**T341-20**	585.13	- - - -

Trichloroethene

$CHCl{:}CCl_2$

C_2HCl_3

F.W. 131.39

[79-01-6]

ChemAlert® STORAGE blue

Product Specifications

Actual Lot Analysis is reported on label.

Assay ....≥99.5%

Color (APHA) ....≤10

Density at 25°C 1.455-1.460g/mL

Residue after Evaporation ....≤0.001%

Titratable Acid ....≤0.0001mEq/g

Titratable Base ....≤0.0003mEq/g

Water ....≤0.01%

Heavy Metals (as Pb) ....≤0.1ppm

Free Halogens ....To pass test

Trichloroethylene Technical

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**T340-4**	140.08	4/435.74

Trichloroethene

$CHCl{:}CCl_2$

C_2HCl_3

F.W. 131.39

[79-01-6]

ChemAlert® STORAGE blue

▸***Trichloromethane*** *see Chloroform beginning with C297. Also see Fisher BioReagents BP1145.*

1,1,2-Trichloro-1,2,2-trifluoroethane — Optima*

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**T178-4**	2134.23	4/6701.19

*Freon**
$FCCl_2CClF_2$
$C_2Cl_3F_3$
F.W. 187.37

ChemAlert® STORAGE gray

NOTE: This product may not be available. Call your Customer Service Center for the latest information.

Certificate of Lot Analysis included with each bottle: UV and other chromatograms available on request.

[76-13-1]

Product Specifications

Assay (by GC)	≥99.8%
Color (APHA)	≤10
Residue after Evaporation	≤1ppm
Water	≤0.01%
Pesticide Residue Analysis (as Heptachlor Epoxide)	≤10ng/L
Refractive Index at 25°C	1.3550 to 1.3570
Optical Absorbance:	
at 231nm	≤1.00
at 254nm	≤0.025
at 300nm	≤0.005
at 350nm	≤0.005
at 400nm	≤0.005
I.R. Suitability for EPA Tests 413 and 418	To pass test
Water-soluble Titratable Acid	≤0.0001mEq/g
Boiling Range (1 drop to dryness)	47°-48°C
Chloride	≤10ppm

Triethanolamine — NF

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**T350-500**	138.24	6/621.37
4L	Amber Glass	**T350-4**	512.67	4/1500.37

Trolamine, Tri-beta-hydroxy Ethylamine
$N(CH_2CH_2OH)_3$
$C_6H_{15}NO_3$
F.W. 149.14
[102-71-6]

ChemAlert® STORAGE gray

Product Specifications

Assay	99.0-107.4%
Refractive Index at 20°C	1.481 to 1.486
Residue on Ignition	≤0.05%
Specific Gravity at 25°C	1.120-1.128
Water	≤0.5%
Organic Volatile Impurities	Meets the requirements

Triethanolamine — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**T407-500**	121.21	6/544.54
1L	Amber Glass	**T407-1**	171.28	6/803.11
4L	Amber Glass	**T407-4**	479.13	4/1437.13

Tri-β-hydroxy Ethylamine, Trolamine
$N(CH_2CH_2OH)_3$
$C_6H_{15}NO_3$
F.W. 149.14
[102-71-6]

ChemAlert® STORAGE gray

Product Specifications

Assay	≥99.0%
Water	≤0.2%
Density at 25°C	1.117 to 1.125g/mL
Iron	≤0.001%

Triethylamine — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**04884-100**	43.13	6/202.26

TEA, N,N-Diethylethanamine
$(C_2H_5)_3N$
$C_6H_{15}N$
F.W. 101.19
[121-44-8]

SOLVENT
STORAGE red

Product Specifications

Assay	≥99%
Optical Absorbance of a 1% Solution:	
at 254nm	≤0.10
at 265nm	≤0.04
at 300nm	≤0.02

Triethylamine — Reagent

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**04885-1**	79.25	6/371.57
4L	Amber Glass	**04885-4**	137.78	4/425.64
20L	Steel Pail	**04885-20**	556.80	----

TEA
N,N-Diethylethanamine
$(C_2H_5)_3N$
$C_6H_{15}N$
F.W.101.19
[121-44-8]

SOLVENT
STORAGE red

Product Specifications

Assay	≥99%

Triethylamine, 99% — Pure

Quantity	Packaging	Cat. No.	Each	Case of
1L	Glass	**AC15791-0010**	48.60	4/165.05
2.5L	Glass	**AC15791-0025**	90.20	4/306.66
5mL	Glass	**AC15791-0050**	8.50	----
100mL	Glass	**AC15791-1000**	9.10	----

TETN
$(C_2H_5)_3N$
$C_6H_{15}N$
F.W. 101.19
Melting point: -115°C
Boiling point: 90°C (at 760mmHg)
Flash point: -11°C
Density: 0.728g/mL
n: 1.399-1.401
[121-44-8]

Triethylene Glycol — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**T346-4**	275.17	4/820.40

$C_6H_{14}O_4$
$HOCH_2CH_2OCH_2CH_2OCH_2CH_2OH$
F.W. 150.18
[112-27-6]

ChemAlert® STORAGE gray

Trifluoroacetic Acid Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**04901-500**	226.90	6/1059.01

TFA
CF_3COOH
$C_2HF_3O_2$
F.W. 114.02
[76-05-1]

ChemAlert® STORAGE white

roduct Specifications
Assay (by titration) .... ≥97%

Trifluoroacetic Acid Certified
For Peptide and Protein Analysis

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**04902-100**	166.72	6/778.14

CF_3COOH
$C_2HF_3O_2$
F.W. 114.02
[76-05-1]

ChemAlert® STORAGE white

roduct Specifications
ctual Lot Analysis is reported on label.
Assay (by titration) .... ≥98.5%
Water (by Karl Fischer) .... ≤0.25%

Trifluoroacetic Acid, 99%

Quantity	Packaging	Cat. No.	Each	Case of
25g	Glass Bottle	**AC13972-0250**	16.40	- - - -
100g	Glass Bottle	**AC13972-1000**	25.30	6/128.88
500g	Glass Bottle	**AC13972-5000**	89.10	6/427.70
1kg	Glass Bottle	**AC13972-0010**	172.10	- - - -

TFA
CF_3CO_2H
$C_2HF_3O_2$
F.W. 114.02
Melting point: -15°C
Boiling point: 72°C (at 760mmHg)
Density: 1.535g/mL
n: 1.3
[76-05-1]

1,2,3-Trihydroxybenzene *see Pyrogallol A263.*

Tri-beta-hydroxy Ethylamine *see Triethanolamine, NF grade T350 and Certified grade T407.*

1,2,3-Triketohydrindene Hydrate *see Ninhydrin T349.*

3,4,5-Trimethoxyphenol, 98.5+%

Quantity	Packaging	Cat. No.	Each	Case of
5g	Glass Bottle	**AC18914-0050**	57.50	- - - -
25g	Glass Bottle	**AC18914-0250**	186.90	- - - -

$(CH_3O)_3C_6H_2OH$
$C_9H_{12}O_4$
F.W. 184.19
Melting point: 146-149°C
[642-71-7]

▸***Trimethyl Carbinol*** *see tert-Butanol A401.*

▸***Trimethylol Aminomethane*** *see Tris (Tromethamine) T393 and Tris(hydroxymethyl) aminomethane T393 and T395.*

▸***Trimethylol Aminomethane 2*** *see Tris Base, Fisher BioReagents* BP152 and BP154.*

▸***2,2,4-Trimethylpentane*** *see Isooctane beginning with O301.*

▸***2,4,6-Trinitrophenol*** *see Picric Acid 5860.*

▸***Trioxymethylene*** *see Formaldehyde T353 and Para.*

Triphenylphosphine, 99%

Quantity	Packaging	Cat. No.	Each	Case of
25g	Plastic Bottle	**AC14042-0250**	15.10	- - - -
250g	Plastic Bottle	**AC14042-2500**	63.00	- - - -
1kg	Plastic Bottle	**AC14042-0010**	127.30	- - - -

$(C_6H_5)_3P$
$C_{18}H_{15}P$
F.W. 262.29
Melting point: 78.5-81.5°C
Boiling point: 377°C (at 760mmHg)
Flash point: 181°C
[603-35-0]

NEW

2,3,5-Triphenyltetrazolium Chloride Certified
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
10g	Amber Glass	**T413-10**	111.76	6/499.65

Tetrazolium Chloride
$C_{19}H_{15}N_4Cl$
F.W. 334.81
[298-96-4]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.
Sensitivity for Reducing Sugars .... To pass test
Solubility in Ethyl Alcohol .... To pass test

▸***Tripotassium Phosphate*** *see Potassium Phosphate Tribasic P289.*

▸***Tris*** *see Tris (Tromethamine) T393 and Tris(hydroxymethyl)aminomethane T395 and T370.*

▸***Tris*** *see Tris Base Fisher BioReagents* BP152 and BP154.*

Tris (Tromethamine) USP
Granular

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**T393-500**	108.72	6/471.86
2.5kg	Poly Bottle	**T393-212**	428.08	4/1338.72
12kg	Poly Pail	**T393-12**	1618.80	- - - -

Trishydroxymethylaminomethane, Tris
$H_2NC(CH_2OH)_3$
$C_4H_{11}NO_3$
F.W. 121.14
[77-86-1]

ChemAlert® STORAGE gray

Product Specifications
Identification .... To pass test
Assay ($C_4H_{11}NO_3$) (Dried Basis) 99.0-101.0%
Heavy Metals (as Pb) .... ≤0.001%
Loss on Drying at 105°C .... ≤1.0%
Melting Range .... 168-172°C
pH of a 5% Solution at 25°C ±2°C .... 10.0 to 11.5
Organic Volatile Impurities .... Meets requirements
Residue on Ignition .... ≤0.1%

▸ ***Tris Buffer*** *see Tris (Tromethamine), USP grade T393 and Tris(hydroxymethyl)aminomethane, Certified ACS grade T395 and Laboratory grade T370.*

▸ ***Tris Buffer 2*** *see Tris Base, Fisher BioReagents* BP152 and BP154.*

▸ ***Tris Buffer, 2M Solution*** *see Fisher BioReagents* BP1759.*

▸ ***Tris-Glycine 10X Buffer Solution*** *see Fisher BioReagents* BP1306.*

▸ ***Tris Hydrochloride*** *see Tris(hydroxymethyl)aminomethane Hydrochloride O4997.*

Tris(hydroxymethyl)aminomethane Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**T395-100**	55.79	6/261.70
500g	Amber Glass	**T395-500**	163.21	6/765.60
1kg	Amber Glass	**T395-1**	259.34	4/807.15

2-Amino-2-(hydroxymethyl)-1,3-propanediol, Trimethylol Aminomethane, Tris
$H_2NC(CH_2OH)_3$
$C_4H_{11}NO_3$
F.W. 121.14
Alkalimetric standard
[77-86-1]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	99.8-100.1%
Absorbance	To pass test
pH of a 0.05M Solution at 25°C	10.3 to 10.5
Insoluble Matter	≤0.005%
Water	≤2%
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm

Tris(hydroxymethyl)aminomethane Laboratory

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**T370-500**	119.38	6/533.67
3kg	Poly Pail	**T370-3**	423.18	- - - -

THAM, 2-Amino-2-(hydroxymethyl)-1,3-Propanediol Trimethylol Aminomethane*
$H_2NC(CH_2OH)_3$
$C_4H_{11}NO_3$
F.W. 121.14
[77-86-1]

ChemAlert® STORAGE gray

Tris(hydroxymethyl)aminomethane Hydrochloride Certified

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**O4997-100**	92.29	6/414.56

2-Amino-2-(hydroxymethyl)-1,3-propanediol Hydrochloride, Tris Hydrochloride
$NH_2C(CH_2OH)_3 \cdot HCl$
$C_4H_{11}NO_3 \cdot HCl$
F.W. 157.60
[1185-53-1]

ChemAlert® STORAGE gray

Product Specifications

Assay	≥95%

▸ ***Trisodium Phosphate*** *see Sodium Phosphate Tribasic Dodecahydrate S377 and S376.*

(Tris)-1,10-Phenanthroline Iron (II) Sulfate Solution Certified

0.025M

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**P69-100**	50.11	6/234.97
500mL	Amber Glass	**P69-500**	189.16	6/851.22

Ferroin
$(C_{12}H_8N_2)_3FeSO_4$
$C_{36}H_{24}FeN_6O_4S$
Suitable as redox indicator.
[14634-91-4]

ChemAlert® STORAGE gray

Product Specifications

Suitability for Redox Indicator	Pass Test

Triton* X-100 Wetting Agent

Viscous colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**8698-5**	1642.33	- - - -

Melting point: 6°C
Boiling point: 270°C
Shelf life: 24 months
[9002-93-1]

NEW

▸ ***Trolamine*** *see Triethanolamine, NF grade T350 and Certified grade T407.*

Trypsin Laboratory

Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**T360-500**	279.48	6/1311.03

[9002-07-7]

ChemAlert® STORAGE blue

▸ ***Tryptone*** *see Fisher BioReagents* BP1421.*

▸ ***Tungstophosphoric Acid*** *see Phosphotungstic Acid A248.*

Turk Blood Diluting Fluid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**8850-16**	13.69	- - - -
1L	Poly Natural	**8850-32**	23.31	- - - -

Tween* 20

Quantity	Packaging	Cat. No.	Each	Case of
5mL	Glass Bottle	**AC23336-0050**	11.90	- - - -
250mL	Glass Bottle	**AC23336-2500**	11.70	- - - -
1L	Glass Bottle	**AC23336-0010**	40.70	- - - -

Polyoxyethylene(20)sorbitan Monolaurate
Boiling point: 100°C (at 760mmHg)
Density: 1.1g/mL
n: 1.4685-1.4715
[9005-64-5]

NEW

Tween* 80

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**T164-500**	91.49	6/429.05

Polyoxyethylene (20), Polysorbate (80)
[9005-65-6]

ChemAlert® STORAGE gray

▸***ULTRAcheck* Blind Quality Control Standards*** *see Standards, Inorganic, Quality Control/Profieiency Samples.*

▸***Ultra Scientific Standards*** *see Standards, Inorganic, Quality/Control/Proficiency Samples and Standards, Organic EPA Methods.*

Universal Indicator, Bogens

Alcoholic
Clear, light green liquid

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Glass Amber	**8875-4**	20.64	- - - -
500mL	Glass Amber	**8875-16**	55.47	- - - -
1L	Glass Amber	**8875-32**	81.65	- - - -

[76-59-5 (Bromothymol Blue)]
[77-09-8 (Phenolphthalein)]
[62625-21-2 (Thymol Blue, Sodium Salt)]
[493-52-7 (Methyl Red)]
[60-11-7 (4-Dimethylaminoazobenzene)]
[67-63-0 (2-Propanol)]

Universal Indicator

Clear, dark colored liquid

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Glass Amber	**8870-4**	19.87	- - - -
500mL	Glass Amber	**8870-16**	42.38	- - - -
1L	Glass Amber	**8870-32**	59.35	- - - -

Boiling point: Approx. 77°C
[34722-90-2 (Bromothymol Blue Sodium Salt)]
[493-52-7 (Methyl Red)]
[60-11-7 (4-Dimethylaminoazobenzene)]
[62625-21-2 (Thymol Blue, Sodium Salt)]
[64-17-5 (Ethyl Alcohol (Ethanol))]
[77-09-8 (Phenolphthalein)]

▸***Universal Indicator Solution*** *see also Indicator Solution, Universal, SI60.*

Uranine — Laboratory

Concentrated, Water Soluble

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**A833-100**	65.91	6/305.51
500g	Amber Glass	**A833-500**	219.82	6/1013.88

Fluorescein Sodium Salt
$C_{20}HNa_2O_5$
F.W. 376.28
ChemAlert® STORAGE gray
Used by nuclear utilities to test cooling systems for small leaks.
C.I. 45350
[518-47-8]

Urea — USP/EP/BP/JP

Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
2.5kg	Poly Bottle	**U17-212**	328.85	- - - -
12kg	Poly Pail	**U17-12**	613.78	- - - -

Carbamide
NH_2CONH_2
CH_4N_2O
F.W. 60.06
[57-13-6]
ChemAlert® STORAGE gray

Product Specifications

Meets USP Chemical Specifications

Assay	99.0-100.5%
Melting Range	132° to 135°C
Alcohol-insoluble Matter	≤0.04%
Residue on Ignition	≤0.1%
Chloride	≤0.007%
Heavy Metals (as Pb)	≤0.002%
Sulfate	≤0.010%
Bacterial Endotoxins	Report

Meets EP and BP Chemical Specifications

Assay	98.5-101.5%
Appearance of Solution	To pass test
Alkalinity	To pass test
Biuret	≤0.1%
Ammonium	≤500ppm
Heavy Metals	≤10ppm
Loss on Drying	≤1.0%
Sulfated Ash	≤0.1%
Bacterial Endotoxins	Report

Meets JP Chemical Specifications

Assay	≥99.0%
Melting Point	132.5° to 134.5°C
Chloride	≤0.007%
Sulfate	≤0.010%
Heavy Metals	≤20ppm
Ethanol-insoluble Substances	≤0.04%
Residue on Ignition	≤0.10%

Urea — USP

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**U16-3**	233.98	4/687.30
50kg	Fiber Drum	**U16-50**	985.95	- - - -

Carbamide
NH_2CONH_2
CH_4N_2O
F.W. 60.06
[57-13-6]
ChemAlert® STORAGE gray

Product Specifications

Assay	99.0-100.5%
Melting Range	132°-135°C
Alcohol-insoluble Matter	≤0.04%
Residue on Ignition	≤0.1%
Chloride	≤0.007%
Heavy Metals (as Pb)	≤0.002%
Sulfate	≤0.010%

Urea **Certified ACS**

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**U15-500**	51.84	6/243.19
3kg	Poly Bottle	**U15-3**	204.74	4/640.30
50kg	Fiber Drum	**U15-50**	1068.08	- - - -

Carbamide
NH_2CONH_2
CH_4N_2O
F.W. 60.06
[57-13-6]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.

Assay	99.0-100.5%
Melting Range	132 to 135°C
Insoluble Matter	≤0.01%
Residue after Ignition	≤0.01%
Chloride	≤5ppm
Sulfate	≤0.001%
Heavy Metals (as Pb)	≤0.001%
Iron	≤0.001%

Urease
Powder

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**U21-25**	244.31	6/1132.37

[9002-13-5]

ChemAlert® STORAGE gray

▸***Vanillic Aldehyde*** *see Vanillin V10.*

Vanillin **NF**
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**V10-100**	49.14	6/230.51

Methyl Protocatechuic Aldehyde, Vanillic Aldehyde
3-Methoxy-4-Hydroxybenzaldehyde
1-(CHO)-3-(OCH_3)-4-(OH)-C_6H_3
$C_8H_8O_3$
F.W. 152.15
[121-33-5]

ChemAlert® STORAGE gray

Product Specifications

Assay (Dried Basis)	97.0-103.0%
Loss on Drying	≤1.0%
Melting Range	81 to 83°C
Residue on Ignition	≤0.05%
Organic Volatile Impurities	Meets requirements

▸***Victoria Green WB*** *see Malachite Green Oxalate M290.*

▸***Vitamin B7*** *see D-Biotin, Fisher BioReagents* BP232.*

▸***Vitamin C*** *see L-Ascorbic Acid A61 and Ascorbic Acid A62.*

▸***Vitriol, Blue*** *see Cupric Sulfate Pentahydrate C493, C489 and C490.*

▸***Vitriol, Green*** *see Ferrous Sulfate Heptahydrate, Certified ACS grade I146.*

▸***Vitriol, Oil of*** *see Sulfuric Acid beginning with A468.*

▸***Vitriol, White*** *see Zinc Sulfate Heptahydrate, Certified ACS grade Z68 and USP/FCC grade Z76.*

▸***Volumetric Solutions*** *see alphabetic listings as Hydrochloric Acid Solution, Potassium Hydroxide Solution, Sodium Thiosulfate Solution, etc.*

Water **Plasma Grade**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**W9-500**	76.39	6/340.12
1L	Poly Bottle	**W9-1**	118.01	6/525.64
2L	Poly Bottle	**W9-2**	253.17	- - - -

H_2O
F.W. 18.01
Certificate of Lot Analysis included with each bottle.
[7732-18-5]

ChemAlert® STORAGE gray

Product Specifications

	Max. Spec.	Typical Value
Color (APHA)	10	<10
Chloride	100ppb	<150ppb
Phosphate	100ppb	<10ppb
Sulfate	200ppb	<150ppb
Aluminum	20ppt	<20ppt
Antimony	10ppt	<10ppt
Arsenic	10ppt	<10ppt
Barium	10ppt	<1ppt
Beryllium	10ppt	<5ppt
Bismuth	10ppt	<0.1ppt
Boron	50ppt	<20ppt
Cadmium	10ppt	<1ppt
Calcium	20ppt	<20ppt
Cerium	10ppt	<0.1ppt
Cesium	10ppt	<0.1ppt
Chromium	10ppt	<10ppt
Cobalt	10ppt	<1ppt
Copper	10ppt	<5ppt
Dysprosium	1ppt	<0.1ppt
Erbium	1ppt	<0.1ppt
Europium	1ppt	<0.1ppt
Gadolinium	1ppt	<0.1ppt
Gallium	10ppt	<1ppt
Germanium	10ppt	<1ppt
Gold	10ppt	<10ppt
Hafnium	1ppt	<0.1ppt
Holmium	1ppt	<0.1ppt
Indium	1ppt	<1ppt
Iron	20ppt	<20ppt
Lanthanum	1ppt	<0.1ppt
Lead	10ppt	<1ppt
Lithium	10ppt	<1ppt
Lutetium	1ppt	<0.1ppt
Magnesium	10ppt	<5ppt
Manganese	10ppt	<1ppt
Mercury	20ppt	<20ppt
Molybdenum	10ppt	<1ppt
Neodymium	1ppt	<0.1ppt
Nickel	10ppt	<10ppt
Niobium	10ppt	<1ppt
Palladium	10ppt	<5ppt
Platinum	10ppt	<1ppt
Potassium	10ppt	<10ppt
Praseodymium	10ppt	<0.1ppt
Rhenium	10ppt	<1ppt
Rhodium	10ppt	<1ppt
Rubidium	10ppt	<1ppt
Ruthenium	10ppt	<1ppt
Samarium	10ppt	<0.1ppt
Scandium	10ppt	<1ppt
Selenium	50ppt	<50ppt
Silver	10ppt	<5ppt
Sodium	10ppt	<10ppt
Strontium	10ppt	<1ppt
Tantalum	10ppt	<10ppt
Tellurium	1ppt	<1ppt

*Trademark. See Trademark Reference.

Terbium	10ppt	<0.1ppt
Thallium	10ppt	<0.1ppt
Thorium	1ppt	<0.1ppt
Thulium	10ppt	<0.1ppt
Tin	10ppt	<10ppt
Titanium	10ppt	<10ppt
Tungsten	10ppt	<10ppt
Uranium	1ppt	<0.1ppt
Vanadium	10ppt	<1ppt
Ytterbium	10ppt	<0.1ppt
Yttrium	1ppt	<1ppt
Zinc	10ppt	<10ppt
Zirconium	10ppt	<1ppt

Water — Environmental Grade

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**W11-1**	55.31	6/273.60
4L	Amber Glass	**W11-4**	125.70	4/377.72

H_2O

F.W. 18.01

Certificate of Lot Analysis included with each bottle.

[7732-18-5]

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)	≤5
Residue after Evaporation	≤1ppm
Fluorescence (as Quinine)	≤100ppt
Resistivity (at time of bottling)	≥18MΩ
Total Organic Carbon (TOC)	≤20ppbLC
Gradient Suitability at 254nm	To pass test
Optical Absorbance:	
at 200nm	≤0.01
at 254nm	≤0.005
at 300nm	≤0.005
at 400nm	≤0.005

Water — Optima* LC/MS

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**W6-1**	53.76	6/252.18
4L	Amber Glass	**W6-4**	113.23	4/353.90

H_2O

F.W. 18.01

Boiling point: 100°C

Suitable for LC/MS applications in Bio-Pharmaceutical, Drug Discovery, Peptide, and Protein analysis.

0.2 micron filtered.

Actual Lot Analysis reported on label; Certificate of Actual Lot Analysis available on request

[7732-18-5]

Water — Optima*

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**W7-4**	107.28	4/303.12

Also available in recyclable FisherPak and NOWPak* containers.*

H_2O

F.W. 18.01

0.5 micron filtered.

Certificate of Lot Analysis included with each bottle; UV and other chromatograms available on request.

[7732-18-5]

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)	≤5
LC Gradient Suitability at 205 and 254nm	To pass test
Optical Absorbance:	
at 200nm	≤0.01
at 254nm	≤0.005
at 300nm	≤0.005
at 400nm	≤0.005
Residue after Evaporation (at time of manufacture)	≤1ppm

Water — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**W5-1**	39.30	6/165.06
1L	Glass/Safe-Cote*	**W5SK-1**	52.01	6/217.26
4L	Amber Glass	**W5-4**	74.17	4/211.44
4L	Glass/Safe-Cote	**W5SK-4**	81.75	4/229.85
19L	NOWPak*	**W5-N119**	221.21	----

*Also available in recyclable FisherPak**

H_2O

F.W. 18.01

Boiling point: 100°C

0.5 micron filtered.

[7732-18-5]

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)	≤5
L.C. Gradient Suitability at 254nm	To pass test
Residue after Evaporation (at time of manufacture)	≤1ppm

Water — HPLC

ACROS ORGANICS

Quantity	Packaging	Cat. No.	Each	Case of
1L	Glass Bottle	**AC26830-0010**	19.50	----
2.5L	Glass Bottle	**AC26830-0025**	31.10	4/105.46
4L	Glass Bottle	**AC26830-0040**	52.00	4/176.62

H_2O

F.W. 18.02

Boiling point: 100°C (at 760mmHg)

n: 1.399-1.401

[7732-18-5]

Water — HPLC/ACS Reagent Grade

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**9153-32**	21.05	----
4L	Amber Glass	**9153-1**	47.62	----

Application: Suitable for Ultraviolet Spectrophotometry and Liquid Chromatography

Water — USP/EP Purified

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Natural	**9190-1**	21.13	----
4L	Glass Amber	**9190-1G**	56.52	----
10L	Cubitainer*	**9190-25**	40.31	----
20L	Cubitainer	**9190-5**	93.20	----

Water, D.I.U.F.

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**W2-4**	51.12	4/190.73
20L	PolyPac*	**W2-20**	141.21	----

Deionized Ultra-filtered Water

H_2O

F.W. 18.01

[7732-18-5]

ChemAlert® STORAGE gray

Product Specifications

Color (APHA)	≤5
Specific Conductance at 25°C	2.0μmhos/cm
pH at 25°C	5.4 to 7.0

Water — ACS Reagent Grade

ASTM Type I, ASTM Type II

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**9151-1**	20.86	- - - -
20L	Cubitainer*	**9152-5**	52.80	- - - -

Water — ACS Reagent Grade

ASTM Type I

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**9150-32**	11.56	- - - -
4L	Poly Natural	**9150-1**	14.66	- - - -
10L	Cubitainer*	**91502-25**	27.70	- - - -
20L	Cubitainer	**9150-5**	40.72	- - - -
20L	Hard-Pack	**91505-HP**	46.22	- - - -
55 gal.	Drum	**13-622-62**	1359.09	- - - -

F.W. 18.01

[7732-18-5]

NEW

Water — Reagent Grade

Distilled

Quantity	Packaging	Cat. No.	Each	Case of
4L	Glass Amber	**91801**	48.77	- - - -

[7732-18-5]

Water — Purified, USP

Sterile; Tested for sterililty and endotoxin using current USP method

Quantity	Packaging	Cat. No.	Each	Case of
3.8L	Bottle	**22-281-500**	138.03	- - - -

Application: Ideal for laboratory, cleanroom and manufacturing-facility applications

Filtered to 0.22µm

Irradiated to SAL 10^{-6}

Double-bagged in a class 100 cleanroom

Water with 0.1% Formic Acid (v/v) — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**HB5234**	92.03	4/298.52

Water with 0.1% Trifluoroacetic Acid (v/v) — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**HB5134**	103.20	4/344.16

Water with 0.05% Trifluoroacetic Acid (v/v) — HPLC

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**HB5124**	100.63	4/315.01

▸ **Water and Wastewater Pollution Standards** *see Standards, Inorganic Mixed Multi-Element and Standards, Inorganic, Quality Control/Proficiency Samples, and Standards, Organic EPA Methods.*

▸ **Water Glass** *see Sodium Silicate Solution SS338.*

▸ **Water Hardness Buffers** *see Buffer Solution for Water Hardness SB119.*

▸ **Water Hardness Indicators** *see Eriochrome* Black T, Hydroxynaphthol Blue, and Murexide.*

▸ **Water Hardness Titrant, 0.01M EDTA** *see EDTA Titrant, 0.01M 2700.*

▸ **Water Tests, Karl Fischer** *see Karl Fisher Reagents, AquaStar* and Aqualine*.*

▸ **White Arsenic** *see Arsenic Trioxide A59I.*

▸ **White Vitriol** *see Zinc Sulfate Heptahydrate Z68.*

▸ **Wijs Iodine Solution** *see Iodine Solution, Wijs SI106.*

▸ **Wood Alcohol** *see Methanol, Low Water A935.*

m-Xylene — Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**05079-4**	129.55	4/379.10

$C_6H_4(CH_3)_2$

F.W. 106.16

[108-38-3]

SOLVENT

STORAGE red

Product Specifications

Color (APHA)....................≤20

o-Xylene — Certified

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**05081-4**	173.94	4/521.12

Also available in recyclable FisherPak and NOWPak* containers.*

$C_6H_4(CH_3)_2$

C_8H_{10}

F.W. 106.16

[95-47-6]

SOLVENT

STORAGE red

Product Specifications

Color (APHA)....................≤20

Melting Range....................+2°C incl. -24°C

p-Xylene — Certified

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**05082-500**	79.14	6/346.21
4L	Amber Glass	**05082-4**	194.03	4/575.10

$C_6H_4(CH_3)_2$

C_8H_{10}

F.W. 106.16

[106-42-3]

SOLVENT

STORAGE red

Product Specifications

Actual Lot Analysis is reported on label.

Assay (by GC)....................≥99%

Color (APHA)....................≤20

Melting Point....................14 - 15°C

▸ **Xylene Cyanol FFn** *see Fisher BioReagents* BP565.*

Xylenes — Scintanalyzed*

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**X16-4**	135.35	4/421.12

Xylol, Dimethylbenzene

$C_6H_4(CH_3)_2$

C_8H_{10}

F.W. 106.17

[1330-20-7]

SOLVENT

STORAGE red

Product Specifications

Assay (Xylene isomers plus Ethylbenzene [Ethylbenzene not to exceed 25%])	≥98.5%
Color (APHA)	≤10
Residue after Evaporation	≤0.002%
Sulfur Compounds (as S)	≤0.003%
Water	≤0.05%
Substances Darkened by H_2SO_4	To pass test
LSC Analysis:	
^3H Background	≤50cpm
^3H Efficiency	≥0.90
^{14}C Background	≤50cpm
^{14}C Efficiency	≥0.90

Xylenes

Certified ACS

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**X5-500**	40.18	6/183.06
1L	Amber Glass	**X5-1**	82.59	6/371.76
4L	Amber Glass	**X5-4**	147.76	4/459.68
4L	SafeTin*	**X5S-4**	164.64	4/499.13
4L	Glass/Safe-Cote*	**X5SK-4**	165.26	4/508.13
1 gal.	Poly Bottle	**X5P-1GAL**	127.52	4/391.97
20L	Steel Pail	**X5-20**	326.40	- - - -
200L	Steel Drum	**X5-200**	1602.06	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

Xylol, Dimethylbenzene

C_8H_{10}

F.W. 106.16

SOLVENT

ChemAlert® STORAGE red

Boiling point: 137–140°C

Density: 0.86

This reagent is generally a mixture of the ortho, meta, and para isomers and may contain some Ethylbenzene.

[1330-20-7]

Product Specifications

Actual Lot Analysis is reported on label.

Assay (Xylene isomers plus Ethylbenzene [Ethylbenzene not to exceed 25%])	≥98.5%
Color (APHA)	≤10
Residue after Evaporation	≤0.002%
Sulfur Compounds (as S)	≤0.003%
Substances Darkened by H_2SO_4	To pass test
Water	≤0.05%
Heavy Metals (as Pb)	≤0.1ppm
Copper	≤0.1ppm
Iron	≤0.1ppm
Nickel	≤0.1ppm
Silver	≤0.1ppm

Xylenes

Histological

Quantity	Packaging	Cat. No.	Each	Case of
1 gal.	Poly Bottle	**X3P-1GAL**	93.20	4/296.29
1 gal.	Poly	**X3-F1GAL**	92.00	4/300.53
4L	SafeTin*	**X3S-4**	97.40	4/301.28
20L	Steel Pail	**X3S-20**	211.75	- - - -
200L	Steel Drum	**X3S-200**	1160.12	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

Xylol, Dimethylbenzene

$C_6H_4(CH_3)_2$

C_8H_{10}

F.W. 106.16

SOLVENT

ChemAlert® STORAGE red

Specially filtered for use in tissue processors.

This reagent is generally a mixture of the ortho, meta, and para isomers and may contain some Ethylbenzene.

[1330-20-7]

Xylenes

Laboratory

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**X4-4**	143.91	4/444.51
20L	Steel Pail	**X4-20**	353.89	- - - -

Naphtha Solvent from Coal Tar, Xylol, Dimethylbenzene

$C_6H_4(CH_3)_2$

C_8H_{10}

F.W. 106.16

SOLVENT

ChemAlert® STORAGE red

Meets ASTM D 95-46-B

This reagent is generally a mixture of the ortho, meta, and para isomers and may contain some Ethylbenzene.

[1330-20-7]

Xylenol Orange Tetrasodium Salt

Certified

Quantity	Packaging	Cat. No.	Each	Case of
5g	Amber Glass	**X15-5**	202.31	6/949.03

Xylenol Orange Indicator

$C_{31}H_{28}N_2O_{13}S \bullet 4Na$

ChemAlert® STORAGE gray

Indicator for Bismuth. Also suitable as a chelometric indicator for Cadmium, Lead, Mercury, Lanthanum, Scandium, and Thorium.

[3618-43-7]

Product Specifications

Suitability Test	To pass test

▸***Xylenol Orange Indicator*** *see Xylenol Orange Tetrasodium Salt X15.*

▸***D-(+)-Xylose*** *see also Fisher BioReagents* BP708.*

▸***Yeast Extract*** *see Fisher BioReagents* BP1422.*

▸***Yellow Prussiate Potash*** *see Potassium Ferrocyanide Trihydrate, Certified ACS grade P236.*

Zenker's Fixative Solution

Mercuric Chloride-Potassium Dichromate-Sodium Sulfate Mixture

Clear, orange colored liquid

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Natural	**9410-32**	30.79	- - - -
4L	Poly Natural	**9410-1**	85.97	- - - -
20L	Cubitainer*	**9410-5**	333.06	- - - -

[7487-94-7 (Mercuric Chloride)]

[7757-82-6 (Sodium Sulfate)]

[7778-50-9 (Potassium Dichromate)]

[7732-18-5 (Water, Deionized)]

Zinc

Certified ACS

Granular, 20 Mesh

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**Z15-500**	133.18	6/623.22
3kg	Amber Glass	**Z15-3**	565.52	6/1760.93

Zn

At. Wt. 65.37

ChemAlert® STORAGE gray

Low in Arsenic, Iron and Lead.

[7440-66-6]

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.8%
Suitability for Determination of Arsenic	To pass test
Iron	≤0.01%
Lead	≤0.01%

Zinc **Certified ACS**
Granular, 30 Mesh

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**Z16-500**	122.38	6/566.75

Zn
At. Wt. 65.37
Low in Arsenic, Iron and Lead.
[7440-66-6]

ChemAlert® STORAGE **gray**

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.8%
Suitability for Determination of Arsenic	To pass test
Iron	≤0.01%
Lead	≤0.01%

Zinc **Certified ACS**
Mossy

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**Z11-500**	104.41	6/464.45

Zn
At. Wt. 65.37
Low in Arsenic, Iron and Lead.
[7440-66-6]

ChemAlert® STORAGE **gray**

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.8%
Suitability for Determination of Arsenic	To pass test
Iron	≤0.01%
Lead	≤0.01%

Zinc **Certified**
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**Z5-500**	66.91	6/309.82

Zinc Dust, Zn
At. Wt. 65.37
[7440-66-6]

ChemAlert® STORAGE **red**

Product Specifications

Assay	≥97%
Nitrogen Compounds (as N)	≤0.001%

Zinc Acetate Dihydrate **Certified**
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**Z20-500**	86.72	6/389.60

Acetic Acid Zinc Salt
$Zn(C_2H_3O_2)_2 \cdot 2H_2O$
$C_4H_6O_4Zn \cdot 2H_2O$
F.W. 219.53
[5970-45-6]

ChemAlert® STORAGE **gray**

Product Specifications

Insoluble Matter	≤0.005%
Chloride	≤0.001%
Lead	≤0.002%
Sulfate	≤0.002%
Iron	≤5ppm
pH of a 5% Solution at 25°C	6.0 to 7.0
Calcium	≤0.005%
Magnesium	≤0.005%
Potassium	≤0.01%
Sodium	≤0.05%

Zinc Chloride **Certified ACS**
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**Z33-100**	60.30	6/279.22
500g	Poly Bottle	**Z33-500**	185.08	6/866.15
3kg	Poly Bottle	**Z33-3**	686.55	4/2111.14

$ZnCl_2$
F.W. 136.30
[7646-85-7]

ChemAlert® STORAGE **white**

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥97.0%
Oxychloride	To pass test
Insoluble Matter	≤0.005%
Nitrate	≤0.003%
Sulfate	≤0.01%
Ammonium	≤0.005%
Iron	≤0.001%
Lead	≤0.005%
Calcium	≤0.06%
Magnesium	≤0.01%
Potassium	≤0.02%
Sodium	≤0.05%

Zinc Chloride **Technical**
Powder

Quantity	Packaging	Cat. No.	Each	Case of
3kg	Poly Bottle	**Z31-3**	163.75	4/506.00

$ZnCl_2$
F.W. 136.30
[7646-85-7]

ChemAlert® STORAGE **white**

Zinc Nitrate Hexahydrate **Certified ACS**
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**Z45-500**	89.17	6/400.55

$Zn(NO_3)_2 \cdot 6H_2O$
F.W. 297.49
[10196-18-6]

ChemAlert® STORAGE **yellow**

Product Specifications

Insoluble Matter	≤0.005%
Acidity (as HNO_3)	≤0.03%
Calcium	≤0.06%
Chloride	≤0.005%
Phosphate	≤0.001%
Potassium	≤0.02%
Sulfate	≤0.010%
Sodium	≤0.05%
Lead	≤0.005%
Magnesium	≤0.01%
Iron	≤0.001%

Zinc Oxide **Certified ACS**
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**Z52-500**	98.06	6/441.28
10kg	Poly Pail	**Z52-10**	496.05	- - - -

ZnO
F.W. 81.41
[1314-13-2]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.0%
Insoluble in Dilute H_2SO_4	≤0.01%
Alkalinity	To pass test
Chloride	≤0.001%
Nitrate	≤0.003%
Sulfur Compounds (as SO_4)	≤0.01%
Iron	≤0.001%
Lead	≤0.005%
Manganese	≤5ppm
Magnesium	≤0.005%
Potassium	≤0.01%
Sodium	≤0.05%
Calcium	≤0.005%

Zinc Stearate **USP**
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**Z784-500**	77.51	4/232.52

Stearic Acid Zinc Salt, Octadecanoic Acid Zinc Salt
$Zn(C_{18}H_{35}O_2)_2$
$C_{36}H_{70}O_4Zn$
F.W. 632.34
[557-05-1]

ChemAlert® STORAGE gray

Product Specifications

Assay (as ZnO)	12.5-14.0%
Alkalis and Alkaline Earths	≤1.0%
Arsenic	≤1.5ppm
Lead	≤0.001%
Organic Volatile Impurities	Meets the requirements

Zinc Sulfate Heptahydrate **USP/FCC**

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**Z76-500**	69.07	6/316.43
3kg	Poly Bottle	**Z76-3**	222.17	4/663.68
12kg	Poly Pail	**Z76-12**	711.54	- - - -

$ZnSO_4 \cdot 7H_2O$
F.W. 287.56
[7446-20-0]

ChemAlert® STORAGE gray

Product Specifications

Identification	To pass test
Meets USP Chemical Specifications	
Assay (as $ZnSO_4 \cdot 7H_2O$)	99.0-108.7%
Acidity	To pass test
Arsenic (As)	≤14ppm
Lead (Pb)	≤0.002%
Alkalies and Alkaline Earths	≤0.9%
Meets FCC Chemical Specifications	
Assay (as $ZnSO_4 \cdot 7H_2O$)	99.0-108.7%
Acidity	To pass test
Alkalies and Alkaline Earths	≤0.5%
Cadmium	≤2mg/kg
Lead	≤4mg/kg
Mercury	≤5mg/kg
Selenium	≤0.003%

Zinc Sulfate Heptahydrate **Certified ACS**
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**Z68-500**	83.14	6/373.32
3kg	Poly Bottle	**Z68-3**	381.69	4/1188.01

Salt of Vitriol, White Vitriol
$ZnSO_4 \cdot 7H_2O$
F.W. 287.58
[7446-20-0]

ChemAlert® STORAGE gray

Product Specifications

Actual Lot Analysis is reported on label.

Assay	99.0-103.0%
Insoluble Matter	≤0.01%
pH of a 5% Solution at 25°C	4.4 to 6.0
Chloride	≤5ppm
Nitrate	≤0.002%
Ammonium	≤0.001%
Iron	≤0.001%
Lead	≤0.003%
Manganese	≤3ppm
Calcium	≤0.005%
Magnesium	≤0.005%
Potassium	≤0.01%
Sodium	≤0.05%

Zinc Sulfate
1.180 Specific Gravity

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**9650-16**	17.53	- - - -
1L	Poly Natural	**9650-32**	25.64	- - - -
4L	Poly Natural	**9650-1**	71.84	- - - -

Application: For Concentration of Intestinal Parasites, Eggs, and Cysts
Solvent/Matrix: Aqueous solution
[7446-20-0 (Zinc Sulfate Heptahydrate)]
[7732-18-5 (Water, Deionized)]

Zirconium Oxide Anhydrous **Laboratory**
Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**Z83-500**	114.68	6/531.54

Zirconium Dioxide
ZrO_2
F.W. 123.22
C.I. 77990
[1314-23-4]

ChemAlert® STORAGE gray

Fisher BioReagents* Material Grades

Material Grade	Definition
Analytical Grade	Designates reagents suitable for use in analytical procedures.
Certified	Reagent chemicals for which the purity standard is established by Fisher Scientific. Purity is guaranteed to meet published maximum limits of impurities.
Certified ACS	Reagent chemicals that meet or exceed the latest ACS specifications.
Certified ACS Plus	Acids that meet or exceed the latest specifications of ACS, and in addition are analyzed for more than 16 metals.
DNA Grade	Designates reagents suitable for use in Molecular Biology applications involving the manipulation of DNA. Tested for specific contaminants such as DNase and protease.
DNA Synthesis	Designates reagents suitable for use with automated DNA synthesis instrumentation.
Electrophoresis	Material used specifically for electrophoresis applications.
Genetic Analysis Grade	Material that is specially prepared for various molecular cloning applications. Tested for specific contaminants such as DNase and RNase.
HPLC	Solvents manufactured specifically for use with HPLC instruments. Meet all ACS specifications. Submicron filtered.
IEF Grade	Material suitable for use with isoelectric focusing of proteins.
Islet Isolation Grade	Material suitable for isolation of pancreatic islets.
Molecular Biology Grade	Designates reagents suitable for use in Molecular Biology applications. Teasted for specific contaminants such as nucleases and bacteria where appropriate.
Molecular Genetics	Reagent chemicals that have been specifically purified and assayed for Molecular Genetics applications.
PCR Grade	Material suitable for use in polymerase chain reaction (PCR).
Peptide Synthesis	Designates reagents suitable for use with protein synthesis instrumentation.
Protein Electrophoresis Grade	Material used specifically for protein electrophoresis applications.
Sequencing	Material designed for use with automated DNA or protein sequencing equipment.
Super Pure	Material with a purity level exceeding the various monograph grades.
Tissue Culture Grade	Material of superior quality where there are no published standards, and that are suitable for use in Tissue Culture applications.

Acetic Acid, Glacial — Sequencing

Aldehyde-free

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Glass	**BP1185-500**	30.54	6/169.29

CH_3COOH

$C_2H_4O_2$

F.W. 60.05

Application: Aldehyde-free Acetic Acid is suitable for DNA sequencing and other biological applications.

[64-19-7]

Recommended storage: RT

Product Specifications

Assay	≥99.7%
Color (APHA)	≤10
Acetic Anhydride	≤0.01%
Chloride	≤0.4ppm
Copper	≤0.1ppm
Dilution Test	To pass test
Heavy Metals (as Pb)	≤0.5ppm
Iron	≤0.2ppm
Nickel	≤0.1ppm
Residue after Evaporation	≤8ppm
Impurities Reducing Dichromate	Not detected
Impurities Reducing Permanganate	Not detected
Sulfate	≤0.4ppm
Titratable Base	≤0.0004mEq/g

Acetic Acid, Glacial — Certified ACS Plus

Quantity	Packaging	Cat. No.	Each	Case of
2.5L	Glass	**BP2401-212**	107.74	----

Vinegar Acid

CH_3COOH

$C_2H_4O_2$

F.W. 60.05

Application: Acetic Acid, Glacial can be used for several biochemical procedures.

17.4N

[64-19-7]

Recommended storage: RT

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.7%
Color (APHA)	≤10
Dilution Test	To pass test
Residue after Evaporation	≤8ppm
Chloride	≤0.4ppm
Sulfate	≤0.4ppm
Heavy Metals (Pb)	≤0.5ppm
Acetic Anhydride [$(CH_3CO)_2O$]	≤0.01%
Titratable Base	≤0.0004mEq/g
Arsenic and Antimony (as As)	≤0.005ppm
Aluminum	≤0.3ppm
Boron	≤0.2ppm
Calcium	≤0.3ppm
Chromium	≤0.2ppm
Copper	≤0.1ppm
Gold	≤0.3ppm
Iron	≤0.2ppm
Lead	≤0.3ppm
Magnesium	≤0.3ppm
Manganese	≤0.3ppm
Nickel	≤0.1ppm
Potassium	≤0.3ppm
Sodium	≤0.3ppm
Tin	≤0.3ppm
Titanium	≤0.3ppm
Zinc	≤0.3ppm
Phosphate (PO_4^{3-})	≤1ppm
Substances Reducing Permanganate	To pass test
Substances Reducing Dichromate	To pass test

*Trademark. See Trademark Reference.

Acetone **Certified ACS**

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**BP2403-4**	140.82	4/505.48
20L	Steel Pail	**BP2403-20**	350.95	- - - -

Also available in recyclable FisherPak and NOWPak* containers.*

SOLVENT

ChemAlert® STORAGE red

Pyroacetic Ether, 2-Propanone, Dimethyl Ketone
CH_3COCH_3
C_3H_6O
F.W. 58.08
Melting point: -94°C
Boiling point: 56.2°C
Density: 0.78
Application: Acetone can be used for biomolecular extraction processes.
[67-64-1]
Recommended storage: RT

Product Specifications
Actual Lot Analysis is reported on label.

Assay	≥99.5%
Color (APHA)	≤10
Isopropyl Alcohol	≤0.05%
Density at 25°C	≤0.7857g/mL
Boiling Range (1 drop to dryness)	≤0.8°C
Boiling Point	56.1° ± 0.1°C
Residue after Evaporation	≤0.001%
Solubility in H_2O	To pass test
Aldehyde (as HCHO)	≤0.002%
Titratable Acid	≤0.0003mEq/g
Titratable Base	≤0.0006mEq/g
Methanol	≤0.05%
Substances Reducing Permanganate	To pass test
IR Transmittance	To pass test
Water	≤0.5%

▸ ***Acetonitrile, Anhydrous*** *Available from Fisher BioReagents*, BP1165-50. Please see Fishersci.com for complete ordering information.*

Acetonitrile **DNA Synthesis**
Anhydrous

Quantity	Packaging	Cat. No.	Each	Case of
450mL	Amber Glass	**BP1170-450**	35.66	6/190.66
4L	Amber Glass	**BP1170-4**	222.24	4/831.55
19L	NOWPak*	**BP1170N1-19**	699.87	- - - -

Also available in recyclable FisherPak.*

SOLVENT

ChemAlert® STORAGE red

Application: Acetonitrile Anhydrous is commonly used in DNA or peptide synthesis.
[75-05-8]
Recommended storage: RT

Product Specifications

Assay (by GLC)	≥99.9%
IR	Conforms to standard
Color (APHA)	≤10
Optical Absorbance:	
at 190nm	≤1.00
at 195nm	≤0.15
at 200nm	≤0.07
at 205nm	≤0.05
at 210nm	≤0.04
at 220nm	≤0.02
at 254nm	≤0.01
Fluorescence Background	To pass test
Refractive Index at 25°C	1.3405 to 1.3425
Titratable Acid	≤0.008mEq/g
Titratable Base	≤0.0006mEq/g
Residue after Evaporation	≤1.0ppm
Water	≤10ppm
LC Gradient Suitability	To pass test
Boiling Range (1 drop to dryness)	≤1.0°C (should include 81.6° ± 0.1°C)
Density at 25°C	0.775-0.780g/mL

▸ ***Acetonitrile Anhydrous, 99.9%*** *Available from Fisher BioReagents*, BP2600-100. Please see Fishersci.com for complete ordering information.*

▸ ***N-Acetylmuramidase*** *Available from Fisher BioReagents*, BP2640-10. Please see Fishersci.com for complete ordering information.*

Acrylamide **Electrophoresis**
White, Needle-like Crystals

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP170-100**	61.81	6/342.80
500g	Poly Bottle	**BP170-500**	173.61	6/1014.73
5kg	Poly Pail	**BP170-5**	1169.13	- - - -

ChemAlert® STORAGE blue

CH_2:$CHCONH_2$
C_3H_5NO
F.W. 71.08
Application: This Acrylamide is 3X recrystallized to obtain a high-purity crystalline material suitable for electrophoretic separation of proteins and nucleic acids.
[79-06-1]
Recommended storage: RT

Product Specifications

Assay	≥99.9%
Appearance	To pass test
Acrylic Acid	≤0.002%
Insoluble in H_2O	≤0.005%
Insoluble in Methanol	≤0.005%
pH of a 10% Solution in 0.1M NaCl	6.5 ± 0.5
Electrophoresis	To pass test
Iron	≤1ppm
Mercury	≤1ppm
Arsenic	≤1ppm
Lead	≤1ppm
Conductivity of a 50% Solution	≤2.50µmhos/cm
DNase	Not detected
RNase	Not detected
Protease	Not detected

Acrylamide Solution, 40% **Electrophoresis**

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**BP1402-1**	152.80	- - - -

ChemAlert® STORAGE blue

Application: 40% Acrylamide Solution is made from 3X recrystallized acrylamide and is suitable for electrophoretic separation of proteins and nucleic acids.
Recommended storage: 4°C

Product Specifications

Conductivity at 25°C	≤5µmhos/cm
Electrophoresis	To pass test
pH at 25°C	6.5 ± 0.5
Acrylic Acid	≤0.003%
DNase	Not detected
RNase	Not detected
Protease	Not detected

BP1402 is made from Acrylamide that meets BP170 specifications.

Acrylamide: Bis-Acrylamide 19:1 **Electrophoresis**
Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP1364-100**	60.22	- - - -

ChemAlert® STORAGE blue

Application: This dry powder mix is premixed for 5% cross-linking and is suitable for DNA sequencing and separation of low-molecular-weight proteins.
[79-06-1 (Acrylamide)]
[110-26-9 (Methylene Diacrylamide)]
Recommended storage: RT

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Product Specifications

Conductivity (30% aqueous solution)	≤10µmhos/cm
Solubility (30% aqueous solution)	Clean and clear
Electrophoresis	To pass test

BP1364 is made from Acrylamide and Bis-Acrylamide that meet BP170 and BP171 specifications, including being DNase-, RNase-, and Protease-free.

Acrylamide: Bis-Acrylamide 19:1 — Electrophoresis

40% Solution

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**BP1406-1**	182.92	- - - -

Application: This Acrylamide Solution is premixed for 5% cross-linking and is suitable for DNA sequencing and separation of low-molecular-weight proteins.

ChemAlert® STORAGE blue

[79-06-1 (Acrylamide)]
[110-26-9 (Methylene Diacrylamide)]
Recommended storage: 4°C

Product Specifications

Conductivity at 25°C	≤10µmhos/cm
Electrophoresis	To pass test

BP1406 is made from Acrylamide and Bis-Acrylamide that meet BP170 and BP171 specifications, including being DNase-, RNase-, and Protease-free.

Acrylamide: Bis-Acrylamide 29:1 — Electrophoresis

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP1366-100**	61.43	- - - -

Application: This dry powder mix is premixed for 3.3% cross-linking and is suitable for DNA sequencing and separation of proteins.

ChemAlert® STORAGE blue

[79-06-1 (Acrylamide)]
[110-26-9 (Methylene Diacrylamide)]
Recommended storage: RT

Product Specifications

Conductivity (30% aqueous solution)	≤10µmhos/cm
Solubility (30% aqueous solution)	Clean and clear
Electrophoresis	To pass test

BP1366 is made from Acrylamide and Bis-Acrylamide that meet BP170 and BP171 specifications, including being DNase-, RNase-, and Protease-free.

Acrylamide: Bis-Acrylamide 29:1 — Electrophoresis

40% Solution

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**BP1408-1**	176.50	- - - -

Application: This Acrylamide Solution is premixed for 3.3% cross-linking and is suitable for DNA sequencing and separation of proteins.

ChemAlert® STORAGE blue

[79-06-1 (Acrylamide)]
[110-26-9 (Methylene Diacrylamide)]
Recommended storage: 4°C

Product Specifications

Conductivity at 25°C	≤10µmhos/cm
Electrophoresis	To pass test

BP1408 is made from Acrylamide and Bis-Acrylamide that meet BP170 and BP171 specifications, including being DNase-, RNase-, and Protease-free.

Acrylamide: Bis-Acrylamide 37.5:1 — Electrophoresis

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP1368-100**	61.43	- - - -

Application: This dry powder mix is premixed for 2.6% cross-linking and is suitable for separation of high-molecular-weight proteins.

ChemAlert® STORAGE blue

[79-06-1 (Acrylamide)]
[110-26-9 (Methylene Diacrylamide)]
Recommended storage: RT

Product Specifications

Conductivity (30% aqueous solution)	≤10µmhos/cm
Solubility (30% aqueous solution)	Clean and clear
Electrophoresis	To pass test

BP1368 is made from Acrylamide and Bis-Acrylamide that meet BP170 and BP171 specifications, including being DNase-, RNase-, and Protease-free.

Acrylamide: Bis-Acrylamide 37.5:1 — Electrophoresis

40% Solution

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**BP1410-1**	179.24	- - - -

Application: This Acrylamide Solution is premixed for 2.6% cross-linking and is suitable for separation of high-molecular-weight proteins.

ChemAlert® STORAGE blue

[79-06-1 (Acrylamide)]
[110-26-9 (Methylene Diacrylamide)]
Recommended storage: 4°C

Product Specifications

Conductivity at 25°C	≤10µmhos/cm
Electrophoresis	To pass test

BP1410 is made from Acrylamide and Bis-Acrylamide that meet BP170 and BP171 specifications, including being DNase-, RNase-, and Protease-free.

▸ ***Acrylamide + SDS Starter Kit** Available from Fisher BioReagents*, BP201. Please see Fishersci.com for complete ordering information.*

Actinomycin-D

Red Crystals

Quantity	Packaging	Cat. No.	Each	Case of
5mg	Poly Micro Tube	**BP606-5**	76.94	- - - -
10mg	Poly Micro Tube	**BP606-10**	133.59	- - - -

Not on EPA-TSCA inventory; for Research and Development use only; not for manufacturing or commercial use.

ChemAlert® STORAGE blue

$C_{62}H_{86}N_{12}O_{16}$
F.W. 1255.44
Application: This antibiotic is a widely used transcription inhibitor.
Isolated from *Streptomyces parvuius.*
[50-76-0]
Recommended storage: 4°C

Product Specifications

Assay	≥98.0%
Melting Point	245°-252°C
Maximum Absorbance (λ Max.)	441nm
E Max	24700
Solubility (10mg/mL in Methanol and Methylene Chloride)	To pass test

Adenosine 5'-Triphosphate Disodium Salt Trihydrate

Quantity	Packaging	Cat. No.	Each	Case of
25g	Poly Bottle	**BP413-25**	166.38	6/918.02

Disodium Salt ATP

ChemAlert® STORAGE blue

$C_{10}H_{14}N_5O_{13}P_3Na_2 \cdot 3H_2O$
F.W. 605.24
Application: The disodium salt of ATP is suitable for use in many molecular biology applications.
[51963-61-2]
Recommended storage: Below 0°C

Product Specifications

Molar Extinction Coefficient (259nm, phosphate buffer, pH 7.0)	>15,000
Solubility (5% in H_20, 25°C)	Clear and haze-free
Lead	≤0.002%

*Trademark. See Trademark Reference.

AEBSF Hydrochloride
White to off-white Crystals

Quantity	Packaging	Cat. No.	Each	Case of
50mg	Poly Micro Tube	**BP635-50**	60.74	- - - -
100mg	Poly Micro Tube	**BP635-100**	133.71	- - - -
500mg	Poly Micro Tube	**BP635-500**	298.28	- - - -

4-(2-Aminoethyl)-Benzenesulfonyl Fluoride HCl
*Pefabloc**
$C_8H_{10}FNO_2S{\bullet}HCl$
F.W. 239.70

ChemAlert® STORAGE gray

Application: This specific, irreversible inhibitor of serine proteases is a stable, nontoxic alternative to PMSF.
[30827-99-7]
Recommended storage: RT

Product Specifications

Assay (TLC, HPLC)	≥98.0%
Melting Point	182.0°-190.0°C
Carbon	40.09% ± 0.5%
Hydrogen	4.62% ± 0.04%
Nitrogen	5.84% ± 0.2%
Sulfur	13.38% ± 0.1%
Solubility:	
20g in 100mL Water	To pass test
7.5g in 100mL Absolute Alcohol	>250TIU†/g

†*TIU=Trypsin Inhibitor Units determined using Pefachrome* TRY.*

Agar — Molecular Genetics
Granulated

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP1423-500**	113.45	6/605.82
2kg	Poly Pail	**BP1423-2**	448.57	- - - -

ChemAlert® STORAGE gray

Application: Agar, Granulated, is used as a solidifying agent in preparing microbiological culture media.
[9002-18-0]
Recommended storage: RT

Product Specifications

Gelling Point	~35°C
Growth promotion ability:	
S. aureus	Found
E. coli	Found

Agar (80-100 Mesh)
Cream powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP2641-100**	29.61	3/82.85
500g	Poly Bottle	**BP2641-500**	90.70	4/311.43
1kg	Poly Bottle	**BP2641-1**	143.00	6/747.65

ChemAlert® STORAGE gray

Product Specifications

Appearance	Cream powder
Botanic Characteristics	To pass test
Identity Test A	To pass test
Identity Test B	To pass test
Microbial Limits (Salmonella)	Negative
Water	≤20%
Total Ash (Dry Weight Basis)	≤6.5%
Acid Insoluble Ash	≤0.5%
Foreign Organic Matter	≤1.0%
Foreign Insoluble Matter	≤1.0%
Arsenic	≤3ppm
Lead	≤10ppm
Heavy Metals	≤40ppm
Foreign Starch	To pass test
Gelatin	To pass test
Water Absorption	To pass test
Particle Size (80-100 Mesh)	To pass test
Organic Volatile Impurities	To pass test

Constituted Solution	Conforms
Uniformity of Dosage Units	85.0-115.0%
%RSD	≤6.0%
pH	6.0 to 8.0
Water	≤5%
Chorionic Gonadotropin	10,500u/vial (80.0-125.0%)
Estrogenic Activity	Conforms
Sterility	Meets USP Requirements
Bacterial Endotoxins	≤0.03EU/unit
Diluent	Bacteriostatic Water

Agarose — Genetic Analysis Grade
Low-Melting, <1kb DNA/RNA

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP1360-100**	324.66	6/1775.58

ChemAlert® STORAGE gray

Application: Low melting temperature agarose. Certified recovery of small NA fragments. Outstanding resolution of PCR and RT-PCR fragments from 50 to 1000bp. In-gel PCR. In-gel ligations/transformations.
[9012-36-6]
Recommended storage: RT

Product Specifications

Melting Temperature	≤65°C
Gelation Temperature	<35°C
Gel Strength	$>500g/cm^2$
Sulfate Content	<0.15%
EEO (-Mr)	<0.15
Moisture Content	<10%
DNase	Not detected
RNase	Not detected

Agarose — Molecular Biology Grade
Low-Melting, Nucleic Acid Recovery

Quantity	Packaging	Cat. No.	Each	Case of
25g	Poly Bottle	**BP165-25**	154.54	6/823.00

ChemAlert® STORAGE gray

Application: Original low melting temperature agarose. NA separation from 200bp to 25kb. Preparative DNA and RNA electrophoresis. Ideally suited for DNA and RNA recovery. Cloning of tissue culture cells and viral plaque assays.
[9012-36-6]
Recommended storage: RT

Product Specifications

Melting Temperature	<65°C
Gelation Temperature	<26° to 30°C
Gel Strength	$>200g/cm^2$
Sulfate Content	<0.10%
EEO (-Mr)	<0.10
Moisture Content	<10%
DNase	Not detected
RNase	Not detected

Agarose — Genetic Analysis Grade
Broad Separation Range for DNA/RNA

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP1356-100**	200.38	6/1086.59
500g	Poly Bottle	**BP1356-500**	800.28	- - - -

ChemAlert® STORAGE gray

Application: Routine NA electrophoresis; broad resolution range 500bp to 25kb. Certified for recovery of DNA and RNA. Reliable digestion and ligation of recovered DNA or RNA fragments. Cloning.
[9012-36-6]
Recommended storage: RT

Product Specifications

Gelation Temperature	34.5° to 37.5°C
Gel Strength	$>1200g/cm^2$
Sulfate Content	<0.15%
EEO (-Mr)	<0.15

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Moisture Content	<10%
DNase	Not detected
RNase	Not detected

Agarose — PCR Grade
Intermediate Melting

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP2410-100**	286.66	6/1575.90

Application: Separation of low MW DNA <100bp. PCR analysis applications.
[9012-36-6]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Melting Temperature	<80°C
Gelation Temperature	≤35.5°C
Gel Strength (3%)	≥1200g/cm^2
Sulfate Content	≤0.11%
EEO (-Mr)	≤0.12
DNase	Not detected
RNase	Not detected

Agarose — Protein Electrophoresis Grade
High Gelling Temperature

Quantity	Packaging	Cat. No.	Each	Case of
25g	Poly Bottle	**BP164-25**	66.30	6/355.78
100g	Poly Bottle	**BP164-100**	192.71	6/1039.22
500g	Poly Bottle	**BP164-500**	662.79	6/3615.20

Application: Crossed-IEP. Counter-immunoelectrophoresis (CIEP). Protein electrophoresis.
[9012-36-6]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Gelation Temperature	<40.5° - 43.5°C
Gel Strength	>800g/cm^2
Sulfate Content	<0.15%
EEO (-Mr)	<0.1
Moisture Content	<10%
DNase	Not detected
RNase	Not detected

Agarose — Molecular Biology Grade
Low-EEO/Multi-Purpose

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP160-100**	138.71	6/752.19
500g	Poly Bottle	**BP160-500**	456.58	6/2490.38

Application: Routine electrophoresis of DNA and RNA; wide resolution range 500bp to 23kb. High gel strength ideal for Southern and Northern blotting. PCR >1kb. Immunoprecipitation techniques. Baculovirus screening. Colony lifts.
[9012-36-6]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Gelation Temperature	34.5° - 37.5°C
Gel Strength	>1200g/cm^2
Sulfate Content	<0.15%
EEO (-Mr)	0.09 to 0.13
Moisture Content	<10%
DNase	Not detected
RNase	Not detected

Agarose — Protein Electrophoresis Grade
Medium-EEO

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP161-100**	187.92	6/1001.88

Application: Ideal alternative to polyacrylamide for serum protein electrophoresis. Immunoelectrophoresis. Electrophoresis of nucleic acids.
[9012-36-6]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Gelation Temperature	34.5° - 37.5°C
Gel Strength	>1000g/cm^2
Sulfate Content	<0.15%
EEO (-Mr)	0.16 to 0.19
Moisture Content	<10%
DNase	Not detected
RNase	Not detected

Agarose — Protein Electrophoresis Grade
High-EEO

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP162-100**	195.78	6/1054.22

Application: Immunoelectrophoresis (IEP). Crossed-IEP. Counter-immunoelectrophoresis (CIEP). Serum protein electrophoresis.
[9012-36-6]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Gelation Temperature	34.5° - 37.5°C
Gel Strength	>650g/cm^2
Sulfate Content	<0.15%
EEO (-Mr)	0.23 to 0.26
Moisture Content	<10%
DNase	Not detected
RNase	Not detected

▸**Agarose, IEF Grade** *Available from Fisher BioReagents*, BP163-10. Please see Fishersci.com for complete ordering information.*

Agarose Gel-Loading Dye, 6X — Molecular Biology
Contains 15% Ficoll 400*

Quantity	Packaging	Cat. No.	Each	Case of
5mL	Poly Bottle	**BP633-5**	60.61	- - - -

Application: This tracking dye is added to DNA and RNA samples prior to electrophoresis on agarose gels.
Components: Amaranth (<1.0%), Ficoll (15%), Proprietary Component (<1.0%), and Water.
[915-67-3 (Amaranth)]
[26873-85-8 (Ficoll)]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Description	Dark purple slightly viscous liquid
Optical Absorbance (dilution, 1:500 with deionized water):	
at 525nm	0.3 to 0.6
at 588-594nm	0.5 to 0.8
at 635-641nm	0.5 to 0.7
DNase	Not detected
RNase	Not detected

L-Alanine
White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP369-100**	74.40	6/416.57

L-α-amino propionic acid
$C_3H_7NO_2$
F.W. 89.09

ChemAlert® STORAGE **gray**

Application: This amino acid is suitable for use in tissue culture systems requiring additives.
[56-41-7]
Recommended storage: RT

Product Specifications

Assay	98.5-101.0%
Ammonium	≤0.02%
Heavy Metals (Pb)	≤10ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying at 105°C	≤0.20%
Residue on Ignition (sulfated)	≤0.10%
Arsenic	≤1ppm
State of Solution	≥98.0% transmittance
Specific Rotation $[\alpha]_D^{20}$ (c=10, 6N HCl)	+14.3° to +15.2°

▸***Amikacin*** *Available from Fisher BioReagents*, BP2643-1. Please see Fishersci.com for complete ordering information.*

4-(2-Aminoethyl)benzenesulfonyl Fluoride Hydrochloride
White Powder

Quantity	Packaging	Cat. No.	Each	Case of
10mg	Amber Glass	**BP2644-10**	20.71	5/96.88
50mg	Amber Glass	**BP2644-50**	49.06	5/206.29
100mg	Amber Glass	**BP2644-100**	81.36	5/369.97
500mg	Amber Glass	**BP2644-500**	295.33	9/2515.47
1g	Amber Glass	**BP2644-1**	438.04	9/3760.27

AEBSF
$C_8H_{10}FNO_2S•HCl$
F.W. 239.7

ChemAlert® STORAGE **gray**

Application: 4-(2-aminoethyl)benzenesulfonyl fluoride hydrochloride is a covalent binding serine protease inhibitor. Similiar in structure to the commonly used inhibitor PMSF, AEBSF offers better solubility in water, lower toxicity, greater stability and higher inhibitory activity.
AEBSF belongs to the family of irreversible sulfonyl fluoride inhibitors that block trypsin and chymotrypsin-type enzymes.
[30827-99-7]
Recommended storage: RT, protect from light.

Product Specifications

Purity (by HPLC)	≥97%
FTIR	Conforms to reference
Melting Point	175°–185°C

Ammonium Acetate
White Crystals

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP326-500**	43.73	6/242.41
1kg	Amber Glass	**BP326-1**	83.13	4/307.37

Acetic Acid Ammonium Salt
CH_3COONH_4
$C_2H_7NO_2$
F.W. 77.08

ChemAlert® STORAGE **gray**

Application: Ammonium acetate can be used to precipitate DNA from enzymatic reactions.
[631-61-8]
Recommended storage: 4°C

Product Specifications

Assay	≥98.0%
Chloride	≤5ppm
Heavy Metals (as Pb)	≤5ppm
Insoluble Matter	≤0.005%
Iron	≤5ppm
Nitrate	≤0.001%
pH of a 5% Solution at 25°C	6.7 to 7.3
Residue after Ignition	≤0.01%
Sulfate	≤0.001%
Filtration Test	To pass test
Optical Absorbance of a 1M Solution:	
at 254nm	≤0.02
at 280nm	≤0.01
at 350nm	≤0.01

Ammonium Bicarbonate
Fine, White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP2413-500**	58.50	6/304.26

Acid Ammonium Carbonate, Ammonium Hydrogen Carbonate
NH_4HCO_3
CH_5NO_3
F.W. 79.06

ChemAlert® STORAGE **gray**

Application: Ammonium bicarbonate is used for many biochemical applications.
[1066-33-7]
Recommended storage: RT

Product Specifications

Assay (as NH_3)	21.30 to 21.73
Chloride	≤5ppm
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Residue after Ignition	≤0.005%
Sulfate	≤0.002%

Ammonium Persulfate **Electrophoresis**
Colorless-to-white Crystals

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**BP179-25**	23.12	6/128.05
100g	Amber Glass	**BP179-100**	31.15	6/172.66

APS, Ammonium Peroxydisulfate
$(NH_4)_2S_2O_8$
F.W. 228.20

ChemAlert® STORAGE **yellow**

Application: Electrophoresis-grade Ammonium persulfate is an initiator of acrylamide polymerization for the preparation of polyacrylamide electrophoresis gels.
[7727-54-0]
Recommended storage: RT

Product Specifications

Assay	≥98.0%
Titratable Free Acid	≤0.04mEq/g
Chloride and Chlorate (as Cl)	≤0.001%
Heavy Metals (as Pb)	≤0.005%
Insoluble Matter	≤0.005%
Iron	≤0.001%
Manganese	≤0.5ppm
Residue after Ignition	≤0.05%

▸***Ammonium Phosphate Monobasic*** *Available from Fisher BioReagents*, BP2427-500. Please see Fishersci.com for complete ordering information.*

Amphotericin B
Yellow Powder

Quantity	Packaging	Cat. No.	Each	Case of
250mg	Amber Glass	**BP928-250**	68.28	- - - -

$C_{47}H_{73}NO_{17}$
F.W. 924.1
Application: Amphotericin B is an antibiotic used for controlling microbial and fungal contamination in tissue culture applications.
[1397-89-3]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Loss on Drying at 105°C	≤5.0%
Amphotericin A	≤15%

Ampicillin Trihydrate
Off-white Powder

Quantity	Packaging	Cat. No.	Each	Case of
25g	Poly Bottle	**BP902-25**	70.18	- - - -

$C_{16}H_{19}N_3O_4S \cdot 3H_2O$
F.W. 403.45
[7177-48-2]
Recommended storage: 4°C

ChemAlert® STORAGE gray

Product Specifications

Assay	≥90%
pH of a 1% Solution at 25°C	3.5 to 6.0

Ampicillin Sodium Salt
Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
5g	Poly Bottle	**BP1760-5**	46.45	- - - -
25g	Poly Bottle	**BP1760-25**	61.31	6/319.88

$C_{16}H_{18}N_3NaO_4S$
F.W. 371.39
[69-52-3]
Recommended storage: 4°C

ChemAlert® STORAGE blue

Product Specifications

Potency	845-988µg/mg
Moisture	<2.0%
pH of a 1% Aqueous Solution	8.0 to 10.0
Dimethylaniline	<0.002%

▸***Antibiotic A23187*** *Available from Fisher BioReagents*, BP2502-5. Please see Fishersci.com for complete ordering information.*

▸***D-(-)-Arabinose*** *Available from Fisher BioReagents*, BP2504-1. Please see Fishersci.com for complete ordering information.*

L-Arginine
White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP370-100**	35.93	6/203.10

$C_6H_{14}N_4O_2$
F.W. 174.20
Application: This amino acid is suitable for use in tissue culture systems requiring additives.
[74-79-3]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Assay	98.5-101.0%
Specific Rotation $[\alpha]_D^{20}$ (c=8, HCl)	+26.9° to +27.9°
State of Solution	≥98.0% transmittance
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying at 105°C	≤0.5%
Residue on Ignition (sulfated)	≤0.10%

L-Arginine, Free Base
White Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP2505-100**	34.18	3/96.60
500g	Poly Bottle	**BP2505-500**	100.72	4/366.63
1kg	Poly Bottle	**BP2505-1**	169.07	6/937.06

2-amino-5-guanidinovaleric acid
(S)-2-amino-5-[(aminoiminomethyl)amino]pentanoic acid
$C_6H_{14}N_4O_2$
F.W. 174.2
Application: L-Arginine is an essential amino acid used in biochemical research applications.
[74-79-3]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Assay	≥99%
Optical Rotation (c=1.6, 6N HCl)	+26.3° to +27.7°
Moisture	≤0.3%
FTIR	Conforms to standard
Melting Point	225-240°C

L-Arginine Hydrochloride
White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP372-100**	33.62	6/190.82

$C_6H_{14}N_4O_2 \cdot HCl$
F.W. 210.66
Application: The hydrochloride salt of L-arginine is suitable for use in tissue culture systems requiring additives and has many of the same applications as L-arginine.
[1119-34-2]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Assay	≥98.5-101%
Specific Rotation $[\alpha]_D^{20}$ (dried sample, c=8, 6N HCl)	+22° to +23° (+26.7° to +27.7° calc. as free base)
State of Solution	≥98.0% transmittance
Chloride	16.58-17.00%
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids (chromatographic detection)	≤1%
Loss on Drying at 105°C	≤0.20%
Residue on Ignition (sulfated)	≤0.10%

L-Ascorbic Acid
White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP351-500**	61.81	6/336.01

Vitamin C
$C_6H_8O_6$
F.W. 176.12
Application: Ascorbic acid is suitable for use in tissue culture systems requiring additives.
Not for human use.
[50-81-7]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Assay	≥99.0%
Specific Rotation at 25°C (c=10, H_2O)	+20.5° to +21.5°
Residue after Ignition	≤0.1%
Heavy Metals (as Pb)	≤0.002%
Iron	≤0.001%

***Avidin** Available from Fisher BioReagents*, BP2506-1. Please see Fishersci.com for complete ordering information.*

BamH I
Source: Bacillus amyloliquefaciens H

Quantity	Packaging	Cat. No.	Each	Case of
12,500 units	Poly Tube	**BP3320-5**	161.46	- - - -

ChemAlert® STORAGE gray

Application: *Bam*H I restriction endonuclease digests dsDNA with sequence indicated below.

G'GATC C

C CTAG'G

Concentration: 10 units/µL

High Concentration (HC): 40-80 units/µL

Isoschizomers: None

Heat Inactivated +

Qualified for Blue/White Cloning Assays.

Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 300mM KCl, 5mM $MgCl_2$, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA and 50% glycerol.

Recommended storage: -20°C

Product Specifications

Percent Activity in Quad 4* Buffer System:

A	75–100%
B	75–100%
C	75–100%
D	50–75%
E	100%
UNIVERSAL*	75–100%

Frequency of Cutting:

λ	5
Ad-2	3
ΦX174	0
pUC18	1
M13mp18	1
pBR322	1

Benzamidine Hydrochloride Hydrate
White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
1kg	Amber Glass	**BP435-1**	1402.90	6/6733.92
25g	Poly Bottle	**BP435-25**	76.85	6/417.80

Benzamidinium Chloride

$C_7H_8N_2{\bullet}HCl{\bullet}xH_2O$

ChemAlert® STORAGE gray

F.W. 156.61

Application: Benzamidine hydrochloride is commonly used as a protease inhibitor.

[1670-14-0]

Recommended storage: 4°C

Product Specifications

Assay	≥99.0%
Solubility (1% in H_2O at Room Temp.)	Clear and haze-free
Lambda Max. (λ) (in Methanol)	230nm ± 5nm
Heavy Metals (as Pb)	≤0.005%
Water (internal)	≤15%

Bicine
White Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP2646-100**	51.66	3/142.43
250g	Poly Bottle	**BP2646-250**	97.49	4/344.87
1kg	Poly Bottle	**BP2646-1**	328.13	6/1810.18

N,N-bis [2-hydroxyethyl]glycine

$(HOCH_2CH_2)_2NCH_2COOH$

$C_6H_{13}NO_4$

ChemAlert® STORAGE gray

F.W. 163.2

Application: Bicine is one of the zwitterionic amino acids known as "good" buffers. Used as a biological buffer and chelating agent.

[150-25-4]

Recommended storage: RT

Product Specifications

FTIR	Conforms to standard
pH (1% aqueous solution)	4.5 to 5.5
OD_{260nm} (10% aqueous solution)	<0.100
OD_{280nm} (10% aqueous solution)	<0.100

***Biotech Grade Water** see Water (Biotech Grade), BP2485-4.*

D-Biotin

Quantity	Packaging	Cat. No.	Each	Case of
1g	Amber Glass	**BP232-1**	73.33	6/398.73

Vitamin B_7

$C_{10}H_{16}N_2O_3S$

ChemAlert® STORAGE gray

F.W. 244.31

Application: D-Biotin, which forms a stable complex with avidin, is useful in the study of avidin-biotin interactions and in affinity chromatography.

Not for human use.

[58-85-5]

Recommended storage: -20°C

Product Specifications

Assay	97.5 - 100.5%
IR	Conforms to standard
Specific Rotation $[\alpha]_D^{25}$ (c=1, 0.1N NaOH)	+89° to +93°

Bis-Acrylamide
Electrophoresis

Quantity	Packaging	Cat. No.	Each	Case of
25g	Poly Bottle	**BP171-25**	39.56	6/232.86
100g	Poly Bottle	**BP171-100**	93.17	6/506.56

N,N'–Methylene-bis-acrylamide

$CH_2CHCONHCH_2NHCOCHCH_2$

$C_7H_{10}N_2O_2$

ChemAlert® STORAGE gray

F.W. 154.17

Application: Bis-Acrylamide is a cross-linker commonly used in the preparation of polyacrylamide electrophoresis gels.

[110-26-9]

Recommended storage: 4°C

Product Specifications

Assay	≥95%
pH of a 1% Solution in 0.1M NaCl	≥5.0
Absorbance of a 1% Solution at 290nm	≤0.2
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

Bis-Tris
Fine White Crystals

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP301-100**	80.27	6/436.34

2-(Bis-2(hydroxyethyl)imino)-2-(hydroxymethyl)-1,3-propanediol

$(HOCH_2CH_2)_2NC(CH_2OH)_3$

$C_8H_{19}NO_5$

F.W. 209.2

ChemAlert® STORAGE gray

Application: This biological buffer has a usable pH range of 5.8 to 7.2.

[6976-37-0]

Recommended storage: RT

Product Specifications

Assay	≥99%
pK_a at 25°C	6.5 ± 0.2
Melting Point	104°C ± 2°C

Blasticidin S Hydrochloride
From Streptomyces griseochromogenes
White Powder

Quantity	Packaging	Cat. No.	Each	Case of
25mg	Amber Glass	**BP2647-25**	114.07	10/1055.37
50mg	Amber Glass	**BP2647-50**	171.79	5/809.75
100mg	Amber Glass	**BP2647-100**	300.44	5/1381.11

BLA-S, Cytovirin

$C_{17}H_{26}N_8O_5 \cdot HCl$

F.W. 422.44

[2079-00-7]

ChemAlert® STORAGE blue

Recommended storage: 0° to 5°C

Product Specifications

Melting Point	235° – 236°C

Boric Acid — Electrophoresis
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP168-500**	34.39	6/191.38
1kg	Poly Bottle	**BP168-1**	57.50	6/313.93

H_3BO_3

F.W. 61.83

ChemAlert® STORAGE gray

Application: This high-purity Electrophoresis-grade reagent is used in the preparation of Tris/Borate/EDTA electrophoresis buffers.

[10043-35-3]

Recommended storage: RT

Product Specifications

Assay	≥99.0%
Calcium	≤0.005%
Chloride	≤0.001%
Heavy Metals (as Pb)	≤0.001%
Insoluble in Methanol	≤0.005%
Iron	≤0.001%
Nonvolatile with Methanol	≤0.05%
Phosphate	≤0.001%
Sulfate	≤0.010%
Electrophoresis	To pass test
DNase	Not detected

Bovine Serum Albumin
Lyophilized Powder

Quantity	Packaging	Cat. No.	Each	Case of
1g	Amber Glass	**BP671-1**	57.68	- - - -
10g	Amber Glass	**BP671-10**	246.84	- - - -

BSA

ChemAlert® STORAGE gray

Application: Bovine serum albumin is used as a protein stabilizer and blocking agent.

[9048-46-8]

Recommended storage: 2° to 8°C

Product Specifications

Assay (by electrophoresis)	≥99.0%
Loss on Drying (at 105°C, 4Hr.)	≤5.0%
pH at 25°C (7% Solution in H_2O)	5.0 to 5.4
Heavy Metals (as Pb)	≤0.002%
Ash (sulfonated)	≤0.5%
DNase	Not detected
RNase	Not detected
Protease	Not detected

Bovine Serum Albumin Solution
20mg/ml

Quantity	Packaging	Cat. No.	Each	Case of
1mL	Amber Glass	**BP675-1**	55.79	- - - -
5mL	Amber Glass	**BP675-5**	212.91	- - - -

Application: Bovine serum albumin is used as a protein stabilizer and blocking agent.

ChemAlert® STORAGE gray

[9048-46-8]

Recommended storage: 2° to 8°C

Product Specifications

Total Protein (Bradford)	18-22mg/mL
Optical Absorbance (dilution, 1:40 in water):	
at 280nm	0.25 to 0.35
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

Bovine Serum Albumin (Fraction V)
Cold-ethanol Precipitated

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP1605-100**	210.07	- - - -

BSA (Fraction V)

ChemAlert® STORAGE gray

Application: Cold-ethanol precipitated bovine serum albumin is used as a stabilizer for enzymes or enzymatic reactions, or as a blocker of nonspecific sites.

[9048-46-8]

Recommended storage: 4°C

Product Specifications

Assay	≥98%
Heavy Metals (as Pb)	≤0.002%
Moisture	≤5%
pH (1% Solution in 0.9% NaCl)	7.0 ± 0.3
Solubility (0.4g/10mL H_2O)	Clear and haze-free
Sulfated Ash	≤2%

Bovine Serum Albumin (Fraction V)
Heat-shock Treated

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP1600-100**	150.56	- - - -
1kg	Poly Bottle	**BP1600-1**	933.41	4/3328.21

BSA (Fraction V)

ChemAlert® STORAGE gray

Application: Heat-shock Treated Bovine Serum Albumin is suitable for immunological studies.

[9048-46-8]

Recommended storage: 4°C

Product Specifications

Assay	≥98%
Heavy Metals (as Pb)	≤0.002%
Loss on Drying at 105°C	≤5%
pH (1% Solution in 0.9% NaCl)	7.0 ± 0.3
Solubility (0.4g/10mL H_2O)	Clear and haze-free
Sulfated Ash	≤2%

Brij* 35

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP345-500**	30.67	6/169.84

Polyoxyethylene (23) Lauryl Ether
$(C_2H_4O)_{23}C_{12}H_{26}O$
$C_{58}H_{118}O_{24}$

ChemAlert® STORAGE gray

Application: This nonionic detergent is used for solubilizing proteins and isolating membrane complexes.
Avg. Molecular Wt.: 1198
[9002-92-0]
Recommended storage: RT

Product Specifications

Hydroxyl Number	40 to 60
Water	≤3.0%

Brilliant Blue G-250

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**BP100-25**	87.10	6/473.49
50g	Amber Glass	**BP100-50**	145.92	6/845.42

Coomassie Blue G-250*
$C_{47}H_{48}N_3O_7S_2Na$
F.W. 854.01

ChemAlert® STORAGE gray

Application: Brilliant Blue G-250 is a general protein stain.
C.I. 42655
[6104-58-1]
Recommended storage: RT

Product Specifications

Solubility	To pass test
Loss on Drying at 105°C	≤5%
$E^{1\%}_{1cm}$	≥600L $g^{-1}cm^{-1}$
Lambda Max. (λ)	610nm ± 2nm

Brilliant Blue R-250

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**BP101-25**	68.66	6/373.20
50g	Amber Glass	**BP101-50**	116.71	6/644.06

Coomassie Blue R-250*
$C_{45}H_{44}N_3O_7S_2Na$
F.W. 825.99

ChemAlert® STORAGE gray

Application: Brilliant Blue R-250 is commonly used for staining proteins in polyacrylamide gels.
C.I. 42660
[6104-59-2]
Recommended storage: RT

Product Specifications

Solubility	To pass test
Loss on Drying at 105°C	≤5%
$E^{1\%}_{1cm}$	≥700L $g^{-1}cm^{-1}$
Lambda Max. (λ)	592nm ± 2nm
Protease	Not detected

▸**8-Bromoadenine** *Available from Fisher BioReagents*, BP2507-100. Please see Fishersci.com for complete ordering information.*

5-Bromo-4-chloro-3-indolyl-β-D-galactopyranoside

Quantity	Packaging	Cat. No.	Each	Case of
100mg	Amber Glass	**BP1615-100**	83.02	6/439.67
1g	Amber Glass	**BP1615-1**	391.52	6/2114.16

X-Gal
$C_{14}H_{15}NO_6BrCl$
F.W. 408.64

ChemAlert® STORAGE gray

Application: X-Gal is a chromogenic substrate for the enzyme β-Galactosidase used in the detection of recombinant bacteriophage. It is also used for immunoblotting and immunocytochemical assays.
[7240-90-6]
Recommended storage: -20°C

Product Specifications

IR	Conforms to standard
Molar Extinction (292 ± 2nm)	≥4000L $g^{-1}cm^{-1}$
Solubility (5% in DMF)	Clear and colorless
Specific Rotation (c=0.1, 50% DMF)	-60° ± 4°
TLC	Single spot

5-Bromo-2'-Deoxyuridine
Off-white Powder

Quantity	Packaging	Cat. No.	Each	Case of
250mg	Amber Glass	**BP2508-250**	30.16	5/139.12
500mg	Amber Glass	**BP2508-500**	45.54	9/392.65
1g	Amber Glass	**BP2508-1**	78.01	9/669.21
5g	Amber Glass	**BP2508-5**	295.50	9/2541.38

5- Bromouracil-2-deoxyriboside
$C_9H_{11}BrN_2O_5$
F.W. 307.1

ChemAlert® STORAGE gray

Application: 5-Bromo-2'-deoxyuridine is a thymidine analog used as a mutagen in genetic research.
[59-14-3]
Recommended storage: -20°C

Product Specifications

Assay	>99%
Melting Point	183 -193°C
FTIR	Conforms to standard
UV/VIS: λ_{max} (H_2O)	279, (209)nm ± 3nm

Bromophenol Blue Sodium Salt

Quantity	Packaging	Cat. No.	Each	Case of
25g	Amber Glass	**BP114-25**	104.04	6/565.50

3,3',5,5'-Tetrabromophenolsulfonphthalein sodium salt
$C_{19}H_9Br_4NaO_5S$
F.W. 691.94

ChemAlert® STORAGE gray

Application: Bromophenol Blue Sodium Salt is commonly used as a tracking dye in electrophoresis.
[62625-28-9]
Recommended storage: RT

Product Specifications

Lambda Max. (λ) in 0.05M Sodium Acetate	585-595nm
$E^{1\%}_{1cm}$	≥800L $g^{-1}cm^{-1}$
Clarity of Solution	To pass test
Visual Transition Interval	To pass test

▸**BSA** *see Bovine Serum Albumin, BP671-10 and BP675-5.*

▸**BSA (Fraction V)** *see Bovine Serum Albumin (Fraction V), BP1605-100 and BP1600-100.*

▸**Bsp1286 I** *Available from Fisher BioReagents*, BP3328-1. Please see Fishersci.com for complete ordering information.*

▸**BsrBR I** *Available from Fisher BioReagents*, BP3330-1. Please see Fishersci.com for complete ordering information.*

n-Butanol
Clear Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
25mL	Amber Glass	**BP505-25**	25.79	6/149.98
500mL	Amber Glass	**BP505-500**	107.61	6/593.99

1-Butanol, n-Butyl Alcohol
$CH_3CH_2CH_2CH_2OH$
$C_4H_{10}O$
F.W. 74.07

ChemAlert® STORAGE red

Application: n-Butanol is used as an analytical reagent and solvent.
[71-36-3]
Recommended storage: RT

Product Specifications

Assay	≥99.8%
Color (APHA)	≤5
Isobutanol	≤0.1%
Water	≤0.1%
Acidity	≤0.005%
Aldehydes	None
Chlorides	None

Cacodylic Acid
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle/ Poison Pack	**BP324-100**	208.07	- - - -

Dimethylarsinic Acid
$(CH_3)_2As(O)OH$
$C_2H_7AsO_2$
F.W. 138.00

ChemAlert® STORAGE blue

Application: Cacodylic acid is used in buffers for DNA sequencing and recombinant DNA procedures.
[75-60-5]
Recommended storage: RT

Product Specifications

Assay (dry basis)	≥99%
IR	Conforms to standard
Melting Point	195°-196°C
Solubility (10g/100mL H_2O)	Clear and colorless

Calcium Chloride Dihydrate
White Crystals to Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP510-100**	22.23	- - - -
250g	Poly Bottle	**BP510-250**	30.21	6/167.43
500g	Poly Bottle	**BP510-500**	41.71	6/231.15

$CaCl_2 \cdot 2H_2O$
F.W. 147.02

ChemAlert® STORAGE gray

Application: Calcium chloride is suitable for use in the preparation of buffer solutions.
[10035-04-8]
Recommended storage: RT

Product Specifications

Assay	≥99-103.3%
pH (5% solution in H_20 at 25°C)	4.5 to 8.5
DNase	Not detected
RNase	Not detected
Protease	Not detected

CAPS
Fine White Crystals

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP321-100**	59.49	6/323.44
500g	Amber Glass	**BP321-500**	247.89	6/1367.91

3-Cyclohexylamino-1-Propanesulfonic Acid
$C_6H_{11}NH(CH_2)_3SO_3H$
$C_9H_{19}NO_3S$
F.W. 221.32

ChemAlert® STORAGE gray

Application: This biological buffer has a usable pH range of 9.7 to 11.1.
[1135-40-6]
Recommended storage: RT

Product Specifications

Assay	≥98%
IR	Conforms to standard
pK_a at 25°C	10.4 ± 0.2

Carbenicillin Disodium Salt
White Powder

Quantity	Packaging	Cat. No.	Each	Case of
250mg	Amber Glass	**BP2648-250**	37.06	- - - -
1g	Amber Glass	**BP2648-1**	97.60	- - - -
5g	Amber Glass	**BP2648-5**	274.71	6/1480.24

α-Carboxybenzylpenicillin
$C_{17}H_{16}N_2O_6SNa_2$
F.W. 422.4
[4800-94-6]

ChemAlert® STORAGE gray

Recommended storage: 0° to 5°C

Product Specifications

Potency	≥770mcg/mg
pH at 25°C (1%, water)	6.5 to 8.0
Water Content	≤6.0%

Casamino Acids
Molecular Genetics

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP1424-100**	43.83	6/232.18
500g	Poly Bottle	**BP1424-500**	92.38	6/475.73
2kg	Poly Pail	**BP1424-2**	373.64	4/1338.99

Application: Casamino acids is an acid-hydrolyzed casein used in culture media. Its low concentrations of sodium chloride and iron permit toxin production.
[65072-00-6]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Growth promotion ability:

S. aureus	Found
E. coli	Found

▸**Cathepsin D** *Available from Fisher BioReagents*, BP2509-15. Please see Fishersci.com for complete ordering information.*

Cesium Chloride

Molecular Biology

White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP210-100**	138.30	6/776.11
500g	Poly Bottle	**BP210-500**	425.64	6/2402.97
1kg	Poly Bottle	**BP210-1**	663.33	6/3547.78

CsCl

F.W. 168.36

ChemAlert® STORAGE gray

Application: This Molecular Biology-grade cesium chloride is ideal for UV analysis of nucleic acids during density-gradient centrifugation and for the isolation of plasmid DNA, phage DNA, virus particles, and RNA.

[7647-17-8]

Recommended storage: RT

Product Specifications

Assay	≥99.999%
UV A_{260nm} of a 50% Solution (w/v)	≤0.02
Refractive Index of a 50% Solution	1.369 ± 0.002
Potassium	≤2ppm
Sodium	≤4ppm
Lithium	≤1ppm
DNase	Not detected
RNase	Not detected
Protease	Not detected

Cesium Chloride

Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP1595-500**	303.50	6/1713.49
1kg	Poly Bottle	**BP1595-1**	451.45	6/2548.64

CsCl

F.W. 168.37

ChemAlert® STORAGE gray

Application: This economical grade of cesium chloride can be used where low levels of metal ion impurities do not interfere. It is recommended for isolating phage DNA, plasmid DNA, or total RNA.

[7647-17-8]

Recommended storage: RT

Product Specifications

Assay	≥99.5%
Refractive Index (50% solution at 25°C)	1.369 ± 0.005
UV A_{260nm} of a 50% Solution (w/v)	≤0.08
Potassium	≤0.03%
Sodium	≤0.02%
Lithium	≤0.0002%
DNase	Not detected
RNase	Not detected
Protease	Not detected

CHAPS

White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
1g	Amber Glass	**BP571-1**	41.39	6/240.84
5g	Amber Glass	**BP571-5**	127.14	6/705.92

3-[(3-Cholamidopropyl) dimethylammonio]-1-propanesulfonate

$C_{32}H_{58}N_2SO_7$

F.W. 614.9

ChemAlert® STORAGE gray

Application: CHAPS is a zwitterionic detergent used for solubilizing membrane proteins.

[75621-03-3]

Recommended storage: RT

Product Specifications

Assay (TLC)	≥98%
Solubility (0.5g/50mL)	Clear and colorless liquid
Optical Absorbance (1%):	
260nm	≤0.1
280nm	≤0.1

Conductivity of a 10% Aqueous Solution at 24°C	<50µmhos/cm
pH of a 10% Solution	5.0-7.0
FTIR	Conforms to standard

▸CHAPSO *Available from Fisher BioReagents*, BP575-500. Please see Fishersci.com for complete ordering information.*

Chloramphenicol

Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP904-100**	117.17	6/680.61

$C_{11}H_{12}Cl_2N_2O_5$

F.W. 323.13

ChemAlert® STORAGE gray

Not for drug use.

[56-75-7]

Recommended storage: RT

Product Specifications

Specific Rotation (25°C ± 0.5°C, c=5, Ethanol)	+17° to +20°
pH of a 2.5% Solution	4.5 to 7.4
Melting Range	149°-153°C

Chloroform

Molecular Biology

Approx. 0.75% Ethanol as Preservative

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**BP1145-1**	40.23	6/223.77

$CHCl_3$

F.W. 119.38

SOLVENT

ChemAlert® STORAGE blue

Application: This solvent is used in phenol/chloroform extractions to remove proteins from DNA or RNA samples.

With preservative.

[67-66-3]

[64-17-5 (0.75% Ethanol)]

Recommended storage: RT

Product Specifications

Assay (by GC)	≥99%
Color (APHA)	≤10
Optical Absorbance:	
at 244nm	≤1.00
at 245nm	≤0.80
at 250nm	≤0.28
at 254nm	≤0.13
Fluorescence Background (as Quinine Sulfate)	To pass test
Refractive Index (at 25°C)	1.4420 to 1.4450
Acid and Chloride	Not detected
Residue after Evaporation	≤2ppm
Reactive Impurities (with H_2SO_4)	Not detected
Water	≤0.02%
Suitability for use in Dithizone Test	To pass test
Acetone and Aldehyde	Not detected
Density at 25°C	1.471-1.476g/mL
Lead	≤0.05ppm
Free Chlorine	Not detected
Preservative (Ethanol)	0.5-1.0v/v%
Peroxides	Not detected

▸4-Chloro-1-naphthol *Available from Fisher BioReagents*, BP1550-50. Please see Fishersci.com for complete ordering information.*

Citric Acid Anhydrous
Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP339-500**	27.93	6/154.66

$C_6H_8O_7$
F.W. 192.13
Application: Anhydrous citric acid is suitable for use in tissue culture systems requiring additives.
[77-92-9]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Assay	≥99.5%
Chloride	≤0.001%
Lead	≤2ppm
Insoluble Matter	≤0.005%
Iron	≤3ppm
Oxalate	To pass test (about 0.05%)
Phosphate	≤0.001%
Residue after Ignition	≤0.02%
Substances Carbonizable by H_2SO_4 (Tartrates, etc.)	To pass test
Sulfate	≤0.002%

Collagenase
Islet Isolation Grade
From Clostridium histolyticum
Yellowish Brown Lyophilized Powder

Quantity	Packaging	Cat. No.	Each	Case of
1g	Amber Glass	**BP2649-1**	453.72	7/2887.72

Clostridiopeptidase A
Application: Collagenase is most suitable for pancreatic islet isolation.
Unit Definition: One unit will liberate peptides from collagen equivalent in ninhydrin color to 3.0µmole of L-leucine in 18 hr. at pH 7.4 and 37°C.
Inhibitors: Hg^{2+}, Pb^{2+}, Cd^{2+}, Cu^{2+}, Zn^{2+}, EDTA, o-phenanthroline.
Recommended storage: 0° to 5°C, dessicate

ChemAlert® STORAGE gray

Product Specifications

Activity	≥3,500units/g

▸**Complement C1Q Protein** *Available from Fisher BioReagents*, BP2511-1. Please see Fishersci.com for complete ordering information.*

Copper (II) Sulfate Pentahydrate
Crystalline (Blue)

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP346-500**	46.38	6/256.98

Cupric Sulfate Pentahydrate, Blue Vitriol
$CuSO_4 \cdot 5H_2O$
F.W. 249.68
[7758-99-8]
Recommended storage: RT

ChemAlert® STORAGE blue

Product Specifications

Assay	98.0-102.0%
Calcium	≤0.005%
Chloride	≤0.001%
Insoluble Matter	≤0.005%
Iron	≤0.003%
Nickel	≤0.005%
Nitrogen Compounds (as N)	≤0.002%
Potassium	≤0.01%
Sodium	≤0.02%

Cyanocobalamin
Crystalline (Dark Red)

Quantity	Packaging	Cat. No.	Each	Case of
1g	Amber Glass	**BP862-1**	65.61	- - - -

Vitamin B_{12}
$C_{63}H_{88}CoN_{14}O_{14}P$
F.W. 1355.42
Application: Cyanocobalamin is used as a supplement in cell culture and tissue culture media.
Not for human use.
[68-19-9]
Recommended storage: -4°C

ChemAlert® STORAGE gray

Product Specifications

Assay	≥99%
IR	Conforms to standard

L-Cysteine Hydrochloride Monohydrate
White Crystals

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP376-100**	54.97	6/298.91

$C_3H_7NO_2S \cdot HCl \cdot H_2O$
F.W. 175.63
Application: This amino acid is suitable for use in tissue culture systems requiring additives.
[7048-04-6]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Assay	98.5-101%
Specific Rotation $[\alpha]_D^{20}$ (c=8, HCl)	+5.5° to +7.0° (+8.0° to +10.1° calc. as cysteine)
State of Solution	≥98.0% transmittance
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Chloride	19.89-20.29%
Arsenic (as As_2O_3)	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying	8.5-12%
Residue on Ignition (sulfated)	≤0.10%

L-Cystine
White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP377-100**	50.44	6/282.51

$C_6H_{12}N_2O_4S_2$
F.W. 240.29
Application: This amino acid is suitable for use in tissue culture systems requiring additives.
[56-89-3]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Assay	98.5-101.0%
Specific Rotation $[\alpha]_D^{20}$ (c=2, 1N HCl)	-215° to -225°
State of Solution	≥98.0% transmittance
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying	≤0.30%
Residue on Ignition (sulfated)	≤0.10%

*Trademark. See Trademark Reference.

Cytoscint* Scintillation Cocktail — Molecular Biology

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**BP458-4**	132.48	- - - -

ChemAlert® STORAGE **red**

Application: Universal LSC Cocktail.
Components: 65-95% Pseudocumene, 0-35% Ethoxylated Nonylphenol, <0.1% 2,5-Diphenyloxazole, <1% 1,4-bis[2-(2-methylphenyl)ethenyl]-benzene
[95-63-6 (Pseudocumene)]
[9016-45-9 (Ethoxylated Nonylphenol)]
[92-71-7 (2,5-Diphenyloxazole)]
[13280-61-0 (1,4-Bis[2-(2-methylphenyl)ethenyl]-benzene)]

Product Specifications

^{3}H Background	≤50cpm
^{3}H Efficiency	≥50%
Distilled Water Capacity	≥8.5%
Aqueous PBS Buffer Capacity	≥4.5%
Specific Gravity	0.88 ± 0.02
GC, IR, TLC	Conforms to standard

▸***Dacarbazine*** *Available from Fisher BioReagents*, BP2513-100. Please see Fishersci.com for complete ordering information.*

Denhardts' Reagent — Molecular Biology
50X Solution

Quantity	Packaging	Cat. No.	Each	Case of
5mL	Amber Glass	**BP515-5**	65.18	6/356.20

ChemAlert® STORAGE **gray**

Application: Denhardt's Reagent is used as a blocking agent in DNA hybridizations.
Components: <1% each of Ficoll*, Polyvinylpyrrolidone, and Bovine Albumin; and Water. Each 5mL of 50X Solution contains 50mg each of Ficoll*, Polyvinylpyrrolidone, and Bovine Albumin.
[26873-85-8 (Ficoll)]
[9003-39-8 (Polyvinylpyrrolidone)]
[9048-46-8 (Bovine Albumin)]
Recommended storage:-20°C

Product Specifications

pH of a 1X Solution at 25°C	5.0 to 7.0
DNase	Not detected
RNase	Not detected
Protease	Not detected
Optical Absorbance of a 5X Solution: at 278nm	0.6 to 0.8

2'-Deoxyadenosine 5'-Triphosphate (dATP)
100mM Solution

Quantity	Packaging	Cat. No.	Each	Case of
400µL (40µmols)	Poly Tube	**BP2560-4**	103.06	- - - -

ChemAlert® STORAGE **gray**

dATP
$C_{10}H_{12}N_5O_{12}P_3Na_4$
F.W. 579.2
Application: dATP high-purity solution is used in PCR, dideoxy sequencing, mutagenesis, and cDNA synthesis.
Functionally tested in PCR.
High purity: >98% triphosphate.
Supplied as 100mM solution in purified water (pH 7.5).
[1927-31-7]
Recommended storage: -20°C

Product Specifications

λ max (pH 7.0)	259nm
Molar Absorbancy (A_m) at pH 7.0	15.2 × 10^3

Deoxycholic Acid Sodium Salt

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP349-100**	85.17	6/463.10

ChemAlert® STORAGE **gray**

Sodium Deoxycholate
$C_{24}H_{39}O_4Na$
F.W. 414.5
Application: This anionic detergent is useful for solubilizing and isolating membrane-bound proteins in an active state.
[302-95-4]
Recommended storage: RT

Product Specifications

Assay (dry basis)	≥99%
Sodium Choleate	≤2%
Moisture	≤5%
Lead	≤0.001%
Arsenic	≤0.001%

2'-Deoxycytidine 5'-Triphosphate (dCTP)
100mM Solution

Quantity	Packaging	Cat. No.	Each	Case of
400µL (40µmols)	Poly Tube	**BP2562-4**	103.06	- - - -

ChemAlert® STORAGE **gray**

dCTP
$C_9H_{12}N_3O_{13}P_3Na_4$
F.W. 555.1
Application: dCTP high-purity solution is used in PCR, dideoxy sequencing, mutagenesis, and cDNA synthesis.
Functionally tested in PCR.
High purity: >98% triphosphate.
Supplied as 100mM solution in purified water (pH 7.5).
[102783-51-7]
Recommended storage: -20°C

Product Specifications

λ max (pH 7.0)	280nm
Molar Absorbancy (A_m) at pH 7.0	13.1 × 10^3

2'-Deoxyguanosine 5'-Triphosphate (dGTP)
100mM Solution

Quantity	Packaging	Cat. No.	Each	Case of
400µL (40µmols)	Poly Tube	**BP2561-4**	103.06	- - - -

ChemAlert® STORAGE **gray**

dGTP
$C_{10}H_{12}N_5O_{13}P_3Na_4$
F.W. 595.1
Application: dGTP high-purity solution is used in PCR, dideoxy sequencing, mutagenesis, and cDNA synthesis.
Functionally tested in PCR.
High purity: >98% triphosphate.
Supplied as 100mM solution in purified water (pH 7.5).
[93919-41-6]
Recommended storage: -20°C

Product Specifications

λ max (pH 7.0)	253nm
Molar Absorbancy (A_m) at pH 7.0	13.7 × 10^3

▸***2'-Deoxyguanosine 5'-Triphosphate Trisodium Salt Dihydrate*** *Available from Fisher BioReagents*, BP419-10. Please see Fishersci.com for complete ordering information.*

2'-Deoxythymidine 5'-Triphosphate (dTTP)
100mM Solution

Quantity	Packaging	Cat. No.	Each	Case of
400µL (40µmols)	Poly Tube	**BP2563-4**	101.16	- - - -

dTTP
$C_{10}H_{13}N_2O_{14}P_3Na_4$
F.W. 570.1

ChemAlert® STORAGE gray

Application: dTTP high-purity solution is used in PCR, dideoxy sequencing, mutagenesis, and cDNA synthesis. Functionally tested in PCR.
High purity: >98% triphosphate.
Supplied as 100mM solution in purified water (pH 7.5).
[18423-43-3]
Recommended storage: -20°C

Product Specifications

λ max (pH 7.0)	267nm
Molar Absorbancy (A_m) at pH 7.0	9.6×10^3

Dextran
White to Off-white Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP1580-100**	162.23	- - - -

ChemAlert® STORAGE gray

Application: Dextran may be used with polyethylene glycol under certain conditions in the fractionation of proteins, cells, virus particles, and other macromolecules. Dextran at neutral pH may be autoclaved.
Average M.W.: 500,000
[9004-54-0]
Recommended storage: RT

Product Specifications

Heavy Metals (as Pb)	≤0.0005%
Loss on Drying	≤5%
pH of a 1% Solution in 0.9% NaCl	6.5 ± 0.3
Sulfated Ash	≤1%

Dextran Sulfate Sodium Salt
White to Off-white Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP1585-100**	186.20	6/1033.15
500g	Poly Bottle	**BP1585-500**	885.03	6/4780.84

ChemAlert® STORAGE gray

Application: Dextran Sulfate accelerates the rate of hybridization of DNA or RNA bound to membranes and may be used in Southern and Northern blotting procedures.
Average M.W.: 500,000
[9011-18-1]
Recommended storage: RT

Product Specifications

Sulfur Content	17-20%
Moisture	≤7.5%

Dextrose Anhydrous
Molecular Biology
Crystalline Granules

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP350-500**	34.46	6/190.91
1kg	Amber Glass	**BP350-1**	40.79	6/226.03

Glucose
$HOCH_2(CHOH)_4CHO$
$C_6H_{12}O_6$
F.W. 180.16

ChemAlert® STORAGE gray

Application: Dextrose is often used as a cell culture additive.
[50-99-7]
Recommended storage: RT

Product Specifications

Assay	≥99.8%
Specific Rotation $[\alpha]_D^{25}$ (c=10, 0.03N NH_4OH)	+52.5° to +53.0°
Insolubles	≤0.005%
Moisture (105°C)	≤0.2%
Ash	≤0.02%
Chloride	≤0.01%
Sulfate and Sulfite	≤0.005%
Arsenic	≤0.00004%
Heavy Metals (as Pb)	≤0.0005%
Iron	≤0.0005%
DNase	Not detected
RNase	Not detected

N,N'-Diisopropylcarbodiimide
Peptide Synthesis

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**BP590-100**	238.60	- - - -

DIPCDI
$C_7H_{14}N_2$
F.W. 126.20

SOLVENT ChemAlert® STORAGE red

Application: N,N'-Diisopropylcarbodiimide is used as an alternative to dicyclohexylcarbodiimide in peptide synthesis reactions.
[693-13-0]
Recommended storage: RT

Product Specifications

Assay	≥99%
Color (APHA)	≤100
IR	Conforms to standard
Boiling Point	147°-149°C
Refractive Index at 20°C	1.4330 ± 0.0015

N,N-Diisopropylethylamine
Peptide Synthesis

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**BP592-500**	140.38	- - - -

DIEA
$C_8H_{19}N$
F.W. 129.25

SOLVENT ChemAlert® STORAGE red

Application: N,N-Diisopropylethylamine is commonly used in peptide synthesis reactions.
[7087-68-5]
Recommended storage: RT

Product Specifications

Assay	≥99%
Color (APHA)	≤20
Refractive Index at 25°C	1.4133 ± 0.002
Water (Karl Fischer)	≤0.2%
IR	Conforms to standard

▸***1-(3-Dimethylaminopropyl)-3-Ethylcarbodiimide Hydrochloride*** *Available from Fisher BioReagents*, BP2735-10. Please see Fishersci.com for complete ordering information.*

▸***N,N-Dimethylethanolamine*** *Available from Fisher BioReagents*, BP2628-1. Please see Fishersci.com for complete ordering information.*

N,N-Dimethylformamide
Synthesis

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**BP1160-500**	62.51	6/350.61
4L	Amber Glass	**BP1160-4**	166.73	4/623.83

Also available in recyclable FisherPak and NOWPak* containers.*

SOLVENT

Application: N,N-Dimethylformamide is commonly used in automated synthesis procedures.
[68-12-2]
Recommended storage: RT

Product Specifications

Assay (by GC)	≥99.5%
IR	Conforms to standard
Color (APHA)	≤15

*Trademark. See Trademark Reference.

Prices subject to change.

Boiling Range (1 drop to dryness)	2.0°C
Boiling Point	153.0° ± 0.1°C
Density at 25°C	0.942-0.946g/mL
Residue after Evaporation	≤0.005%
Water	≤0.03%
Titratable Base	≤0.003mEq/g
Titratable Acid	≤0.0005mEq/g
Amines (as Dimethylamine)	≤5ppm
Optical Absorbance:	
at 270nm	≤1.00
at 275nm	≤0.30
at 295nm	≤0.10
at 310nm	≤0.05
at 340-400nm	≤0.01

Dimethyl Sulfoxide

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**BP231-100**	23.15	6/122.73
1L	Amber Glass	**BP231-1**	64.03	6/357.57
4L	Amber Glass	**BP231-4**	196.14	4/733.86

DMSO
$(CH_3)_2SO$
C_2H_6OS
F.W. 78.13

ChemAlert® STORAGE gray

Application: DMSO is a cryopreservation agent for cells, and may also be used in bacterial transformations.

NOTE: Sold for nonmedical use only. Not to be used or sold as a drug for humans or animals.

[67-68-5]

Recommended storage: RT

Product Specifications

Assay	≥99.7%
Color (APHA)	≤10
Residue after Evaporation	≤0.001%
Freezing Point	≥18.0°C
Water	≤0.2%
Density at 25°C	1.095 ± 0.005g/mL
A_{280nm}	≤0.10

Dithiothreitol **Electrophoresis**

White Crystals or Powder

Quantity	Packaging	Cat. No.	Each	Case of
5g	Amber Glass	**BP172-5**	88.99	6/492.76
25g	Amber Glass	**BP172-25**	335.44	6/1893.64

DTT, Cleland's Reagent
$HSCH_2CH(OH)CH(OH)CH_2SH$
$C_4H_{10}O_2S_2$
F.W. 154.25

ChemAlert® STORAGE gray

Application: Dithiothreitol is used to reduce disulfide bonds in proteins and peptides and is added in low concentrations as an enzyme stabilizer during protein purification and enzymatic reactions.

[3483-12-3]

Recommended storage: -20°C

Product Specifications

Assay	≥99%
IR	Conforms to standard
Melting Point	41° ± 2°C
Corrected Absorbance of Disulfide (S-S) in 0.02M Solution:	
at 280nm	≤0.04
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

***λ DNA-Hind III/phiX-174 RF DNA-Hae III Digest** Available from Fisher BioReagents*, BP2554-25. Please see Fishersci.com for complete ordering information.*

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dNTP Set

High-purity: >98% triphosphate
4 tube/pack
100mM Solutions (dATP, dCTP, dGTP, dGTP, dTTP)

Quantity	Packaging	Cat. No.	Each	Case of
100µL/tube (10µmols/tube)	Poly tube	**BP2564-1**	92.37	- - - -
400µL/tube (40µmols/tube)	Poly tube	**BP2564-4**	314.77	- - - -

Application: dNTP Set consists of 100mM high-purity solutions of dATP, dCTP, dGTP, and dTTP for use in PCR, dideoxy sequencing, mutagenesis and cDNA synthesis. Supplied as 100mM solutions in purified water (pH 7.5) Functionally tested in PCR.

ChemAlert® STORAGE gray

Recommended storage: -20°C

Product Specifications

dATP	
λ_{max} (pH 7.0)	259nm
Molar Absorbancy (A_m) at pH 7.0	15.2×10^3
dCTP	
λ_{max} (pH 7.0)	280nm
Molar Absorbancy (A_m) at pH 7.0	13.1×10^3
dGTP	
λ_{max} (pH 7.0)	253nm
Molar Absorbancy (A_m) at pH 7.0	13.7×10^3
dTTP	
λ_{max} (pH 7.0)	267nm
Molar Absorbancy (A_m) at pH 7.0	9.6×10^3

Doxorubicin Hydrochloride

Reddish-orange Powder

Quantity	Packaging	Cat. No.	Each	Case of
1mg	Amber Glass	**BP2516-1**	27.80	5/135.10
5mg	Amber Glass	**BP2516-5**	95.35	5/433.80
10mg	Amber Glass	**BP2516-10**	158.54	5/732.15
50mg	Amber Glass	**BP2516-50**	648.35	5/3209.35

Adriamycin
14-Hydroxydaunomycin, HCl
$C_{27}H_{29}NO_{11}$•HCl
F.W. 580

ChemAlert® STORAGE gray

Application: Doxorubicin HCL is a chemotherapeutic agent. Antitumor, immunosuppressive, and antibiotic agent. It blocks RNA polymerase and reverse transcriptase. Also inhibits nucleic acid synthesis.

[25316-40-9]

Recommended storage: 2° to 8°C

Product Specifications

Assay (by HPLC)	≥95%
FTIR	Conforms to standard
Melting Point	201-210°C

Doxycycline Hydrochloride

Yellow Powder

Quantity	Packaging	Cat. No.	Each	Case of
1g	Amber Glass	**BP2653-1**	22.77	9/197.40
5g	Amber Glass	**BP2653-5**	67.83	9/552.85

$C_{22}H_{24}N_2O_8$•HCl
F.W. 480.9
[10592-13-9]

ChemAlert® STORAGE gray

Recommended storage: 0° to 5°C, light sensitive, dessicate.

Product Specifications

FTIR	Conforms to standard

▸**Eco52 I** *Available from Fisher BioReagents*, BP3360-1. Please see Fishersci.com for complete ordering information.*

EcoR I
Source: E. coli RY 13

Quantity	Packaging	Cat. No.	Each	Case of
15,000 units	Poly Tube	**BP3362-5**	85.20	- - - -

ChemAlert® STORAGE gray

Application: *Eco*R I restriction endonuclease digests dsDNA with sequence indicated below.

G'AATT C

CTTA'A G

Concentration: 8-12 units/µL

High Concentration (HC): 40-80 units/µL

Isoschizomers: None

Heat Inactivated: +

Qualified for Blue/White Cloning Assays.

Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 400mM NaCl, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA, 0.15% Triton* X-100 and 50% glycerol.

Recommended storage: -20°C

Product Specifications

Percent Activity in Quad 4* Buffer System:

A	25–50%
B	50–75%
C	50–75%
D	50–75%
H	100%
UNIVERSAL*	100%

Frequency of Cutting:

λ	5
Ad-2	5
ΦX174	0
pUC18	1
M13mp18	1
pBR322	1

EcoR V
Source: E. coli J62 pLG74

Quantity	Packaging	Cat. No.	Each	Case of
10,000 units	Poly Tube	**BP3356-5**	219.33	- - - -

ChemAlert® STORAGE gray

Application: *Eco*R V restriction endonuclease digests dsDNA with sequence indicated below.

GAT'ATC

CTA'TAG

Concentration: 10 units/µL

Isoschizomers: *Eco*32 I

Heat Inactivated: +

Qualified for Blue/White Cloning Assays.

Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 50mM NaCl, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA and 50% glycerol.

Recommended storage: -20°C

Product Specifications

Percent Activity in Quad 4* Buffer System:

A	10–25%
B	25–50%
C	50–75%
D	100%
UNIVERSAL*	100%

Frequency of Cutting:

λ	21
Ad-2	9
ΦX174	0
pUC18	0
M13mp18	0
pBR322	1

Electrode Storage Solution

Quantity	Packaging	Cat. No.	Each	Case of
460mL	Poly Bottle	**BP2418-1**	33.37	6/185.74

ChemAlert® STORAGE gray

Application: Electrode Storage Solution is a safe and convenient method to maintain sensitivity by removing build-up from electrodes.

For use in storage of pH electrodes.

Recommended storage: RT

Product Specifications

Potassium Chloride	6.2 ± 0.3g/L
Residue after Evaporation	1.65 ± 0.08%
pH at 25°C	3.9 ± 0.1

▸**Eosin Y Disodium Salt** *Available from Fisher BioReagents*, BP2419-100. Please see Fishersci.com for complete ordering information.*

Erythromycin
White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
25g	Poly Bottle	**BP920-25**	88.03	- - - -

ChemAlert® STORAGE gray

E-Mycin, Erythrocin

$C_{37}H_{67}NO_{13}$

F.W. 733.94

Application: Erythromycin is used as an inhibitor in cell-free protein biosynthesis.

[114-07-8]

Recommended storage: RT

Product Specifications

pH of a 0.4% Solution in 5% Methanol in Water	8.0 to 10.5
IR	Conforms to standard

▸**Erythropoietin** *Available from Fisher BioReagents*, BP2518-50. Please see Fishersci.com for complete ordering information.*

Ethidium Bromide

Quantity	Packaging	Cat. No.	Each	Case of
1g	Amber Glass	**BP102-1**	31.47	6/174.35
5g	Amber Glass	**BP102-5**	116.71	6/644.06

ChemAlert® STORAGE blue

$C_{21}H_{20}N_3Br$

F.W. 394.33

Application: Used for fluorometric detection of double stranded nucleic acids. Also acts as an RNA polymerase inhibitor, and in separation of high molecular weight DNAs.

[1239-45-8]

Recommended storage: RT

Product Specifications

Solubility	To pass test
Loss on Drying at 105°C	$\leq$5%
$E^{1\%}_{1cm}$	$\geq$100L $g^{-1}cm^{-1}$
Lambda Max. (λ)	480nm ± 2nm
DNase	Not detected
RNase	Not detected
Protease	Not detected

Ethidium Bromide, 1% Solution

Molecular Biology

Quantity	Packaging	Cat. No.	Each	Case of
10mL	Amber Poly Bottle	**BP1302-10**	41.12	- - - -

$C_{21}H_{20}N_3Br$

F.W. 394.33

ChemAlert® STORAGE blue

Application: Ethidium Bromide is an intercalating dye used in the visualization of DNA and RNA in electrophoresis gels and cesium chloride density gradients.

Filtered through a 0.2-micron filter.

[1239-45-8]

Recommended storage: RT

Product Specifications

Appearance	Clear, reddish-brown liquid
$E^{1\%}_{1cm}$	>100 absorbance units at λ_{max}
Lambda Max. (λ)	480nm ± 2nm
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

Ethyl Acetate

Sequencing

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**BP1125-1**	50.76	6/274.94
4L	Amber Glass	**BP1125-4**	113.41	4/417.29

$CH_3COOCH_2CH_3$

$C_4H_8O_2$

F.W. 88.11

SOLVENT

ChemAlert® STORAGE red

Application: This solvent is commonly used in DNA or peptide synthesis.

[141-78-6]

Recommended storage: RT

Product Specifications

Assay (by GC)	≥99.9%
Color (APHA)	≤10
Optical Absorbance:	
at 255nm	≤1.00
at 260nm	≤0.15
at 270nm	≤0.025
Fluorescence Background	To pass test
Refractive Index at 25°C	1.3680 to 1.3710
Titratable Acid	≤0.0009mEq/g
Residue after Evaporation	≤10ppm
Reactive Impurities with H_2SO_4	Not detected
Water	≤0.02%
Density at 25°C	0.893 to 0.895g/mL
Peroxides	Not detected

Ethylenediamine Tetraacetate, DEPC-Treated Solution

0.5M, pH 8.0

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**BP2483-100**	50.79	6/270.98
500mL	Poly Bottle	**BP2483-500**	63.30	6/340.72
1L	Poly Bottle	**BP2483-1**	89.21	6/477.82

Application: EDTA, DEPC-treated solution is ideal for RNA work.

ChemAlert® STORAGE gray

[60-00-4 (Ethylenediamine Tetraacetic Acid, <14.0%)]

[1310-73-2 (Sodium Hydroxide, <4.0%)]

[1609-47-8 (Diethyl Pyrocarbonate, 1.0%)]

Recommended storage: RT

Product Specifications

Description	Clear, colorless liquid
pH	8.0 ± 0.1
Molarity	0.475-0.525M
RNase	Not detected
Protease	Not detected

Ethylenediamine Tetraacetic Acid

White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP118-500**	64.28	6/351.08

EDTA (Free Acid)

$(HOOCCH_2)_2NCH_2CH_2N(CH_2COOH)_2$

$C_{10}H_{16}N_2O_8$

F.W. 292.25

ChemAlert® STORAGE gray

Application: EDTA is a chelating agent for metal ions and is used extensively in molecular biology to minimize metal ion impurities in reaction buffers.

[60-00-4]

Recommended storage: RT

Product Specifications

Assay	≥99.5%
Insoluble in Dilute NH_4OH	Clear and haze-free
pH of a 5% Solution at 25°C	2.5 to 3.5
Iron	≤0.005%
Magnesium	≤0.0005%
Residue after Ignition	≤0.2%
Nitrilotriacetic Acid $[N(CH_2COOH)_3]$	≤0.1%

Ethylenediamine Tetraacetic Acid Solution, 0.5 M

pH 8.0 (for DNA Work)

Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**BP2482-100**	35.24	6/207.34
500mL	Amber Glass	**BP2482-500**	47.97	6/275.97
1L	Amber Glass	**BP2482-1**	75.89	6/394.52
20L	PolyPac*	**BP2482-20**	320.02	- - - -

EDTA

$(HOOCCH_2)_2NCH_2CH_2N(CH_2COOH)_2$

$C_{10}H_{16}N_2O_8$

F.W. 292.25

ChemAlert® STORAGE gray

Application: EDTA is used extensively in molecular biology to minimize metal ion impurities in reaction buffers. Ideal for DNA work.

[60-00-4]

Recommended storage: RT

Product Specifications

pH	8.0 ± 0.1
Molarity	0.475–0.525M
DNase	Not detected
Protease	Not detected

Ethylenediamine Tetraacetic Acid, Dipotassium Salt Dihydrate

White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP119-500**	117.31	6/679.75

EDTA, Dipotassium Salt

$(HOOCCH_2)_2NCH_2CH_2N(CH_2COOK)_2 \cdot 2H_2O$

$C_{10}H_{14}K_2N_2O_8 \cdot 2H_2O$

F.W. 404.47

ChemAlert® STORAGE gray

Application: The dipotassium salt of EDTA is used in place of the disodium salt where sodium would interfere with the reaction.

[25102-12-9]

Recommended storage: RT

Product Specifications

Assay	≥99.0%
Chloride	≤0.02%
Iron	≤0.001%
Heavy Metals (as Pb)	≤0.001%
pH of a 5% Solution at 25°C	4 to 5

Ethylenediamine Tetraacetic Acid, Disodium Salt Dihydrate

Electrophoresis

Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP120-500**	65.49	6/359.14
1kg	Poly Bottle	**BP120-1**	104.47	6/382.07

EDTA, Disodium Salt Sodium Versenate

$(HO_2CCH_2)_2NCH_2CH_2N(CH_2CO_2Na)_2{\bullet}2H_2O$

$C_{10}H_{14}N_2Na_2O_8{\bullet}2H_2O$

ChemAlert® STORAGE gray

F.W. 372.24

Application: The disodium salt of EDTA is a chelating agent for metal ions and is used extensively in molecular biology to minimize metal ion impurities in reaction buffers.

[6381-92-6]

Recommended storage: RT

Product Specifications

Assay	≥99%
IR	Conforms to standard
Insoluble Matter	≤0.005%
pH of a 5% Solution in Water at 25°C	4.0 to 6.0
Nitrilotriacetic Acid $[N(CH_2COOH)_3]$	≤0.1%
Electrophoresis	To pass test
Calcium	≤10ppm
Iron	≤10ppm
Lead	≤5ppm
Arsenic	≤2ppm
Mercury	≤2ppm

Ethylenediamine Tetraacetic Acid, Disodium Salt Dihydrate

White Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP121-500**	36.85	6/204.11

EDTA, Tetrasodium Salt

$(NaO_2CCH_2)_2NCH_2CH_2N(CH_2CO_2Na)_2{\bullet}2H_2O$

$C_{10}H_{12}N_2Na_4O_8{\bullet}2H_2O$

ChemAlert® STORAGE gray

F.W. 416.20

Application: The tetrasodium salt of EDTA is a chelating agent for metal ions and is used extensively in molecular biology to minimize metal ion impurities in reaction buffers.

[10378-23-1]

Recommended storage: RT

Product Specifications

Assay (dry basis)	≥99%
Insoluble Matter	≤0.005%
pH of a 1% w/w Solution	10.7 to 11.7
Nitrilotriacetic Acid $[N(CH_2COOH)_3]$	≤0.2%

Ethylene Glycol

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**BP230-1**	36.74	6/203.59
4L	Amber Glass	**BP230-4**	114.98	4/425.60

1,2-Ethanediol

$HOCH_2CH_2OH$

$C_2H_6O_2$

ChemAlert® STORAGE gray

F.W. 62.07

Application: Due to its property as an antifreeze, ethylene glycol may be used for the storage of enzymes at low temperatures.

[107-21-1]

Recommended storage: RT

Product Specifications

Assay	≥99%
Color (APHA)	≤10
Titratable Acid	0.002mEq/g
Boiling Range	196°-199°C
Iron	≤5ppm
Water	≤0.5%
Metals (as Fe)	≤5ppm

Ficoll* 400

Molecular Biology

White to Off-white Powder

Quantity	Packaging	Cat. No.	Each	Case of
5g	Poly Bottle	**BP525-5**	44.21	6/252.34
10g	Poly Bottle	**BP525-10**	61.59	6/334.83
25g	Poly Bottle	**BP525-25**	123.31	6/680.47
100g	Poly Bottle	**BP525-100**	282.03	6/1592.19
500g	Poly Bottle	**BP525-500**	1160.40	6/6616.72

F.W. ≈400,000

ChemAlert® STORAGE gray

Application: Ficoll 400 is used as a component of Denhardt's Reagent and in gel-loading buffers for DNA gels. It is also used in forming density gradients to separate cells and subcellular components.

[26873-85-8]

Recommended storage: RT

Product Specifications

IR	Conforms to standard
Specific Rotation $[\alpha]_D^{20}$ (c=4, H_2O)	52° ± 2°
DNase	Not detected
RNase	Not detected
Protease	Not detected

Folic Acid

Yellow to Orange Powder

Quantity	Packaging	Cat. No.	Each	Case of
5g	Amber Glass	**BP2519-5**	19.18	7/123.80
10g	Amber Glass	**BP2519-10**	26.61	6/147.32
25g	Amber Glass	**BP2519-25**	49.76	3/145.00
100g	Amber Glass	**BP2519-100**	153.15	3/444.63

Pteroylglutamic Acid

$C_{19}H_{19}N_7O_6$

ChemAlert® STORAGE gray

F.W. 441.4

Application: Folic acid is used in cell culture.

[59-30-3]

Recommended storage: RT, protect from light

Product Specifications

Assay	≥95%
FTIR	Conforms to standard
Loss on Drying	≤8.5%
Residue on Ignition	≤0.3%
UV/VIS λ_{max}(0.1N NaOH)	256 ± 3nm

Formaldehyde, 37% (w/w)

Molecular Biology

Quantity	Packaging	Cat. No.	Each	Case of
25mL	Amber Glass	**BP531-25**	20.15	6/111.69
500mL	Amber Glass	**BP531-500**	29.52	6/163.71

Formalin, Formic Aldehyde Solution, Formol, Methanal, Methylene Oxide

ChemAlert® STORAGE red

HCHO

CH_2O

F.W. 30.03

Application: Molecular Biology-grade formaldehyde is used for denaturing RNA.

Components: 37% Formaldehyde, 15% Methyl Alcohol and 48% Water.

[50-00-0 (Formaldehyde)]

[67-56-1 (Methyl Alcohol)]

Recommended storage: RT

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*Trademark. See Trademark Reference.

Product Specifications

Assay (HCHO)	≥36.5 to 38%
Color (APHA)	≤10
Residue after Ignition	≤0.005%
Chloride	≤5ppm
Sulfate	≤0.002%
Heavy Metals (as Pb)	≤5ppm
Iron	≤2ppm
Titratable Acid	≤0.006mEq/g
Methanol	10-15%
pH at 25°C	3 to 4

Formamide **Super Pure**

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**BP228-100**	41.15	6/227.98

$H_2NCH{:}O$

CH_3NO

ChemAlert® STORAGE gray

F.W. 45.04

Application: Super Pure Formamide has been pretreated with a mixed-bed resin so that it is ready for use in nucleic acid hybridization and sequencing.

[75-12-7]

Recommended storage: 4°C

Product Specifications

Assay	≥99.5%
IR	Conforms to standard
Conductivity	≤100µmhos/cm
Optical Absorbance at 280nm	<0.05
Freezing Point	1.0°-3.0°C
Iron	≤0.0005%
Copper	≤0.0001%
Lead	≤0.0005%
Zinc	≤0.0005%

Vacuum distilled and packaged under Nitrogen.

Formamide **Molecular Biology**

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**BP227-100**	38.63	6/215.88
500mL	Amber Glass	**BP227-500**	89.47	6/495.41

$H_2NCH{:}O$

CH_3NO

ChemAlert® STORAGE gray

F.W. 45.04

Application: Molecular Biology-Grade Formamide is commonly used in nucleic acid hybridization and sequencing. It requires pretreatment with a mixed-bed resin.

[75-12-7]

Recommended storage: 4°C

Product Specifications

Assay	≥99.0%
IR	Conforms to standard
Conductivity	≤350µmhos/cm
Optical Absorbance at 280nm	≤0.1
Freezing Point	1.0°-3.0°C
Iron	≤0.0005%
Copper	≤0.0001%
Lead	≤0.0005%
Zinc	≤0.0005%

Vacuum distilled and packaged under Nitrogen.

Formic Acid **Sequencing**

Aldehyde-free

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**BP1215-500**	56.03	6/304.54

HCOOH

CH_2O_2

ACID

ChemAlert® STORAGE white

F.W. 46.02

Application: Formic Acid is used in Maxam-Gilbert DNA sequencing reactions and other biological applications.

[64-18-6]

Recommended storage: RT

Product Specifications

Assay (HCOOH w/w in H_2O)	≥88%
Color (APHA)	≤15
Acetic Acid	≤0.4%
Ammonium	≤0.005%
Chloride	≤0.001%
Dilution Test	To pass test
Heavy Metals (as Pb)	≤5ppm
Iron	≤5ppm
Residue after Evaporation	≤0.002%
Sulfate	≤0.002%
Sulfite	To pass test
Aldehydes	Not detected

▸**Forskolin** *Available from Fisher BioReagents*, BP2520-25. Please see Fishersci.com for complete ordering information.*

G418 Sulfate

White to Off-white Powder

Quantity	Packaging	Cat. No.	Each	Case of
1g	Amber Glass	**BP673-1**	106.60	- - - -
5g	Amber Glass	**BP673-5**	395.37	- - - -

$C_{20}H_{40}N_4O_{10}{\bullet}2H_2SO_4$

ChemAlert® STORAGE gray

F.W. 692.44

Application: This antibiotic inhibits microbial contamination in tissue culture and molecular biology applications. The effective killing concentration of G418 varies with the cell type, media, growth conditions, and the cells' metabolic rate and position in the cell cycle. Effective concentrations have been reported from 100µg/mL up to 5mg/mL.

[108321-42-2]

Recommended storage: -20°C

Product Specifications

Potency (*B. subtilis*)	760 ± 40µg/mg
Absorbance:	
570nm (100mg/mL solution)	<0.10
280nm (1mg/mL solution)	<0.015
TLC	≤3 spots
Ammonia	≤1.0%
Moisture	≤10.0%
Biological potency test:	
ED_{50}-sensitive assay	≤400µg/mL
ED_{50}-resistant assay	≥2500µg/mL
Solubility in Water	To pass test

D-Galactose

White to Off-white Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP656-500**	80.27	6/413.35

$C_6H_{12}O_6$

ChemAlert® STORAGE gray

F.W. 180.16

Application: D-Galactose is suitable for use in cell culture systems requiring sugar additives.

[59-23-4]

Recommended storage: RT

Contd. on next page.

Contd. from previous page.

Product Specifications

Assay	≥98%
Specific Rotation $[\alpha]_D^{20}$ (c=5, H_2O, 5 hr.)	+80.2° ± 2°
Melting Point	+166°-171°C
TLC	Single spot

Gentamycin Sulfate

White Powder

Quantity	Packaging	Cat. No.	Each	Case of
1g	Amber Glass	**BP918-1**	77.26	- - - -

ChemAlert® STORAGE gray

Application: Gentamycin sulfate inhibits protein synthesis, preventing microbial contamination in tissue culture applications. It is also used to confer antibiotic resistance/sensitivity in molecular biology procedures.

[1405-41-0]

Recommended storage: 4°C

Product Specifications

Specific Rotation $[\alpha]_D^{22}$ (c=2, H_20)	+107° to +121°
pH of a 4% Solution at 22°C	3.5 to 5.5

▸***Giemsa Stain*** *Available from Fisher BioReagents*, BP2422-10. Please see Fishersci.com for complete ordering information.*

L-Glutamic Acid

White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP378-100**	24.42	6/135.35

$C_5H_9NO_4$

F.W. 147.13

ChemAlert® STORAGE gray

Application: This amino acid is suitable for use in tissue culture systems requiring additives.

[56-86-0]

Recommended storage: RT

Product Specifications

Assay	99.0-100.5%
Specific Rotation $[\alpha]_D^{20}$ (c=10, HCl)	+31.5° to +32.5°
State of Solution	≥98.0% transmittance
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying at 105°C	≤0.1%
Residue on Ignition (sulfated)	≤0.10%

▸***L-Glutamyl-p-Nitroanilide, Hydrochloride*** *Available from Fisher BioReagents*, BP2656-10. Please see Fishersci.com for complete ordering information.*

Glutaraldehyde Solution, 50% **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**BP2547-1**	112.99	6/614.26

Pentanedial, Glutaral

$HC(O)(CH_2)_3CHO$

$C_5H_8O_2$

F.W. 100.12

ChemAlert® STORAGE blue

[111-30-8]

Recommended storage: Refrigerate

Product Specifications

Assay	49.0–52.0%
Color (APHA)	≤125
Clarity of Solution	To pass test
pH at 25°C	3.7 to 4.5
Specific Gravity at 20°C	1.125 to 1.135

Glutaraldehyde Solution, 25% **Certified**

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**BP2548-1**	89.92	6/481.63
4L	Amber Glass	**BP2548-4**	264.11	4/984.86

Pentanedial, Glutaral

$HC(O)(CH_2)_3CHO$

$C_5H_8O_2$

F.W. 100.12

ChemAlert® STORAGE blue

[111-30-8]

Recommended storage: RT

Product Specifications

Assay	24.0–26.5%
Color (APHA)	≤20
Clarity of Solution	Pass test

Glutathione Reduced

White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
1g	Amber Glass	**BP2521-1**	23.47	9/195.85
5g	Amber Glass	**BP2521-5**	43.09	9/351.61
10g	Amber Glass	**BP2521-10**	57.40	8/417.91
25g	Amber Glass	**BP2521-25**	112.99	8/874.67
50g	Amber Glass	**BP2521-50**	210.92	3/584.49
100g	Amber Glass	**BP2521-100**	353.88	4/1401.32

γ-L-Glutamyl-L-cysteinylglycine

$C_{10}H_{17}N_3O_6S$

F.W. 307.3

ChemAlert® STORAGE gray

Application: Glutathione is a useful tripeptide involved in many aspects of metabolism, including transport of γ-glutamyl amino acids and reductive cleavage of disulfide bonds.

[70-18-8]

Recommended storage: 4°C

Product Specifications

Assay	≥98%
Solubility 3.5% aqueous solution	Clear, colorless solution
pH	Acidic
FTIR	Conforms to standard
Optical Rotation (c=2, H_2O)	-16° ± 5°

Glycerol **Molecular Biology**

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**BP229-1**	69.83	6/386.62
4L	Poly Bottle	**BP229-4**	242.07	4/900.50

Glycerin

$HOCH_2CH(OH)CH_2OH$

$C_3H_8O_3$

F.W. 92.09

ChemAlert® STORAGE gray

Application: Glycerol is used for low-temperature storage of enzymes and bacterial cultures, purification of proteins, and as a component in electrophoresis loading buffers.

[56-81-5]

Recommended storage: RT

Product Specifications

Assay	≥99.5%
IR	Conforms to standard
Color (APHA)	≤10
A_{280nm}	≤0.05
Density at 20°C	1.260 ± 0.005g/mL
Magnesium	≤1ppm
Iron	≤5ppm
Heavy Metals (as Pb)	≤5ppm
Calcium	≤5ppm
Zinc	≤2ppm
DNase	Not detected
RNase	Not detected
Protease	Not detected

*Trademark. See Trademark Reference.

Glycerol Gel-Loading Dye, 5X

Molecular Biology

Contains 30% Glycerol

Quantity	Packaging	Cat. No.	Each	Case of
1mL	Poly Tube	**BP645-1**	24.68	- - - -
5mL	Poly Bottle	**BP645-5**	77.17	- - - -

ChemAlert® STORAGE **gray**

Application: This dye is added to DNA and RNA samples prior to electrophoresis on agarose gels.

Components: Glycerol (30%), Proprietary Components (<6%), and Water

[56-81-5 (Glycerol)]

Recommended storage: RT

Product Specifications

Optical Absorbance (dilution 1:500 with deionized water):

at 525nm	0.25 to 0.45
at 588-594nm	0.30 to 0.50
at 635-641nm	0.25 to 0.45
DNase	Not detected
RNase	Not detected

Glycine

White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP381-500**	28.94	6/161.83
1kg	Poly Bottle	**BP381-1**	48.92	6/270.37
5kg	Poly Pail	**BP381-5**	175.75	- - - -

Aminoacetic Acid

$C_2H_5NO_2$

F.W. 75.07

ChemAlert® STORAGE **gray**

Application: Glycine is used in the preparation of Tris–Glycine electrophoresis buffers and culture media.

[56-40-6]

Recommended storage: RT

Product Specifications

Assay	98.5-101.0%
State of Solution	≥98.0% transmittance
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying	≤0.20%
Residue on Ignition (sulfated)	≤0.10%

D-Glycogen

Beef Liver, White to Straw-yellow Crystals

Quantity	Packaging	Cat. No.	Each	Case of
5g	Amber Glass	**BP676-5**	113.23	- - - -

$(C_6H_{10}O_5)_n$

ChemAlert® STORAGE **gray**

Application: Glycogen is used as a carrier in precipitating DNA or RNA in place of sonicated DNA or tRNA.

[9005-79-2]

Recommended storage: 4°C

Product Specifications

Specific Rotation $[\alpha]_D^{20}$ (c=0.25, H_2O)	+175° ± 10°
TLC	Single spot

***▸Glycyl-L-Glutamic Acid** Available from Fisher BioReagents*, BP2522-1. Please see Fishersci.com for complete ordering information.*

***▸Glycylglycine** Available from Fisher BioReagents*, BP1304-100. Please see Fishersci.com for complete ordering information.*

***▸Granulocyte Colony Stimulating Factor** Available from Fisher BioReagents*, BP2650-5. Please see Fishersci.com for complete ordering information.*

Guanidine Hydrochloride

Colorless-to-white Crystals

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP178-500**	145.06	6/814.09
1kg	Poly Bottle	**BP178-1**	252.92	6/1419.48

Guanidinium Chloride, Guanidine Chloride

$H_2NC(NH_2){:}NH{\bullet}HCl$, $CH_5N_3{\bullet}HCl$

F.W. 95.53

ChemAlert® STORAGE **blue**

Application: Guanidine hydrochloride is a strong protein-denaturing agent used in the isolation of RNA from cell extracts. RNase activity is inhibited in the presence of this reagent.

[50-01-1]

Recommended storage: RT

Product Specifications

Assay	≥99%
Absorbance of a 6M Solution:	
at 260nm	≤0.03
at 280nm	≤0.01
Iron	≤5ppm
Lead	≤5ppm
Arsenic	≤5ppm

Guanidine Thiocyanate

White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
250g	Poly Bottle	**BP221-250**	107.43	6/596.02
1kg	Poly Bottle	**BP221-1**	378.71	6/2138.04

Guanidinium Isothiocyanate

$H_2NC({:}NH)NH_2{\bullet}HSCN$, $C_2H_6N_4S$

F.W. 118.16

ChemAlert® STORAGE **blue**

Application: A more powerful denaturing agent than guanidine hydrochloride, guanidine thiocyanate is suitable for the isolation of intact RNA from cell extracts.

[593-84-0]

Recommended storage: RT

Product Specifications

Assay	≥99.0%
IR	Conforms to standard
Melting Point	117°-122°C
Solubility (70% in H_2O at 25°C)	Clear and haze-free
A_{280nm} (70% in H_2O at 25°C)	≤0.8

Hae III

Source: Haemophilus aegyptius

Quantity	Packaging	Cat. No.	Each	Case of
10,000 units	Poly Tube	**BP3368-5**	219.33	- - - -

ChemAlert® STORAGE **gray**

Application: *Hae* III restriction enzyme digests dsDNA with sequence indicated below.

GG'CC

CC'GG

Concentration: 10 units/µL, **Isoschizomers:** *Bsh* I, *Bsu*R I

Heat Inactivated: -, **Note:** Not sensitive to overlapping *dcm* methylation., **Storage Buffer Components:** 10mM Tris-HCl (pH 7.4), 300mM NaCl, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA and 50% glycerol.

Recommended storage: -20°C

Product Specifications

Percent Activity in Quad 4* Buffer System:

A	75–100%
B	75–100%
C	100%
D	50–75%
UNIVERSAL*	100%

Frequency of Cutting:

λ	149
Ad-2	219
ΦX174	11
pUC18	11
M13mp18	15
pBR322	22

***Hematoxylin** Available from Fisher BioReagents*, BP2424-100. Please see Fishersci.com for complete ordering information.*

***Hematoxylin Trihydrate** Available from Fisher BioReagents*, BP2523-100. Please see Fishersci.com for complete ordering information.*

Heparin
From Porcine Intestinal Mucosa

Quantity	Packaging	Cat. No.	Each	Case of
10mg	Amber Glass	**BP2524-10**	31.41	10/284.85
50mg	Amber Glass	**BP2524-50**	100.29	10/912.60
100mg	Amber Glass	**BP2524-100**	169.07	5/818.10
250mg	Amber Glass	**BP2524-250**	408.62	5/1930.72

F.W. ≈ 5000

Application: Heparin is used as an anticoagulant in biochemical research.

Low molecular weight.

Sodium Salt.

[9041-08-1]

Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Description	white lyophilized powder
Activity (Anti-Xa)	100-120 IU/mg

Heparin Sodium
White to Grayish-brown Powder

Quantity	Packaging	Cat. No.	Each	Case of
1g	Amber Glass	**BP2425**	209.54	6/1128.03

Heparin Sodium Salt

Application: Heparin Sodium is an anticoagulant used in biochemical research procedures.

[9041-08-1]

Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

pH (of 1% aqueous solution)	6.0 to 7.5

HEPES
Molecular Biology

Fine White Crystals

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP310-100**	68.40	6/378.80
500g	Poly Bottle	**BP310-500**	227.62	6/1270.05
1kg	Poly Bottle	**BP310-1**	393.22	4/1479.98
5kg	Poly Pail	**BP310-5**	1820.46	- - - -

N-(2-Hydroxyethyl)piperazine-N'-2-ethanesulfonic acid

$C_8H_{18}N_2O_4S$

F.W. 238.3

Application: HEPES is commonly used as a buffering agent.

[7365-45-9]

Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Assay	≥99%
pK$_a$ at 25°C	7.5 ± 0.2
Solubility (1.196g/100mL H_2O)	Clear and colorless
Absorbance of a 0.1M Solution at 280nm	≤0.01
TLC	Single spot
DNase	Not detected
RNase	Not detected
Protease	Not detected

HEPES Buffer Solution, 1M
Molecular Biology

pH 7.3

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**BP299-100**	42.12	6/249.10
500mL	Poly Bottle	**BP299-500**	139.58	6/669.98
1L	Poly Bottle	**BP299-1**	219.50	6/1296.68

N-(2-Hydroxyethyl)piperazine-N'-2-ethanesulfonic acid

$C_8H_{18}N_2O_4S$

F.W. 238.3

Application: HEPES is commonly used as a buffering agent.

[7365-45-9]

Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Molarity	1.0 ± 0.05
pH at 37°C	7.3 ± 0.1
Absorbance of a 0.1M Solution:	
at 280nm	≤0.004
at 260nm	≤0.008
DNase	Not detected
RNase	Not detected

HEPES Sodium Salt
White Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP410-500**	308.06	6/1510.52
1kg	Poly Bottle	**BP410-1**	585.23	4/2268.75
2.5kg	Poly Bottle	**BP410-212**	1224.36	- - - -
12kg	Poly Bottle	**BP410-12**	3720.05	- - - -

$C_8H_{17}N_2O_4SNa$

F.W. 260.28

Application: HEPES sodium salt is used as a buffer for in vitro cell culture.

[75277-39-3]

Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Assay (dry weight basis)	≥99%
Absorbance of a 0.1M Solution in Water (1cm):	
at 260nm	≤0.04
at 280nm	≤0.02
IR	Conforms to standard
Endotoxins by LAL	≤0.06 EU/mL
pK$_a$ at 25°C	7.55 ± 0.1
Heavy Metals (as Pb)	≤0.001%
Loss on Drying at 110°C	≤3.0%
Solubility (0.1M in water)	Clear, complete & colorless
pH of 1% Solution at 25°C	10.5 ± 0.5

Heptane
Sequencing

Peroxide-free

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**BP1115-500**	105.90	6/604.54

$CH_3(CH_2)_5CH_3$

C_7H_{16}

F.W. 100.21

Application: Heptane is a solvent for other organics and is used as a carrier in chromatography.

[142-82-5 (99.4% Heptane)]

[28729-52-4 (0.1% Dimethylcyclopentane)]

[26635-64-3 (0.1% Isooctane)]

[108-87-2 (0.2% Methylcyclohexane)]

Recommended storage: RT

SOLVENT

STORAGE red

*Trademark. See Trademark Reference.

Prices subject to change.

Product Specifications

Assay	99.0%
Color (APHA)	≤10
Optical Absorbance:	
at 200nm	≤0.75
at 215nm	≤0.20
at 254nm	≤0.014
Fluorescence Background	To pass test
Refractive Index at 25°C	1.3855 to 1.3865
Residue after Evaporation	≤5ppm
Water	≤0.02%
Peroxides	Not detected
Aldehydes	Not detected

Hinc II

Source: Haemophilus influenzae Rc

Quantity	Packaging	Cat. No.	Each	Case of
1000 units	Poly Tube	**BP3370-5**	192.42	- - - -

ChemAlert® STORAGE gray

Application: *Hinc* II restriction endonuclease digests dsDNA with sequence indicated below.

GT(T/C)'(A/G)AC
CA(A/G'(T/C)TG

Concentration: 10 units/µL

Isoschizomers: *Hin*d II, **Heat Inactivated:** +

Qualified for Blue/White Cloning Assays.

Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 50mM NaCl, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA and 50% glycerol.

Recommended storage: -20°C

Product Specifications

Percent Activity in Quad 4* Buffer System:

A	25–50%
B	100%
C	25–50%
D	50–75%
UNIVERSAL*	100%

Frequency of Cutting:

λ	35
Ad-2	25
ΦX174	13
pUC18	1
M13mp18	1
pBR322	2

Hind III

Source: Haemophilus influenzae Rd

Quantity	Packaging	Cat. No.	Each	Case of
15,000 units	Poly Tube	**BP3372-5**	78.33	----

ChemAlert® STORAGE gray

Application: *Hin*d III restriction endonuclease digests dsDNA with sequence indicated below.

A'AGCT T
T TCGA'A

Concentration: 10 units/µL

High Concentration (HC): 40-80 units/µL

Isoschizomers: None

Heat Inactivated: +

Qualified for Blue/White Cloning Assays.

Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 250mM NaCl, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA and 50% glycerol.

Recommended storage: -20°C

Product Specifications

Percent Activity in Quad 4* Buffer System:

A	25–50%
B	100%
C	75–100%
D	10–25%
E	100%
UNIVERSAL*	50–75%

Frequency of Cutting:

λ	7
Ad-2	12
ΦX174	0
pUC18	1
M13mp18	1
pBR322	1

L-Histidine

White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP382-100**	58.16	6/325.68

ChemAlert® STORAGE gray

$C_6H_9N_3O_2$

F.W. 155.16

Application: This amino acid is suitable for use in tissue culture systems requiring additives.

[71-00-1]

Recommended storage: RT

Product Specifications

Assay	98.5-101.0%
Specific Rotation $[\alpha]_D^{20}$ (c=11, 6N HCl)	+12.5° ± 0.5°
State of Solution	≥98.0% transmittance
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying	≤0.20%
Residue on Ignition (sulfated)	≤0.10%

L-Histidine Hydrochloride Monohydrate

White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP383-100**	51.31	6/286.32

ChemAlert® STORAGE gray

$C_6H_9N_3O_2 \cdot HCl \cdot H_2O$

F.W. 209.63

Application: L-Histidine hydrochloride is suitable for use in tissue culture systems or as an amino acid standard.

[5934-29-2]

Recommended storage: RT

Product Specifications

Assay	98.5-101.0%
Specific Rotation $[\alpha]_D^{20}$ (c=11, HCl)	+8.9° to +9.5° (+12.0° to +12.8° calc. as free base)
State of Solution	≥98.0% transmittance
Chloride	16.66-17.08%
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying	≤0.20%
Residue on Ignition (sulfated)	≤0.10%

Hpa I

Source: Haemophilus parainfluenzae

Quantity	Packaging	Cat. No.	Each	Case of
500 units	Poly Tube	**BP3376-5**	226.05	- - - -

ChemAlert® STORAGE gray

Application: *Hpa* I restriction endonuclease digests dsDNA with sequence indicated below.

GTT'AAC
CAA'TTG

Concentration: 3-10 units/µL

Isoschizomers: *Bst*HP I, *Ksp*A I

Heat Inactivated: -

Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 300mM sodium glutamate, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA and 50% glycerol.

Recommended storage: -20°C

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Product Specifications

Percent Activity in Quad 4* Buffer System:

A	25–50%
B	50–75%
C	25–50%
D	10–25%
J	100%
UNIVERSAL*	100%

Frequency of Cutting:

λ	14
Ad-2	6
ΦX174	3
pUC18	0
M13mp18	0
pBR322	0

Human Serum, Type AB

Normal Pool

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**BP2525-100**	205.00	- - - -

ChemAlert® STORAGE gray

Application: Human Serum, Type AB is used in biochemical research procedures.

This serum is collected from Type AB human blood.

Recommended storage: 0°C

Product Specifications

HBsAG	Negative
HIV	Negative
HCV	Negative

Hyamine Hydroxide

Clear Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**BP2658-500**	448.77	6/2448.22

ChemAlert® STORAGE red

Tissue Solubilizer, Hydroxide of Hyamine

$C_8H_{45}NO_3$

F.W. 443.7

Application: Used to trap CO_2 and as a solubilizer for biological tissue and polyacrylamide gel slices.

This product is a 1M solution of methyl benzothonium hydroxide in methanol.

[26248-39-5]

Recommended storage: RT

Hydrogen Peroxide, 30%

Aqueous Solution

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP2633-500**	44.51	6/195.60

ChemAlert® STORAGE yellow

Hydrogen Dioxide, Hydroperoxide

H_2O_2

F.W. 34.01

Application: Hydrogen peroxide is used as an antiseptic and for decomposition of inorganic and organic samples.

[7722-84-1]

Recommended storage: RT

Product Specifications

Assay (as H_2O_2, %wt)	29.0-32.0%
Residue after Evaporation (%wt)	≤0.002%
Color (APHA)	≤10
Titratable Acid	≤0.0006mEq/g
Heavy Metals (as Pb)	≤1µg/g
Sulfate	≤5µg/g
Chloride	≤3µg/g
Iron	≤0.5µg/g
Ammonium (as NH_4)	≤5µg/g
Nitrate	≤2µg/g
Phosphate	≤2µg/g

▸**8-Hydroxyquinoline** *Available from Fisher BioReagents*, BP436-100. Please see Fishersci.com for complete ordering information.*

▸**IgG, Human, Purified Antigen** *Available from Fisher BioReagents*, BP2685-50. Please see Fishersci.com for complete ordering information.*

▸**IL-2** *see Interleukin 2, BP2733-50.*

Imidazole — Molecular Biology

Quantity	Packaging	Cat. No.	Each	Case of
50g	Poly Bottle	**BP305-50**	191.57	6/1062.93

ChemAlert® STORAGE white

HNCH:CHN:CH

$C_3H_4N_2$

F.W. 68.08

Application: Imidazole is an excellent biological buffer with a usable pH range of 6.2 to 7.8.

[288-32-4]

Recommended storage: RT

Product Specifications

Assay	≥99%
pK_a at 25°C	6.99 ± 0.2
Melting Point	90° ± 2°C
Absorbance of a 0.1M Solution at 260nm	≤0.01
DNase	Not detected
RNase	Not detected
Protease	Not detected

L-Isoleucine

White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP384-100**	121.48	6/695.61

ChemAlert® STORAGE gray

$C_6H_{13}NO_2$

F.W. 131.17

Application: This amino acid is suitable for use in tissue culture systems requiring additives.

[73-32-5]

Recommended storage: RT

Product Specifications

Assay	98.5-101.0%
Specific Rotation $[\alpha]_D^{20}$ (c=4, 6N HCl)	+39.5° to +41.5°
State of Solution	≥98.0% transmittance
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying	≤0.20%
Residue on Ignition (sulfated)	≤0.10%

Isopropanol, 99.9% — HPLC

Also meets ACS specifications

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**BP2632-4**	71.34	4/274.81

Also available in recyclable FisherPak and NOWPak* containers.*

SOLVENT ChemAlert® STORAGE red

2-Propanol, Isopropyl Alcohol

$(CH_3)_2CHOH$

C_3H_8O

F.W. 60.10

Melting point: -89.5°C

Boiling point: 81–83°C

Density: 0.785g/mL

Application: Isopropanol is used for precipitating nucleic acids.

Submicron Filtered.

[67-63-0]

Recommended storage: RT

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.9%
Color (APHA)	≤10
Fluorescence Background (as Quinine Sulfate)	To pass test
Refractive Index at 25°C	1.3740 to 1.3760
Residue after Evaporation	≤2ppm
Solubility in H_2O	To pass test
Water	≤0.10%
Titratable Acid or Base	≤0.0001mEq/g
Density at 25°C	0.781-0.783g/mL
Optical Absorbance:	
at 205nm	≤1.00
at 220nm	≤0.25
at 230nm	≤0.13
at 254nm	≤0.025
Carbonyl Compounds:	
Acetone	≤0.002%
Propionaldehyde	≤0.002%

Isopropyl-β-D-thiogalactopyranoside (IPTG)

Dioxane-free

Quantity	Packaging	Cat. No.	Each	Case of
1g	Amber Glass	**BP1755-1**	40.82	6/218.32
10g	Amber Glass	**BP1755-10**	318.44	- - - -
100g	Amber Glass	**BP1755-100**	1797.02	6/10679.24

IPTG

$C_9H_{18}O_5S$

F.W. 238.31

ChemAlert® STORAGE gray

Application: Because IPTG induces β-galactosidase activity in many bacteria, it is used to maximize the expression of cloned genes under control of the *lac* operon.

[367-93-1]

Recommended storage: 4°C

Product Specifications

Assay (TLC)	>99.0%
Appearance	White powder or crystals
Specific Rotation $[\alpha]_D^{20}$ (c=1, H_2O)	-31.5° ± 3.0°
Melting Point	110° to 114°C
Dioxane (NMR Analysis)	Not detected

Isopropyl-β-D-Thiogalactopyranoside (IPTG)

White Powder, Dioxane Crystallized

Quantity	Packaging	Cat. No.	Each	Case of
1g	Amber Glass	**BP1620-1**	47.43	- - - -
10g	Amber Glass	**BP1620-10**	322.35	- - - -

IPTG

$C_9H_{18}O_5S$

F.W. 238.31

ChemAlert® STORAGE gray

Application: Because IPTG induces β-galactosidase activity in many bacteria, it is used to maximize the expression of cloned genes under the control of the *lac* operon.

[367-93-1]

Recommended storage: -20°C

Product Specifications

Specific Rotation $[\alpha]_D^{22}$ (c=1, H_2O)	-27.0° ± 1.0°
TLC	Single spot
Solubility (5% in H_2O)	To pass test
Optical Absorbance of a 5% Aqueous Solution:	
at 300nm	≤0.13
at 400nm	≤0.06

Kanamycin Sulfate

White Powder

Quantity	Packaging	Cat. No.	Each	Case of
5g	Poly Bottle	**BP906-5**	47.17	6/248.75

$C_{18}H_{36}N_4O_{11} \cdot H_2SO_4$

F.W. 582.58

[25389-94-0]

Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

pH of a 1% Solution	6.5 to 8.5
Chromatographic Purity	To pass USP test

▸***Kinetin (6-Furylaminopurine)*** *Available from Fisher BioReagents*, BP942-1. Please see Fishersci.com for complete ordering information.*

Kpn I

Source: Klebsiella pneumoniae OK8

Quantity	Packaging	Cat. No.	Each	Case of
10,000 units	Poly Tube	**BP3380-5**	150.69	- - - -

Application: *Kpn* I restriction endonuclease digests dsDNA with sequence indicated below.

G GTAC'C

C'CATG G

ChemAlert® STORAGE gray

Concentration: 8-12 units/µL

High Concentration (HC): 40-80 units/µL

Isoschizomers: None (Neoschizomer *Acc*65 I, cut site G'G-TACC)

Heat Inactivated: +/-

Qualified for Blue/White Cloning Assays.

Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 200mM KCl, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA and 50% glycerol.

Recommended storage: -20°C

Product Specifications

Percent Activity in Quad 4* Buffer System:

A	100%
B	25–50%
C	25–50%
D	<10%
J	100%
UNIVERSAL*	75–100%

Frequency of Cutting:

λ	2
Ad-2	8
ΦX174	0
pUC18	1
M13mp18	1
pBR322	0

LB Agar, Miller

Molecular Genetics

Granular

pH 7.0 ± 0.2 at 25°C

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP1425-500**	89.33	6/464.27
2kg	Poly Pail	**BP1425-2**	339.40	4/1072.48

Components (per liter): Tryptone, 10g; Yeast Extract, 5g; Sodium Chloride, 10g; Agar, Granulated, 15g

Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Growth promotion ability:

S. aureus	Found
E. coli	Found

LB Broth, Lennox

Molecular Genetics

Powder
pH 7.0 ± 0.2 at 25°C

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP1427-500**	46.01	6/242.57
2kg	Poly Pail	**BP1427-2**	158.94	4/611.42

ChemAlert® STORAGE gray

Application: LB (Luria-Bertani) Broth, Lennox, is used for the culturing of *E. coli* in molecular biology procedures. Components (per liter): Tryptone, 10g; Yeast Extract, 5g; Sodium Chloride, 5g

Recommended storage: RT

Product Specifications

Growth promotion ability:

S. aureus	Found
E. coli	Found

LB Broth, Miller

Molecular Genetics

Granular
pH 7.0 ± 0.2 at 25°C

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP1426-500**	44.97	6/238.16
2kg	Poly Pail	**BP1426-2**	156.37	4/493.86

ChemAlert® STORAGE gray

Application: LB (Luria-Bertani) Broth, Miller, is used for the culturing of *E. coli* in molecular biology procedures. Components (per liter): Tryptone, 10g; Yeast Extract, 5g; Sodium Chloride, 10g

Recommended storage: RT

Product Specifications

Growth promotion ability:

S. aureus	Found
E. coli	Found

L-Leucine

White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP385-100**	47.22	6/261.66

ChemAlert® STORAGE gray

$C_6H_{13}NO_2$

F.W. 131.17

Application: This amino acid is suitable for use in tissue culture systems requiring additives.

[61-90-5]

Recommended storage: RT

Product Specifications

Assay	98.5-100.5%
Specific Rotation $[\alpha]_D^{20}$ (c=4, 6N HCl)	+14.9° to +16.0°
State of Solution	≥98.0% transmittance
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying at 105°C	≤0.2%
Residue on Ignition (sulfated)	≤0.10%

▸**Leukotriene B4** *Available from Fisher BioReagents*, BP2528-25. Please see Fishersci.com for complete ordering information.*

Leupeptin Hemisulfate

White Powder

Quantity	Packaging	Cat. No.	Each	Case of
1mg	Amber Glass	**BP2662-1**	22.37	5/104.35
5mg	Amber Glass	**BP2662-5**	70.84	5/319.26
25mg	Amber Glass	**BP2662-25**	142.57	5/621.09
100mg	Amber Glass	**BP2662-100**	385.22	5/1751.31

ChemAlert® STORAGE gray

(Acetyl-Leu-Leu-Arg-al), Valeramide

$C_{20}H_{38}N_6O_4 \cdot \frac{1}{2}H_2SO_4$

F.W. 475.60

Application: Leupeptin hemisulfate is a biochemical used as an inhibitor for trypsin, plasmin, papain, and cathepsin B.

[103476-89-7]

Recommended storage: -20°C, dessicate, protect from light.

▸**Liquid Paraffin** *see Mineral Oil, BP2629-1.*

▸**Liquid Petrolatum** *see Mineral Oil, BP2629-1.*

Lithium Dodecyl Sulfate

Molecular Biology

Powder or Flakes

Quantity	Packaging	Cat. No.	Each	Case of
5g	Poly Bottle	**BP1309-5**	27.21	- - - -
25g	Poly Bottle	**BP1309-25**	60.21	- - - -

ChemAlert® STORAGE gray

$CH_3(CH_2)_{11}OSO_3Li$

$C_{12}H_{25}LiO_4S$

F.W. 272.4

Application: Lithium Dodecyl Sulfate (LDS) is a detergent used for dissociating proteins.

[2044-56-6]

Recommended storage: RT

Product Specifications

Assay	≥99.0%
Absorbance of a 3% Solution:	
at 230nm	≤0.3
at 280nm	≤0.05
at 405nm	≤0.01
Heavy Metals	≤5ppm
Phosphate	≤1ppm
pH at 25°C (3% aqueous solution)	7.0 ± 1.0

Lymphocyte Separation Medium-LSM*

Quantity	Packaging	Cat. No.	Each	Case of
5 × 100mL	Poly Bottles	**BP2663-500**	150.67	- - - -

ChemAlert® STORAGE gray

Application: LSM is formulated for isolation of mononuclear cells from defribinated or heparinized whole human blood.

One-step centrifugation permits separation of mononuclear lymphocytes from erythrocytes, polynuclear lymphocytes and most platelets.

LSM is a sterile-filtered solution of a sucrose polymer and diatrizoate salts at a specific gravity of 1.077-1.080 g/mL at 20°C.

Recommended storage: 0° to 5°C

L-Lysine Hydrochloride

White Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP386-100**	26.33	6/145.75

ChemAlert® STORAGE gray

$C_6H_{14}N_2O_2 \cdot HCl$

F.W. 182.65

Application: This amino acid is suitable for use in tissue culture systems requiring additives.

[657-27-2]

Recommended storage: RT

Product Specifications

Assay	98.5-100.5%
Specific Rotation $[\alpha]_D^{20}$(c=8, 6N HCl)	+20.7° to +21.5° (+25.9° to 26.9° calc. as free base)
State of Solution	≥98.0% transmittance
Chloride	19.12-19.51%
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying at 105°C	≤0.40%
Residue on Ignition (sulfated)	≤0.10%

Lysozyme, Egg White

White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
1g	Amber Glass	**BP535-1**	41.25	- - - -
5g	Amber Glass	**BP535-5**	204.93	6/1071.24
10g	Amber Glass	**BP535-10**	261.72	6/1477.56
25g	Amber Glass	**BP535-25**	485.62	6/2796.45
100g	Amber Glass	**BP535-100**	1421.77	6/8187.35

Application: This enzyme is used to lyse *E. coli* for preparation of plasmid DNA from transformed cell cultures.

ChemAlert® STORAGE gray

Recommended storage: <0° C

Product Specifications

Activity	Approx. 20,000 units/mg protein
Salmonella	None detected

Magnesium Acetate Tetrahydrate

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP215-500**	56.40	6/306.69

$(CH_3COO)_2Mg•4H_2O$

$C_4H_6O_4Mg•4H_2O$

ChemAlert® STORAGE gray

F.W. 214.46, **Application:** Magnesium acetate is suitable for use in the preparation of buffer solutions and is required as a stabilizer for all stages of bacteriophage purification.

[16674-78-5]

Recommended storage: RT

Product Specifications

Assay	≥99.0%
Calcium	≤0.01%
Iron	≤5ppm
Heavy Metals (as Pb) (ACS method)	≤5ppm
Water-insoluble Matter	≤0.005%
Chloride	≤0.001%
Sulfate	≤0.005%
Nitrogen Compounds	≤0.001%
pH of a 5% Solution at 25°C	6.5 to 8.5

Magnesium Chloride Hexahydrate

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP214-500**	42.28	6/234.23

$MgCl_2·6H_2O$

F.W. 203.30, **Application:** Magnesium chloride is suitable for use in the preparation of buffer solutions.

ChemAlert® STORAGE gray

[7791-18-6]

Recommended storage: RT

Product Specifications

Assay	≥99.0%
Calcium	≤0.01%
Lead	≤5ppm
Iron	≤0.0005%
Ammonium	≤0.002%
Nitrate	≤0.001%
Sulfate	≤0.002%
Phosphate	≤5ppm
Water-insoluble Matter	≤0.005%

Magnesium Sulfate Heptahydrate

Quantity	Packaging	Cat. No.	Each	Case of
1kg	Amber Glass	**BP213-1**	96.33	6/332.36

$MgSO_4•7H_2O$

F.W. 246.48

ChemAlert® STORAGE gray

Application: Magnesium Sulfate is suitable for use in the preparation of buffer solutions.

[10034-99-8]

Recommended storage: RT

Product Specifications

Assay	≥99.0%
Arsenic	≤2ppm
Calcium	≤0.02%
Iron	≤5ppm
Heavy Metals (as Pb)	≤5ppm
Manganese	≤3ppm
Chloride	≤5ppm
Ammonium	≤0.002%
Nitrate	≤0.002%

D-(+)-Maltose Monohydrate

White to off-white Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP684-500**	78.57	6/427.18

$C_{12}H_{22}O_{11}•H_2O$

F.W. 360.22

ChemAlert® STORAGE gray

Application: Maltose is suitable for use in cell culture systems requiring sugar additives.

[6363-53-7]

Recommended storage: RT

Product Specifications

Assay	≥97%
TLC	Single spot
Specific Rotation $[\alpha]_D^{20}$ (c=4, HCl)	+130° ± 2°
Melting Point	119°-139°C

Manganese Chloride Solution, 1.0M **Molecular Biology**

Clear, Light-pink Solution

Quantity	Packaging	Cat. No.	Each	Case of
10 × 1mL	Poly Tube	**BP541-1**	42.85	- - - -
100mL	Poly Bottle	**BP541-100**	47.41	6/269.72

Manganese Dichloride, Manganous Chloride

Application: Manganese Chloride is used for dC and dG tailing of DNA.

ChemAlert® STORAGE gray

0.2µm-filtered solution in 18-megohm water.

[7773-01-5]

Recommended storage: RT

Product Specifications

Concentration	1.0M ± 0.01
Heavy Metals	≤5.0ppm
DNase	Not detected
RNase	Not detected
Protease	Not detected

D-Mannitol

White to off-white Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP686-500**	29.92	- - - -

$C_6H_{14}O_6$

F.W. 182.18

ChemAlert® STORAGE gray

Application: Mannitol is suitable for use in cell culture systems requiring sugar additives.

[69-65-8]

Recommended storage: RT

Contd. on next page.

Contd. from previous page.

Product Specifications

Assay	≥98%
TLC	Single spot
Specific Rotation $[\alpha]_D^{20}$ (c=8, HCl)	+24° ± 1°
Melting Point	165°-168°C

2-Mercaptoethanol — Electrophoresis

Quantity	Packaging	Cat. No.	Each	Case of
89.74mL (100g)	Amber Glass/ Poison Pack	**BP176-100**	53.51	- - - -

2-Hydroxy-1-ethanethiol, 2-Hydroxyethyl mercaptan, Thioglycol
$HSCH_2CH_2OH$
C_2H_6OS
F.W. 78.13
Application: 2-Mercaptoethanol reduces disulfide linkages in proteins and peptides and is used in many enzymatic reactions as a protein stabilizer.
[60-24-2]
Recommended storage: RT

STORAGE red

Product Specifications

Assay	≥98%
Total Disulfide (S-S) Absorbance of a 0.02M Solution at 285nm	≤0.05
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected

▸ ***β-Mercaptoethylamine Hydrochloride*** *Available from Fisher BioReagents*, BP2664-100. Please see Fishersci.com for complete ordering information.*

MES
Fine White Crystals

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP300-100**	61.14	6/335.39

2-(4-Morpholino)ethanesulfonic Acid
$OCH_2CH_2NCH_2CH_2(CH_2CH_2SO_3H)$
$C_6H_{13}NO_4S$
F.W. 195.24
Application: This biological buffer has a usable pH range of 5.5 to 6.7.
[4432-31-9]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Assay	≥98%
pK_a at 25°C	6.09 ± 0.2
Moisture	≤10%
DNase	Not detected
RNase	Not detected

Methanol — Sequencing
Peroxide-free

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**BP1105-1**	38.57	6/215.66
4L	Amber Glass	**BP1105-4**	61.16	4/228.41

Also available in recyclable FisherPak and NOWPak* containers.*
CH_3OH
CH_4O
F.W. 32.04
Application: Methanol is used in staining and destaining protein electrophoresis gels, in HPLC, and in other biological applications.
[67-56-1]
Recommended storage: RT

SOLVENT

STORAGE red

Product Specifications

Assay	≥99.9%
IR	Conforms to standard
Color (APHA)	≤5
Optical Absorbance:	
at 205nm	≤1.00
at 220nm	≤0.30
at 230nm	≤0.15
at 254nm	≤0.025
Fluorescence Background	To pass test
Refractive Index at 25°C	1.3260-1.3300
Titratable Acid	≤0.0003mEq/g
Titratable Base	≤0.0002mEq/g
Residue after Evaporation	≤3ppm
Solubility in H_2O	To pass test
Impurities Reactive with H_2SO_4	Not detected
Water	≤0.1%
Acetone	To pass test (about 0.001%)
Fluorescent Derivatizable Amines	To pass test
Peroxides	≤0.001%
LC Gradient Suitability	To pass test
Substances Reducing Permanganate	To pass test

L-Methionine
White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP388-100**	51.09	6/284.93

$C_5H_{11}NO_2S$
F.W. 149.21
Application: This amino acid is suitable for use in tissue culture systems requiring additives.
[63-68-3]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Assay	98.5-100.5%
Specific Rotation $[\alpha]_D^{20}$ (c=2, 6N HCl)	+23.0° to +24.5°
State of Solution	≥98.0% transmittance
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying at 105°C	≤0.20%
Residue on Ignition (sulfated)	≤0.10%

Methylene Blue

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP117-100**	102.25	6/555.83

$C_{16}H_{18}N_3SCl$
F.W. 319.87
C.I. 52015
[61-73-4]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Solubility	To pass test
Loss on Drying at 105°C	≤15%
$E^{1\%}_{1cm}$	≥2000L $g^{-1}cm^{-1}$
Lambda Max. (λ)	662nm ± 2nm

*Trademark. See Trademark Reference.

Methylene Chloride
Pentene Preservative

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**BP1186-4**	79.08	4/289.16

Also available in recyclable FisherPak and NOWPak* containers.*

SOLVENT

Dichloromethane, DCM
CH_2Cl_2
F.W. 84.93

ChemAlert® STORAGE **blue**

Application: This solvent is often used in automated synthesis procedures.
[75-09-2]
Recommended storage: RT

Product Specifications

Assay	≥99.9%
Color (APHA)	≤10
Optical Absorbance:	
at 233nm	≤1.00
at 240nm	≤0.12
at 254nm	≤0.010
Residue after Evaporation	≤1ppm
Water	≤25ppm
Fluorescence Background (as Quinine Sulfate)	≤1ppb
Refractive Index at 25°C	1.4200 to 1.4230
Density at 25°C	1.315-1.321g/mL
Titratable Acid (as HCl)	≤0.0003mEq/g
Boiling Range (1 drop to dryness)	≤1.0° incl. 39.8°C at 760mmHg
Free Halogens	To pass test

N-Methylpyrrolidinone

Quantity	Packaging	Cat. No.	Each	Case of
4L	Amber Glass	**BP1172-4**	199.75	4/747.34
19L	NOWPak* (Plastic Exterior)	**BP1172N1-19**	827.17	- - - -

N-Methyl-2-Pyrrolidinone, NMP
C_5H_9NO
F.W. 99.13

ChemAlert® STORAGE **gray**

Application: N-Methylpyrrolidinone is used in automated oligonucleotide synthesis.
[872-50-4]
Recommended storage: RT

roduct Specifications

Assay (by GC)	≥99.8%
IR	Conforms to standard
Color (APHA)	≤20
Water	≤0.05%
Titratable Base	≤0.001mEq/g
Optical Absorbance:	
at 265nm	≤1.0
at 270nm	≤0.7
at 300nm	≤0.3
at 400nm	≤0.02

▸***4-Methylumbelliferyl Phosphate Disodium Salt** Available from Fisher BioReagents*, BP2666-1. Please see Fishersci.com for complete ordering information.*

▸***Metolazone** Available from Fisher BioReagents*, BP2667-100. Please see Fishersci.com for complete ordering information.*

▸***Miconazole** Available from Fisher BioReagents*, BP2668-25. Please see Fishersci.com for complete ordering information.*

Mineral Oil
Clear, Viscous Liquid

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**BP2629-1**	38.86	6/158.50

Liquid Petrolatum, Liquid Paraffin

ChemAlert® STORAGE **gray**

Application: Mineral Oil can be used in PCR applications.
[8020-83-5]
Recommended storage: RT

Product Specifications

Solubility	To pass test
Specific Gravity at 25°C	0.845 to 0.905
Neutrality	To pass test
Limit of Polynuclear Compounds	To pass test
Viscosity at 40°C	≥34.5cs
Readily Carbonizable Substances	To pass test

Mitomycin C

Quantity	Packaging	Cat. No.	Each	Case of
2mg	Amber Glass	**BP2531-2**	70.49	5/336.03
10mg	Amber Glass	**BP2531-10**	291.98	5/1445.32
20mg	Amber Glass	**BP2531-20**	540.61	5/2554.39

$C_{15}H_{18}N_4O_5$
F.W. 334.3

ChemAlert® STORAGE **blue**

Application: Mitomycin C is used in biochemical research applications.
[50-07-7]
Recommended storage: 4°C

M-MLV Reverse Transcriptase

Quantity	Packaging	Cat. No.	Each	Case of
10,000 Units	Poly Tube	**BP3208-1**	61.65	- - - -
50,000 Units	Poly Tube	**BP3208-5**	218.18	- - - -

ChemAlert® STORAGE **blue**

Application: M-MLV RT can be used for first-strand synthesis of cDNA from RNA molecules.

Description: Moloney Murine Leukemia Virus Reverse Transcriptase (M-MLV RT) is an RNA-dependent DNA polymerase that can be used in cDNA synthesis with long messenger RNA templates (>5kb). M-MLV RT is the preferred reverse transcriptase for long mRNA templates because the RNase H activity of M-MLV RT is weaker than the commonly used Avian Myeloblastosis Virus (AMV) reverse transcriptase.

Concentration: 200 units/mL

Storage Buffer Components: Supplied in 20mM Tris-HCl (pH 7.5), 200mM NaCl, 0.1mM EDTA, 1mM DTT, 0.01% Nonidet* P-40 and 50% glycerol.

Provided with 5X Reaction Buffer: The 1X buffer composition is 50mM Tris-HCl (pH 8.3 at 25°C), 75mM KCl, 3mM $MgCl_2$, and 10mM DTT.

Unit Definition: One unit is defined as the amount of enzyme required to catalyze the transfer of 1nmole of deoxynucleotide into acid-precipitable material in 10 minutes at 37°C.

Note: M-MLV Reverse Transcriptase is less processive than AMV Reverse Transcriptase and therefore more units of M-MLV RT are required to generate the same amount of cDNA as in the AMV reaction.

Recommended storage: -20°C

Product Specifications

Tested for first-strand cDNA synthesis, purity by SDS-PAGE, DNase activity, RNase activity, and endonuclease/nickase activity.

▸***Molecular Sieves, Grade 513** Available from Fisher BioReagents*,BP2634-500. Please see Fishersci.com for complete ordering information.*

Molecular Sieves, Grade 514

Type 4A; 8-12 Mesh

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP2631-500**	46.30	6/217.46

Aluminum Sodium Silicate

ChemAlert® STORAGE **gray**

Application: Used for dehydration of liquids.
Effective pore size: 4Å
Base: Alumina-Silicate
Cation: Sodium
[1344-00-9 (Aluminum Oxide)]
[14808-60-7 (Quartz)]
Recommended storage: RT

Product Specifications

Mesh Size	To pass test

MOPS

Molecular Biology

Fine White Crystals

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP308-100**	74.41	6/408.18
500g	Poly Bottle	**BP308-500**	194.36	6/1078.42

3-(4-Morpholino)propane sulfonic Acid
$CH_2CH_2OCH_2CH_2N(CH_2)_3SO_3H$
$C_7H_{15}NO_4S$
F.W. 209.26

ChemAlert® STORAGE **gray**

Application: This biological buffer has a usable pH range of 6.5 to 7.9.
[1132-61-2]
Recommended storage: RT

Product Specifications

Assay	≥97%
IR	Conforms to standard
pK_a at 25°C	7.2 ± 0.2
DNase	Not detected
RNase	Not detected
Protease	Not detected

Msp I

Source: Moraxella species

Quantity	Packaging	Cat. No.	Each	Case of
10,000 units	Poly Tube	**BP3384-5**	254.32	- - - -
10,000 units (HC)	Poly Tube	**BP3384-7**	234.12	- - - -

ChemAlert® STORAGE **gray**

Application: *Msp* I restriction endonuclease digests dsDNA with sequence indicated below.
C'CG G
G GC'C
Concentration: 10 units/µL
High Concentration (HC): 40-80 units/µL
Isoschizomers: *Hpa* II, *Hap* II, *BsiS* I
Heat Inactivated: +
Note: Exhibits different methylation sensitivity.
Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 50mM NaCl, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA and 50% glycerol.
Recommended storage: -20°C

Product Specifications

Percent Activity in Quad 4* Buffer System:

A	75–100%
B	100%
C	75–100%
D	25–50%
UNIVERSAL*	25–50%

Frequency of Cutting:

λ	328
Ad-2	171
ΦX174	5
pUC18	13
M13mp18	18
pBR322	26

Nde II *Available from Fisher BioReagents*, BP3394-1. Please see Fishersci.com for complete ordering information.*

Neomycin Sulfate *Available from Fisher BioReagents*, BP2669-5. Please see Fishersci.com for complete ordering information.*

(-)-Nicotine Tartrate *Available from Fisher BioReagents*, BP2533-1. Please see Fishersci.com for complete ordering information.*

Nitrilotriacetic Acid *Available from Fisher BioReagents*, BP2760-1. Please see Fishersci.com for complete ordering information.*

NZCYM Broth *Available from Fisher BioReagents*, BP2464-2. Please see Fishersci.com for complete ordering information.*

n-Octyl-β-D-Glucopyranoside

White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500mg	Poly Micro Tube	**BP585-500**	57.36	- - - -
1g	Poly Micro Tube	**BP585-1**	81.63	- - - -
5g	Amber Poly Bottle	**BP585-5**	310.98	6/1864.00
25g	Amber Poly Bottle	**BP585-25**	623.47	- - - -

$C_{14}H_{28}O_6$
F.W. 292.4

ChemAlert® STORAGE **gray**

Application: n-Octyl-β-D-Glucopyranoside is a highly purified, nonionic detergent.
[29836-26-8]
Recommended storage: -20°C

Product Specifications

Assay (by GC)	≥98.0%
Specific Rotation $[\alpha]_D^{20}$(c=1, anhydrous MeOH)	-32.0° to -28.0°
Absorbance (at 260nm)	<0.3
1-Octanol	≤0.05%
Solubility (in H_2O)	To pass test

Oligonucleotide Sizing Markers *Available from Fisher BioReagents*, BP2660-25. Please see Fishersci.com for complete ordering information.*

Opti-Freeze* DMSO Cryopreservation Medium

Quantity	Packaging	Cat. No.	Each	Case of
50mL	Amber Glass	**BP2652-50**	74.84	8/524.26

ChemAlert® STORAGE **gray**

Application: Opti-Freeze with DMSO and supplemented with 10% FBS is used for preservation of cell lines.
Recommended storage: -20°C

Product Specifications

pH	7.2 to 7.8
Endotoxin	≤10ng/mL
Sterility	Negative
Mycoplasma	Negative
Cell-freeze Recovery	To pass test

OptiGrow* Preweighed Media

Description	Packaging	Cat. No.	Each	Case of
LB Agar Miller	10 Pouches/Box	**BP1425-10P1**	56.58	- - - -
LB Broth Lenox	10 Pouches/Box	**BP1427-10P1**	57.00	- - - -
LB Broth Miller	10 Pouches/Box	**BP1426-10P1**	57.00	- - - -
Terrific	10 Pouches/Box	**BP2468-10P1**	82.22	- - - -

Four classic media, in convenient, preweighed pouches. Optimized for superior yield of bacterial culture.

- Preblended medium components save time and preparation costs
- Each pouch contains enough material for 1L of liquid media
- No more weighing of dusty powders
- High quality—assured by stringent testing procedures

*Trademark. See Trademark Reference.

***▸L-Ornithine Hydrochloride** Available from Fisher BioReagents*, BP389-100. Please see Fishersci.com for complete ordering information.*

Ovalbumin

Lyophilized Powder

Quantity	Packaging	Cat. No.	Each	Case of
5g	Amber Glass	**BP2535-5**	140.75	9/1170.01

Application: Ovalbumin is used in several biochemical research applications.

From chicken egg white by ion exchange.

[9006-59-1]

Recommended storage: -20°C

ChemAlert® STORAGE **gray**

roduct Specifications

Assay (SDS-PAGE)	>90%
Total Protein	93.6%

***▸PBS** see Phosphate Buffered Saline, BP399-4, BP661-10, BP665-1, and BP2438-4.*

PCR Nucleotide Mix

10mM solution of each dATP, dCTP, dGTP, dTTP

Quantity	Packaging	Cat. No.	Each	Case of
200µL	Poly Micro Tube	**BP2565-2**	60.62	- - - -
1000µL	Poly Micro Tube	**BP2565-1**	228.06	- - - -

DNA Nucleotide Mix

Application: PCR Nucleotide Mix is a premixed 10mM solution of each dATP, dCTP, dGTP, and dTTP used for PCR.

Functionally tested in PCR.

High purity: >98% triphosphate.

Supplied as 10mM solution in purified water (pH 7.5).

[1927-31-7 (dATP)]

[18423-43-3 (dTTP)]

[93919-41-6 (dGTP)]

[102783-51-7 (dCTP)]

Recommended storage: -20°C

ChemAlert® STORAGE **gray**

Penicillin-G Potassium Salt

White to off-white Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP914-100**	63.90	- - - -

$C_{16}H_{17}N_2KO_4S$

F.W. 372.47

Application: Penicillin inhibits microbial contamination in tissue culture applications.

Not for drug use.

[113-98-4]

Recommended storage: RT

ChemAlert® STORAGE **gray**

oduct Specifications

Assay	≥85%
pH of a 0.6% Solution	5.5 to 7.5
Loss on Drying at 105°C	≤1.0%

Peptone

Molecular Genetics

owder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP1420-100**	41.73	6/221.01
500g	Poly Bottle	**BP1420-500**	76.95	6/403.60
2kg	Poly Bottle	**BP1420-2**	282.32	4/1107.00

Application: Peptone contains nitrogen in a form readily available to bacteria.

[73049-73-7]

Recommended storage: RT

ChemAlert® STORAGE **gray**

oduct Specifications

Growth promotion ability:

S. aureus	Found
E. coli	Found

Phenol

Crystallized

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass/Poison Pack	**BP226-100**	80.88	- - - -
500g	Amber Glass/Poison Pack	**BP226-500**	165.61	- - - -

Carbolic Acid, Oxybenzene

C_6H_5OH

C_6H_6O

F.W. 94.11

Application: Phenol is used in nucleic acid purification procedures.

[108-95-2]

Recommended storage: 4°C

ChemAlert® STORAGE **white**

Product Specifications

Assay	≥99.0%
Melting Point	40°-41°C
Heavy Metals (as Pb)	≤0.01%
Water	≤0.5%
Saturation of Phenol with Tris	To pass test

Phenol, Saturated

pH 4.3, Liquid

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Coated Amber Glass/ Poison Pack	**BP1751I-100**	56.57	- - - -
400mL	Coated Amber Glass/ Poison Pack	**BP1751I-400**	107.87	- - - -

Application: Phenol saturated with Tris buffer is used for purifying RNA.

Capped with a layer of buffer.

Recommended storage: 4°C

ChemAlert® STORAGE **white**

Product Specifications

Assay	>99.0%
Optical Absorbance:	
at 330nm	<0.2
at 405nm	<0.1
at 510nm	<0.1
pH (with buffer)	4.3 ± 0.2
Stability (4.0°C)	>1 year

Phenol, Saturated

pH 6.6/7.9, Liquid

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Coated Amber Glass/ Poison Pack	**BP1750I-100**	58.35	- - - -
400mL	Coated Amber Glass/ Poison Pack	**BP1750I-400**	105.97	- - - -

Application: Phenol saturated with Tris buffer is used in DNA extraction procedures.

Capped with a layer of buffer.

Recommended storage: 4°C

ChemAlert® STORAGE **white**

Product Specifications

Assay	>99.0%
Optical Absorbance:	
at 330nm	<0.2
at 405nm	<0.1
at 510nm	<0.1
pH	6.6 ± 0.2
pH (with buffer)	7.9 ± 0.2
DNase	Not detected
RNase	Not detected
Stability (4.0°C)	>1 year
Stability (with buffer)	6 months

Phenol/Chloroform/Isoamyl Alcohol

25:24:1 Mixture, pH 4.3, Liquid

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Coated Amber Glass/ Poison Pack	**BP1754I-100**	59.56	- - - -
400mL	Coated Amber Glass/ Poison Pack	**BP1754I-400**	157.56	- - - -

Application: This mixture is used to purify total RNA from mixtures containing RNA, DNA, and protein.

Recommended storage: 4°C

ChemAlert® STORAGE white

Product Specifications

Assay	>99.0%
Optical Absorbance:	
at 330nm	<0.2
at 405nm	<0.1
at 510nm	<0.1
pH	4.3 ± 0.2
Stability (4.0°C)	>1 year

Phenol/Chloroform/Isoamyl Alcohol

25:24:1 Mixture, pH 5.2, Liquid

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Coated Amber Glass/ Poison Pack	**BP1753I-100**	59.56	- - - -
400mL	Coated Amber Glass/ Poison Pack	**BP1753I-400**	157.56	- - - -

Application: This mixture is used for purification of nucleic acids.

Recommended storage: 4°C

ChemAlert® STORAGE white

Product Specifications

Assay	>99.0%
Optical Absorbance:	
at 330nm	<0.2
at 405nm	<0.1
at 510nm	<0.1
pH (with buffer)	5.2 ± 0.2
Stability (4.0°C)	>1 year

Phenol/Chloroform/Isoamyl Alcohol

25:24:1 Mixture, pH 6.7/8.0, Liquid

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Coated Amber Glass/ Poison Pack	**BP1752I-100**	47.91	- - - -
400mL	Coated Amber Glass/ Poison Pack	**BP1752I-400**	141.40	- - - -

Application: This mixture is used for purification of nucleic acids.

Recommended storage: 4°C

ChemAlert® STORAGE white

Product Specifications

Assay	>99.0%
Optical Absorbance:	
at 330nm	<0.2
at 405nm	<0.1
at 510nm	<0.1
pH	6.7 ± 0.2
pH (with buffer)	8.0 ± 0.2
Stability (4.0°C)	>1 year

L-Phenylalanine

White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP391-100**	66.03	6/371.54

$C_9H_{11}NO_2$

F.W. 165.19

Application: This amino acid is suitable for use in tissue culture systems requiring additives.

[63-91-2]

Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Assay	98.5-100.5%
Specific Rotation $[\alpha]_D^{20}$ (c=2, H_2O)	-33.5° to -35.0°
State of Solution	≥98.0% transmittance
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying at 105°C	≤0.20%
Residue on Ignition (sulfated)	≤0.10%

▸***o-Phenylenediamine*** *Available from Fisher BioReagent*, BP2537-1. Please see Fishersci.com for complete ordering information.*

Phorbol 12-Myristate 13-Acetate

Clear or Whitish Film

Quantity	Packaging	Cat. No.	Each	Case of
1mg	Glass Ampule	**BP685-1**	63.76	- - - -
5mg	Glass Ampule	**BP685-5**	152.99	- - - -
10mg	Glass Ampule	**BP685-10**	301.41	- - - -

PMA

$C_{36}H_{56}O_8$

F.W. 616.8

Application: PMA is an activator of Protein Kinase C; it is a skin irritant and mouse skin tumor promoter.

Film adheres to inside of vial.

[16561-29-8]

Recommended storage: -20°C

ChemAlert® STORAGE gray

Product Specifications

Assay (HPLC)	≥99.0%
NMR	Identical to standard reference
Solubility (in DMSO, Methanol, Ethanol, Acetone, Ether, and DMF)	To pass test

Phosphate Buffered Saline, 10X Concentrate

White Granular Powder

Quantity	Packaging	Cat. No.	Each	Case of
2 × 1L	Foil Pack	**BP665-1**	35.85	- - - -

Application: This product provides a convenient way to make a 10X concentrated solution of standard Phosphate Buffer; each pack contains 98.8g for reconstitution in 1 liter of water.

Components: Sodium Chloride (81%), Sodium Phosphate Dibasic (≈14%), Potassium Phosphate Monobasic (≈3.0%), and Potassium Chloride (≈2%).

[7647-14-5 (Sodium Chloride)]

[7558-79-4 (Sodium Phosphate Dibasic)]

[7778-77-0 (Potassium Phosphate Monobasic)]

[7447-40-7 (Potassium Chloride)]

Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

Solubility (1% in water)	To pass test
pH of a 10X Solution at 25°C	6.7 to 6.9
pH of a 1X Solution at 25°C	7.3 to 7.5
Conductivity of a 1X Solution	14,000 to 17,800µmhos
Chloride Concentration of a 1X Solution	0.140 ± 0.004 moles/L
DNase	Not detected
RNase	Not detected
Protease	Not detected

Phosphate Buffered Saline, 10X Solution

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**BP399-500**	23.51	6/137.76
1L	Poly Bottle	**BP399-1**	44.43	6/255.83
4L	PolyPac*	**BP399-4**	106.39	- - - -
20L	PolyPac	**BP399-20**	333.19	- - - -

PBS

ChemAlert® STORAGE gray

Application: A concentrated, standard phosphate buffer solution.

Components: Sodium Chloride (8%), Potassium Chloride (<1.0%), Sodium Phosphate Dibasic (1.4%), and Potassium Phosphate Monobasic (<1.0%).

1.37M Sodium Chloride, 0.027M Potassium Chloride, and 0.119M Phosphate Buffer.

[7647-14-5 (Sodium Chloride)]
[7447-40-7 (Potassium Chloride)]
[7558-79-4 (Sodium Phosphate Dibasic)]
[7778-77-0 (Potassium Phosphate Monobasic)]

Recommended storage: RT

roduct Specifications

pH of a 10X Solution at 25°C	6.7 to 6.9
pH of a 1X Solution at 25°C	7.3 to 7.5
Conductivity of a 1X Solution	14,000 to 17,800µmhos
Chloride Concentration of a 1X Solution	0.140 ± 0.004 moles/L
DNase	Not detected
RNase	Not detected
Protease	Not detected

hosphate Buffered Saline, 1X Concentrate

Vhite Granular Powder

Quantity	Packaging	Cat. No.	Each	Case of
10L	Poly Bottle	**BP661-10**	34.73	6/191.49
50L	Poly Bottle	**BP661-50**	103.47	6/543.67

ChemAlert® STORAGE gray

Application: This product provides a convenient way to make large volumes of standard 1X Phosphate Buffer; each bottle contains 98.9g or 492g for reconstitution in 10 liters or 50 liters of water, respectively.

Components: Sodium Chloride (81%), Sodium Phosphate Dibasic (≈14%), Potassium Phosphate Monobasic (≈3.0%), and Potassium Chloride (≈2%).

[7647-14-5 (Sodium Chloride)]
[7558-79-4 (Sodium Phosphate Dibasic)]
[7778-77-0 (Potassium Phosphate Monobasic)]
[7447-40-7 (Potassium Chloride)]

Recommended storage: RT

oduct Specifications

Solubility (1% in water)	To pass test
pH of a 1X Solution at 25°C	7.3 to 7.5
Conductivity of a 1X Solution	14,000 to 17,800µmhos
Chloride Concentration of a 1X Solution	0.140 ± 0.004 moles/L
DNase	Not detected
RNase	Not detected
Protease	Not detected

hosphate Buffered Saline, 1X Solution

Quantity	Packaging	Cat. No.	Each	Case of
4L	PolyPac*	**BP2438-4**	83.98	- - - -
20L	PolyPac	**BP2438-20**	225.06	- - - -

PBS

ChemAlert® STORAGE gray

Application: A standard phosphate buffer used in many biomolecular procedures.

0.137M Sodium Chloride, 0.0027M Potassium Chloride, and 0.0119M Phosphates.

Filtered through a 0.2-micron filter.

[7647-14-5 (Sodium Chloride)]
[7447-40-7 (Potassium Chloride)]
[7558-79-4 (Sodium Phosphate Dibasic)]
[7778-77-0 (Potassium Phosphate Monobasic)]

Recommended storage: RT

Product Specifications

pH of a 1X Solution at 25°C	7.3 to 7.5
Conductivity of a 1X Solution	14,000 to 17,800µmhos/cm
Chloride Concentration of a 1X Solution	0.140 ± 0.004 moles/L
DNase	Not detected
RNase	Not detected
Protease	Not detected

▸ ***ΦX-174RF DNA-Hinc II Digest*** *Available from Fisher BioReagents*, BP2557-10. Please see Fishersci.com for complete ordering information.*

PIPES, Sesquisodium Salt **Molecular Biology**

Fine White Crystals

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP304-100**	87.63	6/476.44
500g	Poly Bottle	**BP304-500**	328.09	6/1889.28

$C_8H_{16.5}N_2O_6S_2\cdot1.5Na$

ChemAlert® STORAGE gray

F.W. 335.37

Application: This biological buffer has a usable pH range of 6.1 to 7.5.

[100037-69-2]

Recommended storage: RT

Product Specifications

Assay	≥95%
pK_a at 25°C	6.76 ± 0.2
DNase	Not detected
RNase	Not detected

Polyethylene Glycol 8000 (P.E.G.)

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP233-100**	35.72	6/197.83
1kg	Poly Bottle	**BP233-1**	54.38	4/201.69

*P.E.G. 8000, Polyethylene Oxide, Carbowax**

ChemAlert® STORAGE gray

$H(OCH_2CH_2)_nOH$

F.W. 7000-8000

Application: P.E.G. 8000 is suitable as a medium for the fusion of mammalian cells. It is also used to precipitate bacteriophage from lysed cell supernatants.

[25322-68-3]

Recommended storage: RT

Product Specifications

Melting Point	59°-63°C
Specific Gravity	1.2 ± 0.1
pH of a 5% Aqueous Solution	6 to 7

Polyvinylpyrrolidone

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP431-100**	27.30	6/151.31
500g	Poly Bottle	**BP431-500**	104.58	6/571.01

Povidone, Polyvidone, PVP

ChemAlert® STORAGE gray

$(C_6H_9NO)_n$

Application: Polyvinyl pyrrolidone is a component of Denhardt's reagent, commonly used in nucleic acid hybridization procedures.

Average Molecular Wt.: 40,000

[9003-39-8]

Recommended storage: RT

Product Specifications

Assay (dry basis)	≥95%
pH (5% in H_2O at Room Temperature)	3.0 to 7.0
Ash	≤0.05%
Arsenic	≤0.0002%
Heavy Metals (as Pb)	≤0.001%
Viscosity at 23°C	1.2 to 1.3 Centistokes

Ponceau S

Quantity	Packaging	Cat. No.	Each	Case of
10g	Amber Glass	**BP103-10**	27.93	6/154.66

Application: Ponceau S is commonly used for staining serum and plasma proteins on nitrocellulose and cellulose acetate membranes.

C.I. 27195

[6226-79-5]

Product Specifications

Solubility	To pass test
$E^{1\%}_{1cm}$	≥350L g^{-1}cm^{-1}
Lambda Max. (λ)	514nm ± 2nm

Potassium Acetate

Colorless Crystals or Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP364-500**	33.82	6/187.29

ChemAlert® STORAGE gray

Acetic Acid, Potassium Salt

CH_3COOK

$C_2H_3O_2K$

F.W. 98.15

Application: This potassium salt can be used as a replacement for sodium acetate in ethanol precipitations. Also, bacteriophage λ can be purified through centrifugation in a potassium acetate density gradient.

[127-08-2]

Recommended storage: RT

Product Specifications

Assay	≥99.0%
Calcium, Magnesium, and R_2O_3 Precipitate	≤0.01%
Chloride	≤0.003%
Heavy Metals (as Pb)	≤5ppm
Insoluble Matter	≤0.005%
Iron	≤5ppm
pH of a 5% Solution at 25°C	6.5 to 9.0
Phosphate	≤0.001%
Sodium	≤0.03%
Sulfate	≤0.002%
Clarity of Solution	To pass test

Potassium Carbonate Anhydrous

White Granular Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP365-500**	36.82	6/210.05

ChemAlert® STORAGE gray

Dipotassium Carbonate

K_2CO_3

F.W. 138.21

Application: This potassium salt is used in buffers for molecular biology and cell culture applications.

[584-08-7]

Recommended storage: RT

Product Specifications

Assay	≥99.0%
Arsenic	≤1ppm
Chloride	≤0.003%
Heavy Metals (as Pb)	≤5ppm
Insoluble Matter	≤0.01%
Phosphate	≤0.001%
Silica	≤0.005%
Sodium	≤0.02%
Sulfate	≤0.004%

Potassium Chloride

White Crystals

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP366-500**	30.08	6/166.69
1kg	Poly Bottle	**BP366-1**	49.31	6/267.09

ChemAlert® STORAGE gray

KCl

F.W. 74.56

Application: Potassium chloride is used in buffers for molecular biology and cell culture applications.

[7447-40-7]

Recommended storage: RT

Product Specifications

Assay	99.0-100.5%
Barium	To pass test (about 0.001%)
Bromide	≤0.01%
Calcium	≤0.002%
Chlorate and Nitrate (as NO_3)	≤0.003%
Heavy Metals (as Pb)	≤5ppm
Insoluble Matter	≤0.005%
Iodide	≤0.002%
Iron	≤2ppm
Magnesium	≤0.001%
Nitrogen Compounds (as N)	≤0.001%
pH of a 5% Solution at 25°C	5.4 to 8.6
Phosphate	≤5ppm
Sodium	≤0.005%
Sulfate	≤0.001%

Potassium Iodide

White, Free-flowing Granules

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP367-500**	89.36	6/499.46

ChemAlert® STORAGE gray

KI

F.W. 166.00

Application: This potassium salt is used in buffers for molecular biology and cell culture applications.

[7681-11-0]

Recommended storage: RT

Product Specifications

Assay	>99.5%
Barium	≤0.002%
Calcium, Magnesium, and R_2O_3 Precipitate	≤0.002%
Chloride and Bromide (as Cl)	≤0.01%
Heavy Metals (as Pb)	≤5ppm
Insoluble Matter	≤0.005%
Iodate	≤3ppm
Iron	≤3ppm
Loss on Drying at 105°C	≤0.2%
Nitrogen Compounds (as N)	≤0.001%
pH of a 5% Solution at 25°C	6.0 to 9.2
Phosphate	≤0.001%
Sodium	≤0.005%
Sulfate	≤0.005%
Magnesium (Mg)	≤0.001%

Potassium Nitrate

Colorless-to-white Crystals

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP368-500**	46.69	6/260.38

ChemAlert® STORAGE yellow

KNO_3

F.W. 101.11

Application: Potassium nitrate is used in buffers for molecular biology and cell culture applications.

[7757-79-1]

Recommended storage: RT

Product Specifications

Assay	≥99.0%
Calcium, Magnesium, and R_2O_3 Precipitate	≤0.01%
Chloride	≤0.002%
Heavy Metals (as Pb)	≤3ppm
Insoluble Matter	≤0.005%
Iodate	≤5ppm
Nitrite	≤0.001%
Iron	≤3ppm
pH of a 5% Solution at 25°C	4.5 to 8.5
Phosphate	≤5ppm
Sodium	≤0.005%
Sulfate	≤0.003%

Potassium Phosphate Monobasic

White Crystals

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP362-500**	43.73	6/242.41
1kg	Amber Glass	**BP362-1**	75.17	6/408.78

Phosphoric Acid, Monopotassium Salt
KH_2PO_4
F.W. 136.09

ChemAlert® STORAGE gray

Application: This potassium salt is used in buffers for molecular biology and cell culture applications.
[7778-77-0]
Recommended storage: RT

roduct Specifications

Assay	≥99.0%
Chloride	≤0.001%
Heavy Metals (as Pb)	≤0.001%
Insoluble Matter, Calcium, and NH_4OH	≤0.010%
Iron	≤0.002%
Loss on Drying at 105°C	≤0.20%
Nitrogen Compounds (as N)	≤0.001%
pH of a 5% Solution at 25°C	4.1 to 4.5
Sodium	≤0.005%
Sulfate	≤0.003%

otassium Phosphate Dibasic

ine White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP363-500**	59.92	6/325.70
1kg	Poly Bottle	**BP363-1**	93.06	6/505.93

Phosphoric Acid, Dipotassium Salt
K_2HPO_4
F.W. 174.18

ChemAlert® STORAGE gray

Application: This potassium salt is used in buffers for molecular biology and cell culture applications.
[7758-11-4]
Recommended storage: RT

oduct Specifications

Assay	≥98.0% Minimum
Chloride	≤0.003%
Heavy Metals (as Pb)	≤5ppm
Insoluble Matter	≤0.010%
Iron	≤0.001%
Loss on Drying at 105°C	≤1.0%
Nitrogen Compounds (as N)	≤0.001%
pH of a 5% Solution at 25°C	8.5 to 9.6
Sodium	≤0.05%
Sulfate	≤0.005%

L-Proline

White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP392-100**	67.98	6/376.95

$C_5H_9NO_2$
F.W. 115.13

ChemAlert® STORAGE gray

Application: This amino acid is suitable for use in tissue culture systems requiring additives.
[147-85-3]
Recommended storage: RT

Product Specifications

Assay	98.5-101.0%
Specific Rotation $[\alpha]_D^{20}$ (c=4, H_2O)	-84.5° to -86.0°
State of Solution	≥98.0% transmittance
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying at 105°C	≤0.30%
Residue on Ignition (sulfated)	≤0.10%

n-Propanol

Sequencing

Peroxide-free

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**BP1130-500**	28.66	6/158.83

1-Propanol
$CH_3CH_2CH_2OH$
C_3H_8O
F.W. 60.10

SOLVENT

ChemAlert® STORAGE red

Application: n-Propanol is used for extracting ethidium bromide from DNA samples.
[71-23-8]
Recommended storage: RT

Product Specifications

Assay (by GC)	≥99.5%
Color (APHA)	≤20
Acidity (as Acetic Acid)	≤0.02%
Boiling Range	96°-98°C
Residue after Evaporation	≤0.01%
Density at 25°C	0.8016 ± 0.005g/mL
Peroxides	Not detected
Aldehydes	Not detected

Proteinase K

Molecular Biology

From Tritirachium album

Quantity	Packaging	Cat. No.	Each	Case of
50mg	Poly Bottle	**BP1700-50**	77.28	- - - -
100mg	Poly Bottle	**BP1700-100**	118.62	- - - -
500mg	Poly Bottle	**BP1700-500**	506.09	- - - -

Application: Proteinase K is widely used in the isolation of DNA and RNA from cell and tissue preparations. It is a wide-spectrum protease, inactivating many enzymes, including endogenous nucleases.

ChemAlert® STORAGE gray

[39450-01-6]
Recommended storage: -20°C

Product Specifications

Specific Activity	≥30U/mg
DNase	Not detected
RNase	Not detected

Protein Gel-Loading Dye for SDS–PAGE, 2X Electrophoresis

Dark-purple Liquid

Quantity	Packaging	Cat. No.	Each	Case of
1mL	Poly Tube	**BP637-1**	30.95	- - - -
5mL	Poly Bottle	**BP637-5**	66.55	- - - -

ChemAlert® STORAGE gray

Application: This dye is added to protein samples prior to electrophoresis on SDS–PAGE gels.
Components: Sodium Dodecyl Sulfate (<5%), Glycerol (<12%), Tris (<1.0%), Proprietary Component (<2%), and Water (80%).
[151-21-3 (Sodium Dodecyl Sulfate)]
[56-81-5 (Glycerol)]
[126-72-7 (Tris)]
Recommended storage: RT

Product Specifications

Optical Absorbance (dilution, 1:250 with deionized water):

at 525nm	0.15-0.35
at 588-594nm	0.32-0.47
at 635-641nm	0.25-0.40
DNase	Not detected
RNase	Not detected
Protease	Not detected

Pst I

Source: Recombinant E. coli strain

Quantity	Packaging	Cat. No.	Each	Case of
15,000 units	Poly Tube	**BP3404-5**	141.29	- - - -
50,000 units (HC)	Poly Tube	**BP3404-7**	292.65	- - - -

ChemAlert® STORAGE gray

Application: *Pst* I restriction endonuclease digests dsDNA with sequence indicated below.
C TGCA'G
G'ACGT C
Concentration: 10 units/μL
High Concentration (HC): 40-80 units/μL
Isoschizomers: None
Heat Inactivated: +
Qualified for Blue/White Cloning Assays.
Storage Buffer Components: 10mM Tris-HCl (pH 7.3), 300mM NaCl, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA, 0.15% Triton* X-100 and 50% glycerol.
Recommended storage: -20°C

Product Specifications

Percent Activity in QUAD 4* Buffer System:

A	10–25%
B	50–75%
C	50–75%
D	50–75%
H	100%
UNIVERSAL*	25–50%

Frequency of Cutting:

λ	28
Ad-2	30
ΦX174	1
pUC18	1
M13mp18	1
pBR322	1

Pvu II

Source: Proteus vulgaris

Quantity	Packaging	Cat. No.	Each	Case of
5000 units	Poly Tube	**BP3408-5**	181.65	- - - -

SOLVENT ChemAlert® STORAGE red

Application: *Pvu* II restriction endonuclease digests dsDNA with sequence indicated below.
CAG'CTG
GTC'GAC
Concentration: 8-12 units/μL
Isoschizomers: None
Heat Inactivated: +
Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 50mM NaCl, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA, and 50% glycerol.
Recommended storage: -20°C

Product Specifications

Percent Activity in Quad 4* Buffer System:

A	25–50%
B	100%
C	50–75%
D	25–50%
Universal*	50–75%

Frequency of Cutting:

λ	15
Ad-2	24
ΦX174	0
pUC18	2
M13mp18	3
pBR322	1

Pyridine Sequencing

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**BP1155-500**	57.27	6/326.87

Also available in recyclable FisherPak and NOWPak* containers.*

ChemAlert® STORAGE gray

C_5H_5N
F.W. 79.10
Application: Pyridine is commonly used in automated synthesis protocols.
[110-86-1]
Recommended storage: RT

Product Specifications

Assay (by GC)	≥99.5%
Ammonia	≤0.002%
Boiling Range (1 drop to dryness)	≤2.0°C
Boiling Point	115.3° ± 0.1°C
Chloride	≤0.001%
Copper	To pass test (about 5ppm)
Impurities Oxidized by Permanganate	Not detected
Residue after Evaporation	≤0.002%
Solubility in H_2O	To pass test
Sulfate	≤0.001%
Water	≤0.10%

▸**Pyridoxal Hydrochloride** *Available from FisherBioReagents*, BP2675-100. Please see Fishersci.com for complete ordering information.*

▸**Pyridoxal 5-Phosphate Monohydrate** *Available from FisherBioReagents*, BP2676-5. Please see Fishersci.com for complete ordering information.*

▸**Pyridoxine Hydrochloride** *Available from Fisher BioReagents*, BP2677-100. Please see Fishersci.com for complete ordering information.*

Ribonuclease A
From Bovine Pancreas

Quantity	Packaging	Cat. No.	Each	Case of
100mg	Amber Glass	**BP2539-100**	59.55	10/516.21
250mg	Amber Glass	**BP2539-250**	100.26	10/894.97
1g	Amber Glass	**BP2539-1**	273.66	9/2283.17

Application: Ribonuclease A is used in biochemical research applications.
[9001-99-4]
Recommended storage: -20°C

ChemAlert® STORAGE gray

Product Specifications

Description	white lyophilized powder
Activity	≥50 Kuntz units/mg

***Ribonuclease B** Available from Fisher BioReagents*, BP2678-1. Please see Fishersci.com for complete ordering information.*

Rifampicin
Bright Orange Powder

Quantity	Packaging	Cat. No.	Each	Case of
250mg	Amber Glass	**BP2679-250**	22.25	5/107.16
1g	Amber Glass	**BP2679-1**	48.35	9/398.57
5g	Amber Glass	**BP2679-5**	182.57	9/1574.83
25g	Amber Glass	**BP2679-25**	655.95	6/3508.36

Rifampin
$C_{43}H_{58}N_4O_{12}$
F.W. 822.96
Application: Rifampicin is a rifamycin which specifically inhibits DNA-dependent bacterial RNA polymerase. Mammalian RNA polymerase is not affected.
[13292-46-1]
Recommended storage: +4°C

ChemAlert® STORAGE gray

Product Specification

UV/VIS (λ_{max}) methanol	237–239nm
Loss on Drying	≤2%

***Rink's Resin** Available from Fisher BioReagents*, BP459-1. Please see Fishersci.com for complete ordering information.*

Sac I
Source: Streptomyces achromogenes

Quantity	Packaging	Cat. No.	Each	Case of
5000 units	Poly Tube	**BP3412-5**	232.78	- - - -

Application: *Sac* I restriction endonuclease digests dsDNA with sequence indicated below.
G AGCT'C
C'TCGA G
Concentration: 10 units/µL
Isoschizomers: *Sst* I, *Psp*124B I (Neoschizomer *Eco*ICR I, cut site GAG'CTC)
Heat Inactivated: +
Qualified for Blue/White Cloning Assays.
Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 50mM NaCl, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA and 50% glycerol.
Recommended storage: -20°C

ChemAlert® STORAGE gray

roduct Specifications

Percent Activity in Quad 4* Buffer System:

A	75–100%
B	25–50%
C	25–50%
D	<10%
J	100%
UNIVERSAL*	100%

Frequency of Cutting:

λ	2
Ad-2	16
ΦX174	0
pUC18	1
M13mp18	1
pBR322	0

Sal I
Source: Streptomyces albus G

Quantity	Packaging	Cat. No.	Each	Case of
10,000 units	Poly Tube	**BP3416-5**	269.63	- - - -

Application: *Sal* I restriction endonuclease digests dsDNA with sequence indicated below.
G'TCGA C
C AGCT'G
Concentration: 10 units/µL
Isoschizomers: None
Heat Inactivated: +
Qualified for Blue/White Cloning Assays and genomic assays.
Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 300mM KCl, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA, and 50% glycerol.
Recommended storage: -20°C

ChemAlert® STORAGE gray

Product Specifications

Percent Activity in Quad 4* Buffer System:

A	<10%
B	10–25%
C	25–50%
D	100%
UNIVERSAL*	<10%

Frequency of Cutting:

λ	2
Ad-2	3
ΦX174	0
pUC18	1
M13mp18	1
pBR322	1

Saline–Sodium Citrate (SSC), 20X Solution Molecular Biology

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**BP1325-1**	59.96	6/343.06
4L	PolyPac*	**BP1325-4**	108.44	- - - -
20L	PolyPac	**BP1325-20**	313.29	- - - -

SSC Buffer
Application: Saline–Sodium Citrate (SSC) is used as a buffer in Southern transfer protocols.
Components: Sodium Chloride (17.5%) and Sodium Citrate Dihydrate (8.8%).
Filtered through a 2-5 micron filter.
[7647-14-5 (Sodium Chloride)]
[6132-04-3 (Sodium Citrate Dihydrate)]
Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications

pH (20X solution) at 23°C	7.0 ± 0.1
NaCl Molarity	3 ± 0.10M
DNase	Not detected
RNase	Not detected
Protease	Not detected

Saline–Sodium Phosphate–EDTA (SSPE), 20X Solution

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**BP1328-1**	61.42	6/238.41
4L	PolyPac*	**BP1328-4**	107.91	- - - -
20L	PolyPac	**BP1328-20**	297.63	- - - -

SSPE Buffer

ChemAlert® STORAGE gray

Application: Saline–Sodium Phosphate–EDTA (SSPE) is used in bacterial screening and hybridization procedures. 0.2M NaH_2PO_4, 3.0M NaCl, and 0.02M EDTA.

Components: Sodium Chloride (17.5%), Sodium Biphosphate (2.8%), and Ethylenediamine Tetraacetic Acid (0.6%).

Filtered through a 2-5 micron filter.

[7647-14-5 (Sodium Chloride)]

[7558-80-7 (Sodium Biphosphate)]

[60-00-4 (Ethylenediamine Tetraacetic Acid)]

Recommended storage: RT

Product Specifications

pH (20X solution) at 23°C	7.4 ± 0.1
Molarity of NaCl	3 ± 0.10M
DNase	Not detected
RNase	Not detected
Protease	Not detected

Sarkosyl

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP234-500**	86.01	6/467.65

Sodium Lauroyl Sarcosinate

ChemAlert® STORAGE gray

$NaO_2CCH_2N(CH_3)CO(CH_2)_{10}CH_3$

F.W. 293.39

Application: This anionic detergent is used for the solubilization of membrane proteins.

[137-16-6]

Recommended storage: RT

Product Specifications

Assay (dry basis)	≥95%
pH of a 10% Solution	7.5 to 8.5

SDS–PAGE Buffer Mix

Electrophoresis

Dry Powder Mix of Tris/Glycine/SDS

Quantity	Packaging	Cat. No.	Each	Case of
92g	Poly Bottle	**BP1398-92**	24.08	6/131.18

Tris–Glycine–SDS Buffer Mix

ChemAlert® STORAGE gray

Makes 1 liter of 5X buffer. Final concentrations of components in 1X buffer: 0.025M Tris, 0.192M glycine, and 0.1% SDS.

Components: Glycine (82.3%), Tris (17.1%), and SDS (0.6%)

[56-40-6 (Glycine)]

[77-86-1 (Tris)]

[151-21-3 (SDS)]

Recommended storage: RT

Product Specifications

Solubility (buffer in final volume of 1 liter in H_2O)	Clear solution
pH of a 1X Buffer at 25°C	8.3 ± 0.2
Electrophoresis	To pass test

L-Serine

White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP393-100**	85.69	6/479.89

$C_3H_7NO_3$

ChemAlert® STORAGE gray

F.W. 105.09

Application: This amino acid is suitable for use in tissue culture systems requiring additives.

[56-45-1]

Recommended storage: RT

Product Specifications

Assay	98.5-101.0%
Specific Rotation $[\alpha]_D^{20}$ (c=10, HCl)	+14.4° to +15.5°
State of Solution	≥98.0% transmittance
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying at 105°C	≤0.20%
Residue on Ignition (sulfated)	≤0.10%

Silver Nitrate

Certified ACS

Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP2546-100**	168.67	6/908.02

$AgNO_3$

ChemAlert® STORAGE yellow

F.W. 169.87

Application: Silver Nitrate is used in biochemistry to stain agarose and acrylamide gels.

[7761-88-8]

Recommended storage: RT

Product Specifications

Actual Lot Analysis is reported on label.

Assay	≥99.7%
Chloride	≤5ppm
Free Acid	To pass test
Clarity of Solution	To pass test
Substances not Precipitated by HCl	≤0.01%
Sulfate	≤0.002%
Copper	≤2ppm
Iron	≤2ppm
Lead	≤0.001%

Sma I

Source: Serratia marcescens

Quantity	Packaging	Cat. No.	Each	Case of
5000 units	Poly Tube	**BP3426-5**	248.93	- - - -

Application: *Sma* I restriction endonuclease digests dsDNA with sequence indicated below.

ChemAlert® STORAGE gray

CCC'GGG

GGG'CCC

Concentration: 8-12 units/µL

Isoschizomers: (Neoschizomer *Xma* I, cut site C'CCGGG)

Heat Inactivated: +

Qualified for Blue/White Cloning Assays and genomic assays.

Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 300mM KCl, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA, and 50% glycerol.

Recommended storage: -20°C

Product Specifications

Percent Activity in Quad 4* Buffer System:

A	<10%
B	<10%
C	<10%
D	<10%
J	100%
UNIVERSAL*	100%

Frequency of Cutting:

λ	3
Ad-2	12
ΦX174	0
pUC18	1
M13mp18	1
pBR322	0

*Trademark. See Trademark Reference.

Sodium Acetate Anhydrous
hite Crystals or Granular Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP333-500**	43.49	6/241.03
1kg	Poly Bottle	**BP333-1**	78.41	6/426.28

CH_3COONa
$C_2H_3O_2Na$
F.W. 82.03

ChemAlert® STORAGE gray

Application: Sodium acetate is added to DNA reactions to facilitate ethanol precipitation of the DNA.
[127-09-3]
Recommended storage: RT

roduct Specifications

Assay	≥99.0%
Calcium, Magnesium, and R_2O_3 Precipitate	≤0.01%
Chloride	≤0.002%
Heavy Metals (as Pb)	≤0.001%
Insoluble Matter	≤0.01%
Iron	≤0.001%
Loss on Drying at 120°C	≤1.0%
pH of a 5% Solution at 25°C	7.0 to 9.2
Phosphate	≤0.001%
Sulfate	≤0.003%
Clarity of Solution	To pass test

odium Acetate Trihydrate
olorless-to-white Crystals

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP334-500**	35.83	6/198.51
1kg	Poly Bottle	**BP334-1**	47.00	6/260.34

$CH_3COONa \cdot 3H_2O$
$C_2H_3O_2Na \cdot 3H_2O$
F.W. 136.08

ChemAlert® STORAGE gray

Application: The trihydrate form of sodium acetate can be used for many of the same applications as the anhydrous form.
[6131-90-4]
Recommended storage: RT

oduct Specifications

Assay	99.0-100.5%
Calcium, Magnesium, and R_2O_3 Precipitate	≤0.01%
Chloride	≤0.001%
Heavy Metals (as Pb)	≤5ppm
Insoluble Matter	≤0.005%
Iron	≤5ppm
pH of a 5% Solution at 25°C	7.5 to 9.2
Phosphate	≤5ppm
Potassium	≤0.005%
Substances Reducing Permanganate	To pass test
Sulfate	≤0.002%
Clarity of Solution	To pass test

odium Azide
hite Granular Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass/ Poison Pack	**BP922I-500**	86.86	- - - -

NaN_3
F.W. 65.01

ChemAlert® STORAGE blue

Application: Sodium Azide is used as a preservative in biological solutions.
[26628-22-8]
Recommended storage: RT

oduct Specifications

Assay	≥99%

Sodium Bicarbonate
Fine White Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP328-500**	25.12	6/139.25
1kg	Poly Bottle	**BP328-1**	40.01	6/221.77

Sodium Hydrogen Carbonate
$NaHCO_3$
F.W. 84.01

ChemAlert® STORAGE gray

Application: This sodium salt is used in buffers for molecular biology and cell culture applications.
[144-55-8]
Recommended storage: RT

Product Specifications

Assay	99.7-100.3%
Ammonium	≤5ppm
Calcium, Magnesium, and R_2O_3 Precipitate	≤0.02%
Chloride	≤0.003%
Heavy Metals (as Pb)	≤5ppm
Insoluble Matter	≤0.015%
Iron	≤0.001%
Phosphate	≤0.001%
Potassium	≤0.005%
Sulfate	≤0.003%

Sodium Cacodylate Trihydrate
White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
50g	Poly Bottle/ Poison Pack	**BP325-50**	102.65	- - - -

Sodium Dimethylarsinate
$(CH_3)_2AsO_2Na \cdot 3H_2O$
$C_2H_6AsNaO_2 \cdot 3H_2O$
F.W. 214.0

ChemAlert® STORAGE blue

Application: Sodium cacodylate is a component of the DMS reaction buffer in Maxam-Gilbert sequencing and is also used as a buffer in terminal transferase reactions.
[124-65-2]
Recommended storage: RT

Product Specifications

Assay	≥97%
Solubility in H_2O (5g/100mL)	Clear and colorless
Loss on Drying at 105°C	25% ± 2%
pH of a 5% Solution at 25°C	8.0 to 9.0

Sodium Carbonate
White Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
1kg	Poly Bottle	**BP357-1**	54.85	6/298.17

Disodium Carbonate, Soda Ash
Na_2CO_3
F.W. 105.99

ChemAlert® STORAGE gray

Application: This sodium salt is used in buffers for molecular biology and cell culture applications.
[497-19-8]
Recommended storage: RT

Product Specifications

Assay	≥99.0%
Calcium	≤0.03%
Arsenic	≤0.0001%
Magnesium	≤0.005%
Chloride	≤0.001%
Heavy Metals (as Pb)	≤0.0005%
Insoluble Matter	≤0.01%
Iron	≤0.0005%
Loss on Heating at 285°C	≤1.0%
Phosphate	≤0.001%
Potassium	≤0.005%
Silica	≤0.005%
Sulfate	≤0.003%

Sodium Chloride

Quantity	Packaging	Cat. No.	Each	Case of
1kg	Poly Bottle	**BP358-1**	29.74	6/168.85
2.5kg	Poly Bottle	**BP358-212**	44.94	4/170.09
10kg	Poly Pail	**BP358-10**	74.52	- - - -

Salt, NaCl

F.W. 58.44

ChemAlert® STORAGE gray

Application: Sodium chloride is a main component of many electrophoresis and molecular biology buffers and media.

[7647-14-5]

Recommended storage: RT

Product Specifications

Assay (Dry Basis)	>99.5%
Heavy Metals (as Pb)	≤0.0005%
Iodide	≤0.002%
Iron	≤0.0002%
Calcium	≤0.005%
Phosphate	≤0.0005%
Magnesium	≤0.005%
Sulfate	≤0.004%

▸Sodium Chloride-Tris-EDTA (STE) Buffer, 1X, pH 8.0

Available from Fisher BioReagents, BP2478-1. Please see Fishersci.com for complete ordering information.*

Sodium Citrate Dihydrate

Small, Colorless Granules

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP327-500**	28.38	6/157.29
1kg	Poly Bottle	**BP327-1**	32.72	6/181.29

$Na_3C_6H_5O_7 \cdot 2H_2O$

F.W. 294.10

ChemAlert® STORAGE gray

Application: Sodium citrate is used primarily in the preparation of SSC buffer used in Southern transfers.

[6132-04-3]

Recommended storage: RT

Product Specifications

Assay	99.0-101.0%
Ammonia	≤0.003%
Calcium	≤0.005%
Chloride	≤0.003%
Free Acid (as Citric Acid)	≤0.15%
Free Alkali	None
Heavy Metals (as Pb)	≤5ppm
Insoluble Matter	≤0.005%
Iron	≤0.001%
Sulfate	≤0.005%
pH of a 5% Solution at 25°C	7.0 to 9.0

Sodium Dodecyl Sulfate

Electrophoresis

White Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP166-100**	36.80	6/205.79
500g	Poly Bottle	**BP166-500**	160.91	6/897.92
5kg	Poly Pail	**BP166-5**	981.82	- - - -

Sodium Lauryl Sulfate

SDS

$CH_3(CH_2)_{10}CH_2OSO_3Na$

$C_{12}H_{25}O_4SNa$

F.W. 288.38

ChemAlert® STORAGE gray

Application: Sodium Dodecyl Sulfate (SDS) is the most commonly used detergent in protein purification and electrophoresis. It is used as a protein denaturing agent during both extraction procedures and SDS polyacrylamide gel electrophoresis.

[151-21-3]

Recommended storage: RT

Product Specifications

Assay (as Fatty Alcohol Sulfate)	≥99%
Assay (as C_{12}-OH)	≥98%
IR	Conforms to standard
Absorbance of a 0.1% Solution:	
at 230nm	≤0.4
at 280nm	≤0.1
Phosphate	≤0.0001%
Lead	≤5ppm
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected

Sodium Dodecyl Sulfate Solution, 20%

Electrophoresis/ Molecular Biology

Quantity	Packaging	Cat. No.	Each	Case of
200mL	Poly Bottle	**BP1311-200**	49.68	6/233.88
1L	Poly Bottle	**BP1311-1**	171.80	6/906.86

$CH_3(CH_2)_{10}CH_2OSO_3Na$

$C_{12}H_{25}O_4SNa$

F.W. 288.38

ChemAlert® STORAGE gray

Application: Sodium Dodecyl Sulfate (SDS) is the most commonly used detergent in protein purification and electrophoresis. It is used as a protein denaturing agent during both extraction procedures and SDS polyacrylamide gel electrophoresis.

Filtered through a 0.2-micron filter.

[151-21-3]

Recommended storage: RT

Product Specifications

Assay (as Fatty Alcohol Sulfate)	≥99%
Concentration	20 ± 0.5%
Optical Absorbance of a 0.1% Solution:	
at 230nm	≤0.4
at 280nm	≤0.1
Chloride	≤0.1%
Phosphate	≤0.0005%
Lead	≤0.0005%
Copper	≤0.0005%
DNase	Not detected
RNase	Not detected
Protease	Not detected

Sodium Dodecyl Sulfate Solution, 10%

Electrophoresis

Quantity	Packaging	Cat. No.	Each	Case of
200mL	Poly Bottle	**BP2436-200**	40.62	6/221.77
1L	Poly Bottle	**BP2436-1**	103.74	6/539.48

$CH_3(CH_2)_{10}CH_2OSO_3Na$

$C_{12}H_{25}O_4SNa$

F.W. 288.38

ChemAlert® STORAGE gray

Application: Sodium Dodecyl Sulfate (SDS) is the most commonly used detergent in protein purification and electrophoresis. It is used as a protein denaturing agent during both extraction procedures and SDS polyacrylamide gel electrophoresis.

Filtered through a 0.2-micron filter.

[151-21-3]

Recommended storage: RT

Product Specifications

Assay (as Fatty Alcohol Sulfate)	≥99%
Concentration	10.0 ± 0.5%
Optical Absorbance of a 0.1% Solution:	
at 230nm	≤0.4
at 280nm	≤0.1
Chloride	≤0.1%
Phosphate	≤0.0005%
Lead	≤0.0005%
Copper	≤0.0005%
DNase	Not detected
RNase	Not detected
Protease	Not detected

*Trademark. See Trademark Reference.

Sodium Hydroxide
White Pellets

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP359-500**	28.43	6/158.08
2.5kg	Poly Bottle	**BP359-212**	72.78	4/269.87

$NaOH$
F.W. 40.00

ChemAlert® STORAGE gray

Application: Sodium hydroxide is used to adjust the pH of buffers for molecular biology and cell culture applications.
[1310-73-2]
Recommended storage: RT

roduct Specifications

Assay	≥98%
Calcium	≥0.005%
Chloride	≤0.005%
Copper	≤0.001%
Heavy Metals (as Ag)	≤0.002%
Iron	≤0.001%
Magnesium	≥0.002%
Mercury	≤0.1ppm
Nickel	≤0.001%
Nitrogen Compounds (as N)	≤0.001%
Phosphate	≤0.001%
Potassium	≤0.02%
Sodium Carbonate	≤1.0%
Sulfate	≤0.003%

▸**Sodium Lauroyl Sarcosinate** *see Sarkosyl, BP234-500.*

Sodium Persulfate, >98%
hite Crystalline

Quantity	Packaging	Cat. No.	Each	Case of
1kg	Poly Bottle	**BP2637-1**	45.94	6/147.85

Sodium Peroxydisulfate
$Na_2S_2O_8$
F.W. 238.10

ChemAlert® STORAGE yellow

Application: Sodium persulfate is used as a promoter for polymerization reactions.
[7775-27-1]
Recommended storage: RT

oduct Specifications

Assay	≥98.0%

Sodium Phosphate Monobasic Anhydrous
olorless-to-white Crystals

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP329-500**	30.41	6/169.18
1kg	Amber Glass	**BP329-1**	49.07	6/270.96

Sodium Dihydrogen Phosphate
NaH_2PO_4
F.W. 119.96

ChemAlert® STORAGE gray

Application: Sodium phosphate is commonly used in tissue culture and molecular biology applications.
[7558-80-7]
Recommended storage: RT

oduct Specifications

Assay	≥99%
Moisture	≤0.5%
pH of a 1M Solution at 25°C	4.0 to 6.0
Insoluble Matter	≤0.03%
Heavy Metals (as Pb)	≤0.001%

Sodium Phosphate Monobasic Monohydrate
Colorless-to-white Crystals

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP330-500**	60.64	6/329.69
1kg	Amber Glass	**BP330-1**	106.42	6/587.27

Sodium Dihydrogen Phosphate
$NaH_2PO_4 \cdot H_2O$
F.W. 137.99

ChemAlert® STORAGE gray

Application: Sodium phosphate is commonly used in tissue culture and molecular biology applications.
[10049-21-5]
Recommended storage: RT

Product Specifications

Assay	98.0-102.0%
Calcium	≤0.005%
Chloride	≤5ppm
Heavy Metals	≤0.001%
Insoluble Matter	≤0.01%
Iron	≤0.001%
pH of a 5% Solution at 25°C	4.1 to 4.5
Sulfate	≤0.003%
Potassium	≤0.01%

Sodium Phosphate Dibasic Anhydrous
White Granules or Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP332-500**	48.16	6/260.99
1kg	Poly Bottle	**BP332-1**	96.31	6/523.63

Disodium Hydrogen Phosphate
Na_2HPO_4
F.W. 141.96

ChemAlert® STORAGE gray

Application: This buffer component is commonly used in tissue culture and molecular biology applications.
[7558-79-4]
Recommended storage: RT

Product Specifications

Assay	≥99.0%
Chloride	≤0.002%
Heavy Metals (as Pb)	≤0.001%
Insoluble Matter	≤0.010%
Iron	≤0.001%
Loss on Drying at 105°C	≤0.20%
pH of a 5% Solution at 25°C	8.7 to 9.3
Sulfate	≤0.005%

Sodium Phosphate Dibasic Heptahydrate
Colorless-to-white Crystals

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP331-500**	43.18	6/239.31
1kg	Amber Glass	**BP331-1**	73.33	6/398.73

Disodium Hydrogen Phosphate
$Na_2HPO_4 \cdot 7H_2O$
F.W. 268.07

ChemAlert® STORAGE gray

Application: This buffer component is commonly used in tissue culture and molecular biology applications.
[7782-85-6]
Recommended storage: RT

Product Specifications

Assay	99.0-102.0%
Heavy Metals (as Pb)	≤0.001%
Insoluble Matter	≤0.005%
Iron	≤0.001%
Loss on Drying at 105°C	43-50%
pH of a 5% Solution at 25°C	8.7 to 9.3
Sulfate	≤0.005%
Chloride	≤0.001%

Sodium Pyruvate
White Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP356-100**	81.42	6/442.63

Pyruvic Acid, Sodium Salt
CH_3COCO_2Na
$C_3H_3O_3Na$
F.W. 110.40

ChemAlert® STORAGE gray

Application: This sodium salt is used in buffers for molecular biology and cell culture applications.
[113-24-6]
Recommended storage: RT

Product Specifications

Assay (by titration)	≥99%
Solubility (6g/100mL H_2O)	Clear, haze-free
Free Acid (as Pyruvic Acid)	≤1.0%

Sodium Sulfate Anhydrous
White Granules

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP354-500**	30.24	6/167.64

Disodium Sulfate, Sulfuric Acid, Disodium Salt
Na_2SO_4
F.W. 142.04

ChemAlert® STORAGE gray

Application: This sodium salt is used in buffers for molecular biology and cell culture applications.
[7757-82-6]
Recommended storage: RT

Product Specifications

Assay	≥99.0%
Calcium, Magnesium, and R_2O_3 Precipitate	≤0.02%
Chloride	≤0.001%
Heavy Metals (as Pb)	≤5ppm
Insoluble Matter	≤0.01%
Iron	≤0.001%
Loss on Ignition	≤0.5%
Nitrogen Compounds (as N)	≤5ppm
pH of a 5% Solution at 25°C	5.2 to 9.2

Sodium Sulfite Anhydrous
White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP355-500**	29.20	6/166.60

Disodium Sulfite, Sulfurous Acid, Disodium Salt
Na_2SO_3
F.W. 126.04

ChemAlert® STORAGE gray

Application: This sodium salt is used in buffers for molecular biology and cell culture applications.
[7757-83-7]
Recommended storage: RT

Product Specifications

Assay	≥98.0%
Chloride	≤0.02%
Titratable Free Base	≤0.03mEq/g
Free Acid	To pass test
Heavy Metals (as Pb)	≤0.001%
Insoluble Matter	≤0.005%
Iron	≤0.001%
Phosphate	≤5ppm

Sodium Tartrate Dihydrate
Colorless Crystals

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP352-500**	71.46	6/400.14

Disodium Tartrate, Dihydrate
$Na_2C_4H_4O_6 \cdot 2H_2O$
F.W. 230.08

ChemAlert® STORAGE gray

Application: This sodium salt is used in buffers for molecular biology and cell culture applications.
[6106-24-7]
Recommended storage: RT

Product Specifications

Assay	99.0-101.0%
Ammonium	≤0.003%
Calcium	≤0.01%
Chloride	≤0.005%
Heavy Metals (as Pb)	≤0.001%
Insoluble Matter	≤0.005%
Iron	≤0.001%
Loss on Drying at 150°C	15.61-15.71%
pH of a 5% Solution at 25°C	7.0 to 9.0
Phosphate	≤5ppm
Sulfate	≤0.005%

Sorbitol

Quantity	Packaging	Cat. No.	Each	Case of
500g	Amber Glass	**BP439-500**	28.31	6/156.81

$C_6H_{14}O_6$
F.W. 182.17

ChemAlert® STORAGE gray

Application: Sorbitol is used in the preparation of isoelectric focusing gels.
[50-70-4]
Recommended storage: RT

Product Specifications

Assay	91.0-100.5%
Chloride	≤0.005%
Sulfate	≤0.01%
Arsenic	≤3ppm
Heavy Metals (as Pb) (USP method)	≤0.001%
Reducing Sugars	To pass test
Total Sugar	To pass test

Spe I
Source: Sphaerotilus natans ATCC 13923

Quantity	Packaging	Cat. No.	Each	Case of
1000 units	Poly Tube	**BP3430-5**	331.67	- - - -

ChemAlert® STORAGE gray

Application: *Spe* I restriction endonuclease digests dsDNA with sequence indicated below.
A'CTAG T
T GATC'A
Concentration: 10 units/µL
Isoschizomers: *Acl*N I, *Bcu* I
Heat Inactivated: +
Qualified for Blue/White Cloning Assays and genomic assays.
Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 50mM NaCl, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA and 50% glycerol.
Recommended storage: -20°C

Contd. on next page.

*Trademark. See Trademark Reference.

Prices subject to change.

Contd. from previous page.

Product Specifications

Percent Activity in Quad 4* Buffer System:

A	75–100%
B	100%
C	75–100%
D	75–100%
UNIVERSAL*	100%

Frequency of Cutting:

λ	116
Ad-2	87
ΦX174	0
pUC18	15
M13mp18	7
pBR322	22

Sph I
Source: Streptomyces phaeochromogenes

Quantity	Packaging	Cat. No.	Each	Case of
1000 units	Poly Tube	**BP3432-5**	305.57	----

Application: *Sph* I restriction endonuclease digests dsDNA with sequence indicated below.

ChemAlert® STORAGE gray

G CATG'C
C'GTAC G

Concentration: 10 units/µL
Isoschizomers: *Bbu* I, *Pae* I
Heat Inactivated: +
Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 100mM sodium citrate, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA and 50% glycerol.
Qualified for Blue/White Cloning Assays.
Recommended storage: -20°C

roduct Specifications

Percent Activity in Quad 4* Buffer System:

A	75–100%
B	75–100%
C	100%
D	75–100%
K	100%
UNIVERSAL*	10–25%

Frequency of Cutting:

λ	6
Ad-2	8
ΦX174	0
pUC18	1
M13mp18	1
pBR322	1

▸***SSC Buffer*** *see Saline–Sodium Citrate, Fisher BioReagents* BP1325-4.*

Staurosporine
From Streptomyces sp.

Quantity	Packaging	Cat. No.	Each	Case of
100µg	Poly Micro Tube	**BP2541-100**	94.36	5/467.18
500µg	Poly Micro Tube	**BP2541-500**	357.15	5/1687.55
1mg	Poly Micro Tube	**BP2541-1**	669.80	5/3134.70

$C_{28}H_{26}N_4O_3$
F.W. 466.5

ChemAlert® STORAGE gray

Application: Staurosporine is a potent protein kinase inhibitor useful for studies on protein phosphorylation in the regulation of cellular functions.
[62996-74-1]
Recommended storage: 4°C, protect from light.

roduct Specifications

Assay	≥98%
Description	White Powder

▸***Sterile Water*** *see Water, Sterile (DNA grade) BP2470-1; (for RNA Work) BP561-1; and (Nuclease Free) BP2484-100.*

▸***STET Buffer, 1X Solution, pH 8.0*** *Available from Fisher BioReagents*, BP2480-1. Please see Fishersci.com for complete ordering information.*

Streptomycin Sulfate
White to Light Yellow Powder

Quantity	Packaging	Cat. No.	Each	Case of
50g	Poly Bottle	**BP910-50**	45.20	6/237.29

$(C_{21}H_{39}N_7O_{12})_2 \cdot 3H_2SO_4$
$C_{42}H_{84}N_{14}O_{36}S_3$
F.W. 1457.58

ChemAlert® STORAGE gray

Application: Streptomycin Sulfate inhibits protein synthesis. It prevents microbial contamination in tissue culture applications and confers antibiotic resistance/sensitivity in molecular biology procedures.
Not for drug use.
[3810-74-0]
Recommended storage: 4°C

Product Specifications

pH of a 20% Solution	4.5 to 7.0
Loss on Drying at 105°C	≤5%

D-Sucrose
Molecular Biology

Quantity	Packaging	Cat. No.	Each	Case of
1kg	Poly Bottle	**BP220-1**	44.63	6/248.19
2.5kg	Poly Bottle	**BP220-212**	68.36	4/253.44
10kg	Poly Pail	**BP220-10**	250.88	- - - -

$C_{12}H_{22}O_{11}$
F.W. 342.30

ChemAlert® STORAGE gray

Application: D-Sucrose is suitable for the preparation of density gradients used in purification of proteins and nucleic acids by ultracentrifugation.
[57-50-1]
Recommended storage: RT

Product Specifications

Assay	≥99.9%
Specific Rotation $[\alpha]_D^{25}$ (c=26, H_2O)	+66° to +67°
Color of a 50% Solution (APHA)	≤10
Titratable Acid	≤0.0008mEq/g
Residue after Ignition	≤0.01%
Melting Point	160°-186°C
Invert Sugar	≤0.1%
Loss on Drying at 105°C	≤0.03%
Insoluble Matter	≤0.005%
Lead (ACS)	≤5ppm
Iron	≤5ppm
DNase	Not detected
RNase	Not detected
Protease	Not detected

Sucrose Gel-Loading Dye for DNA Gels, 5X **Electrophoresis**

Contains 40% Sucrose

Quantity	Packaging	Cat. No.	Each	Case of
1mL	Poly Tube	**BP655-1**	27.21	----
5mL	Poly Bottle	**BP655-5**	70.03	----

Application: This dye includes sucrose instead of glycerol. Add the dye to DNA samples prior to electrophoresis on agarose gels.

ChemAlert® STORAGE **gray**

Components: Sucrose (40%), Proprietary Component (<3%), and Water.

[57-50-1 (Sucrose)]

Recommended storage: RT

Product Specifications

Optical Absorbance (dilution 1:500 with deionized water):

at 525nm	0.30-0.45
at 588-594nm	0.50 to 0.65
at 635-641nm	0.47-0.62
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected

▸Sudan Black *Available from Fisher BioReagents*, BP109-10. Please see Fishersci.com for complete ordering information.*

Taq Polymerase

Quantity	Packaging	Cat. No.	Each	Case of
In Buffer A				
100 units	Poly Tube	**FB-6000-10**	68.94	----
5 × 100 units	Poly Tube	**FB-6000-15**	264.10	----
25 × 100 units	Poly Tube	**FB-6000-20**	1493.51	----
500 units	Poly Tube	**FB-6000-25**	267.54	----
5 × 500 units	Poly Tube	**FB-6000-30**	1307.56	----
2500 units	Poly Tube	**FB-6000-35**	1188.68	----
5 × 2500 units	Poly Tube	**FB-6000-40**	5349.06	----
In Buffer B				
100 units	Poly Tube	**FB-6000-45**	68.94	----
5 × 100 units	Poly Tube	**FB-6000-50**	293.61	----
25 × 100 units	Poly Tube	**FB-6000-55**	1493.51	----
500 units	Poly Tube	**FB-6000-60**	291.24	----
5 × 500 units	Poly Tube	**FB-6000-65**	1307.56	----
2500 units	Poly Tube	**FB-6000-70**	1188.68	----
5 × 2500 units	Poly Tube	**FB-6000-75**	5349.06	----

Application: Taq DNA Polymerase is a recombinant enzyme that is licensed for use in PCR. Provides superior performance in routine PCR and RT-PCR. Capable of amplifying large DNA target regions (up to 10kb). Well-suited for the following PCR applications: STR, RAPD, AFLP, and SNP analyses.

Description: Taq DNA Polymerase is a thermostable enzyme of approximately 94kDa size which was isolated originally from *Thermus aquaticus*. Replicates DNA optimally at 72°C and has a half-life of 40 minutes at 95°C allowing up to 45–50 thermal cycles without appreciable loss of enzyme activity. The enzyme catalyzes the polymerization of nucleotides into double-stranded DNA in the 5'→3' direction in the presence of magnesium and it also has a 5'→3' exonuclease activity.

Source: Escherichia coli carrying a recombinant plasmid that encodes the *T. aquaticus* DNA polymerase gene.

Storage Buffer: 50mM Tris-HCl (pH 7.5), 0.1mM EDTA, 5mM DTT, added stabilizers, and 50% glycerol.

10X Buffer A: Supplied. Contains 500mM KCl, 15mM $MgCl_2$, and 100mM Tris-HCl (pH 9.0 at 25°C).

10X Buffer B: Supplied. Contains 500mM KCl and 100mM Tris-HCl (pH 9.0 at 25°C). $MgCl_2$ supplied separately.

Concentration: 5000 units/mL

Unit Definition: One unit catalyzes the incorporation of 10 nmole of total nucleotide into acid-insoluble product in 30 minutes at 70°C utilizing M13mp18 DNA as template.

Tested for: DNase and Nickase contamination and a functional test of generating a PCR amplicon from human genomic DNA using primers for the p53 gene.

TEMED **Electrophoresis**

Quantity	Packaging	Cat. No.	Each	Case of
26mL (20g)	Amber Glass	**BP150-20**	36.13	6/200.17
130mL (100g)	Amber Glass	**BP150-100**	107.23	6/583.04

N,N,N',N'-Tetramethylethylenediamine

$(CH_3)_2NCH_2CH_2N(CH_3)_2$

$C_6H_{16}N_2$

F.W. 116.21

ChemAlert® STORAGE **red**

Application: TEMED is a commonly used catalyst for the polymerization of acrylamide/bis-acrylamide.

[110-18-9]

Recommended storage: RT

Product Specifications

Assay (by titration)	≥97%
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

Terrific Broth **Molecular Genetics**

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP2468-100**	27.13	6/130.22
500g	Poly Bottle	**BP2468-500**	82.71	6/482.15
2kg	Poly Bottle	**BP2468-2**	261.60	4/837.12
10kg	Poly Pail	**BP2468-10**	1229.49	----

Application: Terrific broth is a buffered enriched medium used to obtain high yields of plasmid DNA from transformed *E. coli*.

ChemAlert® STORAGE **gray**

Components in 1L: Tryptone: 12g; Yeast Extract: 24g; K_2HPO_4: 12.5g; KH_2PO_4: 2.3g

Recommended storage: RT

Product Specifications

Growth promotion ability:

S. aureus	Found
E. coli	Found

TES

White Crystals

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP309-100**	93.81	6/530.01

N-Tris(hydroxymethyl)methyl-2-aminoethanesulfonic Acid

ChemAlert® STORAGE **gray**

$C_6H_{15}NO_6S$

F.W. 229.2

Application: This biological buffer has a usable pH range of 6.8 to 8.2.

[7365-44-8]

Recommended storage: RT

Product Specifications

Assay	≥98%
pK_a at 25°C	7.4 ± 0.2
Melting Point	219° ± 5°C

Tetracycline Hydrochloride

Yellow Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP912-100**	80.97	----

$C_{22}H_{24}N_2O_8 \cdot HCl$

ChemAlert® STORAGE **gray**

F.W. 480.90

Application: Tetracycline blocks protein synthesis and is used to select tetracycline-resistant recombinant plasmids.

Shelf Life: 3 years

Not for drug use.

[64-75-5]

Recommended storage: RT

Product Specifications

pH of a 1% Solution .... 1.8 to 2.8
Loss on Drying at 105°C .... ≤2.0%

Tetrahydrofuran

Sequencing

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Glass	**BP1140-1**	69.36	6/395.89

THF
C_4H_8O
F.W. 72.11

ChemAlert® STORAGE gray

Application: Tetrahydrofuran is commonly used in sequencing procedures.
[109-99-9]
Recommended storage: RT

▸Thapsigargin *Available from Fisher BioReagents*, BP629-1. Please see Fishersci.com for complete ordering information.*

Thiamine Hydrochloride

White Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP892-100**	47.20	- - - -

Vitamin B_1 Hydrochloride
$C_{12}H_{17}ClN_4OS•HCl$
F.W. 337.28

ChemAlert® STORAGE gray

Application: This vitamin is suitable for use in systems requiring additives.
Not for human use.
[67-03-8]
Recommended storage: RT

Product Specifications

Assay .... ≥98%
Water .... ≤6.0%
Residue after Evaporation .... ≤0.2%
Nitrate .... None detected

▸Thimerosal *Available from Fisher BioReagents*, BP2542-100. Please see Fishersci.com for complete ordering information.*

▸DL-Thioctic Acid *Available from Fisher BioReagents*, BP2682-25. Please see Fishersci.com for complete ordering information.*

L-Threonine

White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP394-100**	110.87	6/624.00

$C_4H_9NO_3$
F.W. 119.12

ChemAlert® STORAGE gray

Application: This amino acid is suitable for use in tissue culture systems requiring additives.
[72-19-5]
Recommended storage: RT

Product Specifications

Assay 98.5-100.5%
Specific Rotation $[\alpha]_D^{20}$ (c=6, H_2O) .... -27.6° to -29.0°
State of Solution .... ≥98.0% transmittance
Ammonium .... ≤0.02%
Heavy Metals (as Pb) .... ≤10ppm
Arsenic .... ≤1ppm
Other Amino Acids .... Chromatographically not detectable
Loss on Drying at 105°C .... ≤0.20%
Residue on Ignition (sulfated) .... ≤0.10%

Thrombin

From Bovine Plasma

Quantity	Packaging	Cat. No.	Each	Case of
2kU	Amber Glass	**BP2543-2**	100.29	5/456.31
10kU	Amber Glass	**BP2543-10**	278.53	5/1267.47
25kU	Amber Glass	**BP2543-25**	490.34	5/2316.91

ChemAlert® STORAGE gray

Application: Thrombin is used for clotting factor tests, coagulation assays, and the defibrination of blood or plasma.
[9002-04-4]
Recommended storage: Store below 0°C

Product Specifications

Description .... white to off-white powder
Activity .... ≈ 100 NIH units/mg protein

▸Transferrin *Available from Fisher BioReagents*, BP2544-1. Please see Fishersci.com for complete ordering information.*

D-(+)-Trehalose, Dihydrate

White Powder

Quantity	Packaging	Cat. No.	Each	Case of
10g	Poly Bottle	**BP2687-10**	27.78	8/205.96
25g	Poly Bag	**BP2687-25**	60.97	8/451.85
100g	Poly Bottle	**BP2687-100**	161.44	3/453.23
1kg	Poly Bottle	**BP2687-1**	702.52	6/3870.05

$C_{12}H_{22}O_{11}•2H_2O$
F.W. 378.3

ChemAlert® STORAGE gray

Application: D-(+)-Trehalose is used in several biochemical techniques.
[6138-23-4]
Recommended storage: RT

Product Specifications

Assay .... ≥98%
FTIR .... Conforms to standard
Loss on Drying 8.5-10.5%

Trichloroacetic Acid

Flakes or Crystals

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**BP555-250**	54.91	6/265.34
500g	Amber Glass	**BP555-500**	92.92	6/451.98
1kg	Poly Bottle	**BP555-1**	102.07	4/321.36

Trichlorethanoic Acid
TCA
CCl_3COOH
$C_2HCl_3O_2$
F.W. 163.36

ChemAlert® STORAGE white

Application: TCA is used to precipitate proteins and nucleic acids from solution.
[76-03-9]
Recommended storage: RT

Product Specifications

Assay .... ≥99.0%
Chloride .... ≤0.002%
Heavy Metals (as Pb) .... ≤0.002%
Iron .... ≤0.001%
Nitrate .... ≤0.002%
Phosphate .... ≤5ppm
Residue after Ignition 0.030%
Substances Darkened by Sulfuric Acid .... To pass test
Sulfate .... ≤0.02%

Tricine
White Crystals

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP315-100**	50.52	6/279.31

N-[Tris-(hydroxymethyl)methyl]glycine

$(HOCH_2)_3CNHCH_2CO_2H$

$C_6H_{13}NO_5$

F.W. 179.2

ChemAlert® STORAGE gray

Application: This biological buffer has a usable pH range of 7.4 to 8.8.

[5704-04-1]

Recommended storage: RT

Product Specifications

Assay	≥98%
pK_a at 25°C	8.10 ± 0.2
Melting Point	184° ± 2°C

Triethylamine

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**BP616-500**	41.87	----

Trifluoroacetic Acid
Peptide Synthesis Grade

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**BP618-500**	180.98	----

TFA, Perfluoroacetic Acid, Trifluoroethanoic Acid

CF_3COOH

$C_2HF_3O_2$

F.W. 114.02

[76-05-1]

Product Specifications

Assay	≥99.5%
Water	≤0.01%
Fluoride	≤14ppm
Chloride	≤5ppm
Sulfate	≤2ppm
UV Absorbance:	
at 275nm	≤0.06
at 300nm	≤0.03

Tris Base
Triple-Crystallized

White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
1kg	Poly Bottle	**BP154-1**	154.77	4/562.43

Trimethylol Aminomethane, Tris(hydroxymethyl) aminomethane

$H_2NC(CH_2OH)_3$

$C_4H_{11}NO_3$

F.W. 121.14

ChemAlert® STORAGE gray

Application: This ultrapure, triple-crystallized buffer component is alcohol-free, so it is compatible with sensitive molecular biology, tissue culture, and electrophoresis methods.

[77-86-1]

Recommended storage: RT

Product Specifications

Assay (corrected for H_2O)	≥99.9%
Absorbance of a 1M Solution at 280nm	≤0.05
Water	≤0.5%
pH of a 0.05M Solution at 25°C	10.3 to 10.5
Copper	≤1ppm
Iron	≤2ppm
Magnesium	≤10ppm
Lead	≤1ppm
Arsenic	≤5ppm
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris Base
Molecular Biology

White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP152-500**	49.95	6/278.89
1kg	Poly Bottle	**BP152-1**	87.27	4/325.22
5kg	Poly Pail	**BP152-5**	334.54	----
10kg	Poly Pail	**BP152-10**	556.30	----
25kg	Fiber Drum	**BP152-25**	1364.49	----

Trimethylol Aminomethane, Tris(hydroxymethyl) aminomethane

$H_2NC(CH_2OH)_3$

$C_4H_{11}NO_3$

F.W. 121.14

ChemAlert® STORAGE gray

Application: Tris Base is a buffer component in molecular biology, tissue culture, and electrophoresis procedures.

[77-86-1]

Recommended storage: RT

Product Specifications

Assay (corrected for H_2O)	≥99.8%
Absorbance of a 1M Solution at 280nm	≤0.05
Water	≤2%
pH of a 0.05M Solution at 25°C	10.3 to 10.5
Copper	≤1ppm
Iron	≤2ppm
Magnesium	≤10ppm
Lead	≤1ppm
Arsenic	≤5ppm
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris Hydrochloride
Molecular Biology

Small White Flakes

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP153-500**	102.96	6/564.87
1kg	Poly Bottle	**BP153-1**	152.05	4/571.16

Tris(hydroxymethyl)aminomethane Hydrochloride

$H_2NC(CH_2OH)_3 \cdot HCl$

$C_4H_{11}NO_3 \cdot HCl$

F.W. 157.60

ChemAlert® STORAGE gray

Application: Tris Hydrochloride is a buffering medium for electrophoresis, molecular biology, and cell culture applications. It may be combined with Tris Base to simplify Tris buffer preparation.

[1185-53-1]

Recommended storage: RT

Product Specifications

Assay	≥99%
IR	Conforms to standard
Melting Point	152° ± 2°C
Absorbance of a 1M Solution at 280nm	≤0.05
Calcium	≤10ppm
Copper	≤1ppm
Iron	≤2ppm
Magnesium	≤10ppm
Lead	≤5ppm
Arsenic	≤10ppm
Barium	≤1ppm
Manganese	≤1ppm
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

*Trademark. See Trademark Reference.

Prices subject to change.

Tris Hydrochloride, 1M Solutions — Molecular Biology

pH 7.0, pH 7.5, and pH 8.0
High Purity, Low Metal

pH	Quantity	Packaging	Cat. No.	Each	Case of
7.0	100mL	Poly Bottle	**BP1756-100**	35.90	6/192.25
7.0	500mL	Poly Bottle	**BP1756-500**	49.58	6/260.21
7.5	100mL	Poly Bottle	**BP1757-100**	35.90	6/192.25
7.5	500mL	Poly Bottle	**BP1757-500**	51.50	6/264.20
8.0	100mL	Poly Bottle	**BP1758-100**	36.62	6/194.13
8.0	500mL	Poly Bottle	**BP1758-500**	51.50	6/264.20

Application: Tris is a buffer component in molecular biology, tissue culture, and electrophoresis procedures. These 1M solutions of Tris Hydrochloride at pH 7.0, pH 7.5, and pH 8.0 provide convenient and highly purified solutions.

ChemAlert® STORAGE **gray**

BP1756 solutions are pH 7.0
BP1757 solutions are pH 7.5
BP1758 solutions are pH 8.0
Filtered through a 0.2 micron filter.
[77-86-1 (Tris)]
[1185-53-1 (Tris HCl)]
Recommended storage: RT

Product Specifications

Arsenic	<0.0005%
Lead	<0.0001%
Iron	<0.0001%
Copper	<0.0001%
Magnesium	<0.0005%
Calcium	<0.0002%
Zinc	<0.0001%
Molar Concentration	1 ± 0.04M
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris Buffer Solution, 2M — Molecular Biology

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**BP1759-100**	36.12	6/195.29
500mL	Poly Bottle	**BP1759-500**	69.33	6/358.80

Application: Tris is a buffer component in molecular biology, tissue culture, and electrophoresis procedures. Tris Solution, 2M, provides a convenient stock solution for preparing Tris buffers.

ChemAlert® STORAGE **gray**

[77-86-1]
Recommended storage: RT

Product Specifications

Optical Absorbance of a 1M Aqueous Solution: at 280nm	<0.05
pH at 25°C	10.1-11.1
Arsenic	<0.0005%
Lead	<0.0001%
Iron	<0.0001%
Copper	<0.0001%
Magnesium	<0.0005%
DNase	Not detected
RNase	Not detected
Protease	Not detected
Molarity	2.0 ± 0.05

Tris Buffer Solution, 0.3M — Molecular Biology

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**BP1761-500**	56.51	6/333.05
1L	Poly Bottle	**BP1761-1**	101.44	6/597.96

Application: Tris is a buffer component in molecular biology, tissue culture, and electrophoresis procedures. Tris Solution, 0.3M, provides a convenient stock solution for these applications.

ChemAlert® STORAGE **gray**

[77-86-1]
Recommended storage: RT

Product Specifications

Molarity	0.3 ± 0.010
pH at 25°C	10.1 to 11.1
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris–Acetate–EDTA, 50X Solution — Electrophoresis

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**BP1332-500**	49.96	6/284.94
1L	Poly Bottle	**BP1332-1**	91.86	6/525.78
4L	PolyPac*	**BP1332-4**	174.23	- - - -
20L	PolyPac*	**BP1332-20**	603.87	- - - -

Application: Tris–Acetate–EDTA (TAE) is commonly used as a buffer for nucleic acid electrophoresis.

ChemAlert® STORAGE **gray**

2M Tris–Acetate and 0.050M EDTA.
Components: Tris (24%), Acetic Acid (5.0%), and EDTA (<2%).
Filtered through a 0.2 micron filter.
[77-86-1 (Tris)]
[64-19-7 (Acetic Acid)]
[60-00-4 (EDTA)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	8.2 to 8.4
Conductivity of a 1X Solution at 25°C	Report
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris–Acetate–EDTA, 25X — Electrophoresis

Powder

Quantity	Packaging	Cat. No.	Each	Case of
1	Foil Pack	**BP1331-1**	106.49	- - - -

Application: Tris–Acetate–EDTA (TAE) is commonly used as a buffer for nucleic acid electrophoresis.

ChemAlert® STORAGE **gray**

Each pack contains preweighed powder to make 1L of a 25X solution (1M Tris–Acetate and 0.025M EDTA).
Components: Tris (64.36%), Acetic Acid, Sodium Salt (31.91%) and Ethylenediamine Tetraacetic Acid (3.72%).
[77-86-1 (Tris)]
[127-09-3 (Acetic Acid, Sodium Salt)]
[60-00-4 (EDTA)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	8.3 ± 0.1
Solubility	To pass test
Conductivity of a 1X Solution at 25°C	1300 ± 200μmhos/cm
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris–Acetate–EDTA, 25X Solution

Electrophoresis

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**BP1330-1**	108.61	6/630.90

ChemAlert® STORAGE gray

Application: Tris–Acetate–EDTA (TAE) is commonly used as a buffer for nucleic acid electrophoresis.
1M Tris–Acetate and 0.025M EDTA.
Components: Tris (11.31%), EDTA Disodium Salt (0.87%), Acetic Acid, Sodium Salt (7.66%), and Hydrogen Chloride (3.74%).
Filtered through a 0.2 micron filter.
[77-86-1 (Tris)]
[139-33-3 (EDTA Disodium Salt)]
[127-09-3 (Acetic Acid, Sodium Salt)]
[7647-01-0 (Hydrogen Chloride)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	8.3 ± 0.1
Conductivity of a 1X Solution at 25°C	Report
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris–Acetate–EDTA, 10X Solution

Electrophoresis

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**BP1335-500**	22.86	6/109.73
1L	Poly Bottle	**BP1335-1**	44.42	6/235.44
4L	PolyPac*	**BP1335-4**	89.24	- - - -
20L	PolyPac	**BP1335-20**	287.87	- - - -

ChemAlert® STORAGE gray

Application: Tris–Acetate–EDTA (TAE) is commonly used as a buffer for nucleic acid electrophoresis.
0.4M Tris–Acetate and 0.01M EDTA.
Components: Tris (<5.0%), Acetic Acid (1.0%), and EDTA (<1%).
Filtered through a 0.2 micron filter.
[77-86-1 (Tris)]
[64-19-7 (Acetic Acid)]
[60-00-4 (EDTA)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	8.2 to 8.4
Conductivity of a 1X Solution at 25°C	1200 ± 200μmhos/cm
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris–Acetate–EDTA, 1X Solution

Electrophoresis

Quantity	Packaging	Cat. No.	Each	Case of
4L	PolyPac*	**BP2434-4**	50.80	- - - -
20L	PolyPac	**BP2434-20**	218.40	- - - -

ChemAlert® STORAGE gray

Application: Tris–Acetate–EDTA (TAE) is commonly used as a buffer for nucleic acid electrophoresis.
0.04M Tris–Acetate and 0.001M EDTA.
Filtered through a 0.2 micron filter.
[77-86-1 (Tris)]
[64-19-7 (Acetic Acid)]
[60-00-4 (EDTA)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	8.3 ± 0.1
Conductivity of a 1X Solution at 25°C	Report
DNase	Not detected
RNase	Not detected
Protease	Not detected
Electrophoresis	To pass test

TBE Buffer Mix

Electrophoresis

Dry Powder Mix of Tris/Boric Acid/EDTA

Quantity	Packaging	Cat. No.	Each	Case of
86.1g	Poly Bottle	**BP1396-86**	46.14	- - - -

ChemAlert® STORAGE gray

Tris-Boric Acid-EDTA Buffer Mix
Application: Electrophoresis buffer.
Makes 1 liter of 5X buffer. Final concentration of components in 1X buffer: 0.089M Tris, 0.089M Boric Acid, 0.002M EDTA.
[77-86-1 (Tris)]
[6381-92-6 (EDTA)]
[10043-35-3 (Boric Acid)]

Tris–Borate–EDTA, 10X

Electrophoresis

Powder

Quantity	Packaging	Cat. No.	Each	Case of
1	Foil Pack	**BP1334-1**	93.07	- - - -

ChemAlert® STORAGE gray

Application: Tris–Borate–EDTA (TBE) is commonly used as a buffer for nucleic acid electrophoresis.
Each pack contains preweighed powder to make 1L of a 10X solution (0.89M Tris Base, 0.89M Boric Acid, and 0.02M EDTA).
Components: Tris (63.91%), Boric Acid (32.54%), and EDTA (3.55%).
[77-86-1 (Tris)]
[10043-35-3 (Boric Acid)]
[60-00-4 (EDTA)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	8.3 ± 0.1
Solubility (1X concentration 1g/60mL H_2O)	Clear, colorless with no suspending impurities
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

▸***Tris-Borate-EDTA, 10X Solution*** *Available from Fisher BioReagents*, BP1336-1. Please see Fishersci.com for complete ordering information.*

Tris–Borate–EDTA, 10X Solution

Electrophoresis

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**BP1333-1**	43.01	6/255.29
4L	PolyPac*	**BP1333-4**	86.80	- - - -
20L	PolyPac	**BP1333-20**	274.46	- - - -

ChemAlert® STORAGE gray

Application: Tris–Borate–EDTA (TBE) is commonly used as a buffer for nucleic acid electrophoresis.
0.89M Tris Base, 0.89M Boric Acid, and 0.02M EDTA.
Components: Tris (10.8%), Boric Acid (5.5%), and EDTA (0.6%)
Filtered through a 0.2 micron filter.
[77-86-1 (Tris)]
[10043-35-3 (Boric Acid)]
[60-00-4 (EDTA)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	8.3 ± 0.1
Conductivity of 1X Solution at 25°C	750 to 1250μmhos/cm
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris–Borate–EDTA, 1X Solution — Electrophoresis

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**BP2430-1**	36.29	6/198.08
4L	PolyPac*	**BP2430-4**	50.80	- - - -
20L	PolyPac	**BP2430-20**	218.40	- - - -

Application: Tris–Borate–EDTA (TBE) is commonly used as a buffer for nucleic acid electrophoresis.

ChemAlert® STORAGE gray

0.089M Tris Base, 0.089M Boric Acid, and 0.002M EDTA.
Filtered through a 0.2 micron filter.
[77-86-1 (Tris)]
[6381-92-6 (EDTA)]
[10043-35-3 (Boric Acid)]
Recommended storage: RT

Product Specifications

pH of a 1X solution at 25°C	8.3 ± 0.1
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris Buffered Saline (TBS), 10X Solution — Molecular Biology

pH 7.4

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**BP2471-100**	39.52	6/216.51
500mL	Poly Bottle	**BP2471-500**	50.70	6/271.46
1L	Poly Bottle	**BP2471-1**	69.68	6/364.05

TBS

Application: Tris Buffered Saline (TBS) is used in biochemical and molecular biology applications.

ChemAlert® STORAGE gray

10X solution contains 1.37M Sodium Chloride, 0.027M Potassium Chloride, and 0.25M Tris/Tris-HCl.
Filtered and autoclaved.
[77-86-1 (Tris)]
[1185-53-1 (Tris Hydrochloride)]
[7447-40-7 (Potassium Chloride)]
[7647-14-5 (Sodium Chloride)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	7.3 to 7.5
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris–EDTA, 100X Solution — Molecular Biology

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**BP1338-1**	114.57	6/599.03
4L	PolyPac*	**BP1338-4**	390.93	- - - -
20L	PolyPac	**BP1338-20**	212.38	- - - -

Application: Tris–EDTA (TE) is routinely used for suspending nucleic acid samples.

ChemAlert® STORAGE gray

1.0M Tris Base and 0.1M EDTA.
Filtered through a 0.2 micron filter.
[77-86-1 (Tris)]
[60-00-4 (EDTA)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	8.0 ± 0.1
Conductivity of a 1X Solution at 25°C	Report
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris–EDTA (TE), 10X Solution — Molecular Biology

pH 7.6

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**BP2475-100**	39.41	6/215.18
500mL	Poly Bottle	**BP2475-500**	49.54	6/264.30
1L	Poly Bottle	**BP2475-1**	64.71	6/346.42

TE

Application: Tris–EDTA (TE) is used for suspending nucleic acid samples.

ChemAlert® STORAGE gray

10X solution contains 100mM Tris and 10mM EDTA.
Filtered through a 5 micron filter and autoclaved.
[60-00-4 (EDTA)]
[77-86-1 (Tris)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	7.5 to 7.7
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris–EDTA, 1X Solution — Molecular Biology

pH 7.4

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**BP2476-100**	25.56	6/153.30
500mL	Poly Bottle	**BP2476-500**	32.23	6/154.70
1L	Poly Bottle	**BP2476-1**	42.38	6/203.42

TE

Application: Tris–EDTA (TE) is routinely used for suspending nucleic acid samples.

ChemAlert® STORAGE gray

10mM Tris and 1mM EDTA.
Filtered through a 5 micron filter.
[60-00-4 (EDTA)]
[77-86-1 (Tris)]
[7647-01-0 (Hydrogen Chloride)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	7.4 ± 0.1
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris–EDTA, 1X Solution — Molecular Biology

pH 7.6

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**BP2474-100**	25.56	6/153.30
500mL	Poly Bottle	**BP2474-500**	32.23	6/154.70
1L	Poly Bottle	**BP2474-1**	42.38	6/203.42

TE

Application: Tris–EDTA (TE) is routinely used for suspending nucleic acid samples.

ChemAlert® STORAGE gray

10mM Tris and 1mM EDTA.
Filtered through a 5 micron filter.
[60-00-4 (EDTA)]
[77-86-1 (Tris)]
[7647-01-0 (Hydrogen Chloride)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	7.6 ± 0.1
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris–EDTA, 1X Solution — Molecular Biology

pH 8.0

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**BP2473-100**	26.07	6/153.30
500mL	Poly Bottle	**BP2473-500**	32.87	6/193.41
1L	Poly Bottle	**BP2473-1**	42.38	6/203.42

TE

ChemAlert® STORAGE gray

Application: Tris–EDTA (TE) is routinely used for suspending nucleic acid samples.
10mM Tris and 1mM EDTA.
Filtered through a 5 micron filter.
[60-00-4 (EDTA)]
[77-86-1 (Tris)]
[7647-01-0 (Hydrogen Chloride)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	8.0 ± 0.1
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris–Glycine, 10X — Electrophoresis

Powder

Quantity	Packaging	Cat. No.	Each	Case of
1	Foil Pack	**BP1307-1**	59.23	- - - -

ChemAlert® STORAGE gray

Application: Tris–Glycine is commonly used as a buffer in native polyacrylamide gel electrophoresis.
Each pack contains preweighed powder to make 1L of a 10X solution (0.25M Tris Base and 1.92M Glycine).
[77-86-1 (Tris Base)]
[56-40-6 (Glycine)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	8.4 ± 0.1
DNase	Not detected
RNase	Not detected
Protease	Not detected
Electrophoresis	To pass test

Tris–Glycine, 10X Solution — Electrophoresis

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**BP1306-1**	61.56	6/352.34

ChemAlert® STORAGE gray

Application: Tris–Glycine is commonly used as a buffer in native polyacrylamide gel electrophoresis.
0.25M Tris Base and 1.92M Glycine.
Components: Tris (2-3%) and Glycine (13-14%).
Filtered through a 0.2 micron filter.
[77-86-1 (Tris)]
[56-40-6 (Glycine)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	8.3 to 8.5
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris–Glycine–SDS, 10X — Electrophoresis

Powder

Quantity	Packaging	Cat. No.	Each	Case of
1	Foil Pack	**BP1342-1**	60.35	- - - -

ChemAlert® STORAGE gray

Application: Tris–Glycine–SDS is commonly used as a buffer in SDS–PAGE.
Each pack contains preweighed powder to make 1L of a 10X solution (0.25M Tris Base, 1.92M Glycine, and 1.0% w/v SDS).
[77-86-1 (Tris)], [56-40-6 (Glycine)], [151-21-3 (SDS)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	8.4 ± 0.1
Protease	Not detected
Electrophoresis	To pass test

Tris–Glycine–SDS, 10X Solution — Electrophoresis

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**BP1341-1**	61.56	6/352.34

ChemAlert® STORAGE gray

Application: Tris–Glycine–SDS is commonly used as a buffer in SDS–PAGE.
0.25M Tris Base, 1.92M Glycine, and 1.0% (w/v) SDS.
Filtered through a 0.2 micron filter.
[77-86-1 (Tris)]
[56-40-6 (Glycine)]
[151-21-3 (SDS)]
Recommended storage: RT

Product Specifications

pH (1X solution) at 25°C	8.4 ± 0.1
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

Tris–Glycine–SDS, 1X Solution — Electrophoresis

Quantity	Packaging	Cat. No.	Each	Case of
4L	PolyPac*	**BP2440-4**	71.95	- - - -
20L	PolyPac	**BP2440-20**	89.51	- - - -

ChemAlert® STORAGE gray

Application: Tris–Glycine–SDS is commonly used as a buffer in SDS–PAGE.
0.025M Tris Base, 0.192M Glycine, and 0.1% (w/v) SDS.
Filtered through a 0.2 micron filter.
[56-40-6 (Glycine)]
[77-86-1 (Tris)]
[151-21-3 (SDS)]
Recommended storage: RT

Product Specifications

pH of a 1X solution at 25°C	8.3 ± 0.1
Electrophoresis	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

Triton* X-100 — Electrophoresis

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**BP151-100**	22.52	6/125.18
500mL	Poly Bottle	**BP151-500**	31.73	6/176.42

Polyethylene Glycol p-tert-Octylphenyl Ether
$C_{14}H_{21}(OCH_2CH_2)_4OH$
$C_{22}H_{38}O_5$
F.W. 382.54

ChemAlert® STORAGE gray

Application: This nonionic detergent is used to solubilize membranes.
[9002-93-1]
Recommended storage: RT

Product Specifications

IR	Conforms to standard
Cloud Point (1% in H_2O)	63-69°C
pH of a 5% Solution at 25°C	6 to 8
Solubility	Colorless, slightly hazy solution

Tryptone — Molecular Genetics

Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP1421-100**	35.48	6/187.87
500g	Poly Bottle	**BP1421-500**	63.72	6/334.23
2kg	Poly Bottle	**BP1421-2**	245.67	4/766.68

*Trademark. See Trademark Reference.

L-Tryptophan
White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP395-100**	107.56	6/596.38

$C_{11}H_{12}N_2O_2$
F.W. 204.23

ChemAlert® STORAGE **gray**

Application: This amino acid is suitable for use in tissue culture systems requiring additives.
[73-22-3]
Recommended storage: RT

Product Specifications

Assay	98.5-100.5%
Specific Rotation $[\alpha]_D^{20}$ (c=1, H_2O)	-30° to -33°
State of Solution	≥95.0% transmittance
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying at 105°C	≤0.20%
Residue on Ignition (sulfated)	≤0.10%

*F ▸**Tth111 I** Available from Fisher BioReagents*, BP3444-1. Please see Fishersci.com for complete ordering information.*

Tween* 20

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**BP337-100**	18.41	6/104.01
500mL	Poly Bottle	**BP337-500**	22.04	6/124.58

Polysorbate 20, Polyoxyethylene-20-sorbitan Monolaurate
$C_{58}H_{114}O_{26}$
F.W. 1227.54

ChemAlert® STORAGE **gray**

Application: This nonionic detergent is used in the isolation of water-soluble membrane proteins.
[9005-64-5]
Recommended storage: RT

Product Specifications

Hydroxyl Number	96 to 108
Water	≤3.0%
Residue after Ignition	≤0.25%
Arsenic	≤0.0003%
Lead	≤0.0005%
Copper	≤0.0005%

Tween* 80

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**BP338-500**	26.93	6/149.19

Polysorbate 80, Polyoxyethylene-20-sorbitan Monooleate
$C_{64}H_{124}O_{26}$
F.W. 1309.68

ChemAlert® STORAGE **gray**

Application: This nonionic detergent is used in the isolation of water-soluble membrane proteins.
[9005-65-6]
Recommended storage: RT

Product Specifications

Hydroxyl Number	65 to 80
Water	≤3.0%
Residue after Ignition	≤0.25%
Arsenic	≤0.0001%
Lead	≤0.0005%
Copper	≤0.0005%

L-Tyrosine
White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP396-100**	41.96	6/239.51

$C_9H_{11}NO_3$
F.W. 181.19

ChemAlert® STORAGE **gray**

Application: This amino acid is suitable for use in tissue culture systems requiring additives.
[60-18-4]
Recommended storage: RT

Product Specifications

Assay	98.5-100.5%
Specific Rotation $[\alpha]_D^{20}$ (c=5, 1N HCl)	-11.3° to -12.1°
State of Solution	≥95.0% transmittance
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying	≤0.20%
Residue on Ignition (sulfated)	≤0.10%

Urea **Molecular Biology**
Colorless-to-white Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
500g	Poly Bottle	**BP169-500**	47.22	6/260.87
2.5kg	Poly Bottle	**BP169-212**	128.87	4/479.41
10kg	Poly Pail	**BP169-10**	421.38	- - - -

NH_2CONH_2
CH_4N_2O
F.W. 60.06

ChemAlert® STORAGE **gray**

Application: Urea is used as a denaturing agent for DNA and proteins.
[57-13-6]
Recommended storage: RT

Product Specifications

Assay	≥99.0%
Absorbance of a 5M Solution at 280nm	≤0.05
Melting Point	132°-135°C
CNO	≤5ppm
Biuret Test	Negative
Copper	≤1ppm
Iron	≤2ppm
Heavy Metals (as Pb)	≤5ppm
Solubility of an 8M Solution	To pass test
DNase	Not detected
RNase	Not detected
Protease	Not detected

L-Valine
White Crystals or Crystalline Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Amber Glass	**BP397-100**	64.68	6/363.90

$C_5H_{11}NO_2$
F.W. 117.15

ChemAlert® STORAGE **gray**

Application: This amino acid is suitable for use in tissue culture systems requiring additives.
[72-18-4]
Recommended storage: RT

Product Specifications

Assay	98.5-100.5%
Specific Rotation $[\alpha]_D^{20}$ (c=8, 6N HCl)	+27.6° to +29.0°
State of Solution	≥98.0% transmittance
Ammonium	≤0.02%
Heavy Metals (as Pb)	≤10ppm
Arsenic	≤1ppm
Other Amino Acids	Chromatographically not detectable
Loss on Drying at 105°C	≤0.20%
Residue on Ignition (sulfated)	≤0.10%

F ▸**Vimentin** *Available from Fisher BioReagents*, BP2545-100. Please see Fishersci.com for complete ordering information.*

F ▸**Vitamin B12** *see Cyanocobalamin, Fisher BioReagents*, BP862-1.*

Water, Sterile — Biotech Grade

Quantity	Packaging	Cat. No.	Each	Case of
4L	PolyPac*	**BP2485-4**	43.56	- - - -
20L	PolyPac	**BP2485-20**	140.93	- - - -

H_2O

F.W. 18.02

ChemAlert® STORAGE gray

Application: Biotech-grade water can be used for several biological test procedures.

Filtered through a 0.2 micron filter.

[7732-18-5]

Product Specifications

Specific Conductance at 25°C	≤2×10^{-6} ohm^{-1} cm^{-1}
pH at 25°C	5.4–7.0
Heavy Metals (as Pb)	≤0.01ppm
Substances Reducing Permanganate	To pass test

Water, Sterile — DNA Grade

For DNA Work

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**BP2470-1**	34.00	6/180.88

H_2O

F.W. 18.02

ChemAlert® STORAGE gray

Application: DNA-grade Water is DNase- and Protease-free and is suitable for all DNA work.

Filtered through a 0.2 micron filter and autoclaved.

[7732-18-5]

Product Specifications

pH at 25°C	5.4–7.0
DNase	Not detected
Protease	Not detected

Water, Sterile — Molecular Biology

For RNA work, DEPC-treated and Nuclease-free

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**BP561-1**	37.11	6/197.56

H_2O

F.W. 18.02

ChemAlert® STORAGE gray

Application: Diethylpyrocarbonate (DEPC)-treated Water is guaranteed nuclease-free (tested for both DNase and RNase) and is suitable for all RNA work.

DEPC-treated and autoclaved.

Filtered through a 0.2 micron filter.

[7732-18-5]

Product Specifications

Specific Conductance at 25°C	≤18×10^{-6} ohm^{-1} cm^{-1}
DNase	Not detected
RNase	Not detected
Protease	Not detected

Water, Sterile — Sterile

Nuclease Free

Quantity	Packaging	Cat. No.	Each	Case of
50mL	Poly Bottle	**BP2484-50**	24.57	6/114.69
100mL	Poly Bottle	**BP2484-100**	36.67	6/171.19

H_2O

F.W. 18.02

ChemAlert® STORAGE gray

Application: Diethylpyrocarbonate (DEPC)-treated Water is guaranteed nuclease-free (tested for both DNase and RNase) and is suitable for all RNA work.

Filtered through a 0.2 micron filter.

[7732-18-5]

Product Specifications

DNase	Not detected
RNase	Not detected
Protease	Not detected

Xba I

Source: Xanthomonas badrii

Quantity	Packaging	Cat. No.	Each	Case of
10,000 units	Poly Tube	**BP3448-5**	244.88	- - - -

ChemAlert® STORAGE gray

Application: *Xba* I restriction endonuclease digests dsDNA with sequence indicated below.

T'CTAG A
A GATC'T

Concentration: 8-12 units/µL

High Concentration (HC): 40-80 units/µL

Isoschizomers: None

Heat Inactivated: -

Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 300mM NaCl, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA and 50% glycerol.

Qualified for Blue/White Cloning Assays and genomic assays.

Recommended storage: -20°C

Product Specifications

Percent Activity in Quad 4* Buffer System:

A	50–75%
B	75–100%
C	75–100%
D	100%
UNIVERSAL*	100%

Frequency of Cutting:

λ	1
Ad-2	5
ΦX174	0
pUC18	1
M13mp18	1
pBR322	0

Xho I

Source: Xanthomonas holcicola

Quantity	Packaging	Cat. No.	Each	Case of
10,000 units	Poly Tube	**BP3450-5**	154.74	- - - -

ChemAlert® STORAGE gray

Application: *Xho* I restriction endonuclease digests dsDNA with sequence indicated below.

C'TCGA G
G AGCT'C

Concentration: 10 units/µL

Isoschizomers: *Sfr*274 I, *Pae*R7 I

Heat Inactivated: +

Storage Buffer Components: 10mM Tris-HCl (pH 7.4), 300mM KCl, 0.01% Triton* X-100, 0.1mM EDTA, 1mM DTT, 0.5mg/mL BSA and 50% glycerol.

Qualified for Blue/White Cloning Assays and genomic assays.

Recommended storage: -20°C

Product Specifications

Percent Activity in Quad 4* Buffer System:

A	25–50%
B	75–100%
C	75–100%
D	100%
UNIVERSAL*	10–25%

Frequency of Cutting:

λ	1
Ad-2	6
ΦX174	1
pUC18	0
M13mp18	0
pBR322	0

Xylene Cyanole FF — Electrophoresis
Bluish-green Powder

Quantity	Packaging	Cat. No.	Each	Case of
10g	Amber Glass	**BP565-10**	67.40	6/368.33

$C_{25}H_{27}N_2O_7S_2Na$

F.W. 554.62

ChemAlert® STORAGE gray

Application: This dye is used in electrophoretic applications to mark the migration position of nucleic acid fragments.

C.I. 42135

[2650-17-1]

Recommended storage: RT

Product Specifications
Loss on Drying at 105°C ....≤10.0%
Absorption Maxima ....614 ± 2nm
Molar Absorbance (E_m, H_2O) ....>30,000
IR ....Conforms to standard
DNase ....Not detected
RNase ....Not detected

D-(+)-Xylose
White to Off-white Powder

Quantity	Packaging	Cat. No.	Each	Case of
250g	Amber Glass	**BP708-250**	132.47	6/738.32

$C_5H_{10}O_5$

F.W. 150.13

ChemAlert® STORAGE gray

Application: D-(+)-Xylose is often used as a cell culture additive.

[58-86-6]

Recommended storage: RT

Product Specifications
Assay ....≥98%
TLC ....Single spot
Specific Rotation $[\alpha]_D^{20}$ (c=10, H_2O) ....+20° ± 1°

▸***Yeast DNA PFGE Markers*** *Available from Fisher BioReagents*, BP2659-40. Please see Fishersci.com for complete ordering information.*

Yeast Extract — Molecular Genetics
Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP1422-100**	50.46	6/264.22
500g	Poly Bottle	**BP1422-500**	85.88	6/450.52
2kg	Poly Bottle	**BP1422-2**	314.08	- - - -

Application: Yeast Extract is the water-soluble portion of autolyzed yeast used in bacteriological culture media.

[8013-01-2]

Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications
Growth promotion ability:
S. aureus ....Found
E. coli ....Found

YPD Broth — Molecular Genetics
Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP2469-100**	23.48	6/112.70
2kg	Poly Bottle	**BP2469-2**	200.79	4/642.53
10kg	Poly Pail	**BP2469-10**	909.66	- - - -

Application: YPD Broth is used for the maintenance and propagation of yeast.

Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications
Growth promotion ability:
S. aureus ....Found
E. coli ....Found

▸***2X YT Agar*** *Available from Fisher BioReagents*, BP2466-100. Please see Fishersci.com for complete ordering information.*

2X YT Broth — Molecular Genetics
Powder

Quantity	Packaging	Cat. No.	Each	Case of
100g	Poly Bottle	**BP2467-100**	23.66	6/113.57
500g	Poly Bottle	**BP2467-500**	62.53	6/300.14
2kg	Poly Bottle	**BP2467-2**	190.97	4/761.54
10kg	Poly Pail	**BP2467-10**	853.50	- - - -

Application: 2X YT Broth is used for growth of hosts for replication of M13 vectors.

Components in 1L: Tryptone: 16g; Yeast Extract: 10g; NaCl: 5g

Recommended storage: RT

ChemAlert® STORAGE gray

Product Specifications
Growth promotion ability:
S. aureus ....Found
E. coli ....Found

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Standards, Inorganic

The following pages are a representative listing of Inorganic Standards available from Fisher Chemical*, SPEX CertiPrep*, Restek* and Ultra Scientific. Throughout this section, you'll find certified standards designed especially for use in Atomic Absorption (AA), AA/ICP-AES, Contract Laboratory Program (CLP), ICP-MS/ICP-AES, Ion Chromatography, Quality Control Testing, and Proficiency Testing. Included with each entry are applicable EPA method protocols, a listing of individual components, and relevant concentration levels.

Atomic Absorption

Aluminum, Reference Standard Solution — Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SA442-100**	34.91	6/162.84
500mL	Poly Bottle	**SA442-500**	93.09	6/435.25

For Atomic Absorption.
(1mL = 1mg Al)
Solute: Aluminum Chloride Hexahydrate
Solvent: Dilute Hydrochloric Acid
[7784-13-6 (Aluminum Chloride Hexahydrate)]
[7647-01-0 (Hydrogen Chloride)]

ChemAlert® STORAGE white

Product Specifications
Actual Lot Analysis is reported on label.
Concentration (by Wet Method) ....≥990ppm and ≤1010ppm Al

Arsenic, Reference Standard Solution — Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SA449-100**	33.27	6/159.77
500mL	Poly Bottle	**SA449-500**	90.91	6/430.58

For Atomic Absorption.
(1mL = 1mg As)
Solute: Arsenic Trioxide
Solvent: Dilute Nitric Acid

ChemAlert® STORAGE white

Product Specifications
Concentration ....≥990 and ≤1010ppm As

Boron, Reference Standard Solution — Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SB155-100**	33.28	6/159.85
500mL	Poly Bottle	**SB155-500**	89.09	6/417.96

For Atomic Absorption.
(1mL = 1mg B)
Solute: Boric Acid
Solvent: Distilled Water
[10043-35 (Boric Acid)]

ChemAlert® STORAGE gray

Product Specifications
Concentration ....≥990 and ≤1010ppm B

Cadmium, Reference Standard Solution — Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SC118-100**	30.64	6/147.14
500mL	Poly Bottle	**SC118-500**	84.18	6/398.55

For Atomic Absorption.
(1mL = 1mg Cd)
Solute: Cadmium Metal
Solvent: Dilute Nitric Acid
[7440-43-9 (Cadmium)]
[7697-37-2 (Nitric Acid)]

ChemAlert® STORAGE white

Product Specifications
Concentration (Wet Method) ....≥990 and ≤1010ppm Cd

Calcium, Reference Standard Solution — Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SC191-100**	33.28	6/159.85
500mL	Poly Bottle	**SC191-500**	98.74	6/470.77

For Atomic Absorption.
(1mL = 1mg Ca)
Solute: Calcium Carbonate
Solvent: Dilute Nitric Acid
[471-34-1 (Calcium Carbonate)]
[7697-37-2 (Nitric Acid)]

ChemAlert® STORAGE white

Product Specifications
Concentration (Wet Method) ....≥990 and ≤1010ppm Ca

Chromium, Reference Standard Solution — Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SC192-100**	33.28	6/159.85
500mL	Poly Bottle	**SC192-500**	90.77	6/429.89

For Atomic Absorption.
(1mL = 1mg Cr)
Solute: Potassium Dichromate
Solvent: Distilled Water
[7778-50-9 (Potassium Dichromate)]

ChemAlert® STORAGE gray

Product Specifications
Actual Lot Analysis is reported on label.
Concentration ....≥990 and ≤1010ppm Cr

Cobalt, Reference Standard Solution — Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SC193-100**	32.90	6/157.99
500mL	Poly Bottle	**SC193-500**	90.97	6/428.79

For Atomic Absorption.
(1mL = 1mg Co)
Solute: Cobalt Nitrate
Solvent: Dilute Nitric Acid
[10026-22-9 (Cobaltous Nitrate)]
[7697-37-2 (Nitric Acid)]

ChemAlert® STORAGE white

*Trademark. See Trademark Reference.

Product Specifications

Actual Lot Analysis is reported on label.

Concentration (Wet Method) ....≥990 and ≤1010ppm Co

Copper, Reference Standard Solution — Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SC194-100**	35.04	6/163.50
500mL	Poly Bottle	**SC194-500**	95.67	6/447.39

For Atomic Absorption.
(1mL = 1mg Cu)
Solute: Copper Nitrate
Solvent: Dilute Nitric Acid
[19004-19-4 (Cupric Nitrate)]
[7697-37-2 (Nitric Acid)]

ChemAlert® STORAGE **white**

Product Specifications

Concentration (Wet Method) ....≥990 and ≤1010ppm Cu

Gold, Reference Standard Solution — Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**SG91-100**	104.23	6/485.61

For Atomic Absorption.
(1mL = 1mg Au)
Solute: Gold Chloride
Solvent: Distilled Water
[16961-25-4 (Gold Chloride)]

ChemAlert® STORAGE **gray**

Product Specifications

Concentration ....≥990 and ≤1010ppm Au

Iron, Reference Standard Solution — Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SI124-100**	35.22	6/164.35
500mL	Poly Bottle	**SI124-500**	88.19	6/412.32

For Atomic Absorption.
(1mL = 1mg Fe)
Solute: Ferric Nitrate
Solvent: Dilute Nitric Acid
[7782-61-8 (Ferric Nitrate)]
[7697-37-2 (Nitric Acid)]

ChemAlert® STORAGE **white**

Product Specifications

Concentration (Wet Method)......................................≥990 and ≤1010ppm Fe

Lead, Reference Standard Solution — Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SL21-100**	39.95	6/186.52
500mL	Poly Bottle	**SL21-500**	95.60	6/447.02

For Atomic Absorption.
(1mL = 1mg Pb)
Solute: Lead Metal
Solvent: Dilute Nitric Acid

ChemAlert® STORAGE **white**

Product Specifications

Concentration (Wet Method) ....≥990ppm and ≤1010ppm Pb

Magnesium, Reference Standard Solution — Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SM51-100**	33.28	6/159.85
500mL	Poly Bottle	**SM51-500**	90.97	6/430.93

For Atomic Absorption.
(1mL = 1mg Mg)
Solute: Magnesium Metal
Solvent: Dilute Nitric Acid
[13446-18-9 (Magnesium Dinitrate Hexahydrate)]
[7697-37-2 (Nitric Acid)]

ChemAlert® STORAGE **white**

Product Specifications

Concentration (Wet Method) ....≥990ppm and ≤1010ppm Mg

Manganese, Reference Standard Solution — Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SM81-100**	33.28	6/159.85
500mL	Poly Bottle	**SM81-500**	90.97	6/430.93

For Atomic Absorption.
(1mL = 1mg Mn)
Solute: Manganese Nitrate Hexahydrate
Solvent: Dilute Nitric Acid
[17141-63-8 (Manganese Nitrate Hexahydrate)]
[7697-37-2 (Nitric Acid)]

ChemAlert® STORAGE **white**

Product Specifications

Concentration (Wet Method) ....≥990ppm and ≤1010ppm Mn

Mercury, Reference Standard Solution — Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SM114-100**	33.28	6/159.85
500mL	Poly Bottle	**SM114-500**	90.97	6/428.79

For Atomic Absorption.
(1mL = 1mg Hg)
Solute: Mercuric Nitrate
Solvent: Dilute Nitric Acid
[7783-34-8 (Mercury (II) Nitrate Monohydrate)]
[7697-37-2 (Nitric Acid)]

ChemAlert® STORAGE **white**

Hg

Product Specifications

Concentration (Wet Method)..............................≥990ppm and ≤1010ppm Hg

Molybdenum, Reference Standard Solution — Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SM113-100**	33.28	6/159.85
500mL	Poly Bottle	**SM113-500**	92.14	6/437.08

For Atomic Absorption.
(1mL = 1mg Mo)
Solute: Molybdenum Metal
Solvent: Dilute Aqua Regia
[1313-27-5 (Molybdenum Trioxide)]
[7647-01-0 (Hydrogen Chloride)]
[7697-37-2 (Nitric Acid)]

ChemAlert® STORAGE **white**

Product Specifications

Concentration (Wet Method) ....≥990ppm and ≤1010ppm Mo

Nickel, Reference Standard Solution

Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SN70-100**	35.22	6/164.35
500mL	Poly Bottle	**SN70-500**	88.52	6/413.76

For Atomic Absorption.
(1mL = 1mg Ni)
Solute: Nickel Nitrate
Solvent: Dilute Nitric Acid
[13478-00-7 (Nickel (II) Nitrate, Hexahydrate)]
[7697-37-2 (Nitric Acid)]

ChemAlert® STORAGE white

Product Specifications
Concentration (Wet Method) ....≥990ppm and ≤1010ppm Ni

Potassium, Reference Standard Solution

Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SP351-100**	33.28	6/159.85
500mL	Poly Bottle	**SP351-500**	90.97	6/430.93

For Atomic Absorption.
(1mL = 1mg K)
Solute: Potassium Chloride
Solvent: Distilled Water
[7447-40-7 (Potassium Chloride)]

ChemAlert® STORAGE gray

Product Specifications
Concentration (Wet Method) ....≥990ppm and ≤1010ppm K

Selenium, Reference Standard Solution

Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SS464-100**	33.27	6/159.77
500mL	Poly Bottle	**SS464-500**	90.91	6/428.43

For Atomic Absorption.
(1mL = 1mg Se)
Solute: Selenium Dioxide
Solvent: Distilled Water
[7783-00-8 (Selenium Dioxide)]

ChemAlert® STORAGE gray

Product Specifications
Concentration ....≥990 and ≤1010ppm Se

Silicon, Reference Standard Solution

Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SS465-100**	33.27	6/159.77
500mL	Poly Bottle	**SS465-500**	90.91	6/430.58

For Atomic Absorption.
(1mL = 1mg Si)
Solute: Sodium Silicate
Solvent: Distilled Water
[6834-92-0 (Sodium Metasilicate)]

ChemAlert® STORAGE gray

Product Specifications
Concentration ....≥990ppm and ≤1010ppm Si

Silver, Reference Standard Solution

Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Amber Glass	**SS457-100**	36.85	6/171.97
500mL	Amber Glass	**SS457-500**	100.85	6/467.44

For Atomic Absorption.
(1mL = 1mg Ag)
Solute: Silver Nitrate
Solvent: Dilute Nitric Acid
[7761-88-8 (Silver Nitrate)]
[7697-37-2 (Nitric Acid)]

ChemAlert® STORAGE white

Product Specifications
Concentration (Wet Method) ....≥990ppm and ≤1010ppm Ag

Sodium, Reference Standard Solution

Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SS139-100**	33.28	6/159.85
500mL	Poly Bottle	**SS139-500**	90.03	6/426.49

For Atomic Absorption.
(1mL = 1mg Na)
Solute: Sodium Chloride
Solvent: Distilled Water
[7647-14-5 (Sodium Chloride)]

ChemAlert® STORAGE white

Product Specifications
Concentration (Wet Method) ....≥990ppm and ≤1010ppm Na

Tin, Reference Standard Solution

Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**ST97-100**	33.27	6/159.77
500mL	Poly Bottle	**ST97-500**	98.66	6/468.10

For Atomic Absorption.
(1mL = 1mg Sn)
Solute: Tin Metal
Solvent: Dilute Hydrochloric Acid
[7440-31-5 (Tin)]
[7647-01-0 (Hydrogen Chloride)]

ChemAlert® STORAGE white

Product Specifications
Concentration (Wet Method) ....≥990ppm and ≤1010ppm Sn

Zinc, Reference Standard Solution

Certified

1000ppm ± 1%

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**SZ13-100**	35.04	6/163.50
500mL	Poly Bottle	**SZ13-500**	95.67	6/447.39

For Atomic Absorption.
(1mL = 1mg Zn)
Solute: Zinc Oxide
Solvent: Dilute Nitric Acid
[1314-13-2 (Zinc Oxide)]
[7697-37-2 (Nitric Acid)]

ChemAlert® STORAGE white

Product Specifications
Concentration (Wet Method) ....≥990ppm and ≤1010ppm Zn

AA/ICP-AES Single Elements

Aluminum Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLAL2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLAL2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLAL2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLAL2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLAL2-3X**	158.23	- - - -
500mL	Poly Bottle	**PLAL1-2X**	104.47	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLAL2-2Y, -2T, -2X
	10,000µg/mL	PLAL2-3Y, -3X
2-5% HCl	1000µg/mL	PLAL1-2X

Arsenic Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLAS2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLAS2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLAS2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLAS2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLAS2-3X**	158.23	- - - -
500mL	Poly Bottle	**PLAS1-2X**	104.47	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLAS2-2Y, -2T, -2X
	10,000µg/mL	PLAS2-3Y, -3X
2-5% HCl	1000µg/mL	PLAS1-2X

Barium Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLBA2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLBA2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLBA2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLBA2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLBA2-3X**	158.23	- - - -
500mL	Poly Bottle	**PLBA1-2X**	104.47	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLBA2-2Y, -2T, -2X
	10,000µg/mL	PLBA2-3Y, -3X
2-5% HCl	1000µg/mL	PLBA1-2X

Beryllium Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLBE2-2Y**	55.28	- - - -
500mL	Poly Bottle	**PLBE2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLBE2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLBE2-3X**	158.23	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLBE2-2Y, -2X
	10,000µg/mL	PLBE2-3Y, -3X

Boron Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLB9-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLB9-2T**	90.62	- - - -
500mL	Poly Bottle	**PLB9-2X**	100.02	- - - -
125mL	Poly Bottle	**PLB9-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLB9-3X**	158.23	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
H_2O	1000µg/mL	PLB9-2Y, -2T, -2X
	10,000µg/mL	PLB9-3Y, -3X

Cadmium Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLCD2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLCD2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLCD2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLCD2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLCD2-3X**	158.23	- - - -
500mL	Poly Bottle	**PLCD1-2X**	104.47	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLCD2-2Y, -2T, -2X
	10,000µg/mL	PLCD2-3Y, -3X
2-5% HCl	1000µg/mL	PLCD1-2X

Calcium Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLCA2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLCA2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLCA2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLCA2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLCA2-3X**	158.23	- - - -
500mL	Poly Bottle	**PLCA1-2X**	104.47	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLCA2-2Y, -2T, -2X
	10,000µg/mL	PLCA2-3Y,-3X
2-5% HCl	1000µg/mL	PLCA1-2X

Cesium Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLCS2-2Y**	57.95	- - - -
500mL	Poly Bottle	**PLCS2-2X**	112.13	- - - -
125mL	Poly Bottle	**PLCS2-3Y**	85.17	- - - -
500mL	Poly Bottle	**PLCS2-3X**	176.62	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLCS2-2Y, -2X
	10,000µg/mL	PLCS2-3Y, -3X

Cobalt Standard

Plasma Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLCO2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLCO2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLCO2-2X**	100.02	- - - -
500mL	Poly Bottle	**PLCO2-3X**	158.23	- - - -
500mL	Poly Bottle	**PLCO1-2X**	104.47	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLCO2-2Y, -2T, -2X
	10,000µg/mL	PLCO2-3X
2-5% HCl	1000µg/mL	PLCO1-2X

Copper Standard

Plasma Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLCU2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLCU2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLCU2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLCU2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLCU2-3X**	158.23	- - - -
500mL	Poly Bottle	**PLCU1-2X**	104.47	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLCU2-2Y, -2T, -2X
	10,000µg/mL	PLCU2-3Y, -3X
2-5% HCl	1000µg/mL	PLCU1-2X

Iron Standard

Plasma Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLFE2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLFE2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLFE2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLFE2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLFE2-3X**	158.23	- - - -
500mL	Poly Bottle	**PLFE1-2X**	104.47	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLFE2-2Y, -2T, -2X
	10,000µg/mL	PLFE2-3Y, -3X
2-5% HCl	1000µg/mL	PLFE1-2X

Lead Standard

Plasma Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLPB2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLPB2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLPB2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLPB2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLPB2-3X**	158.23	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLPB2-2Y, -2T, -2X
	10,000µg/mL	PLPB2-3Y, -3X

Magnesium Standard

Plasma Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLMG2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLMG2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLMG2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLMG2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLMG2-3X**	158.23	- - - -
500mL	Poly Bottle	**PLMG1-2X**	104.47	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLMG2-2Y, -2T, -2X
	10,000µg/mL	PLMG2-3Y, -3X
2-5% HCl	1000µg/mL	PLMG1-2X

Manganese Standard

Plasma Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLMN2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLMN2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLMN2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLMN2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLMN2-3X**	158.23	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLMN2-2Y, -2T, -2X
	10,000µg/mL	PLMN2-3Y, -3X

Mercury Standard

Plasma Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLHG2-1AY**	64.59	- - - -
500mL	Poly Bottle	**PLHG2-1AX**	88.38	- - - -
125mL	Poly Bottle	**PLHG2-1Y**	71.15	- - - -
500mL	Poly Bottle	**PLHG2-1X**	92.06	- - - -
125mL	Poly Bottle	**PLHG4-2Y**	55.28	- - - -
500mL	Poly Bottle	**PLHG4-2X**	100.02	- - - -
125mL	Poly Bottle	**PLHG4-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLHG4-3X**	158.23	- - - -

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	10µg/mL	PLHG2-1AY, -1AX
	100µg/mL	PLHG2-1Y, -1X
10% HNO_3	1000µg/mL	PLHG4-2Y, -2X
	10,000µg/mL	PLHG4-3Y, -3X

Molybdenum Standard

Plasma Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLMO9-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLMO9-2T**	90.62	- - - -
500mL	Poly Bottle	**PLMO9-2X**	100.02	- - - -
125mL	Poly Bottle	**PLMO9-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLMO9-3X**	158.23	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
H_2O	1000µg/mL	PLMO9-2Y, -2T, -2X
	10,000µg/mL	PLMO9-3Y, -3X

*Trademark. See Trademark Reference.

Nickel Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLNI2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLNI2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLNI2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLNI2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLNI2-3X**	158.23	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO$_3$	1000µg/mL	PLNI2-2Y, -2T, -2X
	10,000µg/mL	PLNI2-3Y, -3X

Phosphorus Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLP9-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLP9-2T**	90.62	- - - -
500mL	Poly Bottle	**PLP9-2X**	100.02	- - - -
125mL	Poly Bottle	**PLP9-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLP9-3X**	158.23	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
H$_2$0	1000µg/mL	PLP9-2Y, -2T, -2X
	10,000µg/mL	PLP9-3Y, -3X

Platinum Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLPT3-2Y**	94.25	- - - -
500mL	Poly Bottle	**PLPT3-2X**	208.38	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
10% HCl	1000µg/mL	PLPT3-2Y, -2X

Potassium Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLK2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLK2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLK2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLK2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLK2-3X**	158.23	- - - -
500mL	Poly Bottle	**PLK1-2X**	104.47	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO$_3$	1000µg/mL	PLK2-2Y, -2T, -2X
	10,000µg/mL	PLK2-3Y, -3X
2-5% HCl	1000µg/mL	PLK1-2X

Rhenium Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLRE9-2Y**	94.25	- - - -
500mL	Poly Bottle	**PLRE9-2X**	208.38	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
H$_2$0	1000µg/mL	PLRE9-2Y, -2X

Rhodium Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLRH3-2Y**	359.00	- - - -
500mL	Poly Bottle	**PLRH3-2X**	641.70	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
10% HCl	1000µg/mL	PLRH3-2Y, -2X

Scandium Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLSC2-2Y**	94.25	- - - -
500mL	Poly Bottle	**PLSC2-2X**	208.38	- - - -
125mL	Poly Bottle	**PLSC2-3Y**	164.49	- - - -
500mL	Poly Bottle	**PLSC2-3X**	347.76	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO$_3$	1000µg/mL	PLSC2-2Y, -2X
	10,000µg/mL	PLSC2-3Y, -3X

Selenium Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLSE2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLSE2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLSE2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLSE2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLSE2-3X**	158.23	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO$_3$	1000µg/mL	PLSE2-2Y, -2T, -2X
	10,000µg/mL	PLSE2-3Y, -3X

Silver Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLAG2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLAG2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLAG2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLAG2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLAG2-3X**	158.23	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO$_3$	1000µg/mL	PLAG2-2Y, -2T, -2X
	10,000µg/mL	PLAG2-3Y, -3X

Sodium Standard — Plasma Grade

SPEX CertiPrep

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLNA2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLNA2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLNA2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLNA2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLNA2-3X**	158.23	- - - -
500mL	Poly Bottle	**PLNA1-2X**	104.47	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO$_3$	1000µg/mL	PLNA2-2Y, -2T, -2X
	10,000µg/mL	PLNA2-3Y, -3X
2-5% HCl	1000µg/mL	PLNA1-2X

Strontium Standard **Plasma Grade**

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLSR2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLSR2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLSR2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLSR2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLSR2-3X**	158.23	- - - -
500mL	Poly Bottle	**PLSR1-2X**	104.47	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLSR2-2Y, -2T, -2X
	10,000µg/mL	PLSR2-3Y, -3X
2-5% HCl	1000µg/mL	PLSR1-2X

Sulfur Standard **Plasma Grade**

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLS9-2Y**	55.28	- - - -
500mL	Poly Bottle	**PLS9-2X**	100.02	- - - -
125mL	Poly Bottle	**PLS9-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLS9-3X**	158.23	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
H_2O	1000µg/mL	PLS9-2Y, -2X
	10,000µg/mL	PLS9-3Y, -3X

Thallium Standard **Plasma Grade**

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLTL2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLTL2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLTL2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLTL2-3Y**	81.64	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLTL2-2Y, -2T, -2X
	10,000µg/mL	PLTL2-3Y

Tin Standard **Plasma Grade**

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**PLSN2-2X**	104.47	- - - -
500mL	Poly Bottle	**PLSN2-3X**	168.43	- - - -
125mL	PTFE	**PLSN5-2Y**	72.63	- - - -
250mL	PTFE	**PLSN5-2T**	136.78	- - - -
500mL	PTFE	**PLSN5-2X**	143.01	- - - -
125mL	PTFE	**PLSN5-3Y**	104.39	- - - -

Assurance Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
1% HNO_3/1% HF	1000µg/mL	PLSN2-2X
2% HNO_3/2% HF	10,000µg/mL	PLSN2-3X
20% HCl	1000µg/mL	PLSN5-2Y, -2T, -2X
	10,000µg/mL	PLSN5-3Y, -3X

Titanium Standard **Plasma Grade**

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLTI9-2Y**	56.02	- - - -
250mL	Poly Bottle	**PLTI9-2T**	97.17	- - - -
500mL	Poly Bottle	**PLTI9-2X**	104.47	- - - -
125mL	Poly Bottle	**PLTI9-3Y**	82.41	- - - -
500mL	Poly Bottle	**PLTI9-3X**	168.43	- - - -
500mL	PTFE	**PLTI5-2X**	135.39	- - - -
500mL	PTFE	**PLTI5-3X**	223.52	

Product Specifications

Matrix	Concentration	Cat. No.
H_2O/tr 2.4%F^-	1000µg/mL	PLTI9-2Y, -2T, -2X
	10,000µg/mL	PLTI9-3Y, -3X
40% HCl	1000µg/mL	PLTI5-2X
	10,000µg/mL	PLTI5-3X

Tungsten Standard **Plasma Grade**

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLW9-2Y**	56.02	- - - -
500mL	Poly Bottle	**PLW9-2X**	104.47	- - - -
125mL	Poly Bottle	**PLW9-3Y**	82.41	- - - -
500mL	Poly Bottle	**PLW9-3X**	171.47	- - - -
500mL	Poly Bottle	**PLW2-2X**	104.47	- - - -
500mL	Poly Bottle	**PLW2-3X**	168.43	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
H_2O	1000µg/mL	PLW9-2Y, -2X
	10,000µg/mL	PLW9-3Y, -3X
1% HNO_3/2% HF	1000µg/mL	PLW2-2X
2% HNO_3/5% HF	10,000µg/mL	PLW2-3X

Vanadium Standard **Plasma Grade**

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLV2-2Y**	55.28	- - - -
500mL	Poly Bottle	**PLV2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLV4-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLV4-3X**	158.23	- - - -
500mL	Poly Bottle	**PLV1-2X**	104.47	- - - -
500mL	Poly Bottle	**PLV3-3X**	168.43	- - - -

Assurance* Certificate of Analysis reports up 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2% HNO_3	1000µg/mL	PLV2-2Y, -2X
15% HNO_3	10,000µg/mL	PLV4-3Y, -3X
2% HCl	1000µg/mL	PLV1-2X
15% HCl	10,000µg/mL	PLV3-3X

Yttrium Standard **Plasma Grade**

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLY2-2Y**	56.02	- - - -
250mL	Poly Bottle	**PLY2-2T**	97.17	- - - -
500mL	Poly Bottle	**PLY2-2X**	104.47	- - - -
125mL	Poly Bottle	**PLY2-3Y**	82.41	- - - -
500mL	Poly Bottle	**PLY2-3X**	168.43	- - - -

Assurance* Certificate of Analysis reports up to 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLY2-2Y, -2T, -2X
	10,000µg/mL	PLY2-3Y, -3X

*Trademark. See Trademark Reference.

Prices subject to change.

Zinc Standard

Plasma Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**PLZN2-2Y**	55.28	- - - -
250mL	Poly Bottle	**PLZN2-2T**	90.62	- - - -
500mL	Poly Bottle	**PLZN2-2X**	100.02	- - - -
125mL	Poly Bottle	**PLZN2-3Y**	81.64	- - - -
500mL	Poly Bottle	**PLZN2-3X**	158.23	- - - -
500mL	Poly Bottle	**PLZN1-2X**	104.47	- - - -

Assurance* Certificate of Analysis reports up 39 elements at ppb levels.

Product Specifications

Matrix	Concentration	Cat. No.
2-5% HNO_3	1000µg/mL	PLZN2-2Y, -2T, -2X
	10,000µg/mL	PLZN2-3Y, -3X
2-5% HCl	1000µg/mL	PLZN1-2X

AA/ICP-AES Plasma Emission Kits

Plasma Emission Standards Kit 1

Quantity	Packaging	Cat. No.	Each	Case of
38 × 125mL	Poly and PTFE Bottles	**ICP-KIT-1**	1504.00	- - - -

Each component in a separate 100mL bottle at 1000µg/mL

Component in 20% HCl (in PTFE bottle):Tin
Components in 10% HNO_3: Bismuth, Mercury

Components in 2% HNO_3: Aluminum, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Nickel, Potassium, Scandium, Selenium, Silver, Sodium, Strontium, Thallium, Vanadium, Yttrium, Zinc, Zirconium

Components in H_2O: Antimony, Boron, Molybdenum, Niobium, Phosphorus, Silicon, Sulfur, Titanium, Tungsten

Mixed Multi-Element

Trace Metals I

Groundwater and Wastewater Pollution Control Check Standard

For Environmental Analysis

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**WP-15**	230.08	- - - -
500mL	Poly Bottle	**WP-15-500**	380.61	- - - -

Refer to EPA Methods Manual 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes," Trace Metals 21I, 21II, and 21III Methods.

Components in 5% HNO_3. Mercury is supplied separately.

Al	500µg/mL
As	100µg/mL
Be	100µg/mL
Cd	25µg/mL
Cr	100µg/mL
Co	100µg/mL
Cu	100µg/mL
Fe	100µg/mL
Pb	100µg/mL
Mn	100µg/mL
Hg	10µg/mL
Ni	100µg/mL
Se	25µg/mL
V	250µg/mL
Zn	100µg/mL

Instrument Check Standard 7

For Environmental Analysis

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CALMIX7-100**	265.00	- - - -
500mL	Poly Bottle	**CALMIX7-500**	650.94	- - - -

Components in 2% HNO_3

Al	100µg/mL
As	100µg/mL
Cd	100µg/mL
Cr	100µg/mL
Co	100µg/mL
Cu	100µg/mL
Fe	100µg/mL
Pb	100µg/mL
Mg	100µg/mL
Mn	100µg/mL
Ni	100µg/mL
K	100µg/mL
Na	100µg/mL
Y	600µg/mL
Zn	100µg/mL

Laboratory Fortifying

Stock Solution

For Environmental Analysis

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**LFS-1-100**	322.18	- - - -
500mL	Poly Bottle	**LFS-1-500**	554.70	- - - -

For use in EPA Method 200.7 and SW-846, Method 6010. Used for spiking the laboratory fortified blank and sample matrix. With Certificate of Analysis.

Components in 5% HNO_3/tr. Tartaric acid/tr. HF. Mercury is supplied separately.

Al	25µg/mL
Sb	25µg/mL
As	25µg/mL
Ba	25µg/mL
Be	5µg/mL
B	25µg/mL
Cd	10µg/mL
Cr	25µg/mL
Co	10µg/mL
Cu	25µg/mL
Fe	25µg/mL
Pb	25µg/mL
Li	25µg/mL
Mn	25µg/mL
Hg	5µg/mL
Mo	10µg/mL
Ni	25µg/mL
P	50µg/mL
Se	25µg/mL
SiO_2	25µg/mL
Ag	2.5µg/mL
Sr	25µg/mL
Tl	25µg/mL
Sn	10µg/mL
V	10µg/mL
Zn	25µg/mL

Laboratory Performance

Check Standard

For Environmental Analysis

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**LPC-1-100**	357.74	- - - -
500mL	Poly Bottle	**LPC-1-500**	617.00	- - - -
125mL	Poly Bottle	**LPC-1-100N**	300.48	- - - -
500mL	Poly Bottle	**LPC-1-500N**	454.40	- - - -

LPC-1-100N and LPC-1-500N do not include Mercury.

For use in EPA Method 200.7 and SW-846, Method 6010.

5% HNO_3/tr. Tartaric Acid/tr. HF. Mercury is supplied separately.

Al	20µg/mL
Sb	20µg/mL
As	20µg/mL
Ba	20µg/mL
Be	20µg/mL
B	20µg/mL
Cd	20µg/mL
Ca	20µg/mL
Cr	20µg/mL
Co	20µg/mL
Cu	20µg/mL
Fe	20µg/mL
Pb	20µg/mL
Li	20µg/mL
Mg	20µg/mL
Mn	20µg/mL
Hg	100µg/mL
Mo	20µg/mL
Ni	20µg/mL
P	100µg/mL
K	100µg/mL
Se	20µg/mL
SiO_2	100µg/mL
Ag	5µg/mL
Na	20µg/mL
Sr	20µg/mL
Tl	20µg/mL
Sn	20µg/mL
V	20µg/mL
Zn	20µg/mL

Quality Control Standard 7

For Environmental Analysis

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**QC-7**	165.80	- - - -
500mL	Poly Bottle	**QC-7-500**	260.26	- - - -

For use in EPA Method 200.7 and SW-846, Method 6010.

Components in 5% HNO$_3$/tr. HF:

Al	100µg/mL	Si	50µg/mL
Ba	100µg/mL	Ag	100µg/mL
B	100µg/mL	Na	100µg/mL
K	1000µg/mL		

Quality Control Standard 7A

For Environmental Analysis

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**QC-7A**	162.17	- - - -
500mL	Poly Bottle	**QC-7A-500**	252.85	- - - -

For use in EPA Method 200.7and SW-846 Method 6010.

Components in 5% HNO$_3$/tr. HF:

Al	100µg/mL	Si	500µg/mL
Ba	100µg/mL	Ag	50µg/mL
B	100µg/mL	Na	100µg/mL
K	1000µg/mL		

Quality Control Standard 21

For Environmental Analysis

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**QC-21**	286.75	- - - -
500mL	Poly Bottle	**QC-21-500**	485.63	- - - -

For use in EPA Method 200.7 and SW-846 Method 6010.

Each component at 100µg/mL in 5% HNO$_3$/tr. Tartaric Acid/tr. HF:

Antimony
Arsenic
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Lithium
Magnesium
Manganese
Molybdenum
Nickel
Selenium
Strontium
Thallium
Titanium
Vanadium
Zinc

Contract Laboratory Program (CLP)

Instrument Calibration Standard 1

For CLP (Contract Laboratory Program)

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**ICAL-1**	180.50	- - - -

Each component at 5000µg/mL in 5% HNO$_3$:

Calcium
Magnesium
Potassium
Sodium

Interferents A

For CLP (Contract Laboratory Program)

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**INT-A1**	308.83	- - - -

Components in 5% HNO$_3$:

Al	5000µg/mL	Fe	2000µg/mL
Ca	5000µg/mL	Mg	5000µg/mL

Spike Sample Analysis Standard

For CLP (Contract Laboratory Program)

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**SPIKE-1**	268.80	- - - -
500mL	Poly Bottle	**SPIKE-1-500**	461.72	- - - -

Components in 5% HNO$_3$/tr Tartaric Acid/tr HF:

Al	200µg/mL	Sb	50µg/mL
As	200µg/mL	Ba	200µg/mL
Be	5µg/mL	Cd	5µg/mL
Cr	20µg/mL	Co	50µg/mL
Cu	25µg/mL	Fe	100µg/mL
Pb	50µg/mL	Mn	50µg/mL
Ni	50µg/mL	Se	200µg/mL
Ag	5µg/mL	Tl	200µg/mL
V	50µg/mL	Zn	50µg/mL

ICP-MS/ICP-AES, Single Element

Arsenic Standard

Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLAS2-2Y**	72.15	- - - -

Contents at 1000µg/mL in 2% HNO$_3$.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

Barium Standard

Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLBA2-2Y**	72.15	- - - -

Contents at 1000µg/mL in 2% HNO$_3$.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

Cadmium Standard

Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLCD2-2Y**	72.15	- - - -

Contents at 1000µg/mL in 2% HNO$_3$.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

Calcium Standard

Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLCA2-2Y**	72.15	- - - -

Contents at 1000µg/mL in 2% HNO$_3$.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

Chromium Standard

Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLCR2-2Y**	72.15	- - - -

Contents at 1000µg/mL in 2% HNO$_3$.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

Copper Standard

Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLCU2-2Y**	72.15	- - - -

Contents at 1000µg/mL in 2% HNO$_3$.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

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*Trademark. See Trademark Reference.

Gold Standard
Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLAU1-1Y**	93.77	- - - -

Contents at 100µg/mL in 2% HCl.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

Iron Standard
Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLFE2-2Y**	72.15	- - - -

Contents at 1000µg/mL in 2% HNO_3.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

Lead Standard
Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLPB2-2Y**	72.15	- - - -

Contents at 1000µg/mL in 2% HNO_3.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

Manganese Standard
Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLMN2-2Y**	72.15	- - - -

Contents at 1000µg/mL in 2% HNO_3.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

Mercury Standard
Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLHG4-2Y**	72.15	- - - -
125mL	Poly Bottle	**CLHG2-1AY**	68.45	- - - -

Contents at 1000µg/mL in 10% HNO_3 for CLHG4-2Y.
Contents at 10µg/mL in 5% HNO_3 for CLHG2-1AY.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

Molybdenum Standard
Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLMO9-2Y**	72.15	- - - -

Contents at 1000µg/mL in H_2O.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

Potassium Standard
Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLK2-2Y**	72.15	- - - -

Contents at 1000µg/mL in 2% HNO_3.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

Rhodium Standard
Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLRH1-1AY**	254.07	- - - -

Internal Standard Solution.
Contents at 10µg/mL in 2% HCl.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

Sodium Standard
Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLNA2-2Y**	72.15	- - - -

Contents at 1000µg/mL in 2% HNO_3.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

Tin Standard
Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
100mL	Poly Bottle	**CLSN2-2Y**	99.38	- - - -

Contents at 1000µg/mL in 1% HNO_3/1% HF.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

Zinc Standard
Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLZN2-2Y**	72.15	- - - -

Contents at 1000µg/mL in 2% HNO_3.
Claritas PPT* Certificate of Analysis reports up to 68 elements at ppt levels.

ICP-MS/ICP-AES, Multi-Element

▸*Internal Standard Stock Solutions* *see CLISS-1.*

ICP-MS Calibration Standard 1
Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLMS-1**	214.33	- - - -

Each component at 10µg/mL in 5% HNO_3:

- Cerium
- Dysprosium
- Erbium
- Europium
- Gadolinium
- Holmium
- Lanthanum
- Lutetium
- Neodymium
- Praseodymium
- Samarium
- Scandium
- Terbium
- Thorium
- Thulium
- Ytterbium
- Yttrium

ICP-MS Calibration Standard 2
Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLMS-23**	30.26	- - - -
125mL	Poly Bottle	**CLMS-2N**	65.79	- - - -

CLMS-2N does not contain mercury.

Each component at 10µg/mL in 5% HNO_3:

- Aluminum
- Arsenic
- Barium
- Beryllium
- Bismuth
- Cadmium
- Calcium
- Cesium
- Chromium
- Cobalt
- Copper
- Gallium
- Indium
- Iron
- Lead
- Lithium
- Magnesium
- Manganese
- Mercury†
- Nickel
- Potassium
- Rubidium
- Selenium
- Silver
- Sodium
- Strontium
- Thallium
- Uranium
- Vanadium
- Zinc

† Supplied separately.

ICP-MS Calibration Standard 2A — Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLMS-2A**	317.17	- - - -
125mL	Poly Bottle	**CLMS-2AN**	254.76	- - - -

CLMS-2AN does not contain mercury.

Each component at 10µg/mL in 5% HNO_3:

Aluminum
Arsenic
Barium
Beryllium
Cadmium
Calcium
Cesium
Chromium
Cobalt
Copper
Gallium
Iron
Mercury†
Potassium
Lead
Lithium
Magnesium
Manganese
Nickel
Rubidium
Selenium
Silver
Sodium
Strontium
Thallium
Uranium
Vanadium
Zinc

† Supplied separately.

ICP-MS Calibration Standard 3 — Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLMS-3**	156.16	- - - -

Each component at 10µg/mL in 10% HCl/1% HNO_3:

Antimony
Gold
Hafnium
Iridium
Palladium
Platinum
Rhodium
Ruthenium
Tellurium
Tin

ICP-MS Calibration Standard 4 — Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLMS-4**	187.80	- - - -

Each component at 10µg/mL in H_2O/tr. HF:

Boron
Germanium
Molybdenum
Niobium
Phosphorus
Rhenium
Silicon
Sulfur
Tantalum
Titanium
Tungsten
Zirconium

ICP-MS Calibration Standard 5 — Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLMS-5**	129.88	- - - -

Each component at 10µg/mL in 2% HNO_3:

Beryllium
Bismuth
Cerium
Cobalt
Indium
Lead
Magnesium
Nickel
Uranium

ICP-MS Calibration Standards — Trace ICP/ICP-MS Grade

Set of 7

Quantity	Packaging	Cat. No.	Each	Case of
7 × 125mL	Poly Bottles	**CLMS-SET**	832.00	- - - -

Set includes one 100mL bottle each of:

CLMS-1
CLMS-2
CLMS-3
CLMS-4
CLBLK-HNO_3
CLBLK-HCL
CLBLK-H_2O

ICP-MS/ICP, Instrument Modification Blanks

Instrument Calibration Standard 1 — Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CL-CAL-1**	299.03	- - - -

Each component at 20µg/mL in 2% HNO_3/tr. Tartaric Acid:

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Copper
Lead
Manganese
Molybdenum
Nickel
Selenium
Silver
Thallium
Thorium
Uranium
Vanadium
Zinc

Instrument Calibration Standard 2 — Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CL-CAL-2**	321.80	- - - -

Each component at 100µg/mL in 5% HNO_3/tr. Tartaric Acid/tr. HF:

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Manganese
Molybdenum
Nickel
Potassium
Selenium
Silver
Sodium
Strontium
Thallium
Tin
Titanium
Vanadium
Zinc

Instrument Check Standard 1 — Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CL-ICS-1**	263.80	- - - -

With Certificate of Analysis.

Each component at 10µg/mL in 2% HNO_3/tr. Tartaric Acid:

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Copper
Lead
Manganese
Nickel
Selenium
Silver
Thallium
Vanadium
Zinc

Instrument Check Standard 3 — Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CL-ICS-3**	144.55	- - - -

Each component at 200µg/mL in 2% HNO_3:

Calcium
Iron
Magnesium
Potassium
Sodium

Interference Check Standard 1 Trace ICP/ICP-MS Grade

For SW-846

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CL-INT-A23**	17.17	- - - -

Components in 5% HNO_3/tr. HF:

Al	1000µg/mL
Ca	1000µg/mL
C	2000µg/mL
Cl	10,000µg/mL
Fe	1000µg/mL
Mg	1000µg/mL
Mo	20µg/mL
P	1000µg/mL
K	1000µg/mL
Na	1000µg/mL
S	1000µg/mL
Ti	20µg/mL

▸***Internal Standards for Single Elements*** *begin on p. 2281.*

Internal Standard Stock Solution Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CLISS-1**	144.55	- - - -

May be used to monitor and correct changes that occur from differences between standards and samples.

Each component at 10µg/mL in 2% HNO_3:

Bismuth
Holmium
Indium
Lithium
Scandium
Terbium
Yttrium

Quality Control Standard 21 Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CL-QC-21**	316.16	- - - -

Used to check the standard curve, the procedure for interelement correction, and other spectral interferences.

Each component at 100µg/mL in 5% HNO_3/tr Tartaric Acid/tr HF:

Antimony
Arsenic
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Lithium
Magnesium
Manganese
Molybdenum
Nickel
Selenium
Strontium
Thallium
Titanium
Vanadium
Zinc

Tuning Solution Trace ICP/ICP-MS Grade

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**CL-TUNE-1**	233.72	- - - -

Each component at 10µg/mL in 2% HNO_3/5% HCl:

Barium
Beryllium
Cerium
Cobalt
Indium
Lead
Lithium
Magnesium
Rhodium
Thallium
Uranium
Yttrium

Ion Chromatography, Single Element

Ion Chromatography Ammonia Nitrogen Standard

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**AS-NH3N9-2Y**	53.35	- - - -

For use with EPA Method 300.0 and ASTM* Method D4327.
Ammonia Nitrogen anion at 1000µg/mL in aqueous solution of NH_4Cl.
With Certificate of Analysis.
Solvent/Matrix: H_2O

Ion Chromatography Bromate Standard

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**AS-BRO39-2Y**	78.69	- - - -
500mL	Poly Bottle	**AS-BRO39-2X**	151.01	- - - -

For use with EPA Method 300.0 and ASTM* Method D4327.
Bromate anion at 1000µg/mL in aqueous solution of $NaBrO_3$.
With Certificate of Analysis.
Solvent/Matrix: H_2O

Ion Chromatography Bromide Standard

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**AS-BR9-5Y**	53.35	- - - -
500mL	Poly Bottle	**AS-BR9-5X**	96.79	- - - -
125mL	Poly Bottle	**AS-BR9-2Y**	53.35	- - - -
500mL	Poly Bottle	**AS-BR9-2X**	96.79	- - - -

For use with EPA Method 300.0 and ASTM* Method D4327.
Sodium Bromide (NaBr), 0.1M: AS-BR9-5Y, -5X
Bromide anion at 1000µg/mL in aqueous solution of NaBr: AS-BR9-2Y, -2X
Solvent/Matrix: H_2O

Ion Chromatography Chloride Standard IC

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**AS-CL9-2Y**	53.35	- - - -
500mL	Poly Bottle	**AS-CL9-2X**	96.79	- - - -

For use with EPA Method 300.0 (Revision 2.1) and ASTM* Method D4327.
Chloride anion at 1000µg/mL in aqueous solution of NaCl.
With Certificate of Analysis.

Ion Chromatography Cyanide Reference Standard

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**RSCN9-2Y**	68.60	- - - -
500mL	Poly Bottle	**RSCN9-2X**	105.05	- - - -
500mL	Poly Bottle	**RSCN9C-2X**	105.05	- - - -

Product Specifications

For Use In	Matrix	Contents	Cat. No.
EPA Methods 335.2 and 335.3; ASTM* Method D2036-19; and Standard Method 4500-CNF.	H_2O/2% KOH	1000µg/mL: KCN	**RSCN9-2X, -2Y**
EPA Method 335.1	H_2O/2% KOH	1000µg/mL: $K_3Fe(CN)_6$	**RSCN9C-2X**

Ion Chromatography Fluoride Standard

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**AS-F9-5Y**	53.35	- - - -
125mL	Poly Bottle	**AS-F9-1AY**	48.09	- - - -
500mL	Poly Bottle	**AS-F9-1AX**	90.38	- - - -
125mL	Poly Bottle	**AS-F9-1Y**	48.09	- - - -
500mL	Poly Bottle	**AS-F9-1X**	91.63	- - - -
125mL	Poly Bottle	**AS-F9-2Y**	53.35	- - - -
500mL	Poly Bottle	**AS-F9-2X**	96.79	- - - -

For use with EPA Method 300.0 and ASTM* Method D4327.
Sodium Fluoride (NaF), 0.1M: AS-F9-5Y
Fluoride anion at 10µg/mL in aqueous solution of NaF: AS-F9-1AY, -1AX
Fluoride anion at 100µg/mL in aqueous solution of NaF: AS-F9-1Y, -1X
Fluoride anion at 1000µg/mL in aqueous solution of NaF: AS-F9-2Y, -2X
With Certificate of Analysis.
Solvent/Matrix: H_2O

Ion Chromatography Nitrate Standard

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**AS-NO39-2Y**	53.35	- - - -
500mL	Poly Bottle	**AS-NO39-2X**	97.90	- - - -

For use with EPA Method 300.0 and ASTM* Method D4327.
Nitrate anion at 1000µg/mL in aqueous solution of $NaNO_3$.
With Certificate of Analysis.
Solvent/Matrix: H_2O

Ion Chromatography Nitrite Standard

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**AS-NO29-2Y**	53.35	- - - -
500mL	Poly Bottle	**AS-NO29-2X**	96.79	- - - -

For use with EPA Method 300.0 and ASTM* Method D4327.
Nitrite anion at 1000µg/mL in aqueous solution of $NaNO_2$.
With Certificate of Analysis.
Solvent/Matrix: H_2O

Ion Chromatography Nitrite-N Standard

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**AS-NO2N9-2Y**	53.35	- - - -
500mL	Poly Bottle	**AS-NO2N9-2X**	96.79	- - - -

For use with EPA Method 300.0 and ASTM* Method D4327.
Nitrite-N anion at 1000µg/mL in aqueous solution of $NaNO_2$.
With Certificate of Analysis.
Solvent/Matrix: H_2O

Ion Chromatography Phosphate Standard

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**AS-PO49-2Y**	53.35	- - - -
500mL	Poly Bottle	**AS-PO49-2X**	96.79	- - - -

For use with EPA Method 300.0 and ASTM* Method D4327.
Phosphate anion at 1000µg/mL in aqueous solution of KH_2PO_4.
With Certificate of Analysis.
Solvent/Matrix: H_2O

Ion Chromatography Phosphate-P Standard

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**AS-PO4P9-2Y**	53.35	- - - -
500mL	Poly Bottle	**AS-PO4P9-2X**	96.79	- - - -

For use with EPA Method 300.0 and ASTM* Method D4327.
Phosphate-P anion at 1000µg/mL in aqueous solution of KH_2PO_4.
With Certificate of Analysis.
Solvent/Matrix: H_2O

Ion Chromatography Sulfate Standard

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**AS-SO49-2Y**	53.35	- - - -
500mL	Poly Bottle	**AS-SO49-2X**	96.79	- - - -

For use with EPA Method 300.0 and ASTM* Method D4327.
Sulfate anion at 1000µg/mL in aqueous solution of K_2SO_4.
With Certificate of Analysis.
Solvent/Matrix: H_2O

Ion Chromatography, Multi-Element

Ion Chromatography Instrument Check Standard 1

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**ICMIX1-100**	136.70	- - - -

For use with EPA Method 300.0 and ASTM* Method D4327.
With Certificate of Analysis.

Components in H_2O:

Cl^-	30µg/mL
F^-	20µg/mL
NO_3^-	100µg/mL
HPO_4^{-2}	150µg/mL
SO_4^{-2}	150µg/mL

Ion Chromatography Instrument Check Standard 2

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**ICMIX2-100**	153.52	- - - -

For use with EPA Method 300.0 and ASTM* Method D4327.
With Certificate of Analysis.

Components in H_2O:

Br^-	400µg/mL
Cl^-	200µg/mL
F^-	100µg/mL
NO_3^-	400µg/mL
HPO_4^{-2}	600µg/mL
SO_4^{-2}	400µg/mL

Ion Chromatography Instrument Check Standard 3

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**ICMIX3-100**	157.95	- - - -

For use with EPA Method 300.0 and ASTM* Method D4327.
With Certificate of Analysis.

Components in 2% HNO_3:

Ca^{+2}	1000µg/mL
K^+	200µg/mL
Li^+	50µg/mL
Mg^{+2}	200µg/mL
Na^+	200µg/mL
NH_4^+	400µg/mL

*Trademark. See Trademark Reference.

Prices subject to change.

Ion Chromatography Instrument Check Standard 6

Quantity	Packaging	Cat. No.	Each	Case of
125mL	Poly Bottle	**ICMIX6-100**	206.38	- - - -

For use with EPA Method 300.0 and ASTM* Method D4327.
With Certificate of Analysis.

Components in water:

Br^-	100µg/mL
Cl^-	50µg/mL
F^-	20µg/mL
HPO_4^{-2}	150µg/mL
NO_3^--N	25µg/mL
NO_2^--N	25µg/mL
SO_4^{-2}	150µg/mL

Quality Control/Proficiency Samples, Water

Total Residual Chlorine Drinking Water/Wastewater Standard

ULTRAcheck* Blind QC Standard

Quantity	Packaging	Cat. No.	Each	Case of
10mL	Ampule	**US-QCI-780**	48.94	- - - -

Total Residual Chlorine at 0.3-5.0mg/L when diluted to 2 liters.

Minerals Drinking Water/Wastewater Standard

ULTRAcheck* Blind QC Standard

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**US-QCI-710**	70.71	- - - -

Traceable to NIST*.

Component concentrations in ready-to-use solution:

Alkalinity (as $CaCO_3$)	100-300mg/L
pH	5-10 units
Chloride	10-250mg/L
Potassium	2-330mg/L
Conductivity	500-2500µmhos
Sodium	50-300mg/L
Sulfate	3-400mg/L
Fluoride	1-10mg/L
Nitrate	1-14mg/L

Solids Drinking Water/Wastewater Standard

ULTRAcheck* Blind QC Standard

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Bottle	**US-QCI-711**	57.08	- - - -

Component concentrations in ready-to-use solution:

Suspended Solids	20-200mg/L
Dissolved Solids	50-5000mg/L
Total Solids	70-5200mg/L

Trace Metals Wastewater Standard

ULTRAcheck* Blind QC Standard

Quantity	Packaging	Cat. No.	Each	Case of
10mL	Ampule	**US-QCI-700**	57.08	- - - -

For AA and ICP methods.
Traceable to NIST*.

Component concentrations when diluted to 1L:

Aluminum	100-1000µg/L
Antimony	20-250µg/L
Arsenic	20-250µg/L
Barium	100-1000µg/L
Beryllium	20-250µg/L
Boron	100-1000µg/L
Cadmium	20-250µg/L
Chromium	100-1000µg/L
Cobalt	100-1000µg/L
Copper	100-1000µg/L
Iron	100-1000µg/L
Lead	100-1000µg/L
Manganese	100-1000µg/L
Mercury	2-20µg/L
Molybdenum	100-1000µg/L
Nickel	100-1000µg/L
Selenium	20-250µg/L
Silver	20-250µg/L
Strontium	100-1000µg/L
Thallium	20-250µg/L
Vanadium	100-1000µg/L
Zinc	100-1000µg/L

Standards, Organic

EPA Methods, Single Component

Acetaldehyde Standard

Quantity	Packaging	Cat. No.	Each	Case of
1.8mL	Ampule	**S125W18**	36.25	- - - -

1000µg/mL acetaldehyde in water.

Benzidine, Single-Component Organic Standard

Quantity	Packaging	Cat. No.	Each	Case of
1.2mL	Ampule	**SS410**	21.59	- - - -

[92-87-5]

▸***Contract Laboratory Program (CLP) Standards*** *see Standards, Organic—Contract Laboratory Program (CLP).*

EPA Methods, Multi-Component

Acids Surrogate Standard Mix

For EPA, Method 8270C and CLP Methods

Quantity	Packaging	Cat. No.	Each	Case of
1 × 1mL	Ampule	**US-ISM-290N-1**	34.66	- - - -
4 × 1mL	ULTRApak*	**US-ISM-290†**	115.52	- - - -
4 × 1mL	ULTRApak	**US-ISM-290N**	110.87	- - - -
12 × 1mL	VALUpak	**US-ISM-290N-V**	291.03	- - - -

† Designates A2LA-Certified product

Each Component at 2000µg/mL in Methanol:

- 2-Fluorophenol
- Phenol-d_5
- 2,4,6-Tribromophenol

Acrolein and Acrylonitrile in Methanol Purge and Trap

EPA Method 603

Quantity	Packaging	Cat. No.	Each	Case of
1.2mL	Ampule	**603-XM**	18.15	- - - -

Components at 2000µg/mL in Methanol:

Acrolein
Acrylonitrile

Alternate BTEX Standard

EPA Method 602

Quantity	Packaging	Cat. No.	Each	Case of
1.2mL	Ampule	**BTEX21H**	28.50	- - - -

NEW

Components at 2000µg/mL:

Benzene
Ethylbenzene
Toluene
o-Xylene

Components at 1000µg/mL:

m-Xylene
p-Xylene

Solvent/Matrix: P & T Methanol

Base/Neutrals Surrogate Standard Mix

For EPA Method 8270C

Quantity	Packaging	Cat. No.	Each	Case of
1 × 1mL	Ampule	**US-ISM-280N-1**	34.66	- - - -
4 × 1mL	ULTRApak*	**US-ISM-280N**	110.87	- - - -
12 × 1mL	VALUpak*	**US-ISM-280N-V**	291.03	- - - -

Each component at 100µg/mL in Methylene Chloride:

Nitrobenzene-d_5
2-Fluorobiphenyl
p-Terphenyl-d_{14}

Big Mix

Quantity	Packaging	Cat. No.	Each	Case of
1.2mL	Ampule	**76BIGMIX**	97.20	- - - -

Volatile organics mix of 76 certified analytes, each at 1000µg/mL in methylene chloride.
Methylene Chloride is treated to prevent the formation of HCl (a common breakdown product of Methylene Chloride).
Starting materials for the 76 neutral and acid analytes used are highly purified and tested.
The final mix is confirmed by GC/MS.
Easy to use, confidence confirmed, all-in-one, stable standard.

Each component at 1000µg/mL in Methylene Chloride:

Pyridine
n-Nitrosodimethylamine
Phenol
Aniline
bis(2-Chloroethyl)ether
2-Chlorophenol
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Benzyl Alcohol
1,2-Dichlorobenzene
2-Methylphenol
2,2'-oxybis(1-Chloropropane)
3-Methylphenols†
4-Methylphenols†
n-Nitroso-di-n-propylamine
Hexachloroethane
Nitrobenzene
Isophorone
2-Nitrophenol
2,4-Dimethylphenol
bis(2-Chloroethoxy)methane
2,4-Dichlorophenol
1,2,4-Trichlorobenzene
Naphthalene
4-Chloroaniline
Hexachlorobutadiene
4-Chloro-3-methylphenol
1-Methylnaphthalene
2-Methylnaphthalene
Hexachlorocyclopentadiene
2,4,6-Trichlorophenol
2,4,5-Trichlorophenol
2-Chloronaphthalene
2-Nitroaniline
1,4-Dinitrobenzene
1,3-Dinitrobenzene
Dimethylphthalate
Acenaphthylene
2,6-Dinitrotoluene
1,2-Dinitrobenzene
3-Nitroaniline
Acenaphthene
2,4-Dinitrophenol
4-Nitrophenol
Dibenzofuran
2,4-Dinitrotoluene
2,3,5,6-Tetrachlorophenol
2,3,4,6-Tetrachlorophenol
Diethylphthalate
Fluorene
4-Chlorophenyl-phenylether
4-Nitroaniline
4,6-Dinitro-2-methylphenol
n-Nitrosodiphenylamine††
Azobenzene†††
4-Bromophenyl-phenylether
Hexachlorobenzene
Pentachlorophenol
Phenanthrene
Anthracene
Carbazole
Di-n-butylphthalate
Fluoranthene
Pyrene
Butylbenzylphthalate
Bis(2-ethylhexyl)adipate
Benzo(a)anthracene
Chrysene
Bis(2-ethylhexyl)phthalate
Di-n-octyl phthalate
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(a)pyrene
Ideno(1,2,3-cd)pyrene
Dibenzo(a,h)anthracene
Benzo(g,h,i)perylene

† 3-Methylphenol and 4-Methylphenol concentrations are 500µg/mL
†† n-Nitrosodiphenylamine (8270-listed analyte) decomposes to Diphenylamine (mix component)
††† 1,2-Diphenylhydrazine (8270-listed analyte) decomposes to Azobenzene (mix component)

Internal Standard

EPA Method 8260B

Quantity	Packaging	Cat. No.	Each	Case of
1.2mL	Ampule	**8260-I**	23.33	- - - -

Components at 2000µg/mL in Methanol purge and trap:

Chlorobenzene-d_5
1,4-Dichlorobenzene-d_4
1,4-Difluorobenzene
Pentafluorobenzene

PAH Mixture

For EPA Methods 625, 8270C/Appendix IX

Quantity	Packaging	Cat. No.	Each	Case of
1 × 1mL	Ampule	**US-US-106N**	111.43	- - - -
4 × 1mL	ULTRApak*	**US-US-106N-4**	356.59	- - - -

Each component at 2000µg/mL in Methylene Chloride/Benzene (1:1):

Acenaphthene
Acenaphthylene
Anthracene
Benz[a]anthracene
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[ghi]perylene
Benzo[a]pyrene
Chrysene
Dibenz[a,h]anthracene
Fluoranthene
Fluorene
Indeno[1,2,3-cd]pyrene
Naphthalene
Phenanthrene
Pyrene

Mix B, Purgeable Gases

USEPA Methods 502.1, 502.2, 524.2, 601, SW-846 Methods 8010A, 8010B, 8260B

Quantity	Packaging	Cat. No.	Each	Case of
1.2mL	Ampule	**5022-BH**	33.85	- - - -

2000µg/mL in P&T methanol
Six Certified Analytes: Bromomethane, Chloroethane, Chloromethane, Dichlorodifluoromethane, Trichlorofluoromethane, Vinyl chloride

Semi-Volatiles GC/MS Tuning Standard

Quantity	Packaging	Cat. No.	Each	Case of
1 × 1mL	Ampule	**US-GCM-150-1**	36.00	- - - -
4 × 1mL	ULTRApak*	**US-GCM-150**	115.23	- - - -

Each component at 1000µg/mL in Methylene Chloride:

Decafluorotriphenylphosphine (DFTPP)
Benzidine
Pentachlorophenol
4,4'-DDT

Surrogate Standard Mixture

For EPA Method 8260

Quantity	Packaging	Cat. No.	Each	Case of
1 × 1mL	Ampule	**US-STM-330N-1**	29.91	- - - -
4 × 1mL	ULTRApak*	**US-STM-330N**	95.72	- - - -
12 × 1mL	VALUpak*	**US-STM-330N-V**	251.25	- - - -

Each component at 2000µg/mL in Methanol:

4-Bromofluorobenzene
Dibromofluoromethane
Toluene-d_8

Trihalomethanes Mixture

For EPA Method 501

Quantity	Packaging	Cat. No.	Each	Case of
1 × 1mL	Ampule	**US-THM-501N-1**	28.61	----
4 × 1mL	ULTRApak*	**US-THM-501N**	91.55	----

Each component at 100µg/mL in Methanol:

Bromodichloromethane
Bromoform
Chloroform
Dibromochloromethane

VOC Mixture

For EPA Methods 502.2, 524.2, 8021A, 8260

Quantity	Packaging	Cat. No.	Each	Case of
1 × 1mL	Ampule	**US-DWM-580-1**	100.61	----
4 × 1mL	ULTRApak*	**US-DWM-580**	321.95	----
12 × 1mL	VALUpak*	**US-DWM-580-V**	845.16	----

Each component at 200µg/mL in Methanol:

Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Carbon Tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
2-Chlorotoluene
4-Chlorotoluene
Dibromochloromethane
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane
Dibromomethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
Hexachlorobutadiene
Isopropylbenzene
4-Isopropyltoluene
Methylene Chloride
Naphthalene
n-Propylbenzene
Styrene
1,1,1,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
Vinyl Chloride
o-Xylene
m-Xylene
p-Xylene

Contract Laboratory Program (CLP), Semi-Volatiles

▸***Contract Laboratory Program (CLP) Standards*** *see EPA Methods for additional CLP standards.*

Semi-Volatiles Internal Standard Mixture

For EPA Methods; 625, 8270C, CLP

Quantity	Packaging	Cat. No.	Each	Case of
1 × 1mL	Ampule	**US-US-108N**	99.19	----
4 × 1mL	ULTRApak*	**US-US-108N-4**	317.44	----
12 × 1mL	VALUpak*	**US-US-108N-V**	833.26	----

Each component at 4000µg/mL in Methylene Chloride:

Acenaphthene-d_{10}
Chrysene-d_{12}
1,4-Dichlorobenzene-d_4
Naphthalene-d_8
Perylene-d_{12}
Phenanthrene-d_{10}

Reference Solutions

Anion/Nonmetal Standards

Ammonia Standard

1000ppm NH_3
1mL = 1mg NH_3

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Bottle	**615-4**	15.36	----
500mL	Poly Bottle	**615-16**	31.35	----
1L	Poly Bottle	**615-32**	52.11	----
4L	Poly Bottle	**615-1**	111.51	----

[12125-02-9 (Ammonium Chloride)]
[7732-18-5 (Water, Deionized)]

Calcium Chloride Standard

1mL = 1mg $CaCO_3$

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Bottle	**1780-4**	18.77	----
500mL	Poly Bottle	**1780-16**	30.45	----
1L	Poly Bottle	**1780-32**	31.97	----

1000ppm $CaCO_3$ (400ppm Ca), 0.0100 M Ca^{2+}, 0.0200 N Ca^{2+}

Organic Carbon Standard

1mL = 1mg C, Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**RC1847-4**	16.78	----
500mL	Amber Glass	**1847-16**	26.02	----
1L	Amber Glass	**1847-32**	34.23	----

Chloride Standard

1mL = 1mg Cl^-, Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**1955-4**	14.82	----
500mL	Poly Bottle	**1955-16**	32.83	----

[7647-14-5 (Sodium Chloride)]
[7732-18-5 (Water, Deionized)]

Cyanide Standard

Alkaline
1mL = 1mg CN^-, Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Poly	**2543-4**	21.96	----
500mL	Amber Poly	**2543-16**	41.86	----

[151-50-8 (Potassium Cyanide)]
[1310-73-2 (Sodium Hydroxide)]
[7732-18-5 (Water, Deionized)]

Fluoride Standard

1mL = 1mg F^-, Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**3173-16**	33.37	----
1L	Poly Natural	**3173-32**	52.83	----

Fluoride Standard

1mL = 0.1mg F^-, Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**3171-16**	30.62	----
1L	Poly Natural	**3171-32**	37.87	----

[7681-49-4 (Sodium Fluoride)]
[7732-18-5 (Water, Deionized)]

Fluoride Standard

1mL = 0.005mg F⁻, Clear, blue liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**3164-16**	28.94	- - - -
1L	Poly Natural	**3164-32**	50.05	- - - -
4L	Poly Natural	**3164-1**	108.51	- - - -

Fluoride Standard

1mL = 0.002mg F⁻, Clear, red liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**3163-16**	30.62	- - - -
1L	Poly Natural	**3163-32**	51.19	- - - -
4L	Poly Natural	**3163-1**	104.26	- - - -

Fluoride Standard

1mL = 0.001mg F⁻, Clear, green liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**3162-16**	34.69	- - - -
1L	Poly Natural	**3162-32**	51.58	- - - -
4L	Poly Natural	**3162-1**	113.59	- - - -

Nitrogen Standard (as Ammonia)

APHA/ASTM/EPA for Ammonia Nitrogen*
1mL = 1mg N

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Bottle	**5455-4**	15.26	- - - -
500mL	Poly Bottle	**5455-16**	26.14	- - - -
1L	Poly Bottle	**5455-32**	38.74	- - - -

1000ppm N, 1216ppm NH_3
[12125-02-9 (Ammonium Chloride)]
[7732-18-5 (Water, Deionized)]

NEW

Nitrogen Standard (as Nitrate)

ASTM /EPA for Nitrate Nitrogen
1mL = 1mg N

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**5459-4**	15.26	- - - -
500mL	Poly Natural	**5459-16**	26.02	- - - -
1L	Poly Natural	**13-622-612**	80.72	- - - -

1000ppm N as nitrate, 4427ppm NO_3^-

NEW

Nitrogen Standard (as Nitrate)

1mL = 1mg NO_3^-

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**5458-4**	14.80	- - - -
500mL	Poly Natural	**5458-16**	24.90	- - - -
1L	Poly Natural	**13-622-61**	180.72	- - - -

[67-66-3 (Chloroform (Trichloromethane))]
[7757-79-1 (Potassium Nitrate)]
[7732-18-5 (Water, Deionized)]

NEW

Nitrogen Standard (as Nitrite) Meets ASTM Specifications

1mL = 1mg N as NO_2^-

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**5461-4**	26.39	- - - -
500mL	Poly Natural	**5461-16**	54.33	- - - -

1000ppm N, 3285ppm NO_2^-
Subject to air oxidation
Restandardize if extreme accuracy is required
Shelf life: 6 month shelf life refrigerated
KNO_2^- in water

Sulfate Standard

1mL = 1mg SO_4^{2-}, Clear, colorless liquid

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Poly Natural	**8112-4**	15.31	- - - -
500mL	Poly Natural	**8112-16**	31.96	- - - -
1L	Poly Natural	**8112-32**	48.39	- - - -

[7757-82-6 (Sodium Sulfate)]
[7732-18-5 (Water, Deionized)]

Thiocyanate Standard Solution, 0.1N Certified

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**ST18-1**	48.86	6/235.65

Potassium Thiocyanate Solutions
Standardized against Silver Nitrate at 25°C.

ChemAlert® STORAGE **gray**

Product Specifications

Normality	0.0995 to 0.1005
Color (APHA)	≤5

Color Standards

Platinum Cobalt Color Standard Solution APHA

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**SP120-500**	171.19	6/811.41
1L	Amber Glass	**SP120-1**	314.25	6/1503.40

APHA No. 500 Color Standard for water and clear liquids.
Meets ASTM* D1209-00.

ChemAlert® STORAGE **white**

Product Specifications

Optical Absorbance:

at 430nm	0.110 to 0.120
at 455nm	0.130 to 0.145
at 480nm	0.105 to 0.120
at 510nm	0.055 to 0.065

Color Standard APHA

Color = 500

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**2230-4**	52.09	- - - -
500mL	Amber Glass	**2230-16**	134.31	- - - -
1L	Amber Glass	**2230-32**	273.17	- - - -

Hazen (Platinum-Cobalt)

Complexometric Standards

Ethylenediamine Tetraacetic Acid, Disodium Salt Standard Solution Certified

0.1M

Quantity	Packaging	Cat. No.	Each	Case of
1L	Poly Bottle	**SS412-1**	75.06	6/356.68

ChemAlert® STORAGE **gray**

Product Specifications

Molarity	0.0995 to 0.1005
Color (APHA)	≤15
pH at 25°	C4.5-5.5

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*Trademark. See Trademark Reference.

Ethylenediamine Tetraacetic Acid, Disodium Salt, Standard Solution

Certified

1mL = 1mg $CaCO_3$

Quantity	Packaging	Cat. No.	Each	Case of
4L	Poly Bottle	**SS221-4**	80.77	4/263.82

Sodium (Di) Ethylenediamine Tetraacetate Standard Solution, EDTA Standard Solution

ChemAlert® STORAGE gray

Product Specifications

Equivalence ($CaCO_3$) ....0.98 to 1.02mg/mL

Color (APHA)....................≤5

Conductivity/TDS Standards

Conductivity Standard

10µS/cm (10µmho/cm) at 25°C
Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
6 × 20mL	Pack	**2236-100P**	29.87	- - - -
20 × 20mL	Pack	**2236-20**	42.89	- - - -
500mL	Poly Natural	**2236-16**	15.61	- - - -
1L	Poly Natural	**2236-32**	34.91	- - - -
4L	Poly Bottle	**2236-1**	58.32	- - - -

4.7ppm as NaCl

Conductivity/TDS Standard

100µS/cm (100µmho/cm) at 25°C
Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
20 × 20mL	Pouch	**2237-20**	42.89	- - - -
6 × 100mL	Plastic	**2237-100P**	29.88	- - - -
500mL	Poly Natural	**2237-16**	15.61	- - - -
1L	Poly Natural	**2237-32**	24.56	- - - -
4L	Poly Natural	**2237-1**	58.32	- - - -

47.2ppm as NaCl

Conductivity/TDS Standard

500µS/cm (500µmho/cm) at 25°C
Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**2241-16**	15.52	- - - -
1L	Poly Natural	**2241-32**	24.41	- - - -
4L	Poly Natural	**2241-1**	58.03	- - - -

240ppm as NaCl

Conductivity/TDS Standard

1mS/cm (1000µmho/cm) at 25°C
Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
20 × 20mL	Pouch	**2243-20**	42.63	- - - -
6 × 100mL	Plastic	**2243-100P**	29.70	- - - -
500mL	Poly Natural	**2243-16**	15.52	- - - -
1L	Poly Natural	**2243-32**	24.41	- - - -
4L	Poly Natural	**2243-1**	58.03	- - - -

495ppm as NaCl

Conductivity/TDS Standard

5mS/cm (5000µmho/cm) at 25°C
Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**2245-16**	15.61	- - - -
1L	Poly Natural	**2245-32**	24.56	- - - -
4L	Poly Natural	**2245-1**	58.32	- - - -

2620ppm as NaCl

Conductivity/TDS Standard

10mS/cm (10,000µmho/cm) at 25°C, 5400ppm as NaCl
Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
20 × 20mL	Pouch	**2246-20**	42.89	- - - -
6 × 100mL	Plastic	**2246-100P**	29.88	- - - -
500mL	Poly Natural	**2246-16**	15.61	- - - -
1L	Poly Natural	**2246-32**	24.56	- - - -
4L	Poly Natural	**2246-1**	58.32	- - - -

Conductivity/TDS Standard

100mS/cm (100,000µmho/cm) at 25°C
Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**22-49-16**	15.61	- - - -
1L	Poly Natural	**2249-32**	24.56	- - - -
4L	Poly Natural	**2249-1**	58.32	- - - -

65,750ppm as NaCl

Potassium Chloride Reference Solution C

1408.8µS/cm (1408.8µmho/cm) at 25°C
Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**5895-16**	21.90	- - - -
1L	Poly Natural	**5895-32**	28.97	- - - -
4L	Poly Natural	**13622-613**	53.04	- - - -
10L	Cubitainer*	**58952-5**	93.47	- - - -

0.01M

NEW

Potassium Chloride Conductivity Standard

50µS/cm at 25°C
Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
250mL	Poly Natural	**588658**	82.91	- - - -
500mL	Poly Natural	**13622-607**	33.05	- - - -
1L	Poly Natural	**13622-605**	8.24	- - - -
4L	Poly Natural	**13622-606**	44.19	- - - -

Shelf life: 12 months

NEW

Potassium Chloride Conductivity Standard

100µS/cm (100µmho/cm) at 25°C
Clear, Colorless Liquid
pH Approx. 7

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**5887-16**	18.00	- - - -
1L	Poly Natural	**5887-32**	25.76	- - - -
4L	Poly Natural	**13622-604**	90.15	- - - -

Potassium Chloride Conductivity Standard

50,000µS/cm (50,000µmho/cm) at 25°C
Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**13622-610**	33.19	- - - -
1L	Poly Natural	**13622-608**	8.24	- - - -
4L	Poly Natural	**13622-609**	44.19	- - - -

NEW

Potassium Chloride Conductivity Standard

1mS/cm (1000µmho/cm) at 25°C
Clear, Colorless Liquid
pH Approx. 7

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**588801-16**	18.00	- - - -
1L	Poly Natural	**588801-32**	26.75	- - - -
4L	Poly Natural	**588801-1**	59.98	- - - -

NEW

Potassium Chloride Conductivity Standard

5mS/cm (5000µmho/cm) at 25°C
Clear, Colorless Liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**588843-16**	16.51	- - - -
1L	Poly Natural	**588843-32**	30.95	- - - -
4L	Poly Natural	**588843-1**	58.30	- - - -

NEW

Potassium Chloride Conductivity Standard

10mS/cm (10,000µmho/cm) at 25°C
Clear, Colorless Liquid
pH Approx. 7

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**588810-16**	17.89	- - - -
1L	Poly Natural	**588810-32**	34.91	- - - -
4L	Poly Natural	**588810-1**	58.29	- - - -

NEW

Oxidation-Reduction Potential (ORP) Standards

Light's Solution

Oxidation-Reduction Potential (ORP) Standard
Clear, Light Yellow Liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Poly Natural	**4330-16**	42.47	- - - -
1L	Poly Natural	**4330-32**	70.64	- - - -

[7783-85-9 (Ferrous Ammonium Sulfate Hexahydrate)]
[7783-83-7 (Ferric Ammonium Sulfate Dodecahydrate)]
[7664-93-9 (Sulfuric Acid)]
[7732-18-5 (Water, Deionized)]

Light's Solution

Modified, Oxidation-Reduction Potential (ORP) Standard
Clear, Light Yellow Liquid

Quantity	Packaging	Cat. No.	Each	Case of
1L	Amber Poly	**4331-32**	80.01	- - - -

[7783-85-9 (Ferrous Ammonium Sulfate Hexahydrate)]
[7664-93-9 (Sulfuric Acid)]
[7783-83-7 (Ferric Ammonium Sulfate Dodecahydrate)]
[7732-18-5 (Water, Deionized)]

ORP Standard

+200mV vs. Ag/AgCl

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**54645-4**	13.80	- - - -
500mL	Amber Glass	**54645-16**	22.17	- - - -

4M KCl sat. with AgCl filling solution

ORP Standard

+600mV vs. Ag/AgCl
Clear, Amber Colored Liquid

Quantity	Packaging	Cat. No.	Each	Case of
120mL	Amber Glass	**54646-4**	16.30	- - - -

4M KCl sat. with AgCl filling solution
Shelf life: 9 months

NEW

ZoBell's Solution

Oxidation-Reduction Potential (ORP) Standard
Clear, Yellow to Yellow-green Colored Liquid

Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Poly	**9880-16**	39.06	- - - -
1L	Amber Poly	**9880-32**	61.63	- - - -
4L	Amber Poly	**9880-1**	237.41	- - - -

[13746-66-2 (Potassium Ferricyanide)]
[14459-95-1 (Potassium Ferrocyanide Trihydrate)]
[7447-40-7 (Potassium Chloride)]
[7732-18-5 (Water, Deionized)]

Petrochemical Standards

Unleaded Gasoline Composite Standard

Quantity	Packaging	Cat. No.	Each	Case of
1mL; 2500µg/mL	Ampule	**06-728-505**	31.00	- - - -
1mL; 50,000µg/mL	Ampule	**06-728-657**	36.00	- - - -
5mL; 50,000µg/mL	Ampule	**06-728-661**	75.00	- - - -

Solvent/Matrix: P and T methanol

Diesel Fuel #2 Composite Standard

Quantity	Packaging	Cat. No.	Each	Case of
1mL; 5000µg/mL	Ampule	**06-801-152**	31.00	- - - -
1mL; 50,000µg/mL	Ampule	**06-801-429**	36.00	- - - -
5mL; 50,000µg/mL	Ampule	**06-801-433**	75.00	- - - -

Solvent/Matrix: Methylene chloride

Turbidity Standards

Turbidity Standard

Primary Standard Stock Formazin Suspension, 4000 NTU
(Nephelometric Turbidity Units)

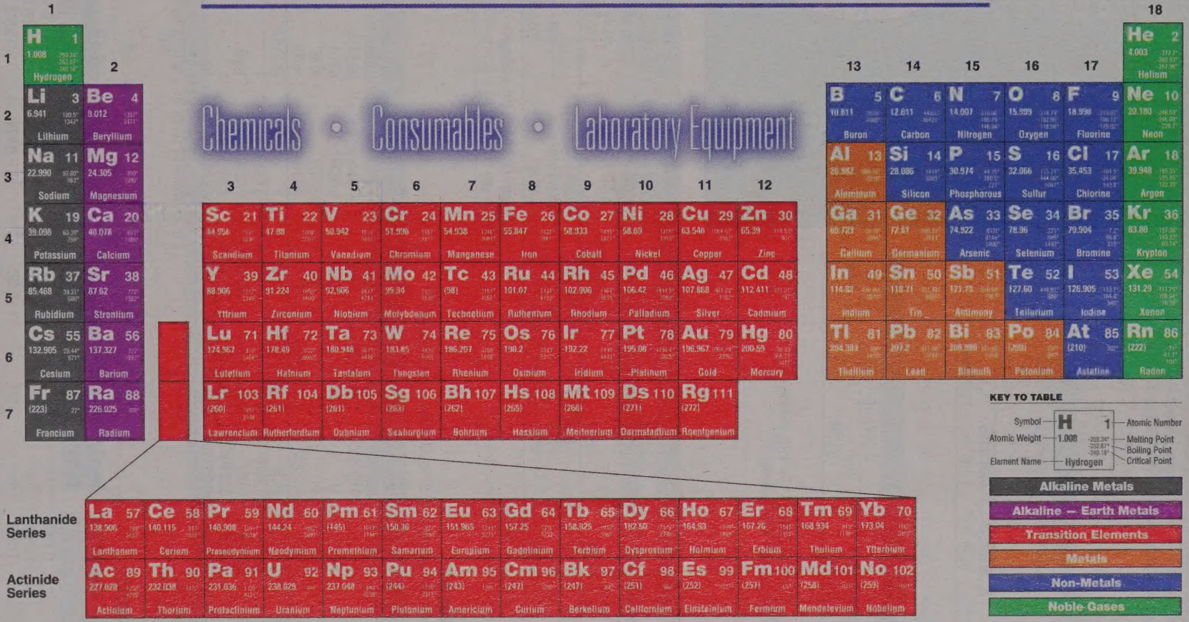
Quantity	Packaging	Cat. No.	Each	Case of
500mL	Amber Glass	**8830-16**	44.24	- - - -

Periodic Table of the Elements

Fisher Scientific

HOW BLUE IS YOUR LAB?

Chemicals • Consumables • Laboratory Equipment



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	H 1 1.008 Hydrogen																	He 2 4.003 Helium
2	Li 3 6.941 Lithium	Be 4 9.012 Beryllium											B 5 10.811 Boron	C 6 12.011 Carbon	N 7 14.007 Nitrogen	O 8 15.999 Oxygen	F 9 18.998 Fluorine	Ne 10 20.180 Neon
3	Na 11 22.990 Sodium	Mg 12 24.305 Magnesium											Al 13 26.982 Aluminum	Si 14 28.086 Silicon	P 15 30.974 Phosphorous	S 16 32.066 Sulfur	Cl 17 35.453 Chlorine	Ar 18 39.948 Argon
4	K 19 39.098 Potassium	Ca 20 40.078 Calcium	Sc 21 44.956 Scandium	Ti 22 47.88 Titanium	V 23 50.942 Vanadium	Cr 24 51.996 Chromium	Mn 25 54.938 Manganese	Fe 26 55.847 Iron	Co 27 58.933 Cobalt	Ni 28 58.69 Nickel	Cu 29 63.546 Copper	Zn 30 65.39 Zinc	Ga 31 69.723 Gallium	Ge 32 72.61 Germanium	As 33 74.922 Arsenic	Se 34 78.96 Selenium	Br 35 79.904 Bromine	Kr 36 83.80 Krypton
5	Rb 37 85.468 Rubidium	Sr 38 87.62 Strontium	Y 39 88.906 Yttrium	Zr 40 91.224 Zirconium	Nb 41 92.906 Niobium	Mo 42 95.94 Molybdenum	Tc 43 (98) Technetium	Ru 44 101.07 Ruthenium	Rh 45 102.906 Rhodium	Pd 46 106.42 Palladium	Ag 47 107.868 Silver	Cd 48 112.411 Cadmium	In 49 114.82 Indium	Sn 50 118.71 Tin	Sb 51 121.75 Antimony	Te 52 127.60 Tellurium	I 53 126.905 Iodine	Xe 54 131.29 Xenon
6	Cs 55 132.905 Cesium	Ba 56 137.327 Barium	Lu 71 174.967 Lutetium	Hf 72 178.49 Hafnium	Ta 73 180.948 Tantalum	W 74 183.85 Tungsten	Re 75 186.207 Rhenium	Os 76 190.2 Osmium	Ir 77 192.22 Iridium	Pt 78 195.08 Platinum	Au 79 196.967 Gold	Hg 80 200.59 Mercury	Tl 81 204.383 Thallium	Pb 82 207.2 Lead	Bi 83 208.980 Bismuth	Po 84 (209) Polonium	At 85 (210) Astatine	Rn 86 (222) Radon
7	Fr 87 (223) Francium	Ra 88 226.025 Radium	Lr 103 (260) Lawrencium	Rf 104 (261) Rutherfordium	Db 105 (261) Dubnium	Sg 106 (263) Seaborgium	Bh 107 (262) Bohrium	Hs 108 (265) Hassium	Mt 109 (266) Meitnerium	Ds 110 (271) Darmstadtium	Rg 111 (272) Roentgenium							

Lanthanide Series	La 57 138.906 Lanthanum	Ce 58 140.115 Cerium	Pr 59 140.908 Praseodymium	Nd 60 144.24 Neodymium	Pm 61 (145) Promethium	Sm 62 150.36 Samarium	Eu 63 151.965 Europium	Gd 64 157.25 Gadolinium	Tb 65 158.925 Terbium	Dy 66 162.50 Dysprosium	Ho 67 164.93 Holmium	Er 68 167.26 Erbium	Tm 69 168.934 Thulium	Yb 70 173.04 Ytterbium
Actinide Series	Ac 89 227.028 Actinium	Th 90 232.038 Thorium	Pa 91 231.036 Protactinium	U 92 238.029 Uranium	Np 93 237.048 Neptunium	Pu 94 (244) Plutonium	Am 95 (243) Americium	Cm 96 (247) Curium	Bk 97 (247) Berkelium	Cf 98 (251) Californium	Es 99 (252) Einsteinium	Fm 100 (257) Fermium	Md 101 (258) Mendelevium	No 102 (259) Nobelium

KEY TO TABLE

Symbol — H
1 — Atomic Number
Atomic Weight — 1.008
-259.34° — Melting Point
-252.87° — Boiling Point
-240.18° — Critical Point
Element Name — Hydrogen

Alkaline Metals
Alkaline – Earth Metals
Transition Elements
Metals
Non-Metals
Noble Gases

Conversion Factors

Find the unit of measurement from which you want to convert under the column "Unit." Move across the line until you reach the column under the unit to which you want to convert. Multiply your existing measurement by the listed factor to obtain the conversion. (Ex: Suppose you want to convert 5 sq. in. into sq. cm. Find "sq. in." under the "Unit" column in the Area table below. Move across this line until you come to the column under "sq. cm." Multiply 5 sq. in. by 6.452 to get 32.260 sq. cm.)

Area

Unit	Sq. In.	Sq. Ft.	Sq. Yd.	Sq. cm	Sq. m
Sq. In.	1	0.006944	0.0007716	6.452	0.000645
Sq. Ft.	144	1	0.1111	929	0.0929
Sq. Yd.	1296	9	1	8361	0.8361
Sq. cm	0.155	0.001076	0.0001196	1	0.0001
Sq. m	1550	10.76	1.196	10,000	1

Force

Unit	Dyne	Lb.	Newton
Dyne	1	2.248×10^{-6}	10^{-5}
Lb.	444,823	1	4.448
Newton	100,000	0.2248	1

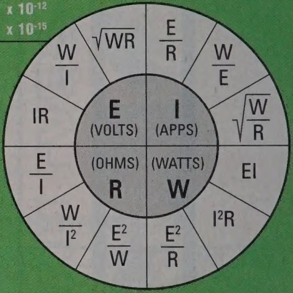
Heat

1 cal./g•°C = 1BTU/lb.•°F = 4.184 joule/g•°C = 4184 joule/kg•°C
1 cal./g = 1BTU/lb. = 4.184 joule/g = 4184 joule/kg

METRIC PREFIXES

Prefix	Abbreviation	Meaning
peta-	P	$\times 10^{15}$
tera-	T	$\times 10^{12}$
giga-	G	$\times 10^{9}$
mega-	M	$\times 10^{6}$
kilo-	k	$\times 10^{3}$
deci-	d	$\times 10^{-1}$
centi-	c	$\times 10^{-2}$
milli-	m	$\times 10^{-3}$
micro-	μ	$\times 10^{-6}$
nano-	n	$\times 10^{-9}$
pico-	p	$\times 10^{-12}$
femto-	f	$\times 10^{-15}$

OHM'S LAW



Length

Unit	In.	Ft.	Yd.	Mile (Statute)	cm	m	km
In.	1	0.0833	0.02778	1.578×10^{-5}	2.54	0.0254	2.54×10^{-5}
Ft.	12	1	0.333	1.894×10^{-4}	30.48	0.3048	3.048×10^{-4}
Yd.	36	3	1	5.682×10^{-4}	91.44	0.9144	9.144×10^{-4}
Mile (Statute)	63,360	5280	1760	1	160,900	1609	1.609
cm	0.3937	0.03281	0.01094	6.214×10^{-6}	1	0.01	10^{-5}
m	39.37	3.281	1.094	6.214×10^{-4}	100	1	10^{-3}
km	39,370	3281	1094	0.6214	100,000	1000	1

1 angstrom (Å) = 10^{-10}m =10^{-5}cm = 10^{-4}μm
1 fermi =1 femtometer (fm) = 10^{-15}m = 10^{-13}cm = 10^{-9}μm

1 light-year = 5.9 p 10^{12} miles (statute) = 9.46 x 10^{12}km
1 micron (μm or μ) = 10^{-6}m = 10^{-4}cm =10^{-3}mm

Liquid Measures

(All drams, ounces, quarts, and gallons are U.S. liquid except where indicated.)

Unit	Dram	Oz.	Qt.	Gal.	Cu. In.	Cu. Ft.	mL	L	Cu. cm	Cu. m
Dram	1	0.125	0.00391	9.766×10^{-4}	0.2256	1.3055×10^{-4}	3.6967	0.0036967	3.6967	----
Oz.	8	1	0.03125	7.813×10^{-3}	1.805	1.0444×10^{-3}	29.5735	0.02957	29.5735	----
Qt.	256	32	1	0.25	57.75	0.03342	946.4	0.9464	946.4	9.464×10^{-4}
Gal.	1024	128	4	1	231	0.1337	3785	3.785	3785	3.785×10^{-3}
Cu. In.	4.4329	0.5541	0.01732	4.329×10^{-3}	1	5.787×10^{-4}	16.39	0.01639	16.39	1.639×10^{-5}
Cu. Ft.	7660.05	957.51	29.92	7.48052	1728	1	28,316.9	28.32	28,316.9	2.832×10^{-2}
mL	0.2705	0.0338	0.001057	2.642×10^{-4}	0.06103	3.532×10^{-5}	1	0.001	1	10^{-6}
L	270.512	33.814	1.057	0.2642	61.024	0.03531	1000	1	1000	10^{-3}
Cu. cm	0.2705	0.0338	0.001057	2.642×10^{-4}	0.06103	3.532×10^{-5}	1	0.001	1	10^{-6}
Cu. m	----	----	1057	264.2	61,023.7	35.31	10^{6}	1000	10^{6}	1

1 gal. U.K. = 1.20095 gal. U.S.
1 gal. U.S. = 0.832675 gal. U.K.

1 lb. of water = 27.68 cu. in. = 0.01602 cu. ft. = 0.1198 gal.

Inch Equivalents

Fraction (inches)	Decimal (inches)	Millimeters
1/64	0.015625	0.3969
1/32	0.03125	0.7938
1/16	0.0625	1.5875
1/8	0.125	3.175
3/16	0.1875	4.7625

Fraction (inches)	Decimal (inches)	Millimeters
1/4	0.25	6.35
5/16	0.3125	7.9375
3/8	0.375	9.525
7/16	0.4375	11.1125

Fraction (inches)	Decimal (inches)	Millimeters
1/2	0.50	12.70
9/16	0.5625	14.2875
5/8	0.625	15.875
11/16	0.6875	17.4625
3/4	0.75	19.05

Fraction (inches)	Decimal (inches)	Millimeters
13/16	0.8125	20.6375
7/8	0.875	22.225
15/16	0.9375	23.8125
1	1.0	25.40

Mass

(Apoth. stands for apothecaries'; avdp. stands for avoirdupois.)

Unit	Grain	Apoth. Scruple	Avdp. Dram	Apoth. Dram	Avdp. Oz.	Apoth. Oz.	Avdp. Lb.	Apoth. Lb.	g	kg	Ton (Short)	Ton (Long)	Ton (Metric)
Grain	1	0.05	0.0365714	0.0167	0.002286	0.002083	0.000142	0.0001736	0.0648	6.48×10^{-5}	----	----	----
Apoth. Scruple	20	1	0.7314	0.3333	0.0457	0.0417	0.002857	0.003472	1.296	0.001296	----	----	----
Avdp. Dram	27.3437	1.367	1	0.4557	0.0625	0.0570	0.003906	0.004747	1.7718	0.0017718	----	----	----
Apoth. Dram	60	3	2.1943	1	0.1371429	0.125	0.008571	0.0104	3.8879	0.003888	----	----	----
Avdp. Oz.	437.5	21.875	16	7.292	1	0.9115	0.0625	0.0759	28.3495	0.0283	----	----	----
Apoth. Oz.	480	24	17.554	8	1.09714	1	0.0686	0.08333	31.1035	0.0311	----	----	----
Avdp. Lb.	7000	350	256	116.67	16	14.5833	1	1.21528	453.5924	0.4536	5×10^{-4}	4.464×10^{-4}	4.536×10^{-4}
Apoth. Lb.	5760	288	210.65	96	13.1657	12	0.822857	1	373.2417	0.3732	4.11×10^{-4}	3.6×10^{-4}	3.7324×10^{-4}
g	15.43	0.7716	0.5644	0.2572	0.03527	0.03215	0.002205	0.002679	1	0.001	----	----	----
kg	15,432.4	771.62	564.38	257.21	35.274	32.151	2.205	2.679	1000	1	1.102×10^{-3}	9.842×10^{-4}	10^{-3}
Ton (Short)	----	----	----	----	----	----	2000	2430.56	----	907.1847	1	0.89286	0.9072
Ton (Long)	----	----	----	----	----	----	2240	2722.22	----	1016	1.12	1	1.016
Ton (Metric)	----	----	----	----	----	----	2205	2679.229	----	1000	1.1023	0.9842	1

Weight = Mass x 9.80665m/sec.^{2}

Power

Unit	BTU/ min.	Ft.-lb./ sec.	hp	Joule/ sec.	kW	Watt
BTU/min.	1	12.96	0.02356	17.57	0.01757	17.57
Ft.-lb./sec.	0.077[†]	1	0.001818	1.356	0.001356	1.356
hp	42.44	550	1	745.7	0.7457	745.7
Joule (abs.)/ sec.	0.0569	0.7378	0.001341	1	0.001	1
kW	56.83[†]	737.6	1.341	1000	1	1000
Watt	0.057[†]	0.7378	0.001341	1	0.001	1

[†] *BTU (mean)/min.*

Velocity

(All miles are statute.)

Unit	Ft./sec.	Miles/hr.	m/min.	km/hr.
Ft./sec.	1	0.6818	18.29	1.097
Miles/hr.	1.467	1	26.82	1.609
m/min.	0.05468	0.03728	1	0.06
km/hr.	0.9113	0.6214	16.67	1

Volume

Unit	Cu. In.	Cu. Ft.	Cu. Yd.	Cu. cm	Cu. m
Cu. In.	1	5.787×10^{-4}	2.143×10^{-5}	16.39	1.639×10^{-5}
Cu. Ft.	1728	1	0.03704	28,316.85	0.02832
Cu. Yd.	46,656	27	1	764,600	0.7646
Cu. cm	0.06102	3.531×10^{-5}	1.3×10^{-6}	1	10^{-6}
Cu. m	61,023.74	35.31	1.308	10^{6}	1

Work and Energy

Unit	BTU	Cal./g (IST[‡])	Erg	Ft.-lb.	Joule	kW-hr.
BTU	1	252	1.05×10^{10}	778	1054.8	0.00029
Cal./g	0.00397	----	4.18×10^{7}	3.08596	4.184	1.16×10^{-6}
Erg	9.48×10^{-11}	2.39×10^{-8}	1	7.4×10^{-8}	10^{-7}	2.778×10^{-14}
Ft.-lb.	0.00129	0.3238	1.356×10^{7}	1	1.356	3.766×10^{-7}
Joule (abs.)	9.48×10^{-4}	0.2389	10^{7}	0.7376	1	2.78×10^{-7}
kW-hr.	3410[††]	8.6×10^{5}	3.6×10^{13}	2.66×10^{6}	3.6×10^{6}	1

[‡] *International Steam Table.*

[††] *BTU (mean).*

1 electron volt (eV) = 1.6×10^{-19} joule

Conversion Tables

Typical Index of Refraction (RI) and Brix Values

Sample	RI	Sample	% Brix	Sample	% Brix
Calcium chloride	1.33 to 1.44	Oranges, pears	5 to 13	Lactic acid beverages	17 to 21
Castor oil (40°C)	1.4770	Tomatoes	2 to 5	Condensed milk	52 to 68
Citric acid	1.33 to 1.37	Apples, melons	11 to 18	Liquid sugar	59 to 80
Corn oil (40°C)	1.4734	Strawberries	15 to 11	Grape wine	14 to 18
Ethylene glycol	1.33 to 1.39	Grapes	12 to 24	Bean milk	5 to 13
Hydrochloric acid	1.33 to 1.42	Fruit juices	12 to 17	Egg yolk	45 to 49
Nitric acid	1.33 to 1.38	Canned fruits	15 to 29	Steak sauce	27 to 37
Olive oil (40°C)	1.4679	Tomato puree	7 to 16	Ketchup	27 to 37
Peanut oil (40°C)	1.4691	Tomato juice	5 to 9	Milk	12 to 16
Potassium chloride	1.33 to 1.36	Carbonated beverages	6 to 15	Jam, marmalade	60 to 70
Sodium chloride	1.33 to 1.37	Nectars	16 to 22	Flour	60 to 70
Sulfuric acid	1.33 to 1.40	Acidophilus beverages	17 to 20	Peaches	11 to 16

Note: all values are approximations at 20°C, except where indicated.

Viscosity Values

Centipoise* (cp)	Centistokes (cSt)	Saybolt Second Universal (SSU)	Typical Liquid
1	1	31	Water
3.2	4	40	Milk
12.6	15.7	80	Number 4 fuel oil
16.5	20.6	100	Cream
34.6	43.2	200	Vegetable oil
88	110	500	SAE 10 oil
176	220	1000	Tomato juice
352	440	2000	SAE 30 oil
880	1100	5000	Glycerine
1561	1735	8000	SAE 50 oil
1760	2200	10,000	Honey
3000	4500	20,000	Glue
5000	6250	28,000	Mayonnaise
8640	10,800	50,000	Molasses B
15,200	19,000	86,000	Sour cream
17,640	19,600	90,000	SAE 70 oil

*Centipoise = centistokes x specific gravity where specific gravity is assumed to be 0.8 (except for water). To find the exact cp of your fluid: **cp = cSt x (weight per gallon x 0.120).**

Brix Scale (sucrose)

% Brix	RI
0.0	1.3330
5.0	1.3403
10.0	1.3479
15.0	1.3557
20.0	1.3639
25.0	1.3723
30.0	1.3811
35.0	1.3902
40.0	1.3997
45.0	1.4096
50.0	1.4200
55.0	1.4307
60.0	1.4418
65.0	1.4532
70.0	1.4651
75.0	1.4774
80.0	1.4901
85.0	1.5003

Conductivity Values µΩ/cm at 77°F (25°C)

% Weight	ppm (mg/L)	NaCl	NaOH	HCl	Acetic Acid
0.0001	1	2.2	6.2	11.7	4.2
0.0003	3	6.5	18.4	35.0	7.4
0.001	10	21.4	61.1	116	15.5
0.003	30	64	182	340	30.6
0.01	100	210	603	1140	63
0.03	300	617	1780	3390	114
0.1	1000	1990	5820	11,100	209
0.3	3000	5690	16,900	32,200	368
1.0	10,000	17,600	53,200	103,000	640
3.0	—	48,600	144,000	283,000	1120
5.0	—	78,300	223,000	432,000	1230
10.0	—	140,000	358,000	709,000	1530
20.0	—	226,000	414,000	850,000	1600
30.0	—	Saturated	292,000	732,000	1405
40.0	—	Saturated	191,000	Saturated	1080
50.0	—	Saturated	150,000	Saturated	740
75.0	—	Saturated	Saturated	Saturated	168
100.0	—	Saturated	Saturated	Saturated	<1

Pressure Unit Conversion Constants

To go from	Multiply by	To get
bar	14.50	psi
bar	401.47	" of H_2O
bar	29.53	" of Hg
bar	100.0	kPa
bar	1000	mbar
bar	1019.73	cm of H_2O
bar	750.06	mm of Hg
cm of H_2O	0.014223	psi
cm of H_2O	0.3937	" of H_2O
cm of H_2O	0.028958	" of Hg
cm of H_2O	0.09806	kPa
cm of H_2O	0.9806	mbar
cm of H_2O	0.7355	mm of Hg
" of H_2O	0.036127	psi
" of H_2O	0.073554	" of Hg
" of H_2O	0.2491	kPa
" of H_2O	2.491	mbar
" of H_2O	2.5400	cm of H_2O
" of H_2O	1.8683	mm of Hg
" of Hg	0.4912	psi
" of Hg	13.596	" of H_2O
" of Hg	3.3864	kPa
" of Hg	33.864	mbar
" of Hg	34.532	cm of H_2O
" of Hg	25.400	mm of Hg
kg/cm^2	14.223	psi
kg/cm^2	393.7	" of H_2O
kg/cm^2	28.96	" of Hg
kg/cm^2	98.06	kPa
kg/cm^2	980.6	mbar
kg/cm^2	1000	cm of H_2O
kg/cm^2	735.5	mm of Hg
kPa	0.14504	psi
kPa	4.0147	" of H_2O
kPa	0.2953	" of Hg
kPa	10.000	mbar
kPa	10.1973	cm of H_2O
kPa	7.5006	mm of Hg
mbar	0.01450	psi
mbar	0.40147	" of H_2O
mbar	0.02953	" of Hg
mbar	0.100	kPa
mbar	1.01973	cm of H_2O
mbar	0.75006	mm of Hg
micron (µ)	0.00019337	psi
micron (µ)	0.0053525	" of H_2O
micron (µ)	0.00039370	" of Hg
micron (µ)	0.0013332	kPa
micron (µ)	0.013332	mbar
micron (µ)	0.013595	cm of H_2O
micron (µ)	0.001	mm Hg
mm of Hg	0.019337	psi
mm of Hg	0.53525	" of H_2O
mm of Hg	0.039370	" of Hg
mm of Hg	0.13332	kPa
mm of Hg	1.3332	mbar
mm of Hg	1.3595	cm of H_2O
$oz/inch^2$	0.06250	psi
$oz/inch^2$	1.7299	" of H_2O
$oz/inch^2$	0.1272	" of Hg
$oz/inch^2$	0.4309	kPa
$oz/inch^2$	4.309	mbar
$oz/inch^2$	4.394	cm of H_2O
$oz/inch^2$	3.232	mm of Hg
psi	27.680	" of H_2O
psi	2.036	" of Hg
psi	6.8947	kPa
psi	68.947	mbar
psi	70.308	cm of H_2O
psi	51.715	mm of Hg
torr	0.019337	psi
torr	0.53525	" of H_2O
torr	0.039370	" of Hg
torr	0.13332	kPa
torr	1.3332	mbar
torr	1.3595	cm of H_2O
torr	1.000	mm Hg

General Technical Data

Hydrometer Correction Table

Factors apply to hydrometers calibrated at 60°/60°F specific gravity, the ratio of the liquid density at 60°F to the density of water at 60°F. To determine the corrected specific gravity, divide the correction factor by 1000 and add it to the measured value.

Example:
Measured specific gravity at 20°C: 1.0000
Correction factor: 0.7000/1000 = 0.0007
Corrected specific gravity: 1.0000 + 0.0007 = 1.0007

Liquid Densities*

Liquid	Grams/mL	Pounds/cu ft	Temperature
Acetone	0.792	49.4	20°C
Alcohol, ethyl	0.791	49.4	20°C
Alcohol, methyl	0.810	50.5	0°C
Benzene	0.899	56.1	0°C
Carbolic acid	0.950 to 0.965	59.2 to 60.2	15°C
Carbon disulfide	1.293	80.7	0°C
Carbon tetrachloride	1.595	99.6	20°C
Chloroform	1.489	93.0	20°C
Ether	0.736	45.9	0°C
Gasoline	0.660 to 0.690	41.0 to 43.0	—
Glycerine	1.260	78.6	0°C
Kerosene	0.820	51.2	—
Mercury	13.600	849.0	—
Milk	1.028 to 1.035	64.2 to 64.6	—
Naptha, petroleum ether	0.665	41.5	15°C
Naptha, wood	0.848 to 0.810	52.9 to 50.5	0°C
Oils:			
Castor	0.969	60.5	15°C
Coconut	0.925	57.7	15°C
Cotton seed	0.926	57.8	16°C
Creosote	1.040 to 1.200	64.9 to 68.6	15°C
Linseed, boiled	0.924	58.8	15°C
Olive	0.918	57.3	15°C
Sea water	1.025	64.0	15°C
Turpentine (spirits)	0.870	54.3	—
Water	1.000	62.4	4°C

*Selected from Smithsonian Tables

Scale of Particle Sizes

Tyler screen mesh/inch	U.S. standard mesh/inch	Particle sizes Inches	Microns (µm)	Class
—	—	1.3 to 2.5	33K to 64K	Very coarse gravel
—	—	0.6 to 1.3	15K to 33K	Coarse gravel
2½	—	0.321	8,000	Medium gravel
5	5	0.157	4,000	Fine gravel
9	10	0.079	2,000	Very fine gravel
16	18	0.039	1,000	Very coarse sand
32	35	0.0197	500	Coarse sand
60	60	0.0098	250	Medium sand
115	120	0.0049	125	Fine sand
250	230	0.0024	62	Very fine sand
400	—	0.0015	37	Coarse silt
—	—	0.0006 to 0.0012	16 to 31	Medium silt
—	—	—	8 to 16	Fine silt
—	—	—	4 to 8	Very fine silt
—	—	—	2 to 4	Coarse clay
—	—	—	1 to 2	Medium clay
—	—	—	0.5 to 1	Fine clay

Approximate Atmospheric Pressures and Barometer Readings at Different Altitudes

Altitude ft (m)	Barometer " Hg (mmHg)	Atmospheric pressure (psi)	Equivalent head of H_2O (in feet at 75°F)	Boiling point of H_2O °F (°C)
–1000 (–304.8)	31.02 (787.9)	15.2	35.2	213.8 (101.0)
–500 (–152.4)	30.47 (773.9)	15.0	34.7	212.9 (100.5)
0	29.92 (760.0)	14.7	34.0	212.0 (100.0)
500 (152.4)	29.38 (746.3)	14.4	33.4	211.1 (99.5)
1000 (304.8)	28.86 (733.1)	14.2	32.8	210.2 (99.0)
1500 (457.2)	28.33 (719.6)	13.9	32.2	209.3 (98.5)
2000 (609.6)	27.82 (706.6)	13.7	31.6	208.4 (98.0)
2500 (762.0)	27.31 (693.7)	13.4	31.0	207.4 (97.4)
3000 (914.4)	26.81 (681.0)	13.2	30.5	206.5 (96.9)
3500 (1066.8)	26.32 (668.5)	12.9	29.9	205.6 (96.4)
4000 (1219.2)	25.84 (656.3)	12.7	29.4	204.7 (95.9)
4500 (1371.6)	25.36 (644.1)	12.4	28.8	203.8 (95.4)
5000 (1524.0)	24.86 (632.2)	12.2	28.3	202.9 (94.9)
5500 (1676.4)	24.43 (620.5)	12.0	27.8	201.9 (94.4)
6000 (1828.8)	23.98 (609.1)	11.8	27.3	201.0 (93.9)
6500 (1981.2)	23.53 (597.7)	11.5	26.7	200.1 (93.4)
7000 (2133.6)	23.09 (586.5)	11.3	26.2	199.2 (92.9)
7500 (2286.0)	22.65 (575.3)	11.1	25.7	198.3 (92.4)
8000 (2438.4)	22.22 (564.4)	10.9	25.2	197.4 (91.9)
8500 (2590.8)	21.80 (553.7)	10.7	24.8	196.5 (91.4)
9000 (2743.2)	21.38 (543.1)	10.5	24.3	195.5 (90.8)
9500 (2895.6)	20.98 (532.9)	10.3	23.8	194.6 (90.3)
10,000 (3048.0)	20.58 (522.7)	10.1	23.4	193.7 (89.8)
15,000 (4572.0)	16.88 (428.8)	8.3	19.1	184.0 (84.4)
20,000 (6096.0)	13.75 (349.3)	6.7	15.2	—
30,000 (9144.0)	8.88 (225.6)	4.4	10.2	—
40,000 (12,192)	5.54 (140.7)	2.7	6.3	—
50,000 (15,240)	3.44 (87.4)	1.7	3.9	—

Specific gravity	Correction factor for measurements taken at designated temperatures 20°C (68°F)	25°C (77°F)	30°C (86°F)	35°C (95°F)	40°C (104°F)	45°C (113°F)	50°C (122°F)	55°C (131°F)	60°C (140°F)	65°C (149°F)	70°C (158°F)	75°C (167°F)	80°C (176°F)	85°C (185°F)	90°C (194°F)	95°C (203°F)	100°C (212°F)
0.7	0.5	1.2	1.9	2.6	3.3	4.0	4.7	5.4	6.1	6.8	7.5	8.2	8.9	9.6	10.3	11.0	11.7
0.8	0.6	1.4	2.2	3.0	3.8	4.6	5.4	6.2	7.0	7.8	8.6	9.4	10.2	11.0	11.8	12.6	13.4
0.9	0.6	1.6	2.6	3.6	4.6	5.6	6.6	7.6	8.6	9.6	10.6	11.6	12.6	13.6	14.6	15.6	16.6
1.0	0.7	1.8	2.9	4.0	5.1	6.2	7.3	8.4	9.5	10.6	11.7	12.8	13.9	15.0	16.1	17.2	18.3
1.1	0.8	1.9	3.0	4.1	5.2	6.3	7.4	8.5	9.6	10.7	11.8	12.9	14.0	15.1	16.1	19.1	18.7
1.2	0.8	2.0	3.2	4.4	5.6	6.8	8.0	9.2	10.4	11.6	12.8	14.0	15.2	16.4	17.6	18.8	20.0
1.3	0.9	2.3	3.7	5.1	6.5	7.9	9.3	10.7	12.1	13.5	14.9	16.3	17.7	19.1	20.5	21.9	23.3
1.4	1.0	2.5	4.0	5.5	7.0	8.5	10.0	11.5	13.0	14.5	16.0	17.5	19.0	20.5	22.0	23.5	25.0
1.5	1.1	2.6	4.1	5.6	7.1	8.6	10.1	11.6	13.1	14.6	16.1	17.6	19.1	20.6	22.1	23.6	25.1
1.6	1.1	2.8	4.5	6.2	7.9	9.6	11.3	13.0	14.7	16.4	18.1	19.8	21.5	23.2	24.9	26.6	28.3
1.7	1.2	3.2	5.2	7.2	9.2	11.2	13.2	15.2	17.2	19.2	21.2	23.2	25.2	27.2	27.3	31.2	33.2
1.8	1.3	3.3	5.3	7.3	9.3	11.3	13.3	15.3	17.5	19.3	21.3	23.3	25.3	27.3	29.3	31.3	35.3
1.9	1.3	3.4	5.5	7.6	9.7	11.8	13.9	16.0	18.1	20.2	22.3	24.4	26.5	26.6	30.7	32.8	34.9
2.0	1.4	3.5	5.6	7.7	9.8	11.9	14.0	16.1	18.2	20.3	22.4	24.3	26.6	28.7	30.8	32.9	35.6

Equations

Density Conversions

Specific Gravity x 1 = g/mL
g/L x 8.345404 = lb/gal
lb/gal x 0.119826 = g/mL

Humidity

Absolute humidity (as g/m³)

$$D = \frac{804}{1 + 0.00633t} \times \frac{e}{P_o}$$

$$= \frac{H}{100} \times \frac{804}{1 + 0.00633t} \times \frac{e}{P_o}$$

H = relative humidity (% RH)
P_o = standard air pressure (mmHg)
D = absolute humidity (g/m³)
e = water steam pressure (mmHg)
D_s = absolute humidity in saturation (g/m³)
e_s = saturated water steam pressure (mmHg)
t = temperature (°C)
T = dew point temperature

Dew point temperature (as °C)

$$T = \frac{237.3/75}{\log e - 0.786} - 1$$

$$e = \frac{H}{100} \times e_s;\ e_s = 6.1078 \times 10^{7.5t/(237.3 + t)}$$

Relative humidity (as % RH)

$$RH = \frac{e_s}{e} \times 100 = \frac{D}{D_s} \times 100$$

Temperature

°F = (1.8 x °C) + 32
°C = (°F – 32) x 0.555
°Kelvin = °C + 273.2

Heating and Cooling

Cooling capacity of chillers

$$\text{Btu/hr} = \frac{\Delta T\ (°F) \times \text{Specific heat of fluid}}{\text{flowrate (GPM)}}$$

Specific heat of water = 500 Btu/hr/GPM/°F
Specific heat of oil = 350 Btu/hr/GPM/°F

Heating water in tanks

$$\text{kW} = \frac{\text{Volume (gallons)} \times \Delta T\ (°F)}{325 \times \text{Heat-up time (hours)}}$$

Heating oil in tanks

$$\text{kW} = \frac{\text{Volume (gallons)} \times \Delta T\ (°F)}{800 \times \text{Heat-up time (hours)}}$$

Heating flowing water

kW = Flow (GPM) x ΔT (°F) x 0.16

Relative Centrifugal Force

$rcf = (11.18 \times 10^{-6})\ RN$

R = rotating radius in cm
N = rotation speed in rpm

Concentration

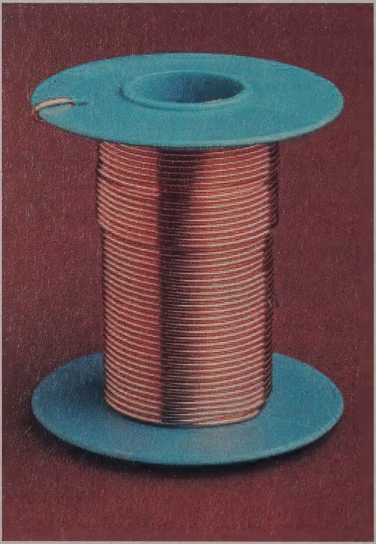
$$\text{Molar (M)} = \frac{\text{Moles of solute}}{\text{Liters of solution}}$$

$$\text{Weight \%} = \frac{\text{Grams of solute} \times 100\%}{\text{Grams of solute + grams of solvent}}$$

$$\text{Volume \%} = \frac{\text{Liters of solute} \times 100\%}{\text{Liters of solution}}$$

$$\text{ppm} = \frac{\text{mg of solute}}{\text{kg of solution}} = \frac{\text{mg of solute}}{\text{Liters of water}}$$

Wire Gauge Conversion Chart



AWG Gauge	Diameter	AWG Gauge	Diameter
0000000	—	18	0.040303"
000000	0.580000"	19	0.035890"
00000	0.516500"	20	0.031961"
0000	0.460000"	21	0.028462"
000	0.409642"	22	0.025346"
00	0.364796"	23	0.022572"
0	0.324861"	24	0.020101"
1	0.289297"	25	0.017900"
2	0.257627"	26	0.015941"
3	0.229423"	27	0.014195"
4	0.204307"	28	0.012641"
5	0.181940"	29	0.011257"
6	0.162023"	30	0.010025"
7	0.144285"	31	0.008928"
8	0.128490"	32	0.007950"
9	0.114423"	33	0.007080"
10	0.101897"	34	0.006305"
11	0.090742"	35	0.005615"
12	0.080808"	36	0.005000"
13	0.071962"	37	0.004453"
14	0.064084"	38	0.003965"
15	0.057068"	39	0.003531"
16	0.050821"	40	0.003144"
17	0.045257"		

Electrical Data

Electrical Terminology

Volt (E) is the unit of electric pressure or electromotive force. It is the potential that will produce a current of 1 ampere through a resistance of 1 ohm.

Ampere (I) is the unit of electrical current (coulombs per second).

Ohm (R) is the unit of electrical resistance (volts/ampere).

Watts (W) and **kilowatts** (KW) are units of electric power.

Kilovolt-ampere (KVA) is a measurement of apparent electric power.

Kilowatt hour (Kwhr) is a unit of electrical energy or work performed.

Joule (J) is a metric unit of energy: watt per second.

1 Kwhr = 2,655,000 ft-lb = 1.341 hp-hr = 3413 Btu = 3,600,000 joules.

Ohm law relationships (direct current)

$E = IR + W/I = \sqrt{WR}$

$W = I^2R = E^2/R = EI$

$I = E/R = W/E = \sqrt{W/R}$

$R = E/I = W/I^2 = E^2/W$

For electrical formulas, see the chart below. Use the symbols above plus the ones defined in the text above the table.

Properties of Conductors

Size (AWG MCM)	Area circle (mils)	Concentric lay conductors		Bare conductors		DC resistance Ω/M ft at 77°F (25°C)*		
		No. of wires	Diameter each wire (inch)	Diameter (inch)	Area (sq inch)	Copper		Aluminum
						Bare	Tinned	
18	1620	—	—	0.0403	0.0013	6.51	6.79	10.7
16	2580	—	—	0.0508	0.0020	4.10	4.26	6.72
14	4110	—	—	0.0641	0.0032	2.57	2.68	4.22
12	6530	—	—	0.0808	0.0051	1.62	1.68	2.66
10	10,380	—	—	0.1019	0.0081	1.018	1.06	1.67
8	16,510	—	—	0.1285	0.0130	0.6404	0.659	1.05
6	26,240	7	0.0612	0.184	0.027	0.410	0.427	0.674
4	41,740	7	0.0772	0.232	0.042	0.259	0.269	0.424
3	52,620	7	0.0867	0.260	0.053	0.205	0.213	0.336
2	66,360	7	0.0974	0.292	0.067	0.162	0.169	0.266
1	83,690	19	0.0664	0.332	0.087	0.129	0.134	0.211
0	105,600	19	0.0745	0.372	0.109	0.102	0.106	0.168
00	133,100	19	0.0837	0.418	0.137	0.0811	0.0843	0.133
000	167,800	19	0.0940	0.470	0.173	0.0642	0.0668	0.105
0000	211,600	19	0.1055	0.528	0.219	0.0509	0.0525	0.0836
250	250,000	37	0.0822	0.575	0.260	0.0431	0.0449	0.0708
300	300,000	37	0.0900	0.630	0.312	0.0360	0.0374	0.0590
400	400,000	37	0.1040	0.728	0.416	0.0270	0.0278	0.0442
500	500,000	37	0.1162	0.813	0.519	0.0216	0.0222	0.0354
600	600,000	61	0.0992	0.893	0.626	0.0180	0.0187	0.0295
700	700,000	61	0.1071	0.964	0.730	0.0154	0.0159	0.0253
800	800,000	61	0.1145	1.030	0.833	0.0135	0.0139	0.0221
1000	1,000,000	61	0.1280	1.150	1.039	0.0108	0.0111	0.0177
1500	1,500,000	91	0.1284	1.140	1.561	0.00719	0.00740	0.0118
2000	2,000,000	127	0.1255	1.630	2.087	0.00539	0.00555	0.00885

*The resistance values given in the last three columns apply only to direct current. When using conductors larger than number 4/0 with alternating current, use the multiplying factors in the table below to compensate for skin effect.

Electrical Formulas

Use the symbols in Electrical Terminology above, plus:

eff = efficiency (expressed as a decimal)

pf = power factor (expressed as a decimal)

hp = horsepower output

Required	Direct current	Alternating current	
		Single-phase	3-phase[†]
KVA	—	$\frac{IE}{1000}$	$\frac{1.73\ IE}{1000}$
Kilowatts	$\frac{IE}{1000}$	$\frac{IE\ (pf)}{1000}$	$\frac{1.73\ IE\ (pf)}{1000}$
Horsepower (output)	$\frac{IE\ (eff)}{746}$	$\frac{IE\ (eff)(pf)}{746}$	$\frac{1.73\ IE\ (eff)(pf)}{746}$
Joules	$\frac{IE}{sec}$	$\frac{IE\ (eff)(pf)}{sec}$	$\frac{1.73\ IE\ (eff)(pf)}{sec}$
Amperes (hp known)	$\frac{746\ (hp)}{E\ (eff)}$	$\frac{746\ (hp)}{E\ (eff)(pf)}$	$\frac{746\ (hp)}{1.73\ E\ (eff)(pf)}$
Amperes (KW known)	$\frac{1000\ KW}{E}$	$\frac{1000\ KW}{E\ (pf)}$	$\frac{1000\ KW}{1.73\ E\ (pf)}$
Amperes (kva known)	—	$\frac{1000\ KVA}{E}$	$\frac{1000\ KVA}{1.73\ E}$

[†] For 3-phase systems, E is measured line to line and I is phase current.

Multiplying Factors for Converting Resistance to 60-Hertz AC Resistance

Size	Multiplying factor			
	For nonmetallic sheathed cables in air or nonmetallic conduits		For metallic sheathed cables or all cables in metallic raceways	
	Copper	Aluminum	Copper	Aluminum
Up to 3 AWG	1.000	1.000	1.00	1.00
Up to 2 AWG	1.000	1.000	1.01	1.00
Up to 1 AWG	1.000	1.000	1.01	1.00
0	1.001	1.000	1.02	1.00
00	1.001	1.001	1.03	1.00
000	1.002	1.001	1.04	1.01
0000	1.004	1.002	1.05	1.01
250 MCM	1.005	1.002	1.06	1.02
300 MCM	1.006	1.003	1.07	1.02
350 MCM	1.009	1.004	1.08	1.03
400 MCM	1.011	1.005	1.10	1.04
500 MCM	1.018	1.007	1.13	1.06
600 MCM	1.025	1.010	1.16	1.08
700 MCM	1.034	1.013	1.19	1.11
750 MCM	1.039	1.015	1.21	1.12
800 MCM	1.044	1.017	1.22	1.14
1000 MCM	1.067	1.026	1.30	1.19
1250 MCM	1.102	1.040	1.41	1.27
1500 MCM	1.142	1.058	1.53	1.36
1750 MCM	1.185	1.079	1.67	1.46
2000 MCM	1.233	1.100	1.82	1.56

Regulatory Agencies and Approvals

ASCII: American Standard Code for Information Interchange is a method of encoding characters into 7 or 8 binary bits (typically 7 bits plus an 8th bit for parity).

ANSI: The American National Standards Institute is a private organization that coordinates the creation of voluntary standards in a number of fields including engineering, electronics, and construction.

ASTM: The American Society for Testing and Materials is a scientific and technical organization that develops material standards and testing methods.

DIN: The Deutsche Industrie Normen is a German organization that develops standards from physical quantities engineering to material engineering.

FDA: Food & Drug Administration is responsible for approving food and drugs for widespread use. Definitions for proper use are found in a series of regulations published annually under Government Regulations CFR 21.

NEMA: The National Electrical Manufacturers Association is a trade association of electrical equipment manufacturers that develops and publishes many manufacturing standards.

NIST: The National Institute of Standards and Technology is a U.S. government agency that provides standard reference materials and calibration services. NIST-certified instruments are calibrated at NIST. NIST-traceable instruments are factory calibrated against NIST-certified standards.

OEM: Products used by Original Equipment Manufacturers in the design of equipment.

OSHA: The Occupational Safety and Health Administration oversees and regulates workplace health and safety.

UL: Underwriters Laboratories, Inc. is concerned with safety of personnel and property. UL listing indicates compliance with UL safety standards for electrical, mechanical, and fire hazards.

USP Class VI: Safety evaluation standards of the U.S. Pharmacopoeia/ National Formulary for biocompatibility with plastics.

Acid-Base Indicator Selection

Name	Visual Transition Interval (pH)	Color Change
Thymol Blue	1.2 – 2.8	Red to Yellow
Thymol Blue, Sodium Salt		Red to Yellow
Bromophenol Blue	3.0 – 4.6	Yellow M Blue
Bromophenol Blue, Sodium Salt		Yellow to Blue
Congo Red	3.0 – 5.0	Blue to Red
Dyphenycarbazone- Bromophenol Blue	3.0 – 7.0	Yellow to Blue
Methyl Orange-Xylene Cyanole Solution	3.2 – 4.2	Purple to Green
Methyl Orange Sodium Salt	3.2 – 4.4	Red to Yellow
Bromocresol Green	3.8 – 5.4	Yellow to Blue
Bromocresol Green, Sodium Salt		Yellow to Blue
Methyl Red	4.2 – 6.2	Pink to Yellow
Methyl Red Hydrochloride		Pink to Yellow
Methyl Red, Sodium Salt		Pink to Yellow
Rosolic Acid	5.0 – 8.0	Yellow to Red
Bromocresol Purple	5.2 – 6.8	Yellow to Purple
Alizarin	5.8 – 7.2	Yellow to Red
Bromothymol Blue	6.0 – 7.6	Yellow to Blue
Bromothymol Blue, Sodium Salt		Yellow to Blue
m-Nitrophenol	6.8 – 8.6	Colorless to Yellow
Phenol Red	6.8 – 8.2	Yellow to Red
Phenol Red, Sodium Salt		Yellow to Red
Cresol Red	7.0 – 8.8	Yellow to Violet Red
Thymol Blue	8.0 – 9.2	Yellow to Blue
Thymol Blue, Sodium Salt		Yellow to Blue
Phenolphthalein	8.0 – 10.0	Colorless to Red
Thymolphthalein	8.8 – 10.5	Colorless to Blue
Alizarin	11.0 – 13.0	Red to Purple
5,5'-Indigodisulfonic Acid, Disodium Salt	11.4 – 13.0	Blue to Yellow
Acid Fuchsin	12.0 – 14.0	Red to Colorless

Concentrations of Acids and Bases

Common Commercial Strength of	Molecular Weight	Moles/ Liter	Grams/ Liter	Percentage by Weight	Specific Gravity
Acetic Acid, Glacial	60.05	17.4	1045	99.5	1.05
Acetic Acid	60.05	6.27	376	36	1.045
Formic Acid	46.02	23.4	1080	90	1.20
Hydrochloric Acid	36.5	11.6	424	36	1.18
		2.9	105	10	1.05
Nitric Acid	63.02	15.99	1008	71	1.42
		14.9	938	67	1.42
		13.3	837	61	1.37
Perchloric Acid	100.5	11.65	1172	70	1.67
		9.2	923	60	1.54
Phosphoric Acid	80.0	18.1	1445	85	1.70
Sulfuric Acid	98.1	18.0	1766	96	1.84
Ammonium Hydroxide	35.0	14.8	251	28	0.898
Potassium Hydroxide	56.1	13.5	757	50	1.52
		1.94	109	10	1.09
Sodium Hydroxide	40.0	19.1	763	50	1.53
		2.75	111	10	1.11

Addition Formulas

Compound	Lab Addition Rate	Cellar Addition Rate
Acids (Increase TA)	+0.1g/100mL	=3.8g tartaric/gal.wine =8.3 lb. tantaric/1000 gal. wine =7.4 lb. malic/1000 gal. wine =7.4 lb. citric/1000 gal. wine
Ascorbic acid (treat disulfides, add copper and carbon afterwards)	+10ppm	=0.1mL of 1% solution in 100mL wine=3.78mL/gal. =37.85g asorbic acid crystals in 1000 gal. wine
Potassium carbonate	reduce TA by 0.1g/100mL	=2.5g/gal. calcium carbonate = 5.5 lb./1000 gal. wine =3.8g/gal. potassium carbonate = 8.3 lb./1000 gal. wine
Copper (treats sulfides) DO TRIALS FIRST	+0.1ppm as Cu	=0.15mL of 1% $CuS0_4$ solution/1000 gal. wine =0.1mL of 0.05% $CuS0_4$ in 120mL. (4 oz.) wine =1.5g $CuS04\ .5H_20$ per 1000 gal. wine
Hydrogen peroxide (reduce $S0_2$) (Not legal for commercial wine)	~10ppm $S0_2$	approx 1mL H_20_2 3% /gal. wine DO TRIALS FIRST!
Potassium metabisulfte (add $S0_2$)	+100ppm $S0_2$	=.76 gal.=760g/1000gal.=20g/hl = 002g/L = 7.6mL/gal.=2mL/ L of 10% KMBS solution (-5% $S0_2$)
Any soluble compound	1% +1lb/ 1000 gal.	1g/100mL = 7.50g/750mL=37.85g/gal. = 0.45g/gal.=0.012g/100mL= 0.09g/750mL

Other Calculations

Normality:

Normality (1) x Volume (1) = Normality (2) x Volume (2)

$$\text{OR volume to add} = \frac{\text{normality desired x volume desired}}{\text{normality of concentrated solution}}$$

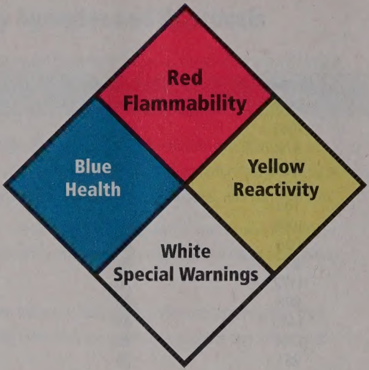
Percentage (% additions):

% (1) x Volume (1) = % (2) x Volume (2)

$$\text{OR amount to add} = \frac{\text{\% desired x total volume desired}}{\text{\% solution to be added}}$$

Parts per million (ppm) = mg/L

$$\text{Amount to add in grams} = \frac{\text{(gallons wine) x 3.785 x desired ppm}}{1000}$$



NFPA Hazard Code Ratings

The National Fire Protection Association has developed a numerical rating system that reflects the health, flammability, self-reactivity, and other hazards of materials, including its reaction with water, specified in NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response.*

Potential hazards are evaluated based on the degree of hazard, and the numerical rating is placed inside the universal NFPA symbol.

HEALTH

HEALTH HAZARDS

4 Very short exposure to material can cause death or major residual injury even if prompt medical treatment is given.

3 Short exposure to material can cause serious temporary or residual injury even if prompt medical treatment is given.

2 Intense or continued exposure to material can cause temporary incapacitation or possibly residual injury unless prompt medical treatment is given.

1 Exposure to material will cause irritation but only minor residual injury even if no treatment is given.

0 Exposure to materials under fire conditions will offer no hazard beyond that of ordinary combustible material.

FLAMMABILITY

FLAMMABILITY

4 Material will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature, or will burn readily when dispersed in air.

3 A liquid or solid that can be ignited under almost all ambient temperature conditions.

2 Material that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.

1 Material that must be preheated before ignition can occur.

0 Material that will not burn.

REACTIVITY

REACTIVITY

4 Material is readily capable of detonation or of explosive decomposition or instability at normal temperatures and pressures.

3 Material is capable of detonation or explosive reaction but requires a strong initiating source; or which must be heated under confinement before initiation; or may react explosively with water.

2 Material is normally unstable and readily undergoes violent chemical change but does not detonate. Also may react violently with water or may form potentially explosive mixtures with water.

1 Material is normally stable but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.

0 Material is normally stable even under fire exposure conditions, and is not reactive with water.

SPECIAL WARNINGS

SPECIAL WARNINGS

OX Oxidizing material

~~W~~ Material is hazardous when in contact with moisture or water

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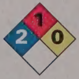
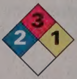
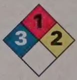
EXAMPLES:



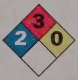
1,1,1-Trichloroethane



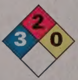
Isopropyl ether



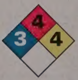
Calcium



Benzene



Acetic acid, glacial

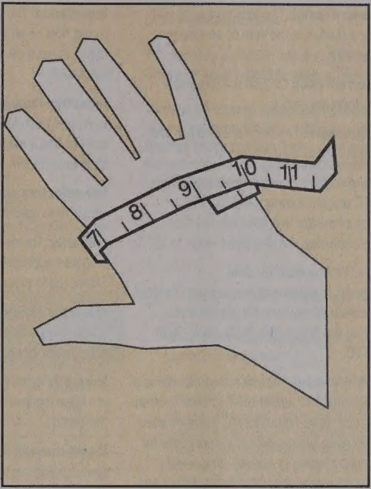


Picric acid, wet, with not less than 10% water

Glove Sizing Guide

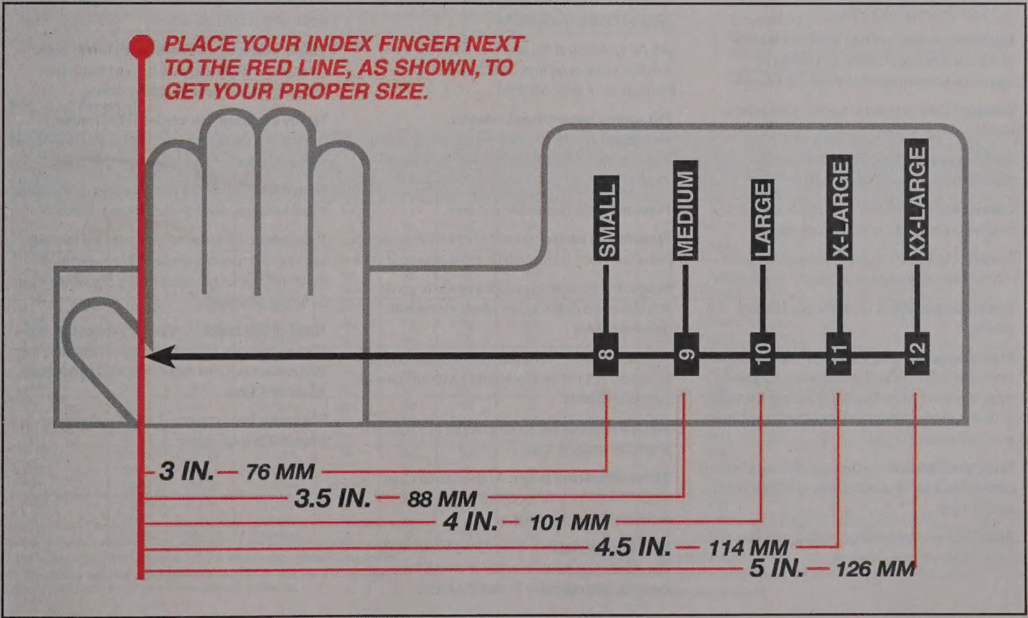
Selecting the right glove size means a comfortable, safe fit, and helps ensure that workers will wear their gloves. Gloves that are too large reduce dexterity and can get caught in machinery. Gloves that are too small are binding and cause the hand to tire more quickly.

To find your glove size, use a tape measure to determine the circumference of your hand around the palm area. If your hand circumference is 9", for example, your closest glove size is a 9. Be aware that gloves can also come in non-numerical sizes. In most cases, the size conversion chart below should be a good guide.



Non-numerical Size	Numerical Size
Extra Small (XS)	6-7
Small (S)	7-8
Medium (M)	8-9
Large (L)	9-10
Extra Large (XL)	10-11
Extra Extra Large (XXL)	11-12

Of course, there are other methods for determining glove size. For your convenience, one of our suppliers has created the following chart that bases glove size on hand width. Please feel free to use it as well, understanding that all of these resources are just guides. Glove sizing varies, depending on manufacturer, origin, and style. Your exact fit will ultimately be found only through use.


PLACE YOUR INDEX FINGER NEXT TO THE RED LINE, AS SHOWN, TO GET YOUR PROPER SIZE.

Glossary of Technical Terms

Accuracy: The degree of precision. Usually expressed, in terms of error, as a percentage of the specified value, or as a percentage of a range.

Absolute pressure (psia): The total force per unit area exerted by a fluid. It is the sum of atmospheric and gauge pressures.

Alternating current (AC): Current that reverses polarity at a uniform frequency.

Atmospheric pressure: The force exerted per unit area by the weight of the atmosphere.

Automatic temperature compensation (ATC): meters with ATC receive a continuous signal from a temperature sensor in a solution and then automatically standardize the displayed value to 25°C.

Baud rate: A unit of measure for data transmission speed. It represents the number of signal elements (typically bits) transmitted per second. Typical baud rates are 300, 1200, 2400, 4800, 9600, 14400, and 28800.

Buffer: In chemistry terms, a solution that maintains a set pH value regardless of added acids or bases; often used for calibration. In computer terms, a device used to store data temporarily, normally to compensate for differences in speed between system components (for example, a high-speed data acquisition board and main memory).

Byte: Eight related bits of information processed as a unit. Eight bits equal one byte.

Cavitation: Process in which small bubbles are formed and implode violently. This results in aggressive cleaning action in ultrasonic cleaners.

Contacts: Elements used to mechanically make or break an electric circuit.

Continuous duty: A device able to operate continuously with no off or rest periods.

Convection: Transmission of energy or mass in a medium by movement of the medium itself.

Density: The mass of a given substance per unit volume, often expressed as pounds/ft^3 or grams/cm^3.

Direct current (DC): A current with a constant polarity.

Explosion-proof (XPRF) motor: A totally enclosed motor that will withstand an explosion of a specific vapor or gas within its housing, or will prevent sparks or flashes generated within its housing from igniting surrounding vapor or gas.

Factory calibration: The tuning or altering of a control device by the manufacturer to bring it into specification.

Gain: Ratio of output voltage, current, or power to input voltage, current, or power.

Gauge pressure (psig): A measure of the force per area exerted by a fluid using atmospheric pressure as a zero reference.

Impedance: The opposition in an electric circuit to the flow of an alternating current. It consists of ohmic resistance, inductive reactance, and capacitive reactance.

Inductive load: Electrical devices made of wound or coiled wire. Current passing through the coil creates a magnetic field that in turn produces mechanical work.

Ion-selective electrode (ISE): An electrode that is sensitive to specific ions in a solution.

Linearity: The degree to which performance or response approaches the condition of being linear. Expressed in percent.

Normally closed (NC): A switch in which the contacts are closed (contacting) without any external force acting upon it.

Normally open (NO): A switch in which the contacts are open (separated) when no external forces act upon the switch.

On/off control: A simple control system in which the device being controlled is either full on or full off, with no intermediate operating positions.

Parallel transmission: The transmission of data bits over different lines, usually simultaneously; as opposed to serial transmission.

pH: An indication of the acidity or alkalinity of a solution. Units range from 0 (most acidic), to 7 (neutral), to 14 (most alkaline).

PID control (proportional, integral, derivative): Control in which the control signal is a linear combination of the error signal, its integral, and its derivative.

Pressure: Force exerted per unit area.

Proportional control: Control in which the amount of corrective action is proportional to the amount of error.

Range: The limits within which a device or circuit operates or the distance over which a transmitter operates reliably.

RS-232: A standard computer interface used primarily to connect PCs and microprocessors with instruments, such as pH meters.

Serial transmission: Sending one bit at a time on a single transmission line.

Series (Universal) motor: A non-induction type motor utilized for small equipment. Speed will decrease as load increases.

Shaded-pole motor: A low-starting torque motor that depends on induced current to create the magnetic field necessary to start the motor.

Single-phase motor: Any motor energized by a single alternation voltage.

Single-pole, double-throw (SPDT): A switch that in one position completes one of two circuits. In the second position the switch completes a second circuit and breaks the first circuit.

Single-pole, single-throw (SPST): A switch that will open or complete a circuit.

Solid-state: Any element that controls current without moving parts, heated filaments, or vacuum gaps.

Standard operating conditions, standard temperature and pressure (STP): Defined temperature and pressure to which all values are referenced for comparison. Generally 760mmHg (1 atm), 25°C.

Stop bit: A signal following a character or block that prepares the receiving device to receive the next character or block.

Temperature compensation: Correction for the influence of temperature on a measurement.

Tolerance: The maximum allowable deviation from a specified standard, as the range of variation permitted, expressed in actual values or more often as a percentage of the nominal value.

Totally enclosed (TE) motor: Motors that prevent the free flow of air from the inside of the motor enclosure to the outside.

Totally enclosed, nonventilated (TENV) motor: A motor in a totally enclosed housing that is not equipped with an external cooling device.

Totally enclosed, fan-cooled (TEFC) motor: A motor in a totally enclosed housing that is equipped with a separate external blower.

Transducer: Any device that generates an electrical signal from real-world physical measurements.

Transmitter: A device that translates the low-level output of a sensor or transducer to a higher level signal suitable for transmission to a site where it can be further processed.

Three-phase motor: A relatively inexpensive, self-starting motor (no starting winding or capacitor); can start heavy loads. The motor requires a three-phase AC power supply.

Viscosity: The resistance of a fluid to flow when subjected to shear stress.

Chemical Resistance and Physical Properties of Plastics

Resin Codes

ECTFE:	Ethylene- chlorotrifluoroethylene copolymer
ETFE:	Ethylenetetrafluoroethylene
FEP:	Fluorinated ethylene propylene
FLPE:	Fluorinated high-density polyethylene
FLPP:	Fluorinated polypropylene
HDPE:	High-density polyethylene
LDPE:	Low-density polyethylene
NYL:	Nylon (polyamide)
PPCO:	Polypropylene copolymer
PC:	Polycarbonate
PETG:	Polyethylene terephthalate copolyester
PK:	Polyketone
PFA:	Perfluoroalkoxy
PMMA:	Polymethyl methacrylate
PMP:	Polymethylpentene
PP:	Polypropylene
PS:	Polystyrene
PSF:	Polysulfone
PTFE:	Polytetrafluoroethylene
PUR:	Polyurethane
PVC:	Polyvinyl chloride
PVDF:	Polyvinylidene fluoride
TPE:	Thermoplastic elastomer
XLPE:	Cross-linked high-density polyethylene

Do not store strong oxidizing agents in plastic labware except if made of FEP, PFA, or PTFE. Other plastics will become brittle after prolonged exposure.

Do not place plastic labware directly in a flame or on a hotplate unless specified.

Use these charts as general guides only. They are recommendations, not guarantees, of fitness for particular uses. Test materials under actual conditions first before using them for your applications.

Chemical Resistance Summary

Classes of substances; temperature 68°F (20°C)	ECTFE/ETFE	FEP/PTFE/PFA	FLPE	HDPE/XLPE	LDPE	NYL	PC	PETG	PK	PMMA	PMP	PP/PPCO	PS	PSF	PUR	PVC	PVDF	TPE[†]
Acids, weak or dilute	E	E	E	E	E	F	E	E	E	G	E	E	E	E	G	E	E	E
Acids[*], strong or concentrated	G	E	E	E	E	N	N	N	G	N	E	E	F	G	F	E	E	F
Alcohols, aliphatic	E	E	E	E	E	N	G	E	G	N	E	E	E	G	F	E	E	E
Aldehydes	E	E	G	G	G	F	F	N	E	G	G	G	N	F	G	N	E	N
Bases	E	E	F	E	E	F	N	N	G	F	E	E	E	E	N	E	E	E
Esters	E	E	E	G	G	E	N	N	E	N	G	G	N	N	N	N	G	N
Hydrocarbons, aliphatic	E	E	E	G	F	E	F	E	E	G	F	G	N	G	E	E	E	N
Hydrocarbons, aromatic	E	E	E	G	F	E	N	N	E	N	F	F	N	N	N	N	E	N
Hydrocarbons, halogenated	E	E	G	F	N	G	N	N	E	N	N	F	N	N	N	N	N	N
Ketones	G	E	E	G	G	E	N	N	E	N	F	G	N	N	N	N	N	N
Oxidizing agents, strong	F	E	F	F	F	N	N	N	G	N	F	F	N	G	N	G	G	N

[*] For oxidizing acids, see table entry "Oxidizing agents, strong." [†] TPE gaskets

E—No damage after 30 days of constant exposure.

G—Little or no damage after 30 days of constant exposure.

F—Some effect after seven days of constant exposure. Depending on the plastic, the effect may be cracking, crazing, loss of strength, or discoloration. Solvents may cause softening, swelling, and permeation losses with PPCO, PP, PMP, LDPE, and HDPE; the solvent effects on these materials are normally reversible.

N—Not recommended for continuous use. Immediate damage may occur. Depending on the plastic, the effect will be severe cracking, crazing, loss of strength, discoloration, deformation, dissolution, or permeation loss.

Physical Properties

Resin	Max use temp (°F/°C)	Brittleness temp (°F/°C)	Transparency	Sterilization					Specific gravity (g/mL)	Flexibility	Permeability (approximate) cc-mm / m² - 24hr - Bar			Water absorption (%)
				Autoclave	Gas	Dry heat	Radiation[‡]	Disinfectants			N_2	O_2	CO_2	
ECTFE, ETFE	302/150	−157/−105	Translucent	Yes	Yes	Yes	No	Yes	1.70	Rigid	—	—	—	<0.03
FEP	401/205	−454/−270	Translucent	Yes	Yes	Yes	No	Yes	2.15	Excellent	4960	11,625	34,100	<0.01
HDPE	248/120	−148/−100	Translucent	No	Yes	No	Yes	Yes	0.95	Rigid	651	2868	8990	<0.01
LDPE	176/80	−148/−100	Translucent	No	Yes	No	Yes	Yes	0.92	Excellent	2790	7750	41,850	<0.01
NYL	194/90	32/0	Translucent	No	Yes	No	Yes	Yes	1.13	Rigid	—	—	—	1.30
PPCO	250/121	−40/−40	Translucent	Yes	Yes	No	No	Yes	0.90	Moderate	698	3100	10,075	<0.02
PC	275/135	−211/−135	Transparent	Yes[**]	Yes	No	Yes	Yes	1.20	Rigid	775	4650	16,663	0.35
PETG	158/70	<−40/<−40	Transparent	No	Yes	No	Yes	Yes	1.27	Moderate	155	388	1240	0.15
PFA	482/250	−454/−270	Translucent	Yes	Yes	Yes	No	Yes	2.15	Excellent	4511	13,656	35,030	<0.03
PK	220	−40	Opaque	Yes	Yes	—	Yes	Some	1.24	Rigid	—	3.1	25	0.45
PMMA	122/50	—	Transparent	No	Yes	No	Yes	Some	1.20	Rigid	—	—	310	0.35
PMP	347/175	68/20	Transparent	Yes	Yes	Yes[**]	No	Yes	0.83	Rigid	17,050	69,750	—	0.01
PP	275/135	32/0	Translucent	Yes	Yes	No	No	Yes	0.90	Rigid	744	3720	12,400	<0.02
PS	194/90	68/20	Transparent	No	Yes	No	Yes	Some	1.05	Rigid	853	4650	17,825	0.05
PSF	329/165	−148/−100	Transparent	Yes	Yes	Yes[**]	Yes	Yes	1.24	Rigid	853	4650	10,850	0.30
PTFE	500/260	−450/−267	Translucent	Yes	Yes	Yes	Yes	Yes	2.15	Rigid	—	—	—	0.01
PUR	180/82	−94/−70	Transparent	Yes[**][††]	Yes	No	Yes	Yes	1.20	Excellent	—	1162-5068	6975-25,575	0.03
PVC	158/70	−22/−30	Transparent	No[**][‡‡]	Yes	No	No	Yes	1.34	Rigid	31-310	62	62	0.15-0.75
PVDF	230/110	−80/−62	Translucent	No	Yes	No	No	Yes	1.75	Rigid	140	217	7,828	0.05
TPE	250/121	—	Opaque	Yes	Yes	No	—	Some	1.20	Excellent	481-2248	1317-10,013	13,950-133,827	<0.01
XLPE	212/100	−180/−118	Translucent	No	Yes	No	Yes	Yes	0.93	Rigid	—	—	—	<0.01

[‡] Radiation—gamma irradiation at 2.5 mrad with unstabilized plastic.

[**] Sterilizing reduces mechanical strength. Do not use PC vessels for vacuum applications if they have been autoclaved.

[††] PUR tubing is not autoclavable.

[‡‡] Some PVC tubing may be autoclaved; see specific product information.

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Care of Plasticware

General Cleaning

Washing Plastics with a Mild Detergent is sufficient for most general applications. Be sure to rinse with tap water, and then rinse again with distilled water. Most plastics, particularly the polyolefins (PPCO, PP, PMP, LDPE, and HDPE), have nonwetting surfaces that resist attack and are easy to clean. Do not use abrasive cleaners or scouring pads on any plastic labware. Do not use strong alkaline cleaning agents with polycarbonate (PC).

Labware Washing Machines can be used with most resins except acrylic, polystyrene (PS), and LDPE due to temperature limitations. PC will be weakened by repeated washings in dishwashers. PC labware exposed to high stresses (centrifuge ware, vacuum chambers) should always be washed by hand using mild, nonalkaline detergents. For PS, use a mild, neutral pH, nonabrasive, noncaustic detergent without sheeting agents. Set water temperature no higher than 135°F (57°C), and keep exposure as short as possible. Avoid excessive abrasion of plastics in dishwashers by covering metal spindles with soft material such as plastic tubing. Labware should be weighted down and held in place with accessory racks.

Ultrasonic Cleaners can be used as long as labware does not rest on the bottom of the tank. Use a cleaning basket for best results.

Removing Grease and Oils. Washing with a mild detergent will remove grease and oils in many situations. Another effective method is to boil labware in dilute sodium bicarbonate ($NaHCO_3$). Do not use this method with acrylic, PC, PS, or LDPE.

To remove grease and oils, you can use organic solvents (such as acetone, alcohols, or methylene chloride) with caution. Extended exposure to these solvents may cause polyolefins to swell. Rinse off all solvents before using labware. Use only alcohols on PC, PS, PSF, or PVC; other organic solvents attack these plastics. Do not use organic solvents with acrylic.

Removing Organic Matter. Soaking plastic in a chromic acid solution will remove organic matter, but since it is a strong oxidizing agent, it will eventually embrittle plastics. To minimize embrittlement, soak for no more than 4 hours.

To make the recommended chromic acid solution: Dissolve 120 g of sodium dichromate ($Na_2Cr_2O_7 \bullet 2H_2O$) in 1000 mL tap water. Add 1600 mL concentrated sulfuric acid. **Note:** Because this solution generates considerable heat, we recommend external cooling. Do not mix in a plastic container.

This solution produces an excess of dichromate in the precipitate form. It dissolves as needed, which extends the solution's life considerably longer than commercially available solutions. The solution can be used repeatedly until it begins to develop a greenish color, indicating a loss of potency.

Sodium hypochlorite solutions (bleaches) are also effective at removing organic matter. Use at room temperature.

Sterilizing Plastics

Autoclaving: Certain chemicals that have no appreciable effects on plastics at room temperature may cause deterioration at autoclave temperatures and therefore must be removed. To avoid baking these contaminants onto the surface of the plastic, carefully clean all items and rinse thoroughly with distilled water before autoclaving.

Because of differences in heat transfer between plastics and inorganic materials, the contents of plastic containers may take longer to reach sterilization temperatures (typically 121°C). Thus, longer autoclaving cycles may be necessary for liquid contents. Cycle lengths can be determined only by experience with specific liquids and containers. Do not autoclave containers (except those made of fluoropolymers) containing detergent or wetting solutions.

Note: Before autoclaving, just set cap or closure on top of the container without engaging threads.

Polypropylene (PP), polypropylene copolymer (PPCO), polymethylpentene (PMP), ETFE, and FEP and PFA can be autoclaved repeatedly at 121°C/15 psi. Cycle length should be at least 15 minutes at 121°C to ensure sterility.

Polysulfone (PSF) and polycarbonate (PC) are autoclavable, but can be weakened by repeated autoclaving. If autoclaved repeatedly, PSF will eventually fail under high-stress applications. After repeated autoclaving, PC shows some loss of mechanical strength and may not function well under high-stress applications such as centrifugation. Limit PSF and PC autoclave cycles to 20 minutes at 121°C.

Polystyrene (PS), polyvinyl chloride (PVC), nylon, acrylic, low-density polyethylene (LDPE), and high-density polyethylene (HDPE) labware and polyurethane tubing are not autoclavable under any conditions.

Note: Some transparent plastics may absorb minute amounts of water vapor and appear cloudy after autoclaving. The clouding will disappear as the plastic dries.

Gas Sterilization: All of the resins mentioned on this page can be gas sterilized (ethylene oxide, formaldehyde). Allow an appropriate aeration time suited to the particular application before using the item.

Chemical Disinfectants: In general, all of the plastics mentioned on this page can be subjected to commonly used disinfectants (formalin, iodophors, quaternary ammonium compounds, benzalkonium chloride). There may be some surface attack (crazing) when using a more chemically aggressive disinfectant for a prolonged time on the less chemical resistant plastics (acrylic, PS, PC, PVC).

Dry Heat: Recommended only for ECTFE, Tefzel ETFE, FEP and PFA, PMP, PSF, and TFE. Maximum temperatures and minimum sterilization times at each temperature are given in the following table:

Resins	Dry heat sterilization	
	Temperature	Time
FEP and PFA, PMP[†], TFE, PSF, ECTFE, Tefzel[*] ETFE	170°C (338°F)	60 min
	160°C (320°F)	120 min
	150°C (302°F)	150 min
	140°C (284°F)	180 min

[†] with no load, no stacking

Microwaving: In general, all plastics allow transmission of microwaves. Among commonly used plastics, PMP and PSF are most transparent to microwaves; we recommend their use when the chemical and temperature resistance of PMP and PSF are compatible with the material to be heated. Use fluoropolymers when heating such aggressive chemicals as acids or solvents; proper ventilation is essential. **Note:** Closure threads must be completely disengaged before heating bottles or containers in a microwave oven.

Hazardous Matter

For Labware Contaminated with Infectious or Toxic Materials, autoclaving is the preferred method for sterilization. However, any method of chemical or heat sterilization compatible with the plastic can be used. Liquid waste that contains biohazardous materials must be decontaminated before disposal.

For Labware Contaminated with Both Biohazardous and Radioactive Material, first sterilize the labware, then remove the radioactive material. Methods for removing radioactive material depend on the isotope used, its quantity, half-life, material, and solubility. For routine decontamination of noninfectious/nontoxic labware, first soak in a decontaminant/cleaner for 24 hours at room temperature. Follow this with several rinsings in distilled water. To accelerate decontamination, increase the cleaner concentration and solution temperature. Always dispose of radioactive wastes and effluents properly.

For more information on handling contaminated labware, contact your Biosafety/Radiation Safety office, or refer to NIH *Biohazardous Safety Guide, Radiation Guide,* and *Laboratory Safety Monograph*.

Trace Level Cleaning

For Most Trace Metal Analyses, plastic is generally less contaminated than glass or other materials. However, plastic does contain trace levels of certain metals. To minimize potential low-level contamination, remove or leach these metals from plastic by soaking in 1N HCl and rinsing in distilled water. For more precise work, use HCl, followed by soaking in 1N HNO_3 and rinsing in distilled water. Soaking time can vary according to individual needs, but plastics should not be soaked longer than 8 hours. **Caution:** Concentrated nitric acid is a strong oxidizing agent and will embrittle many plastics.

To Remove Trace Organics that contribute to trace metal absorption, clean plastic surfaces with alcohol, alkalies, alcoholic alkalies, or chloroform. A final rinse of 1N HCl also minimizes absorption of trace elements.

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Care of Glassware

General Cleaning

Good Laboratory Technique demands clean glassware, because the most carefully executed piece of work may give an erroneous result if dirty glassware is used. In all instances, glassware must be physically clean; it must be chemically clean; and in many cases, it must be bacteriologically clean or sterile.

Glassware Must Be Absolutely Grease-Free. The safest criteria of cleanliness is uniform wetting of the surface by distilled water. This is especially important in glassware used for measuring the volume of liquids. Grease and other contaminating materials will prevent the glass from becoming uniformly wetted. This in turn will alter the volume of residue adhering to the walls of the glass container and thus affect the volume of liquid delivered. Furthermore, in pipets and burets, the meniscus will be distorted and the correct adjustments cannot be made. The presence of small amounts of impurities may also alter the meniscus.

Wash Labware as Quickly as Possible after Use. If a thorough cleaning is not possible immediately, put glassware to soak in water. If labware is not cleaned immediately, it may become impossible to remove the residue.

Most new glassware is slightly alkaline in reaction. For precision chemical tests, new glassware should be soaked several hours in acid water (a 1% solution of hydrochloric or nitric acid) before washing.

Brushes with wooden or plastic handles are recommended as they will not scratch or abrade the glass surface.

Sterilizing Glassware

Glassware Which Is Contaminated with blood clots, such as serology tubes, culture media, Petri dishes, etc., must be sterilized before cleaning. It can best be processed in the laboratory by placing it in a large bucket or boiler filled with water, to which 1–2% soft soap or detergent has been added, and boiled for 30 minutes. The glassware can then be rinsed in tap water, scrubbed with detergent, rinsed again.

You may autoclave glassware or sterilize it in a large steam oven or similar apparatus. If viruses or spore-bearing bacteria are present, autoclaving is absolutely necessary.

Rinsing

It Is Imperative that all soap, detergents and other cleaning fluids be removed from glassware before use. This is especially important with the detergents, slight traces of which will interfere with serologic and cultural reactions.

After Cleaning, rinse the glassware with running tap water. When test tubes, graduates, flasks, and similar containers are rinsed with tap water, allow the water to run into and over them for a short time, then partly fill each piece with water, thoroughly shake and empty at least six times. Pipets and burets are best rinsed by attaching a piece of rubber tubing to the faucet and then attaching the delivery end of the pipets or burets to a hose, allowing the water to run through them. If the tap water is very hard, it is best to run it through a deionizer before using.

Rinse the Glassware in a large bath of distilled water. Rinse with distilled water. To conserve distilled water, use a five-gallon bottle as a reservoir. Store it on a shelf near your cleanup area. Attach a siphon to it and use it for replenishing the reservoir with used distilled water.

For Sensitive Microbiologic Assays, meticulous cleaning must be followed by rinsing 12 times in distilled water.

Handling and Storing

To Prevent Breakage when rinsing or washing pipets, cylinders, or burets, be careful not to let tips hit the sink or the water tap.

Dry Test Tubes, Culture Tubes, Flasks, and other labware by hanging them on wooden pegs or placing them in baskets with their mouths downward and allowing them to dry in the air; or place them in baskets to dry in an oven.* Drying temperatures should not exceed 140°C. Line the drying basket with a clean cloth to keep the vessel mouths clean.

Dry Burets, Pipets, and Cylinders by standing them on a folded towel. Protect clean glassware from dust. This is done best by plugging them with cotton, corking, taping a heavy piece of paper over the mouth or placing the glassware in a dust-free cabinet.

Store Glassware in specially designed racks. Avoid breakage by keeping pieces separated.Do not store alkaline liquids in volumetric flasks or burettes. Stoppers or stopcocks may stick.

*Do not apply heat directly to empty glassware which is used in volumetric measurements. Such glassware should be dried at temperatures of no more than 80–90°C.

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Care of Stainless Steelware

Use the Proper Tools. When cleaning your stainless-steel products, take care to use non-abrasive tools. Soft cloths and plastic scouring pads will not harm the steel's passive layer. Stainless-steel pads can also be used, but the scrubbing motion must be in the direction of the manufacturer's polishing marks.

Clean with the Polish Lines. Some stainless steels come with visible polishing lines or "grain." When visible lines are present, you should always scrub in a motion that is parallel to them. When the grain cannot be seen, use a soft cloth or plastic scouring pad.

Use Alkaline, Alkaline Chlorinated, or Non-Chloride Containing Cleaners at the recommended strength. While many traditional cleaners are loaded with chlorides, the industry is providing an ever-increasing choice of non-chloride cleaners. If you are unsure of your cleaner's chloride content, contact your cleaner supplier. If they tell you that your present cleaner contains chlorides, ask if they have an alternative. Also, avoid cleaners containing quaternary salts as they also can attack stainless steel and cause pitting and rusting. Never use hydrochloric acid (muriatic acid) on stainless steel.

Clean Frequently to avoid buildup of hard, stubborn stains. If chlorinated cleaners are used, you must rinse thoroughly. Wipe dry immediately to remove all traces of chlorination. After wiping the equipment down, allow it to air dry because oxygen helps maintain the stainless steel's passivity film.

Treat your Water. Softening hard water can do much to reduce deposits. Certain filters can be installed to remove distasteful and corrosive elements. If you are unsure of the proper water treatment for your applications, contact a treatment specialist.

Chemical Resistance of Labware Materials

How to Use This Chart

Use This Chart as a General Guide Only. Test each chemical first before storing in labware. The first letter of each pair represents the resistance rating at 20°C; the second at 50°C.

E—No damage after 30 days of constant exposure.

G—Little or no damage after 30 days of constant exposure.

F—Some effect after 7 days of constant exposure. Depending on the material, the effect may be cracking, crazing, loss of strength, or discoloration. Solvents may cause softening, swelling, and permeation losses with PA, PP, PMP, LDPE, and HDPE; the solvent effects on these materials are normally reversible.

N—Not recommended for continuous use. Immediate damage may occur. Depending on the material, the effect will be severe cracking, crazing, loss of strength, discoloration, deformation, dissolution, or permeation loss.

Effects of Chemicals on Labware

Chemicals may affect the weight, strength, color, dimensions, flexibility, and surface appearance of labware. The basic models of interaction that cause these changes are: (1) chemical attack on the polymer chain, with resultant reduction in physical properties, including oxidation; reaction of functional groups in or on the chain; and depolymerization; (2) physical change, including absorption of solvents, resulting in softening and swelling of the plastic; permeation of solvent through the plastic; or dissolution in a solvent; and (3) stress-cracking from the interaction of a "stress-cracking agent" with molded-in or external stresses.

The reactive combination of compounds of two or more classes may cause a synergistic or undesirable chemical effect. Other factors affecting chemical resistance include: temperature, pressure, internal or external stresses (such as centrifugation), and length of exposure to and concentration of the chemical. As temperature increases, resistance to attack decreases.

***Warning!**

Do not store strong oxidizing agents in plastic containers except those made of Teflon® FEP, PFA, or PTFE. Other plastics will become brittle after prolonged exposure.

CHEMICAL	LDPE	HDPE	PP/PPCO	PMP	FEP/PTFE/PFA	ECTFE/ETFE	PC	PVC	PSF	PVDF	PS	NYL	Stainless steel	Glass	Ceramic
Acetaldehyde	GN	GF	GN	GN	EE	GF	FN	GN	NN	EE	NN	EG	EE	EE	EE
Acetamide, sat.	EE	EE	EE	EE	EE	EE	NN	NN	NN	—	EE	EE	EE	EE	EE
Acetic acid, 5%	EE	EE	EE	EE	EE	EE	EG	EE	EE	EE	EG	FN	EE	EE	EE
Acetic acid, 50%	EE	EE	EE	EE	EE	EG	EG	EG	GG	EE	GG	NN	EE	EE	EE
Acetone	NN	NN	EE	EE	EE	GF	NN	NN	NN	NN	NN	EE	EE	EE	EE
Acetonitrile	EE	EE	FN	FN	EE	EE	NN	NN	NN	EE	NN	EE	EG	EE	EE
Acrylonitrile	EE	EE	FN	FN	EE	EG	NN	NN	NN	GF	NN	EG	EG	EE	EE
Adipic acid	EG	EE	EE	EE	EE	EE	EE	EG	GG	—	EE	EF	EG	EE	EE
Alanine	EE	EE	EE	EE	EE	EE	NN	NN	NN	—	EE	EG	—	—	—
Allyl alcohol	EE	EE	EE	EG	EE	EE	GF	GF	GF	—	GF	NN	EE	EG	EG
Aluminum hydroxide	EG	EE	EG	EG	EE	EE	FN	EG	GG	EE	GG	EE	EE	NN	EE
Aluminum salts	EE	EE	EE	EE	EE	EE	EG	EE	EE	EE	GG	NN	GG	EE	EE
Amino acids	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EG	—	—	—
Ammonia	EE	EE	EE	EE	EE	EE	NN	EG	GF	EE	GF	FF	EE	EE	EE
Ammonium acetate, sat.	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EG	EG	EE	EE
Ammonium glycolate	EG	EE	EG	EG	EE	EE	GF	EE	GG	EE	EE	GG	—	—	—
Ammonium hydroxide, 5%	EE	EE	EE	EE	EE	EE	FN	EE	GG	EE	EF	GF	EE	EE	EE
Ammonium hydroxide, 30%	EG	EE	EG	EG	EE	EE	NN	EG	GG	EE	GF	FN	EE	EE	EE
Ammonium oxalate	EG	EE	EG	EG	EE	EE	EE	EE	EE	EE	EE	GF	EE	EE	EE
Ammonium salts	EE	EE	EE	EE	EE	EE	EG	EG	EE	EE	GG	NN	EE	EE	EE
n-Amyl acetate	GF	EG	GF	GF	EE	EE	NN	NN	NN	EE	NN	EE	EE	EE	EG
Amyl chloride	NN	FN	NN	NN	EE	EE	NN	NN	NN	EE	NN	EG	EG	EE	EE
Aniline	EG	EG	GF	GF	EE	GN	FN	NN	NN	EF	NN	GF	EG	EE	EE
Benzaldehyde	EG	EE	EG	EG	EE	EF	FN	NN	FF	EE	NN	EG	GG	EE	EE
Benzene	FN	NN	GF	GF	EE	EG	NN	NN	NN	EE	NN	EE	GG	EE	EE
Benzoic acid, sat.	EE	EE	EG	EG	EE	EE	EG	EG	FF	EE	GG	NN	EG	EE	EE
Benzyl acetate	EG	EE	EG	EG	EE	EG	FN	NN	NN	—	NN	EG	GG	EE	EE
Benzyl alcohol	NN	FN	NN	NN	EE	EE	NN	GF	NN	EE	NN	NN	GG	EE	EE
Bromine	NN	FN	NN	NN	EE	EG	FN	GN	NN	EE	NN	NN	EE	EG	GG
Bromobenzene	NN	FN	NN	NN	EE	GN	NN	NN	NN	EE	NN	EG	GG	GG	GG
Bromoform	NN	NN	NN	NN	EE	GF	NN	NN	NN	EE	NN	FF	GG	EE	EE
Butadiene	NN	FN	NN	NN	EE	EE	NN	FN	NN	EE	NN	FF	GG	EE	EE
n-Butyl acetate	GF	EG	GF	GF	EE	EG	NN	NN	NN	EE	NN	EE	GG	EE	EE
n-Butyl alcohol	EE	EE	EE	EG	EE	EE	GF	GF	GF	EE	EG	NN	EE	EE	EE
sec-Butyl alcohol	EG	EE	EG	EG	EE	EE	GF	GG	GF	EE	GG	NN	EE	EE	EE
tert-Butyl alcohol	EG	EE	EG	EG	EE	EE	GF	EG	GF	EE	EE	NN	EE	EE	EE
Butyric acid	NN	FN	NN	NN	EE	EE	FN	GN	GG	EE	NN	FN	GG	EE	EE
Calcium hydroxide, conc.	EE	EE	EE	EE	EE	EE	NN	EE	GG	EE	GG	NN	GG	NN	EE
Calcium hypochlorite, sat.	EE	EE	EE	EG	EE	EE	FN	GF	EE	EE	GF	NN	EE	EE	EE
Carbazole	EE	EE	EE	EE	EE	EE	NN	NN	NN	—	EE	EE	—	—	—
Carbon disulfide	NN	NN	NN	NN	EE	EF	NN	NN	NN	EE	NN	EG	EE	EE	EE
Carbon tetrachloride	FN	GF	GF	NN	EE	EE	NN	GF	NN	EE	NN	EE	GG	EE	EE
Cedarwood oil	NN	FN	NN	NN	EE	EG	GF	FN	FF	EE	NN	EG	—	—	—
Cellosolve acetate	EG	EE	EG	EG	EE	EG	FN	FN	NN	EG	NN	EE	GG	EE	EE
Chlorine, 10% in air	GN	EF	GN	GN	EE	EE	EG	EE	NN	EE	FN	NN	FF	EE	EE
Chlorine, 10% (moist)	GN	GF	FN	GN	EE	EE	GF	EG	NN	EE	NN	NN	FF	EE	EE
Chloroacetic acid	EE	EE	EG	EG	EE	EE	FN	FN	NN	E–	GN	NN	GG	EE	EE
p-Chloroacetophenone	EE	EE	EE	EE	EE	EE	NN	NN	NN	—	NN	EG	—	—	—
Chloroform	FN	FN	GF	NN	EE	GF	NN	NN	NN	EE	NN	FF	EE	EE	EE
Chromic acid, 10%	EE	EE	EE	EE	EE	EE	GF	EG	NN	EE	EE	NN	GG	EE	EE
Chromic acid, 50%	EE	EE	GF	GF	EE	EE	FN	EF	NN	EG	FF	NN	FF	EE	NN
Cinnamon oil	NN	FN	NN	NN	EE	EG	GF	NN	FF	—	NN	GF	EE	—	—
Citric acid, 10%	EE	EE	EE	EE	EE	EE	EG	GG	EE	EE	EG	NN	GG	EE	EE
Cresol	NN	FN	GF	NN	EE	EG	NN	NN	NN	EE	NN	NN	EE	EE	EE
Cyclohexane	FN	FN	FN	NN	EE	EG	EG	GF	NN	EE	NN	EE	EE	EE	EE
DeCalin	GF	EG	GF	FN	EE	EE	NN	EG	NN	—	NN	EE	—	—	—
o-Dichlorobenzene	FN	FF	FN	FN	EE	EF	NN	NN	NN	EE	NN	EG	GG	EE	EE
p-Dichlorobenzene	FN	GF	GF	GF	EE	EF	NN	NN	NN	EE	NN	EG	GG	EE	EE
Diethyl benzene	NN	FN	NN	NN	EE	EG	FN	NN	NN	—	NN	EE	GG	EE	EE
Diethyl ether	NN	FN	NN	NN	EE	EG	NN	FN	NN	EG	NN	EE	GG	EE	EE
Diethyl ketone	NN	NN	GG	GF	EE	GF	NN	NN	NN	NN	NN	EE	GG	EE	EE
Diethyl malonate	EE	EE	EE	EG	EE	EE	FN	GN	FF	EG	NN	EE	—	—	—
Diethylene glycol	EE	EE	EE	EE	EE	EE	GF	FN	GG	EE	GG	EE	EE	EE	EE
Diethylene glycol ethyl ether	EE	EE	EE	EE	EE	EE	FN	FN	FF	—	NN	EE	EE	EE	EE
Dimethyl formamide	EE	EE	EE	EE	EE	GG	NN	FN	NN	NN	NN	GF	EE	EE	EE
Dimethylsulfoxide	EE	EE	EE	EE	EE	EG	NN	NN	NN	—	EG	EE	EE	EE	EE
1,4-Dioxane	GF	GG	GF	GF	EE	EF	GF	FN	GF	NN	NN	EF	GG	EE	EE
Dipropylene glycol	EE	EE	EE	EE	EE	EE	GF	GF	GG	—	EE	EE	—	—	—
Ether	NN	FN	NN	NN	EE	EG	NN	FN	NN	EG	NN	EE	EE	EE	EE
Ethyl acetate	EE	EE	EE	FN	EE	EE	NN	NN	NN	NN	NN	EE	GG	EE	EE
Ethyl alcohol (absolute)	EG	EE	EG	EG	EE	EE	EG	EG	EG	EE	FN	NN	EE	EE	EE
Ethyl alcohol, 40%	EG	EE	EG	EG	EE	EE	EG	EE	EG	EE	GF	NN	EE	EE	EE
Ethyl benzene	FN	GF	FN	FN	EE	GF	NN	NN	NN	—	NN	EE	GG	—	—
Ethyl benzoate	FF	GG	GF	GF	EE	EG	NN	NN	NN	NN	NN	EE	—	—	—
Ethyl butyrate	GN	GF	GN	FN	EE	EG	NN	NN	NN	NN	NN	EE	EG	—	—
Ethyl chloride, liquid	FN	FF	FN	FN	EE	EE	NN	NN	NN	EE	NN	GF	EE	EE	EE
Ethyl cyanoacetate	EE	EE	EE	EE	EE	EE	FN	FN	FF	NN	GN	GF	—	—	—
Ethyl lactate	EE	EE	EE	EE	EE	EE	FN	FN	FF	NN	FN	EG	—	—	—
Ethylene chloride	GN	GF	FN	NN	EE	EE	NN	NN	NN	EE	NN	EG	GG	EE	EE
Ethylene glycol	EE	EE	EE	EE	EE	EE	GF	EE	EE	EE	EE	EE	GG	EE	EE
Ethylene glycol methyl ether	EE	EE	EE	EE	EE	EE	FN	FN	FF	—	NN	EE	—	—	—
Ethylene oxide	FF	GF	FF	FN	EE	EE	FN	FN	EE	EE	NN	EE	GG	EE	EE
Fluorides	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	GG	EE	—	—	—
Fluorine	FN	GN	FN	FN	EG	EF	GF	EG	NN	—	NN	NN	EG	EE	—
Formaldehyde, 10%	EE	EE	EE	EG	EE	EE	EG	GF	GF	EE	FN	GF	EE	EE	EE

Chemical Resistance of Labware Materials

CHEMICAL	LDPE	HDPE	PP/PPCO	PMP	FEP/PTFE/PFA	ECTFE/ETFE	PC	PVC	PSF	PVDF	PS	NYL	Stainless steel	Glass	Ceramic
Formaldehyde, 40%	EG	EE	EG	EG	EE	EE	EG	GF	GF	EE	NN	GF	EE	EE	EE
Formic acid, 3%	EG	EE	EG	EG	EE	EE	EG	GF	GG	EE	EG	NN	GG	EE	EE
Formic acid, 50%	EG	EE	EG	EG	EE	EE	EG	GF	GG	EE	FF	NN	GG	EE	EE
Formic acid, 98 to 100%	EG	EE	EG	EF	EE	EE	EF	FN	FF	EE	FF	NN	GG	EE	EE
Freon® TF	EG	EG	EG	FN	EE	EG	GF	GF	EG	EE	FN	—	EE	EE	EE
Fuel oil	FN	GF	EG	GF	EE	EE	EG	EE	EG	EE	NN	EE	EE	EE	EE
Gasoline	FN	GG	GF	GF	EE	EE	FF	GN	FF	EE	NN	EE	EE	EE	EE
Glacial acetic acid	EG	EE	EG	EG	EE	EE	NN	EG	FN	EG	NN	NN	EG	EE	EE
Glycerine	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE
n-Heptane	FN	GF	FF	FF	EE	EE	EG	GF	EG	EE	NN	EE	EE	EE	EE
Hexane	NN	GF	GF	FN	EE	EE	FN	GN	EG	EE	NN	EE	EE	EE	EE
Hydrochloric acid, 1 to 5%	EE	EE	EE	EG	EE	EE	EE	EE	EE	EE	EE	NN	NN	EE	EE
Hydrochloric acid, 20%	EE	EE	EE	EG	EE	EE	GF	EG	EE	EE	EE	NN	NN	EE	EE
Hydrochloric acid, 35%	EE	EE	EG	EG	EE	EE	NN	GF	EE	EE	FF	NN	NN	EE	EE
Hydrofluoric acid, 4%	EG	EE	EG	EG	EE	EE	GF	GF	GF	EE	GF	NN	NN	NN	—
Hydrofluoric acid, 48%	EE	EE	EE	EE	EE	EE	NN	GF	FN	EE	NN	NN	NN	NN	NN
Hydrogen peroxide, 3%	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EG	NN	GG	EE	EG
Hydrogen peroxide, 30%	EG	EE	EG	EG	EE	EE	EE	EE	EE	EE	EG	NN	GG	EE	EG
Hydrogen peroxide, 90%	EG	EE	EG	EG	EE	EE	EE	EG	EE	E-	EG	NN	GG	EE	EG
Isobutyl alcohol	EE	EE	EE	EG	EE	EE	EG	EG	EG	EE	GG	NN	EE	EE	EE
Isopropyl acetate	GF	EG	GF	GF	EE	EG	NN	NN	NN	—	NN	EE	GG	EE	EE
Isopropyl alcohol	EE	EE	EE	EE	EE	EE	EE	EG	EE	EE	EG	NN	GG	EE	EE
Isopropyl benzene	FN	GF	FN	NN	EE	EG	NN	NN	NN	—	NN	EG	—	—	—
Kerosene	FN	GG	GF	GF	EE	GF	EE	EE	GF	EE	NN	EE	EE	EE	EE
Lactic acid, 3%	EG	EE	EG	EG	EE	EE	EG	GF	EE	EG	GG	NN	GG	EE	EE
Lactic acid, 85%	EE	EE	EG	EG	EE	EG	EG	GF	EE	GF	GG	NN	GG	EE	EE
Methoxyethyl oleate	EG	EE	EG	EG	EE	EE	FN	NN	NN	—	NN	EG	—	—	—
Methyl alcohol	EE	EE	EE	EE	EE	EE	GF	EF	GF	EE	FN	NN	EE	EE	EE
Methyl ethyl ketone	NN	NN	EG	NN	EE	GF	NN	NN	NN	NN	NN	EE	EE	EE	EE
Methyl isobutyl ketone	NN	NN	GF	FF	EE	GF	NN	NN	NN	GN	NN	EE	GG	EE	EE
Methyl propyl ketone	GF	EG	GF	FF	EE	EG	NN	NN	NN	NN	NN	EE	EE	—	—
Methylene chloride	FN	FN	FN	FN	EE	GG	NN	NN	NN	NN	NN	GF	GG	EE	EE
Mineral oil	GN	EE	EE	EG	EE	EE	EG	EG	EE	EE	EE	EE	EE	EE	EE
Nitric acid, 1 to 10%	EE	EE	EE	EE	EE	EE	EG	EG	EF	EE	GN	NN	EE	EE	EE
Nitric acid, 50%	GN	GN	FN	GN	EE	EE	GF	GF	GF	EG	NN	NN	EG	EG	NN
Nitric acid, 70%	FN	GN	NN	GF	EE	EE	NN	FN	NN	GF	NN	NN	GG	EE	NN
Nitrobenzene	NN	FN	NN	NN	EE	EG	NN	NN	NN	EN	NN	FF	GG	EE	EE
n-Octane	EE	EE	EE	EE	EE	EE	GF	FN	GF	EE	NN	EE	EE	EE	EE
Orange oil	FN	GF	GF	FF	EE	EE	FF	FN	FF	EE	NN	GF	EE	EE	EE
Ozone	EG	EE	EG	EE	EE	EE	EG	EG	EE	EE	FF	EG	EG	—	—
Perchloric acid	GN	GN	GN	GN	GF	EG	NN	GN	NN	EE	GF	NN	FF	EE	EE
Perchloroethylene	NN	NN	NN	NN	EE	EE	NN	NN	NN	EE	NN	EE	EG	EE	EE
Phenol, crystals	GN	GF	GN	FG	EE	EE	NN	FN	FF	EE	NN	NN	GG	EE	EE
Phosphoric acid, 1 to 5%	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	GG	NN	NN	EE	EE
Phosphoric acid, 85%	EE	EE	EG	EG	EE	EE	EG	EG	EE	EE	EG	NN	NN	EE	EE
Pine oil	GN	EG	EG	GF	EE	EG	GF	FN	FF	EE	NN	GF	EE	—	—
Potassium hydroxide, 1%	EE	EE	EE	EE	EE	EE	FN	EE	EE	EE	GG	FF	EG	GF	GF
Potassium hydroxide, conc.	EE	EE	EE	EE	EE	EE	NN	EG	EE	EG	GG	FF	EG	NN	NN
Propane gas	NN	FN	NN	NN	EE	EE	FN	EG	FF	EE	NN	FF	GF	NN	NN
Propylene glycol	EE	EE	EE	EE	EE	EE	GF	FN	GG	—	EE	EE	GG	EE	EE
Propylene oxide	EG	EE	EG	EG	EE	FN	GF	FN	GG	FN	NN	EE	EE	—	—
Resorcinol, sat.	EE	EE	EE	EE	EE	EE	GF	FN	NN	—	GF	NN	—	—	—
Resorcinol, 5%	EE	EE	EE	EE	EE	EF	GF	GN	NN	—	GF	NN	—	—	—
Salicylaldehyde	EG	EE	EG	EG	EE	EN	GF	FN	FF	EG	NN	EG	—	—	—
Salicylic acid, powder	EE	EE	EE	EG	EE	EE	EG	GF	EE	EE	EE	EG	GG	EE	EE
Salicylic acid, sat.	EE	EE	EE	EE	EE	EE	EG	GF	EE	EE	EG	NN	GG	EE	EE
Salt solutions, metallic	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	GG	FF	EG	—	—
Silver acetate	EE	EE	EE	EE	EE	EE	EG	GG	EE	EE	GG	EF	—	—	—
Silver nitrate	EG	EE	EG	EE	EE	EE	EE	EG	EE	EE	GF	NN	GG	EE	EE
Sodium acetate, sat.	EE	EE	EE	EE	EE	EE	EG	GF	EE	EE	GG	FF	GG	EE	EE
Sodium hydroxide, 1%	EE	EE	EE	EE	EE	EE	FN	EE	EE	EE	GG	EE	GG	GE	GE
Sodium hydroxide, 50% to sat.	GG	EE	EE	EE	EE	EE	NN	NN	EG	EG	EE	GF	GF	NN	NN
Sodium hypochlorite, 15%	EE	EE	GF	EE	EE	EE	GF	EE	EE	EE	EE	NN	NN	EE	EG
Stearic acid, crystals	EE	EE	EE	EE	EE	EE	EG	EG	GG	EE	EG	EF	EG	EE	EE
Sulfuric acid, 1 to 6%	EE	EE	EE	EE	EE	EE	EE	EG	EE	EE	EG	NN	FN	EE	EG
Sulfuric acid, 20%	EE	EE	EG	EG	EE	EE	EG	EG	EE	EE	EG	NN	NN	EE	GG
Sulfuric acid, 60%	EG	EE	EG	EG	EE	EE	GF	EG	EE	EE	GN	NN	NN	EE	NN
Sulfuric acid, 98%	GG	GG	FN	GG	EE	EE	NN	GN	NN	EG	NN	NN	NN	EE	NN
Sulfur dioxide, liq., 46 psi	NN	FN	NN	NN	EE	EG	GN	FN	GG	EE	NN	NN	FN	NN	NN
Sulfur dioxide, wet or dry	EE	EE	EE	EE	EE	EE	EG	EG	GG	GE	FN	NN	FN	EE	EE
Sulfur salts	FN	GF	FN	FN	EE	EG	FN	NN	GG	GF	NN	NN	—	—	—
Tartaric acid	EE	EE	EE	EE	EE	EE	EG	EG	EE	EE	GG	EF	FF	EE	EE
Tetrahydrofuran	FN	GF	GF	FF	EE	GF	NN	NN	NN	FN	NN	EE	EE	EE	EE
Thionyl chloride	NN	NN	NN	NN	EE	EE	NN	NN	NN	—	NN	NN	NN	EE	EE
Toluene	FN	GG	GF	FF	EE	EE	FN	NN	NN	EE	NN	EE	EE	EE	EE
Tributyl citrate	GF	EG	GF	GF	EE	EG	NN	FN	FF	EF	NN	EG	—	—	—
Trichloroethane	NN	FN	NN	NN	EG	NN	NN	NN	NN	—	NN	EE	GG	EE	EE
Trichloroethylene	NN	FN	NN	NN	EE	EG	NN	NN	NN	EE	NN	EE	GG	EE	EE
Triethylene glycol	EE	EE	EE	EE	EE	EE	EG	GF	EE	—	EG	EE	—	—	—
Tripropylene glycol	EE	EE	EE	EE	EE	EE	EG	GF	EE	—	EE	EE	—	—	—
Turpentine	FN	GG	GF	FF	EE	EE	FN	GF	NN	EE	NN	EE	EE	EE	EE
Undecyl alcohol	EF	EG	EG	EG	EE	EG	GF	EF	FF	EE	GG	EE	—	—	—
Urea	EE	EE	EE	EG	EE	EE	NN	GN	FF	EE	EG	EE	GG	EE	EE
Vinylidene chloride	NN	FN	NN	NN	EE	GF	NN	NN	NN	EE	NN	NN	GG	—	—
Xylene	GN	GF	FN	FN	EE	EG	NN	NN	NN	EE	NN	EE	GG	EE	EE
Zinc stearate	EE	EE	EE	EE	EE	EE	EE	EG	EE	EE	EE	EE	EE	EE	EE

*Warning!

The plastic resin information in these tables (does not include SS, glass, or ceramic) has been provided by Nalgene and is reprinted with their permission. It should be used ONLY as a guide for selecting labware for testing.

Test the labware for 72 hours under expected or proposed conditions of use, BEFORE putting into service. Test with care to avoid injury or property damage.

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Relative Activity of Restriction Enzymes in 10X Buffers

The 10X Buffer supplied with each restriction enzyme is optimized to give 100% activity at the 1X concentration. In many cases, good activity is also obtained using one of the Fisher BioReagents Quad 4* 10X Buffers. This table may be used to select the best buffer for digestions with multiple restriction enzymes. Enzyme activity is expressed as a percent of the activity obtained with the optimized buffer for each enzyme in a one-hour digest.

Enzyme	Buffer Supplied with Enzyme	A	B	C	D	Universal*	Enzyme Assay Temperature
Aat II	J	50–75%	10–25%	<10%	<10%	<10%	37°C
Acc I	G	50–75%	25–50%	25–50%	10–25%	25–50%	37°C
Acc III	F	<10%	10–25%	25–50%	25–50%	<10%	65°C
*Acc*65 I	D	10–25%	50–75%	75–100%	100%	100%	37°C
*Acc*B7 I	E	10–25%	50–75%	100%[a]	<10%	100%	37°C
Age I	K	25–50%	25–50%	25–50%	50–75%	100%	37°C
Alu I	B	75–100%	100%	75–100%	10–25%	10–25%	37°C
*Alw*26 I	C	10–25%	25–50%	100%	10–25%	75–100%	37°C
*Alw*44 I	C	<10%	25–50%	100%	25–50%	100%	37°C
Apa I	A	100%	50–75%	50–75%	<10%	75–100%	37°C
Ava I	B	10–25%	100%	50–75%	25–50%	<10%	37°C
Ava II	C	50–75%	50–75%	100%	25–50%	25–50%	37°C
Bal I	G	10–25%	<10%	<10%	<10%	<10%	37°C
*Bam*H I	E	75–100%[a]	75–100%	75–100%	50–75%	75–100%	37°C
Ban I	G	25–50%	25–50%	10–25%	<10%	100%	50°C
Ban II	E	75–100%	75–100%	75–100%	25–50%	100%	37°C
Bbu I	A	100%	75–100%	75–100%	<10%	100%	37°C
Bcl I	C	10–25%	75–100%	100%	50–75%	10–25%	50°C
Bgl I	D	10–25%	25–50%	75–100%	100%	100%	37°C
Bgl II	D	25–50%	75–100%	75–100%	100%	<10%	37°C
*Bsa*M I	D	10–25%	25–50%	50–75%	100%	25–50%	65°C
*Bsa*O I	C	10–25%	50–75%	100%	25–50%	100%	50°C
*Bsp*1286 I	A	100%	50–75%	25–50%	10–25%	75–100%	37°C
*Bsr*BR I	H	10–25%	50–75%[a]	100%[a]	50–75%	100%	65°C
*Bsr*S I	D	10–25%	25–50%	10–25%	100%	100%	65°C

* Not recommended due to potential star activity.

Relative Activity of Restriction Enzymes in 10X Buffers (contd.)

Enzyme	Buffer Supplied with Enzyme	A	B	C	D	Universal*	Enzyme Assay Temperature
*Bss*H II	H	75–100%	50–75%	75–100%	50–75%	75–100%	50°C
*Bst*71 I	D	10–25%	25–50%	25–50%	100%	10–25%	50°C
*Bst*98 I	D	<10%	10–25%	10–25%	100%	25–50%	37°C
*Bst*E II	D	25–50%	50–75%	50–75%	100%	100%	60°C
*Bst*O I	C	10–25%	25–50%	100%	25–50%	<10%	60°C
*Bst*X I	D	<10%	10–25%	25–50%	100%	10–25%	50°C
*Bst*Z I	D	<10%	<10%	10–25%	100%	10–25%	50°C
*Bsu*36 I	E	<10%	25–50%	50–75%	25–50%	50–75%	37°C
Cfo I	B	75–100%	100%	75–100%	25–50%	100%	37°C
Cla I	C	75–100%	75–100%	100%	75–100%	100%	37°C
Csp I	K	<10%	10–25%	25–50%	50–75%	10–25%	30°C
*Csp*45 I	B	25–50%	100%	50–75%	25–50%	50–75%	37°C
Dde I	D	25–50%	25–50%	50–75%	100%	25–50%	37°C
Dpn I	B	50–75%	100%	75–100%	50–75%	100%	37°C
Dra I	B	75–100%	100%	75–100%	50–75%	25–50%	37°C
*Ecl*HK I	E	<10%	<10%	75–100%	10–25%	50–75%	37°C
*Eco*47 III	D	<10%	25–50%	50–75%	100%	25–50%	37°C
*Eco*52 I	L	<10%	<10%	10–25%	25–50%	<10%	37°C
*Eco*ICR I	B	10–25%	100%	75–100%	<10%	100%	37°C
*Eco*R I	H	25–50%	50–75%	50–75%	50–75%	100%a	37°C
*Eco*R V	D	10–25%	25–50%	50–75%	100%	100%	37°C
Fok I	B	75–100%	100%	75–100%	25–50%	50–75%	37°C
Hae II	B	50–75%	100%	50–75%	10–25%	100%	37°C
Hae III	C	75–100%	75–100%	100%	50–75%	100%	37°C
Hha I	C	50–75%	75–100%	100%	50–75%	75–100%	37°C
Hinc II	B	25–50%	100%	25–50%	50–75%	100%	37°C
Hind III	E	25–50%	100%	75–100%	10–25%	50–75%	37°C
Hinf I	B	50–75%	100%	75–100%	75–100%	50–75%	37°C
Hpa I	J	25–50%	50–75%	25–50%	10–25%	100%	37°C
Hpa II	A	100%	50–75%	50–75%	10–25%	100%	37°C

* Not recommended due to potential star activity. (continued on next page)

Relative Activity of Restriction Enzymes in 10X Buffers (contd.)

Enzyme	Buffer Supplied with Enzyme	A	B	C	D	Universal*	Enzyme Assay Temperature
Hsp92 I	F	10–25%	75–100%	50–75%	25–50%	10–25%	37°C
Hsp92 II	K	10–25%	25–50%	25–50%	<10%	<10%	37°C
I–*Ppo* I	N/A	10–25%	25–50%	25–50%	25–50%	—	37°C
Kpn I	J	100%a	25–50%	25–50%	<10%	75–100%	37°C
Mbo I	C	10–25%	75–100%	100%	50–75%	<10%	37°C
Mbo II	B	10–25%	100%	50–75%	75–100%	100%	37°C
Mlu I	D	10–25%	25–50%	50–75%	100%	10–25%	37°C
Msp I	B	75–100%	100%	75–100%	25–50%	25–50%	37°C
MspA1 I	C	25–50%	100%a	100%	10–25%	100%	37°C
Nae I	A	100%	50–75%	25–50%	<10%	50–75%	37°C
Nar I	G	75–100%	50–75%	75–100%	25–50%	50–75%	37°C
Nci I	B	100%a	100%	25–50%	25–50%	50–75%	37°C
Nco I	D	50–75%	75–100%	75–100%	100%	75–100%	37°C
Nde I	D	<10%	<10%	25–50%	100%	25–50%	37°C
Nde II	D	<10%	<10%	10–25%	100%	25–50%	37°C
NgoM IV	Universal	100%a	100%a	100%a	<10%	100%	37°C
Nhe I	B	75–100%	100%	75–100%	10–25%	100%	37°C
Not I	D	<10%	10–25%	25–50%	100%	25–50%	37°C
Nru I	K	<10%	<10%	<10%	50–75%	10–25%	37°C
Nsi I	D	10–25%	50–75%	50–75%	100%	10–25%	37°C
Pst I	H	10–25%	50–75%	50–75%	50–75%	25–50%	37°C
Pvu I	D	10–25%	25–50%	50–75%	100%	<10%	37°C
Pvu II	B	25–50%	100%	50–75%	25–50%	50–75%	37°C
Rsa I	C	75–100%	75–100%	100%	<10%	<10%	37°C
Sac I	J	75–100%	25–50%	25–50%	<10%	100%	37°C
Sac II	C	100%	50–75%	100%	50–75%	<10%	37°C
Sal I	D	<10%	10–25%	25–50%	100%	<10%	37°C
Sau3A I	B	25–50%	100%	75–100%	<10%	100%	37°C
Sau96 I	C	25–50%	25–50%	100%	50–75%	50–75%	37°C
Sca I	K	<10%	100%a	50–75%	75–100%	10–25%	37°C

* Not recommended due to potential star activity. (continued on next page)

Relative Activity of Restriction Enzymes in 10X Buffers (contd.)

Enzyme	Buffer Supplied with Enzyme	A	B	C	D	Universal*	Enzyme Assay Temperature
Sfi I	B	75–100%	100%	75–100%	25–50%	75–100%	50°C
Sgf I	C	25–50%	25–50%	100%	<10%	<10%	37°C
Sin I	A	100%	75–100%	50–75%	10–25%	100%	37°C
Sma I	J	<10%	<10%	<10%	<10%	100%	25°C
*Sna*B I	B	50–75%	100%	50–75%	<10%	100%	37°C
Spe I	B	75–100%	100%	75–100%	75–100%	100%	37°C
Sph I	K	75–100%	75–100%	100%a	75–100%	10–25%	37°C
Ssp I	E	10–25%	50–75%	50–75%	75–100%	50–75%	37°C
Stu I	B	75–100%	100%	75–100%	50–75%	50–75%	37°C
Sty I	F	25–50%	75–100%	75–100%	75–100%	<10%	37°C
Taq I	E	10–25%	25–50%	50–75%	50–75%	100%	65°C
*Tru*9 I	F	75–100%	50–75%	75–100%	25–50%	25–50%	65°C
*Tth*111 I	B	50–75%	100%	75–100%	25–50%	100%	65°C
Vsp I	D	<10%	25–50%	75–100%	100%	<10%	37°C
Xba I	D	50–75%	75–100%	75–100%	100%	100%	37°C
Xho I	D	25–50%	75–100%	75–100%	100%	10–25%	37°C
Xho II	C	25–50%	25–50%	100%	10–25%	<10%	37°C
Xma I	B	50–75%	100%	25–50%	<10%	50–75%	37°C
Xmn I	B	75–100%	100%	75–100%	10–25%	75–100%	37°C

* Not recommended due to potential star activity.

Restriction Enzyme Buffer Composition (IX)

Buffer	pH (at 37°C)	Tris-HCl (mM)	MgCl$_2$ (mM)	NaCl (mM)	KCl (mM)	DTT (mM)
A	7.5	6	6	6	—	1
B	7.5	6	6	50	—	1
C	7.9	10	10	50	—	1
D	7.9	6	6	150	—	1
E	7.5	6	6	100	—	1
F	8.5	10	10	100	—	1
G	8.2	50	5	—	—	—
H	7.5	90	10	50	—	—
J	7.5	10	7	—	50	1
K	7.4	10	10	—	150	—
L	9.0	10	3	100	—	—

Universal Buffer (1X) = 25mM Tris-acetate (pH 7.5 at 37°C), 100mM potassium acetate, 10mM magnesium acetate, 1mM DTT.

Notes:

1. For each 10°C rise in temperature between 0°C and 25°C, the pH of Tris buffers decreases 0.31 pH units.
2. For each 10°C rise in temperature between 25°C and 37°C, the pH of Tris buffers decreases 0.25 pH units.

Trademark Name	Owner
1st Choice	Fisher Scientific
1-Step	Thermo Scientific
2D Matrix	Thermo Scientific
2DCypher	Thermo Scientific
3M	3M
3UV	UVP
4H	North Safety Products
4-in-1 EZ Tote	Nalgene
4-Zone	BioTek Instruments
5 PRIME	5 PRIME

A

Trademark Name	Owner
Abbe	Graff/Ross Holdings
ABgene	Thermo Scientific
ABI Prism	Applera Corp.
ABsolute	Thermo Scientific
Absorbond	Texwipe
AccessQuick	Promega Corp.
accuCap	Fisher Scientific
accuFet	Fisher Scientific
accuFlame	Fisher Scientific
accuflex	Fisher Scientific
AccuGENE	Cambrex Bio Science
accumet	Fisher Scientific
accupHast	Fisher Scientific
accuro	Draeger Safety, Inc.
accuSeries	Fisher Scientific
accuSeries II	Fisher Scientific
accuSpin	Fisher Scientific
AccuTech	Ansell Healthcare
accu-Test	Bioscience, Inc.
AccuTrac	Commonwealth Biotechnologies, Inc.
accuTupH	Fisher Scientific
accuTupH+	Fisher Scientific
AccuVac	Hach Co.
Acidicase	Becton Dickinson
aCOLyte	Synoptics Limited
Acorn	Cole-Parmer Instrument Co.
AcroSeal	Fisher Scientific
ActiveX	Microsoft Corp.
Acute-Kare	Steris Corp.
ADCF	Thermo Scientific
Adventurer	Ohaus Corp.
Aerocarrier	Thermo Scientific
Aerosol	American Cyanamid
AFB✓	Fisher Scientific
AffinityPak	Thermo Scientific
AgarMatic	New Brunswick Scientific
Agilent	Agilent Technologies, Inc.
Agilent Technologies	Agilent Technologies, Inc.
Air Cadet	Cole-Parmer Instrument Co.
Airejector	Fisher Scientific
Air'It	Control Co.
Air-Mate	3M

Trademark Name	Owner
Airspray	Airspray International
AirTite	AirTite, Inc.
Alcare Plus	Steris Corp.
Alcott	National Scientific Co.
Alexa Fluor	Molecular Probes, Inc.
Alkacid	Fisher Scientific
All-Guard	Alltech Associates
Alltech	Alltech Associates
Alltima	Alltech Associates
Allure	Restek Corporation
Alpha	ITW Texwipe
Alpha Calf	Thermo Scientific
AlphaSorb	Texwipe
AlphaWipe	Texwipe
ALPS 3000	Thermo Fisher Scientific
Altair	Mine Safety Appliances
Altex	Beckman Coulter
Alundum	Saint-Gobain Performance Plastics
American Allsafe	American Allsafe Co.
Amicon	Millipore Corp.
Ampac	Ampac Holdings LLC
Amplifluor	Intergen Co.
Amplitron	Thermo Scientific
Amplitude	Contec, Inc.
AnaeroGen	Oxoid Inc.
AnaeroJar	Oxoid Inc.
AnaeroPack	Mitsubishi Gas Chemical Company, Inc.
AnaeroPouch	Mitsubishi Gas Chemical Company, Inc.
Anodisc	Whatman Inc.
Anopore	Whatman Inc.
Anotop	The Whatman Group
Ansell	Ansell Healthcare
ANSI	American National Standards Institute
ANSUL	Ansul, Inc.
AOC-14	Shimadzu
AOC-17	Shimadzu
AOC-20	Shimadzu
AOSafety	Aearo Co.
AP2000	National Scientific Co.
Apiezon	M&I Materials Ltd.
A-Plan	Carl Zeiss
Aplus	Thermo Scientific
Apo-ONE	Promega Corp.
AQUAfast	Thermo Scientific
Aqualine	Fisher Scientific
AquaSil	Thermo Scientific
AquaPro	R-Tech UENO
AquaPur	Decon Laboratories
AquaStar	EMD Chemicals
Aquatrode	Metrohm Ltd.
Arc Quencher	Harvard Apparatus
ArchivePure	5 PRIME GmbH
Arctic Express	Thermo Scientific

Trademark Name	Owner
Argos	Argos Technologies, Inc.
ART	Molecular BioProducts
Ascarite II	Thomas Scientific
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers Inc.
Assurance	SPEX CertiPrep
ASTM	American Society for Testing and Materials
Astoria	Astoria-Pacific, Inc.
Astral	Bio Plas Inc.
Astro OTG	Bacou-Dalloz
Astrospec 3000	Bacou-Dalloz
AT	International Business Machines
ATCC	American Type Culture Collection
Atlas Fit	Perfect Fit Glove Co.
At-Speed	Thermo Scientific
At-Start	Thermo Scientific
AutoCal	Thermo Scientific
Autoclean	Benzing Technologies, Inc.
Autoclip	Becton Dickinson
Automation Certified	Zymark Corp.
Autoprime	Scientific Systems
AutoSentry	Scotsman Ice Systems
Auto-Sep	SGE International Australia
Autovial	Whatman Inc.
Axioskop	Carl Zeiss
Axiostar	Carl Zeiss

B

Trademark Name	Owner
B3 Media Bag	Nalgene
Bacdown	Decon Laboratories
Bacharach	Bacharach Inc.
BACTi	Remel, Inc.
Bacti-Cinerator	Sherwood Medical
Bactidrop	Remel, Inc.
BACTi STAPH	Remel, Inc.
BacTiter-Glo	Promega Corp.
Bacto	Difco Laboratories
Bag-Within-A-Bag	ITW Texwipe
BalanceTalk	Labtronics, Inc.
Bank-It	Nunc
Bantam	Thermo Scientific
Bard-Parker	Becton Dickinson
Barnant	Thermo Scientific
Barnstead	Thermo Scientific
Barnstead/Thermolyne	Thermo Scientific
Baseline	Seastar Chemicals, Inc.
Basic	Labconco
Bausch & Lomb	Bausch & Lomb, Inc.
BBL	Becton Dickinson
BD	Becton Dickinson
BD BioCoat	Becton Dickinson
BD Cell	Becton Dickinson
BD CultureSwab	Becton Dickinson
BDD	Decon Laboratories
BD Falcon	Becton Dickinson

Trademark Name	Owner
BD Matrigel	BD Biosciences
Beckman	Beckman Instruments
Bel-Art	Bel-Art Products
Benchkote	Whatman Inc.
Benchkote Plus	Whatman Inc.
BenchMate	Oxford Worldwide LLC
Best	Best Mfg.
BetaWipe	Texwipe
Bevel-Seal	Kontes Glass
Bev-L-Edge	Propper Manufacturing
BGS	Thermo Scientific
BigDye	PE Corp.
Bio-Bag	Becton Dickinson
BioBasic	Thermo Scientific
Bio-Cane	Thermo Scientific
Bio-Cell	BioTek Instruments
Bio-Cert	Brand GMBH & Co. KG
Bio-Clean	Stanbio Laboratory
BioCoat	Becton Dickinson
BioDoc-It	Ultra Violet Products Inc.
BioFlo	New Brunswick Scientific
BioMate	Thermo Scientific
BioMax	Eastman Kodak Co.
Biomax	Millipore Corp.
Biomek	Beckman Instruments
Biometra	Biometra
Biopore	Millipore Corp.
BioPORTER	Genlantis
BioProcess Container	Thermo Scientific
Bioptechs	Bioptechs, Inc.
Biopur	Eppendorf AG
BioRobotix	Molecular BioProducts
Biosate	Becton Dickinson
Bio-Stack	BioTek Instruments
Biotage	Biotage, Inc.
Biotainer	Nalgene
BioTek	BioTek Instruments
BioWhittaker	Cambrex Bio Science
Black & Decker	Black & Decker Corporation
Bleach-Rite	Current Technologies, Inc.
BloodBloc	Fisher Scientific
BlueMax	Becton Dickinson
BlueRanger	Thermo Scientific
Blue-Spirit	Thermo Scientific
Bluetooth	Bluetooth Sig, Inc.
Boekel	Boekel Scientific
Boileezers	Fisher Scientific
Bouncer	Rubbermaid Commercial Products
Bovine Growth Serum	Thermo Scientific
B-PER	Thermo Scientific
B-pure	Thermo Scientific
Bradtect	Bradley Corp.
Brady	Brady Corp.
Bradyprinter	Brady Corp.
Brand	Brand GMBH & Co. KG
BRAND	BrandTech
BrandTech	BrandTech
BreakApart	Nalgene
Breathe Easy	3M
Bright-Glo	Promega Corp.
Bright-Line	Hausser Scientific
Brij	ICI Americas
Brinkmann	Brinkmann Instruments
BriskHeat	BH Thermal
BROEN	Broen A/S
Brute	Rubbermaid Commercial Products
BTO	Chromatography Research Supplies, Inc.
BTX	Harvard Apparatus
Büchi	Büchi Labortechnik AG
BufferPac	Fisher Scientific
Built-in-Ballast	Spectronics Corp.
Bulbsaver	Spectronics Corp.
Bull Driver	Klein Tools
Burn-up Bin	Dynalon
BuzzPlugs	Applied Scientific
Bytac	Saint-Gobain Performance Plastics

C

Trademark Name	Owner
Cahn	Thermo Scientific
Cal Stat	Steris Corp.
Calpain-Glo	Promega Corp.
cAMP-Glo	Promega Corp.
CampyGen	Oxoid Inc.
CampyPak Plus	Becton Dickinson
Canners and Handlers	Ansell Healthcare
Cannon	Cannon Instrument Co.
Carbitol	Union Carbide
Carboloy	Carboloy, Inc.
Carbowax	Union Carbide
Carb-X	Rubbermaid Commercial Products
Cardinal Health	Cardinal Health
Carl Zeiss	Carl Zeiss
Carlo Erba	Pharmacia S.P.A.
CART2	Wheaton Inc.
Caspase-Glo	Promega Corp.
Castaloy	Fisher Scientific
CC2	Nalgene
CCM1	Thermo Scientific
CCM3	Thermo Scientific
CDM4CHO	Thermo Scientific
CDM4MAb	Thermo Scientific
CDM4NSO	Thermo Scientific
CDM4Retino	Thermo Scientific
Celite	Manville Corporation
Cell Spinbar	Bel-Art Products
CellBIND	Corning
cellgro	Mediatech, Inc.
cellgro FREE	Mediatech, Inc.
Cello-Grease	Fisher Scientific
Cellomics	Thermo Scientific
Cello-Seal	Fisher Scientific
Cellosolve	Union Carbide
CellScreen	innovatis GmbH Corp.
CellSTACK	Corning
Cellstripper	Mediatech, Inc.
CellTiter 96	Promega Corp.
CellTiter-Blue	Promega Corp.
CellTiter-Glo	Promega Corp.
Celstir	Wheaton Inc.
Centra	Thermo Scientific
Centricon	Millipore Corp.
Centrific	Fisher Scientific
Centriplus	Millipore Corp.
CentriStar	Corning
CentriVap	Labconco
Centronics	Genicom Corp.
Centura	Justrite Mfg. Co.
Cepheid	Cepheid Corporation
Certified	I-Chem
C-Flex	Concept Polymer
Chamber Slide	Nunc
Chem Master	Best Mfg.
ChemAlert	Fisher Scientific
CHEMetrics	CHEMetrics, Inc.
Chemets	CHEMetrics, Inc.
Chemi-Scraper	Fisher Scientific
Chemraz	Greene, Tweed of Delaware, Inc.
Chemstar	Welch Vacuum
ChemSW	ChemSW, Inc.
ChemTek	Ansell Healthcare
Chemware	Saint-Gobain Performance Plastics
Chloroflex	Best Mfg.
Chromaflex	Kontes Glass
Chromel	Hoskins Manufacturing
Chromerge	Bel-Art Products
Chums	Chums Limited
CiDecon	Decon Laboratories
CiDehol	Decon Laboratories
Cimarec	Thermo Scientific
CIS Chemical Inventory System	ChemSW, Inc.
Citrad	Decon Laboratories
Claritas PPT	SPEX CertiPrep
Classic	Aearo Co.
Classic	Uvex Safety
Clavies	Bel-Art Products
Clay Adams	Becton Dickinson
Clean-Class	CT International
CleanFoam	Texwipe
CleanPak	Wheaton Inc.
CleanSheets	Nalgene
Clean-Sweep	Labconco

Trademark Name	Owner
CleanTips	Texwipe
Cleanware	Bel-Art Products
Clear	GFS Chemicals
Clearboys	Nalgene
ClearPro	The Specialty Packaging Group
ClearSeal	Wheaton Inc.
CloneSaver	Whatman Inc.
CO_2Gen	Oxoid Inc.
Cold Stop	Eppendorf AG
Coleman	The Coleman Co.
Coli-Count	Millipore Corp.
Colorband	National Scientific Co.
ColorFrost	Thermo Scientific
Colormark	Thermo Scientific
colorpHast	Merck KGaA
ColorSmart	Labconco
Combitips	Eppendorf AG
Comfort Grip	Microflex Corporation
CompactFlash	SanDisk Corporation
COMPLETE	Roche Diagnostics
Compulab	Thermo Scientific
Concept	Thermo Scientific
Conflikt	Decon Laboratories
Contec	Contec, Inc.
Contrad	Decon Laboratories
Contrex	Decon Laboratories
Cool Flow	3M
Cool Pak	Fisher Scientific
Cool Stir	Bel-Art Products
CoolZone	Labconco
Coomassie	Dystar Textilfarben GmbH and Co.
Coors	Adolph Coors Co.
CoorsTek	CoorsTek, Inc.
Copeland	Copeland Corporation
Cornercube	Thermo Scientific
Corning	Corning
Costar	Corning
CovaLink	Nunc
Coverage	Steris Corp.
Coverage Plus NPD	Steris Corp.
Coverglass for Growth	Thermo Scientific
CP-Achromat	Carl Zeiss
CPC	Colder Products Company
CR100	Cardinal Health
Critoseal	Sherwood Medical
CritSpin	StatSpin Technologies, Inc.
Crossbond	Restek Corporation
CRV	Minuteman International
Cryette	Precision Systems
CryoCane	Nunc
CryoClaw	Thermo Scientific
CryoFlex	Nalgene
Cryo-Gloves	Tempshield, Inc.
CryoLatch	Thermo Scientific
CryoLine	Nunc
CryoMed	Thermo Scientific
CryoPlus	Thermo Scientific
Cryo-Safe	Bel-Art Products
CryoSleeve	Nunc
CryoTube	Nunc
Cryovault	Thermo Scientific
Crystal	Becton Dickinson
Crystal/Mount	Biomeda
CrystalEX	Corning
Cryule	Wheaton Inc.
Cube 2ube	Bel-Art Products
Cubee	Thermo Scientific
Cubitainer	Hedwin Corporation
Culti-Loop	Remel, Inc.
CulturTek	Fisher Scientific
Cuvettes Plus	Harvard Apparatus
CV	Steris Corp.
Cy	Amersham Pharmacia Biotech UK Ltd.
CY3	Amersham-Pharmacia Biotech
Cyclotec	Foss A/S
Cycolac	General Electric Co.
cyfive	Amersham-Pharmacia Biotech
Cytoscint	InterChem Enterprises
Cytostir	Kontes Glass
CytoTox 96	Promega Corp.
CytoTox-Fluor	Promega Corp.
CytoTox-ONE	Promega Corp.

D

Trademark Name	Owner
Dacron	E.I. du Pont de Nemours
Dalapon	Dow Chemical
Darco	American Norit Co.
DAS-3	Control Co.
DAS-4	Control Co.
Data Matrix	Thermo Scientific
Davisil	W.R. Grace & Co.
DeadDye	Cellomics
DeadEnd	Promega Corp.
DeciDamp2	North Safety Products
Decon	Decon Laboratories
DeepWell	Nunc
Delat	Contec, Inc.
Dell	Dell Computer Corporation
Delrin	E.I. du Pont de Nemours
Delta T	Bioptechs, Inc.
DeltaRange	Mettler Toledo
Demicap	domnick hunter
Denver Instrument	Denver Instrument
DeSCAL	Decon Laboratories
Desi-Vac	Control Co.
Desi-Vac Container	Control Co.
Dharmacon	Thermo Scientific
DharmaFECT	Thermo Scientific
Dial-O-Gram	Ohaus Corp.
Diamond	Thermo Scientific
Diamond Grip	Microflex Medical
Diamonite	Spartech
Difco	Difco Laboratories
DigiDoc-It	Ultra Violet Products, Inc.
Digi-Sense	Cole-Parmer Instrument Co.
Digital Buret	Brand GMBH & Co. KG
Digitrate	Jencons Scientific
Dilu-Lok	Hardy Diagnostics
DI-Pak	Millipore Corp.
DirecTorr	Welch Vacuum
Direct-Q	Millipore Corp.
DirectStack	Millipore Corp.
Discups	Cargille Laboratories
Dispensette	Brand GMBH & Co. KG
Dividastrips	Thermo Scientific
DLR	Promega Corp.
DLReady	Promega Corp.
DMEM-RS	Thermo Scientific
DNA Away	Molecular BioProducts
DNA-BIND	Corning
DNA Engine	MJ Research
DNA-Erase	MP Biomedicals
Doc-It	Ultra Violet Products, Inc.
domnick hunter	domnick hunter
Doubledeep	Thermo Scientific
DoubleWeigh	Environmental Express
Dow Corning	Dow Corning
DP	National Scientific Co.
DPPIV-Glo	Promega Corp.
Dräger	Draeger Safety, Inc.
Dräger CMS	Draeger Safety, Inc.
Drawer/Ganizers	Spectrum Laboratories Inc.
Dri-Bath	Thermo Scientific
Dri-Clean	Decon Laboratories
Dri-Contrad	Decon Laboratories
Drierite	W.A. Hammond Drierite Co.
Drummond	Drummond Scientific
Dry-Keeper	Bel-Art Products
DrySlide	Becton Dickinson
D-Salt	Thermo Scientific
Dual-Action	BioTek Instruments
Dual-Glo	Promega Corp.
Duall	Kontes Glass
DuaLogR	Cole-Parmer Instrument Co.
Dual-Luciferase	Promega Corp.
Duoflex	Bacou-Dalloz
DuoPak	MicroBioLogics
DuoSeal	Welch Vacuum
DuPont	E.I. du Pont de Nemours
Duran	Schott Glaswerke Corporation
Durapore	Millipore Corp.

Trademark Name	Owner
Dust'It	Control Co.
DyLight	Thermo Scientific
Dynalon	Dynalon
Dyneema	DSM High Performance Fibers

E

Trademark Name	Owner
E.A.R	Aearo Co.
E/S	Cole-Parmer Instrument Co.
Eagle	Eagle Manufacturing Company
Eastar	Eastman Chemical Co.
Easy Calibration	Brand GMBH & Co. KG
EasyCare	Brinkmann Instruments
EasyCast	Thermo Scientific
EasyDraw Syringe	U.S. Oil Co., Inc.
EasYFlask	Nalgene
Easy-Grip	Becton Dickinson
Easy-Load	Cole-Parmer Instrument Co.
Easy Peel	Becton Dickinson
Easypet	Eppendorf AG
Easyplate	Bel-Art Products
Easypure	Thermo Scientific
EASYset	Thermo Scientific
Easy Step	Continental Laboratory Products
Easy-Use	Control Co.
Easy-Wash	Corning
ECM	Genetronics, Inc.
Econo-Press	Thermo Scientific
ECTestrs	Cole-Parmer Instrument Co.
ECTestrs+	Cole-Parmer Instrument Co.
Edge-Rite	Thermo Scientific
Ektachem	Johnson & Johnson
ELIMINase	Decon Laboratories
Elite	Thermo Scientific
Elix	Millipore Corp.
Ellipso-Spoon	Bel-Art Products
ELSA	Scott Health and Safety
ELx50	BioTek Instruments
ELx405	BioTek Instruments
ELx800	BioTek Instruments
ELx808	BioTek Instruments
EM	EMD Chemicals
Emax	Promega Corp.
EMD	Merck KGaA
Emit	Syva Corp.
Emperor Penguin	Thermo Scientific
Empore	3M
Encompass	Thermo Scientific
Endogen	Thermo Scientific
EnduRen	Promega Corp.
Enhancer	Harvard Apparatus
Enpac	Enpac Corporation
Entero-STIM	Becton Dickinson
Environmental Express	Environmental Express
Envirotip	Brinkmann Instruments
EnviroWare	Fisher Scientific
Enzyte	Decon Laboratories
EPD	Thermo Scientific
Epower	MicroBioLogics
Epoxyn	Thermo Scientific
Eppendorf	Eppendorf AG
Eppendorf Biopur	Eppendorf AG
Eppendorf Research	Eppendorf AG
Eppendorf Tubes	Eppendorf AG
EP Preserved	EP Scientific
Epsilon	Contec, Inc.
Epson	Epson Kabushiki Kaisha
E-pure	Thermo Scientific
Erada-Stain	Cambridge Diagnostic Products, Inc.
ErGo	Mettler Toledo
ErgoClip	Mettler Toledo
ErgoTouch	Bausch & Lomb, Inc.
Eriochrome	Ciba Specialty Chemicals
Ertco	Thermo Scientific
Esteem	Cardinal Health
Ever-Safe	Thermo Scientific
Evolution	PE Corp.
Evolution	Thermo Scientific
Evolution One	Microflex Corporation
Ex Taq	TaKaRa Shuzo Co.
exACTGene	Fisher Scientific
Exact-Temp	Thermo Scientific
Excel	Howard Leight
Excel	Microsoft Corp.
Excella	New Brunswick Scientific
Excellulose	Thermo Scientific
Excelsior	Uvex Safety
Explorer	Ohaus Corp.
Express	Aearo Co.
Extract-Clean	Alltech Associates
Eye-Lert	North Safety Products
Eyesaline	Fendall, Inc.
EZ Access	Corning
EZ-CFU	MicroBioLogics
EZ-Detect	Thermo Scientific
E-Z Ex-Traction	Wheaton Industries, Inc.
EZFlip	Nalgene
EZ-FPC	MicroBioLogics
E-Zinc	Thermo Scientific
EZ-Label	Thermo Scientific
EZ-Link	Thermo Scientific
EZ-Pak	Millipore Corp.
EZ-PEC	MicroBioLogics
EZ-Run	Fisher Scientific

F

Trademark Name	Owner
FACS	Becton Dickinson
Falcon	Becton Dickinson
FAST	Whatman Inc.
FastBreak	Promega Corp.
Fast-Freeze	Labconco
FastLane	Cambrex Bio Science
FastPlasmid	Eppendorf AG
Fend all	Fendall, Inc.
FetalClone	Thermo Scientific
FetalClone II	Thermo Scientific
FetalClone III	Thermo Scientific
Fiberglas	Owens Corning
Fibertec	Foss A/S
Fibrox	Thermo Scientific
Ficoll	GE Amersham
Field-Ready	Nalgene
Field-Temp	Nalgene
FilterMate	Labconco
FiltrEX	Corning
Finger Dab	BD Biosystems
Finger-Tight	Alltech Associates
Finnigan	Thermo Scientific
Finnpipette	Thermo Scientific
Finntip	Thermo Scientific
Fireboy	Integra Biosciences
FireWire	Apple Computer
First Safety	First Safety Corporation
FirstLight	Ultra Violet Products, Inc.
Fisher BioReagents	Fisher Scientific
FisherBiotech	Fisher Scientific
Fisherbrand	Fisher Scientific
FisherChemical	Fisher Scientific
Fisher Diagnostics	Fisher Scientific
Fisherfinest	Fisher Scientific
FisherFresh	Fisher Scientific
FisherPak	Fisher Scientific
Fisher Scientific	Thermo Fisher Scientific
FisherTab	Fisher Scientific
Fisons	Fisons
FIVE	Mediatech, Inc.
FiveStar	Mine Safety Appliances
FL-70	Fisher Scientific
FLASH 12+	Biotage, Inc.
FLASH 12i	Biotage, Inc.
FLASH 150i	Biotage, Inc.
FLASH 25+	Biotage, Inc.
FLASH 40+	Biotage, Inc.
FLASH 40i	Biotage, Inc.
FLASH 65i	Biotage, Inc.
FLASH 75i	Biotage, Inc.
Flash Freeze	Decon Laboratories

Trademark Name	Owner
FLASH+	Biotage, Inc.
FLASHi	Biotage, Inc.
FLASH-Pac+	Biotage, Inc.
Flaskette	Nalgene
FlatRack	Flat Rack
Flexaframe	Fisher Scientific
FlexColumn	Kontes Glass
FlexDrop	PE Corp.
Flexi	Promega Corp.
FlexPack	Texwipe
Flex-Tip	Eppendorf AG
Flex-Tube	Eppendorf AG
FLIPR	Molecular Devices Corp.
Florisil	U.S. Silica Company
Flo-Rite	Rieke Corp.
FluidShield	Kimberly-Clark Corp.
FluoroBlok	Becton Dickinson
Fluorolube	Hooker Chemicals and Plastics
Fluoropore	Millipore Corp.
FLx800	BioTek Instruments
FoamWipe	Texwipe
FOCUS	Thermo Scientific
FocusLiner	SGE
FogGard	American Allsafe Co.
Forma	Thermo Scientific
Formalde-Fresh	Fisher Scientific
Formica	Formica Corp.
Foss	Foss A/S
FOTO/Analyst	FotoDyne
FOTO/Convertible	FotoDyne
FOTO/Eclipse	FotoDyne
FOTO/Luminary	FotoDyne
FOTO/UV	FotoDyne
Fotodyne	FotoDyne
Foundation Series	Thermo Scientific
Freas	Jouan, Inc.
Freezer/Mill	SPEX CertiPrep
FreezerBondz	Brady Corp
FreezGuard	Bel-Art Products
FreeZone	Labconco
FreeZone Plus	Labconco
FRENCH	Thermo Scientific
Frigimat	Bel-Art Products
FTA	Whatman Inc.
Fyrite	Bacharach Inc.
G	
Gamal	Fisher Scientific
GAPS II	Corning
GasPak	Becton Dickinson
GasPak 100	Becton Dickinson
GasPak 150	Becton Dickinson
GasPak Plus	Becton Dickinson
Gastight	Hamilton Co.
GC Resolv	Fisher Scientific
GE	General Electric Co.
Geduran	Merck & Co., Inc.
Gel/Mount	Biomeda
GelCode	Thermo Scientific
Gelman	Pall Corporation
Gel-Pro	Media Cybernetics
GelStar	Cambrex Bio Science
Gem	Welch Vacuum
Gen5	BioTek Instruments
GeneAmp	Roche Molecular Systems, Inc.
GeneClip	Promega Corp.
GeneLine	Spectronics Corp.
GenePORTER	Genlantis
GeneQuant	Harvard Apparatus
Genesis	Uvex Safety
GENESYS	Thermo Scientific
Genlantis	Gene Therapy Systems, Inc.
Geno/Grinder	SPEX CertiPrep
Gerstel	Gerstel GmbH Limited
Gilmont	Thermo Scientific
Glastic	National Scientific Co.
GloMax	Promega Corp.
GLPcheck	Thermo Scientific
GLPdoc	Thermo Scientific
GoggleGear	Aearo Co.
Gold-Band	Wheaton Inc.
Gold Seal	Gold Seal Products
GoTaq	Promega Corp.
Gram	Fisher Scientific
GramPac	Fisher Scientific
Graph-Tite	Alltech Associates
Gravi-Seal	GE Osmonics
Grip N	North Safety Products
Grip Saf	North Safety Products
Guardian	Labconco
Guth	Guth Products Co.
Gyrotory	New Brunswick Scientific
H	
Hach	Hach Co.
HaloTag	Promega Corp.
Halt	Thermo Scientific
Hamilton	Hamilton Co.
Hamilton	Thermo Scientific
Handee	Thermo Scientific
Handies	Oak Technical Inc.
Handi-Hold	Fisher Scientific
HandyStep	Brand GMBH & Co. KG
Hanna Instruments	Hanna Instruments
HATR	Thermo Scientific
Haws	Haws Drinking Faucet Company
Heat Boost	Labconco
Heavyweight	Oak Technical Inc.
HeLaMONSTER	Mirus Bio Corporation
Helix	Contec, Inc.
Hellige	Hellige Inc.
Hema 3	Fisher Scientific
Hemato-Clad	Drummond Scientific
Hemato-Seal	Fisher Scientific
HEPA-Cap	The Whatman Group
HEPAVent	The Whatman Group
Hewlett-Packard	Hewlett-Packard
High Five	Labsource
Highconic	Thermo Scientific
HisLink	Promega Corp.
HisProbe	Thermo Scientific
HistoPrep	Fisher Scientific
Hitachi	Nissei Sangyo America
HiTEC	Yamato Scientific Co., Ltd.
HiTemp	Fisher Scientific
HitKit	Thermo Scientific
Hoefer	Hoefer Inc.
Holdfast	Bel-Art Products
Honeycomb	Texwipe
Hood Mate	Drummond Scientific
Horiba	Horiba, Ltd.
Horizon	Thermo Scientific
Hoshizaki	Hoshizaki America
Hot-Hand	Bel-Art Products
HotMaster	Eppendorf AG
Howard Leight	Howard Leight
HP	Hewlett-Packard
HTRF	CIS BIO International
Humidity Sponge	Control Co.
HyClone	Thermo Scientific
Hydrion	Micro Essential Laboratory
Hydroknit	Kimberly-Clark Corp.
Hygenic	Hygenic Corporation
Hy-Lite	Hausser Scientific
Hypalon	DuPont Dow Elastomers L.L.C.
Hypercarb	Thermo Scientific
HyperSep	Thermo Scientific
Hypersil	Thermo Scientific
HyperTerminal	Microsoft Corp.
HYPE-WIPE	Current Technologies, Inc.
HypoSol	Decon Laboratories
HyQ	Thermo Scientific
HyQPAK	Thermo Scientific
HyQSphere	Thermo Scientific
HyQTase	Thermo Scientific
Hytrel	E.I. du Pont de Nemours
I	
I/O	Willson
IBM	International Business Machines
IceAssure	3M
I-Chem	Nalgene
I-Chem Certified	Nalgene
I-CORE	Cepheid Corporation

Trademark Name	Owner
I-D	National Scientific Co.
IDENTILAB	Brady Corp
Identi-Plug	Jaece Industries
IEC	Thermo Scientific
IGEPAL	General Dyestuff Corporation
IKA	IKA Works
IKAMAG	IKA Works
Imject	Thermo Scientific
Immobilizer	Exiqon A/S
Immobilon	Millipore Corp.
Immulon	Thermo Scientific
ImmunoPure	Thermo Scientific
Imperial	Thermo Scientific
ImProm-II	Promega Corp.
InCal	Ohaus Corp.
Infinity	Thermo Scientific
InLab	Mettler Toledo
Innova	New Brunswick Scientific
Insectagro	Mediatech, Inc.
Insect-XPRESS	Cambrex Bio Science
InSlide Out	Boekel Scientific
Insta-Chek	Micro Essential Laboratory
Insta-Gard	Cardinal Health
Insta-Test	LaMotte Chemical Products Co.
Integrid	Becton Dickinson
InterMetro	InterMetro Industries
IntrLogic	Thermo Scientific
Invertoskop	Carl Zeiss
InVitro	Nalgene
Invitrogen	Invitrogen
Ion-Ex	Millipore Corp.
I-PER	Thermo Scientific
Iradecon	Decon Laboratories
IRDye	Li-cor, Inc.
I-Series	Denver Instrument
ISO	International Organization for Standardization
IsoClean	E.I. du Pont de Nemours
Isolon	Fisher Scientific
Isopore	Millipore Corp.
Isotemp	Fisher Scientific
IsoVitaleX	Becton Dickinson
ITS	Becton Dickinson
ITS+	Becton Dickinson
ITW Texwipe	ITW Texwipe

J

Trademark Name	Owner
JADE	Alltech Associates
Javelin	Thermo Scientific
Jazz-Mix	Applied Scientific
Jet Stream	Decon Laboratories
Jitterbug	Boekel Scientific
Justrite	Justrite Mfg. Co.

K

Trademark Name	Owner
Kalrez	E.I. du Pont de Nemours
Kantleke	Able Metal Hose, Inc.
KAPPA	Thermo Scientific
Kapton	E.I. du Pont de Nemours
KC4	BioTek Instruments
KCjunior	BioTek Instruments
Kel-F	3M
Kevlar	E.I. du Pont de Nemours
Kik-Step	Cramer Industries
Kimax	Kimble Glass
Kimax-51	Kimble Glass
Kimberly Clark	Kimberly-Clark Corp.
Kimberly-Clark Professional	Kimberly-Clark Corp.
Kimble	Kimble Glass
Kimflow	Kimble Glass
KimKap	Kimble Glass
Kim-Lok	National Scientific Co.
Kimshield	National Scientific Co.
Kim-Snap	National Scientific Co.
Kimtech Pure	Kimberly-Clark Corp.
Kimtech Science	Kimberly-Clark Corp.
Kimwipes	Kimberly-Clark Corp.
Kinase-Glo	Promega Corp.
Kindest Kare	Steris Corp.
KingFisher	Labsystems Oy Corp.
Kjel-Sorb	Fisher Scientific
Kjeltab	Foss A/S
Kjeltec	Foss A/S
Kleenex	Kimberly-Clark Corp.
KleenGuard	Kimberly-Clark Corp.
Knauer	Knauer
KNF	KNF Neuberger
Kodak	Carestream Health, Inc.
Koehler	Koehler-Bright Star, Inc.
Kollect-A-Kem	JV Manufacturing
Kontes	Kontes Glass
Kool-Grip	Guth Products Co.
KP-C18-HS	Biotage, Inc.
KP-NH	Biotage, Inc.
KP-Sil	Biotage, Inc.
K-Resin	Phillips Petroleum Co.
Krypton	Thermo Scientific
Kwik-Stik	MicroBioLogics

L

Trademark Name	Owner
L/S	Cole-Parmer Instrument Co.
LA Taq	TaKaRa Shuzo Co.
Lab File	Wheaton Inc.
Lab Pal	Brady Corp.
Lab Vision	Thermo Scientific
Lab-Aire	Bel-Art Products
LabAlliance	Scientific Systems
Labconco	Labconco
LabCooler	Thermo Scientific
Label IT	Mirus Corporation
LabelMark	Brady Corp.
Label-Off	Bel-Art Products
Lab-Jack	Boekel Scientific
Lab-Line	Thermo Scientific
Laboport	KNF Neuberger
LabpetteR	Labnet
Labquake	Thermo Scientific
Labscale	Millipore Corp.
LabSolutions	Labconco
Labsystems	Thermo Scientific
Lab-Tek	Nalgene
Labworldsoft	IKA Works
LABXPERT	Brady Corp.
Ladderman	TaKaRa Shuzo Co.
Lambda	Corning
LaMotte	LaMotte Chemical Products Co.
Last-Drop	Alltech Associates
Leap	Leap Technologies
Legaci	Thermo Scientific
Legend	Thermo Scientific
Leica	Leica Microsystems, Inc.
LeLoop	Decon Laboratories
Lenscope	Bausch & Lomb, Inc.
LeStab	Decon Laboratories
LeStreak	Decon Laboratories
Lexa	Aearo Co.
Lexan	General Electric Co.
Lifetime Red	Corning
LifterSlip	Thermo Scientific
Lindberg/Blue M	Thermo Scientific
Linear-K	Whatman Inc.
LipiMate	Thermo Scientific
LipoClear	StatSpin Technologies, Inc.
LiteTouch	Rainin Instrument Co., Inc.
LiveCell	Molecular Cytomics Inc.
LOCATE	R-Biopharm Rhone, Ltd.
Locator	Thermo Scientific
Lo-Dose	Becton Dickinson
Logic	Labconco
LogR	Thermo Scientific
Longlife	Spectronics Corp.
LopHene	Decon Laboratories
Lotion Soft	Steris Corp.
LoVial	National Scientific Co.
LpH	Steris Corp.
LS1000	Thermo Scientific
LS250	Thermo Scientific
LTS	Rainin Instrument Co., Inc.
Lubri-Flo	Kimble Glass
Lubriseal	Thomas Scientific
Luer-Lok	Becton Dickinson
Luminex	Luminex Corporation

Trademark Name	Owner
LVI	Wheaton Inc.
Lyfo Disk	MicroBioLogics
Lyph-Lock	Labconco

M

Trademark Name	Owner
M Air T	Millipore Corp.
Mach 1.6	Thermo Scientific
Macintosh	Apple Computer
Macropure	Thermo Scientific
MacroVial	National Scientific Co.
Magna	GE Osmonics
MagnaBind	Thermo Scientific
MagnaCharge	GE Osmonics
Magna-Flex	Wheaton Inc.
MagnaGraph	GE Osmonics
MagnaLift	GE Osmonics
MagnaProbe	GE Osmonics
MagneGST	Promega Corp.
MagneHis	Promega Corp.
MagneSil	Promega Corp.
MagneSphere	Promega Corp.
Magnum 9	Whatman Inc.
Manostat	Thermo Scientific
MantaRay	Wheaton Inc.
MAPA Professional	MAPA Pioneer Corporation
Marigold	London International Group
Mark-it Fresh	Rubbermaid Commercial Products
Mastercycler	Eppendorf AG
Masterflex	Cole-Parmer Instrument Co.
MasterMix	Eppendorf AG
MasterTaq	Eppendorf AG
Matrigel	Becton Dickinson
Max	Howard Leight
Max/Lab	Thermo Scientific
Maxi-Clean	Alltech Associates
Maxim	Aearo Co.
Maxima	Fisher Scientific
MaximaDry	Fisher Scientific
MaxiMix	Thermo Scientific
Maxipettor	Eppendorf AG
MaxiSorp	Nunc
Maxitip	Brinkmann Instruments
Maxitip G	Brinkmann Instruments
Maxitip P	Brinkmann Instruments
Maxitip S	Brinkmann Instruments
MaxPAK	Genlantis
MaxVial	National Scientific Co.
Maxwell	Promega Corp.
mBox	Thermo Scientific
MCal	Metrohm Peak, Inc.
m-ColiBlue24	Hach Co.
Media-Miser	Fisher Scientific
Mediatech	Mediatech, Inc.
MediSorp	Nunc
MegaBACE	Molecular Dynamics
MegaPure	Thermo Scientific
Mel-Temp	Thermo Scientific
Mem-PER	Thermo Scientific
MEM-RS	Thermo Scientific
Merck	Merck & Co., Inc.
Mercsorb	JV Manufacturing
Merlin	Wells Lamont
Meta	Encompass Group
Metab	Fisher Scientific
Metabolic Pathway Design	Thermo Scientific
Metrohm	Metrohm Ltd.
Metrosep	Metrohm Ltd.
Mettler Toledo	Mettler Toledo
MF75	Nalgene
MF-Millipore	Millipore Corp.
Micrewtube	Simport Plastics
Micro BCA	Thermo Scientific
Micro+	Chromacol
MicroBeta	PE Corp.
Microcaps	Drummond Scientific
MicroCaster	Whatman, Inc.
Micro-Clean	Cardinal Health
Microcon	Millipore Corp.
Microfil	Millipore Corp.
Micro-Fine	Becton Dickinson
Microflex	Microflex Corporation
Microfluor	Thermo Scientific
MicroForce	Kimberly-Clark Corp.
MicroHex	Nalgene
Micro-ID	Remel, Inc.
Microlab	Hamilton Co.
Microlite	Thermo Scientific
Microliter	Hamilton Co.
Micromaster	Fisher Scientific
Micro-Mate	Popper & Sons
Micromeritics	National Scientific Co.
MicroMill	Bel-Art Products
MicronSep	GE Osmonics
Micro-Osmette	Precision Systems
MicroProbe	Fisher Scientific
Micropure	Millipore Corp.
MicroSert	National Scientific Co.
Microsoft	Microsoft Corp.
Microson	Misonix, Inc.
Microtainer	Becton Dickinson
Microtip	Heat Systems, Inc.
Microtiter	Thermo Scientific
Micro-V	National Scientific Co.
MicroVials	National Scientific Co.
MicroWell	Nunc
MicroWriter	Anatomical Pathology
Micryo	Argos Technologies, Inc.
Mighty Small	Hoefer Inc.
Millennia	Willson
Millex	Millipore Corp.
Millicell	Millipore Corp.
Milli-DI	Millipore Corp.
Milligard	Millipore Corp.
Millipak	Millipore Corp.
Millipore	Millipore Corp.
Millipore Express	Millipore Corp.
Milli-Q	Millipore Corp.
Milli-RO	Millipore Corp.
Milli-RX	Millipore Corp.
Milwaukee	Milwaukee Electric Tool
Minihelic	Dwyer Instruments, Inc.
MinimIzeR	Cabot Safety
Minipet	Bel-Art Products
MiniSpin	Eppendorf AG
MiniTrak	PE Corp.
Mini-UniPrep	The Whatman Group
Minuteman	Minuteman International
MinWeigh	Mettler-Toledo
MiracleWipe	Texwipe
Misonix	Misonix, Inc.
Mitex	Millipore Corp.
MitoTracker	Molecular Probes, Inc.
Mitsubishi	Mitsubishi Imaging Products
Mixer/Mill	SPEX CertiPrep
MixMate	Eppendorf AG
MLA	Medical Laboratory Automation
Modified Microliter	Hamilton Co.
Modular Steel	Thermo Scientific
Moistur-Barrier	Gold Seal Products
Moldex	Moldex-Metric, Inc.
Molecular BioProducts	Molecular BioProducts
Monitek	Monitek Technologies
MonoGoggle	American Allsafe Co.
Montage	Millipore Corp.
Morton	David H. Morton
Moveable FineRange	Ohaus Corp.
MP4+	Polaroid
MPak	Metrohm Peak, Inc.
M-PER	Thermo Scientific
MSA	Mine Safety Appliances
MSI	GE Osmonics
µFill	BioTek Instruments
µQuant	BioTek Instruments
µStar	Corning
Multi	Thermo Scientific
Multi RF	Thermo Scientific
Multi-Chem	The Whatman Group
Multi-Core	Promega Corp.
MultiDoc-It	Ultra Violet Products, Inc.
MultiDose	Zymark Corp.
Multi-Flex	Cardinal Health
Multimek	Beckman Instruments

Trademark Name	Owner
Multi-Meter	Rieke Corp.
Multi-Osmette	Precision Systems
Multiporator	Eppendorf AG
MultiPROBE	Packard Instrument Co.
MultiScreen	Millipore Corp.
MultiScreenHTS	Millipore Corp.
MULTISIP	Thermo Scientific
Multiskan	Thermo Scientific
MultiSorp	Nunc
Multivapor	Buchi Labortechnik AG
Multiwell	Becton Dickinson
Mycostatin	Becton Dickinson
Mylar	E.I. du Pont de Nemours

N

Trademark Name	Owner
N/F Screen	Remel, Inc.
Nalge	Nalgene
Nalgene	Nalgene
NanoOrange	Molecular Probes, Inc.
Nanopure	Thermo Scientific
NanoQuot	BioTek Instruments
Napco	Jouan, Inc.
National Storeroom	National Scientific Co.
NBS	Corning
N-DEX	Best Mfg.
Neo Grab	Best Mfg.
NeoPro	Microflex Corporation
Neox	Ansell Healthcare
NE-PER	Thermo Scientific
Neslab	Thermo Scientific
Neural	Mirus Corporation
NeuroPORTER	Genlantis
NeuroPrep	Genlantis
NeuroPure	Genlantis
Neu-Thera	Allegiance Corporation
Neutrad	Decon Laboratories
Neutral-Sol	Control Co.
NeutrAvidin	Thermo Scientific
NexGen	Kappler USA
Nichimate Stepper	Nichiryo Co.
NIST	National Institute of Standards and Technology
Nitrilite	Ansell Healthcare
NNI	Nalgene
Nochromix	Godax Laboratories
NoCount	Decon Laboratories
Nomex	E.I. du Pont de Nemours
Nonidet	Royal Dutch/Shell Group
Nonidet P40	Shell Oil Co.
Norit	American Norit Co.
Norm-Ject	AirTite, Inc.
North	North Safety Products
Norton 180	North Safety Products
Noryl	General Electric Co.
No-Slip	Alltech Associates
No-Wire	Bel-Art Products
NOWPak	Now Technologies, Inc.
NOWPak II	Now Technologies, Inc.
NSR	E.I. du Pont de Nemours
NucleoLink	Nunc
Nuclepore	Whatman Inc.
Nunc	Nunc
Nunc-Immuno	Nunc
Nunclon	Nunc
NuSieve	Cambrex Bio Science
NVLAP	National Institute of Standards and Technology

O

Trademark Name	Owner
Oakton	Cole-Parmer Instrument Co.
Ocelot	Boekel Scientific
OdoClave	Bel-Art Products
OdorGone	Decon Laboratories
Ohaus	Ohaus Corp.
Oil-X	domnick hunter
Omnifit	Omnifit, Ltd.
OmniMix	Cepheid Corporation
Omni Prep	Omni International
Omni Tip	Omni International
OmniPur	EM Industries, Inc.
OmniSette	Fisher Scientific
Omnispense	Wheaton Inc.
OmniSwab	Whatman Inc.
OmniTray	Iomega Corp.
Omni-Vial	Wheaton Inc.
One-Shot	Technical Concepts L.P.
Operon	Operon Biotechnologies, Inc.
OptiCell	Nalgene
Opti-Freeze	MP Biomedicals
OptiGrow	Fisher Scientific
Optik-Wipes	Fisher Scientific
Optilux	Becton Dickinson
Optima	Fisher Scientific
OptiMatrixx	Leica Microsystems, Inc.
Optimizer	Millipore Corp.
Organex-Q	Millipore Corp.
ORGANICfree	Thermo Scientific
Orion	Mine Safety Appliances
Orion	Orion Safety Products
Orion	Thermo Scientific
Orlon	E.I. du Pont de Nemours
ORPTestr	Cole-Parmer Instrument Co.
Orthane	EP Scientific
Osmette	Precision Systems
Osmette A	Precision Systems
Osmette II	Precision Systems
Osmette III	Precision Systems
Osmette S	Precision Systems
Osmette XL	Precision Systems
Osmonics	GE Osmonics
Osterizer	Sunbeam Corporation
Owl	Thermo Scientific
Oxford	Oxford Worldwide LLC
Oxoid	Oxoid Inc.

P

Trademark Name	Owner
P450-Glo	Promega Corp.
Packard	Packard Instrument Co.
PAGEgel	PAGEgel Inc.
PAGEr	CBM Intellectual Properties, Inc.
Pall	Pall Corporation
PanVera	PanVera Corp.
Parafilm M	American National Can
PARA/Gard	Triangle Biomedical
Parallel Vision Control	Willson
ParaTrimmer	Thermo Scientific
Parr	Parr Instrument Co.
Partisil	Whatman Inc.
Pasolina	Fisher Scientific
Passport	Mine Safety Appliances
PATH	Thermo Scientific
PC Link	Brady Corp.
PC/XT	International Business Machines
PC-1	BioWhittaker
PD-Tips	Brand GMBH & Co. KG
PE	PE Corp.
PEEK	Victrex plc
Pefachrome	Pentapharm Ltd.
Pellet Pestle	Kontes Glass
Pellicon	Millipore Corp.
Pentium	Intel Corp.
PEP	Harvard Apparatus
Perfect Fit	Perfect Fit Glove Co.
PerFectin	Genlantis
Perfectprep	5 PRIME
PerfectPure	Eppendorf AG
Perfektum	Popper & Sons
Perkin-Elmer	Perkin-Elmer
Permanox	Nalgene
Permetch	Kessler Instruments
Permount	Fisher Scientific
PerpHecT	Thermo Scientific
PersonaPet	Fisher Scientific
Petrifilm	3M
Petri-Pad	Millipore Corp.
PetriSlide	Millipore Corp.
PF 293	Thermo Scientific
PF CHO	Thermo Scientific
PF CHO LS	Thermo Scientific
PF Vero	Thermo Scientific
PFE	Kimberly-Clark Corp.
PFR95	Kimberly-Clark Corp.
pGEM	Promega Corp.
pGeneClip	Promega Corp.
Pgp-Glo	Promega Corp.

Trademark Name	Owner
PharMed	Saint-Gobain Performance Plastics
Phenomenex	Phenomenex Inc.
Philgas	Phillips Petroleum Co.
pHTestr	Cole-Parmer Instrument Co.
PhysioCare Concept	Eppendorf AG
Phytone	Becton Dickinson
PicoGreen	Molecular Probes, Inc.
Pierce	Thermo Scientific
PillowPac	Aearo Co.
Pinnacle	Denver Instrument
PIONEER	Thermo Scientific
PIP	Protective Industrial Products Inc.
Pipet-Aid	Drummond Scientific
Pipette Pump	Bel-Art Products
PlantSaver	Whatman Inc.
Plas-Labs	Plas-Labs, Inc.
PlasmaRotor	StatSpin Technologies, Inc.
Plastibrand	Brand GMBH & Co. KG
Plastisol	Columbia Ribbon and Carbon
PlateTrak	PE Corp.
Platinel	Engelhard Industries
Platinum	Alltech Associates
Plexiglas	Rohm and Haas
Plexor	Promega Corp.
Pluronic	BASF Corp.
PockeTester	LaMotte Company
PolaColor	Polaroid
PolarHeat	Thermo Scientific
Polar Pack	SCA Packaging North America
Polaroid	Polaroid
PolarSafe	Argos Technologies, Inc.
Polycap	The Whatman Group
Polydisc	The Whatman Group
Poly-Labtray	Enpac Corporation
PolyPac	Fisher Scientific
PolyPaper	Nalgene
Polypeptone	Becton Dickinson
Poly-Seal	Poly-Seal Corp.
Polyseed	InterBio
PolySorp	Nunc
Polyspring	National Scientific Co.
Polytron	Kinematica AG
PolyVent	Whatman Inc.
PolyWear	PolyConversions
Polywipe	Contec, Inc.
Popper	Popper & Sons
Pop-Up	Kimberly-Clark Corp.
Poros	Applera Corp.
Portapet	Bel-Art Products
Porta Stream	Fendall, Inc.
Positive Touch	Allegiance Corporation
PourMatic	New Brunswick Scientific

Trademark Name	Owner
Powder Pop	HF Scientific
PowerDry	KNF Neuberger
PowerGen	Fisher Scientific
PowerReports	BioTek Instruments
Powerstop Handle	U.S. Oil Co., Inc.
PowerWave	BioTek Instruments
Poxygrid	Bel-Art Products
P-PER	Thermo Scientific
Precise	Labconco
Precise	Thermo Scientific
Precision	BioTek Instruments
Precision	Thermo Scientific
Precision Power	BioTek Instruments
Precision Pulse	Harvard Apparatus
PrecisionGlide	Becton Dickinson
PRECLEAR	Gentra Systems
PrepSep	Fisher Scientific
PrepSep-R	Fisher Scientific
PreSep	GE Osmonics
Presslok	Thermo Scientific
Press-Tight	Restek Corporation
Presto	Zymark Corp.
Prevail	Alltech Associates
Primaria	Becton Dickinson
Primatone	Quest International
PrimeSTAR	TaKaRa Bio Inc.
ProbeOn	Fisher Scientific
ProCulture	LabGlass
Progard	Millipore Corp.
Proguard	Decon Laboratories
Promega	Promega Corp.
Pronto!	Corning
ProPur	Nunc
PROSAT	Contec, Inc.
PROSAT Sterile	Contec, Inc.
Prosep	Millipore Corp.
ProShield	E.I. du Pont de Nemours
Prospore	Raven Biological Laboratories
Proteasome-Glo	Promega Corp.
Protector	Labconco
Protector Premier	Labconco
Protector XStream	Labconco
Protegrity	Cardinal Health
PROTOCOL	Fisher Scientific
Protran	Scheicher and Schuell
ProVent	Kappler USA
ProWeigh	Environmental Express
ProZorb	Contec, Inc.
PRP	Hamilton Co.
psiCHECK	Promega Corp.
psiLentGene	Promega Corp.
psiSTRIKE	Promega Corp.
Puradisc	The Whatman Group
Pure Flow 1000	Fendall, Inc.
PureFit	Perfect Fit Glove Co.

Trademark Name	Owner
pureGene	Gentra Systems
PureYield	Promega Corp.
PuriCare	Labconco
Purifier	Labconco
Purple Nitrile	Safeskin Corp.
Purple Nitrile-XTRA	Safeskin Corp.
PVDF	GE Osmonics
Pyrex	Corning
PyrexPlus	Corning
Pyroceram	Corning
Pyrofax	PyroFax Gas Corp.
Pyrogard	Millipore Corp.
Pyrosequencing	Biotage Ab Corporation

Q

Trademark Name	Owner
Qdot	Invitrogen
Q-Gard	Millipore Corp.
Qiagen	Qiagen
Quad 4	Fisher Scientific
Quadrascan	Thermo Scientific
Quant	EMD Chemicals
Quantech	Thermo Scientific
Quanti-Cult	Remel, Inc.
Quanti-Cult Plus	Remel, Inc.
QuantiLum	Promega Corp.
Quantum	Millipore Corp.
Quantum	Texwipe
Quebec	Leica Microsystems, Inc.
Quick Mist	Bibby Sterlin Ltd.
Quick Stain	Becton Dickinson
Quick-Start	Labconco
Quick-Stop	Labconco
Quick-Timer	Control Co.
Quick-Tip	Nalgene
QuikEase	Genlantis
Qwik Handi-Press	Thermo Scientific
QUIKset	Thermo Scientific

R

Trademark Name	Owner
RAC	Whatman Inc.
r/b	Remel, Inc.
r/b1	Remel, Inc.
r/b2	Remel, Inc.
R2P	Wheaton Inc.
Radalert	International MedCom, Inc.
Radiometer	Radiometer Medical A/S
Rainin	Rainin Instrument Co., Inc.
RapiDCM	Remel, Inc.
RapidPlate	Caliper Life Sciences
RapidVap	Labconco
Ray-Sorb	Kimble Glass
RBS 35	Thermo Scientific
Reach	Molecular BioProducts
Red Hot	Thermo Scientific
ReddyMix	Thermo Scientific

Trademark Name	Owner
ReddyRun	Thermo Scientific
Redi-Pak	Wheaton Inc.
Redi-Stor	Control Co.
Redi-Tip	Fisher Scientific
Red-Spirit	Thermo Scientific
Reichert	Reichert, Inc.
Reliant	Cambrex Bio Science
Remel	Remel, Inc.
Remote Dispenser	Thermo Scientific
Removawell	Thermo Scientific
Repeater	Brinkmann Instruments
Repipet	Thermo Scientific
Re-Run	Thermo Scientific
Resistance Ratio Technology	YSI Inc.
ResMer	Nalgene
Restek	Restek Corporation
Restore	Thermo Scientific
RetroNectin	TaKaRa Bio Inc.
Retsch	Retsch GmbH
Revco	Thermo Scientific
Rexyn	Fisher Scientific
Rheodyne	Rheodyne, L. P.
Rhodazine D	CHEMetrics, Inc.
RiboGreen	Molecular Probes, Inc.
RiboLadder	Fisher Scientific
Richard-Allan Scientific	Thermo Scientific
Ridox	Fisher Scientific
Rieke	Rieke Corp.
RiOs	Millipore Corp.
Ripette	Ritter Medical
Rite-On	Gold Seal Products
RNase Away	Molecular BioProducts
RNase ONE	Promega Corp.
RNase-Erase	MP Biomedicals
RNasin	Promega Corp.
RoboFlask	Corning
Rocker	Stovall Life Science, Inc.
Rocket	Alltech Associates
RoClean	Millipore Corp.
Rodac	Becton Dickinson
Rogard	McGean-Ronco, Inc.
Rollpruf	MAPA Pioneer Corporation
ROPak	Millipore Corp.
ROpure LP	Thermo Scientific
Ross	Thermo Scientific
ROSS Resolution	Thermo Scientific
Rotaflo	Corning
Ro-Tap	W.S. Tyler Co.
Rotavapor	Büchi Labortechnik AG
RotoMix	Thermo Scientific
ROX	Applera Corp.
RS	Thermo Scientific
RTplusPCR	Eppendorf AG
Rtx	Restek Corporation
Rubbermaid	Rubbermaid Commercial Products
Rulon	Dixon Industries Corporation
Rxi	Restek Corporation
Ryton	Phillips Petroleum Co.

S

Trademark Name	Owner
SAfE	Foss North America
SafeAire	Thermo Scientific
Safe-Cote	Fisher Scientific
SafeGard	Kimble Glass
Safe-Grind	Wheaton Inc.
Safe-Lab	Bel-Art Products
Safe-Lock	Brinkmann Instruments
SafeSnap	Fisher Scientific
SafeTin	Fisher Scientific
Safety Bulb	Secure Medical, Inc.
Safety Choice	Safety Equipment Co.
Safetypette	Jencons Scientific
SafetyPrime	Brand GMBH & Co. KG
Saf-T-Fit	Willson
Saint-Gobain	Saint-Gobain Performance Plastics
SampleLock	Hamilton Co.
Samplet	Biotage, Inc.
Sampule	Wheaton Inc.
Sanalite	Scranton Plastic Laminating Corp.
SaniHol	Decon Laboratories
Sanitized	Sanitized, Inc.
Saranex	The Dow Chemical Company
Sartorius	Sartorius GmbH
Satin Plus	Safeskin Corp.
Sav-It	Porex Technologies Corp.
Scholar	Corning
SciClone	Zymark Corp.
Scienceware	Bel-Art Products
SciLutions	Wheaton Industries Inc.
SciMatCo	Flinn Scientific, Inc.
Scintanalyzed	Fisher Scientific
Scinti-4	Fisher Scientific
Scinti-6	Fisher Scientific
Scinti-8	Fisher Scientific
ScintiGest	Fisher Scientific
ScintiLene	Fisher Scientific
Scinti-Rack	Fisher Scientific
ScintiSafe	Fisher Scientific
ScintiVerse	Fisher Scientific
ScintiVials	Fisher Scientific
Scoopula	Fisher Scientific
Scotch	3M
Scotsman	Scotsman Ice Systems
Scott	Kimberly-Clark Corp.
Scott	Scott Technologies
Scout	Ohaus Corp.
S-Curve	S-Curve Technologies
SeaKem	Cambrex Bio Science
Seal 2000	National Scientific Co.
SealCote	Jencons Scientific
SEAL-IT 100	Thermo Scientific
SearchLight	Thermo Scientific
Secador	Bel-Art Products
Second Skin	Wheaton Inc.
Security-Snap	I-Chem
Securline	Precision Dynamics Corp.
Seiko	Seiko Kabushiki Kaisha
Select	Spectronics Corp.
SelecT	The Automation Partnership
Selecto Scientific	Selecto Scientific
Sellstrom	Sellstrom Mfg.
Sensi-Disc	Becton Dickinson
Sensitive Tension Design	Willson
SepCap	National Scientific Co.
SeptaGard	Nalgene
SeqWright	SeqWright, Inc.
SevenGo	Mettler Toledo
SevenGo pro	Mettler Toledo
Seward	Seward Medical Limited
Sf9	Mediatech, Inc.
SFM4CHO	Thermo Scientific
SFM4CHO-Utility	Thermo Scientific
SFM4HEK293	Thermo Scientific
SFM4MAb	Thermo Scientific
SFM4MegaVir	Thermo Scientific
SFX-CHO	Thermo Scientific
SFX-Insect	Thermo Scientific
SFX-Mab	Thermo Scientific
SGE	SGE International Australia
SGIC	Saint-Gobain Performance Plastics
Sharps-A-Gator	Devon Industries, Inc.
Shatterbox	SPEX CertiPrep
Shimadzu	Shimadzu
Shimadzu Corporation	Shimadzu
ShipSafe	SCA Packaging North America
Shorty Vial	Wheaton Inc.
SHUR/MARK	Triangle Biomedical
Shurlite	G.C. Fuller Mfg.
Sight Savers	Bausch & Lomb, Inc.
Sigma	Contec, Inc.
Silastic	Dow Corning
Silcosteel	Restek Corporation
siLentGene	Promega Corp.
Siltek	Restek Corporation
Silver Shield	North Safety Products
SilverSNAP	Thermo Scientific
SimPak	Millipore Corp.
Simplicity	Millipore Corp.
SimplyLoad	Cambrex Bio Science
SingleBlock	Ericomp
siQUEST	Mirus Corporation
siSTARTER	Thermo Scientific

Trademark Name	Owner
UNIPLATE	The Whatman Group
UniPrep	The Whatman Group
Unispense	Wheaton Inc.
Unitary	Nalgene
Unitized	Guth Products Co.
Unitrode	Metrohm Ltd.
UNIVERSAL	Fisher Scientific
Universal	Labconco
Uni-Yeast Tek	Remel, Inc.
Unwire	Nalgene
UriSystem	Fisher Scientific
U-tek	SCA Packaging North America
UVette	Eppendorf AG
uvex	Uvex Safety
Uvextreme	Uvex Safety
UVP	Ultra Violet Products, Inc.

V

Trademark Name	Owner
V Vial	Wheaton Inc.
Vac-Man	Promega Corp.
Vacufuge	Brinkmann Instruments
Vacu-Guard	The Whatman Group
Vacule	Wheaton Inc.
Vacutainer	Becton Dickinson
Vacuubrand	Brand GMBH & Co. KG
Vakuwash	Bel-Art Products
Valco	Valco Instruments
Valor	Ohaus Corp.
Valox	General Electric Co.
Valu-Bulk	Wheaton Inc.
Value	General Signal Laboratory Equipment
Valumetric	Wheaton Inc.
VALUpak	Ultra Scientific Inc.
Varian	Varian Associates
Vari-Mix	Thermo Scientific
VARIO	BrandTech
Varistaltic	Thermo Scientific
Vectra	ITW Texwipe
Velcro	Velcro Industries, B.V.
Verify	Thermo Scientific
VERSA	C Technologies, Inc.
Versa-Clean	Fisher Scientific
VersaPak	Black & Decker Corporation
Versawipe	Texwipe
VersiDry	National Packaging Services
Verso	Thermo Scientific
Vespel	E.I. du Pont de Nemours
Vesphene	Steris Corp.
Vial File	Wheaton Inc.
Vikem	Bel-Art Products
Vincon	Norton Company
Vinylite	SmartHealth, Inc.
Virtua	Aearo Co.
Viscotester	Thermo Scientific
VisiDoc-It	Ultra Violet Products Inc.
VISIONlife	Thermo Scientific
VISIONlite	Thermo Scientific
VISIONpro	Thermo Scientific
VISIONsecurity	Thermo Scientific
Vista	Corning
VitalDye	Cellomics
VITEK	Biomerieux, Inc.
Viton	DuPont Performance Elastomers LLC
Vitox	Nu Skin International, Inc.
ViviRen	Promega Corp.
Voyager	Ohaus Corp.
Vycor	Corning

W

Trademark Name	Owner
W.A.T.E.R.	Thermo Scientific
Walkaway	Control Co.
Waring	Waring Products
Watchman	Mine Safety Appliances
Water Wash Enhancement	Thermo Scientific
WaterBugs	Remel, Inc.
Water-Jel	Water-Jel Technologies
Waters	Waters Corp.
WaterSaver	Mansfield Plumbing Products, Inc.
Watson-Marlow	Watson-Marlow
Wearwell	Tennessee Mat Company, Inc.
Welch	Welch Vacuum
Wells Lamont	Wells Lamont
Wellwash	Thermo Scientific
WFIQ	Decon Laboratories
Whatman	Whatman Inc.
Wheaton	Wheaton Inc.
Wheaton Dry Seal	Wheaton Inc.
Wheaton-33	Wheaton Inc.
Whirl-Pak	Nasco International, Inc.
Whisk-on-pan	Whit Corporation
White Swan	Encompass Group
Willson	Willson
Windows	Microsoft Corp.
Windows CE	Microsoft Corp.
Windows NT	Microsoft Corp.
Windows XP	Microsoft Corp.
Wiretrol	Drummond Scientific
WISP	Waters Corp.
Wizard	Promega Corp.
Word	Microsoft Corp.
Wrist-Action	Burrell Corp.
Write-On	Bel-Art Products
WypAll	Kimberly-Clark Corp.

X

Trademark Name	Owner
XAR	Eastman Kodak Co.
X-Cell	SPEX CertiPrep
X-Omat	Eastman Kodak Co.
Xpect	Remel, Inc.
XPert	Labconco
XStream	Labconco
XTI	Restek Corporation
X-tra	Rubbermaid Commercial Products
X-VIVO 10	BioWhittaker
X-VIVO 15	BioWhittaker
X-VIVO 20	BioWhittaker

Y

Trademark Name	Owner
Yale	Becton Dickinson
Yamato	Yamato Scientific Co., Ltd.
YSI	YSI Inc.

Z

Trademark Name	Owner
Zeba	Thermo Scientific
ZIF	Biotage, Inc.
ZIF-SIM	Biotage, Inc.
ZIF-SIM10	Biotage, Inc.
ZIF-SIM35	Biotage, Inc.
ZIF-SIM60	Biotage, Inc.
ZipPlate	Millipore Corp.
ZipTip	Millipore Corp.
Z-Taq	TaKaRa Shuzo Co.
Zymark	Caliper Life Sciences
Zymate	Zymark Corp.
Zymolyase	MP Biomedicals

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Compatible with a variety of detection techniques
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IMMOBILON-P (0.45µm)

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- Recommended for Western, dot, slot, and other blotting applications for proteins >20kDa

IMMOBILON-PSQ (0.22µm)

- Recommended for blotting and sequencing of proteins <20kDa

IMMOBILON-FL

- Low fluorescence PVDF membrane for Western blotting applications

SIZE	QUANTITY/PACK	CATALOG NO.
IMMOBILON-P BLOTTING SANDWICHES: PVDF 0.45µm		
7 x 8.4cm Sheet	20	**IPSN-078-52**
8.5 x 13.5cm Sheet	20	**IPSN-081-32**
IMMOBILON-P: PVDF 0.45µm		
10 x 10cm Sheet	10	**IPVH-101-00**
20 x 20cm Sheet	10	**IPVH-202-00**
26.5cm x 3.75m	Roll 1	**IPVH-000-10**
IMMOBILON-PSQ: PVDF 0.22µm		
10 x 10cm Sheet	10	**ISEQ-101-00**
20 x 20cm Sheet	10	**ISEQ-202-00**
26.5cm x 3.75m	Roll 1	**ISEQ-000-10**
IMMOBILON-FL		
10 x 10cm Sheet	10	**IPFL-101-00**
20 x 20cm Sheet	10	**IPFL-202-00**
26.5cm x 3.75m	Roll 1	**IPFL-000-10**

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Immobilon™ Western
HRP Substrate Peroxide Solution
250 mL Store at 2 – 8 °C
For Research Use Only
Kit Cat. No. WBKLS0500
Millipore Corporation, Billerica, MA 01821 U.S.A.
Immobilon™ Western
HRP Substrate Luminol Reagent
250 mL Store at 2 – 8 °C
For Research Use Only
Kit Cat. No. WBKLS0500
Millipore Corporation, Billerica, MA 01821 U.S.A.

DESCRIPTION	QUANTITY	CATALOG NO.
Chemiluminescent HRP Substrate	100mL	WBKL S0 100
Chemiluminescent AP Substrate	100mL	WBKD S0 100

For additional information on antibodies, please go to ***www.fishersci.com/milliporeantibodies***

- High signal intensity and low background allow detection to the mid femtogram level without enhancers or special buffers
- Reduce antibody consumption at least two- to five-fold compared to less sensitive chemiluminescent substrates

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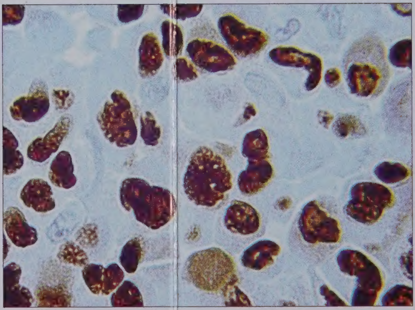

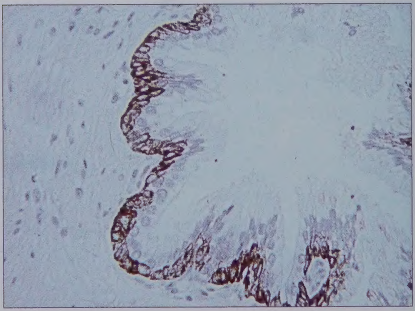

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*Trademark. See Trademark Reference.

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*Trademark. See Trademark Reference.

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CHEMISTRY
24 Analytical
31 Combinatorial
27 Organic
29 Other
30 Wet Chemistry/Titrations
CHROMATOGRAPHY
36 Gas
37 HPLC/LC
38 Other
LIFE SCIENCES
25 Biochemistry
14 Cell Biology
13 Cell Culture
19 Drug Discovery
15 Electrophoresis
12 General Research
11 Genomics
20 High Throughput Screening
16 Immunochemistry
32 Microscopy/Imaging
17 Molecular Biology
33 PCR/QPCR
34 Proteomics
10 RNAi
09 Stem Cell Research
08 Other Life Sciences
55 ADMET/TOXICOLOGY
66 ANIMAL RESEARCH
98 CLEANROOM
53 ENVIRONMENTAL SCIENCES
59 FOOD DIAGNOSTICS
90 PHYSICAL PROPERTIES
91 PILOT PLANT/PRODUCTION
54 QUALITY CONTROL
05 SCIENCE EDUCATION
OTHER ____________

MY ORGANIZATION: In the three spaces at right, please enter the 3-digit code that best describes your organization. ☐☐☐

HOSPITAL/CLINICAL
111 Hosp 0-99 Beds
112 Hosp. 100-199 Beds
113 Hosp. 200-299 Beds
114 Hosp. 300-399 Beds
115 Hosp. 400-499 Beds
116 Hosp. 500+ Beds
140 Local/Regional Labs, Dialysis & Commercial Labs
151 National Reference Labs
801 Other Healthcare
GOVERNMENT
141 Dept. of Commerce (NIST, NOAA)
142 Dept. of Homeland Security, FBI, Justice
143 Federal Law Enforcement
201 Federal VA Hospitals/Clinics
211 Dept. of Agriculture/USDA (APHIS)
231 Dept. of Defense
270 Dept. of Energy (National Labs)
283 Health & Human Services
290 Environmental Protection Agency
240 Other Federal Government
310 State Agriculture, Public Health, & Environment
300 State/Local Law Enforcement
321 City/County Municipal Purchasing
330 Local Public Health & Other Municipal Authorities
200 Government Contractors
BIOTECH
510 Biotech – Biopharmaceutical
511 Biotech – Biotools
512 Biotech – Services
513 Biotech – Other
CHEMICAL
521 Basic Chemicals
522 Specialty Chemicals
FOOD & AGRICULTURE
530 Food & Beverage
531 Agriculture
PHARMACEUTICAL
540 Traditional Pharmaceutical
541 Generics
542 Contract Research Organization
543 Nutraceuticals/Vitamins
544 Other, including Pharmacies
INDUSTRIAL
550 Medical Devices & Equipment
551 Electronics
561 Electric Power & Natural Gas
565 Basic Industries (Metal, Textiles)
589 Construction & Heavy Equipment
590 Water, Sewage, Other Utilities
592 Aerospace, Automotive, Rail, Parts
594 Consumer Products
ENVIRONMENTAL & TESTING
571 Air, Soil, Public Health
595 Wastewater, Water Treatment
596 Commercial Testing Laboratories
EDUCATIONAL
617 4-year College/University
621 2-year College
630 Medical Research Institutes – Non-University
631 Medical Schools
OTHER ____________

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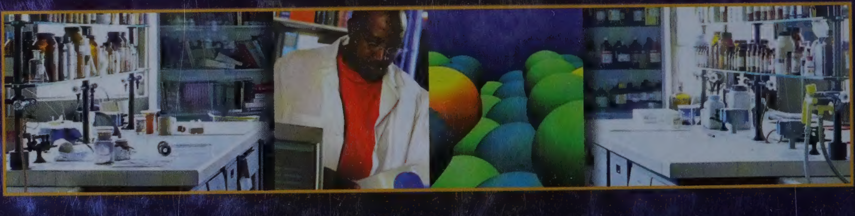1-800-766-7000 Tel 1-800-926-1166 Fax www.fishersci.com